COMPLIANCE / ENGINEERING / REMEDIATION

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August 12, 2016

Mr. Brad Roberts, Environmental Scientist
United States Environmental Protection Agency
Region VII
11201 Renner Boulevard
Lenexa, Kansas 66219

RE: Spring 2016 Status Report
Gates Corporation, 2121 Industrial Park Road, Boone, Iowa
Consent Order Docket # RCRA-7-99-0019 (July 1999)

Dear Mr. Roberts:

Enclosed are two copies of the Spring 2016 Status Report for the above-referenced Gates Corporation (Gates) site, as outlined in the August 2014 *Revised RCRA Corrective Measures Implementation Workplan*. In addition to the Introduction (Section 1), sections of the report include current status/updates regarding: 2) the long-term Monitored Natural Attenuation (MNA) sampling program; 3) the phytoremediation treatment barrier and associated operation and maintenance (O&M) activities; 4) the sub-slab depressurization system and associated O&M activities; and 5) conclusions.

As approved by the United States Environmental Protection Agency in correspondence dated August 12, 2014, the MNA sampling program replaces the previous semi-annual sampling program. Groundwater samples were collected between May 25 and May 26, 2016 using low-flow purging and sampling techniques.

Please find the attached Spring 2016 Status Report for further details on this project. If you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,

LT ENVIRONMENTAL, INC.

John P. Brown — Thomas C. Harp

John P. Brown, CHMM
Project Environmental Scientist

Thomas A. Harp, P.G.
Principal and Director of Technical Operations

cc: Ms. Ellen Huang, Gates Corporation, Denver CO
Attachments

553827

SPRING 2016 STATUS REPORT

GATES CORPORATION
BOONE, IOWA

AUGUST 2016

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VII
Lenexa, Kansas

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11201 Renner Boulevard
Lenexa, Kansas 66219

Prepared by:

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EXECUTIVE SUMMARY

LT Environmental, Inc. (LTE) was retained by Gates Corporation to conduct annual groundwater monitoring of wells installed in association with historical releases of tetrachloroethene, a.k.a. perchloroethene (PCE), from an aboveground storage tank formerly located at the 2121 Industrial Park Road, Boone, Iowa plant. The shallow water-bearing zone which underlies the subject area was sampled to monitor reductions in concentrations of constituents-of-concern (COCs) as a result of natural attenuation and interim and final corrective measures implemented at the site. The 16 monitoring wells stipulated in the Monitored Natural Attenuation (MNA) program, as outlined in the United States Environmental Protection Agency-approved August 2014 Corrective Measures Implementation Workplan, were sampled during this Spring 2016 monitoring event. LTE has prepared this Spring 2016 Status Report, which includes summaries of the long-term MNA sampling program; the phytoremediation treatment barrier (PTB) and associated operation and maintenance (O&M) activities; and the sub-slab depressurization system (SSDS) and associated O&M activities.

The purpose of the MNA sampling program is to assess the reduction of COC concentrations across the site over time and to monitor the effectiveness of the PTB at the downgradient property boundary. Results for samples collected during this Spring 2016 monitoring event were used to evaluate trends in COC concentrations as well as trends for other geochemical parameters. PTB and SSDS observations made during the Spring 2016 event are compared to previous events to determine whether the PTB is healthy and performing as designed, and, for the SSDS, whether the system is functioning properly; performing as designed; and at the same capacity as previous events. Based on observations made during the Spring 2016 sampling event, the SSDS is performing as designed, and SSDS stack emissions continue to decrease over time. There are currently 354 live, established trees that comprise the PTB. In addition, 61 replacement cottonwood trees were planted in June 2016 along the drainage area where limited mortality, likely due to ditch flooding and rodent damage was observed during a 2015 O&M inspection. Otherwise, all of the trees comprising the PTB had leafed-out prior to the Spring 2016 monitoring event and appeared healthy. The effectiveness of the PTB cannot be evaluated until the trees are more mature (i.e. at least several more growing seasons), especially the aforementioned 61 newly-planted trees.

COC concentrations observed in source-area monitoring wells during the Spring 2016 sampling event continue to show stable to decreasing trends as a result of final corrective-measure (BOS 100®) activities. Concentrations of vinyl chloride in monitoring well TW-19 (located near the southwest corner of the building) have been decreasing steadily since implementing the BOS 100® remedy in late 2014, and were just above the maximum contaminant level (MCL) of 2 µg/L during the Spring 2016 monitoring event.

Concentrations of PCE detected in offsite monitoring wells TW-24 and TW-27 continue to exceed the MCL of 5 µg/L; however, concentrations of PCE and other COCs have declined substantially since the Spring 2015 sampling event. Concentrations of all other COCs at monitoring well TW-24 remain below respective MCLs. Additionally, trichloroethylene and cis-1,2-dichloroethylene concentrations at monitoring well TW-27 have decreased to levels below respective MCLs. The concentrations of PCE in offsite monitoring wells TW-25 and TW-26 have historically fluctuated between levels just above or just below the MCL during monitoring events completed between 2002 and 2008. As of this Spring 2016 monitoring event, the concentrations of PCE and other

COCs at these offsite monitoring locations have been below respective MCLs for three consecutive years.

PCE concentrations at monitoring wells downgradient of the PTB (PBW-4 through PBW-7, and TW-26) were generally lower than concentrations observed at monitoring wells upgradient of the PTB (EZ-26, EZ-27, PBW-1, and PBW-2). Varying increases in COC concentrations were observed in PTB monitoring wells PBW-2 and EZ-27 (located hydraulically upgradient of the PTB), possibly the result of reduced capacity of the aging ZVI amendment. Steadily decreasing trends in COC concentrations are observed for PTB monitoring wells PBW-1 and EZ-26. Since COC concentrations in the source area have been greatly reduced as a result of Phase III treatment activities, the mass discharge of COCs into downgradient areas of the site should also decrease over time. It is expected that all monitoring wells located hydraulically upgradient of the PTB will eventually show decreasing COC trends similar to those observed for PBW-1 and EZ-26, regardless of the viability of the ZVI amendment.

These data should continue to be considered part of the baseline-performance monitoring data set, as the PTB trees require several more growing seasons to become established and develop the root depth and spread adequate to reduce solute mass discharge along the downgradient property boundary. Data from future monitoring events will be necessary to determine COC trends for these wells.

It is recommended that the Annual MNA sampling event be conducted in May 2017 and that results be compared to previous sampling events for trend-analysis purposes. It is also recommended that PTB O&M activities be conducted, as necessary, throughout the 2016 growing season. Semi-annual O&M activities for the SSDS will be conducted in October 2016.

1.0 INTRODUCTION

LT Environmental, Inc. (LTE) has been retained by Gates Corporation (Gates) to conduct annual monitored natural attenuation (MNA) groundwater sampling activities at the 2121 Industrial Park Road, Boone, Iowa plant. Historical releases of tetrachloroethene, a.k.a. perchloroethene (PCE), emanated from an aboveground storage tank formerly located at the facility. A site vicinity map is included as Figure 1. Groundwater samples were collected in May 2016 for this Spring 2016 monitoring event.

The shallow water-bearing zone which underlies the subject area was sampled to monitor reductions in concentrations of PCE and other constituents-of-concern (COCs) as a result of natural attenuation and interim and final corrective measures implemented at the site. Potassium permanganate was installed as an interim treatment (Phase I) and zero-valent iron (ZVI) was installed as an interim treatment (Phase II) in 2001. A BOS 100® injection pilot-test was completed in August 2008. The final site remedy was presented in the August 2014 *Revised RCRA Corrective Measures Implementation Workplan* (Revised RCRA CMIW). BOS 100® treatment activities were completed in November 2014, per the Revised RCRA CMIW. Also per the Revised RCRA CMIW, a sub-slab depressurization system (SSDS) was installed beneath the plant building and a phytoremediation treatment barrier (PTB) was installed along the downgradient property boundary. The locations and dates of these interim and final corrective measures are depicted on Figure 2.

Field activities and laboratory results for this Spring 2016 MNA sampling event are discussed in the following sections. Additionally, summaries of operations and maintenance (O&M) activities associated with the PTB and SSDS are provided in Chapters 3.0 and 4.0, respectively.

2.0 LONG-TERM MONITORED NATURAL ATTENUATION SAMPLING PROGRAM

Field activities conducted during the Spring 2016 monitoring event included recording depth-to-groundwater measurements and collecting groundwater samples from specified, accessible monitoring wells for field and chemical analyses. Additionally, the PTB was visually inspected for signs of damage (erosion, pests, dead trees, etc.) and to ascertain the overall health of the trees. Groundwater-monitoring activities are summarized in the sections below and observations regarding the PTB and SSDS are summarized in Chapters 3.0 and 4.0, respectively.

2.1 DEPTH-TO-GROUNDWATER MEASUREMENTS

On May 24, 2016, depth-to-groundwater measurements were recorded for 26 water-bearing zone monitoring wells at the site. Water levels for this monitoring event and previous monitoring events are summarized in Table 1. Water levels ranged from approximately 1 foot to 12 feet below surface (bgs), which is generally comparable to those measured during the Spring 2015 monitoring event; however, the water table was slightly lower at several locations likely due to seasonal variations in precipitation and uptake by the PTB trees.

Water-level data were used to generate an estimated water-table-surface map. As depicted on Figure 3, the predominant groundwater flow direction on the site appears to be easterly with radial-flow components to the southeast and northeast. The onsite hydraulic gradient ranged from approximately 0.004 feet per foot (ft/ft) to 0.035 ft/ft.

2.2 GROUNDWATER SAMPLING OF MONITORING WELLS

Groundwater samples were collected on May 25 and May 26, 2016 using low-flow purging and sampling techniques. Samples were collected from monitoring wells EZ-26, EZ-27, PBW-1, PBW-2, PBW-4 through PBW-7, TW-8, TW-18, TW-19, TW-24 through TW-27, and MPW-15. As a standard practice, oxidation/reduction potential (ORP), pH, specific conductance (SC), temperature, and dissolved oxygen (DO) were measured in the field for well-stabilization purposes prior to collecting groundwater samples. The results for these field-measured stabilization parameters are discussed in Section 2.3.1 of this report.

Samples collected for laboratory analyses were placed in appropriate, laboratory-supplied bottles and transported under standard chain-of-custody procedures to SGS Accutest Laboratories (SGS Accutest), in Wheat Ridge, Colorado. The samples were submitted for either volatile organic compound (VOC) analysis or VOC and general-chemistry analyses, as presented in the table below. Laboratory results are discussed in Section 2.3.

Monitoring Area	Monitoring Wells	Total Number of Wells	Analytical Parameter (Analytical Method)
Upgradient	TW-19, TW-24, TW-25	3	VOCs (SW846 8260B)
Former Source Area	MPW-15, TW-8	2	VOCs (SW846 8260B) Methane (RSKSOP-147/175) Ethane (RSKSOP-147/175) Ethene (RSKSOP-147/175) Chloride (EPA 300/SW846 9056A) Nitrate (EPA 300/SW846 9056A) Sulfate (EPA 300/SW846 9056A) Ferrous Iron (HACH 1,10 Phenanthroline Iron Reagent Method) TOC[1] (SM5310 B-11/SW9060A)[1] Alkalinity (SM2320 B-11)
Dissolved-Phase Plume	EZ-26, EZ-27, PBW-1, PBW-2	4	VOCs, Methane, Ethane, Ethene, Chloride, Nitrate, Sulfate, Ferrous Iron, TOC[1], Alkalinity (Same As Above Analytical Methods)
Downgradient of Phytoremediation Treatment Barrier	PBW-4 through PBW-7, TW-18, TW-26, TW-27	7	VOC, Ethene, Chloride (Same As Above Analytical Methods)

TOC = Total Organic Carbon
1) TOC samples were not collected during the Spring 2016 monitoring event due to a laboratory change over.

2.3 GROUNDWATER SAMPLING RESULTS

A summary of groundwater results for field measurements is presented in Table 2. The sampling methodology and field data sheets are included in Appendix A. The summaries of groundwater analytical results for VOCs are presented in Table 3 and on Figure 4, and general-chemistry analyses are presented in Table 4 and on Figure 5. The SGS Accutest laboratory reports for the Spring 2016 monitoring event are included in Appendix B.

Iso-concentration maps for COCs including PCE and derivative by-products trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), 1,1-dichloroethene (1,1-DCE), and vinyl chloride (VC) are presented on Figure 6 through Figure 10, respectively. These maps are considered qualitative interpolations between points, where solute concentrations are based on laboratory analyses of samples collected from discrete locations. Additionally, iso-concentration contours were developed using sampling data from this sampling event; however, refinements to the overall contour boundaries were completed using site historic data from previous reports.

2.3.1 FIELD-MEASURED GROUNDWATER PARAMETERS

As indicated in Section 2.2, monitoring wells were sampled once stabilization-parameter readings were within acceptable ranges. In general, parameter stabilization occurred prior to sampling; however, the drawdown criterion of 0.33 feet was not met for any of the wells sampled during this monitoring event due to the low-yielding characteristics of the shallow water-bearing unit. ORP values measured during this monitoring event were predominantly positive (oxidizing) throughout the majority of the site, with the exception of negative (reducing) values measured at monitoring wells TW-19, MPW-15, and PBW-5.

2.3.2 VOC ANALYTICAL RESULTS

COC concentrations observed during the Spring 2016 event are summarized in Table 3 and displayed on Figure 4. As shown, the highest COC concentrations were detected in the source area underneath the plant building (represented by monitoring well MPW-15) and under the north loading dock (represented by monitoring well TW-8). The PCE concentration in monitoring well MPW-15 was 7,840 micrograms per liter (µg/L) and the PCE concentration in monitoring well TW-8 was 2,520 µg/L. The highest concentrations of other COCs were also observed at these two source-area locations, and at monitoring well EZ-27 (located hydraulically downgradient of the source area), as shown on Figure 6 through Figure 10. Significant reductions in PCE and other COC concentrations were observed for source-area monitoring well TW-8, while a stable to decreasing trend in COC concentrations is observed at monitoring well MPW-15. Concentrations of VC in monitoring well TW-19 (located near the southwest corner of the building) have been decreasing steadily since implementing the BOS 100® remedy in late 2014, and were just above the maximum contaminant level (MCL) of 2 µg/L during the May 2016 monitoring event.

PCE concentrations at monitoring wells downgradient of the PTB (PBW-4 through PBW-7, and TW-26) were generally lower than concentrations observed at monitoring wells upgradient of the PTB (EZ-26, EZ-27, PBW-1, and PBW-2), as displayed on Figure 6. Keep in mind that due to the radial groundwater flow components at the eastern property boundary, the true hydraulically upgradient well location may not be directly west of those wells located hydraulically downgradient of the PTB. These data should continue to be considered part of the baseline-performance monitoring data set, as the trees require several more growing seasons to become established and develop the root depth and spread adequate to reduce solute mass discharge along the downgradient property boundary. Data from future monitoring events will be necessary to determine COC trends for these wells.

Varying increases in COC concentrations were observed in PTB monitoring wells PBW-2 and EZ-27 (located hydraulically upgradient of the PTB), possibly the result of reduced capacity of the aging ZVI amendment. This hypothesis is further corroborated with the predominantly positive ORP values measured during this Spring 2016 monitoring event in wells installed within ZVI treatment areas. ORP values measured in these monitoring wells between 2001 (after installation of the ZVI amendment) and up to approximately 2015, had been predominantly negative, as a result of the ZVI treatment. Steadily decreasing trends in COC concentrations are observed for PTB monitoring wells PBW-1 and EZ-26. Since COC concentrations in the source area have been greatly reduced due to Phase III treatment, the mass discharge of COCs into downgradient areas of the site should also decrease over time. It is expected that all monitoring wells located

hydraulically upgradient of the PTB will eventually show decreasing COC trends similar to those observed for PBW-1 and EZ-26, regardless of the viability of the ZVI amendment.

Concentrations of PCE detected in offsite monitoring wells TW-24 and TW-27 continue to exceed the MCL of 5 µg/L; however, the concentrations of PCE and other COCs have declined substantially since the Spring 2015 sampling event (Table 3). The concentrations of all other COCs at monitoring well TW-24 remain below respective MCLs. Additionally, TCE and cis-1,2-DCE concentrations at monitoring well TW-27 have decreased to levels below respective MCLs. The concentrations of PCE in offsite monitoring wells TW-25 and TW-26 have historically fluctuated between levels just above or just below the MCL during monitoring events completed between 2002 and 2008. As of this Spring 2016 monitoring event, the concentrations of PCE and other COCs at these offsite monitoring locations have been below respective MCLs for three consecutive years.

Ethene was detected in monitoring wells MPW-15 and EZ-27 during the Spring 2016 monitoring event. Ethene is generated by the dechlorination of VOCs and thus, is expected to be observed in areas of the site where BOS 100® and/or ZVI were installed.

Methane was detected in monitoring wells MPW-15, TW-8, TW-18, PBW-4, PBW-5, EZ-26, and EZ-27, with the highest observed concentrations occurring in monitoring wells located along the eastern drainage ditch adjacent to the PTB. Methanogenesis occurs under anaerobic conditions where highly reducing environments exist. The stagnant water in the drainage ditch has likely created a localized area where anaerobic conditions persist. The mechanisms for COC removal at the site (BOS 100® treatment and the PTB) are not highly dependent upon the oxidation/reduction state or the presence of terminal electron acceptors. It is expected that hydraulic uptake from PTB trees will eventually depress the water table in the ditch, potentially leading to a shift in oxidation/reduction cycling. Methane trends appear to be stable; however, additional monitoring will be necessary to further evaluate trends in methane concentrations.

2.3.3 GENERAL CHEMISTRY ANALYTICAL RESULTS

Alkalinity is a measure of the capacity of water to neutralize or buffer acids. Measuring total alkalinity at remediation sites is important in understand the capacity of aquifers to resist sudden changes in pH due to the presence of organic acids that can be produced as a result of microbial degradation of contaminants. The average values for alkalinity in groundwater vary greatly and are highly dependent upon the specific hydrogeologic setting. Total alkalinity (as calcium carbonate) analytical results for the Spring 2016 sampling event range from a minimum concentration of 117 milligrams per liter (mg/L) to a maximum concentration of 603 mg/L; therefore, the buffering capacity at the Gates site is considered moderate to high. Additionally, the average pH observed during the Spring 2016 monitoring event is 7.18 standard units (su), while the range is 6.82 su to 7.86 su, which is indicative of neutral conditions across the site.

Chloride is naturally present in all groundwater. Elevated levels of chloride at VOC remediation sites can occur because of the dechlorination process. An average site background concentration must be determined to evaluate the degree to which chloride concentrations are elevated. For the Gates site, chloride data generated during previous quarterly and semi-annual monitoring events were utilized for statistical analysis to determine average background concentrations. The

background concentrations of chloride for monitoring wells in areas where treatment has not been implemented ranged from approximately 2 mg/L to 140 mg/L, with an overall average concentration of 57 mg/L. Chloride concentrations observed during the Spring 2016 monitoring event ranged from 4.6 mg/L to 215 mg/L, with the highest concentrations observed where treatment had occurred in the vicinity of monitoring well MPW-15 (source area) and in the vicinity of monitoring well PBW-2 (hydraulically upgradient from the PTB). Chloride concentrations appear to be decreasing over time (since chloride generation will typically peak within a short time after treatment when using BOS 100®); however, additional data will be necessary (and will be obtained during future monitoring events) to compare chloride trends.

Ferrous iron concentrations ranged from 0.05 mg/L to 0.6 mg/L during the Spring 2016 sampling event, while sulfate concentrations ranged from 11 mg/L to 143 mg/L. Ferrous iron and sulfate are generally present in inversely proportional concentrations depending upon whether ferric iron or sulfate is being used as the predominant terminal electron acceptor. Both ferrous iron and sulfate concentrations were generally lower than those concentrations observed during the Spring 2015 monitoring event. Additional data will be necessary (and will be obtained during future monitoring events) to compare ferrous iron and sulfate trends to determine whether sulfate reduction or iron reduction prevails.

Nitrate concentrations ranged from <0.05 mg/L to 44 mg/L during the Spring 2016 monitoring event. The highest concentration (44 mg/L) was observed in the groundwater sample collected from well PBW-2, and the next highest concentration (1.4 mg/L) was detected in the groundwater sample collected from well PBW-1. It is possible that elevated nitrate concentrations may be present in these monitoring wells located adjacent to the PTB due to the application of fertilizer in this area. Nitrate concentrations are decreasing at all monitoring locations, with the exception of monitoring well PBW-2, where nitrate concentrations initially appear to be increasing. Additional data will be necessary to further evaluate the nitrate concentration trends.

Total organic carbon (TOC) analyses were inadvertently not completed during this Spring 2016 monitoring event due to a laboratory change over. This situation has been addressed and TOC analyses will be completed during the next (Spring 2017) monitoring event.

2.4 VOC TREND ANALYSES

As with previous semi-annual monitoring reports, trend analyses of the COCs (PCE, TCE, cis-1,2-DCE, 1,1-DCE, and VC) was completed for this Spring 2016 monitoring event. Trend analyses consisted of comparing the iso-concentration maps for this Spring 2016 monitoring event with the iso-concentration maps for the previous (Spring 2015) monitoring event. Histograms were also prepared for each monitoring well sampled and are included in Appendix C.

2.4.1 PCE Plume

The overall shape and intensity of the PCE plume is similar to the previous (May 2015) monitoring event, with slight decreases in source area monitoring well TW-8 and offsite monitoring well TW-27. As depicted in the histograms and in Table 3, varying increases in PCE concentrations were detected in monitoring wells TW-25, TW-26, PBW-2, PBW-5, and EZ-27. PCE reductions were detected in monitoring wells TW-8, TW-18, TW-24, TW-27, PBW-1, PBW-4, and EZ-26.

Fluctuations in the detected concentrations of PCE in site monitoring wells are expected following the installation of the final site remedy.

2.4.2 TCE Plume

Both the footprint and intensity of the TCE plume have decreased slightly since the May 2015 monitoring event. Varying increases in TCE concentrations were detected in monitoring wells MPW-15, TW-26, PBW-2, PBW-5, PBW-7, and EZ-27. TCE concentrations decreased in monitoring wells TW-8, TW-18, TW-24, TW-27, PBW-1, PBW-4, and EZ-26. Fluctuations in the detected concentrations of TCE in site monitoring wells are expected following the installation of the final site remedy.

2.4.3 Cis-1,2-DCE Plume

The footprint of the cis-1,2-DCE plume has decreased significantly since the May 2015 sampling event; however, the intensity of the plume in source area monitoring well MPW-15 has increased slightly since the previous monitoring event. Varying increases in cis-1,2-DCE concentrations were detected in monitoring wells MPW-15, TW-26, PBW-2, PBW-5, PBW-7, and EZ-27. Cis-1,2-DCE concentrations decreased in monitoring wells TW-8, TW-18, TW-19, TW-24, TW-27, PBW-1, PBW-4, and EZ-26. Fluctuations in the detected concentrations of cis-1,2-DCE in site monitoring wells are expected following the installation of the final site remedy.

2.4.4 1,1-DCE Plume

A trend analysis has not been provided for 1,1-DCE because this analyte has only been occasionally detected at concentrations slightly exceeding the MCL in monitoring wells MPW-15 and TW-8, which are in the source area. Elevated laboratory detection limits have also resulted in data gaps, which limit the accuracy and utility of any trend analysis. During this monitoring event, 1,1-DCE was detected at a concentration of 16 µg/L (exceeding the MCL of 7 µg/L) in monitoring well MPW-15. 1,1-DCE concentrations were below the MCL in all other monitoring wells sampled during this monitoring event.

2.4.5 VC Plume

Both the footprint and the intensity of the VC plume are similar to the May 2015 monitoring event, with the exception that VC concentrations have decreased significantly at monitoring well TW-19. As depicted in the histograms and in Table 3, decreases in VC concentrations were detected in monitoring wells MPW-15 and TW-19, while increases were detected in monitoring wells TW-18, PBW-5, and EZ-27. Fluctuations in the detected concentrations of VC in site monitoring wells are expected following the installation of the final site remedy.

3.0 PHYTOREMEDIATION TREATMENT BARRIER OBSERVATIONS AND OPERATIONS AND MAINTENANCE ACTIVITIES

A phytoremediation O&M site visit was completed in June 2016. There are currently 354 live, established trees that comprise the PTB. In addition, 61 replacement cottonwood trees were planted in June 2016 along the drainage area where limited mortality was observed during a 2015 O&M inspection, likely due to ditch flooding and rodent damage. Otherwise, all of the trees comprising the PTB had leafed-out prior to the Spring 2016 monitoring event and appeared healthy. The trees have increased approximately 2 to 4 feet in height since the Spring 2015 O&M site visit, and the largest trees are approximately two inches in diameter. Some deer damage was noted on the east side of the drainage ditch. No other problems (e.g. – insect pests, erosion, and physical tree damage from winds) were observed during the June 2016 site visit and the trees that had leafed appeared to be in good health. The trees were beginning to show drought effects (i.e., yellow lower leaves) because of little to no recent precipitation, such that irrigation may be necessary if drought conditions persist. Regularly scheduled PTB O&M site visits will continue throughout the summer of 2016. Photographs of the PTB are included in Appendix D.

4.0 SUB-SLAB DEPRESSURIZATION SYSTEM OPERATIONS & MAINTENANCE ACTIVITIES

The SSDS was installed between November 13, 2014 and November 20, 2014, with startup occurring on November 21, 2014. The SSDS layout is depicted on Figure 11. System measurements (vacuum, airflow, inlet temperature, and exhaust temperature) are recorded during each O&M monitoring event and a stack exhaust sample is collected using a Bottle-Vac™. Stack samples are submitted to Origins Laboratory, Inc. in Denver, Colorado, and analyzed for VOCs by EPA Method TO-15. The analytical results for the Spring 2016 monitoring event are summarized in Table 5 and the laboratory analytical report is provided in Appendix E. Total system runtime (as of June 30, 2016) is estimated to be in excess of 14,080 hours. The total hours recorded during the O&M monitoring event completed on May 24, 2016 are listed in the table below, along with a summary of additional system operational parameters.

Date Measured	Parameter	Value
May 24, 2016	Hour Meter	13,189 hours
	Airflow	110 cubic feet per minute
	Total Vacuum	27 inches water column
	Inlet Temperature	69 degrees Fahrenheit
	Exhaust Temperature	94 degrees Fahrenheit
	PID Reading at Stack	0.0 parts per million
	Knock-Out Tank	0 inches water (empty)
	Vacuum At System Leg #1	7 inches water column
	Vacuum At System Leg #2	6 inches water column
	Vacuum At System Leg #3	6 inches water column
	Vacuum At System Leg #4	6 inches water column
	Vacuum At System Leg #5	6 inches water column

A stack sample was collected on May 24, 2016. As shown in Table 5, peak VOC emissions occurred shortly after system startup (within the first day or two) and have continued to decline during system operation, indicative of ongoing removal of vapors from beneath the building slab. The compounds detected for each stack sample are summarized in Table 5. These data were used to generate total estimated annual VOC emissions for the SSDS in tons per year (tpy). The annual calculated VOC emissions are as follows:

November 21, 2014 sample = 0.05 tpy
November 22, 2014 sample = 1.14 tpy
December 11, 2014 sample = 0.01 tpy
May 4, 2015 sample = 0.004 tpy
May 24, 2016 sample = 0.001 tpy

The Iowa Department of Natural Resources (IDNR) has a small-unit exemption for VOCs for emissions less than 5 tpy (see 567 Iowa Administrative Code (IAC) 22.1(2)”w”). As indicated by stack-sampling data, SSDS emissions are significantly less than the 5 tpy threshold; therefore, it

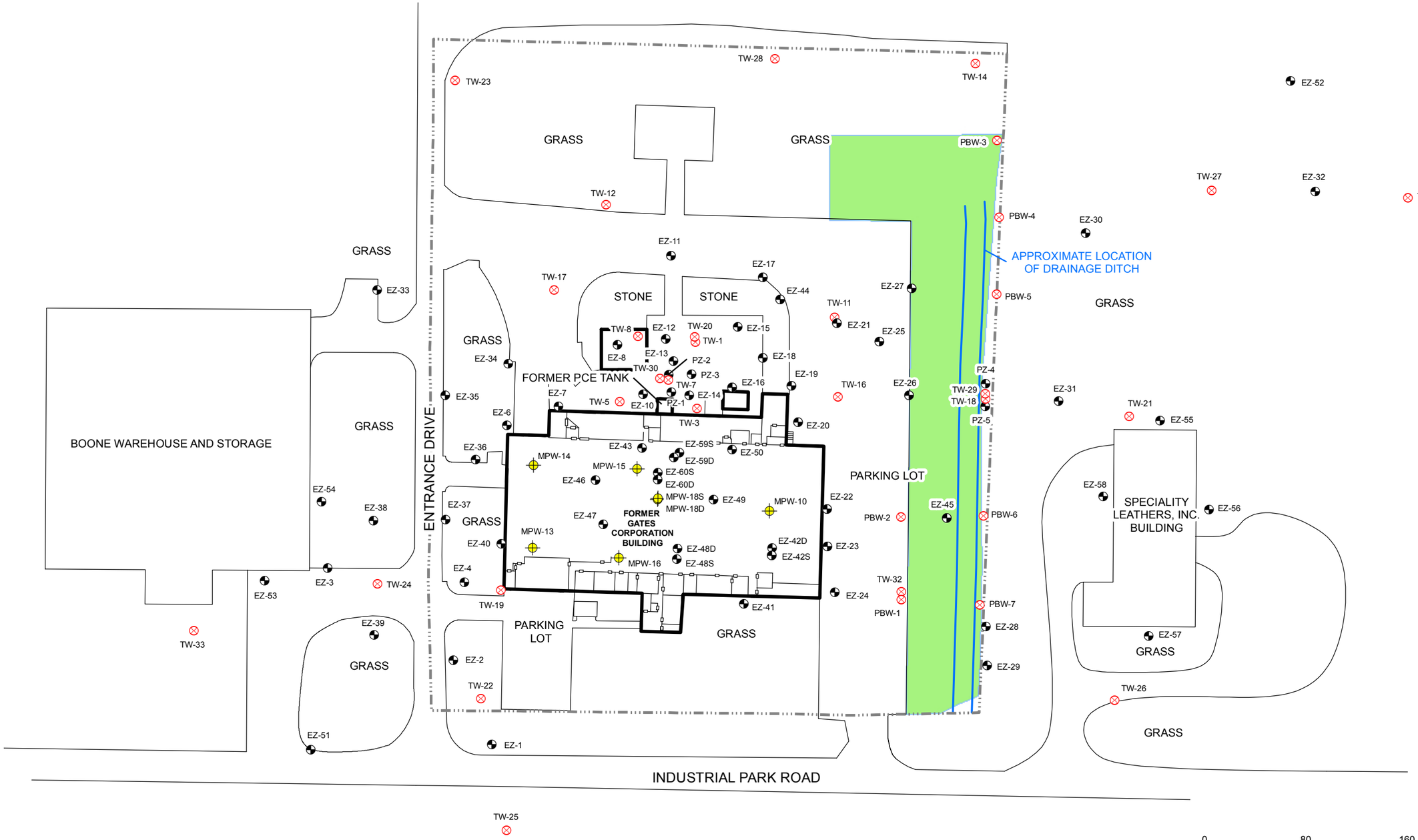
is expected that the Gates facility will continue to be in compliance with this IDNR air construction permitting exemption.

5.0 CONCLUSIONS

The purpose of the MNA sampling program is to assess reductions in COC concentrations across the site over time and to monitor the effectiveness of the PTB at the downgradient property boundary. As indicated by results for samples collected during this Spring 2016 event, significant reductions in COC concentrations were observed in source area monitoring wells (MPW-15 and TW-8); continued reductions were observed in COC concentrations in several other onsite monitoring wells; and fluctuations represented by varying increases or decreases in COC concentrations were observed in several of the PTB monitoring wells. Future data will be used to evaluate trends in COC concentrations as well as trends for other geochemical parameters.

Based on observations made during the Spring 2016 sampling event, the SSDS is performing as designed, and the SSDS stack emissions are decreasing. There are currently 354 live, established trees that comprise the PTB. In addition, 61 replacement cottonwood trees were planted in June 2016 along the drainage area where some limited mortality was observed during the 2015 O&M inspection. Otherwise, all of the PTB trees had leafed-out prior to the Spring 2016 monitoring event and appeared healthy. Additionally, the trees have increased approximately 2 to 4 feet in height since the Spring 2015 O&M site visit. PTB monitoring and O&M events will be conducted approximately every six weeks during the 2016 growing season, and the next scheduled SSDS O&M monitoring event will be conducted in October 2016.

FIGURES

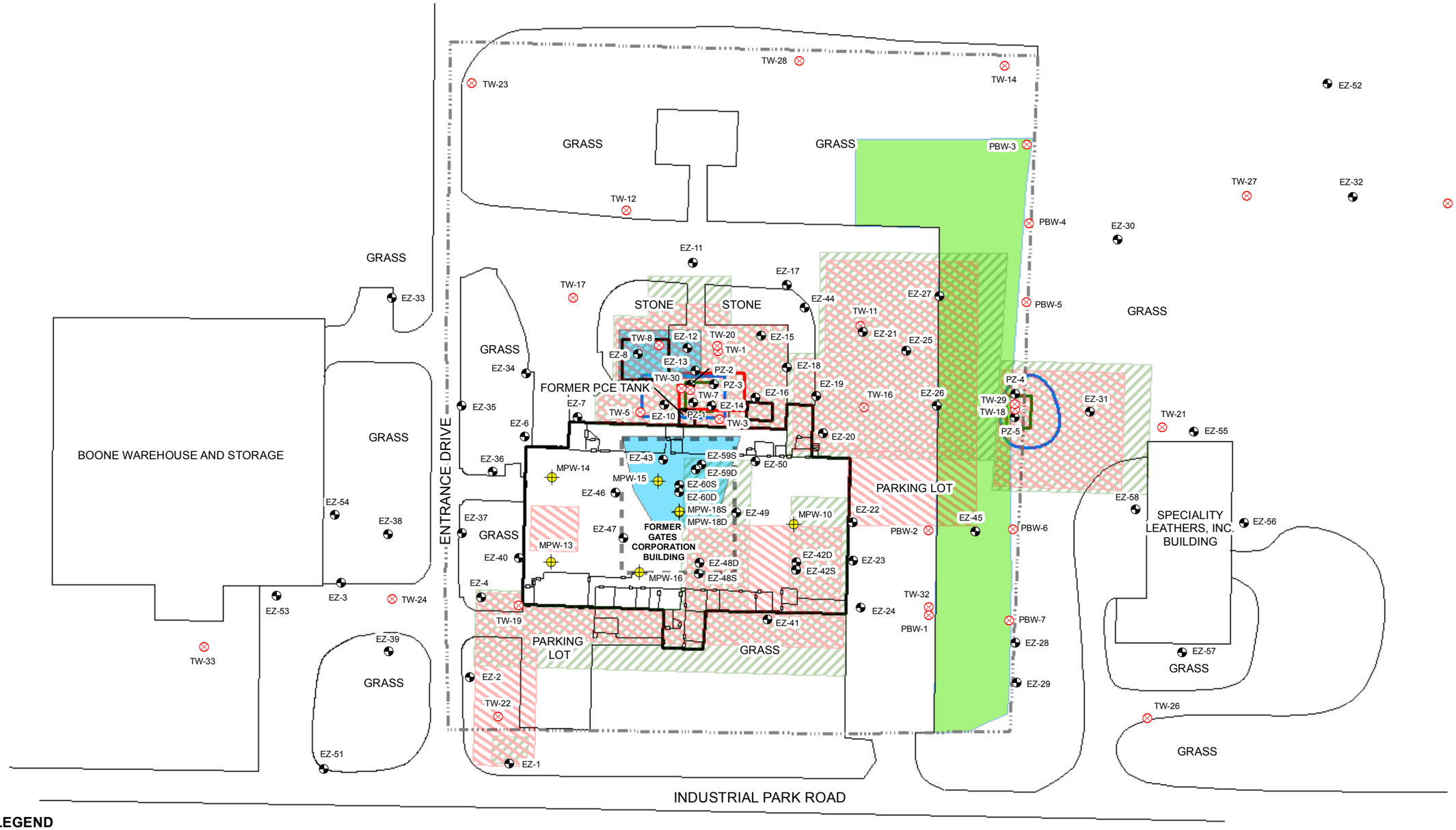


LEGEND

- EXISTING GROUNDWATER SAMPLING POINT
- IAQ TEMPORARY GROUNDWATER SAMPLING POINT
- EXISTING MONITORING WELL
- PROPERTY BOUNDARY
- PHYTOREMEDIATION TREATMENT AREA

FIGURE 1
SITE VICINITY MAP
FORMER GATES CORPORATION FACILITY
2121 INDUSTRIAL PARK ROAD
BOONE, IOWA
GATES CORPORATION

P:\Gates\GIS\MXD\GATES0901 BOONE IOWA\GATE0901_BOONE_11x17_FIG01_SITE_VICINITY_MAP_011515.mxd



LEGEND

- EXISTING GROUNDWATER SAMPLING POINT
- IAQ TEMPORARY GROUNDWATER SAMPLING POINT
- EXISTING MONITORING WELL
- PROPERTY BOUNDARY
- PHYTOREMEDIATION TREATMENT AREA
- APPROXIMATE AREA OF BOS 100® TREATMENT - NOVEMBER 2014
- APPROXIMATE AREA OF (PHASE I) POTASSIUM PERMANGANATE TREATMENT-MARCH AND APRIL 2001
- APPROXIMATE AREA OF (PHASE II) ZERO-VALENT IRON TREATMENT-SEPTEMBER AND OCTOBER 2001
- POTASSIUM PERMANGANATE PILOT TEST-JANUARY 2001
- POTASSIUM PERMANGANATE TREATMENT-FEBRUARY 2001
- BOS 100® PILOT TEST-AUGUST 2008
- SUB-SLAB DEPRESSURIZATION SYSTEM

FIGURE 2
CORRECTIVE MEASURES LOCATION MAP
FORMER GATES CORPORATION FACILITY
2121 INDUSTRIAL PARK ROAD
BOONE, IOWA
GATES CORPORATION

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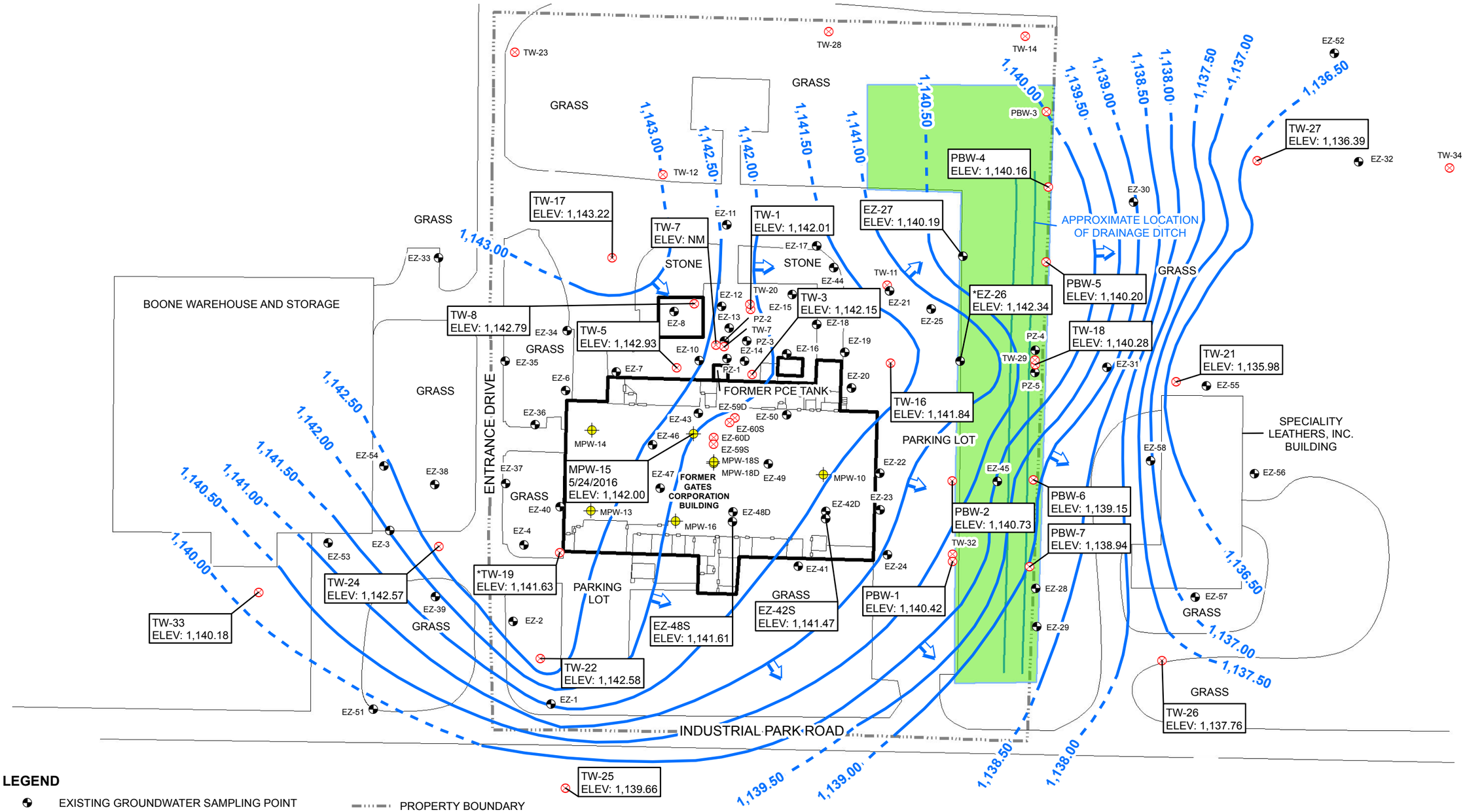


LEGEND

- EXISTING GROUNDWATER SAMPLING POINT
- IAQ TEMPORARY GROUNDWATER SAMPLING POINT
- EXISTING MONITORING WELL
- ESTIMATED GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION CONTOUR
- DASHED WHERE INFERRED
- CONTOUR INTERVAL = 0.50 FEET
- ELEVATIONS WERE MEASURED ON MAY 24, 2016
- PROPERTY BOUNDARY
- PHYTOREMEDIATION TREATMENT AREA

0 80 160
Feet

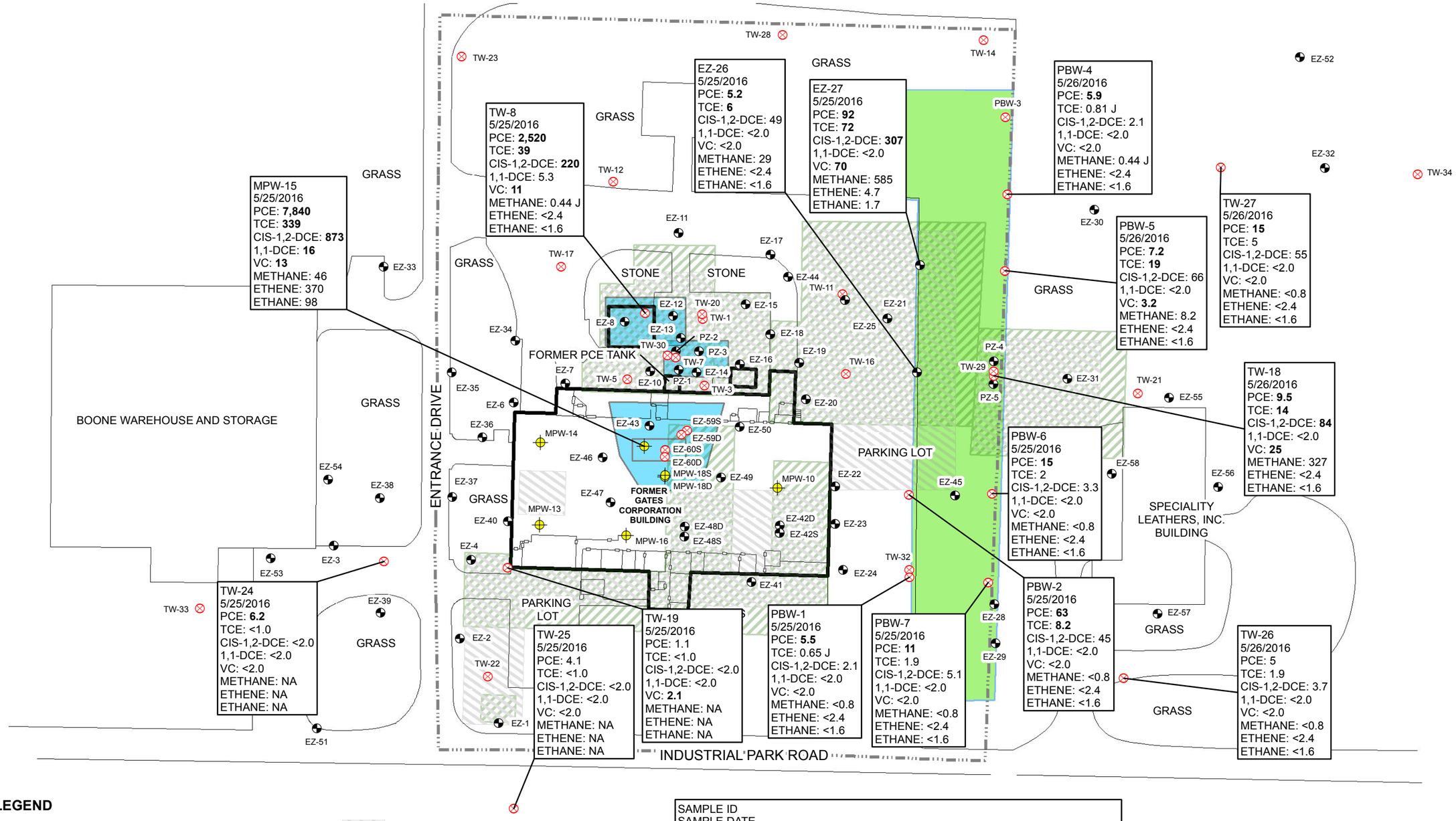
N

*MONITORING WELLS EZ-26 AND TW-19 WERE NOT USED FOR DEVELOPING GROUNDWATER ELEVATION CONTOURS.

WELL ID
ELEV: GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
NM: NOT MEASURED

FIGURE 3
WATER TABLE SURFACE MAP
FORMER GATES CORPORATION FACILITY
2121 INDUSTRIAL PARK ROAD
BOONE, IOWA
GATES CORPORATION

P:\Gates\GIS\MXD\GATES0901 BOONE IOWA\SEMI-ANNUAL_REPORT\MAY_2016\GATE0901_BOONE_FIG03_WATER_TABLE_MAP_MAY_2016_070516.mxd



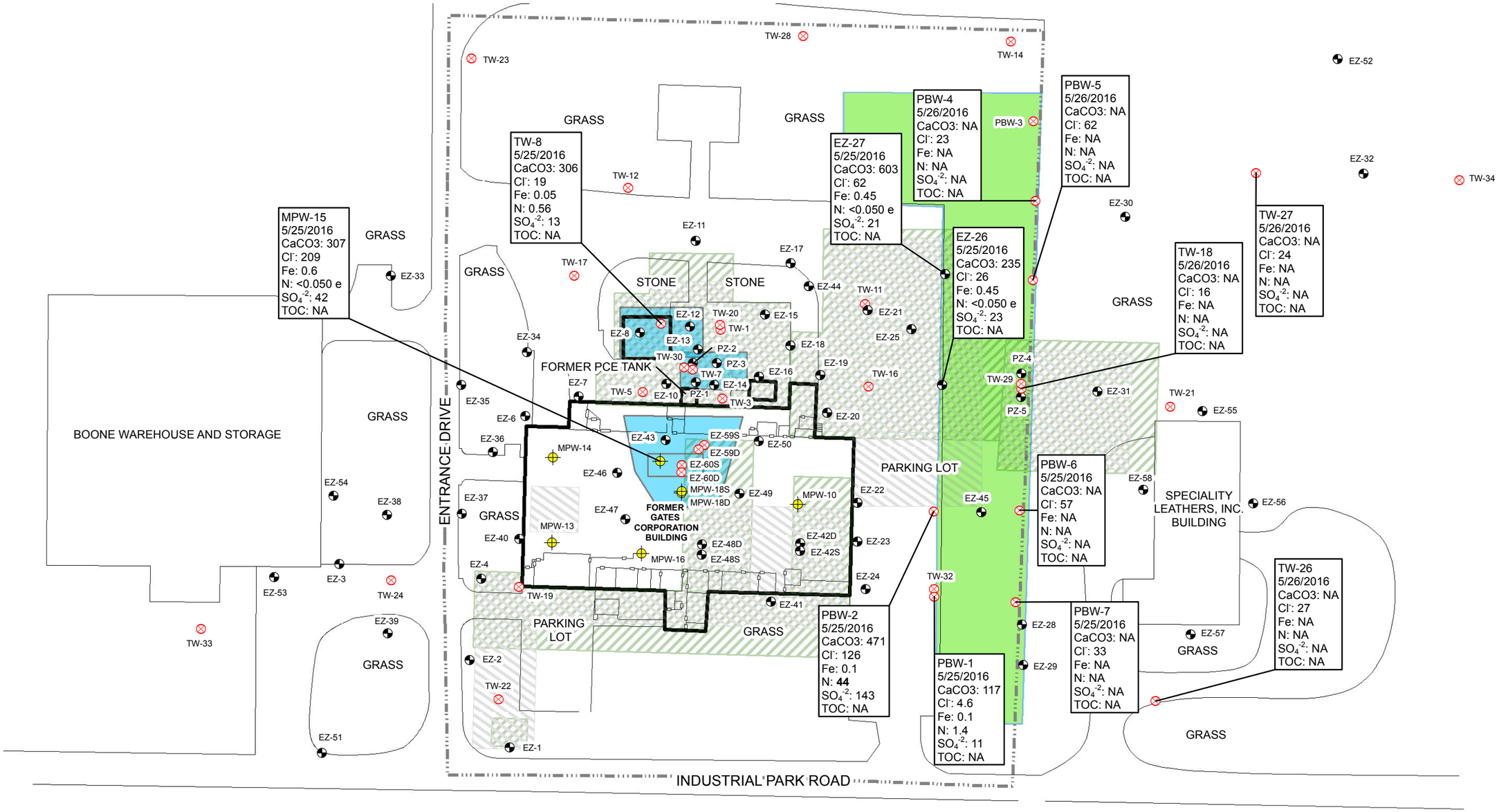
LEGEND

- EXISTING GROUNDWATER SAMPLING POINT
- IAQ TEMPORARY GROUNDWATER SAMPLING POINT
- EXISTING MONITORING WELL
- PROPERTY BOUNDARY
- PHYTOREMEDIATION TREATMENT AREA
- BOS 100® TREATMENT AREAS
- POTASSIUM PERMANGANATE TREATMENT AREAS
- ZERO-VALENT IRON TREATMENT AREAS

SAMPLE ID
SAMPLE DATE
PCE: TETRACHLOROETHYLENE [MICROGRAMS PER LITER (µg/L)]
TCE: TRICHLOROETHYLENE (µg/L)
CIS-1,2-DCE: CIS-1,2-DICHLOROETHYLENE (µg/L)
1,1-DCE: 1,1-DICHLOROETHYLENE (µg/L)
VC: VINYL CHLORIDE (µg/L)
METHANE: (µg/L)
ETHENE: (µg/L)
ETHANE: (µg/L)
J: LABORATORY ESTIMATED VALUE
NA: NOT ANALYZED
<: CONCENTRATION IS LESS THAN THE STATED LABORATORY REPORTING LIMIT
BOLD INDICATES RESULT EXCEEDS EPA MAXIMUM CONTAMINANT LEVEL

FIGURE 4
VOC ANALYTICAL DATA
MAY 2016
FORMER GATES CORPORATION FACILITY
2121 INDUSTRIAL PARK ROAD
BOONE, IOWA
GATES CORPORATION

P:\Gates\GIS\MXD\GATES0901 BOONE IOWA\SEMI-ANNUAL_REPORT\MAY_2016\GATE0901_BOONE_FIG04_VOC_ANALYTICAL_MAY_2016.mxd



LEGEND

- EXISTING GROUNDWATER SAMPLING POINT
- IAQ TEMPORARY GROUNDWATER SAMPLING POINT
- EXISTING MONITORING WELL
- PROPERTY BOUNDARY
- PHYTOREMEDIATION TREATMENT AREA
- BOS 100® TREATMENT AREAS
- POTASSIUM PERMANGANATE TREATMENT AREAS
- ZERO-VALENT IRON TREATMENT AREAS

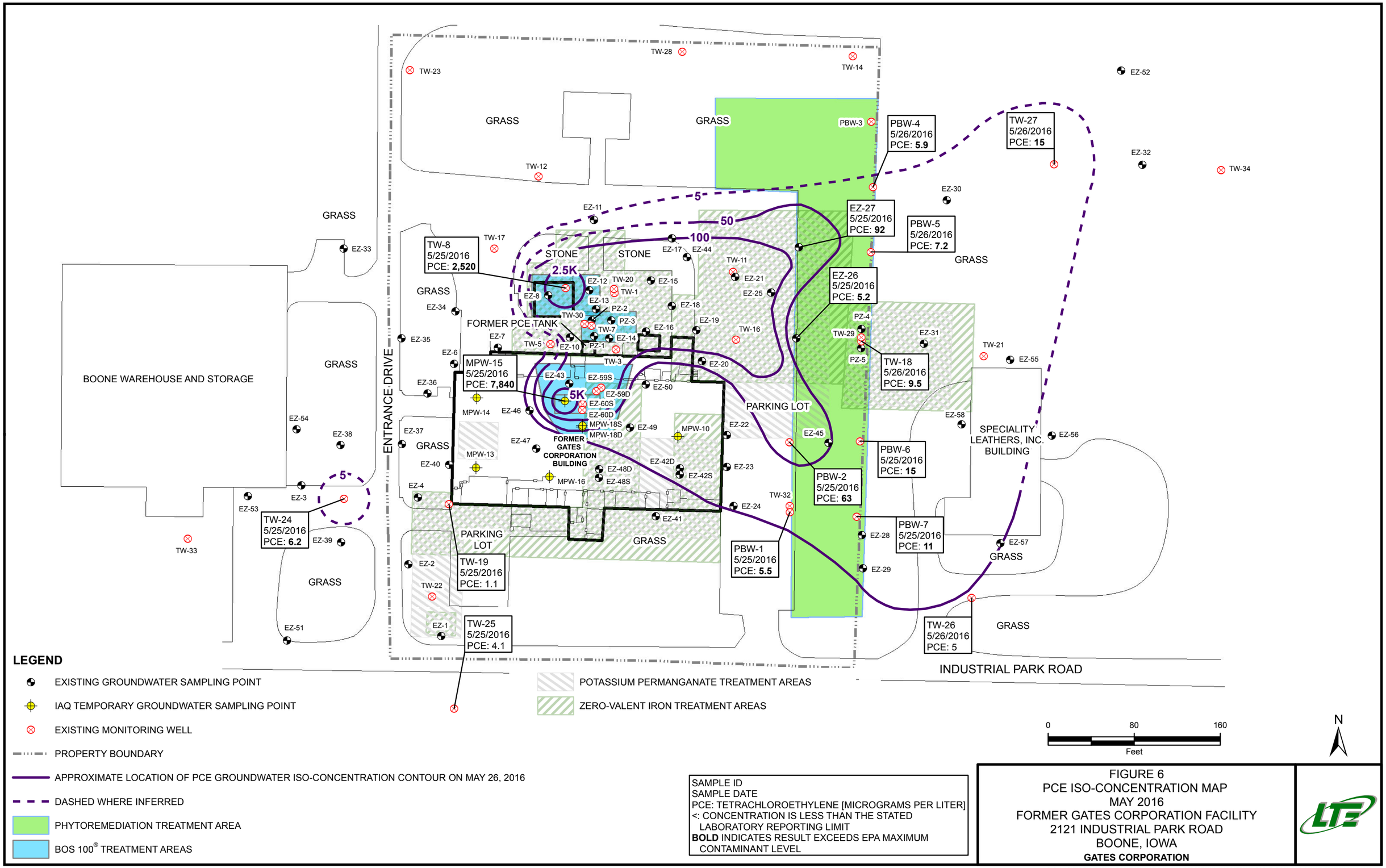
SAMPLE ID
SAMPLE DATE
CaCO3: ALKALINITY, TOTAL AS CaCO3 [MILLIGRAMS PER LITER (mg/L)]
Cl⁻: CHLORIDE (mg/L)
Fe: FERROUS IRON (mg/L)
N: NITRATE (mg/L)
SO_4^{-2}: SULFATE (mg/L)
TOC: TOTAL ORGANIC CARBON (mg/L)
BOLD INDICATES RESULT EXCEEDS EPA MAXIMUM CONTAMINANT LEVEL
<: CONCENTRATION IS LESS THAN THE STATED LABORATORY REPORTING LIMIT
NA: NOT ANALYZED
e: ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE

0 80 160
Feet

N

FIGURE 5
GENERAL CHEMISTRY ANALYTICAL DATA
MAY 2016
FORMER GATES CORPORATION FACILITY
2121 INDUSTRIAL PARK ROAD
BOONE, IOWA
GATES CORPORATION

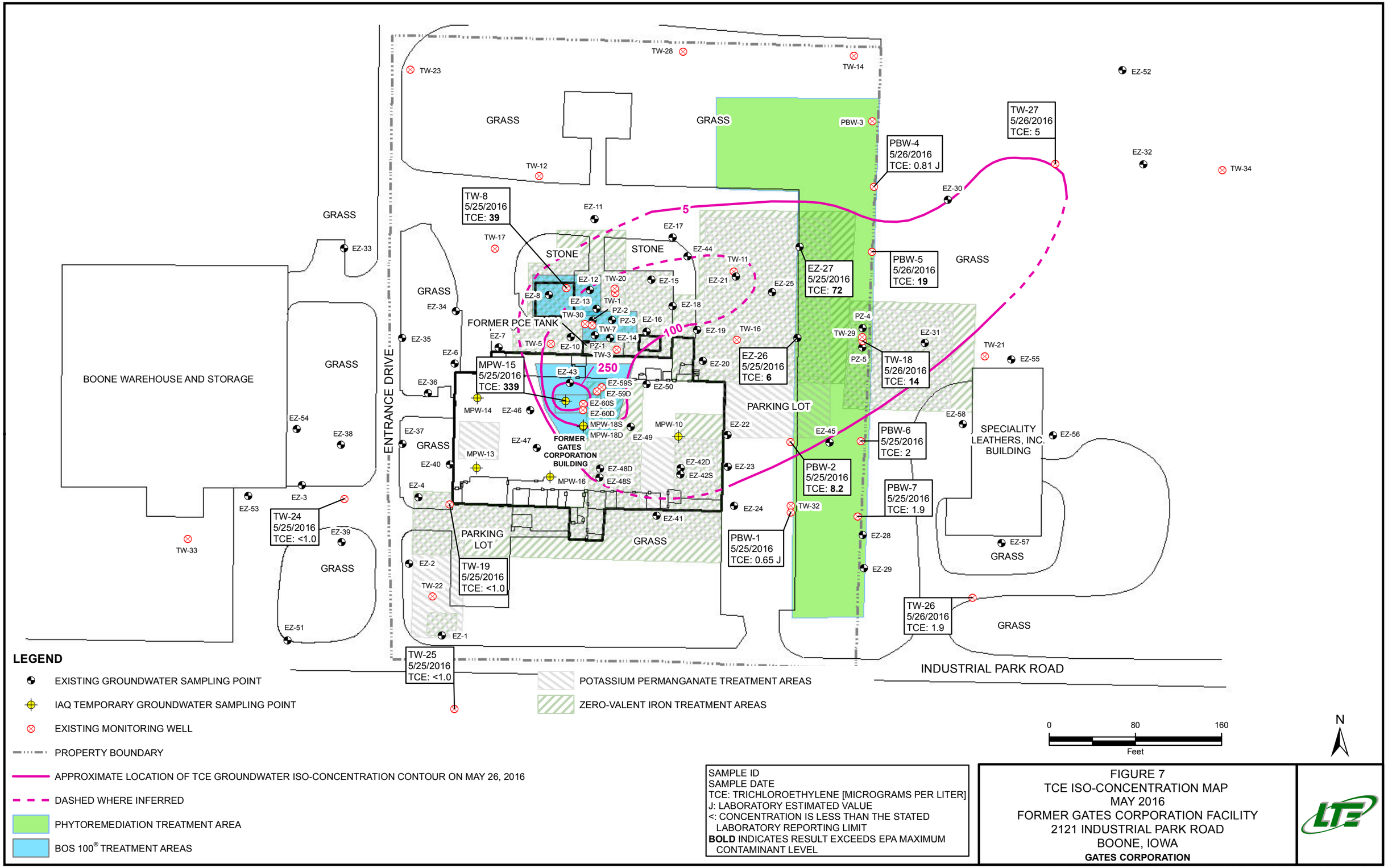
P:\Gates\GIS\MXD\GATES0901 BOONE IOWA\SEMI-ANNUAL_REPORT\MAY_2016\GATE0901_BOONE_FIG05_GEN_CHEM_ANALYTICAL_MAY_2016.mxd



SAMPLE ID
SAMPLE DATE
PCE: TETRACHLOROETHYLENE [MICROGRAMS PER LITER]
<: CONCENTRATION IS LESS THAN THE STATED LABORATORY REPORTING LIMIT
BOLD INDICATES RESULT EXCEEDS EPA MAXIMUM CONTAMINANT LEVEL

FIGURE 6
PCE ISO-CONCENTRATION MAP
MAY 2016
FORMER GATES CORPORATION FACILITY
2121 INDUSTRIAL PARK ROAD
BOONE, IOWA
GATES CORPORATION

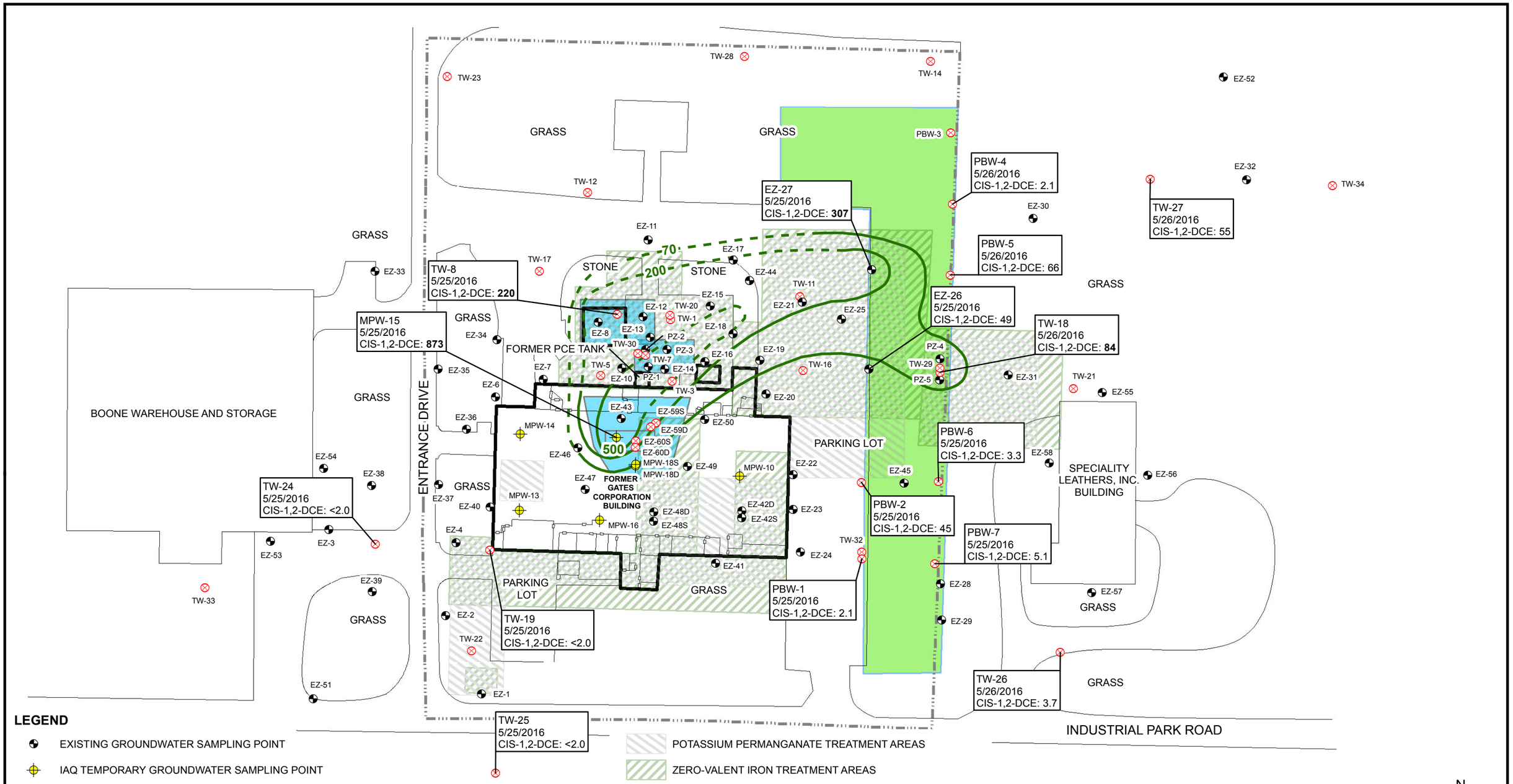
P:\Gates\GIS\MXD\GATES0901 BOONE IOWA\SEMI-ANNUAL_REPORT\MAY_2016\GATE0901_BOONE_FIG06_PCE_CONCENTRATION_MAY_2016.mxd



SAMPLE ID
SAMPLE DATE
TCE: TRICHLOROETHYLENE [MICROGRAMS PER LITER]
J: LABORATORY ESTIMATED VALUE
<: CONCENTRATION IS LESS THAN THE STATED LABORATORY REPORTING LIMIT
BOLD INDICATES RESULT EXCEEDS EPA MAXIMUM CONTAMINANT LEVEL

FIGURE 7
TCE ISO-CONCENTRATION MAP
MAY 2016
FORMER GATES CORPORATION FACILITY
2121 INDUSTRIAL PARK ROAD
BOONE, IOWA
GATES CORPORATION

P:\Gates\GIS\MXD\GATES0901 BOONE IOWA\SEMI-ANNUAL_REPORT\MAY_2016\GATE0901_BOONE_FIG07_TCE_CONCENTRATION_MAY_2016.mxd



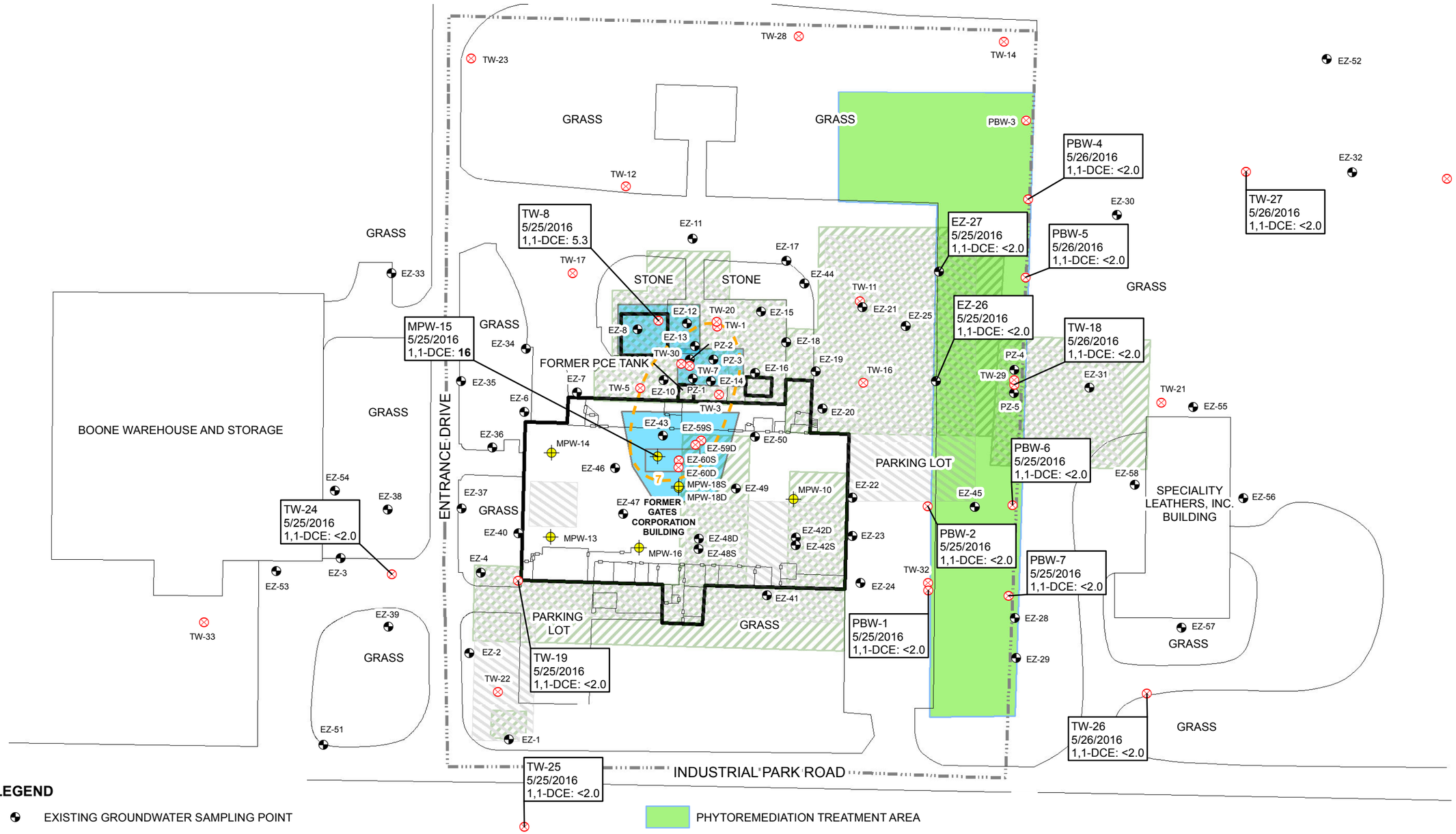
LEGEND

- EXISTING GROUNDWATER SAMPLING POINT
- IAQ TEMPORARY GROUNDWATER SAMPLING POINT
- EXISTING MONITORING WELL
- PROPERTY BOUNDARY
- APPROXIMATE LOCATION OF CIS-1,2-DCE GROUNDWATER ISO-CONCENTRATION CONTOUR ON MAY 26, 2016
- DASHED WHERE INFERRED
- PHYTOREMEDIATION TREATMENT AREA
- BOS 100® TREATMENT AREAS
- POTASSIUM PERMANGANATE TREATMENT AREAS
- ZERO-VALENT IRON TREATMENT AREAS

SAMPLE ID
SAMPLE DATE
CIS-1,2-DCE: CIS-1,2-DICHLOROETHYLENE [MICROGRAMS PER LITER]
<: CONCENTRATION IS LESS THAN THE STATED LABORATORY REPORTING LIMIT
BOLD INDICATES RESULT EXCEEDS EPA MAXIMUM CONTAMINANT LEVEL

FIGURE 8
CIS-1,2-DCE ISO-CONCENTRATION MAP
MAY 2016
FORMER GATES CORPORATION FACILITY
2121 INDUSTRIAL PARK ROAD
BOONE, IOWA
GATES CORPORATION

P:\Gates\GIS\MXD\GATES0901 BOONE IOWA\SEMI-ANNUAL_REPORT\MAY_2016\GATE0901_BOONE_FIG08_CIS_CONCENTRATION_MAY_2016.mxd



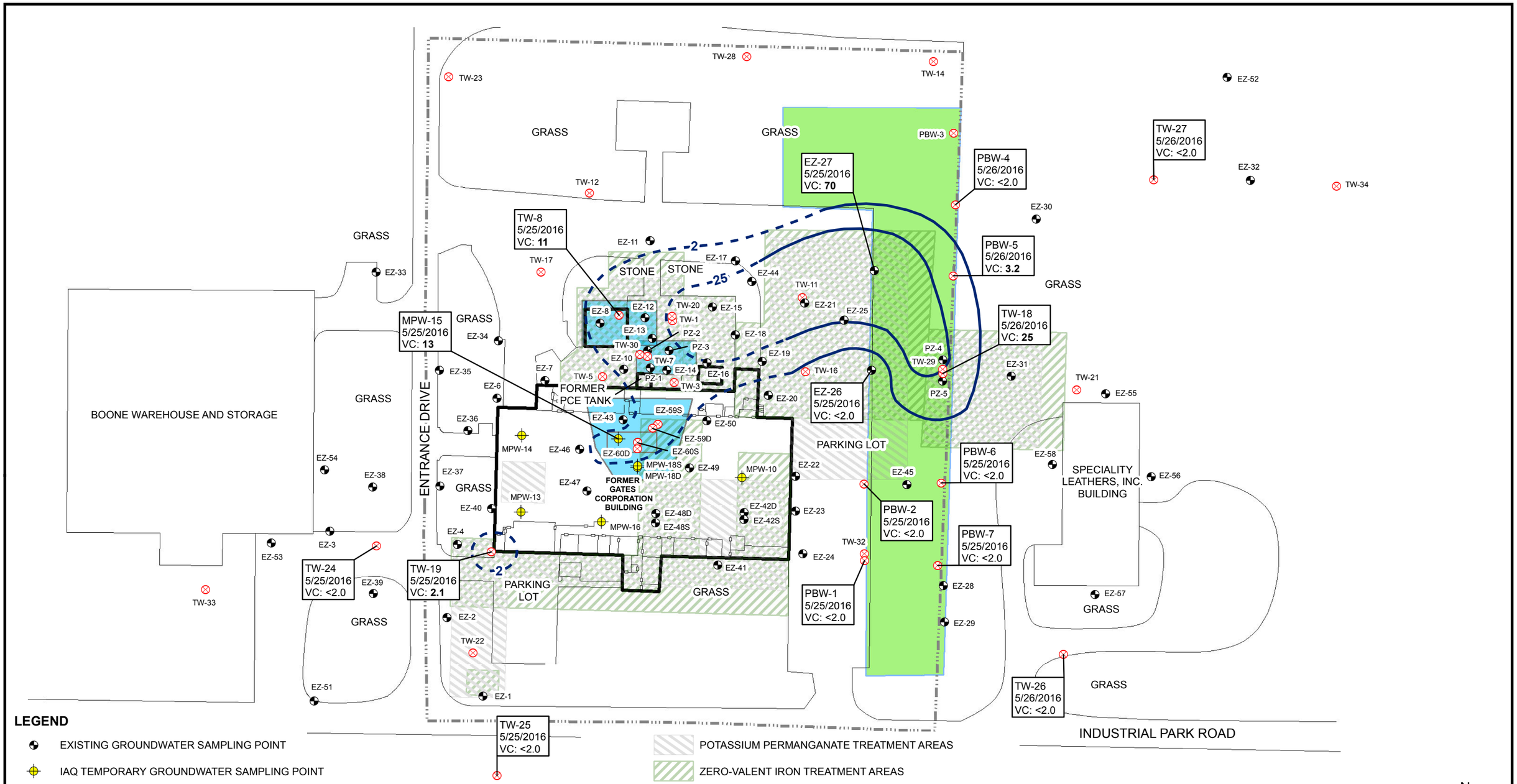
LEGEND

- EXISTING GROUNDWATER SAMPLING POINT
- IAQ TEMPORARY GROUNDWATER SAMPLING POINT
- EXISTING MONITORING WELL
- PROPERTY BOUNDARY
- APPROXIMATE LOCATION OF 1,1-DCE GROUNDWATER ISO-CONCENTRATION CONTOUR ON MAY 26, 2016
- DASHED WHERE INFERRED
- PHYTOREMEDIATION TREATMENT AREA
- BOS 100® TREATMENT AREAS
- POTASSIUM PERMANGANATE TREATMENT AREAS
- ZERO-VALENT IRON TREATMENT AREAS

SAMPLE ID
SAMPLE DATE
1,1-DCE: 1,1-DICHLOROETHYLENE [MICROGRAMS PER LITER]
< CONCENTRATION IS LESS THAN THE STATED LABORATORY REPORTING LIMIT
BOLD INDICATES RESULT EXCEEDS EPA MAXIMUM CONTAMINANT LEVEL

FIGURE 9
1,1-DCE ISO-CONCENTRATION MAP
MAY 2016
FORMER GATES CORPORATION FACILITY
2121 INDUSTRIAL PARK ROAD
BOONE, IOWA
GATES CORPORATION

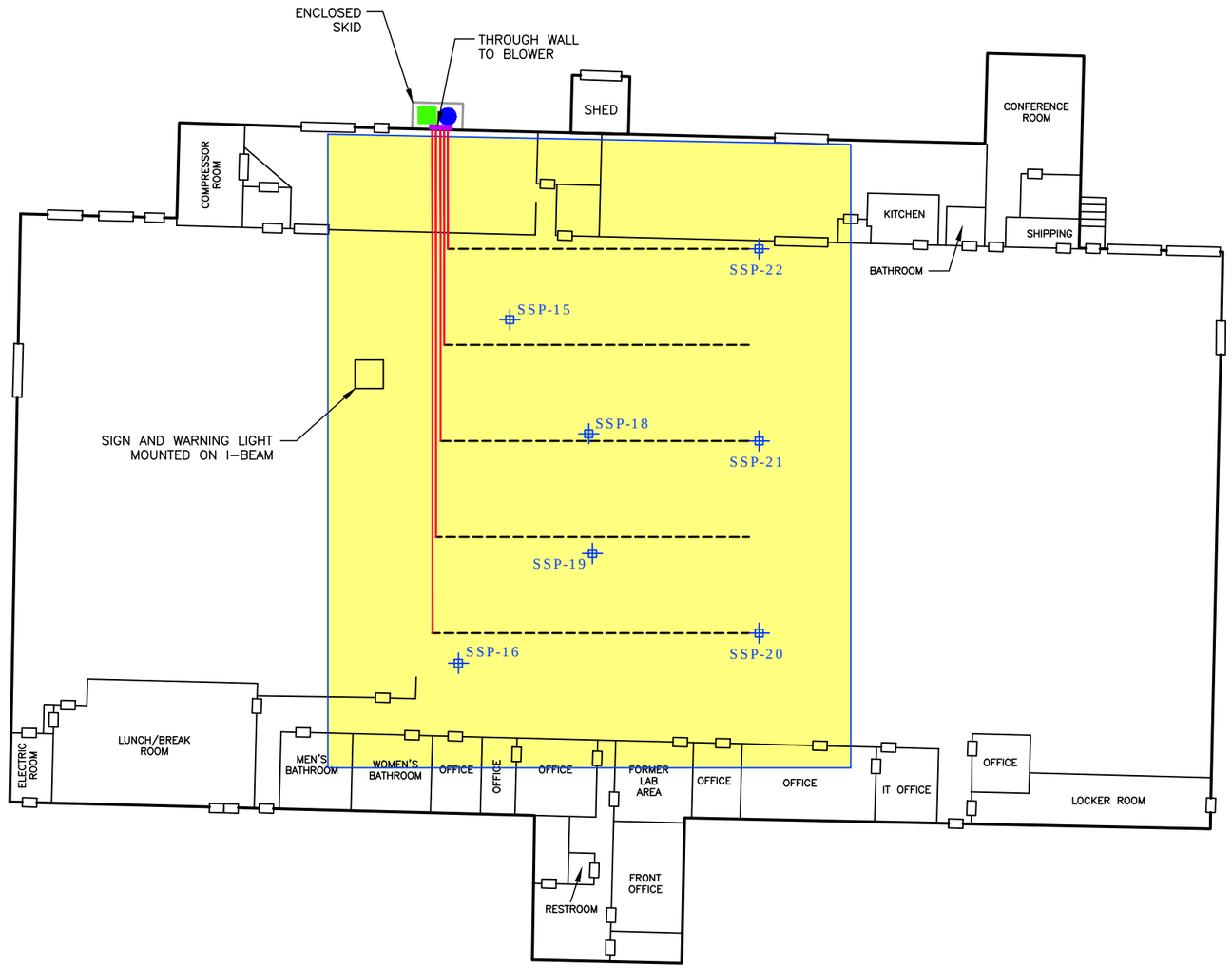
P:\Gates\GIS\MXD\GATES0901 BOONE IOWA\SEMI-ANNUAL_REPORT\MAY_2016\GATE0901_BOONE_FIG09_1_1_DCE_CONCENTRATION_MAY_2016.mxd



SAMPLE ID
SAMPLE DATE
VC: VINYL CHLORIDE [MICROGRAMS PER LITER]
<: CONCENTRATION IS LESS THAN THE STATED LABORATORY REPORTING LIMIT
BOLD INDICATES RESULT EXCEEDS EPA MAXIMUM CONTAMINANT LEVEL

FIGURE 10
VINYL CHLORIDE ISO-CONCENTRATION MAP
MAY 2016
FORMER GATES CORPORATION FACILITY
2121 INDUSTRIAL PARK ROAD
BOONE, IOWA
GATES CORPORATION

P:\Gates\GIS\MXD\GATES0901 BOONE IOWA\SEMI-ANNUAL_REPORT\MAY_2016\GATE0901_BOONE_FIG10_VC_CONCENTRATION_MAY_2016.mxd



LEGEND

	APPROXIMATE AREA OF SUB-SLAB DEPRESSURIZATION		REGENERATIVE BLOWER & OUTDOOR ENCLOSURE
	2" SCH. 40 PVC SOLID PIPE		SUB-SLAB MONITORING POINT
	2" SCH. 40 PVC SLOTTED COLLECTION PIPE		KNOCK OUT TANK
	VALVED MANIFOLD	SCH.	SCHEDULE
		PVC	POLYVINYL CHLORIDE

NOTE: SUB-SLAB MONITORING POINTS WERE ABANDONED IN NOVEMBER 2014 AFTER SYSTEM START-UP

0 7.5 15 30
FEET

FIGURE 11
SUB-SLAB DEPRESSURIZATION SYSTEM SCHEMATIC
2121 INDUSTRIAL PARK ROAD
BOONE, IOWA
THE GATES CORPORATION

GATE0901 3/15

P:\Gates\DRAWINGS\gate0901\2015\GATE0901 08.dwg

TABLES

TABLE 1
SUMMARY OF DEPTH-TO-GROUNDWATER MEASUREMENTS
2121 INDUSTRIAL PARK ROAD

GATES CORPORATION
BOONE, IOWA

Well Name	TW-1	TW-3	TW-5	TW-7	TW-8	TW-16	TW-17	TW-18	TW-19	TW-21	TW-22	TW-24	TW-25	TW-26
Screened Interval (Feet)	(10.0-20.0)	(8.7-19.0)	(9.5-19.0)	(9.5-19.0)	(9.5-19.0)	(9.5-19.0)	(9.5-19.5)	(9.5-19.5)	(9.5-19.5)	(9.5-19.5)	(9.5-19.5)	(11.0-21.0)	(11.0-21.0)	(11.0-21.0)
Casing Elevation (Feet)	1,150.14	1,148.13	1,147.50	1,146.93	1,147.56	1,144.16	1,144.44	1,142.94	1,147.76	1,142.90	1,146.13	1,147.05	1,146.96	1,142.17
Date Measured: October 12, 2014														
Depth to Water (Feet)	1.85	2.31	1.75	6.20	4.10	7.40	0.00	1.90	5.25	2.50	1.92	3.25	6.00	6.42
Water Elevation (Feet)	1,148.29	1,145.82	1,145.75	1,140.73	1,143.46	1,136.76	1,144.44	1,141.04	1,142.51	1,140.40	1,144.21	1,143.80	1,140.96	1,135.75
Date Measured: May 3, 2015														
Depth to Water (Feet)	7.79	5.87	4.62	NM	4.38	1.76	1.28	1.88	5.35	6.72	4.35	3.28	6.43	6.44
Water Elevation (Feet)	1,142.35	1,142.26	1,142.88	NM	1,143.18	1,142.40	1,143.16	1,141.06	1,142.41	1,136.18	1,141.78	1,143.77	1,140.53	1,135.73
Date Measured: May 24, 2016														
Depth to Water (Feet)	8.13	5.98	4.57	NM	4.77	2.32	1.22	2.66	6.13	6.92	3.55	4.48	7.30	4.41
Water Elevation (Feet)	1,142.01	1,142.15	1,142.93	NM	1,142.79	1,141.84	1,143.22	1,140.28	1,141.63	1,135.98	1,142.58	1,142.57	1,139.66	1,137.76

Well Name	TW-27	TW-33	MPW-15	EZ-26	EZ-27	EZ-42S	EZ-48S	PBW-1	PBW-2	PBW-4	PBW-5	PBW-6	PBW-7
Screened Interval (Feet)	(11.0-21.0)	(5.0-20.0)	(14.0-24.0)	(5.0-15.0)	(5.0-15.0)	(9.0-24.0)	(8.0-23.0)	(8.0-23.0)	(5.0-20.0)	(5.0-20.0)	(5.0-20.0)	(5.0-20.0)	(5.0-20.0)
Casing Elevation (Feet)	1,148.47	1,146.66	1,148.15	1,144.30	1,143.71	1,148.39	1,148.22	1,145.48	1,145.46	1,143.57	1,143.44	1,143.18	1,142.90
Date Measured: October 12, 2014													
Depth to Water (Feet)	11.30	3.51	5.05	1.90	0.20	7.95	5.16	0.03	0.02	2.30	0.50	0.90	1.82
Water Elevation (Feet)	1,137.17	1,143.15	1,143.10	1,142.40	1,143.51	1,140.44	1,143.06	1,145.45	1,145.44	1,141.27	1,142.94	1,142.28	1,141.08
Date Measured: May 3, 2015													
Depth to Water (Feet)	11.68	6.23	6.31	1.70	2.30	6.44	6.15	3.81	4.58	2.49	2.45	2.53	1.91
Water Elevation (Feet)	1,136.79	1,140.43	1,141.84	1,142.60	1,141.41	1,141.95	1,142.07	1,141.67	1,140.88	1,141.08	1,140.99	1,140.65	1,140.99
Date Measured: May 24, 2016													
Depth to Water (Feet)	12.08	6.48	6.15	1.96	3.52	6.92	6.61	5.06	4.73	3.41	3.24	4.03	3.96
Water Elevation (Feet)	1,136.39	1,140.18	1,142.00	1,142.34	1,140.19	1,141.47	1,141.61	1,140.42	1,140.73	1,140.16	1,140.20	1,139.15	1,138.94

Notes:
Elevations are based on a benchmark during survey by WHKS & Company
NM = not measured

TABLE 2
FIELD-MEASURED GROUNDWATER PARAMETERS
2121 INDUSTRIAL PARK ROAD

GATES CORPORATION
BOONE, IOWA

Sample/Well Name	Sample Date	Oxidation/ Reduction Potential	pH	Conductivity	Temperature	Dissolved Oxygen
		mV	pH unit	µS	°C	mg/L
TW-8	10/12/2014	81	4.92	710	14.9	2.45
	5/7/2015	57	7.17	583	8.3	2.61
	5/25/2016	30	7.20	607	10.8	1.56
TW-18	10/14/2014	-111	5.54	664	14.7	0.55
	5/5/2015	-34	6.96	632	9.6	0.92
	5/26/2016	31	7.01	567	13.0	0.81
TW-19	10/12/2014	-111	5.31	582	15.9	8.15
	5/5/2015	-250	7.89	586	11.6	0.67
	5/25/2016	-202	7.86	609	13.9	0.76
TW-24	10/12/2014	-19	5.52	976	15.7	1.53
	5/5/2015	96	6.48	445	10.8	1.47
	5/25/2016	75	7.11	263	14.3	7.45
TW-25	10/12/2014	71	6.20	1,077	14.2	0.86
	5/5/2015	65	6.93	1,006	9.5	1.56
	5/25/2016	13	7.08	1,065	12.4	2.25
TW-26	11/3/2014	-18	6.73	1,116	15.0	0.53
	5/5/2015	76	6.87	779	9.8	2.22
	5/26/2016	57	7.10	749	11.9	1.56
TW-27	10/15/2014	155	11.02	851	13.7	9.16
	5/5/2015	83	6.84	755	9.5	4.09
	5/26/2016	46	7.05	780	11.3	3.62
MPW-15	10/15/2014	143	13.84	1,240	19.0	8.80
	5/7/2015	-124	6.90	1,205	17.1	0.74
	5/25/2016	-14	6.87	1,159	16.7	0.93
PBW-1	10/13/2014	-123	5.48	1,353	16.9	1.36
	5/7/2015	67	7.02	506	11.0	3.08
	5/25/2016	43	7.27	540	14.5	4.99
PBW-2	10/13/2014	126	4.71	1,294	14.2	10.23
	5/7/2015	71	6.75	1,521	12.1	3.60
	5/25/2016	49	6.88	589	18.6	3.81
PBW-4	10/14/2014	-478	9.08	606	14.9	0.49
	5/6/2015	155	6.90	842	8.7	1.65
	5/26/2016	18	7.86	565	10.8	1.70
PBW-5	10/14/2014	-504	9.55	1,119	14.5	0.56
	5/6/2015	-55	7.14	930	8.4	1.09
	5/26/2016	-35	7.22	871	11.3	1.61
PBW-6	10/14/2014	-98	6.55	684	14.0	3.02
	5/6/2015	43	7.19	761	8.8	2.62
	5/25/2016	44	7.31	783	12.5	3.45
PBW-7	11/3/2014	-28	7.12	897	13.6	0.96
	5/6/2015	58	7.23	648	10.3	1.77
	5/25/2016	38	7.29	683	12.2	1.69
EZ-26	10/13/2014	57	4.93	788	14.6	9.09
	5/7/2015	57	6.78	427	13.2	4.82
	5/25/2016	26	6.82	300	14.6	3.69
EZ-27	11/3/2014	-44	7.08	1,048	15.1	1.85
	5/7/2015	43	7.01	1,287	10.6	2.27
	5/25/2016	10	6.99	787	15.7	1.15

Notes:
°C = degrees Celsius
mg/L = milligrams per liter
mV = millivolts
NM = not measured
µS = microsiemens

TABLE 3
GROUNDWATER ANALYTICAL RESULTS - VOC ANALYSES
2121 INDUSTRIAL PARK ROAD
GATES CORPORATION
BOONE, IOWA

Sample/Well Name	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1-DCE	Vinyl Chloride	1, 1, 1-TCA	Methane	Ethene	Ethane	Notes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
TW-8	10/12/2014	**12,200**	**349**	**1,340**	<200	<200	<200	80 J	6.6	0.53 J	0.45 J	
	10/12/2014	**10,100**	**241**	**1,040**	15	**11**	**18**	81	8.4	0.56 J	0.38 J	Field Duplicate
	5/7/2015	**2,970**	**94**	**264**	<50	<50	<50	53	15	0.71 J	1.3	
	5/25/2016	**2,520**	**39**	**220**	3.2	5.3	**11**	40	0.44 J	<2.4	<1.6	
TW-18	10/14/2014	3.5	4.2	13	0.90 J	<1.0	**29**	<1.0	437	1.8	1.1	
	5/5/2015	**17**	**19**	**96**	1.2	0.63 J	**20**	2.2	158	0.72 J	<1.0	
	5/26/2016	**9.5**	**14**	**84**	<2.0	<2.0	**25**	1.8 J	327	<2.4	<1.6	
TW-19	10/12/2014	0.26 J	<1.0	3.5	<1.0	<1.0	**53**	<1.0	NA	NA	NA	
	5/5/2015	<1.0	<1.0	2	<1.0	<1.0	**29**	<1.0	NA	NA	NA	
	5/25/2016	1.1	<1.0	<2.0	<2.0	<2.0	**2.1**	<2.0	NA	NA	NA	
TW-24	10/12/2014	**49**	**7.5**	7.8	<1.0	<1.0	0.76 J	<1.0	NA	NA	NA	
	5/5/2015	**17**	1.8	0.77 J	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	
	5/25/2016	**6.2**	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	NA	NA	
TW-25	10/12/2014	3.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	
	5/5/2015	3.5	0.34 J	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	
	5/25/2016	4.1	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	NA	NA	
TW-26	11/3/2014	2.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.22 J	<1.0	<1.0	
	5/5/2015	2.8	0.52 J	0.50 J	<1.0	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	
	5/26/2016	5	1.9	3.7	<2.0	<2.0	<2.0	2.3	<0.8	<2.4	<1.6	
TW-27	10/15/2014	**35**	**11**	**156**	2.6	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	
	5/5/2015	**20**	**9.2**	**93**	2.5	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	
	5/26/2016	**15**	5	55	1.2 J	<2.0	<2.0	<2.0	<0.8	<2.4	<1.6	
MPW-15	10/15/2014	**126,000**	**586**	**16,700**	71	**41**	**35**	87 J	43	25	19	
	5/7/2015	**7,840**	**349**	**146**	<100	<100	<100	<100	18	1,280	141	
	5/25/2016	**7,550**	**365**	**865**	7.7	**18**	**14**	2.4	3.2	25	6	
	5/25/2016	**7,840**	**339**	**873**	7.3	**16**	**13**	2.2	46	370	98	Field Duplicate
PBW-1	10/13/2014	**31**	**5.9**	20	0.91 J	<1.0	<1.0	<1.0	3.2	0.74 J	1.1	
	5/7/2015	**10**	1.7	5.8	<1.0	<1.0	<1.0	<1.0	0.26 J	<1.0	<1.0	
	5/25/2016	**5.5**	0.65 J	2.1	<2.0	<2.0	<2.0	<2.0	<0.8	<2.4	<1.6	
PBW-2	10/13/2014	**19**	2.7	14	0.34 J	<1.0	<1.0	<1.0	0.19 J	<1.0	<1.0	
	5/7/2015	**49**	**7**	37	1.8	<1.0	<1.0	<1.0	0.26 J	<1.0	<1.0	
	5/25/2016	**63**	**8.2**	45	2.2	<2.0	<2.0	<2.0	<0.8	<2.4	<1.6	
PBW-4	10/14/2014	**25**	**11**	**96**	1.5	0.27 J	**2.5**	<1.0	3.3	0.87 J	1.2	
	5/6/2015	**7.9**	1.4	4.7	<1.0	<1.0	<1.0	<1.0	0.47 J	<1.0	<1.0	
	5/26/2016	**5.9**	0.81 J	2.1	<2.0	<2.0	<2.0	<2.0	0.44 J	<2.4	<1.6	
PBW-5	10/14/2014	**6.9**	**7.5**	21	0.91 J	<1.0	0.59 J	<1.0	17	1.8	4	
	5/6/2015	**7**	**8.9**	33	0.84 J	<1.0	<1.0	0.55 J	8.6	<1.0	<1.0	
	5/26/2016	**7.2**	**19**	66	<2.0	<2.0	**3.2**	<2.0	8.2	<2.4	<1.6	
PBW-6	10/14/2014	**6.8**	1.5	2.2	<1.0	<1.0	<1.0	<1.0	4.1	1.1	1.3	
	5/6/2015	**15**	2	2.1	<1.0	<1.0	<1.0	<1.0	0.26 J	<1.0	<1.0	
	5/25/2016	**15**	2	3.3	<2.0	<2.0	<2.0	<2.0	<0.8	<2.4	<1.6	
PBW-7	11/3/2014	1.3	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	6.6	<1.0	<1.0	
	5/6/2015	**12**	1.3	2.9	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	
	5/25/2016	**11**	1.9	5.1	<2.0	<2.0	<2.0	<2.0	<0.8	<2.4	<1.6	
EZ-26	10/13/2014	**32**	**24**	**92**	2.5	0.37 J	**4**	<1.0	47	<1.0	0.61 J	
	5/7/2015	**104 E**	**10**	54	1.4	<1.0	1.1	<1.0	12	<1.0	<1.0	
	5/25/2016	**5.2**	**6**	49	<2.0	<2.0	<2.0	<2.0	29	<2.4	<1.6	
EZ-27	10/13/2014	**28**	2.7	32	0.69 J	<1.0	**3.8**	<1.0	72	0.47 J	0.63 J	
	5/7/2015	**73**	**13**	61	1.3	<1.0	**36**	<1.0	609	6.9	2	
	5/25/2016	**92**	**72**	**307**	6.1	<2.0	**70**	<2.0	585	4.7	1.7	
	Current MCLs	**5**	**5**	**70**	**100**	**7**	**2**	**200**	**NR**	**NR**	**NR**	

Notes:

1,1 DCE = 1,1 Dichlorethylene
1,1,1-TCA = 1,1,1 Trichloroethane
cis-1,2-DCE = cis-1,2 Dichloroethene
E = value exceeds calibration range
J = estimated value
MCL = maximum contaminant level
NA = not analyzed
NR = not regulated
PCE = Tetrachloroethene
TCE = Trichloroethene
trans-1,2-DCE = trans-1,2 Dichloroethene
ug/L = micrograms per liter
VOC = Volatile Organic Compounds
< = less than the indicated laboratory detection limit
Bold indicates concentration exceeds the MCL

TABLE 4
GROUNDWATER ANALYTICAL RESULTS - GENERAL CHEMISTRY
2121 INDUSTRIAL PARK ROAD
GATES CORPORATION
BOONE, IOWA

Sample/Well Name	Sample Date	Alkalinity, Total as CaCO3	Chloride	Iron, Ferrous	Nitrogen, Nitrate	Sulfate	Total Organic Carbon	Notes
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
TW-8	10/12/2014	294	26	<0.10 [a]	5.8 [a]	18	1.1	
	10/12/2014	560	113	0.58 [a]	1.4	39	2.1	Field Duplicate
	5/7/2015	296	28	0.15	0.76 [a]	16	0.88 [d]	
	5/25/2016	306	19	0.05	0.56	13	NA	
TW-18	10/14/2014	NA	36	NA	NA	NA	NA	
	5/5/2015	NA	NA	NA	NA	NA	NA	
	5/26/2016	NA	16	NA	NA	NA	NA	
TW-26	11/3/2014	NA	36	NA	NA	NA	NA	
	5/5/2015	NA	28	NA	NA	NA	NA	
	5/26/2016	NA	27	NA	NA	NA	NA	
TW-27	10/15/2014	NA	30	NA	NA	NA	NA	
	5/5/2015	NA	31	NA	NA	NA	NA	
	5/26/2016	NA	24	NA	NA	NA	NA	
MPW-15	10/15/2014	226	163	1.0 [a]	3.4 [b]	61	18	
	5/7/2015	285	258	3.5	<0.5 [c]	36	2.3	
	5/25/2016	304	215	0.6	<0.050 [e]	42	NA	
	5/25/2016	307	209	0.6	<0.050 [e]	42	NA	Field Duplicate
PBW-1	10/13/2014	487	48	0.14 [a]	9.6	97	2.2	
	5/7/2015	248	12	0.35	3.6 [a]	27	2.4	
	5/25/2016	117	4.6	0.1	1.4	11	NA	
PBW-2	10/13/2014	329	84	0.42 [a]	**15** [b]	92	8.2	
	5/7/2015	478	124	0.75	**33** [a]	142	2.4	
	5/25/2016	471	126	0.1	**44**	143	NA	
PBW-4	10/14/2014	NA	18	NA	NA	NA	NA	
	5/6/2015	NA	43	NA	NA	NA	NA	
	5/26/2016	NA	23	NA	NA	NA	NA	
PBW-5	10/14/2014	NA	189	NA	NA	NA	NA	
	5/6/2015	NA	116	NA	NA	NA	NA	
	5/26/2016	NA	62	NA	NA	NA	NA	
PBW-6	10/14/2014	NA	52	NA	NA	NA	NA	
	5/6/2015	NA	67	NA	NA	NA	NA	
	5/25/2016	NA	57	NA	NA	NA	NA	
PBW-7	11/3/2014	NA	43	NA	NA	NA	NA	
	5/6/2015	NA	42	NA	NA	NA	NA	
	5/25/2016	NA	33	NA	NA	NA	NA	
EZ-26	10/13/2014	294	43	1.1 [a]	0.99 [b]	43	6.1	
	5/7/2015	283	28	0.85	0.53 [a]	24	12	
	5/25/2016	235	26	0.45	<0.050 [e]	23	NA	
EZ-27	11/3/2014	333	148	6.4 [a]	<1.0	38	2.2	
	5/7/2015	449	258	NA	<0.5 [c]	25	13	Turbidity Too High For Ferrous Iron Field Test
	5/25/2016	603	62	0.45	<0.050 [e]	21	NA	
	Current MCLs	**NR**	**NR**	**NR**	**10**	**NR**	**NR**	

Notes:

< = less than the indicated laboratory detection limit
MCL = maximum contaminant level
mg/L = milligrams per liter
NA = not analyzed
NR = not regulated
Bold indicates concentration exceeds the MCL

[a] sample received out of hold time and analyzed by request
[b] sample analyzed beyond hold time
[c] sample analyzed beyond hold time and dilution required due to matrix interference
[d] analyte found in associated method blank
[e] elevated detection limit due to matrix interference

Table 5
Summary of Stack Sample VOC Analytical Results
Sub-Slab Depressurization System
Former Gates Facility - Boone, Iowa

SAMPLE NAME	SAMPLE DATE	DETECTED ANALYTES[1]	RESULT	RESULT UNITS	SSDPS FLOWRATE (ft^3/minute)	SSDPS FLOWRATE (m^3/minute)	SSDPS FLOWRATE (m^3/year)	SSDPS TOTAL VOCs EMISSIONS (µg/year)	SSDPS TOTAL VOCS EMISSIONS (pounds/year)	SSDPS TOTAL VOCS EMISSIONS (tons/year)
Stack 01 (Start Up)	11/21/2014	Ethanol	5,840	ug/m³ Air						
		Freon 114	16	ug/m³ Air						
		Hexachlorobutadiene	46	ug/m³ Air						
		m,p-Xylene	50	ug/m³ Air						
		Tetrachloroethene	9,360	ug/m³ Air						
		Tetrahydrofuran	12,400	ug/m³ Air						
		trans-1,2-Dichloroethene	28	ug/m³ Air						
		Trichloroethene	1,460	ug/m³ Air						
		Vinyl chloride	352	ug/m³ Air						
Stack 01 (Start Up)	**11/21/2014**	**Total VOCs**	**29,552**	**ug/m³ Air**	110	3.115	1,637,167	48,381,068,022	107	0.05
Stack 01	11/22/2014	1,1,1-Trichloroethane	12	ug/m³ Air						
		Acetone	264	ug/m³ Air						
		Benzene	20	ug/m³ Air						
		Ethanol	4,820	ug/m³ Air						
		Ethylbenzene	97	ug/m³ Air						
		Gasoline Range Hydrocarbons	614,000	ug/m³ Air						
		Hexane	13	ug/m³ Air						
		m,p-Xylene	836	ug/m³ Air						
		o-Xylene	131	ug/m³ Air						
		Tetrachloroethene	7,110	ug/m³ Air						
		Tetrahydrofuran	1,600	ug/m³ Air						
		trans-1,2-Dichloroethene	119	ug/m³ Air						
		Trichloroethene	910	ug/m³ Air						
		Vinyl chloride	984	ug/m³ Air						
Stack 01	**11/22/2014**	**Total VOCs**	**630,917**	**ug/m³ Air**	110	3.115	1,637,167	1,032,916,491,887	2,277	1.14
Stack1	12/11/2014	1,2,4-Trichlorobenzene	4	ug/m³ Air						
		Acetone	27	ug/m³ Air						
		Benzene	4	ug/m³ Air						
		Chloromethane	4	ug/m³ Air						
		cis-1,2-Dichloroethene	1,640	ug/m³ Air						
		Ethanol	2,070	ug/m³ Air						
		Ethyl Acetate	24	ug/m³ Air						
		Ethylbenzene	4	ug/m³ Air						
		Hexane	3	ug/m³ Air						
		m,p-Xylene	60	ug/m³ Air						
		o-Xylene	13	ug/m³ Air						
		Tetrachloroethene	2,690	ug/m³ Air						
		Tetrahydrofuran	89	ug/m³ Air						
		Toluene	8	ug/m³ Air						
		Trichloroethene	218	ug/m³ Air						
		Vinyl chloride	59	ug/m³ Air						
Stack1	**12/11/2014**	**Total VOCs**	**6,915**	**ug/m³ Air**	110	3.115	1,637,167	11,321,271,749	25	0.01
Stack1	5/4/2015	1,4-Dichlorobenzene-d4	81	ug/m³ Air						
		cis-1,2-Dichloroethene	210	ug/m³ Air						
		Ethanol	42	ug/m³ Air						
		Fluorobenzene	81	ug/m³ Air						
		Tetrachloroethene	1,450	ug/m³ Air						
		Trichloroethene	66	ug/m³ Air						
		Vinyl chloride	14	ug/m³ Air						
Stack1	**5/4/2015**	**Total VOCs**	**1,944**	**ug/m³ Air**	110	3.115	1,637,167	3,182,652,647	7	0.004
AS-01	5/24/2016	1,2-Dichloroethane	2.95	ug/m³ Air						
		1,3-Dichlorobenzene	4.39	ug/m³ Air						
		1,4-Dichlorobenzene	5.41	ug/m³ Air						
		Benzene	656	ug/m³ Air						
		cis-1,2-Dichloroethene	3.73	ug/m³ Air						
		Ethylbenzene	2.65	ug/m³ Air						
		Naphthalene	40.9	ug/m³ Air						
		o-Xylene	1.87	ug/m³ Air						
		Tetrachloroethene	11.8	ug/m³ Air						
		trans-1,3-Dichloropropene	2.22	ug/m³ Air						
Stack1	**5/24/2016**	**Total VOCs**	**732**	**ug/m³ Air**	110	3.115	1,637,167	1,198,275,270	3	0.001

Notes:
1) Total VOCs calculations are based upon TO-15 analysis and only those analytes that were detected at concentrations above the laboratory reporting limits.
VOC = volatile organic compound
µg/m^3 = micrograms per cubic meter
ft^3 = cubic feet
m^3 = cubic meters

APPENDIX A

FIELD DATA SHEETS

Low-Flow (minimal drawdown) Groundwater Sampling

The purpose of low-flow sampling is to minimize the stress (drawdown) of the aquifer and the sampling artifacts that can, otherwise, be increased due to agitation during conventional well purging using bailer or other high-flow pumping techniques. Agitation can dislodge or mobilize artifactual particles that result in increased turbidity and possibly an overestimate of certain analytes of interest.

During conventional sampling, from three to five casing volumes are typically purged because borehole storage, in general, is considered to be non-representative of formation water. Reasons for purging include 1) the belief that an air interface at the top of the water column in the well results in an oxygen-concentration gradient with depth that can cause a loss of volatiles up the water column or leaching from or sorption to the casing or filter pack, 2) that chemical changes can occur due to groundwater coming into contact with well-construction materials such as bentonite (or other clay) seals or backfill, and 3) that surface infiltration can interfere with groundwater quality due to mixing.

During low-flow sampling, the process involves carefully lowering a sampling devise down a well (to minimize mixing of stagnant casing water with formation water) such that water is extracted discretely from the screened interval only. Samples collected from the screened interval using low-flow techniques are considered representative of the formation, depending upon site hydrogeology. Therefore, the objective during low-flow sampling is not to evacuate a certain number of well volumes and thus disturb the sample site, but rather to minimize aquifer stress and sediment disturbance while collecting water that flows through the well screen. The key is to try and maintain an equilibrium flow rate, i.e. where well recharge equals pumping discharge, long enough for water-quality indicators to stabilize. These conditions are indicative that formation water is, in fact, being sampled and not borehole storage water.

Water Level Measurements

The elevation of groundwater at the monitoring wells was measured with an electronic, water level indicator during the sampling event and recorded to the nearest 0.01 foot. When water-level measurements were made in conjunction with a sampling event, measurements of the depth-to-water were recorded as follows: before purging, several times during stabilization (at the multimeter reading times), after stabilization, and before sampling.

Pre-Sample Event Stabilization and Field Tests

Groundwater was evacuated from the monitoring wells using a peristaltic pump and dedicated, disposable tubing, at a rate that typically ranged from approximately 0.2 liters to 0.5 liters per minute. The tubing was carefully lowered to place the intake depths approximately in the middle of the screened intervals of the wells. The extracted groundwater was pumped through the disposable tubing to a multimeter flow cell where inline probes measured the water-quality

parameters pH, specific electrical conductance, oxidation-reduction potential, dissolved oxygen and temperature. Stabilization of these parameters was required in order to determine when formation water was accessed during purging.

The limits for the stabilization parameters are listed below: (Yeskis, EPA Region 5, July, 2002)

pH	+/- 0.1 standard units
specific electrical conductance	+/- 3% Siemens per centimeter
oxidation-reduction potential	+/-10 millivolts
dissolved oxygen	+/- 0.3 milligrams per liter
discharge	0.2 to 0.5 liters per minute
drawdown	< -0.33 ft after 0.2 to 0.5 liters minute is achieved
temperature	no specific criteria - this parameter is considered insensitive as an indicator of purge completion since it tends to stabilize rapidly (Puls and Barcelona, 1996)

Note: The manufacturer's operations manual for the testing instrument was used as a guide for performing the field tests.

Measured parameters, including water levels for drawdown, were recorded at intervals of approximately every three to five minutes. Sampling can begin once stabilization criteria are met for three successive readings.

Sample Collection

Sample collection and procedures were followed using quality-control guidelines. The field crew performing sampling was trained and familiar with the sampling equipment. Once the wells were stabilized, the samples were obtained through a sampling tap in the disposable tubing ahead of the flow cell. Samples were poured directly from the tubing into containers obtained from the contract laboratory specific to the analytes.

Sample containers were obtained from the contract laboratory and unopened prior to sampling. The sample bottles were labeled in the field with the project number, sample number, sampling technician, date, and time. A clean pair of disposable nitrile/plastic gloves were worn by the sampler at each well. The number of samples collected, container types, volumes, and labeling information was recorded in field notes maintained by the sampling crew. Other relevant information such as sample appearance and odor was also recorded in the field notes.

Sample Preservation

The sample containers were cooled after sample collection. The contract laboratory provided the appropriate volume and concentration of preservatives required for sampling preservation, as required.

Sample Storage and Transport

Samples were packed and padded in sealed containers and cooled for transfer from LT Environmental personnel to a representative of the contract laboratory. The sample coolers were sealed with packing tape and contained Chain-of-Custody records and sufficient cooler packs to keep the samples cool during shipment and delivery.

Cleaning Operations

Cleaning operations were performed during sampling events to reduce the potential for carrying constituents on or off the site or between monitoring wells. Sampling equipment and tools were cleaned prior to arrival at the site and prior to departure from the site. The cleaning procedure for water-level measuring equipment consisted of an Alconox® soap solution, potable water rinse, followed by a deionized water rinse. The flow-through cell was washed with Alconox® solution, rinsed in potable water and rinsed with distilled water between samples. Each portion of flexible tubing was used once during the sample collection then discarded.

Chain-of-Custody Procedures

Chain-of-Custody procedures were followed at the time samples were collected. Chain-of-Custody forms were completed for the analytical samples.

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: TW-8

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 2-Inch

Sampler's Initials: BF

Total Depth: 13.61

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/25/16	14:40	4.77	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	14:45	NR	7.32	11.1	613	3.62	28	0.3	Pre-Purge Parameters
	14:50	NR	7.21	11.0	609	1.98	30	0.7	Clear, No Odor
	14:55	NR	7.20	10.9	607	1.65	31	1.0	Clear, No Odor
	15:00	5.36	7.20	10.8	607	1.56	30	1.3	Clear, No Odor

Ferrous Iron Test Result: 0.05 mg/L

Sampling Information: Clear, No Odor

Pump Intake Depth: 11.2 **Sample Time:** 15:00 **Sampling DTW:** 5.39

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: TW-18

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 2-Inch

Sampler's Initials: BF

Total Depth: 12.91

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/26/16	6:05	2.66	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	6:10	NR	7.13	12.3	596	3.03	44	0.4	Pre-Purge Parameters
	6:15	NR	7.04	12.7	577	2.61	36	0.7	Cloudy, No Odor
	6:20	NR	7.03	12.9	576	1.83	34	1.1	Cloudy, No Odor
	6:25	NR	7.02	12.9	572	0.74	33	1.5	Cloudy, No Odor
	6:30	3.82	7.01	13.0	567	0.81	31	1.8	Cloudy, No Odor

Sampling Information: Cloudy, No Odor

Pump Intake Depth: 11.1 **Sample Time:** 6:30 **Sampling DTW:** 3.91

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: TW-19

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 2-Inch

Sampler's Initials: BF

Total Depth: 15.23

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/25/16	8:55	6.13	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	9:00	NR	7.79	13.5	619	1.99	-199	0.3	Pre-Purge Parameters
	9:05	NR	7.85	13.7	615	1.06	-207	0.7	Cloudy, No Odor
	9:10	NR	7.87	13.8	611	0.80	-205	1.0	Cloudy, No Odor
	9:15	7.61	7.86	13.9	609	0.76	-202	1.4	Cloudy, No Odor
									Cloudy, No Odor

Sampling Information: Cloudy, No Odor

Pump Intake Depth: 12.5 **Sample Time:** 9:15 **Sampling DTW:** 7.65

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: TW-24

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 2-Inch

Sampler's Initials: BF

Total Depth: 18.77

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/25/16	8:05	4.48	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	8:10	NR	7.04	13.7	508	6.25	50	0.3	Pre-Purge Parameters
	8:15	NR	7.02	13.9	465	6.29	56	0.7	Cloudy, No Odor
	8:20	NR	7.07	14.3	346	6.79	68	1.0	Cloudy, No Odor
	8:25	NR	7.08	14.4	286	7.23	75	1.3	Cloudy, No Odor
	8:30	6.07	7.11	14.3	263	7.45	75	1.7	Cloudy, No Odor

Sampling Information: Cloudy, No Odor

Pump Intake Depth: 15.2 **Sample Time:** 8:30 **Sampling DTW:** 6.20

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: TW-25

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 2-Inch

Sampler's Initials: BF

Total Depth: 23.34

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/25/16	9:40	7.30	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	9:45	NR	7.21	11.7	1,063	5.83	7	0.3	Pre-Purge Parameters
	9:50	NR	7.13	12.1	1,063	3.21	12	0.7	Cloudy, No Odor
	9:55	NR	7.10	12.3	1,064	2.59	14	1.0	Cloudy, No Odor
	10:00	8.27	7.08	12.4	1,065	2.25	13	1.3	Cloudy, No Odor

Sampling Information: Cloudy, No Odor

Pump Intake Depth: 16.2 **Sample Time:** 10:00 **Sampling DTW:** 8.33

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: TW-26

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 2-Inch

Sampler's Initials: BF

Total Depth: 19.07

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/26/16	9:10	4.41	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	9:15	NR	7.25	12.4	778	6.98	59	0.3	Pre-Purge Parameters
	9:20	NR	7.13	12.0	774	2.05	58	0.5	Clear, No Odor
	9:25	NR	7.11	11.9	759	1.70	56	0.8	Clear, No Odor
	9:30	6.04	7.10	11.9	749	1.56	57	1.1	Clear, No Odor

Sampling Information: Clear, No Odor

Pump Intake Depth: 15.1 **Sample Time:** 9:30 **Sampling DTW:** 6.11

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: TW-27

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 2-Inch

Sampler's Initials: BF

Total Depth: 23.31

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/26/16	8:25	12.08	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	8:30	NR	7.15	11.5	779	4.97	43	0.3	Pre-Purge Parameters
	8:35	NR	7.08	11.5	781	3.80	45	0.6	Cloudy, No Odor
	8:40	NR	7.06	11.4	780	3.87	45	0.9	Cloudy, No Odor
	8:45	13.84	7.05	11.3	780	3.62	46	1.2	Cloudy, No Odor

Sampling Information: Cloudy, No Odor

Pump Intake Depth: 18.3 **Sample Time:** 8:45 **Sampling DTW:** 13.99

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: MPW-15

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 1-Inch

Sampler's Initials: BF

Total Depth: 23.34

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/25/16	15:05	6.15	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	15:10	NR	6.91	16.9	1,092	2.60	9	0.3	Pre-Purge Parameters
	15:15	NR	6.89	16.9	1,101	1.60	-1	0.5	Clear, Slight Odor
	15:20	NR	6.88	16.8	1,115	1.31	-6	0.8	Clear, Slight Odor
	15:25	NR	6.87	16.7	1,153	0.98	-14	1.1	Clear, Slight Odor
	15:30	8.23	6.87	16.7	1,159	0.93	-14	1.3	Clear, Slight Odor

Ferrous Iron Test Result: 0.60 mg/L

Sampling Information: Clear, Slight Odor

Pump Intake Depth: 18.3 **Sample Time:** 15:30 **Sampling DTW:** 8.41

Notes: No Unusual Conditions Observed
COLLECTED DUPLICATE SAMPLE "MPW-16" AT THIS SAMPLE LOCATION

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: PBW-1

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 1-Inch

Sampler's Initials: BF

Total Depth: 19.25

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/25/16	12:25	5.06	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	12:30	NR	7.28	14.5	347	8.47	49	0.3	Pre-Purge Parameters
	12:35	NR	7.20	14.5	567	4.44	45	0.6	Cloudy, No Odor
	12:40	NR	7.23	14.6	526	4.73	43	0.9	Cloudy, No Odor
	12:45	7.21	7.27	14.5	540	4.99	43	1.2	Cloudy, No Odor

Ferrous Iron Test Result: 0.10 mg/L

Sampling Information: Cloudy, No Odor

Pump Intake Depth: 12.2 **Sample Time:** 12:45 **Sampling DTW:** 7.28

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: PBW-2

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 1-Inch

Sampler's Initials: BF

Total Depth: 19.48

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/25/16	13:10	4.73	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	13:15	NR	6.90	18.2	1,187	3.22	51	0.3	Pre-Purge Parameters
	13:20	NR	6.93	18.2	688	4.64	46	0.6	Cloudy, No Odor
	13:25	NR	6.94	18.5	596	4.70	46	0.9	Cloudy, No Odor
	13:30	5.91	6.88	18.6	589	3.81	49	1.2	Cloudy, No Odor

Ferrous Iron Test Result: 0.10 mg/L

Sampling Information: Cloudy, No Odor

Pump Intake Depth: 12.1 **Sample Time:** 13:30 **Sampling DTW:** 5.98

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: PBW-4

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 1-Inch

Sampler's Initials: BF

Total Depth: 19.46

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/26/16	7:40	3.41	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	7:45	NR	8.70	10.7	537	3.10	19	0.3	Pre-Purge Parameters
	7:50	NR	8.30	10.7	539	2.31	18	0.5	Cloudy, No Odor
	7:55	NR	8.05	10.8	551	1.86	17	0.8	Cloudy, No Odor
	8:00	4.67	7.86	10.8	565	1.70	18	1.1	Cloudy, No Odor

Sampling Information: Cloudy, No Odor

Pump Intake Depth: 12.1 **Sample Time:** 8:00 **Sampling DTW:** 4.73

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: PBW-5

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 1-Inch

Sampler's Initials: BF

Total Depth: 22.92

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/26/16	6:55	3.24	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	7:00	NR	7.23	11.3	870	1.80	-37	0.3	Pre-Purge Parameters
	7:05	NR	7.22	11.3	872	1.70	-36	0.5	Cloudy, No Odor
	7:10	NR	7.22	11.4	873	1.59	-35	0.8	Cloudy, No Odor
	7:15	4.71	7.22	11.3	871	1.61	-35	1.1	Cloudy, No Odor

Sampling Information: Cloudy, No Odor

Pump Intake Depth: 15.5 **Sample Time:** 7:15 **Sampling DTW:** 4.77

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: PBW-6

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 1-Inch

Sampler's Initials: BF

Total Depth: 23.75

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/25/16	17:25	4.03	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	17:30	NR	7.34	11.6	788	4.74	48	0.3	Pre-Purge Parameters
	17:35	NR	7.31	12.0	790	3.81	46	0.5	Clear, No Odor
	17:40	NR	7.31	12.3	787	3.57	45	0.8	Clear, No Odor
	17:45	5.56	7.31	12.5	783	3.45	44	1.1	Clear, No Odor

Sampling Information: Clear, No Odor

Pump Intake Depth: 16.3 **Sample Time:** 17:45 **Sampling DTW:** 5.63

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: PBW-7

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 1-Inch

Sampler's Initials: BF

Total Depth: 24.66

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/25/16	16:40	3.96	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	16:45	NR	7.33	12.0	691	3.11	42	0.3	Pre-Purge Parameters
	16:50	NR	7.30	12.4	682	2.58	40	0.5	Clear, No Odor
	16:55	NR	7.29	12.2	681	2.14	39	0.8	Clear, No Odor
	17:00	4.97	7.29	12.2	683	1.69	38	1.1	Clear, No Odor

Sampling Information: Clear, No Odor

Pump Intake Depth: 17.5 **Sample Time:** 17:00 **Sampling DTW:** 5.02

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: EZ-26

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 1-Inch

Sampler's Initials: BF

Total Depth: 13.71

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/25/16	13:40	1.96	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	13:45	NR	6.96	13.2	536	2.40	29	0.3	Pre-Purge Parameters
	13:50	NR	6.88	14.0	407	2.90	27	0.7	Cloudy, No Odor
	13:55	NR	6.89	14.4	317	3.90	28	1.0	Cloudy, No Odor
	14:00	3.31	6.82	14.6	300	3.69	26	1.3	Cloudy, No Odor

Ferrous Iron Test Result: 0.45 mg/L

Sampling Information: Cloudy, No Odor

Pump Intake Depth: 7.8 **Sample Time:** 14:00 **Sampling DTW:** 3.34

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

WELL PURGING FORM

Project Name: Former Gates Facility - Boone, Iowa

Project Number: GATE0901

Well ID: EZ-27

☒ Low Flow Sampling

☐ 3-Volume Purge

Well Diameter: 1-Inch

Sampler's Initials: BF

Total Depth: 12.70

Purging Method: ☒ **Pump** ☐ **Bailer** ☐ **Other** _____

Date	Time	Depth To Water	pH (su)	Temp (^oC)	S.C. (us/cm^3)	Dissolved Oxygen (mg/L)	ORP (mv)	Volume Removed (gallons)	Comments (Color, Odor, etc)
05/25/16	14:10	3.52	-----	-----	-----	-----	-----	0.0	Depth to Water Measurement
	14:15	NR	7.20	16.3	607	2.36	13	0.3	Pre-Purge Parameters
	14:20	NR	7.08	15.9	665	1.58	7	0.5	Silty, Brown, No Odor
	14:25	NR	6.99	15.6	776	1.19	10	0.8	Silty, Brown, No Odor
	14:30	4.88	6.99	15.7	787	1.15	10	1.1	Silty, Brown, No Odor

Ferrous Iron Test Result: 0.45 mg/L

Sampling Information: Silty, Brown, No Odor

Pump Intake Depth: 8.9 **Sample Time:** 14:30 **Sampling DTW:** 5.01

Notes: No Unusual Conditions Observed

ENTER INFORMATION BELOW FOR 3-VOLUME PURGE ONLY

Casing Volume = Total Depth of Well from measuring point = - Initial Depth to Water = Water Column (Next Line Down)

Water Column = x **MULT** = gallons x 3 Well Volumes = gallons

MULT = 0.016 for 0.5" Wells, 0.041 for 1" Wells, 0.092 for 1.5" Wells, 0.163 for 2" Wells, 0.255 for 2.5" Wells, 0.367 for 3" Wells, 0.653 for 4" Wells, 1.469 for 6" Wells

APPENDIX B

GROUNDWATER ANALYTICAL LABORATORY REPORTS

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

e-Hardcopy 2.0
Automated Report

Technical Report for

LT Environmental

Gates-Boone, IA

Gate0901

SGS Accutest Job Number: D83090

Sampling Dates: 05/25/16 - 05/26/16

Report to:

LT Environmental
4600 West 60th Avenue
Arvada, CO 80003
jbrown@ltenv.com

ATTN: John Brown

Total number of pages in report: **201**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman
Laboratory Director

Client Service contact: Renea Lewis 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), LA (LA150028), TX (T104704511), WY
CO (CO00049)

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Test results relate only to samples analyzed.

SGS Accutest is the sole authority for authorizing edits or modifications to this document.
Unauthorized modification of this report is strictly prohibited.

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SGS Accutest

Sample Summary

LT Environmental

Job No: D83090

Gates-Boone, IA
Project No: Gate0901

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D83090-1	05/25/16	08:30	BF	05/27/16	AQ	Ground Water	TW-24
D83090-2	05/25/16	09:15	BF	05/27/16	AQ	Ground Water	TW-19
D83090-3	05/25/16	10:00	BF	05/27/16	AQ	Ground Water	TW-25
D83090-4	05/26/16	08:00	BF	05/27/16	AQ	Ground Water	PBW-4
D83090-5	05/26/16	07:15	BF	05/27/16	AQ	Ground Water	PBW-5
D83090-6	05/26/16	06:30	BF	05/27/16	AQ	Ground Water	TW-18
D83090-7	05/26/16	08:25	BF	05/27/16	AQ	Ground Water	TW-27
D83090-8	05/26/16	09:30	BF	05/27/16	AQ	Ground Water	TW-26
D83090-9	05/25/16	17:45	BF	05/27/16	AQ	Ground Water	PBW-6
D83090-10	05/25/16	17:00	BF	05/27/16	AQ	Ground Water	PBW-7

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	LT Environmental	**Job No:**	D83090
Site:	Gates-Boone, IA	**Report Date**	6/6/2016 4:41:13 PM

On 05/27/2016, 10 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.9 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D83090 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** V7V1840

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D83134-3MS, D83134-3MSD were used as the QC samples indicated.

Volatiles by GC By Method RSK175 MOD

Matrix: AQ **Batch ID:** GFB798

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D83005-1MS, D83005-1MSD were used as the QC samples indicated.
- The matrix spike (MS) recovery(s) of Methane are outside control limits. Outside control limits due to high level in sample relative to spike amount.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix: AQ **Batch ID:** GP18019

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D83090-4MS, D83090-4MSD, D83090-7MS, D83090-7MSD were used as the QC samples for the Chloride analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D83090
Account: LT Environmental
Project: Gates-Boone, IA
Collected: 05/25/16 thru 05/26/16

3

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D83090-1	**TW-24**					
Tetrachloroethylene		6.2	1.0	0.50	ug/l	SW846 8260B
D83090-2	**TW-19**					
m-Dichlorobenzene		1.2	1.0	0.50	ug/l	SW846 8260B
Tetrachloroethylene		1.1	1.0	0.50	ug/l	SW846 8260B
Vinyl chloride		2.1	2.0	1.0	ug/l	SW846 8260B
D83090-3	**TW-25**					
Tetrachloroethylene		4.1	1.0	0.50	ug/l	SW846 8260B
D83090-4	**PBW-4**					
cis-1,2-Dichloroethylene		2.1	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		5.9	1.0	0.50	ug/l	SW846 8260B
Trichloroethylene		0.81 J	1.0	0.50	ug/l	SW846 8260B
Methane		0.00044 J	0.00080	0.00040	mg/l	RSK175 MOD
Chloride		23.1	5.0		mg/l	EPA 300.0/SW846 9056
D83090-5	**PBW-5**					
1,1-Dichloroethane		1.8 J	2.0	1.0	ug/l	SW846 8260B
cis-1,2-Dichloroethylene		65.7	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		7.2	1.0	0.50	ug/l	SW846 8260B
Trichloroethylene		18.6	1.0	0.50	ug/l	SW846 8260B
Vinyl chloride		3.2	2.0	1.0	ug/l	SW846 8260B
Methane		0.0082	0.00080	0.00040	mg/l	RSK175 MOD
Chloride		61.6	5.0		mg/l	EPA 300.0/SW846 9056
D83090-6	**TW-18**					
1,1-Dichloroethane		2.0	2.0	1.0	ug/l	SW846 8260B
cis-1,2-Dichloroethylene		84.3	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		9.5	1.0	0.50	ug/l	SW846 8260B
1,1,1-Trichloroethane		1.8 J	2.0	1.0	ug/l	SW846 8260B
Trichloroethylene		13.8	1.0	0.50	ug/l	SW846 8260B
Vinyl chloride		25.1	2.0	1.0	ug/l	SW846 8260B
Methane		0.327	0.00080	0.00040	mg/l	RSK175 MOD
Chloride		15.8	5.0		mg/l	EPA 300.0/SW846 9056

Summary of Hits

Job Number: D83090
Account: LT Environmental
Project: Gates-Boone, IA
Collected: 05/25/16 thru 05/26/16

3

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D83090-7	**TW-27**					
cis-1,2-Dichloroethylene		55.2	2.0	1.0	ug/l	SW846 8260B
trans-1,2-Dichloroethylene		1.2 J	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		15.3	1.0	0.50	ug/l	SW846 8260B
Trichloroethylene		5.0	1.0	0.50	ug/l	SW846 8260B
Chloride		23.7	5.0		mg/l	EPA 300.0/SW846 9056
D83090-8	**TW-26**					
cis-1,2-Dichloroethylene		3.7	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		5.0	1.0	0.50	ug/l	SW846 8260B
1,1,1-Trichloroethane		2.3	2.0	1.0	ug/l	SW846 8260B
Trichloroethylene		1.9	1.0	0.50	ug/l	SW846 8260B
Chloride		27.4	5.0		mg/l	EPA 300.0/SW846 9056
D83090-9	**PBW-6**					
cis-1,2-Dichloroethylene		3.3	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		14.5	1.0	0.50	ug/l	SW846 8260B
Trichloroethylene		2.0	1.0	0.50	ug/l	SW846 8260B
Chloride		56.9	5.0		mg/l	EPA 300.0/SW846 9056
D83090-10	**PBW-7**					
cis-1,2-Dichloroethylene		5.1	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		11.1	1.0	0.50	ug/l	SW846 8260B
Trichloroethylene		1.9	1.0	0.50	ug/l	SW846 8260B
Chloride		33.3	5.0		mg/l	EPA 300.0/SW846 9056

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID:	TW-24		
Lab Sample ID:	D83090-1	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34236.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-24		
Lab Sample ID:	D83090-1	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	6.2	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-24		
Lab Sample ID:	D83090-1	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	98%		62-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	100%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	TW-19		
Lab Sample ID:	D83090-2	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34237.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	1.2	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-19		
Lab Sample ID:	D83090-2	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	1.1	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	2.1	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-19		
Lab Sample ID:	D83090-2	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	101%		62-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	97%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	TW-25		
Lab Sample ID:	D83090-3	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34238.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-25		
Lab Sample ID:	D83090-3	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	4.1	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-25		
Lab Sample ID:	D83090-3	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	96%		62-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	100%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	PBW-4		
Lab Sample ID:	D83090-4	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34239.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	2.1	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-4		
Lab Sample ID:	D83090-4	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	5.9	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	0.81	1.0	0.50	ug/l	J
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-4		
Lab Sample ID:	D83090-4	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	101%		62-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	99%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	PBW-4		
Lab Sample ID:	D83090-4	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16818.D	1	05/31/16	JJ	n/a	n/a	GFB798
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	19.0 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.00044	0.00080	0.00040	mg/l	J
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-4		
Lab Sample ID:	D83090-4	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	23.1	5.0	mg/l	10	05/28/16 10:58	JB	EPA 300.0/SW846 9056

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	PBW-5		
Lab Sample ID:	D83090-5	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34240.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	1.8	2.0	1.0	ug/l	J
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	65.7	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-5		
Lab Sample ID:	D83090-5	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	7.2	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	18.6	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	3.2	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-5		
Lab Sample ID:	D83090-5	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	98%		62-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	101%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	PBW-5		
Lab Sample ID:	D83090-5	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16819.D	1	05/31/16	JJ	n/a	n/a	GFB798
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	19.0 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.0082	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-5		
Lab Sample ID:	D83090-5	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	61.6	5.0	mg/l	10	05/28/16 11:11	JB	EPA 300.0/SW846 9056

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	TW-18		
Lab Sample ID:	D83090-6	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34241.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	2.0	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	84.3	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-18		
Lab Sample ID:	D83090-6	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	9.5	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	1.8	2.0	1.0	ug/l	J
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	13.8	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	25.1	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-18		
Lab Sample ID:	D83090-6	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	99%		62-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	100%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	TW-18		
Lab Sample ID:	D83090-6	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16820.D	1	05/31/16	JJ	n/a	n/a	GFB798
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	19.0 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.327	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-18		
Lab Sample ID:	D83090-6	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	15.8	5.0	mg/l	10	05/28/16 11:24	JB	EPA 300.0/SW846 9056

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	TW-27		
Lab Sample ID:	D83090-7	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34242.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	55.2	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	1.2	2.0	1.0	ug/l	J
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-27		
Lab Sample ID:	D83090-7	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	15.3	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	5.0	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-27		
Lab Sample ID:	D83090-7	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	95%		62-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	98%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	TW-27		
Lab Sample ID:	D83090-7	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16821.D	1	05/31/16	JJ	n/a	n/a	GFB798
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	19.0 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-27		
Lab Sample ID:	D83090-7	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	23.7	5.0	mg/l	10	05/28/16 11:37	JB	EPA 300.0/SW846 9056

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	TW-26		
Lab Sample ID:	D83090-8	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34243.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	3.7	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-26		
Lab Sample ID:	D83090-8	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	5.0	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	2.3	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	1.9	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-26		
Lab Sample ID:	D83090-8	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	98%		62-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	97%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	TW-26		
Lab Sample ID:	D83090-8	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16823.D	1	05/31/16	JJ	n/a	n/a	GFB798
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	19.0 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-26		
Lab Sample ID:	D83090-8	**Date Sampled:**	05/26/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	27.4	5.0	mg/l	10	05/28/16 11:50	JB	EPA 300.0/SW846 9056

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	PBW-6		
Lab Sample ID:	D83090-9	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34244.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	3.3	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-6		
Lab Sample ID:	D83090-9	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	14.5	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	2.0	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-6		
Lab Sample ID:	D83090-9	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	98%		62-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	99%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	PBW-6		
Lab Sample ID:	D83090-9	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16824.D	1	05/31/16	JJ	n/a	n/a	GFB798
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	19.0 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-6		
Lab Sample ID:	D83090-9	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	56.9	5.0	mg/l	10	05/28/16 12:03	JB	EPA 300.0/SW846 9056

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	PBW-7		
Lab Sample ID:	D83090-10	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34245.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	5.1	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-7		
Lab Sample ID:	D83090-10	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	11.1	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	1.9	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-7		
Lab Sample ID:	D83090-10	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	100%		62-130%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	101%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	PBW-7		
Lab Sample ID:	D83090-10	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16825.D	1	05/31/16	JJ	n/a	n/a	GFB798
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	19.0 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW-7		
Lab Sample ID:	D83090-10	**Date Sampled:**	05/25/16
Matrix:	AQ - Ground Water	**Date Received:**	05/27/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	33.3	5.0	mg/l	10	05/28/16 12:16	JB	EPA 300.0/SW846 9056

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking #	Bottle Order Control #
SGS Accutest Quote #	SGS Accutest Job # D83090

Client / Reporting Information

Company Name	LTE
Street Address	4600 W. 60th Avenue
City	Arvada
Project Contact	John Brown
Phone #	(303) 433-9788
Sampler(s) Name(s)	B. Finn

Project Information

Project Name:	Gates-Boone
Street	
City	Boone
State	IA
Project #	Gate0901
Client Purchase Order #	
Project Manager	

Billing Information (If different from Report to)
Company Name
Street Address
City
Attention:

Requested Analysis (see TEST CODE sheet)

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	8260 STD VOCs	RSK 175DG MEE	Chloride	LAB USE ONLY
	TW-24		05/25/2016	0830		GW	3			3						X			01
	TW-19		05/25/2016	0915		GW	3			3						X			02
	TW-25		05/25/2016	1000		GW	3			3						X			03
	[redacted] BF Trip Blank																		11
	[redacted] BF Temp Blank																		—
	PBW-4		05/26/2016	0800		GW	7			6		1				X	X	X	04
	PBW-5			0715		GW	7			6		1				X	X	X	05
	TW-18			0630		GW	7			6		1				X	X	X	06
	TW-27			0825		GW	7			6		1				X	X	X	07
	TW-26			0930		GW	7			6		1				X	X	X	08
	PBW-6		05/25/2016	1745		GW	7			6		1				X	X	X	09
	PBW-7		05/25/2016	1700		GW	7			6		1				X	X	X	10

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Turnaround Time (Business days)
- [ ] Std. 15 Business Days
- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [ ]

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information
- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [ ] Report by PDF
- [ ] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions
Please contact John Brown for EDD & TAT
TW 18 Receive two vials broken (smp)

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	05/26/2016 1130	1 [signature] 5/27/16 1045	2		2
3		3	4		4
5		3	Custody Seal # FX ☒ Intact ☐ Not Intact	Preserved where applicable ☒	On Ice THLC ☒ Cooler Temp. 3.9

QA 065-00 Rev. 1 1/21/2016

D83090: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: D83090 **Client:** LTE **Project:** GATES

Date / Time Received: 5/27/2016 10:45:00 AM **Delivery Method:** **Airbill #'s:** FX

Cooler Temps (Initial/Adjusted): #1: (3.9/3.9);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Bar Therm;		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Comments

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-MB	7V34221.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83090-1, D83090-2, D83090-3, D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	

Method Blank Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-MB	7V34221.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83090-1, D83090-2, D83090-3, D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

Method Blank Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-MB	7V34221.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83090-1, D83090-2, D83090-3, D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	62-130%
2037-26-5	Toluene-D8	100%	70-130%
460-00-4	4-Bromofluorobenzene	98%	69-130%

Blank Spike Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-BS	7V34218.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83090-1, D83090-2, D83090-3, D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
108-86-1	Bromobenzene	50	50.9	102	70-130
67-64-1	Acetone	250	227	91	10-190
107-02-8	Acrolein	250	257	103	10-281
107-13-1	Acrylonitrile	125	115	92	58-136
71-43-2	Benzene	50	48.7	97	70-130
74-97-5	Bromochloromethane	50	50.0	100	70-130
75-27-4	Bromodichloromethane	50	48.3	97	70-130
75-25-2	Bromoform	50	51.1	102	70-130
104-51-8	n-Butylbenzene	50	49.9	100	69-130
135-98-8	sec-Butylbenzene	50	50.1	100	70-130
98-06-6	tert-Butylbenzene	50	50.9	102	70-130
75-15-0	Carbon disulfide	50	47.9	96	50-133
56-23-5	Carbon tetrachloride	50	50.2	100	70-130
108-90-7	Chlorobenzene	50	49.0	98	70-130
75-00-3	Chloroethane	50	49.4	99	58-130
110-75-8	2-Chloroethyl vinyl ether	50	48.7	97	31-130
67-66-3	Chloroform	50	48.0	96	70-130
95-49-8	o-Chlorotoluene	50	49.6	99	70-130
106-43-4	p-Chlorotoluene	50	49.5	99	70-130
96-12-8	1,2-Dibromo-3-chloropropane	50	47.0	94	65-130
124-48-1	Dibromochloromethane	50	50.2	100	70-130
106-93-4	1,2-Dibromoethane	50	50.0	100	70-130
95-50-1	o-Dichlorobenzene	50	50.8	102	70-130
541-73-1	m-Dichlorobenzene	50	50.2	100	70-130
106-46-7	p-Dichlorobenzene	50	50.4	101	70-130
75-71-8	Dichlorodifluoromethane	50	48.6	97	10-223
75-34-3	1,1-Dichloroethane	50	48.4	97	65-130
107-06-2	1,2-Dichloroethane	50	47.7	95	67-131
75-35-4	1,1-Dichloroethylene	50	50.5	101	68-130
156-59-2	cis-1,2-Dichloroethylene	50	48.3	97	70-130
156-60-5	trans-1,2-Dichloroethylene	50	49.3	99	69-130
78-87-5	1,2-Dichloropropane	50	49.0	98	70-130
142-28-9	1,3-Dichloropropane	50	49.1	98	70-130
594-20-7	2,2-Dichloropropane	50	47.8	96	32-148
563-58-6	1,1-Dichloropropene	50	49.3	99	70-130
10061-01-5	cis-1,3-Dichloropropene	50	49.1	98	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-BS	7V34218.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83090-1, D83090-2, D83090-3, D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-02-6	trans-1,3-Dichloropropene	50	49.4	99	70-130
100-41-4	Ethylbenzene	50	50.2	100	70-130
87-68-3	Hexachlorobutadiene	50	48.6	97	51-134
591-78-6	2-Hexanone	250	235	94	47-140
98-82-8	Isopropylbenzene	50	49.9	100	70-130
99-87-6	p-Isopropyltoluene	50	50.3	101	70-130
74-83-9	Methyl bromide	50	43.1	86	31-149
74-87-3	Methyl chloride	50	56.0	112	35-155
74-95-3	Methylene bromide	50	48.9	98	70-130
75-09-2	Methylene chloride	50	44.7	89	67-130
108-10-1	4-Methyl-2-pentanone	250	226	90	70-130
78-93-3	Methyl ethyl ketone	250	210	84	38-152
1634-04-4	Methyl Tert Butyl Ether	50	48.2	96	70-130
91-20-3	Naphthalene	50	49.5	99	61-130
103-65-1	n-Propylbenzene	50	50.8	102	70-130
100-42-5	Styrene	50	50.6	101	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	49.4	99	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	49.8	100	70-130
127-18-4	Tetrachloroethylene	50	50.5	101	70-130
108-88-3	Toluene	50	46.2	92	70-130
87-61-6	1,2,3-Trichlorobenzene	50	48.2	96	55-130
120-82-1	1,2,4-Trichlorobenzene	50	49.4	99	65-130
71-55-6	1,1,1-Trichloroethane	50	49.4	99	70-130
79-00-5	1,1,2-Trichloroethane	50	50.2	100	70-130
79-01-6	Trichloroethylene	50	49.2	98	70-130
75-69-4	Trichlorofluoromethane	50	48.7	97	68-146
96-18-4	1,2,3-Trichloropropane	50	53.3	107	70-130
95-63-6	1,2,4-Trimethylbenzene	50	50.5	101	70-130
108-67-8	1,3,5-Trimethylbenzene	50	50.4	101	70-130
108-05-4	Vinyl Acetate	250	231	92	50-133
75-01-4	Vinyl chloride	50	50.2	100	48-141
1330-20-7	Xylene (total)	150	149	99	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-BS	7V34218.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83090-1, D83090-2, D83090-3, D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	70-130%
17060-07-0	1,2-Dichloroethane-D4	100%	62-130%
2037-26-5	Toluene-D8	100%	70-130%
460-00-4	4-Bromofluorobenzene	102%	69-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D83134-3MS	7V34223.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3MSD	7V34224.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3	7V34222.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83090-1, D83090-2, D83090-3, D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Compound	D83134-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
108-86-1	Bromobenzene	ND		50	50.9	102	50	52.5	105	3	70-130/30
67-64-1	Acetone	ND		250	218	87	250	218	87	0	10-190/30
107-02-8	Acrolein	ND		250	267	107	250	272	109	2	10-281/30
107-13-1	Acrylonitrile	ND		125	119	95	125	119	95	0	47-151/30
71-43-2	Benzene	ND		50	50.3	101	50	50.6	101	1	62-130/30
74-97-5	Bromochloromethane	ND		50	51.5	103	50	52.6	105	2	70-130/30
75-27-4	Bromodichloromethane	ND		50	50.8	102	50	51.6	103	2	70-130/30
75-25-2	Bromoform	ND		50	53.7	107	50	53.1	106	1	70-130/30
104-51-8	n-Butylbenzene	ND		50	51.6	103	50	52.0	104	1	51-143/30
135-98-8	sec-Butylbenzene	ND		50	51.2	102	50	52.0	104	2	69-130/30
98-06-6	tert-Butylbenzene	ND		50	51.7	103	50	52.5	105	2	47-158/30
75-15-0	Carbon disulfide	ND		50	49.5	99	50	49.5	99	0	44-133/30
56-23-5	Carbon tetrachloride	ND		50	51.3	103	50	52.4	105	2	70-132/30
108-90-7	Chlorobenzene	ND		50	50.1	100	50	50.4	101	1	70-130/30
75-00-3	Chloroethane	ND		50	53.1	106	50	52.1	104	2	45-139/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	50.9	102	50	51.0	102	0	10-130/30
67-66-3	Chloroform	ND		50	48.9	98	50	49.2	98	1	70-130/30
95-49-8	o-Chlorotoluene	ND		50	50.9	102	50	51.9	104	2	70-130/30
106-43-4	p-Chlorotoluene	ND		50	51.1	102	50	51.6	103	1	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND		50	48.8	98	50	49.5	99	1	62-130/30
124-48-1	Dibromochloromethane	ND		50	51.7	103	50	51.9	104	0	70-130/30
106-93-4	1,2-Dibromoethane	ND		50	51.0	102	50	51.3	103	1	70-130/30
95-50-1	o-Dichlorobenzene	ND		50	51.0	102	50	52.4	105	3	70-130/30
541-73-1	m-Dichlorobenzene	ND		50	51.4	103	50	52.2	104	2	70-130/30
106-46-7	p-Dichlorobenzene	ND		50	51.5	103	50	52.4	105	2	70-130/30
75-71-8	Dichlorodifluoromethane	ND		50	50.1	100	50	51.2	102	2	10-225/30
75-34-3	1,1-Dichloroethane	ND		50	48.5	97	50	49.6	99	2	63-131/30
107-06-2	1,2-Dichloroethane	ND		50	49.0	98	50	49.0	98	0	63-135/30
75-35-4	1,1-Dichloroethylene	ND		50	51.3	103	50	52.0	104	1	62-130/30
156-59-2	cis-1,2-Dichloroethylene	ND		50	50.6	101	50	50.6	101	0	70-130/30
156-60-5	trans-1,2-Dichloroethylene	ND		50	51.3	103	50	51.8	104	1	67-130/30
78-87-5	1,2-Dichloropropane	ND		50	50.4	101	50	50.4	101	0	70-130/30
142-28-9	1,3-Dichloropropane	ND		50	50.2	100	50	50.1	100	0	70-130/30
594-20-7	2,2-Dichloropropane	ND		50	50.1	100	50	50.8	102	1	32-153/30
563-58-6	1,1-Dichloropropene	ND		50	50.2	100	50	51.1	102	2	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND		50	51.1	102	50	52.0	104	2	68-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D83134-3MS	7V34223.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3MSD	7V34224.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3	7V34222.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83090-1, D83090-2, D83090-3, D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Compound	D83134-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	ND		50	50.1	100	50	50.8	102	1	70-130/30
100-41-4	Ethylbenzene	ND		50	51.2	102	50	51.5	103	1	63-130/30
87-68-3	Hexachlorobutadiene	ND		50	50.3	101	50	50.4	101	0	41-140/30
591-78-6	2-Hexanone	ND		250	235	94	250	238	95	1	45-140/30
98-82-8	Isopropylbenzene	ND		50	51.4	103	50	51.7	103	1	70-130/30
99-87-6	p-Isopropyltoluene	ND		50	52.0	104	50	52.4	105	1	70-130/30
74-83-9	Methyl bromide	ND		50	48.2	96	50	48.1	96	0	15-151/30
74-87-3	Methyl chloride	ND		50	55.5	111	50	55.6	111	0	24-160/30
74-95-3	Methylene bromide	ND		50	51.5	103	50	52.0	104	1	70-130/30
75-09-2	Methylene chloride	ND		50	46.5	93	50	47.0	94	1	65-130/30
108-10-1	4-Methyl-2-pentanone	ND		250	240	96	250	244	98	2	70-130/30
78-93-3	Methyl ethyl ketone	ND		250	209	84	250	211	84	1	33-152/30
1634-04-4	Methyl Tert Butyl Ether	ND		50	49.4	99	50	50.1	100	1	69-130/30
91-20-3	Naphthalene	ND		50	51.0	102	50	51.7	103	1	55-130/30
103-65-1	n-Propylbenzene	ND		50	51.5	103	50	51.9	104	1	62-132/30
100-42-5	Styrene	ND		50	52.2	104	50	52.3	105	0	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		50	50.9	102	50	51.7	103	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	49.4	99	50	50.8	102	3	70-130/30
127-18-4	Tetrachloroethylene	ND		50	52.2	104	50	53.2	106	2	70-130/30
108-88-3	Toluene	ND		50	47.1	94	50	47.9	96	2	60-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		50	49.4	99	50	50.5	101	2	52-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		50	51.0	102	50	51.1	102	0	60-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	50.2	100	50	51.1	102	2	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		50	50.7	101	50	51.4	103	1	70-130/30
79-01-6	Trichloroethylene	ND		50	51.3	103	50	52.0	104	1	70-130/30
75-69-4	Trichlorofluoromethane	ND		50	51.1	102	50	51.4	103	1	54-157/30
96-18-4	1,2,3-Trichloropropane	ND		50	53.3	107	50	48.9	98	9	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		50	51.5	103	50	52.4	105	2	65-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		50	52.0	104	50	52.2	104	0	44-155/30
108-05-4	Vinyl Acetate	ND		250	238	95	250	242	97	2	50-133/30
75-01-4	Vinyl chloride	ND		50	52.2	104	50	51.9	104	1	37-146/30
1330-20-7	Xylene (total)	ND		150	153	102	150	154	103	1	67-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D83134-3MS	7V34223.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3MSD	7V34224.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3	7V34222.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83090-1, D83090-2, D83090-3, D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Surrogate Recoveries	MS	MSD	D83134-3	Limits
1868-53-7	Dibromofluoromethane	98%	99%	98%	70-130%
17060-07-0	1,2-Dichloroethane-D4	102%	100%	100%	62-130%
2037-26-5	Toluene-D8	99%	99%	101%	70-130%
460-00-4	4-Bromofluorobenzene	99%	99%	97%	69-130%

* = Outside of Control Limits.

GC/MS Volatiles

Raw Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34236.D
Acq On : 1 Jun 2016 6:08 pm
Operator : amandaj
Sample : D83090-1
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 03 08:38:02 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

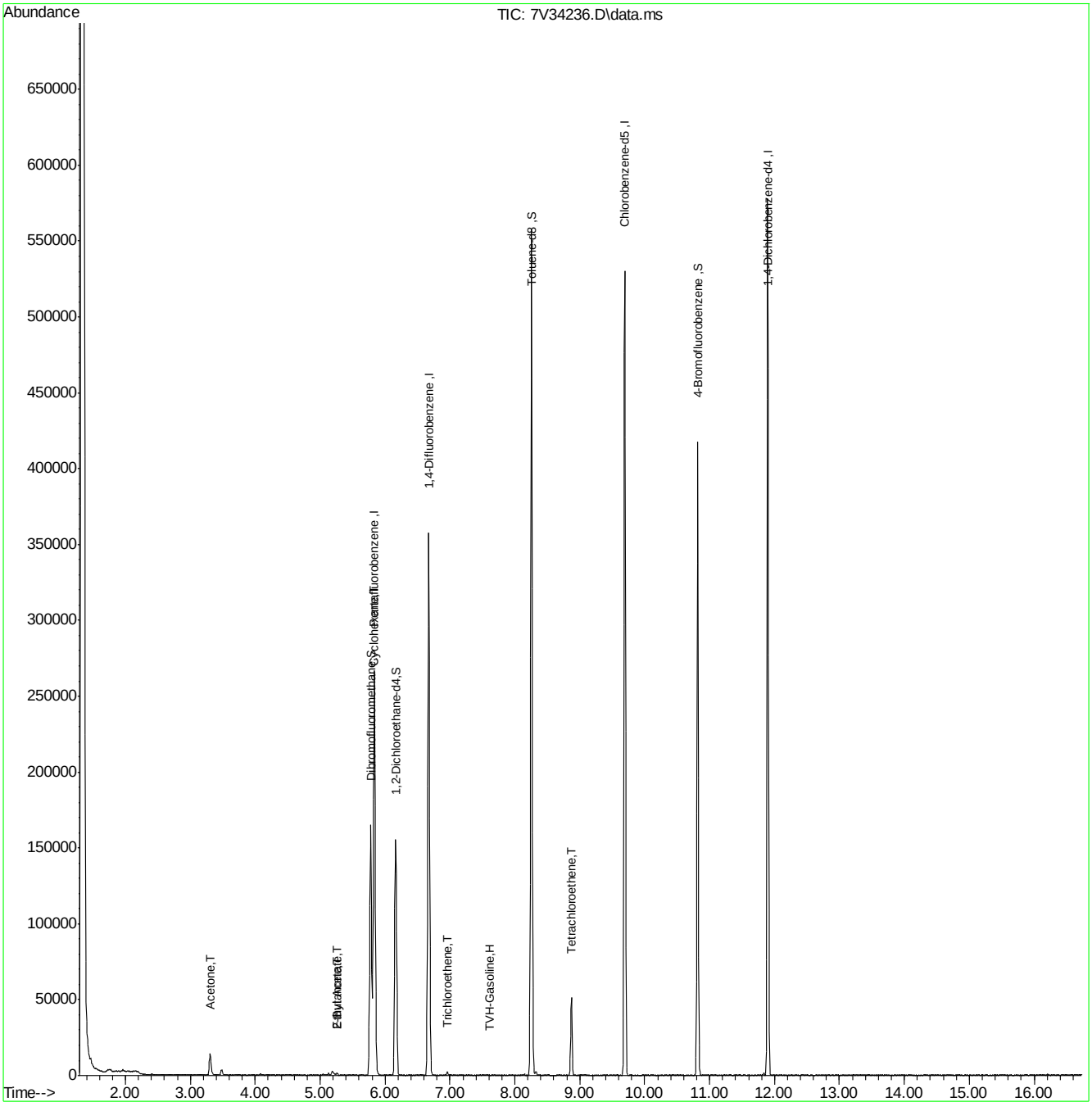
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	209755	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.670	114	326560	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	290235	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	147444	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	111466	48.96	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 97.92%			
41) 1,2-Dichloroethane-d4	6.164	102	23032	49.22	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 98.44%			
56) Toluene-d8	8.255	98	344685	49.39	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 98.78%			
76) 4-Bromofluorobenzene	10.815	95	128288	49.97	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 99.94%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	179993m	18.92	ug/L	
14) Acetone	3.305	43	18497	5.02	ug/L	100
30) 2-Butanone	5.255	43	2362	1.41	ug/L #	60
31) Ethyl Acetate	5.255	43	2215	0.70	ug/L #	65
37) Cyclohexane	5.829	56	3705	0.73	ug/L #	2
47) Trichloroethene	6.962	95	654	0.27	ug/L #	86
60) Tetrachloroethene	8.871	164	11844	6.17	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

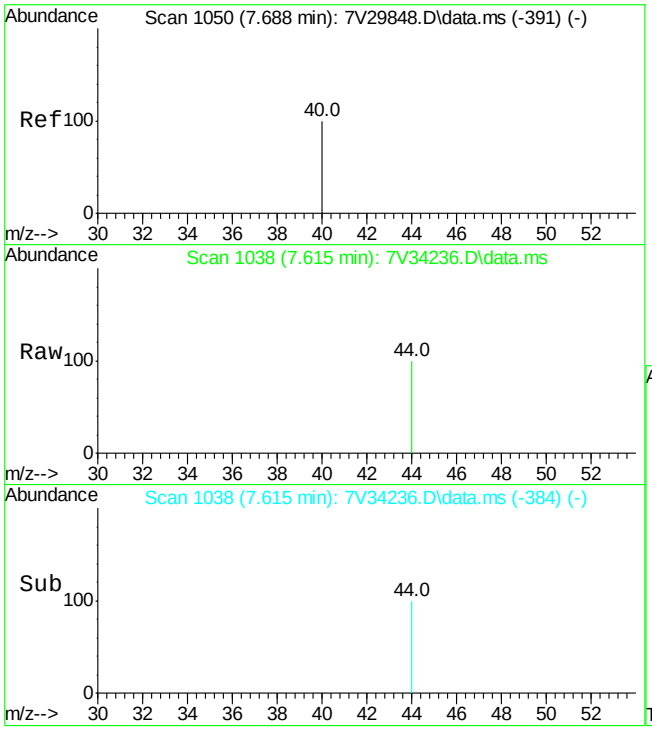
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34236.D
Acq On : 1 Jun 2016 6:08 pm
Operator : amandaj
Sample : D83090-1
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 03 08:38:02 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

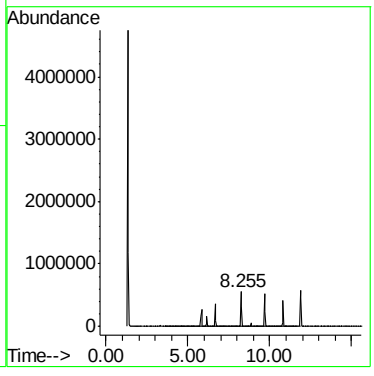


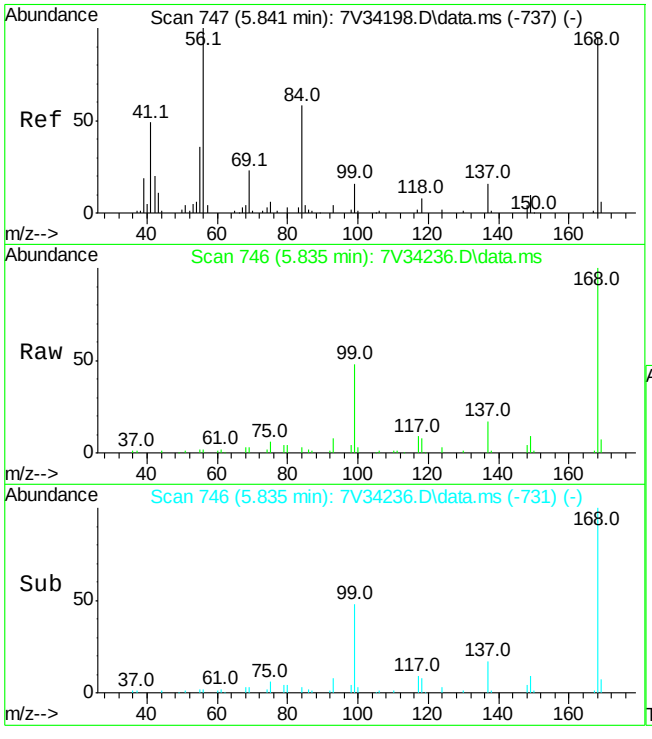
SGS ACCUTEST D83090



#1
TVH-Gasoline
Concen: 18.92 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion:TIC Resp: 179993

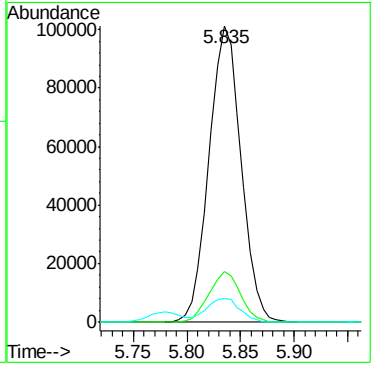


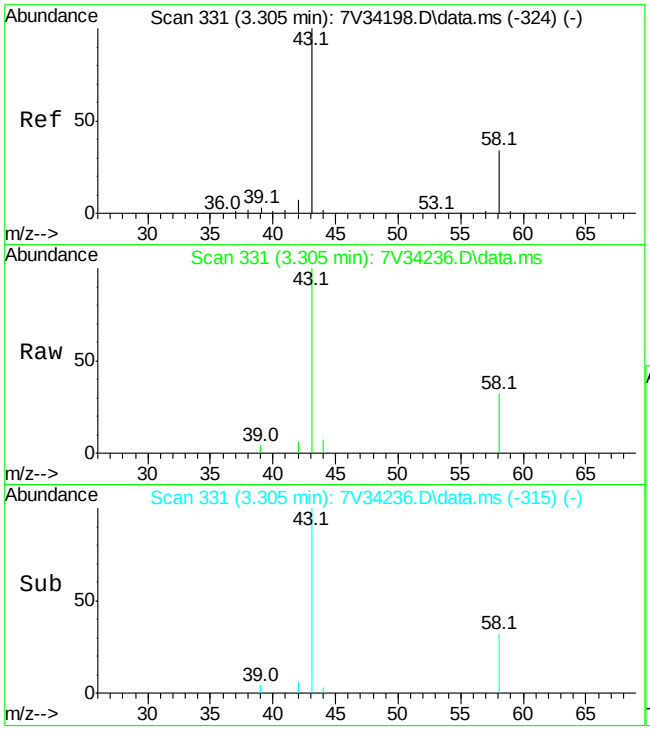


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion:168 Resp: 209755

Ion	Ratio	Lower	Upper
168	100		
137	16.7	0.0	36.8
93	8.1	0.0	28.3

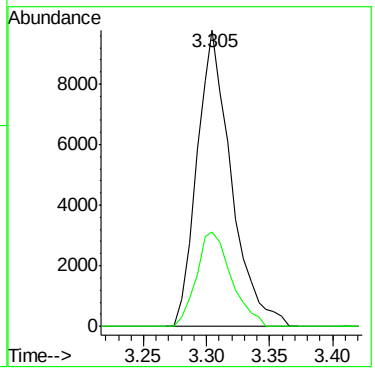


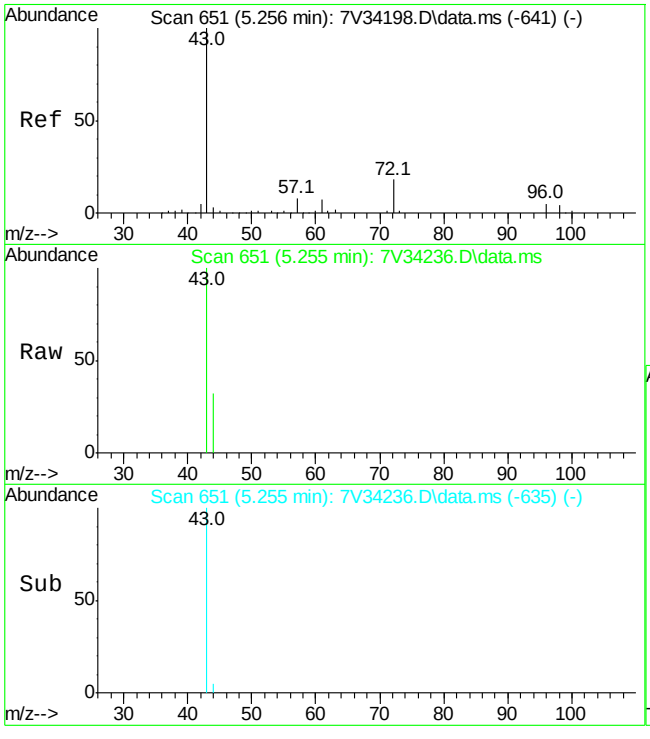


#14
Acetone
Concen: 5.02 ug/L
RT: 3.305 min Scan# 331
Delta R.T. -0.000 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion: 43 Resp: 18497

Ion	Ratio	Lower	Upper
43	100		
58	32.6	12.6	52.6

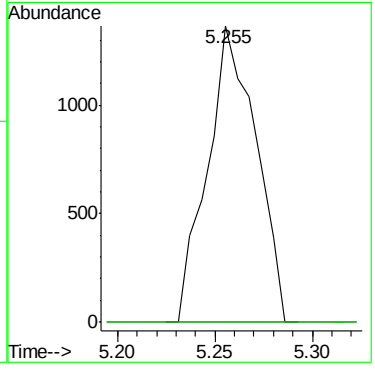


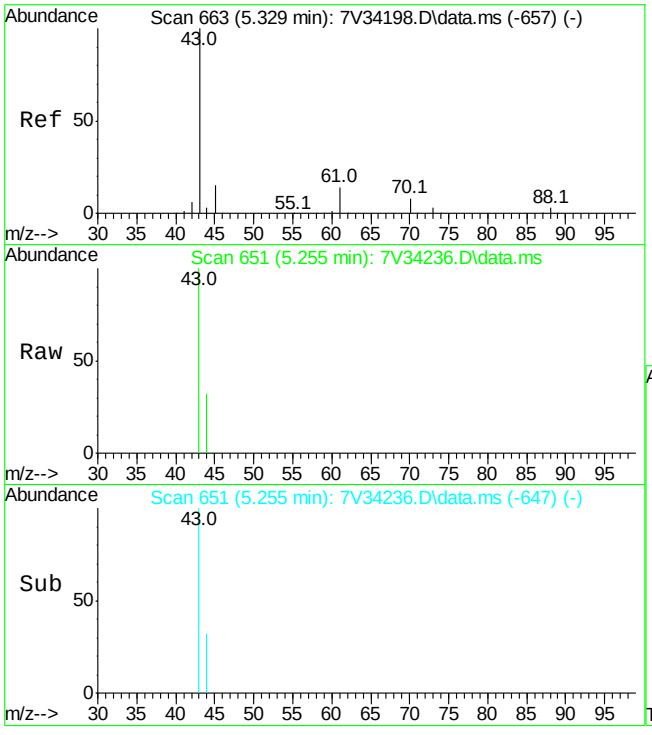


#30
2-Butanone
Concen: 1.41 ug/L
RT: 5.255 min Scan# 651
Delta R.T. -0.001 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion: 43 Resp: 2362

Ion	Ratio	Lower	Upper
43	100		
72	0.0	0.0	37.5

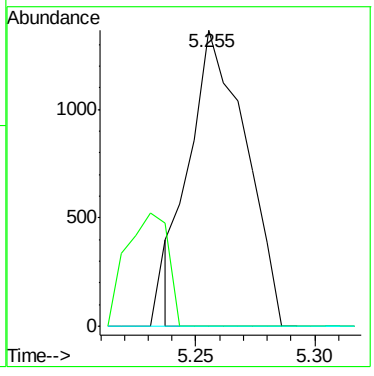


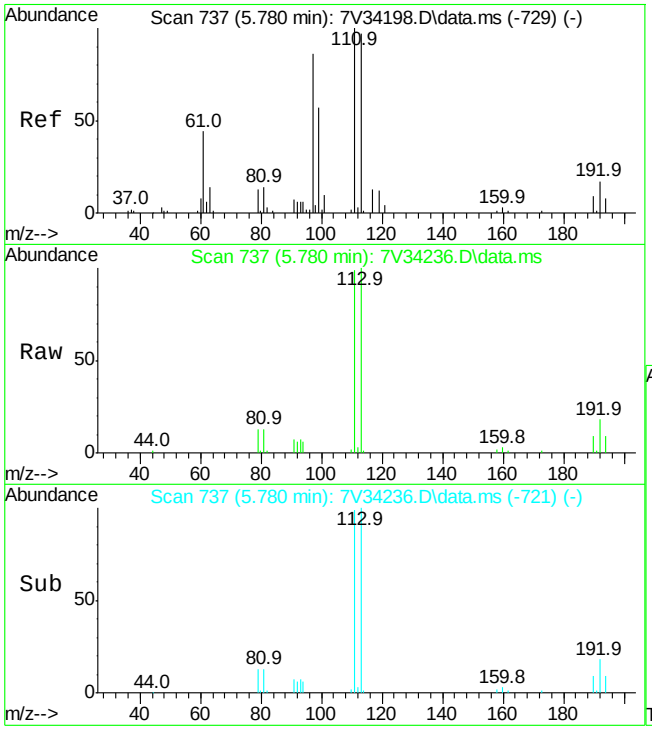


#31
Ethyl Acetate
Concen: 0.70 ug/L
RT: 5.255 min Scan# 651
Delta R.T. -0.074 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion: 43 Resp: 2215

Ion	Ratio	Lower	Upper
43	100		
61	0.0	0.0	33.9
45	0.0	0.0	35.1

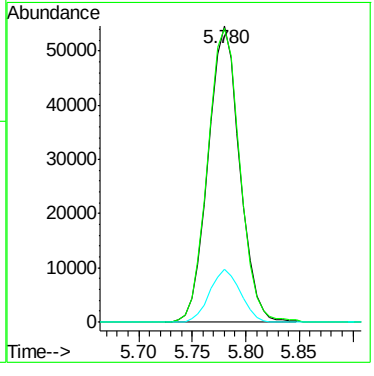


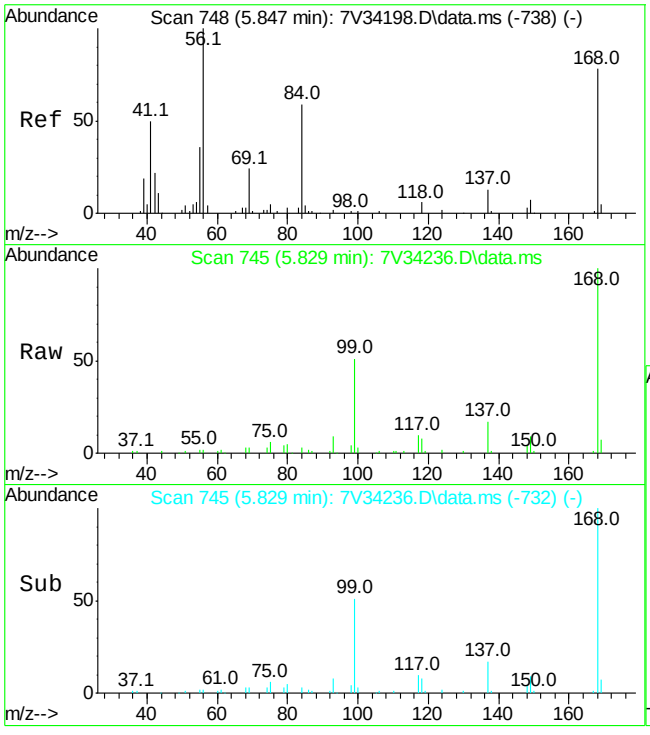


#35
Dibromofluoromethane
Concen: 48.96 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion:113 Resp: 111466

Ion	Ratio	Lower	Upper
113	100		
111	101.0	82.9	122.9
192	17.3	0.0	36.9

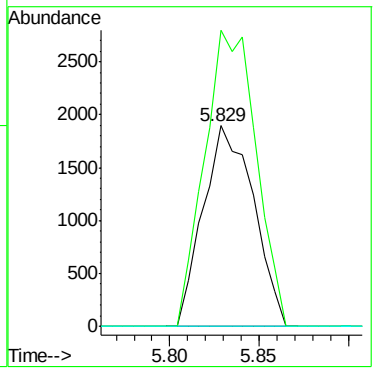


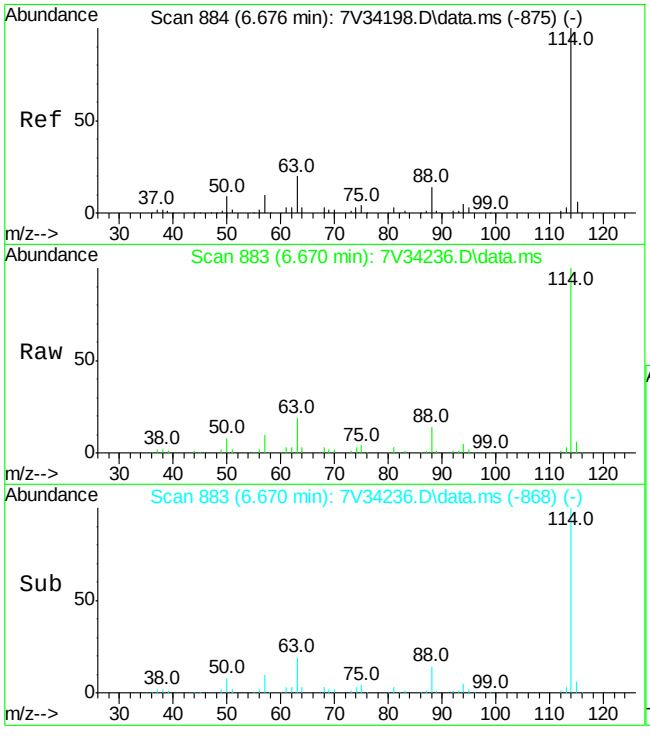


#37
Cyclohexane
Concen: 0.73 ug/L
RT: 5.829 min Scan# 745
Delta R.T. -0.018 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion: 56 Resp: 3705

Ion	Ratio	Lower	Upper
56	100		
84	151.7	40.6	80.6#
41	0.0	30.3	70.3#

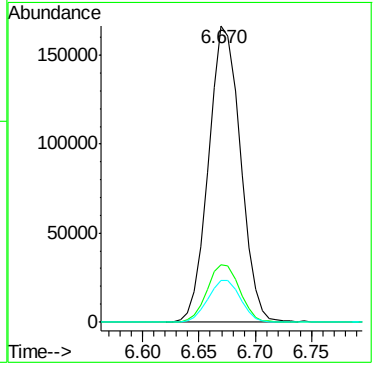


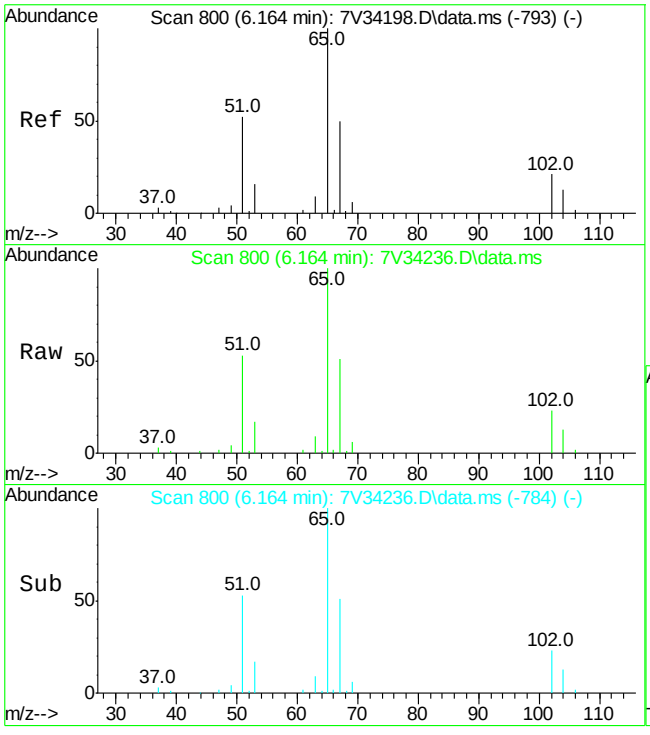


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.670 min Scan# 883
Delta R.T. -0.006 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion:114 Resp: 326560

Ion	Ratio	Lower	Upper
114	100		
63	19.8	0.0	39.6
88	14.3	0.0	34.3

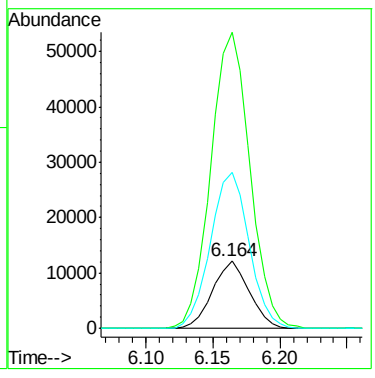


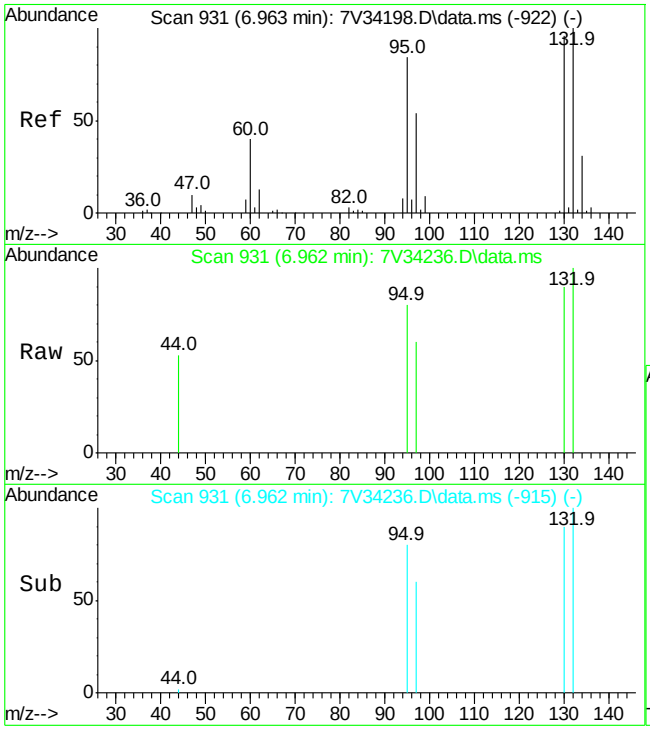


#41
1,2-Dichloroethane-d4
Concen: 49.22 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion:102 Resp: 23032

Ion	Ratio	Lower	Upper
102	100		
65	469.8	469.5	509.5
51	245.3	232.7	272.7

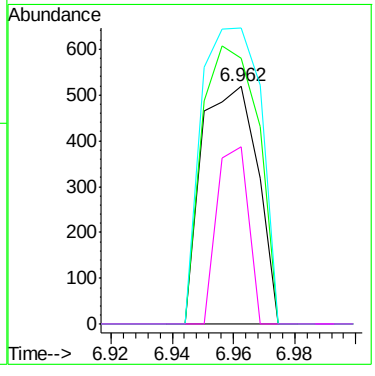


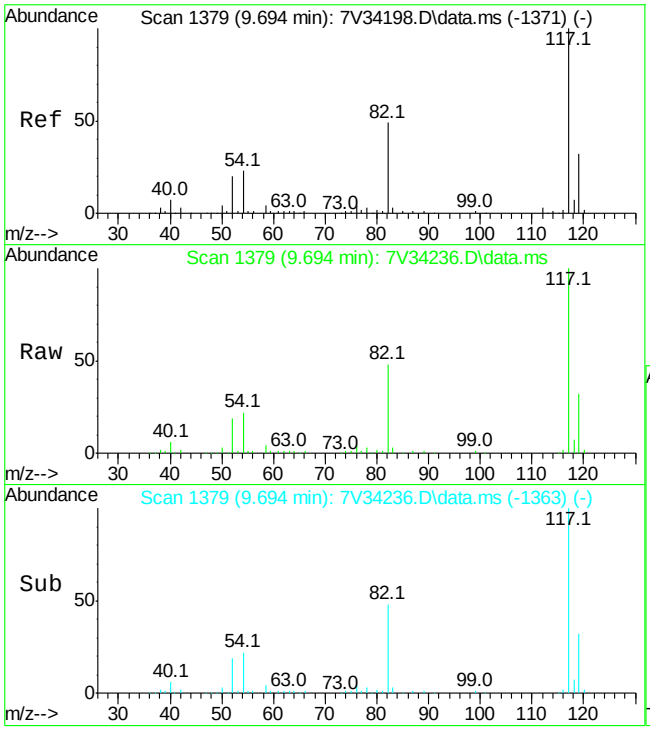


#47
Trichloroethene
Concen: 0.27 ug/L
RT: 6.962 min Scan# 931
Delta R.T. -0.001 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion: 95 Resp: 654

Ion	Ratio	Lower	Upper
95	100		
130	117.7	93.2	133.2
132	132.6	95.9	135.9
97	41.9	44.9	84.9#

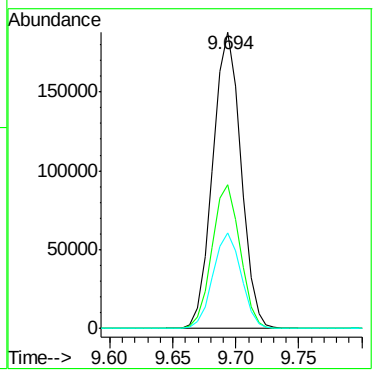


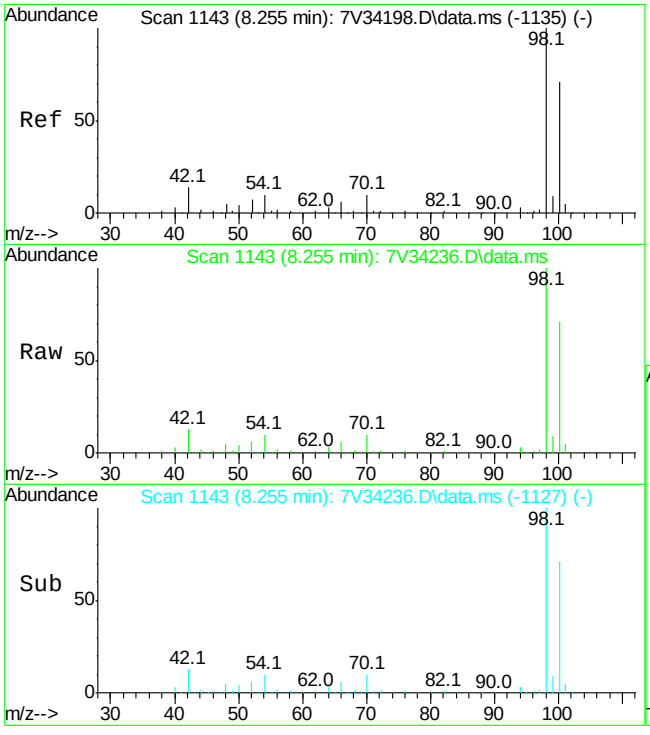


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion:117 Resp: 290235

Ion	Ratio	Lower	Upper
117	100		
82	48.2	28.7	68.7
119	32.2	12.2	52.2

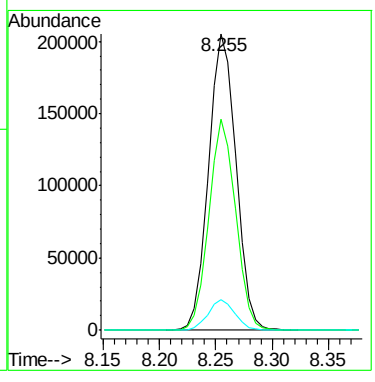


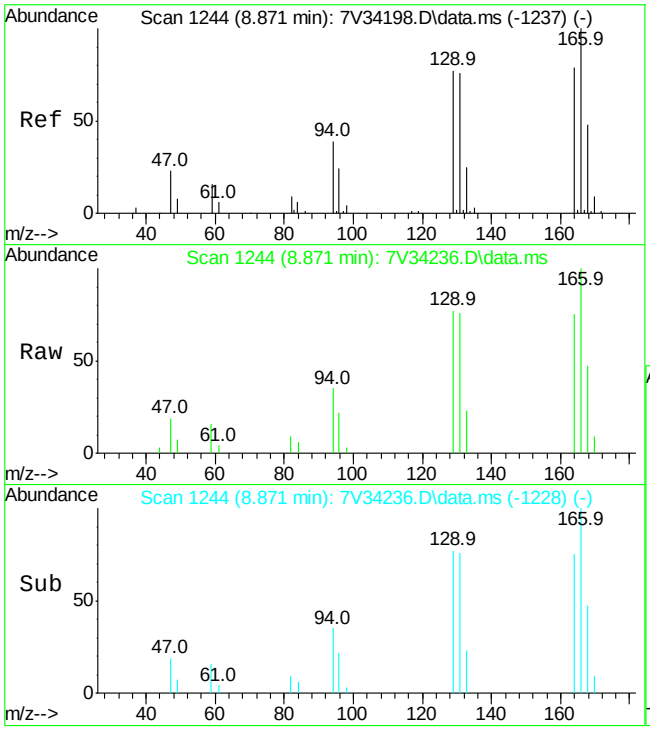


#56
Toluene-d8
Concen: 49.39 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion: 98 Resp: 344685

Ion	Ratio	Lower	Upper
98	100		
100	69.4	49.8	89.8
70	9.9	0.0	30.1

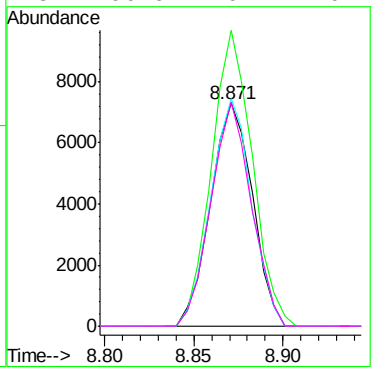


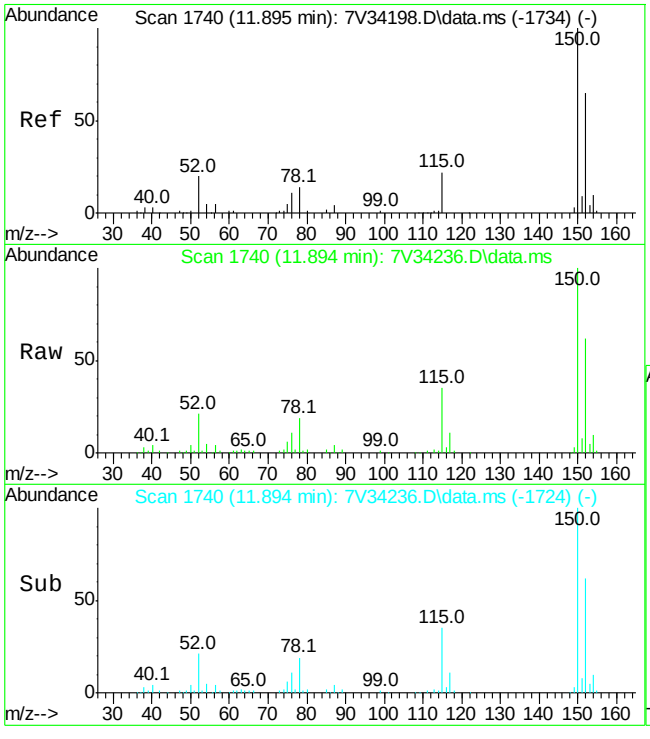


#60
Tetrachloroethene
Concen: 6.17 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion:164 Resp: 11844

Ion	Ratio	Lower	Upper
164	100		
166	129.1	107.5	147.5
129	99.8	76.8	116.8
131	96.9	76.4	116.4

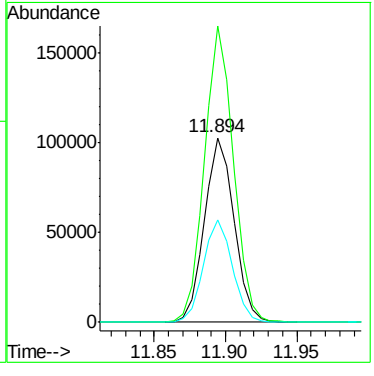


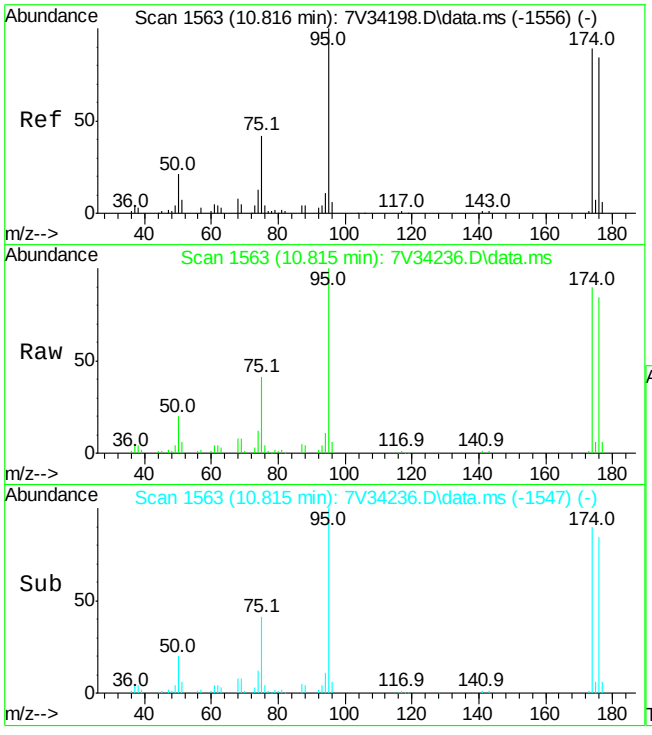


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion:152 Resp: 147444

Ion	Ratio	Lower	Upper
152	100		
150	157.4	154.9	194.9
115	54.4	34.6	74.6

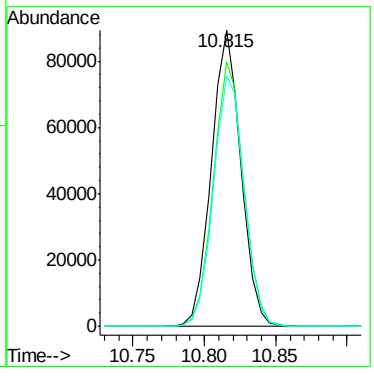




#76
4-Bromofluorobenzene
Concen: 49.97 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34236.D
Acq: 1 Jun 2016 6:08 pm

Tgt Ion: 95 Resp: 128288

Ion	Ratio	Lower	Upper
95	100		
174	91.8	70.3	110.3
176	87.7	67.4	107.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34237.D
Acq On : 1 Jun 2016 6:32 pm
Operator : amandaj
Sample : D83090-2
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 02 12:01:12 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

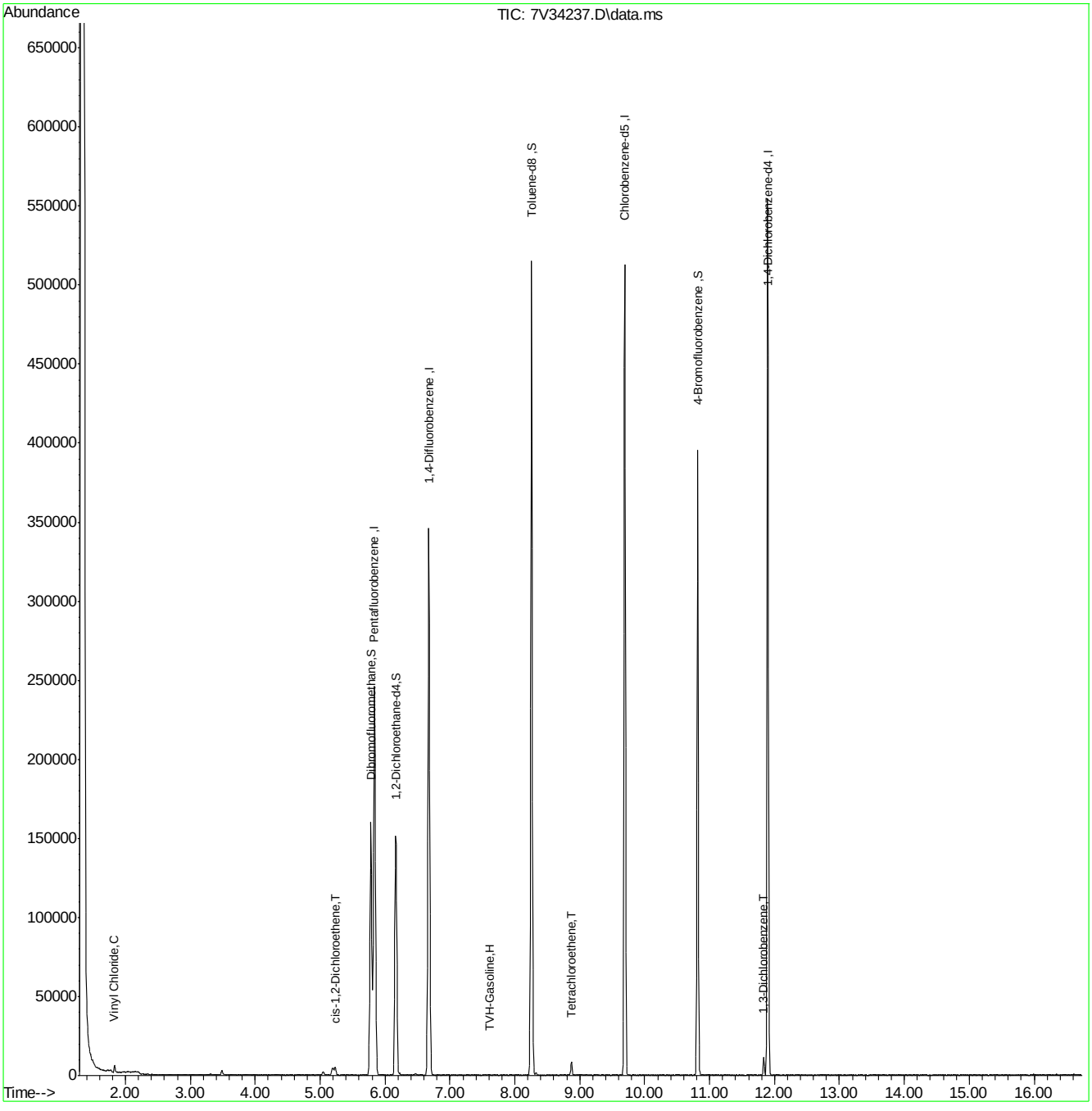
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	198819	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	313529	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	270376	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	144922	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.786	113	108872	50.46	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 100.92%			
41) 1,2-Dichloroethane-d4	6.170	102	22672	50.47	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 100.94%			
56) Toluene-d8	8.255	98	321310	49.42	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 98.84%			
76) 4-Bromofluorobenzene	10.816	95	122505	48.55	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 97.10%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	128980m	13.56	ug/L	
5) Vinyl Chloride	1.829	62	4450	2.12	ug/L	100
29) cis-1,2-Dichloroethene	5.231	96	2116	0.91	ug/L	90
60) Tetrachloroethene	8.871	164	1899	1.06	ug/L	94
89) 1,3-Dichlorobenzene	11.834	146	5731	1.17	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

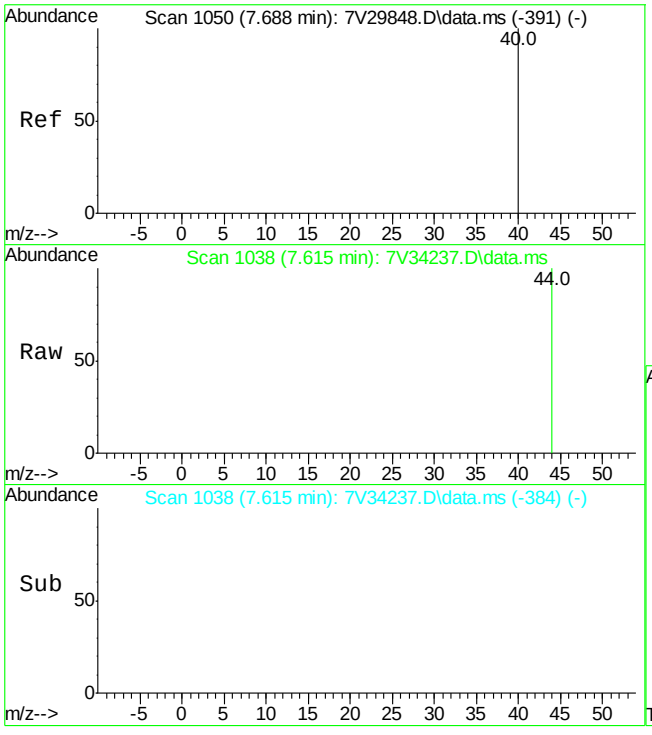
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34237.D
Acq On : 1 Jun 2016 6:32 pm
Operator : amandaj
Sample : D83090-2
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 02 12:01:12 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

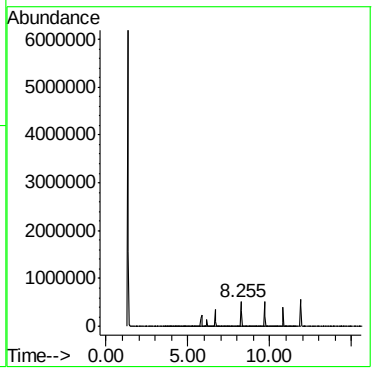


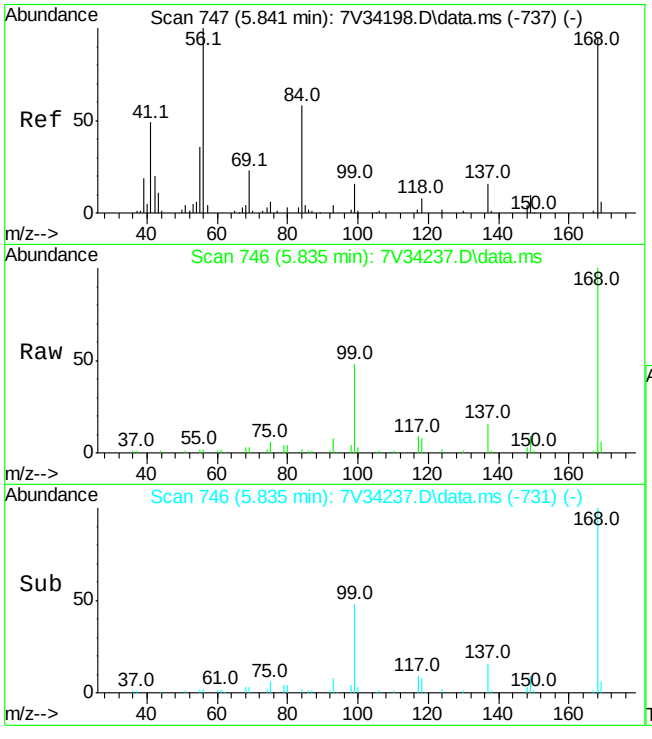
V7V1839F.M Thu Jun 02 12:59:35 2016 Page: 2



#1
TVH-Gasoline
Concen: 13.56 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion:TIC Resp: 128980

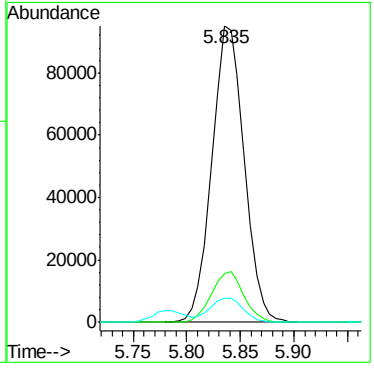


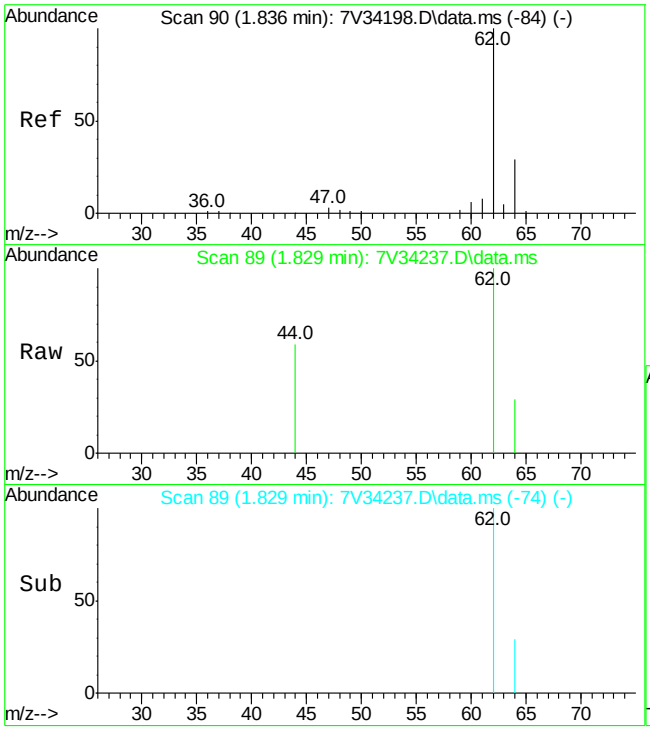


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion:168 Resp: 198819

Ion	Ratio	Lower	Upper
168	100		
137	16.9	0.0	36.8
93	8.3	0.0	28.3

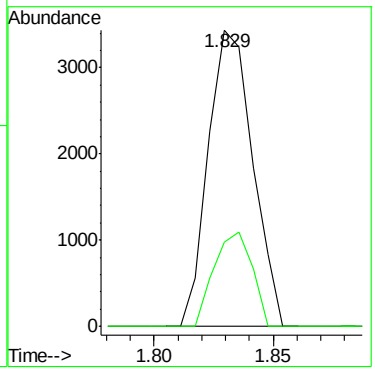


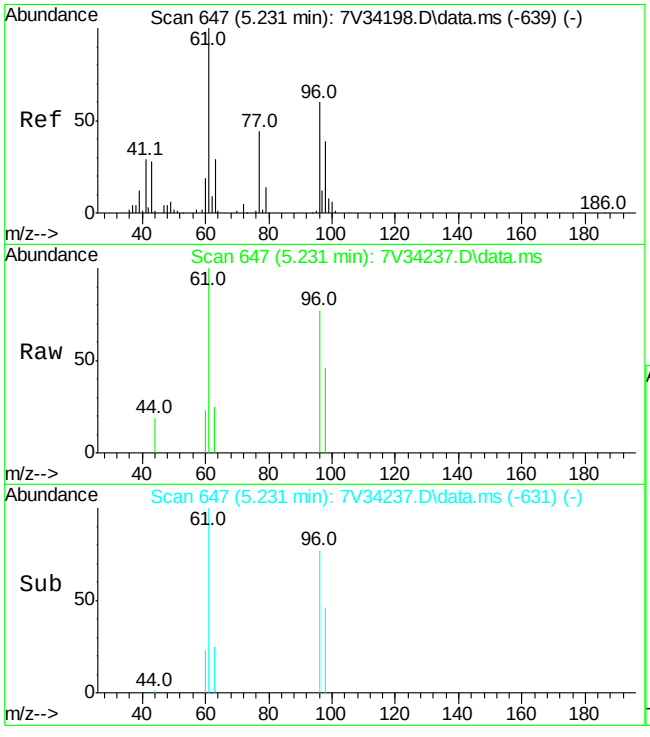


#5
Vinyl Chloride
Concen: 2.12 ug/L
RT: 1.829 min Scan# 89
Delta R.T. -0.007 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion: 62 Resp: 4450

Ion	Ratio	Lower	Upper
62	100		
64	28.5	8.5	48.5

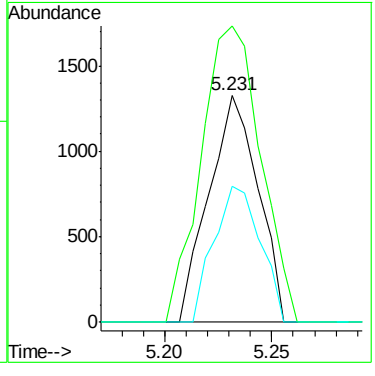


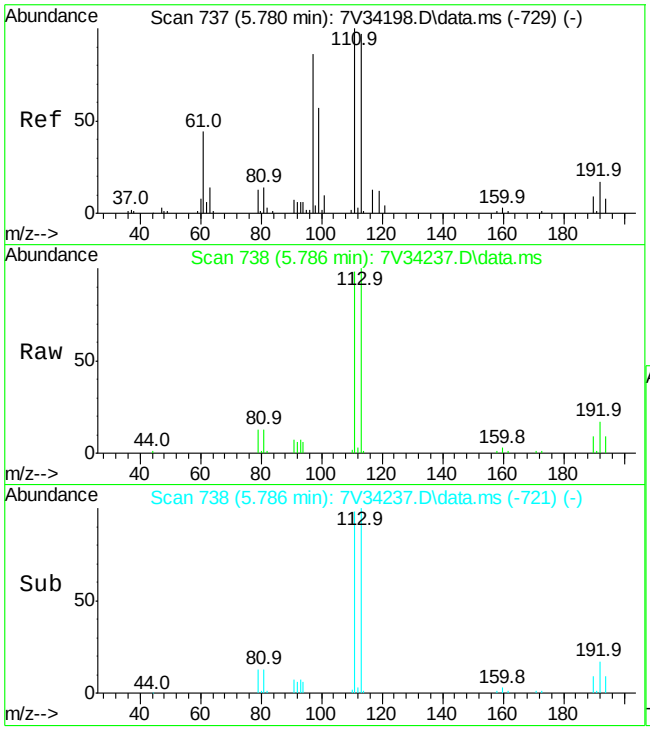


#29
cis-1,2-Dichloroethene
Concen: 0.91 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion: 96 Resp: 2116

Ion	Ratio	Lower	Upper
96	100		
61	158.0	151.8	191.8
98	56.6	44.4	84.4

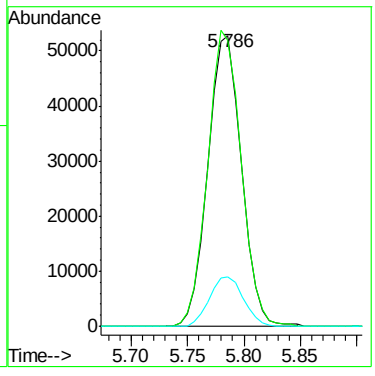


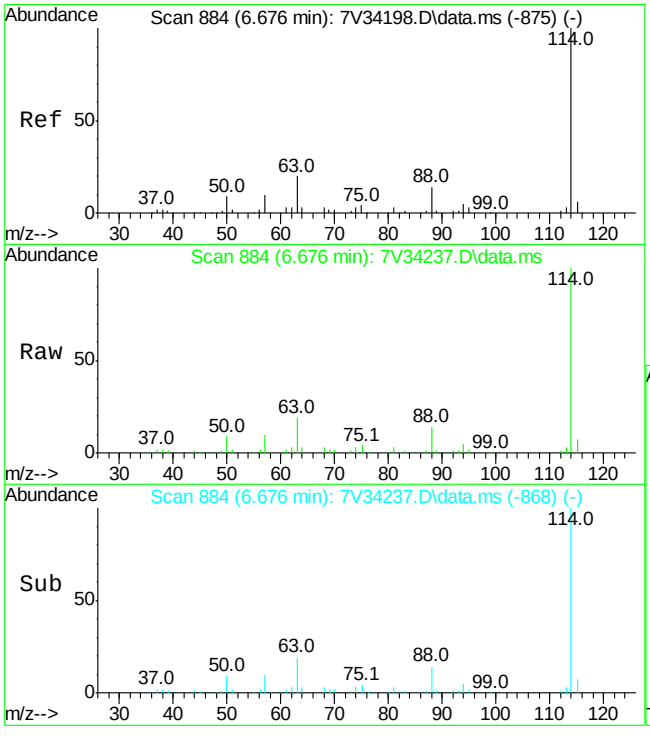


#35
Dibromofluoromethane
Concen: 50.46 ug/L
RT: 5.786 min Scan# 738
Delta R.T. 0.006 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion:113 Resp: 108872

Ion	Ratio	Lower	Upper
113	100		
111	101.3	82.9	122.9
192	17.2	0.0	36.9

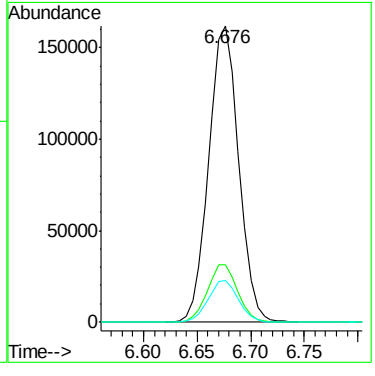


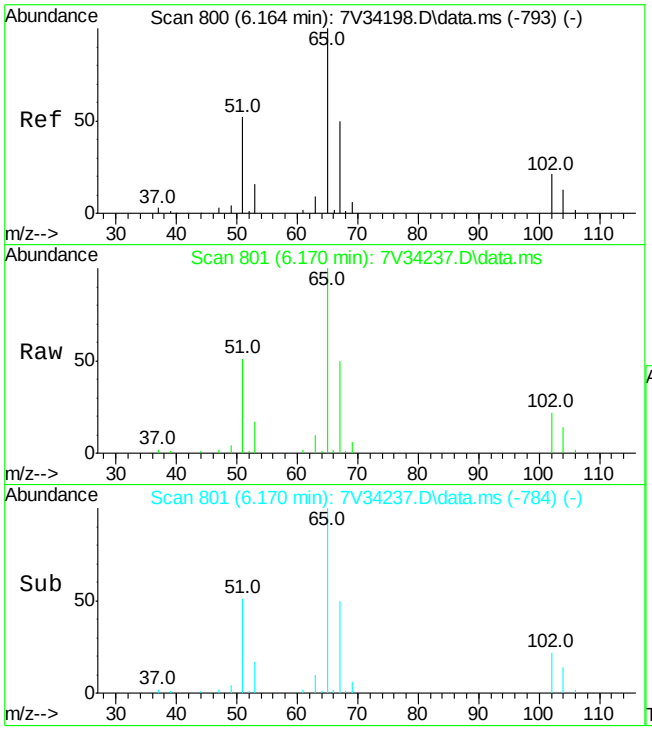


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. 0.000 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion:114 Resp: 313529

Ion	Ratio	Lower	Upper
114	100		
63	19.4	0.0	39.6
88	14.0	0.0	34.3

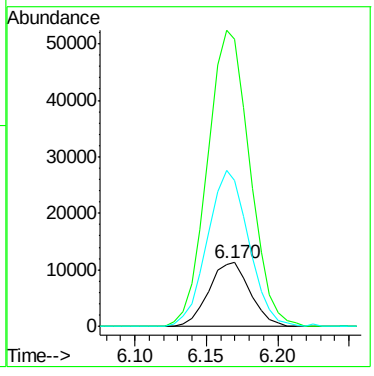


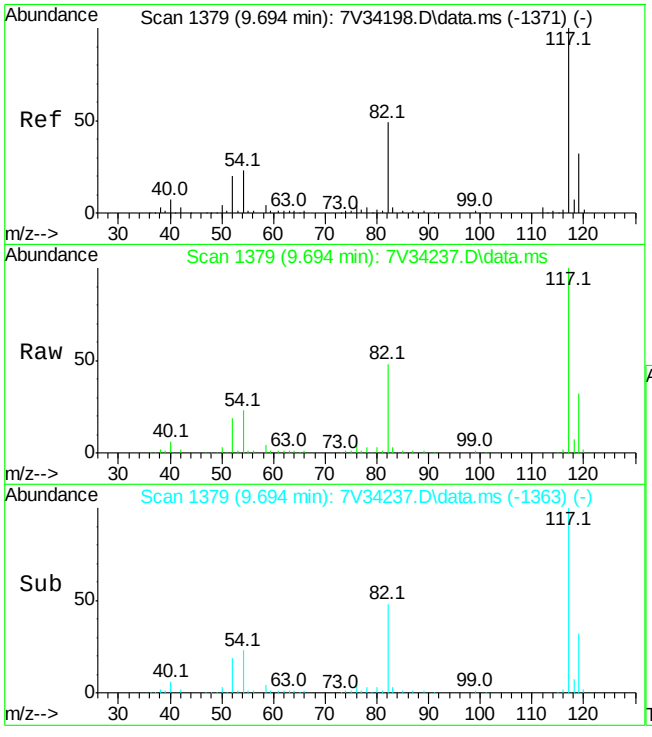


#41
1,2-Dichloroethane-d4
Concen: 50.47 ug/L
RT: 6.170 min Scan# 801
Delta R.T. 0.006 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion:102 Resp: 22672

Ion	Ratio	Lower	Upper
102	100		
65	475.1	469.5	509.5
51	245.8	232.7	272.7

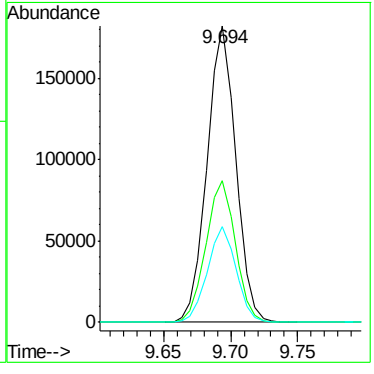


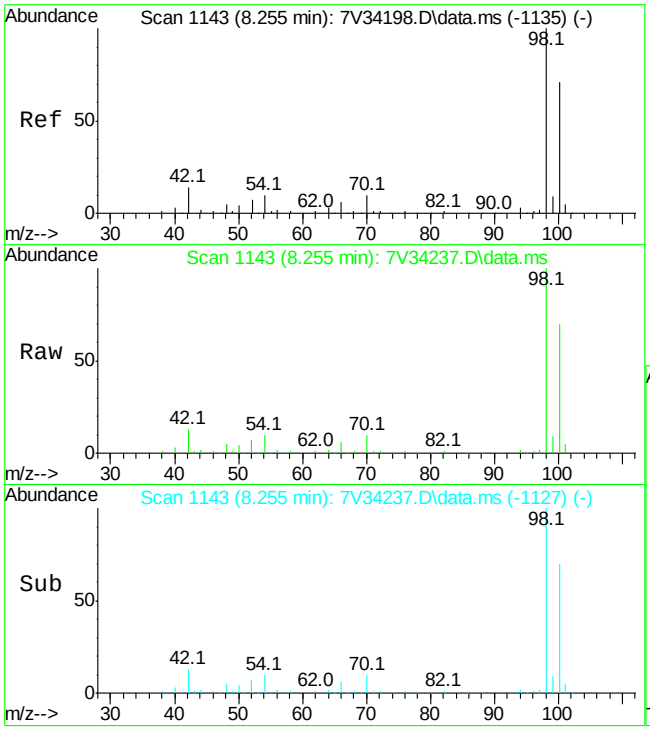


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. 0.000 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion:117 Resp: 270376

Ion	Ratio	Lower	Upper
117	100		
82	48.7	28.7	68.7
119	32.0	12.2	52.2

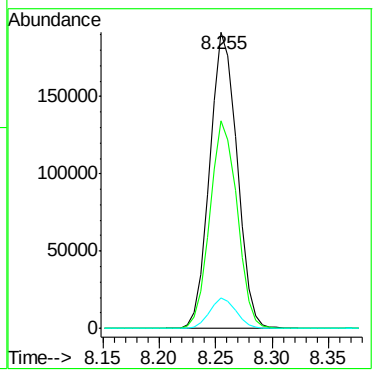


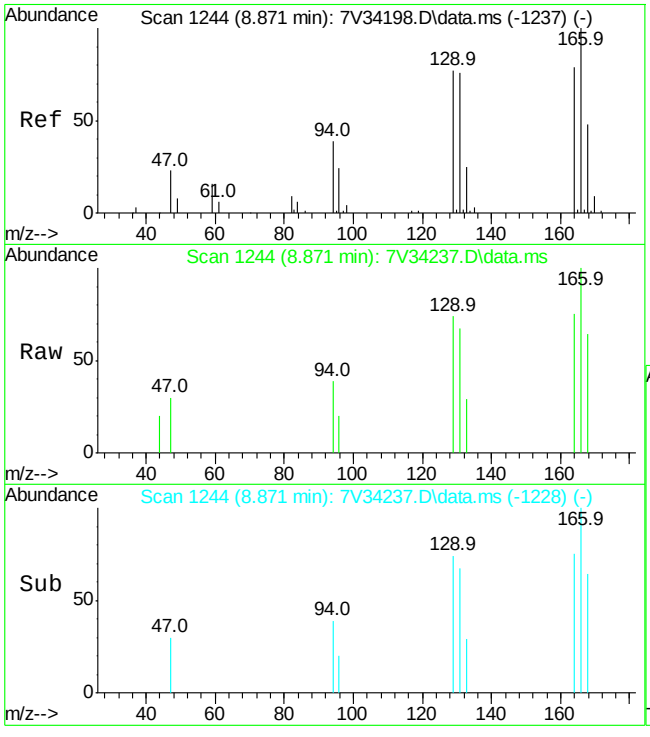


#56
Toluene-d8
Concen: 49.42 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. 0.000 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion: 98 Resp: 321310

Ion	Ratio	Lower	Upper
98	100		
100	69.8	49.8	89.8
70	9.9	0.0	30.1

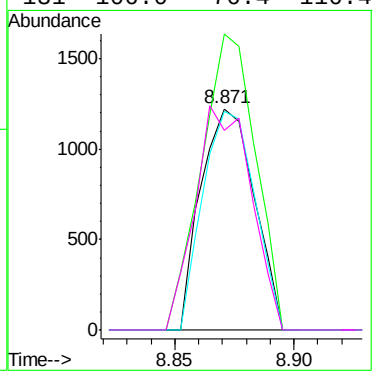


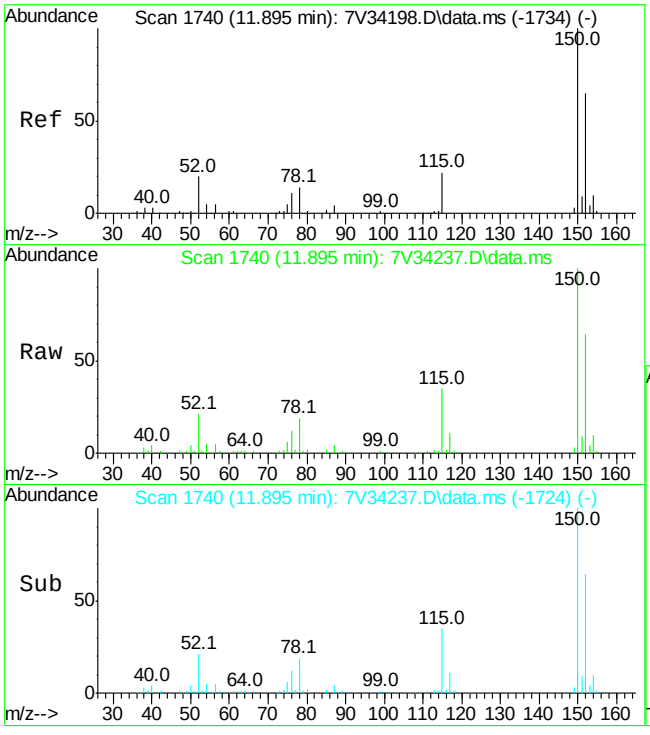


#60
Tetrachloroethene
Concen: 1.06 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion:164 Resp: 1899

Ion	Ratio	Lower	Upper
164	100		
166	135.6	107.5	147.5
129	96.2	76.8	116.8
131	106.0	76.4	116.4

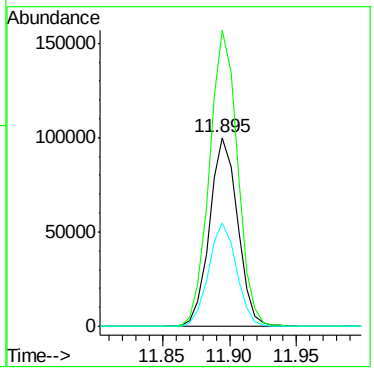


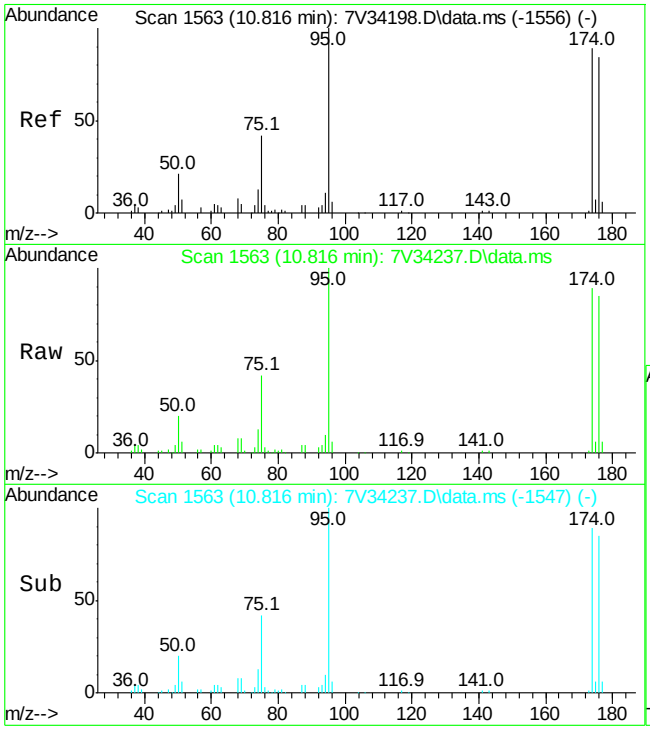


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. 0.000 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion:152 Resp: 144922

Ion	Ratio	Lower	Upper
152	100		
150	157.5	154.9	194.9
115	54.1	34.6	74.6

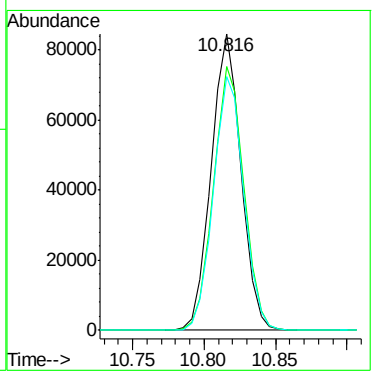


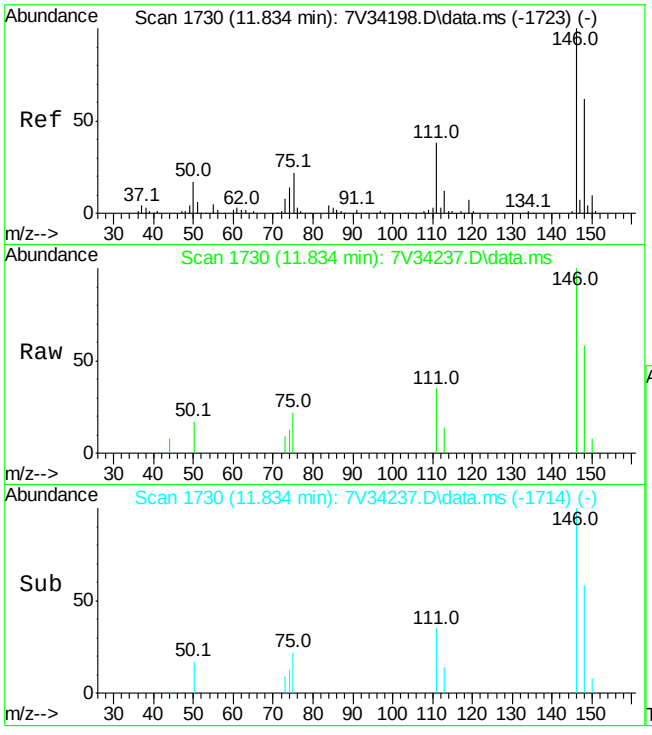


#76
4-Bromofluorobenzene
Concen: 48.55 ug/L
RT: 10.816 min Scan# 1563
Delta R.T. -0.000 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion: 95 Resp: 122505

Ion	Ratio	Lower	Upper
95	100		
174	90.7	70.3	110.3
176	87.2	67.4	107.4

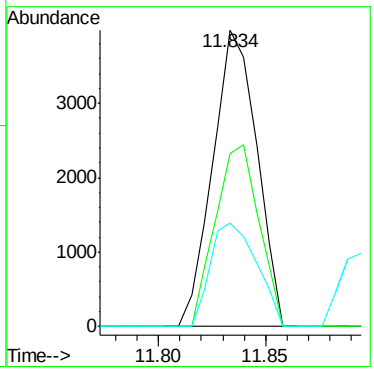




#89
1,3-Dichlorobenzene
Concen: 1.17 ug/L
RT: 11.834 min Scan# 1730
Delta R.T. -0.000 min
Lab File: 7V34237.D
Acq: 1 Jun 2016 6:32 pm

Tgt Ion:146 Resp: 5731

Ion	Ratio	Lower	Upper
146	100		
148	60.4	44.1	84.1
111	36.5	17.5	57.5



SGS ACCUTEST D83090

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34238.D
Acq On : 1 Jun 2016 6:55 pm
Operator : amandaj
Sample : D83090-3
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 02 12:02:14 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

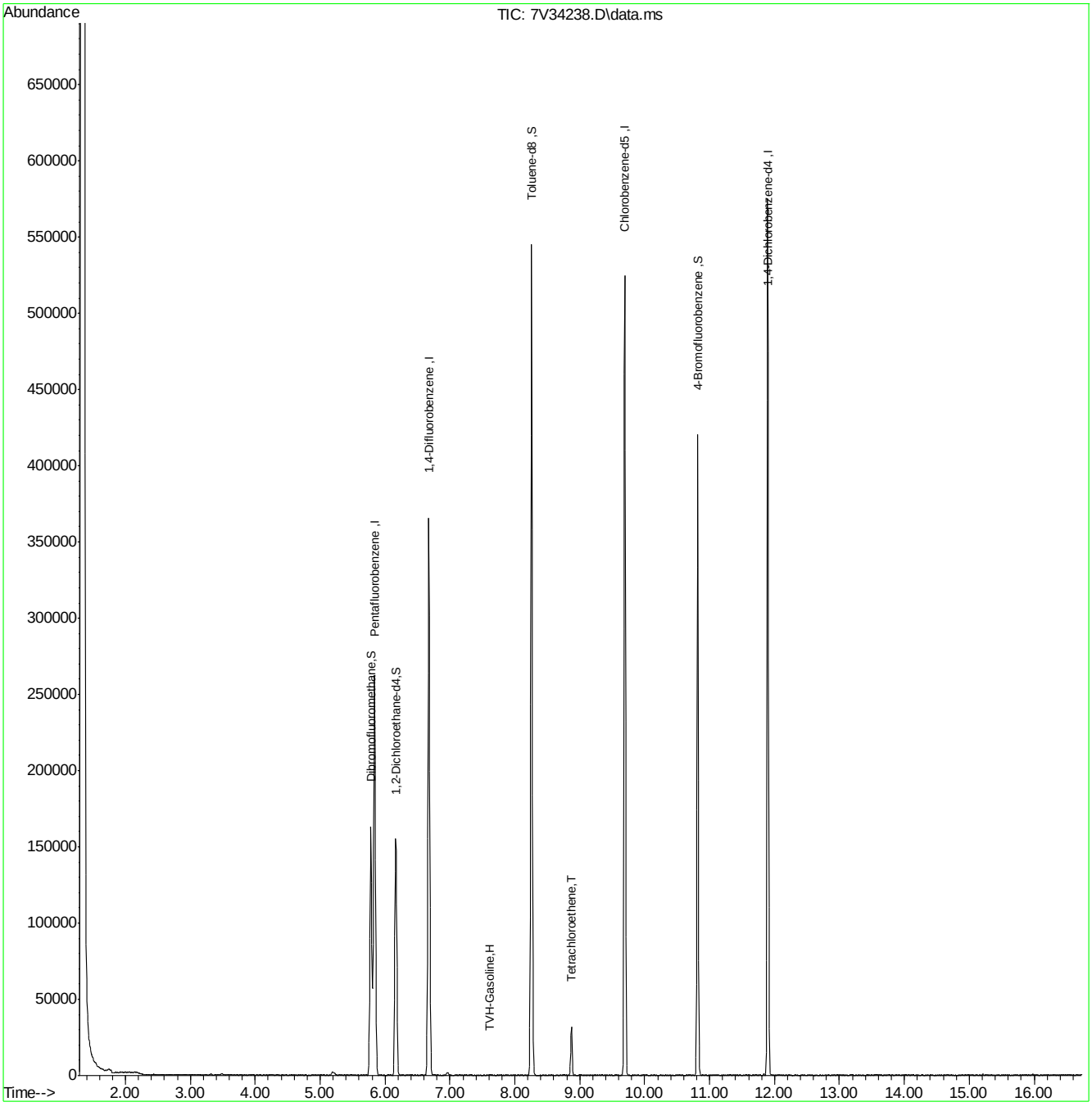
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.841	168	209476	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	328261	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	287583	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	147794	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	112001	49.26	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 98.52%			
41) 1,2-Dichloroethane-d4	6.164	102	22561	47.97	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 95.94%			
56) Toluene-d8	8.255	98	340186	49.19	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 98.38%			
76) 4-Bromofluorobenzene	10.815	95	128068	49.76	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 99.52%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	128781m	13.54	ug/L	
60) Tetrachloroethene	8.871	164	7842	4.13	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

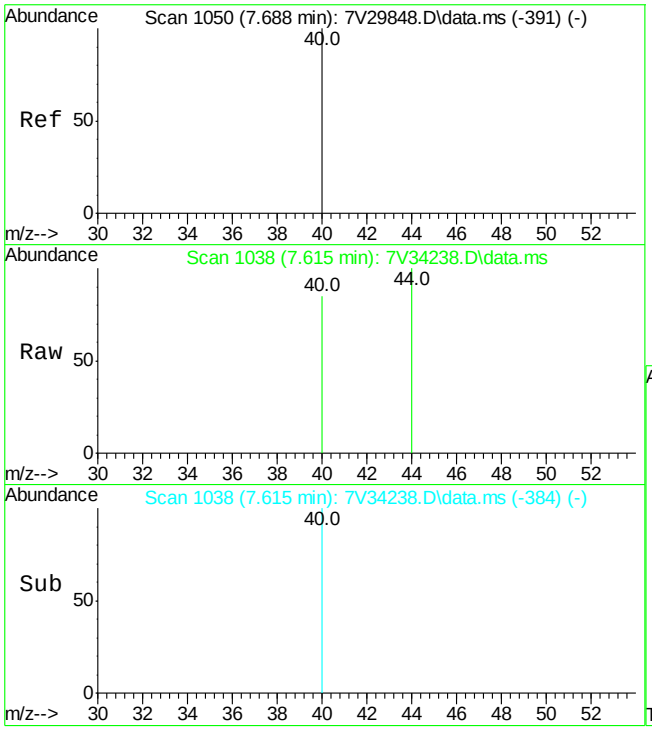
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34238.D
Acq On : 1 Jun 2016 6:55 pm
Operator : amandaj
Sample : D83090-3
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 02 12:02:14 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

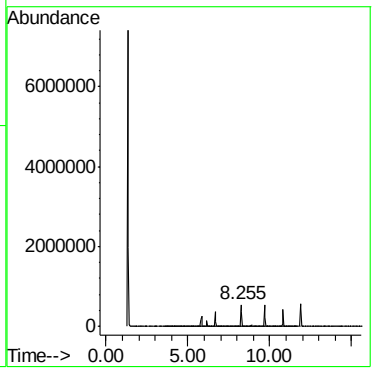


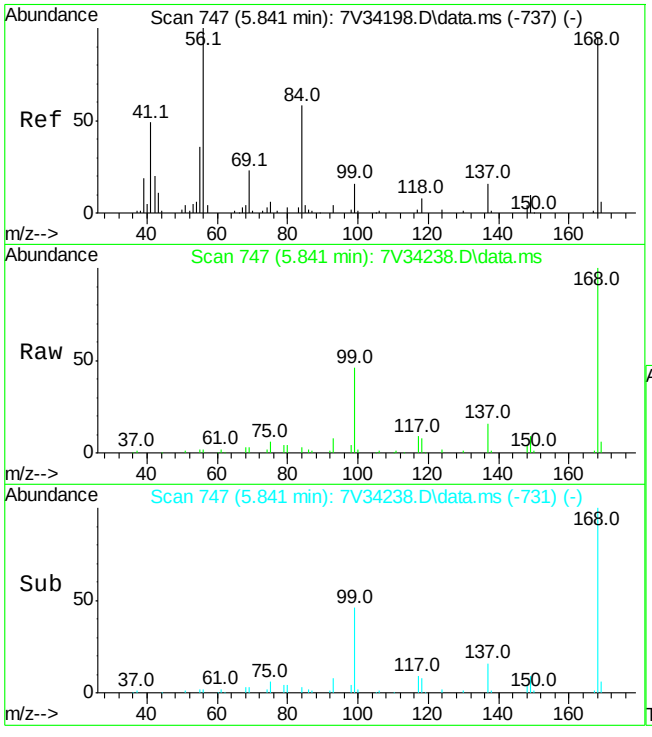
V7V1839F.M Thu Jun 02 12:59:41 2016 Page: 2



#1
TVH-Gasoline
Concen: 13.54 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34238.D
Acq: 1 Jun 2016 6:55 pm

Tgt Ion:TIC Resp: 128781

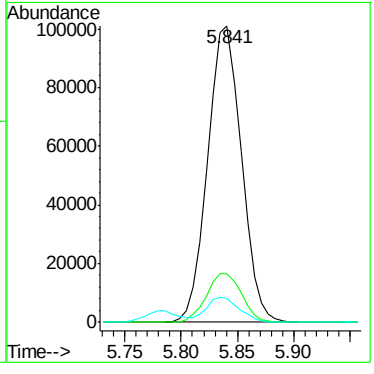


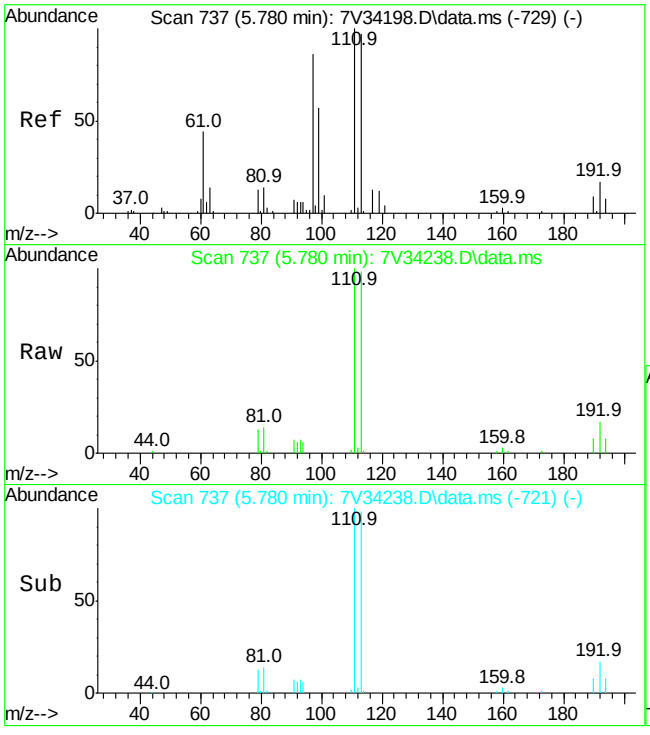


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.841 min Scan# 747
Delta R.T. -0.000 min
Lab File: 7V34238.D
Acq: 1 Jun 2016 6:55 pm

Tgt Ion:168 Resp: 209476

Ion	Ratio	Lower	Upper
168	100		
137	17.0	0.0	36.8
93	8.2	0.0	28.3

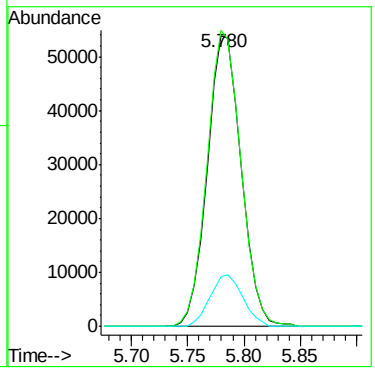


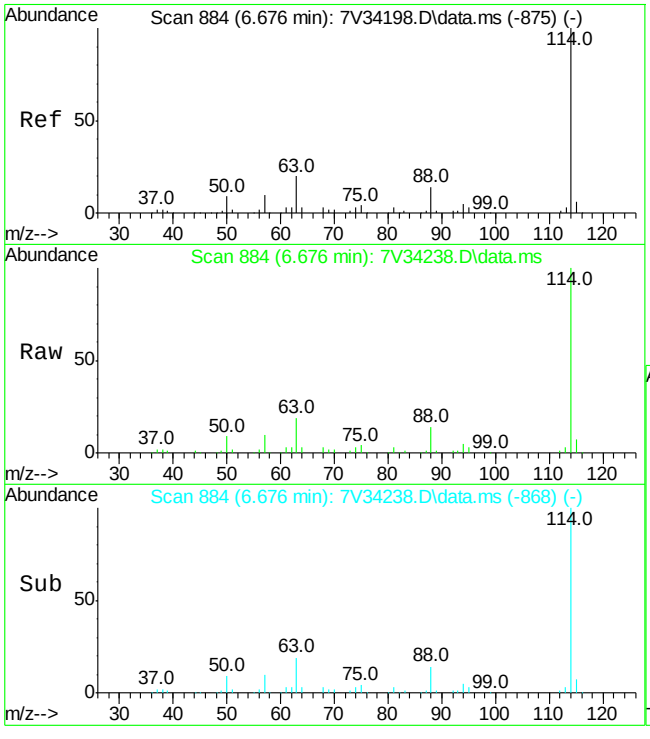


#35
Dibromofluoromethane
Concen: 49.26 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34238.D
Acq: 1 Jun 2016 6:55 pm

Tgt Ion:113 Resp: 112001

Ion	Ratio	Lower	Upper
113	100		
111	101.7	82.9	122.9
192	17.1	0.0	36.9

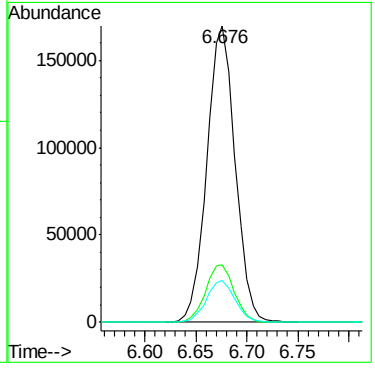


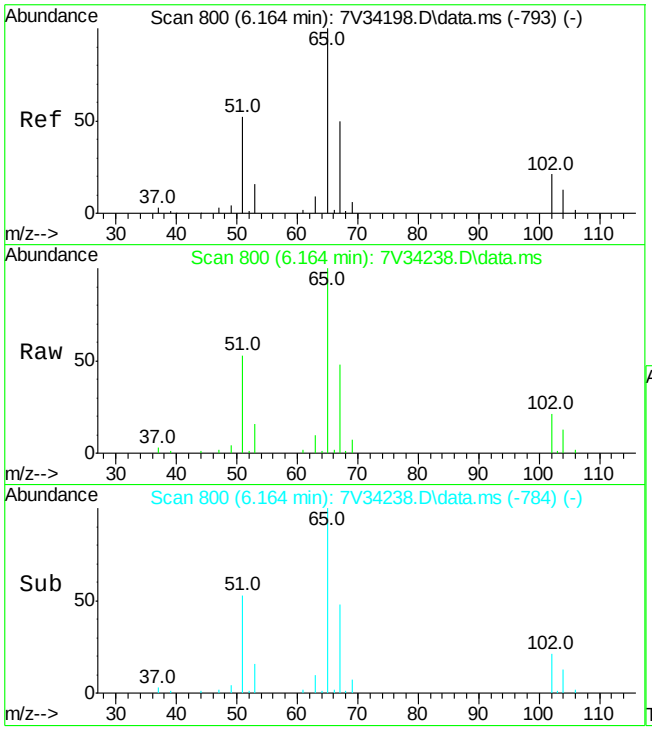


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34238.D
Acq: 1 Jun 2016 6:55 pm

Tgt Ion:114 Resp: 328261

Ion	Ratio	Lower	Upper
114	100		
63	19.4	0.0	39.6
88	14.0	0.0	34.3

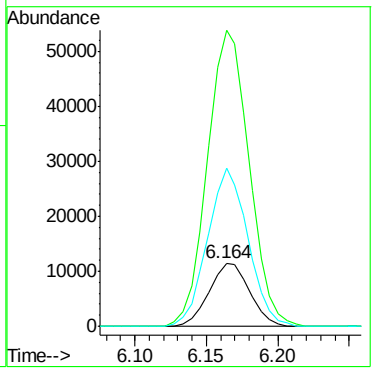


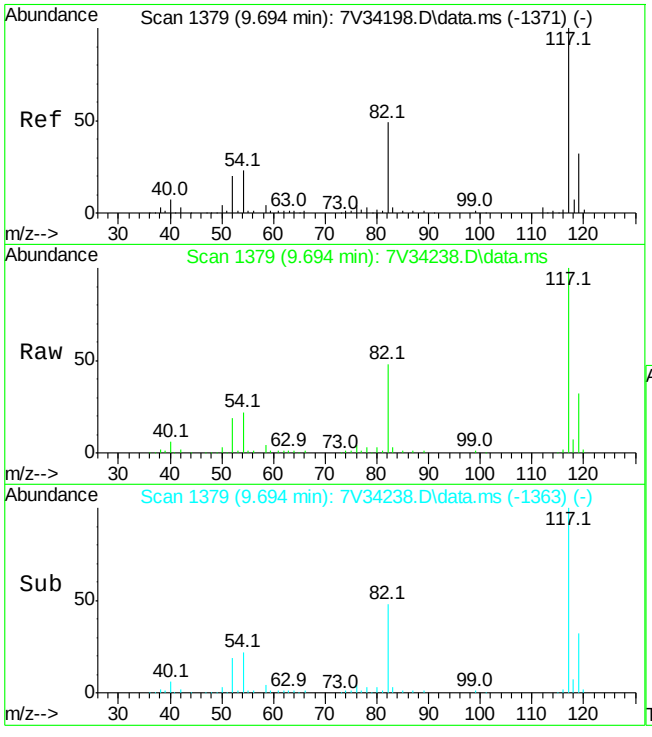


#41
1,2-Dichloroethane-d4
Concen: 47.97 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34238.D
Acq: 1 Jun 2016 6:55 pm

Tgt Ion:102 Resp: 22561

Ion	Ratio	Lower	Upper
102	100		
65	483.8	469.5	509.5
51	250.5	232.7	272.7

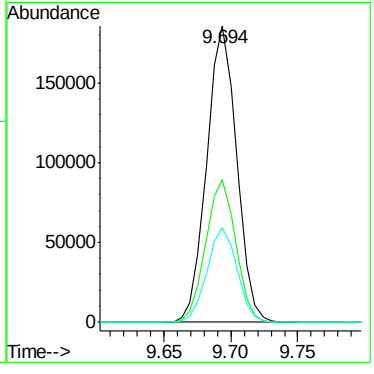




#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34238.D
Acq: 1 Jun 2016 6:55 pm

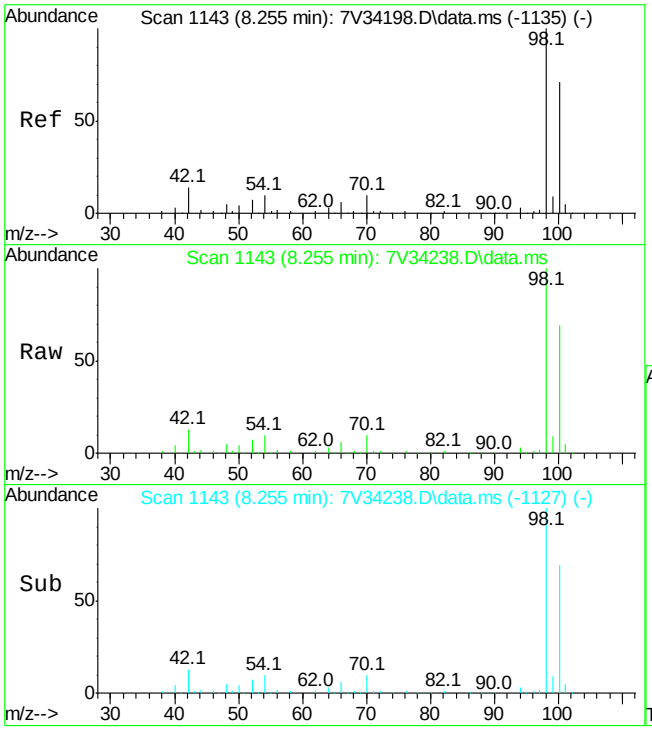
Tgt Ion:117 Resp: 287583

Ion	Ratio	Lower	Upper
117	100		
82	48.0	28.7	68.7
119	31.9	12.2	52.2



7.1.3

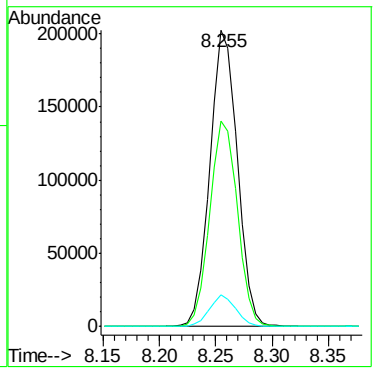
7

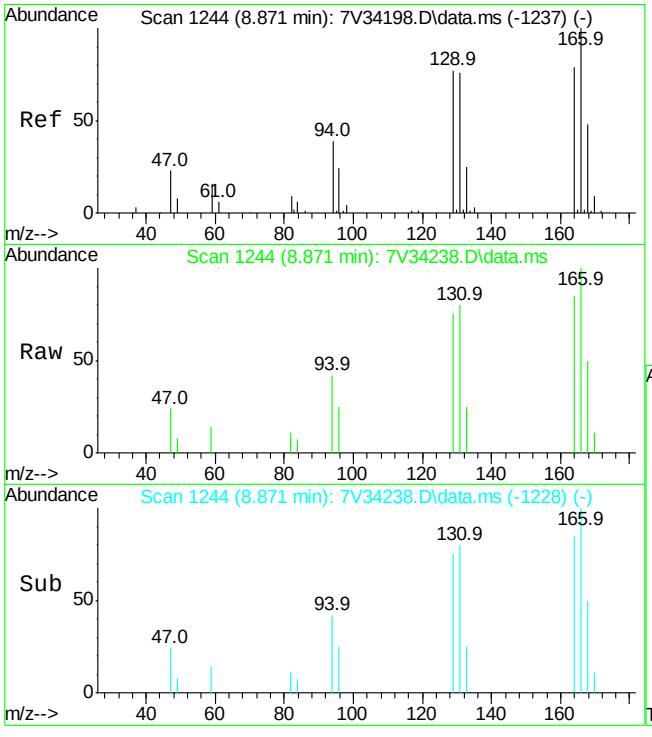


#56
Toluene-d8
Concen: 49.19 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34238.D
Acq: 1 Jun 2016 6:55 pm

Tgt Ion: 98 Resp: 340186

Ion	Ratio	Lower	Upper
98	100		
100	69.8	49.8	89.8
70	10.0	0.0	30.1

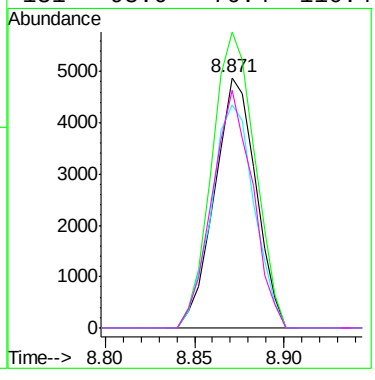




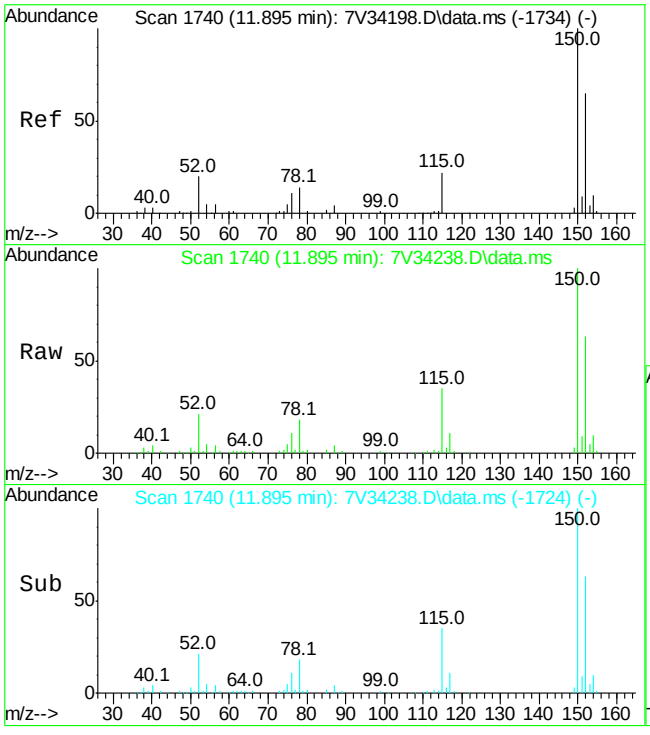
#60
Tetrachloroethene
Concen: 4.13 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34238.D
Acq: 1 Jun 2016 6:55 pm

Tgt Ion:164 Resp: 7842

Ion	Ratio	Lower	Upper
164	100		
166	123.3	107.5	147.5
129	93.0	76.8	116.8
131	93.0	76.4	116.4



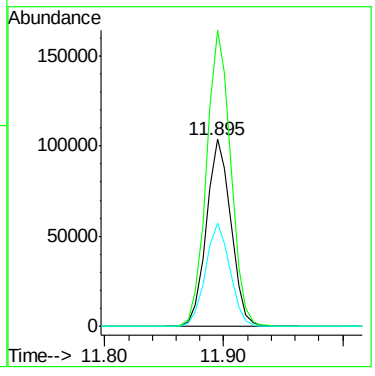
SGS ACCUTEST D83090

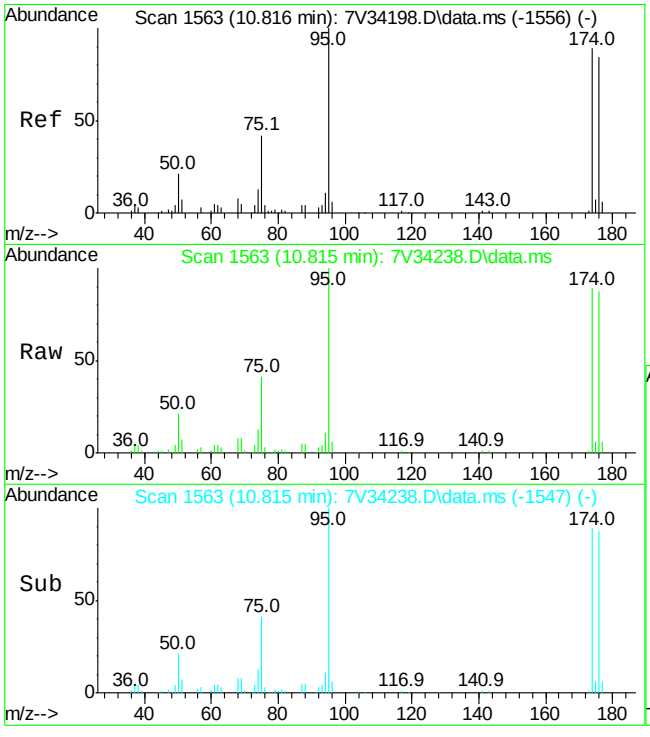


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34238.D
Acq: 1 Jun 2016 6:55 pm

Tgt Ion:152 Resp: 147794

Ion	Ratio	Lower	Upper
152	100		
150	156.9	154.9	194.9
115	55.0	34.6	74.6

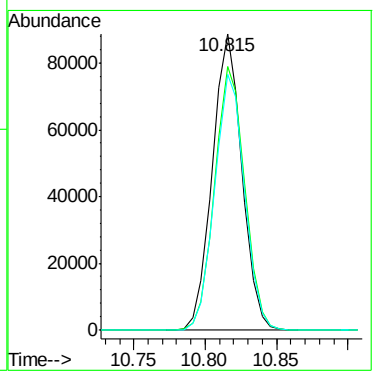




#76
4-Bromofluorobenzene
Concen: 49.76 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34238.D
Acq: 1 Jun 2016 6:55 pm

Tgt Ion: 95 Resp: 128068

Ion	Ratio	Lower	Upper
95	100		
174	90.4	70.3	110.3
176	87.1	67.4	107.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34239.D
Acq On : 1 Jun 2016 7:19 pm
Operator : amandaj
Sample : D83090-4
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 02 12:03:05 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	208119	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	330130	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	289625	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	153023	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	113509	50.25	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 100.50%			
41) 1,2-Dichloroethane-d4	6.164	102	23851	50.42	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 100.84%			
56) Toluene-d8	8.255	98	346226	49.71	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.42%			
76) 4-Bromofluorobenzene	10.815	95	131361	49.30	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 98.60%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	167005m	17.56	ug/L	
29) cis-1,2-Dichloroethene	5.231	96	5188	2.14	ug/L	93
47) Trichloroethene	6.963	95	2016	0.81	ug/L	99
60) Tetrachloroethene	8.877	164	11251	5.88	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.1.4

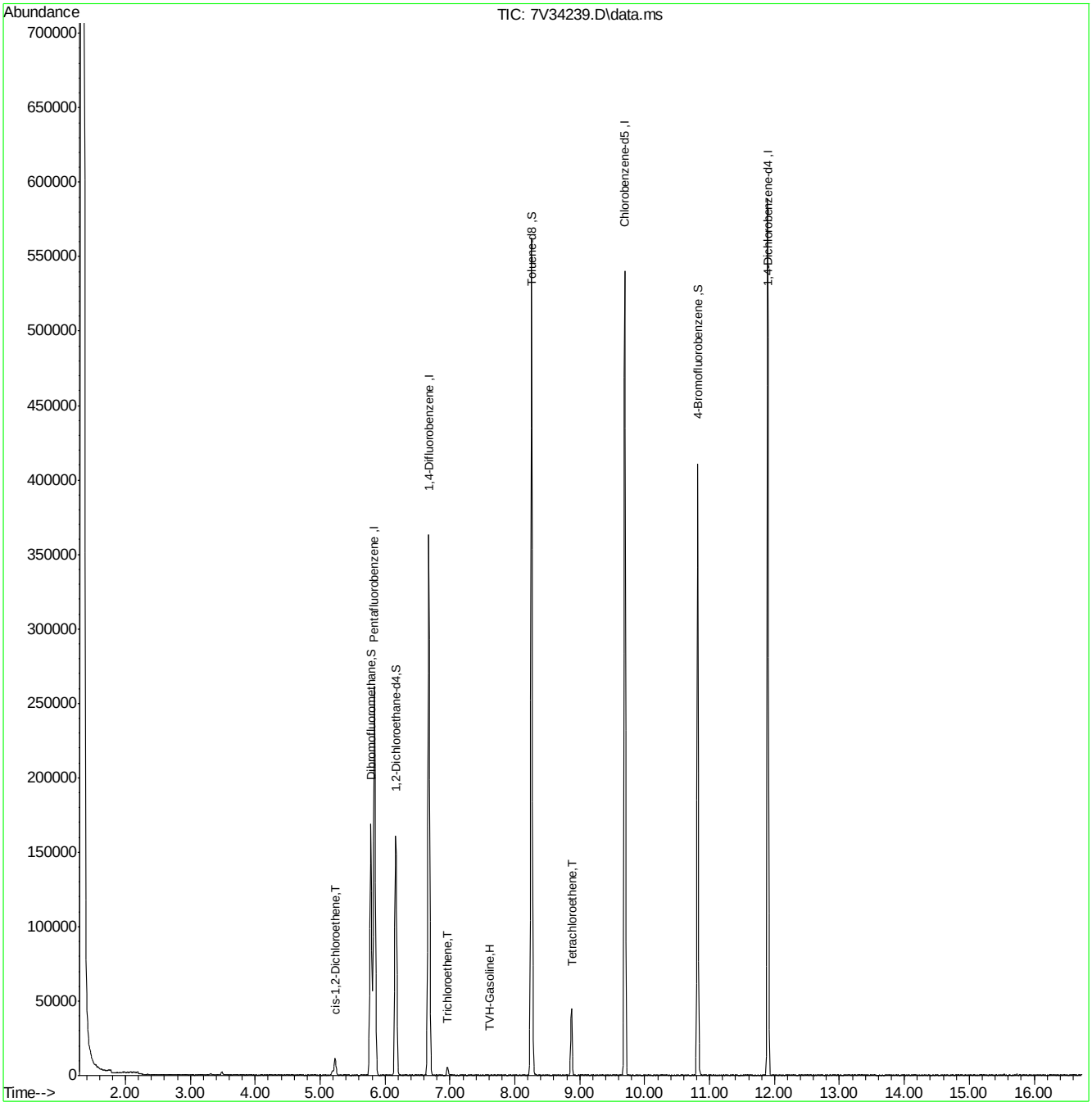
7

SGS ACCUTEST D83090

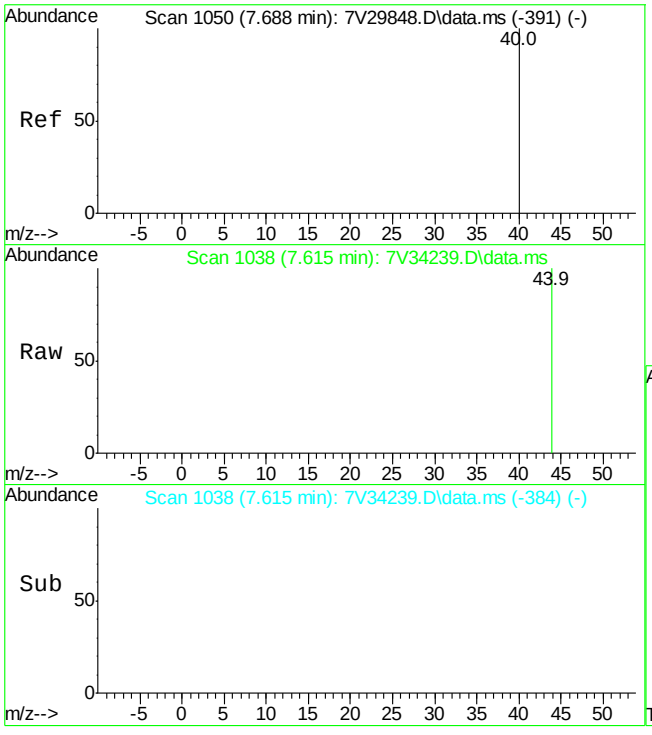
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34239.D
Acq On : 1 Jun 2016 7:19 pm
Operator : amandaj
Sample : D83090-4
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 02 12:03:05 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

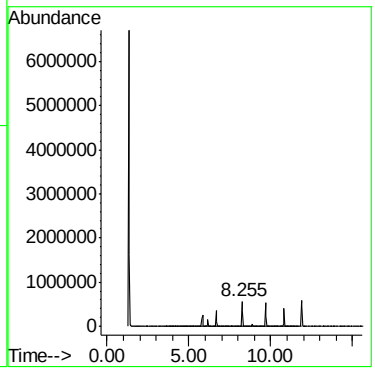


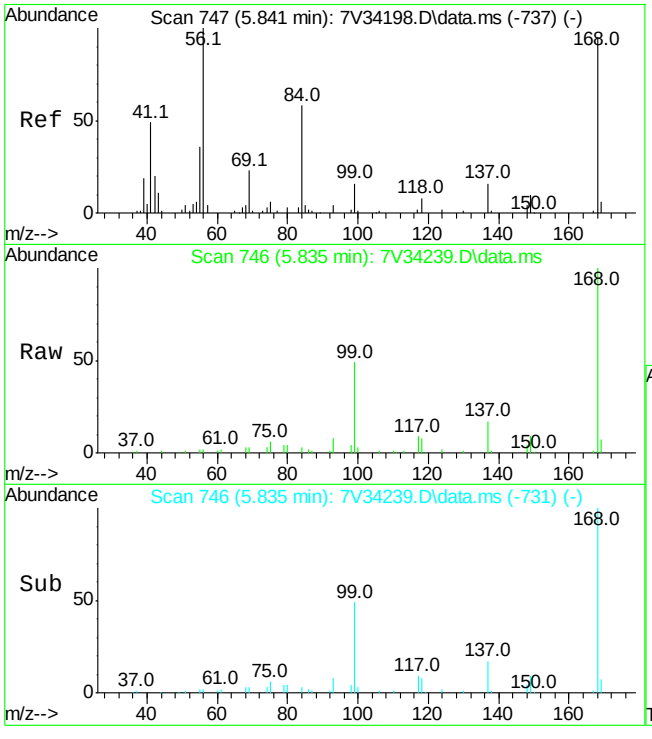
V7V1839F.M Thu Jun 02 12:59:46 2016 Page: 2



#1
TVH-Gasoline
Concen: 17.56 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion:TIC Resp: 167005

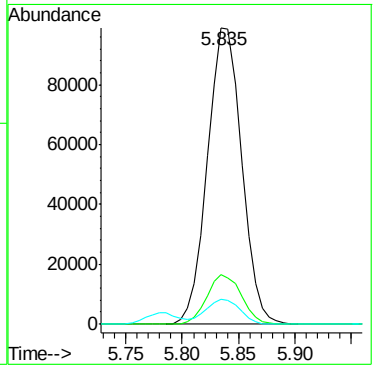


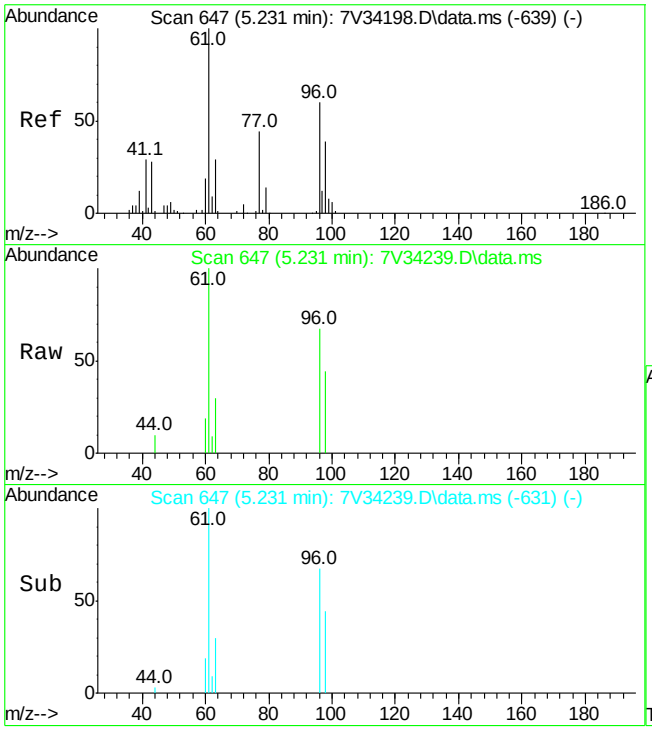


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion:168 Resp: 208119

Ion	Ratio	Lower	Upper
168	100		
137	16.8	0.0	36.8
93	8.3	0.0	28.3

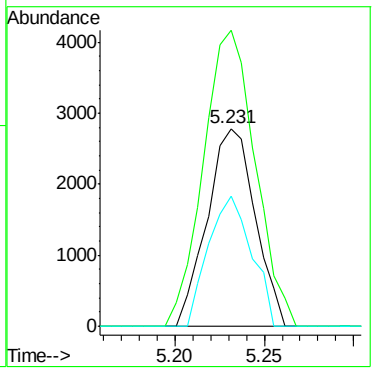


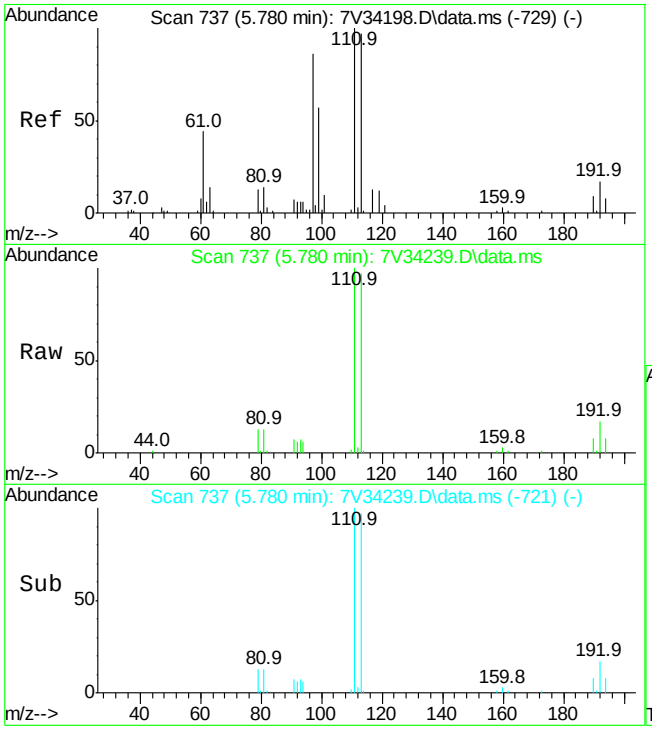


#29
cis-1,2-Dichloroethene
Concen: 2.14 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion: 96 Resp: 5188

Ion	Ratio	Lower	Upper
96	100		
61	161.8	151.8	191.8
98	59.3	44.4	84.4

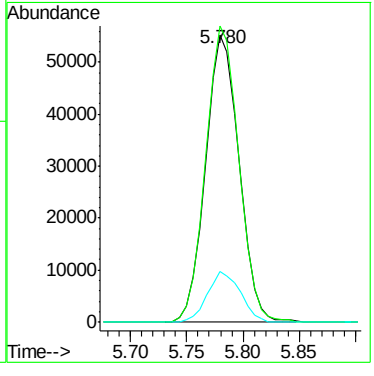


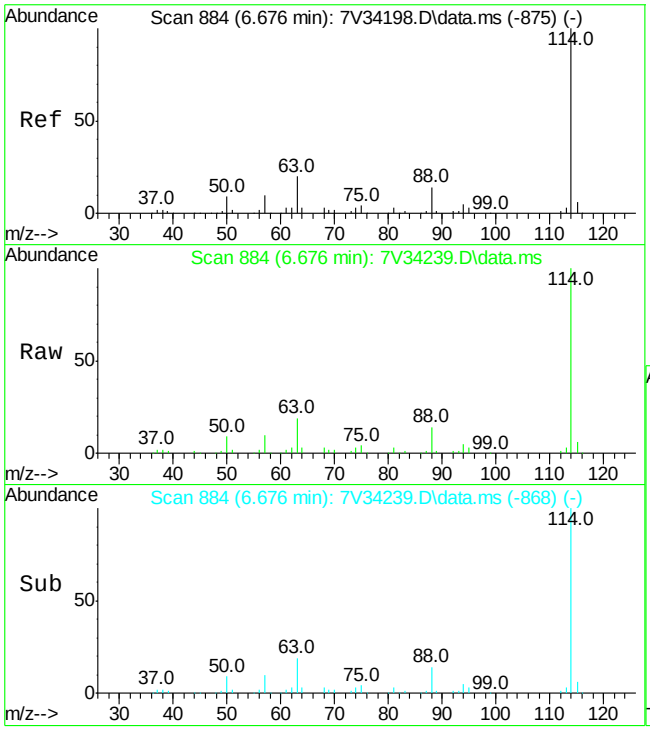


#35
Dibromofluoromethane
Concen: 50.25 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion:113 Resp: 113509

Ion	Ratio	Lower	Upper
113	100		
111	102.1	82.9	122.9
192	17.1	0.0	36.9

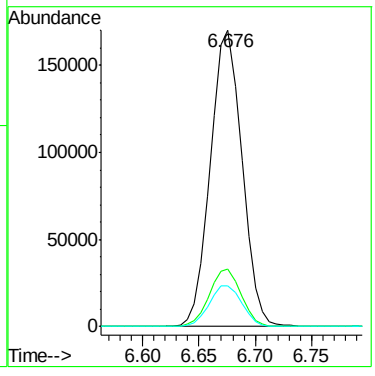


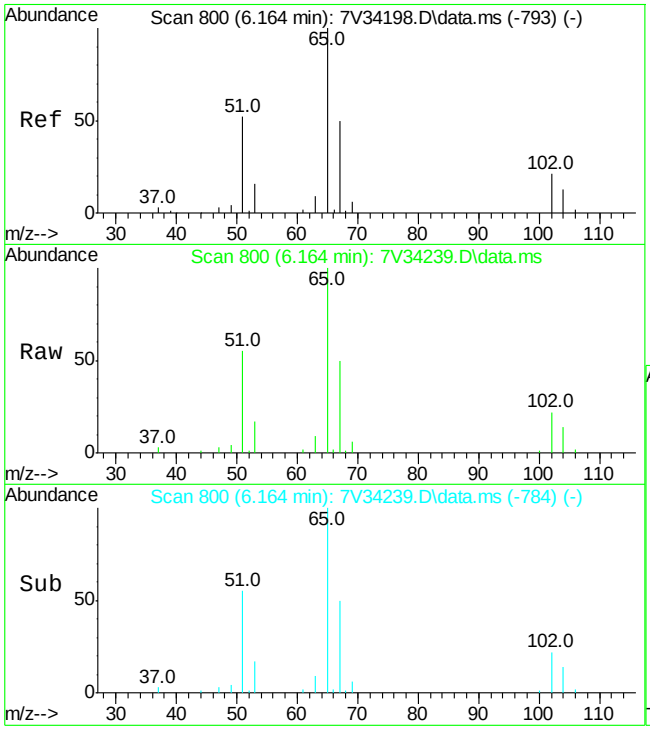


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion:114 Resp: 330130

Ion	Ratio	Lower	Upper
114	100		
63	19.4	0.0	39.6
88	14.0	0.0	34.3

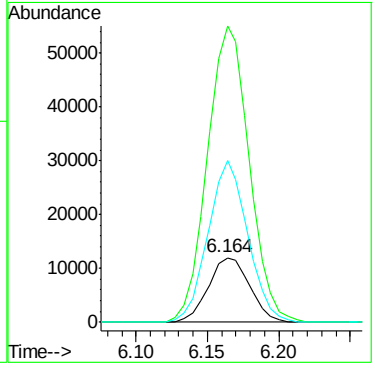


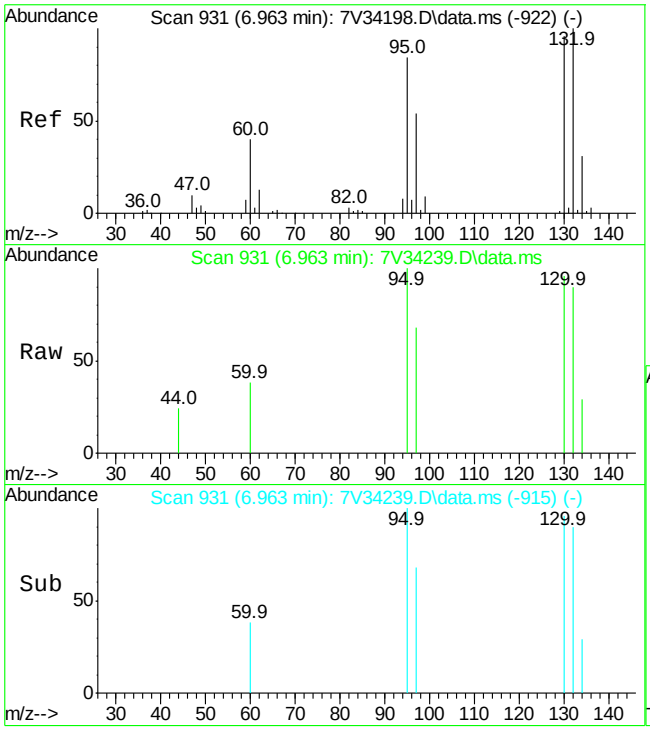


#41
1,2-Dichloroethane-d4
Concen: 50.42 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion:102 Resp: 23851

Ion	Ratio	Lower	Upper
102	100		
65	468.2	469.5	509.5#
51	243.5	232.7	272.7

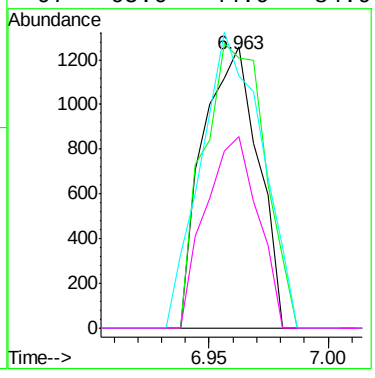


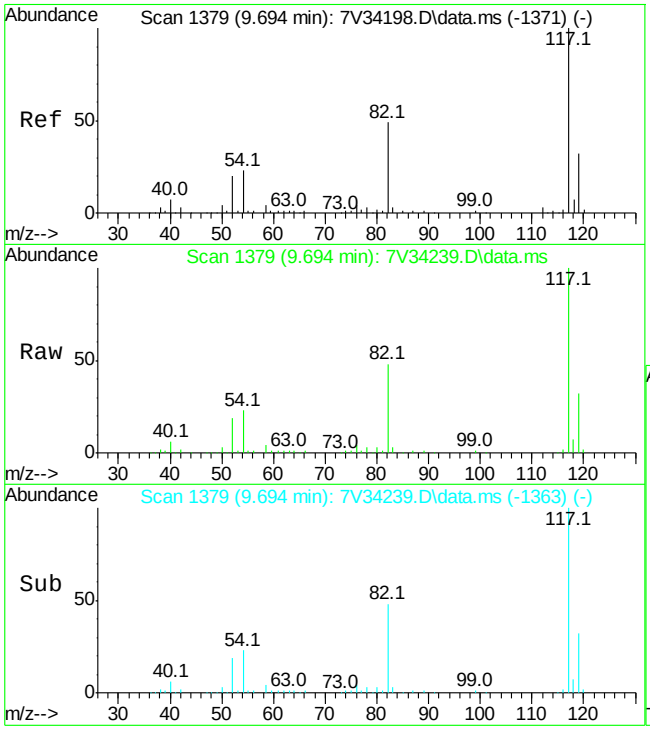


#47
Trichloroethene
Concen: 0.81 ug/L
RT: 6.963 min Scan# 931
Delta R.T. -0.000 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion: 95 Resp: 2016

Ion	Ratio	Lower	Upper
95	100		
130	112.7	93.2	133.2
132	116.8	95.9	135.9
97	65.0	44.9	84.9

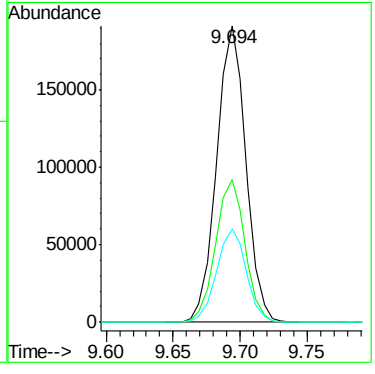


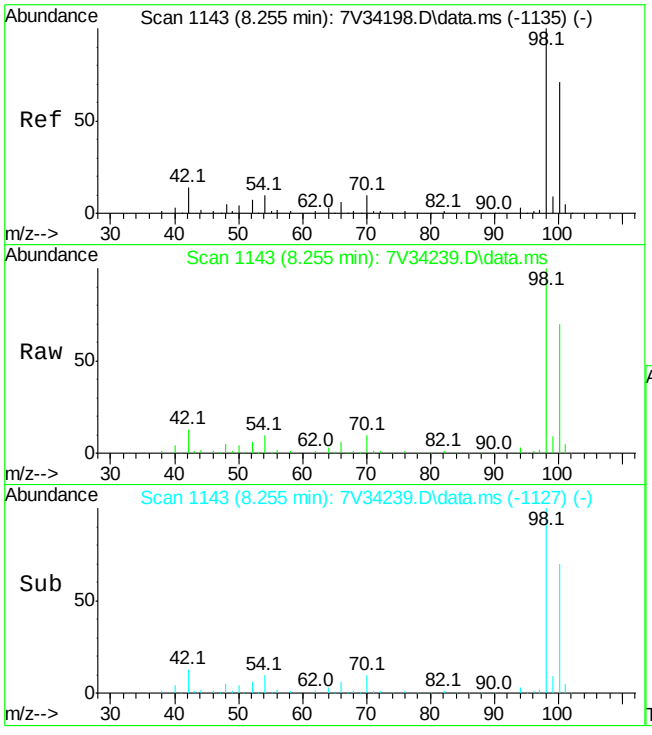


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion:117 Resp: 289625

Ion	Ratio	Lower	Upper
117	100		
82	48.1	28.7	68.7
119	31.8	12.2	52.2

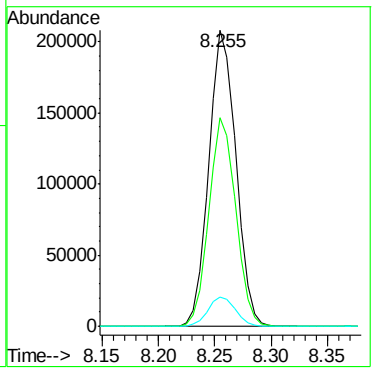


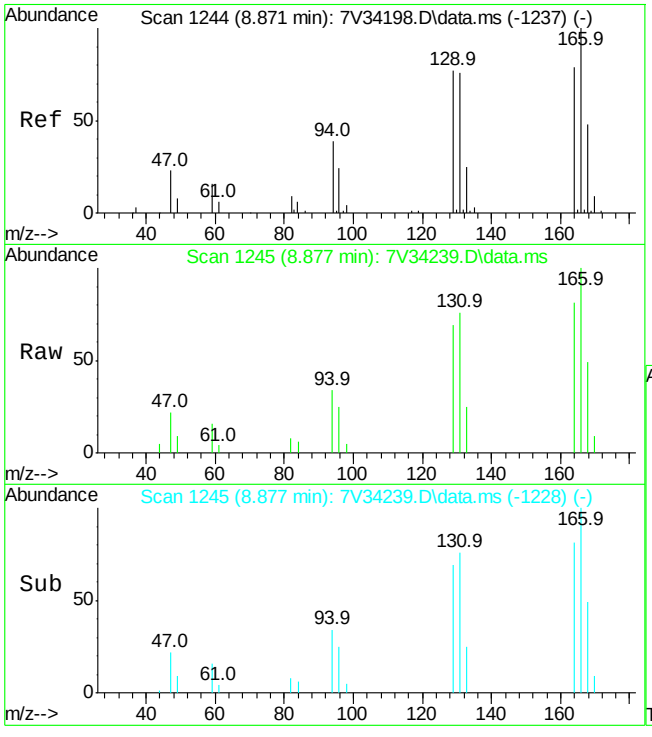


#56
Toluene-d8
Concen: 49.71 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion: 98 Resp: 346226

Ion	Ratio	Lower	Upper
98	100		
100	69.7	49.8	89.8
70	10.0	0.0	30.1

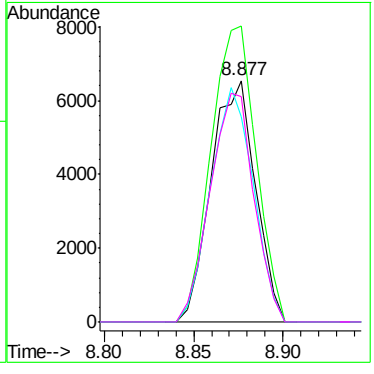


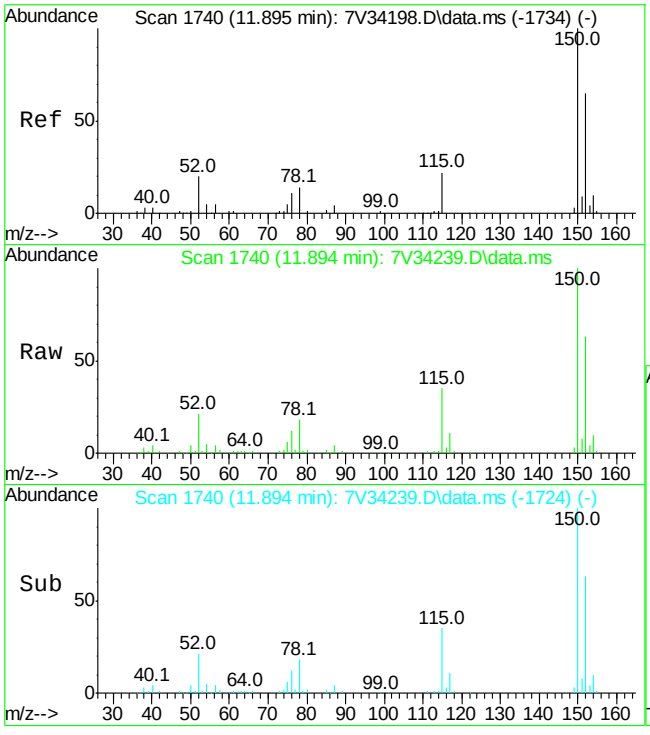


#60
Tetrachloroethene
Concen: 5.88 ug/L
RT: 8.877 min Scan# 1245
Delta R.T. 0.006 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion:164 Resp: 11251

Ion	Ratio	Lower	Upper
164	100		
166	125.1	107.5	147.5
129	93.7	76.8	116.8
131	93.9	76.4	116.4

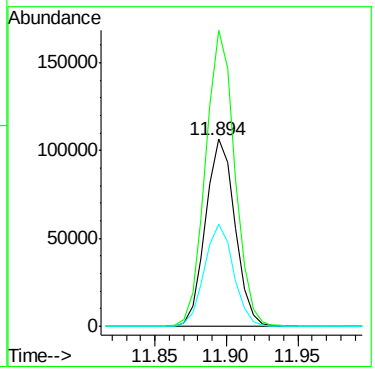


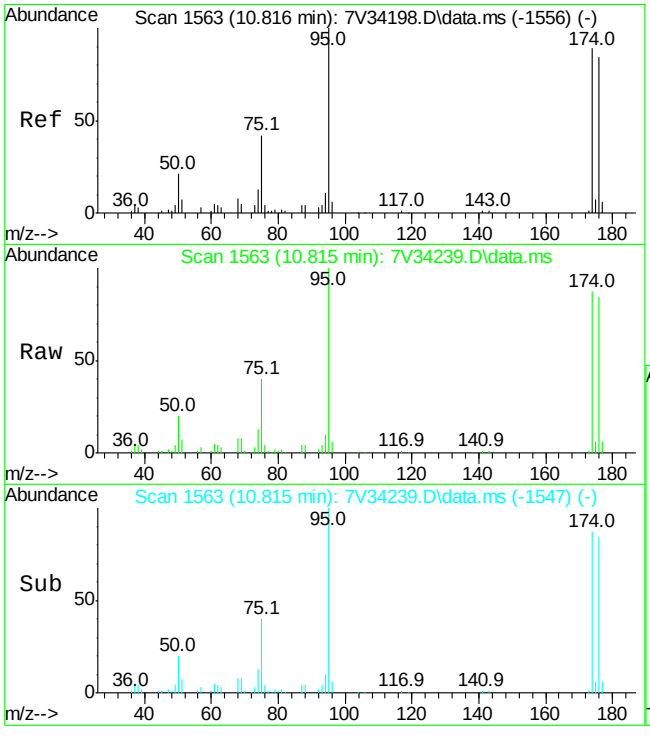


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion:152 Resp: 153023

Ion	Ratio	Lower	Upper
152	100		
150	157.0	154.9	194.9
115	54.1	34.6	74.6

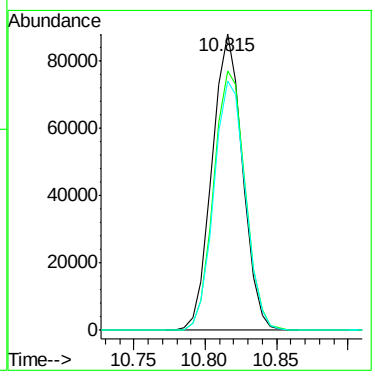




#76
4-Bromofluorobenzene
Concen: 49.30 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34239.D
Acq: 1 Jun 2016 7:19 pm

Tgt Ion: 95 Resp: 131361

Ion	Ratio	Lower	Upper
95	100		
174	90.1	70.3	110.3
176	86.4	67.4	107.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34240.D
Acq On : 1 Jun 2016 7:42 pm
Operator : amandaj
Sample : D83090-5
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 02 12:04:08 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

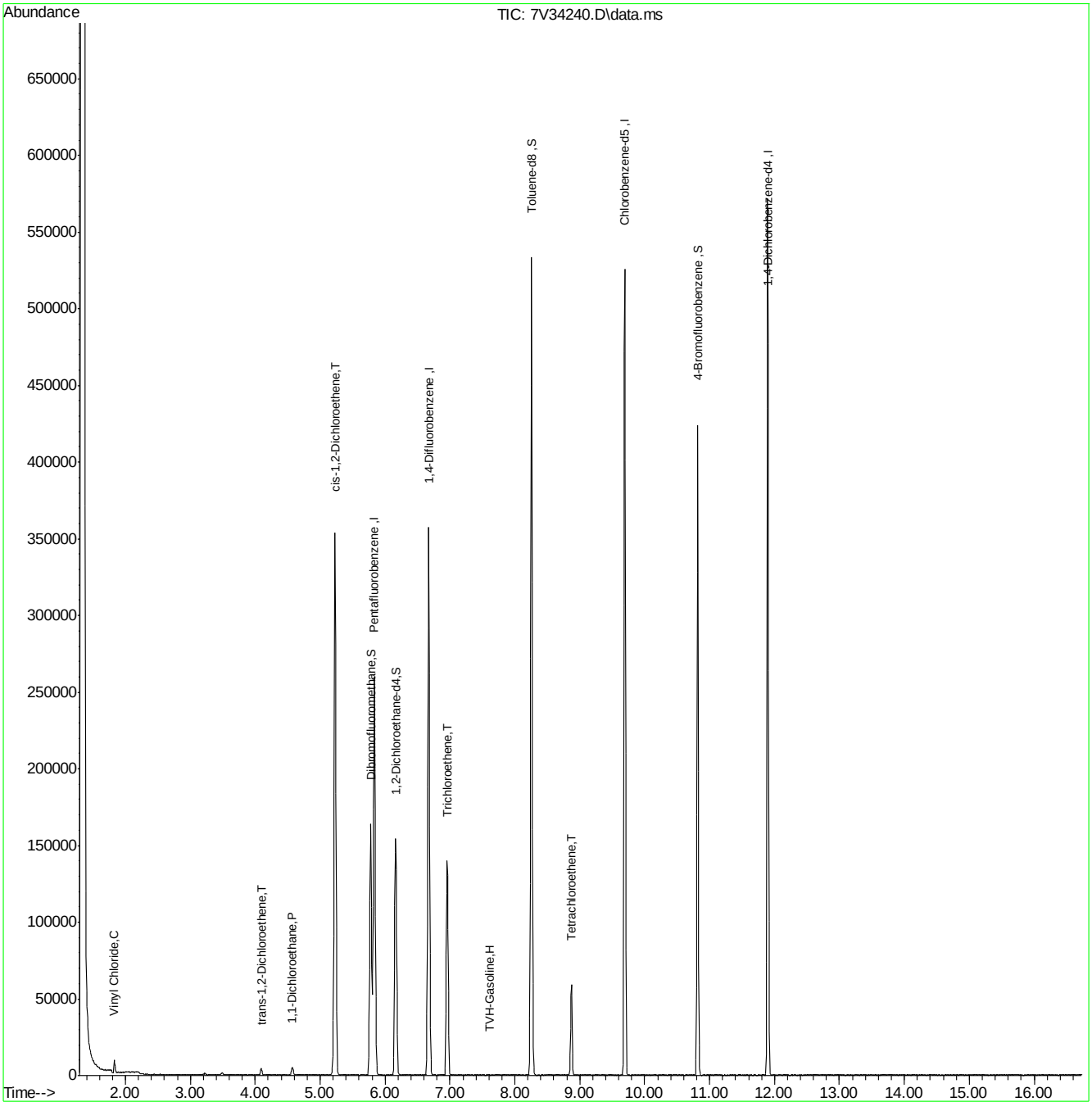
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	204085	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.670	114	321633	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	285216	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	145706	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	109008	49.21	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 98.42%			
41) 1,2-Dichloroethane-d4	6.164	102	22654	49.16	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 98.32%			
56) Toluene-d8	8.255	98	336201	49.02	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 98.04%			
76) 4-Bromofluorobenzene	10.815	95	127525	50.26	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 100.52%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	1156918m	121.63	ug/L	
5) Vinyl Chloride	1.829	62	6793	3.15	ug/L	98
21) trans-1,2-Dichloroethene	4.097	96	1512	0.73	ug/L	94
24) 1,1-Dichloroethane	4.573	63	7500	1.77	ug/L	93
29) cis-1,2-Dichloroethene	5.231	96	156310	65.74	ug/L	89
47) Trichloroethene	6.956	95	44957	18.57	ug/L	98
60) Tetrachloroethene	8.871	164	13531	7.18	ug/L	96

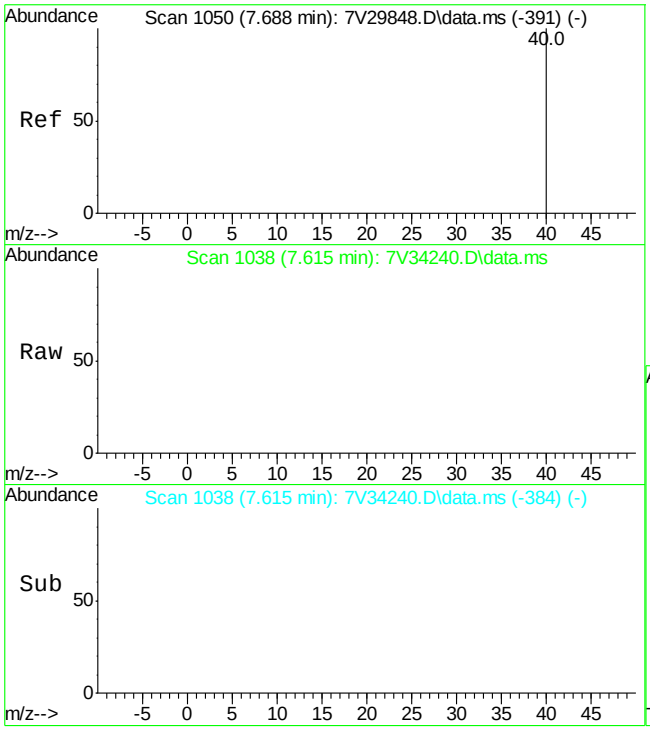
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34240.D
Acq On : 1 Jun 2016 7:42 pm
Operator : amandaj
Sample : D83090-5
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 26 Sample Multiplier: 1

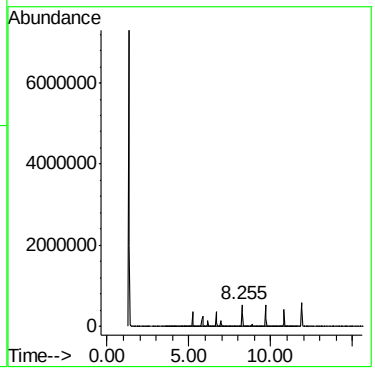
Quant Time: Jun 02 12:04:08 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

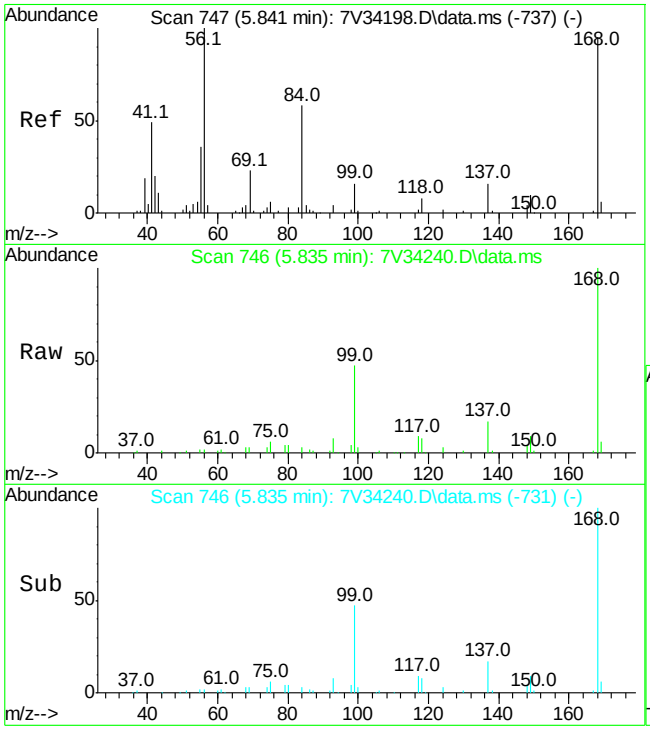




#1
TVH-Gasoline
Concen: 121.63 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion:TIC Resp: 1156918

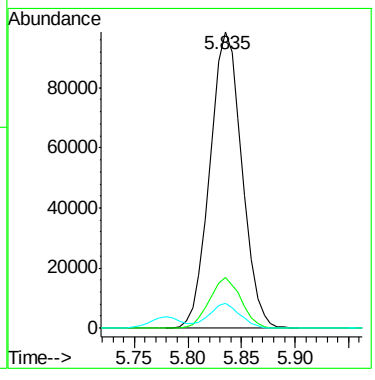


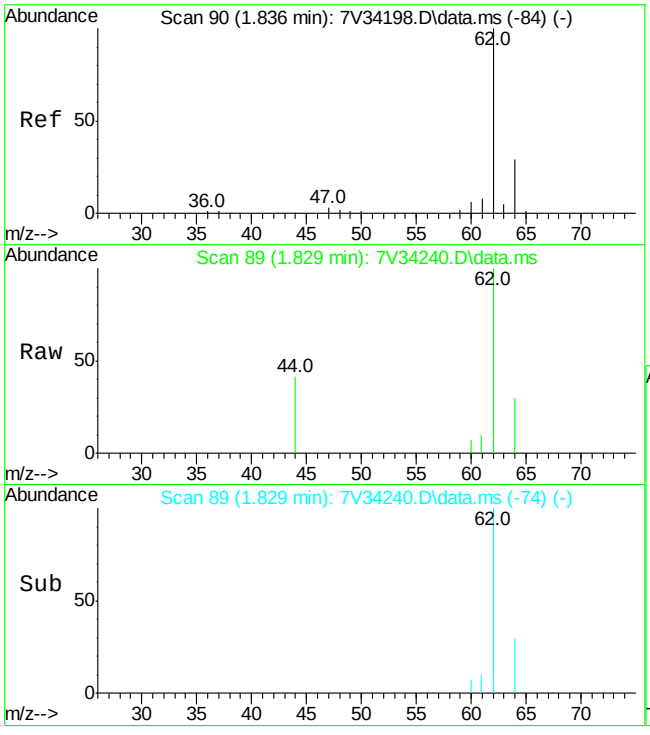


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion:168 Resp: 204085

Ion	Ratio	Lower	Upper
168	100		
137	16.7	0.0	36.8
93	7.9	0.0	28.3

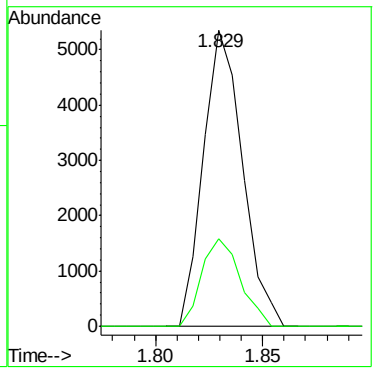


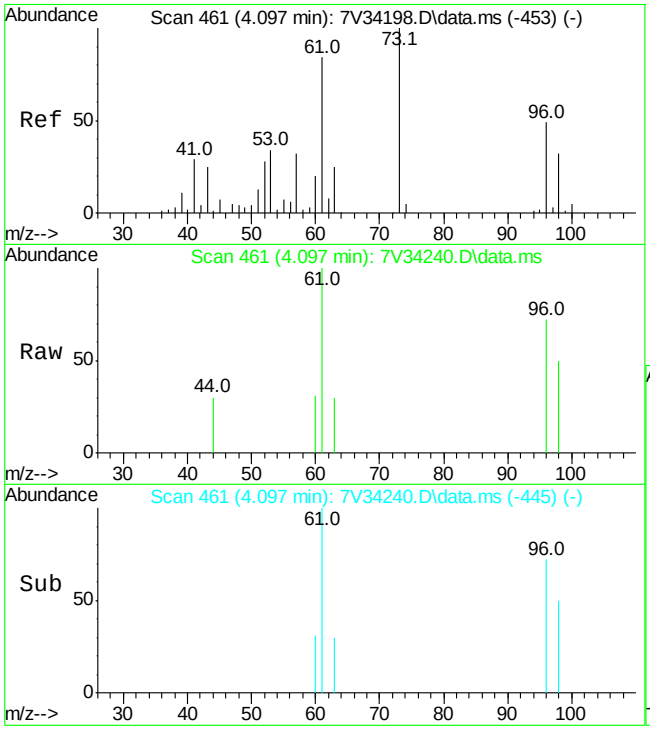


#5
Vinyl Chloride
Concen: 3.15 ug/L
RT: 1.829 min Scan# 89
Delta R.T. -0.007 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion: 62 Resp: 6793

Ion	Ratio	Lower	Upper
62	100		
64	29.6	8.5	48.5

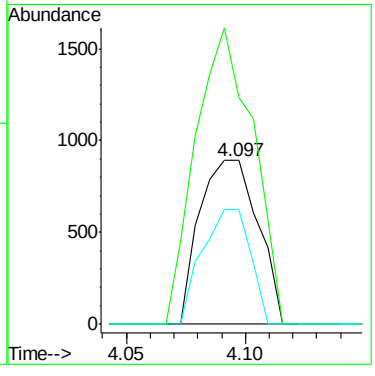


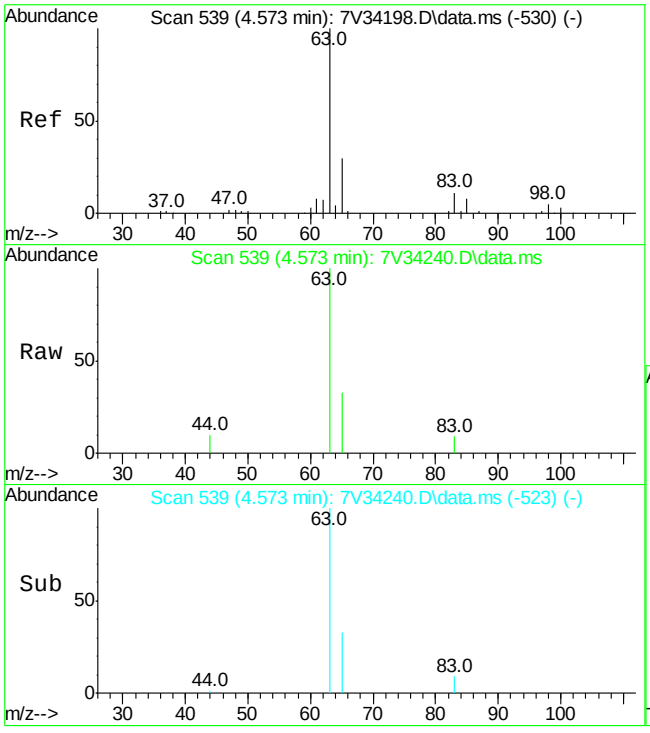


#21
trans-1,2-Dichloroethene
Concen: 0.73 ug/L
RT: 4.097 min Scan# 461
Delta R.T. 0.000 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion: 96 Resp: 1512

Ion	Ratio	Lower	Upper
96	100		
61	178.4	151.1	191.1
98	57.7	43.8	83.8

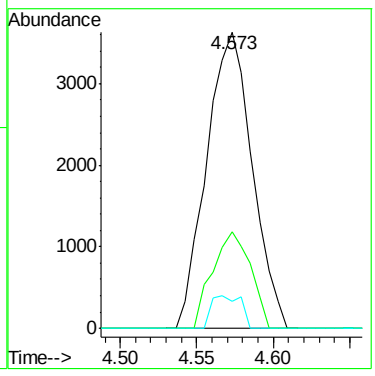


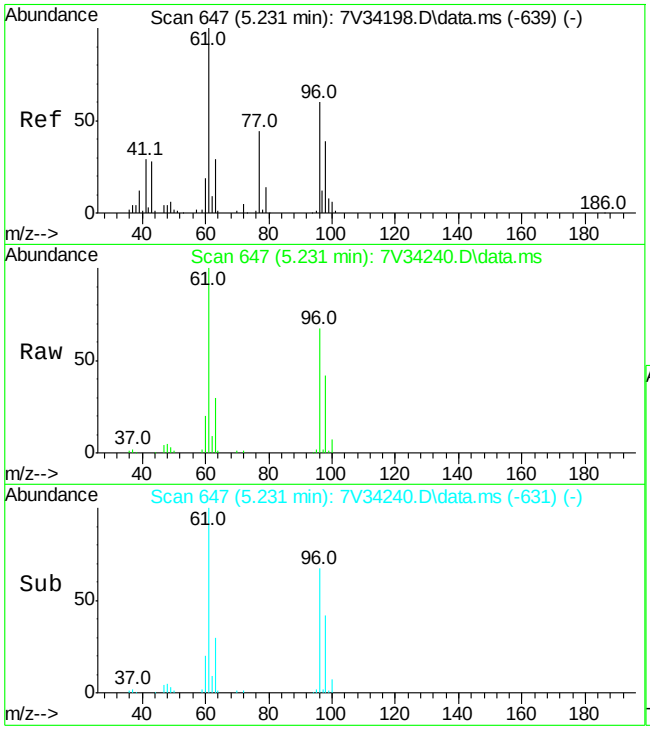


#24
1,1-Dichloroethane
Concen: 1.77 ug/L
RT: 4.573 min Scan# 539
Delta R.T. -0.000 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion: 63 Resp: 7500

Ion	Ratio	Lower	Upper
63	100		
65	27.2	10.5	50.5
83	7.3	0.0	31.4

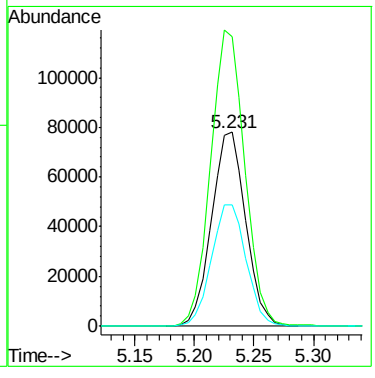


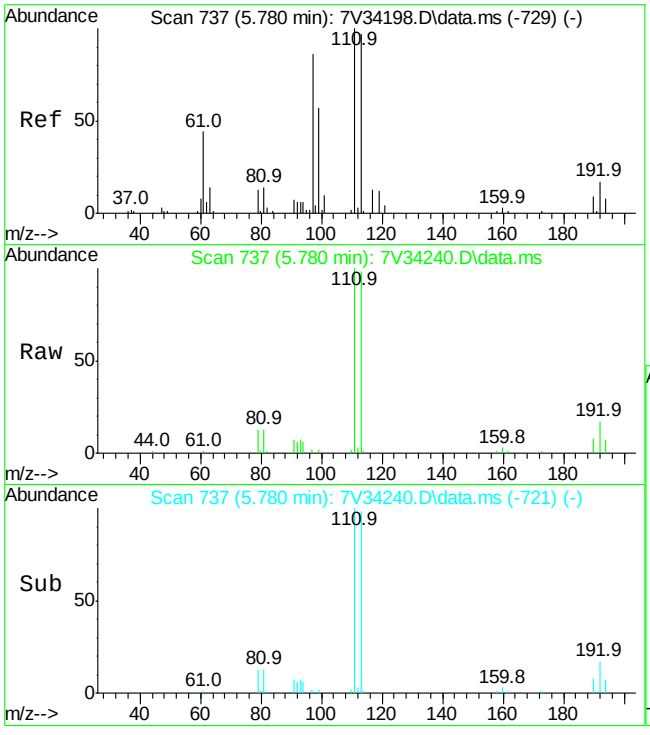


#29
cis-1,2-Dichloroethene
Concen: 65.74 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion: 96 Resp: 156310

Ion	Ratio	Lower	Upper
96	100		
61	152.4	151.8	191.8
98	63.5	44.4	84.4

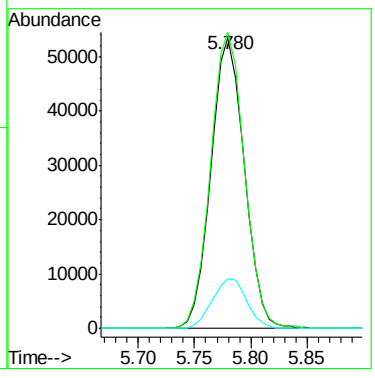


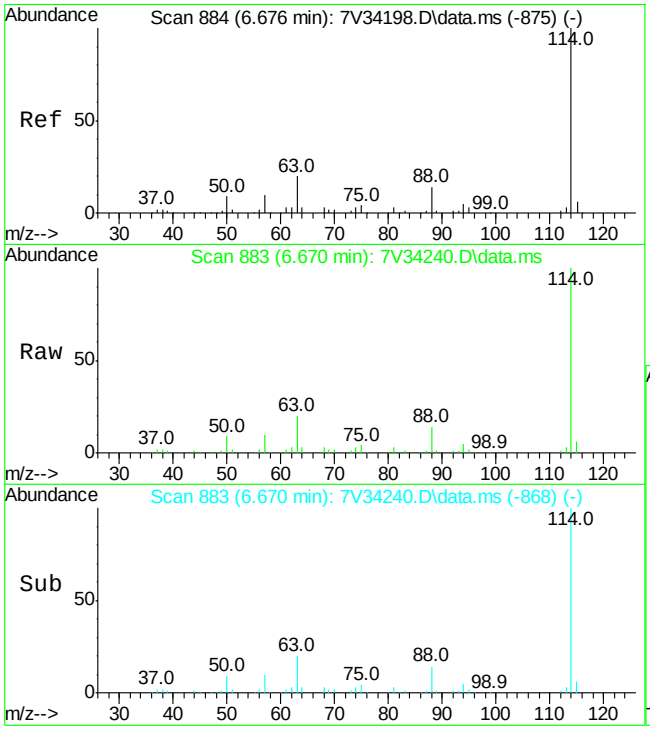


#35
Dibromofluoromethane
Concen: 49.21 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion:113 Resp: 109008

Ion	Ratio	Lower	Upper
113	100		
111	103.4	82.9	122.9
192	17.5	0.0	36.9

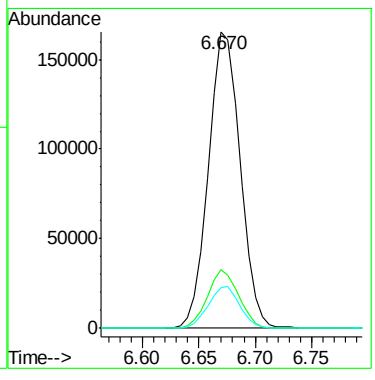


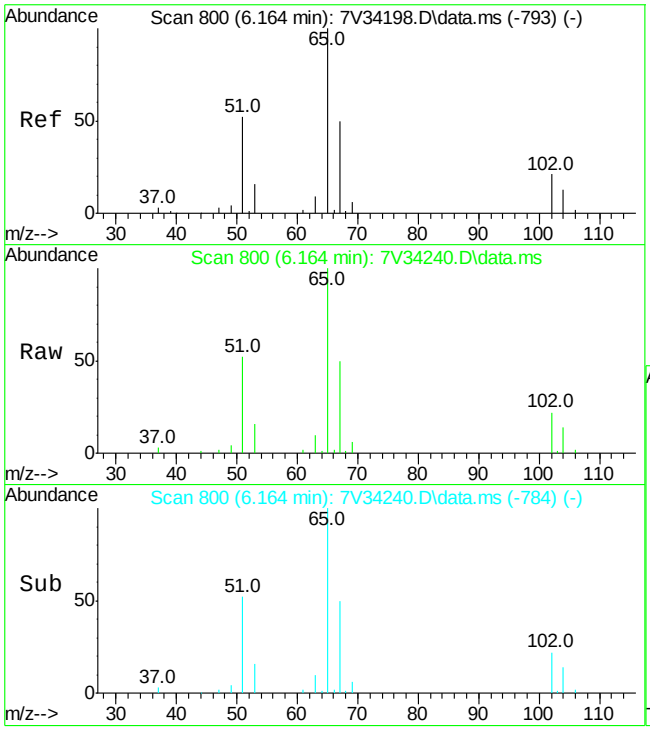


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.670 min Scan# 883
Delta R.T. -0.006 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion:114 Resp: 321633

Ion	Ratio	Lower	Upper
114	100		
63	19.3	0.0	39.6
88	13.9	0.0	34.3

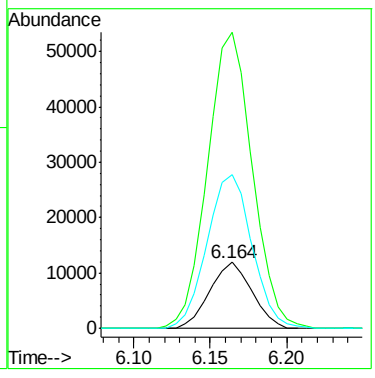


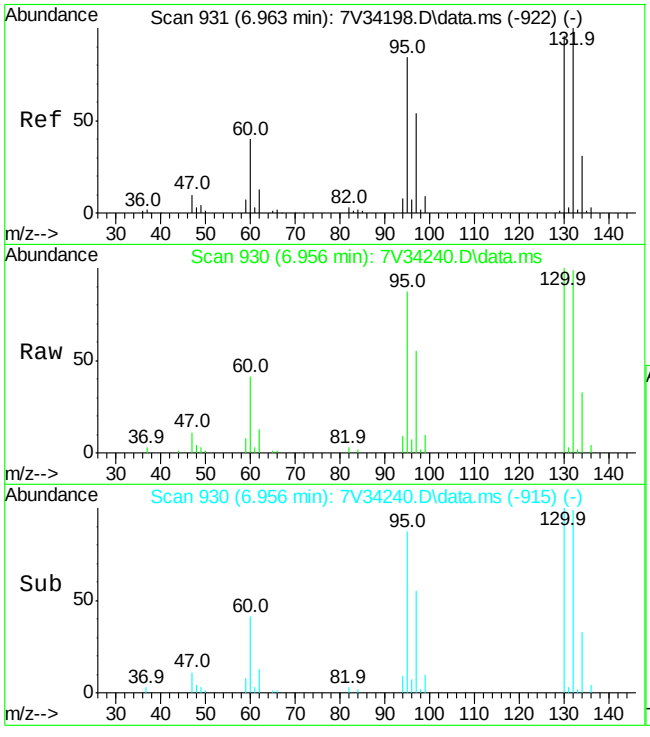


#41
1,2-Dichloroethane-d4
Concen: 49.16 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion:102 Resp: 22654

Ion	Ratio	Lower	Upper
102	100		
65	479.6	469.5	509.5
51	249.9	232.7	272.7

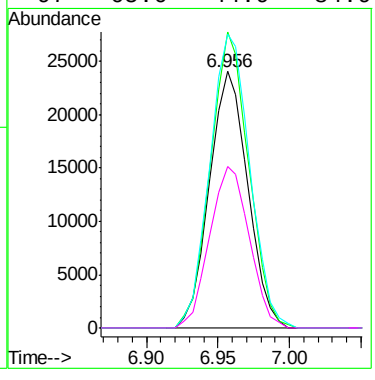


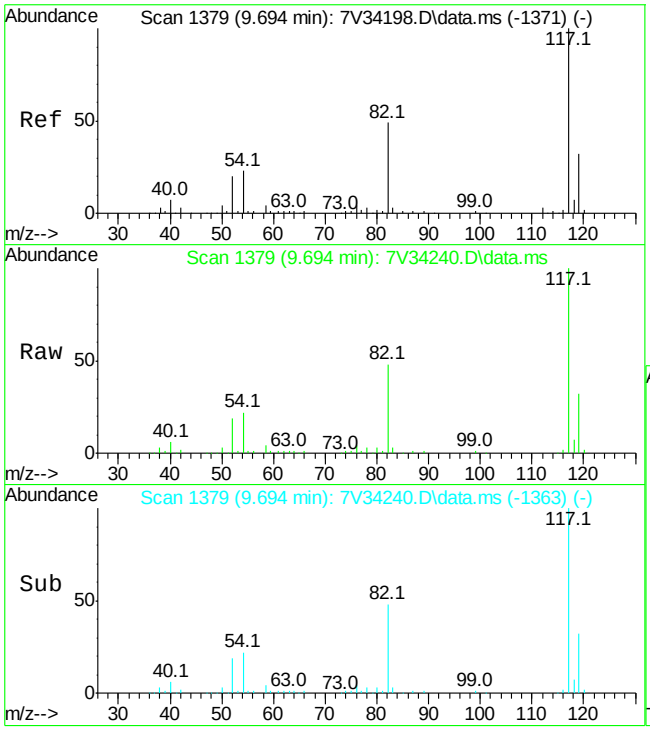


#47
Trichloroethene
Concen: 18.57 ug/L
RT: 6.956 min Scan# 930
Delta R.T. -0.007 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion: 95 Resp: 44957

Ion	Ratio	Lower	Upper
95	100		
130	114.9	93.2	133.2
132	119.3	95.9	135.9
97	65.0	44.9	84.9

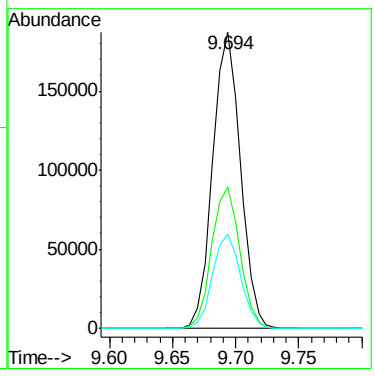


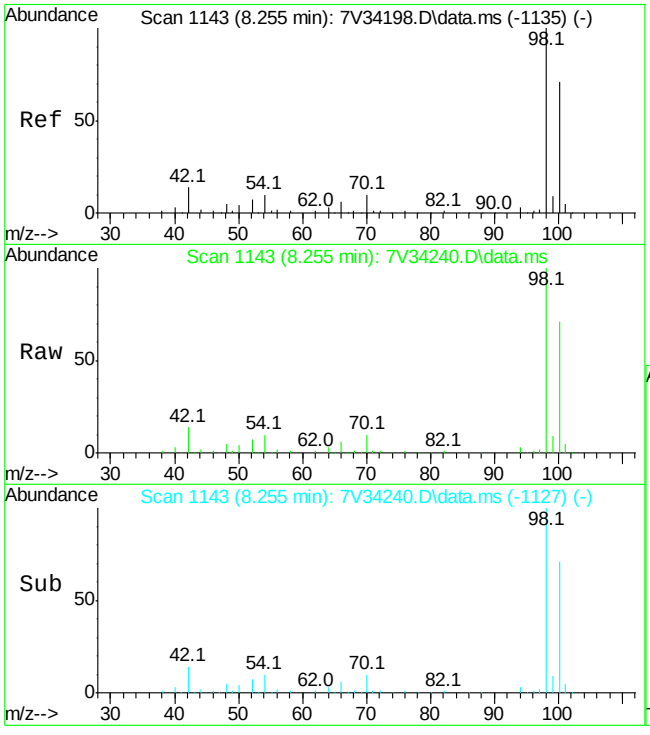


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion:117 Resp: 285216

Ion	Ratio	Lower	Upper
117	100		
82	48.4	28.7	68.7
119	32.1	12.2	52.2

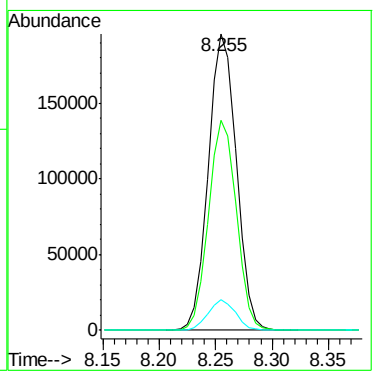


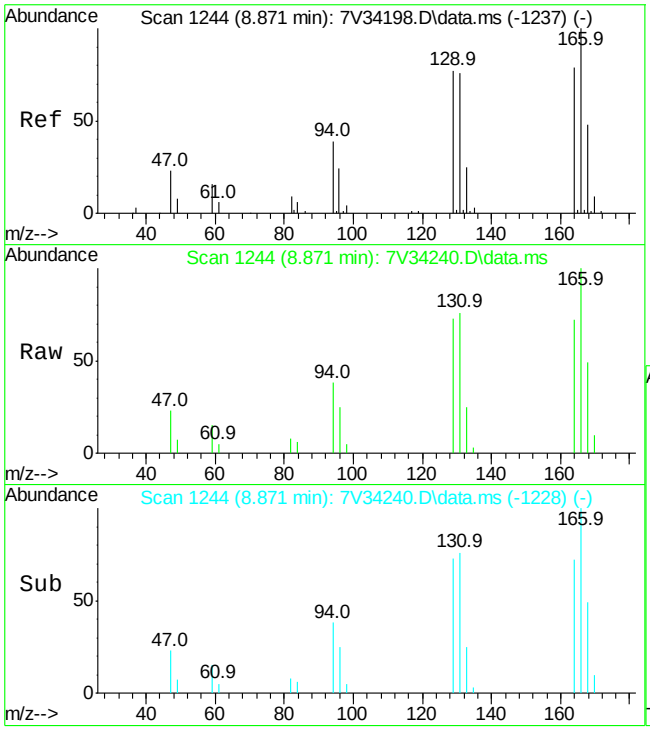


#56
Toluene-d8
Concen: 49.02 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. 0.000 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion: 98 Resp: 336201

Ion	Ratio	Lower	Upper
98	100		
100	70.3	49.8	89.8
70	10.0	0.0	30.1

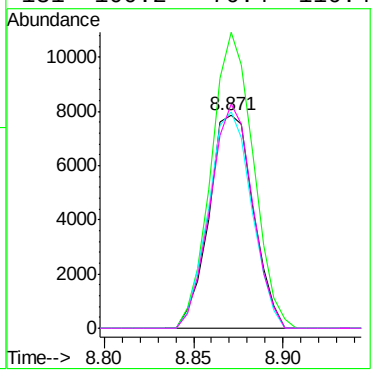


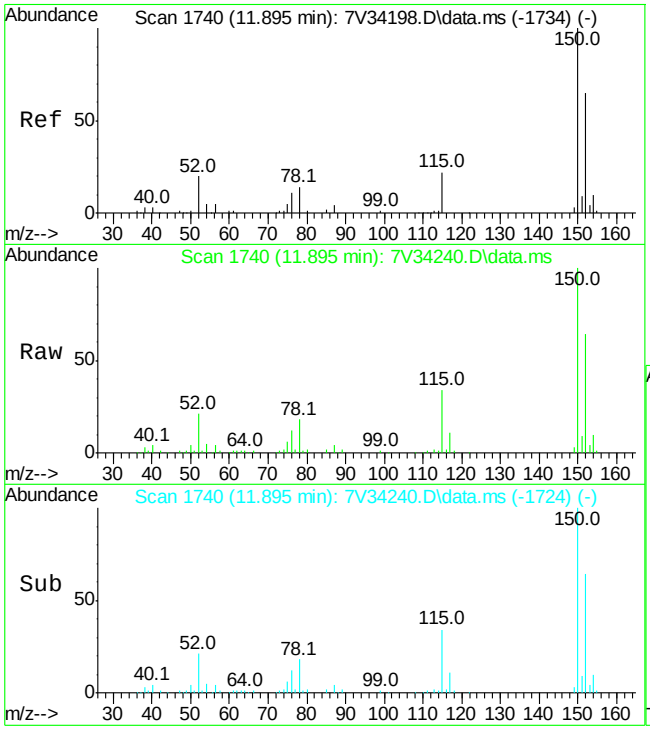


#60
Tetrachloroethene
Concen: 7.18 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion:164 Resp: 13531

Ion	Ratio	Lower	Upper
164	100		
166	132.6	107.5	147.5
129	99.0	76.8	116.8
131	100.2	76.4	116.4

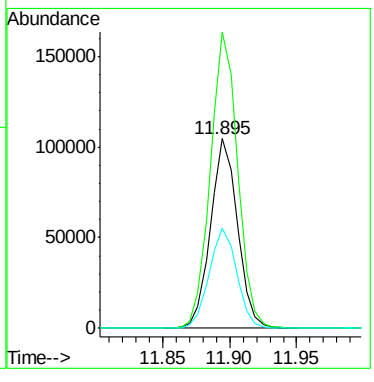


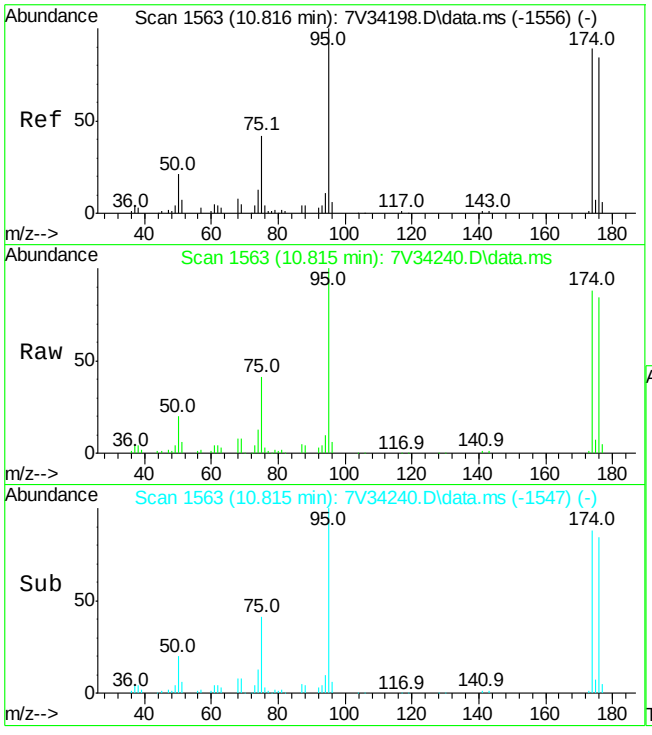


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion:152 Resp: 145706

Ion	Ratio	Lower	Upper
152	100		
150	157.9	154.9	194.9
115	53.7	34.6	74.6

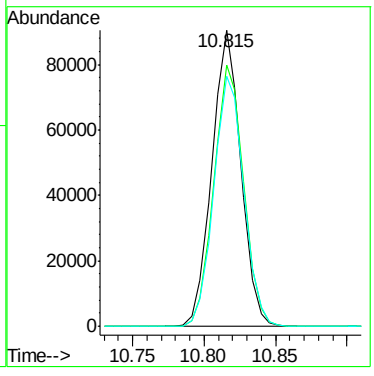




#76
4-Bromofluorobenzene
Concen: 50.26 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34240.D
Acq: 1 Jun 2016 7:42 pm

Tgt Ion: 95 Resp: 127525

Ion	Ratio	Lower	Upper
95	100		
174	90.7	70.3	110.3
176	87.4	67.4	107.4



7.15

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34241.D
Acq On : 1 Jun 2016 8:05 pm
Operator : amandaj
Sample : D83090-6
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 02 12:05:40 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

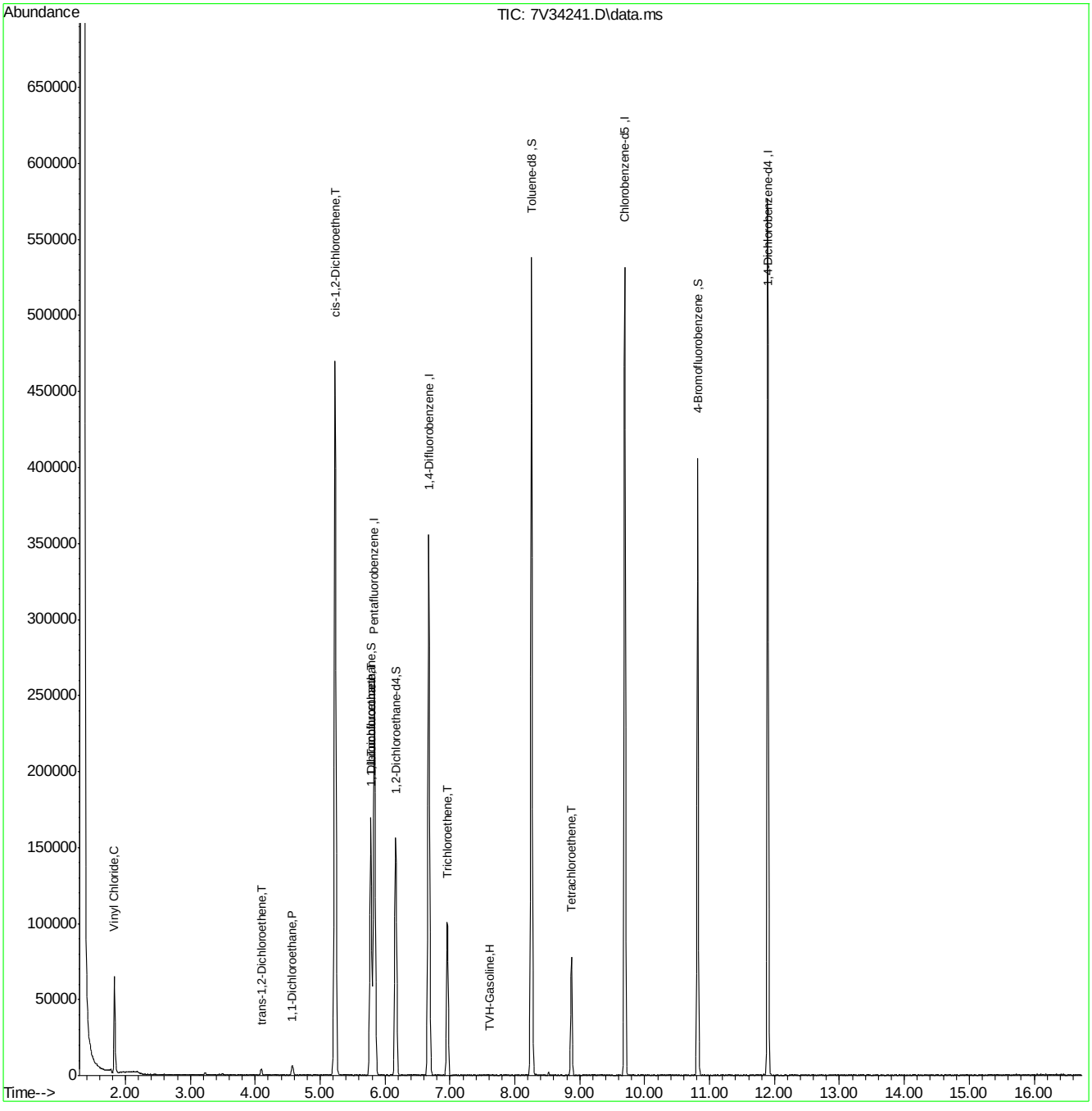
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	206334	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	325349	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	285329	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	148207	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	111260	49.68	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.36%			
41) 1,2-Dichloroethane-d4	6.164	102	23141	49.64	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 99.28%			
56) Toluene-d8	8.255	98	341293	49.74	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.48%			
76) 4-Bromofluorobenzene	10.815	95	128614	49.84	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 99.68%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	1318750m	138.65	ug/L	
5) Vinyl Chloride	1.829	62	54618	25.08	ug/L	100
21) trans-1,2-Dichloroethene	4.097	96	1702	0.81	ug/L	92
24) 1,1-Dichloroethane	4.573	63	8503	1.99	ug/L	94
29) cis-1,2-Dichloroethene	5.231	96	202695	84.32	ug/L	90
36) 1,1,1-Trichloroethane	5.786	97	5526	1.77	ug/L	99
47) Trichloroethene	6.956	95	33673	13.75	ug/L	99
60) Tetrachloroethene	8.871	164	17931	9.51	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34241.D
Acq On : 1 Jun 2016 8:05 pm
Operator : amandaj
Sample : D83090-6
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 02 12:05:40 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration



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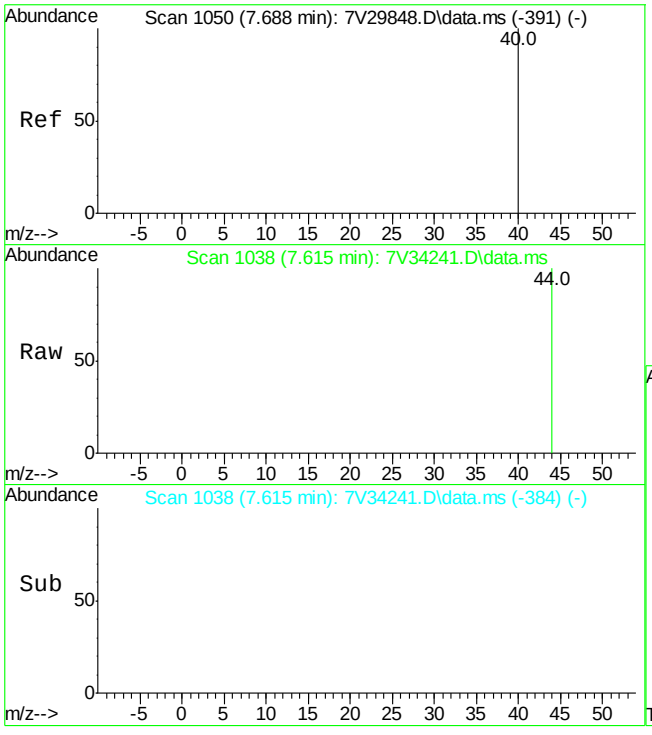
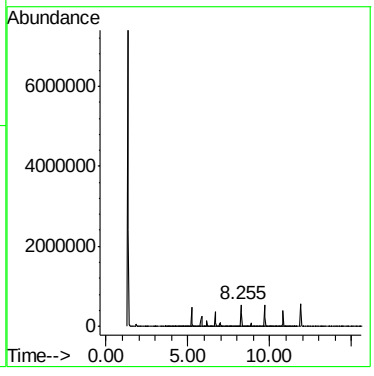
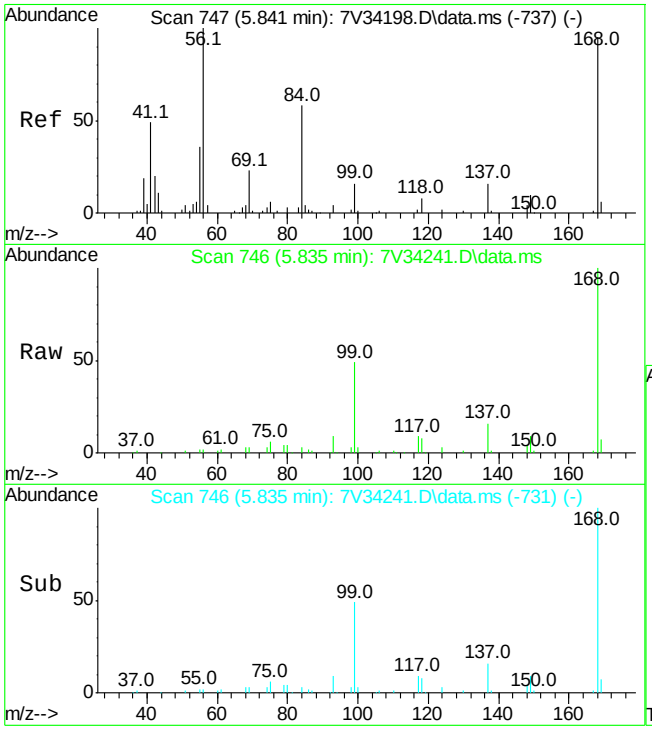


#1
TVH-Gasoline
Concen: 138.65 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion:TIC Resp: 1318750

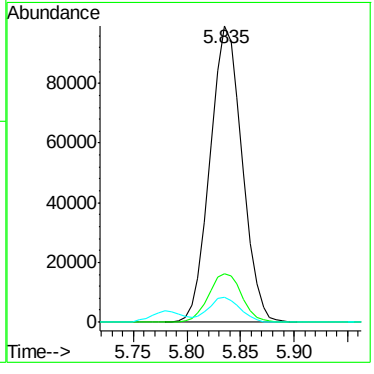


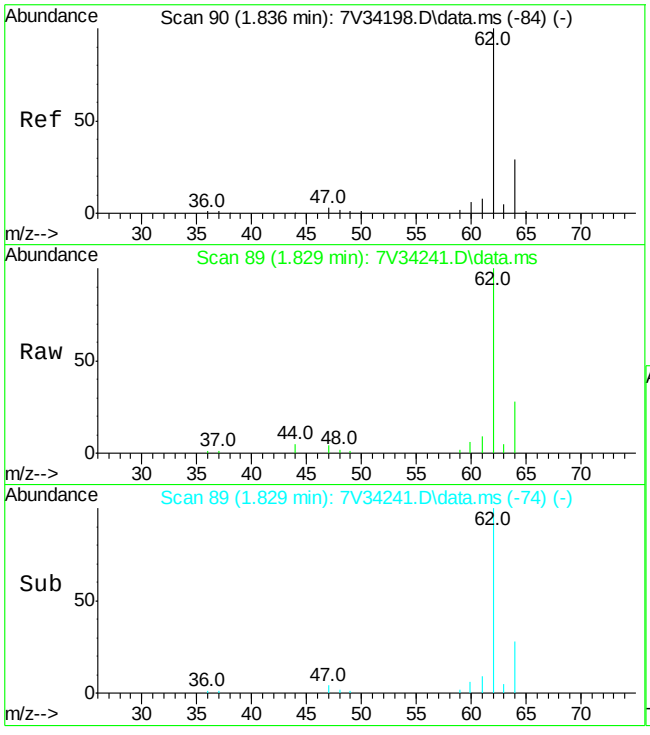


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion:168 Resp: 206334

Ion	Ratio	Lower	Upper
168	100		
137	16.9	0.0	36.8
93	8.2	0.0	28.3

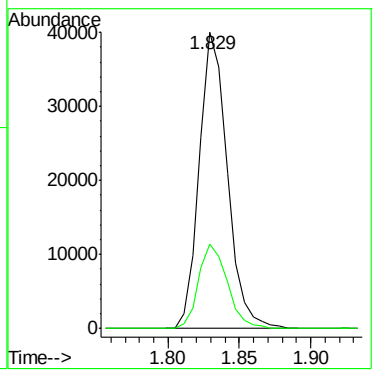


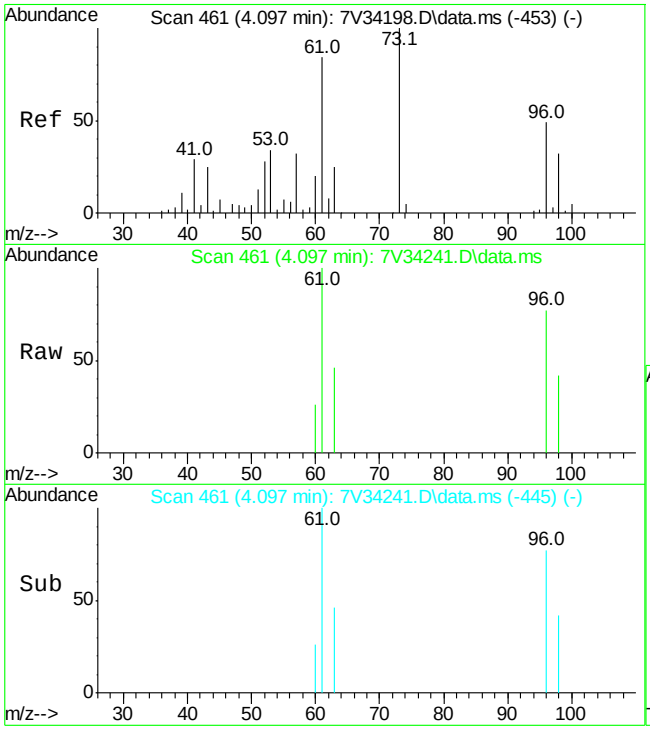


#5
Vinyl Chloride
Concen: 25.08 ug/L
RT: 1.829 min Scan# 89
Delta R.T. -0.007 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion: 62 Resp: 54618

Ion	Ratio	Lower	Upper
62	100		
64	28.4	8.5	48.5

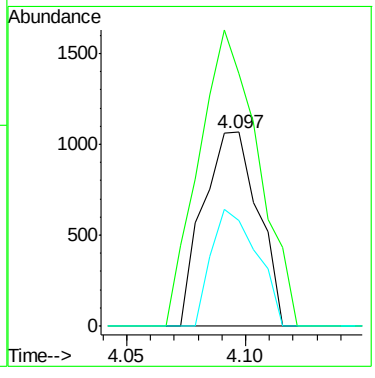


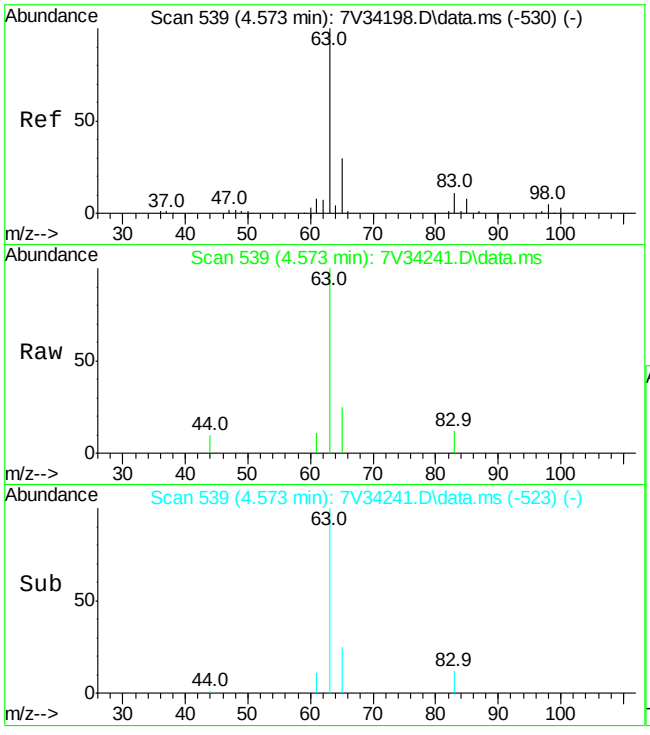


#21
trans-1,2-Dichloroethene
Concen: 0.81 ug/L
RT: 4.097 min Scan# 461
Delta R.T. 0.000 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion: 96 Resp: 1702

Ion	Ratio	Lower	Upper
96	100		
61	165.1	151.1	191.1
98	50.5	43.8	83.8

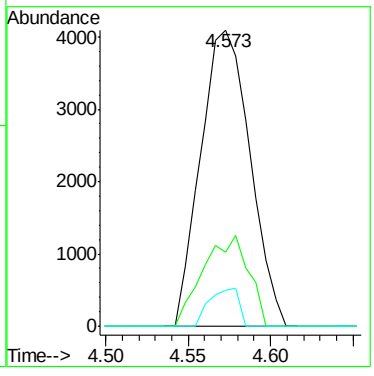


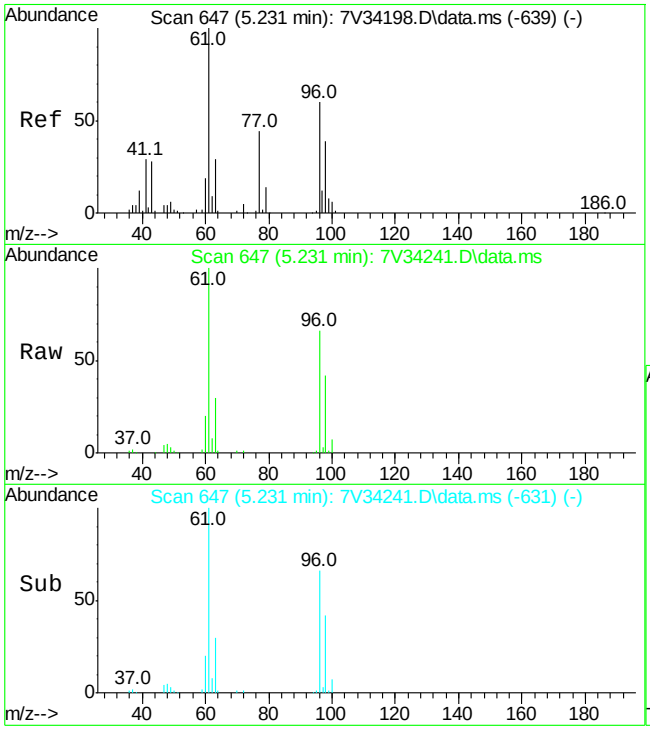


#24
1,1-Dichloroethane
Concen: 1.99 ug/L
RT: 4.573 min Scan# 539
Delta R.T. -0.000 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion: 63 Resp: 8503

Ion	Ratio	Lower	Upper
63	100		
65	28.0	10.5	50.5
83	7.6	0.0	31.4

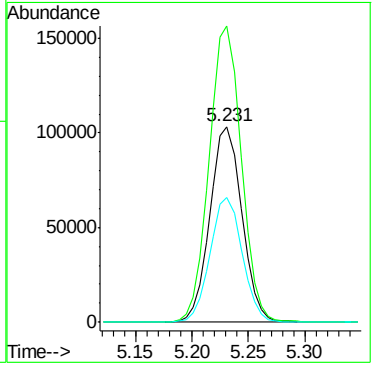


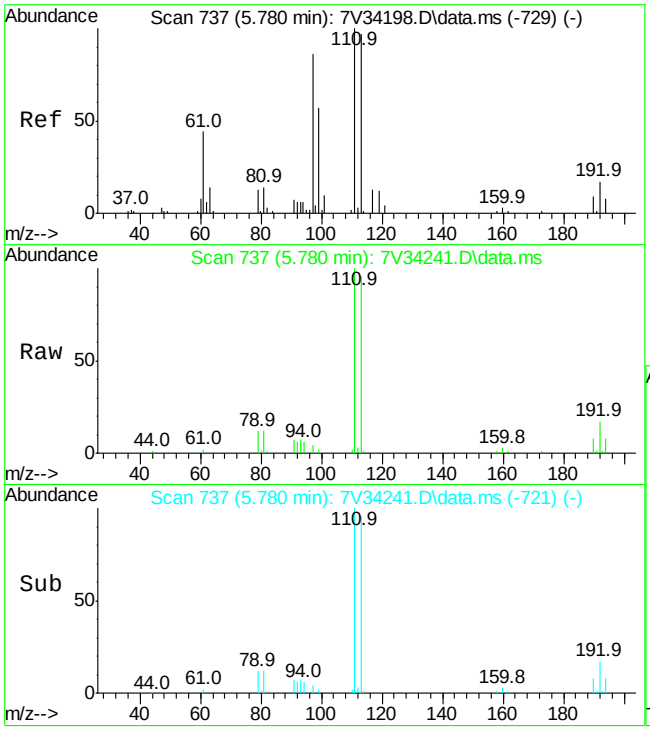


#29
cis-1,2-Dichloroethene
Concen: 84.32 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion: 96 Resp: 202695

Ion	Ratio	Lower	Upper
96	100		
61	152.6	151.8	191.8
98	64.1	44.4	84.4

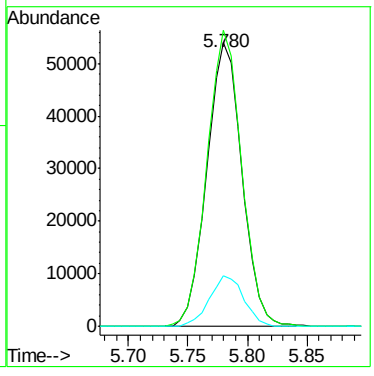


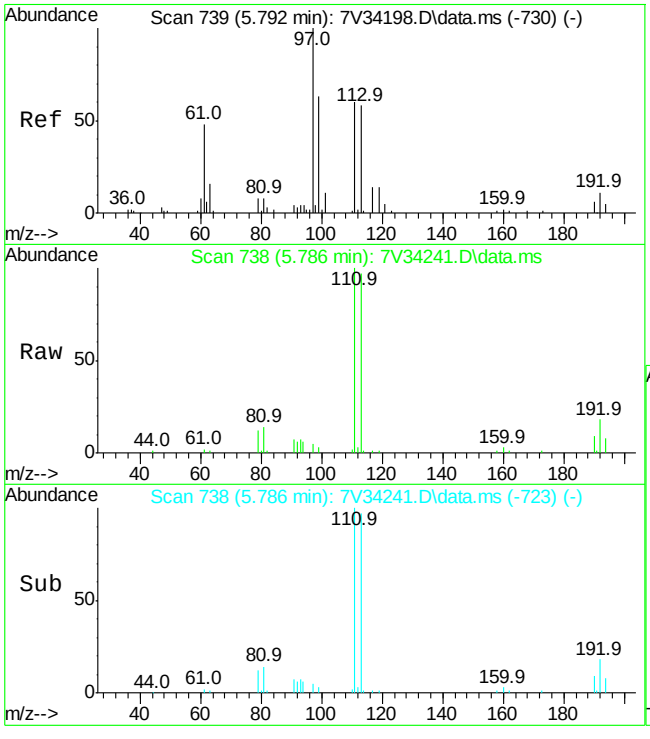


#35
Dibromofluoromethane
Concen: 49.68 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion:113 Resp: 111260

Ion	Ratio	Lower	Upper
113	100		
111	102.9	82.9	122.9
192	17.4	0.0	36.9

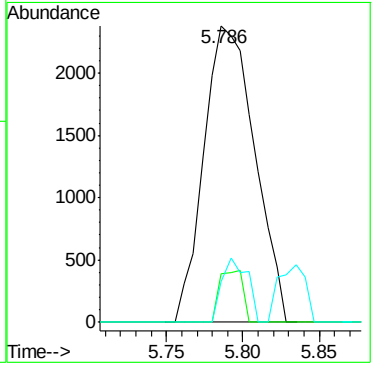




#36
1,1,1-Trichloroethane
Concen: 1.77 ug/L
RT: 5.786 min Scan# 738
Delta R.T. -0.006 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion: 97 Resp: 5526

Ion	Ratio	Lower	Upper
97	100		
63	16.4	0.0	35.6
119	13.8	0.0	33.5



7V34241.D V7V1839F.M Thu Jun 02 12:59:58 2016 Page 6

7V34241.D: D83090-6 TW-18 page 6 of 10

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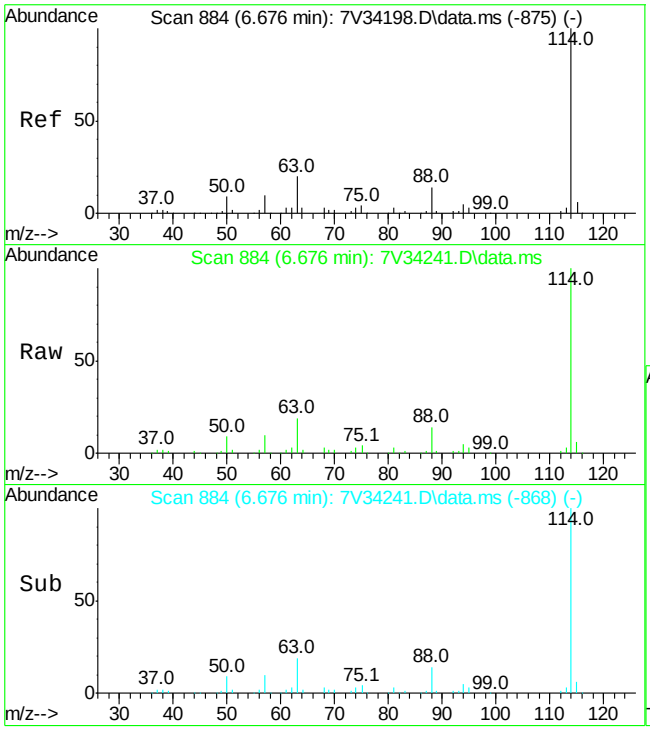
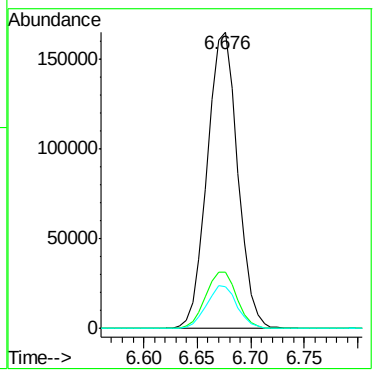
ACCUTEST
D83090

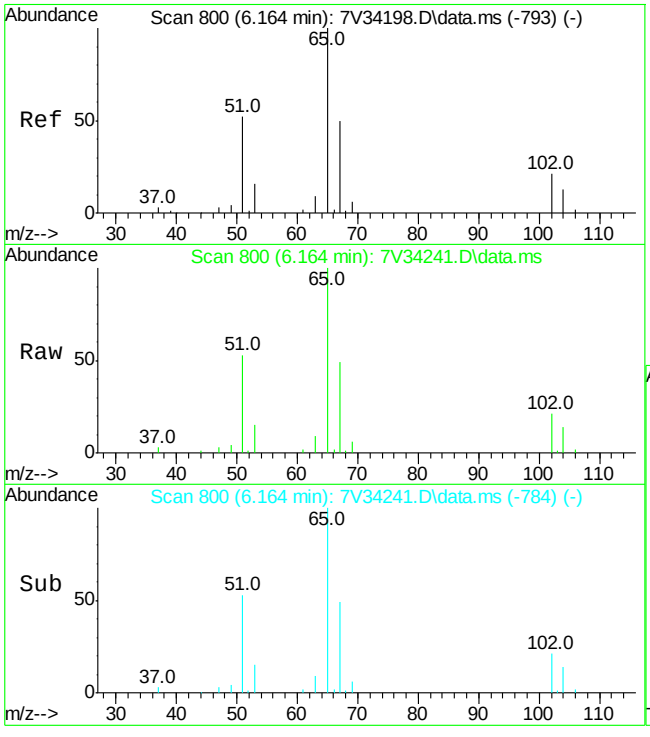


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion:114 Resp: 325349

Ion	Ratio	Lower	Upper
114	100		
63	19.5	0.0	39.6
88	14.2	0.0	34.3

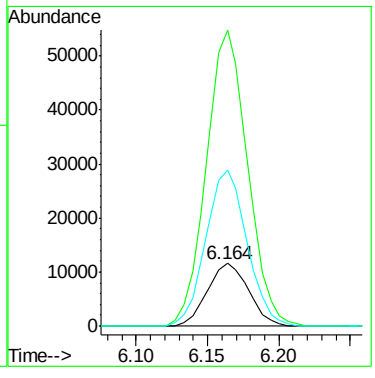


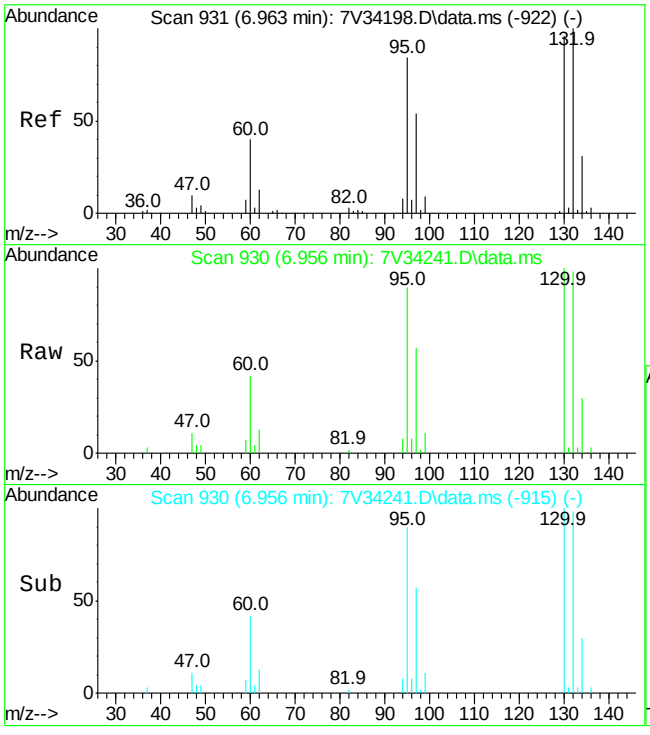


#41
1,2-Dichloroethane-d4
Concen: 49.64 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion:102 Resp: 23141

Ion	Ratio	Lower	Upper
102	100		
65	473.8	469.5	509.5
51	249.6	232.7	272.7

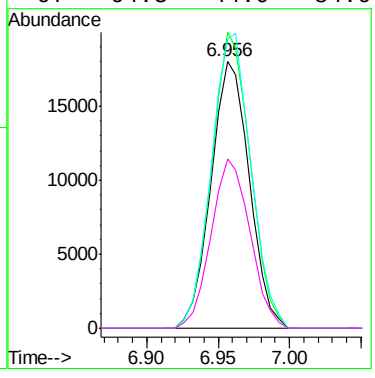


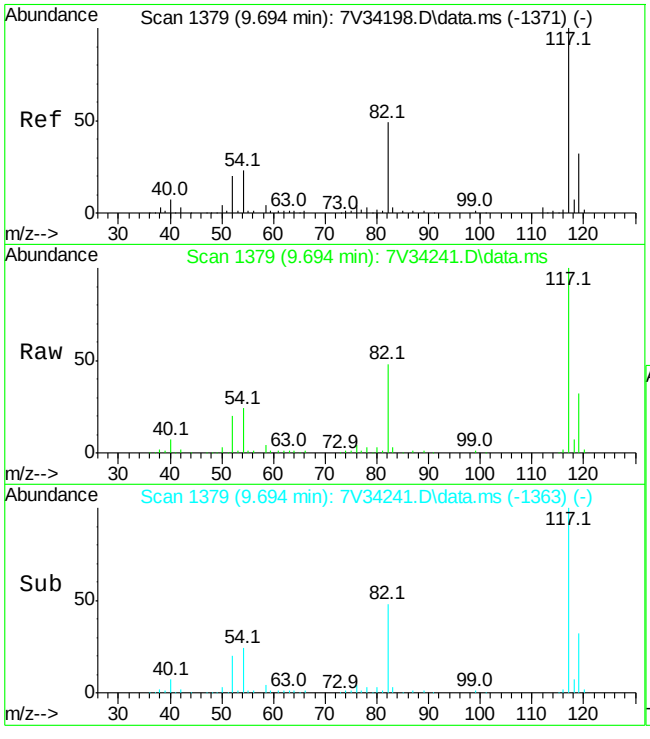


#47
Trichloroethene
Concen: 13.75 ug/L
RT: 6.956 min Scan# 930
Delta R.T. -0.007 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion: 95 Resp: 33673

Ion	Ratio	Lower	Upper
95	100		
130	111.8	93.2	133.2
132	113.7	95.9	135.9
97	64.3	44.9	84.9

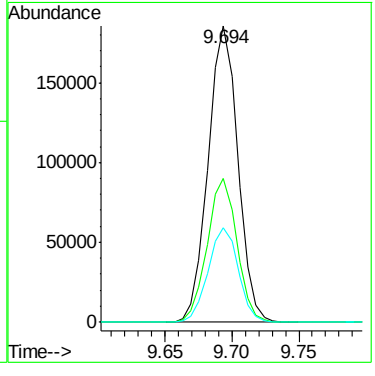


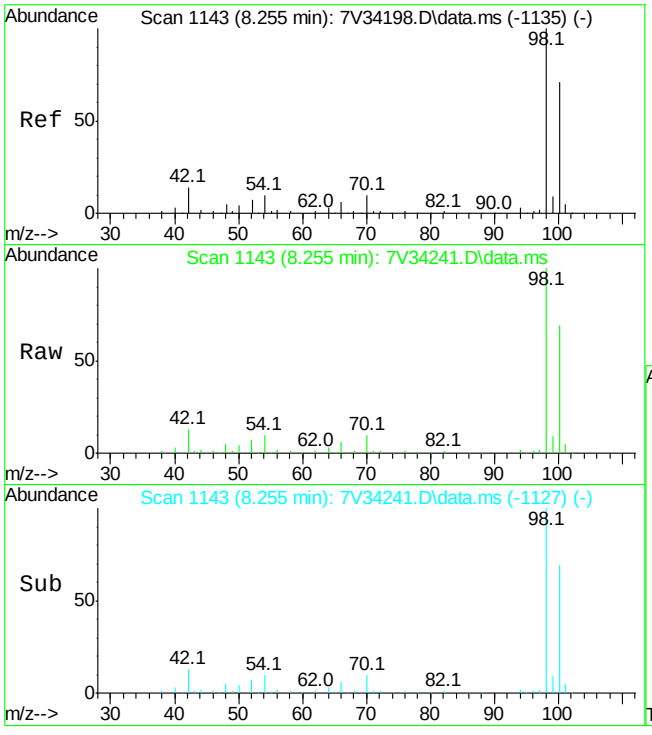


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion:117 Resp: 285329

Ion	Ratio	Lower	Upper
117	100		
82	48.4	28.7	68.7
119	32.2	12.2	52.2

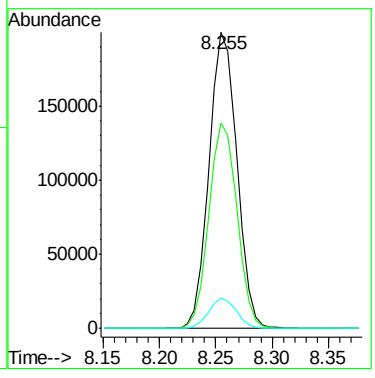


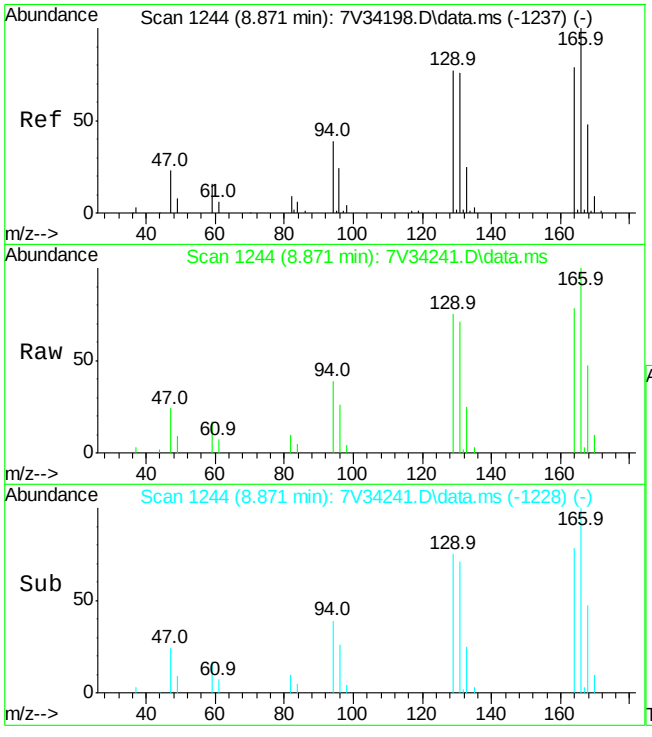


#56
Toluene-d8
Concen: 49.74 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion: 98 Resp: 341293

Ion	Ratio	Lower	Upper
98	100		
100	69.9	49.8	89.8
70	10.1	0.0	30.1

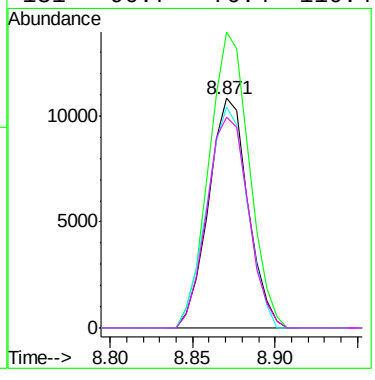


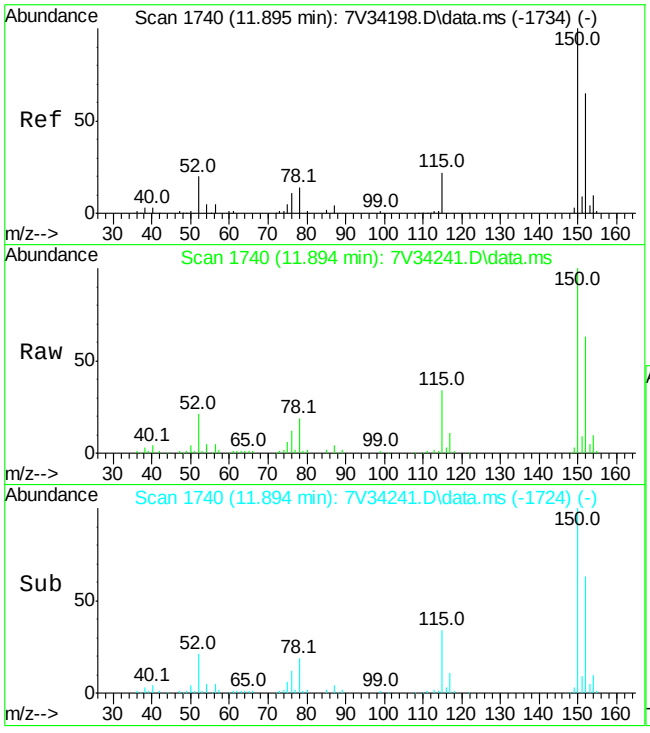


#60
Tetrachloroethene
Concen: 9.51 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion:164 Resp: 17931

Ion	Ratio	Lower	Upper
164	100		
166	131.8	107.5	147.5
129	98.2	76.8	116.8
131	96.7	76.4	116.4

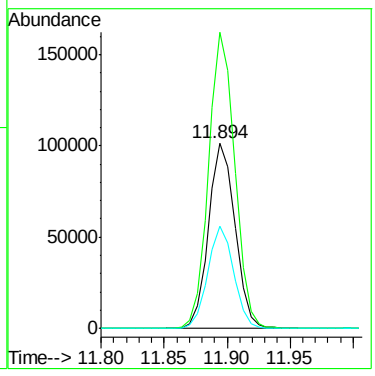


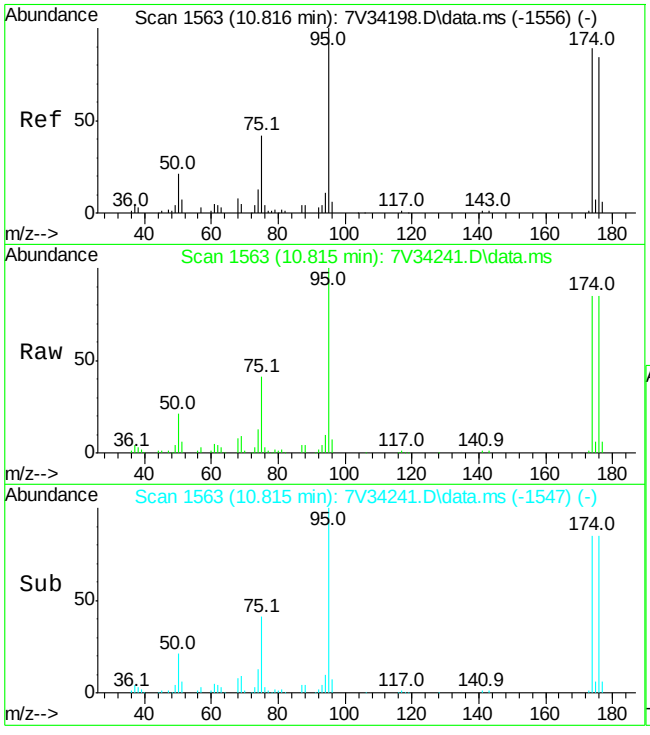


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion:152 Resp: 148207

Ion	Ratio	Lower	Upper
152	100		
150	157.9	154.9	194.9
115	53.7	34.6	74.6

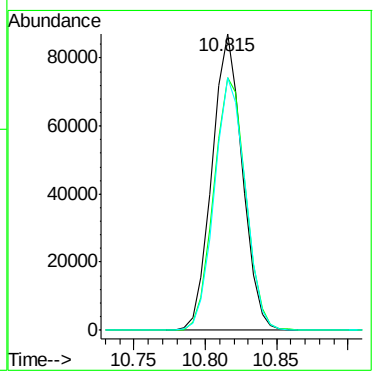




#76
4-Bromofluorobenzene
Concen: 49.84 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34241.D
Acq: 1 Jun 2016 8:05 pm

Tgt Ion: 95 Resp: 128614

Ion	Ratio	Lower	Upper
95	100		
174	89.2	70.3	110.3
176	86.9	67.4	107.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34242.D
Acq On : 1 Jun 2016 8:29 pm
Operator : amandaj
Sample : D83090-7
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 02 12:06:59 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

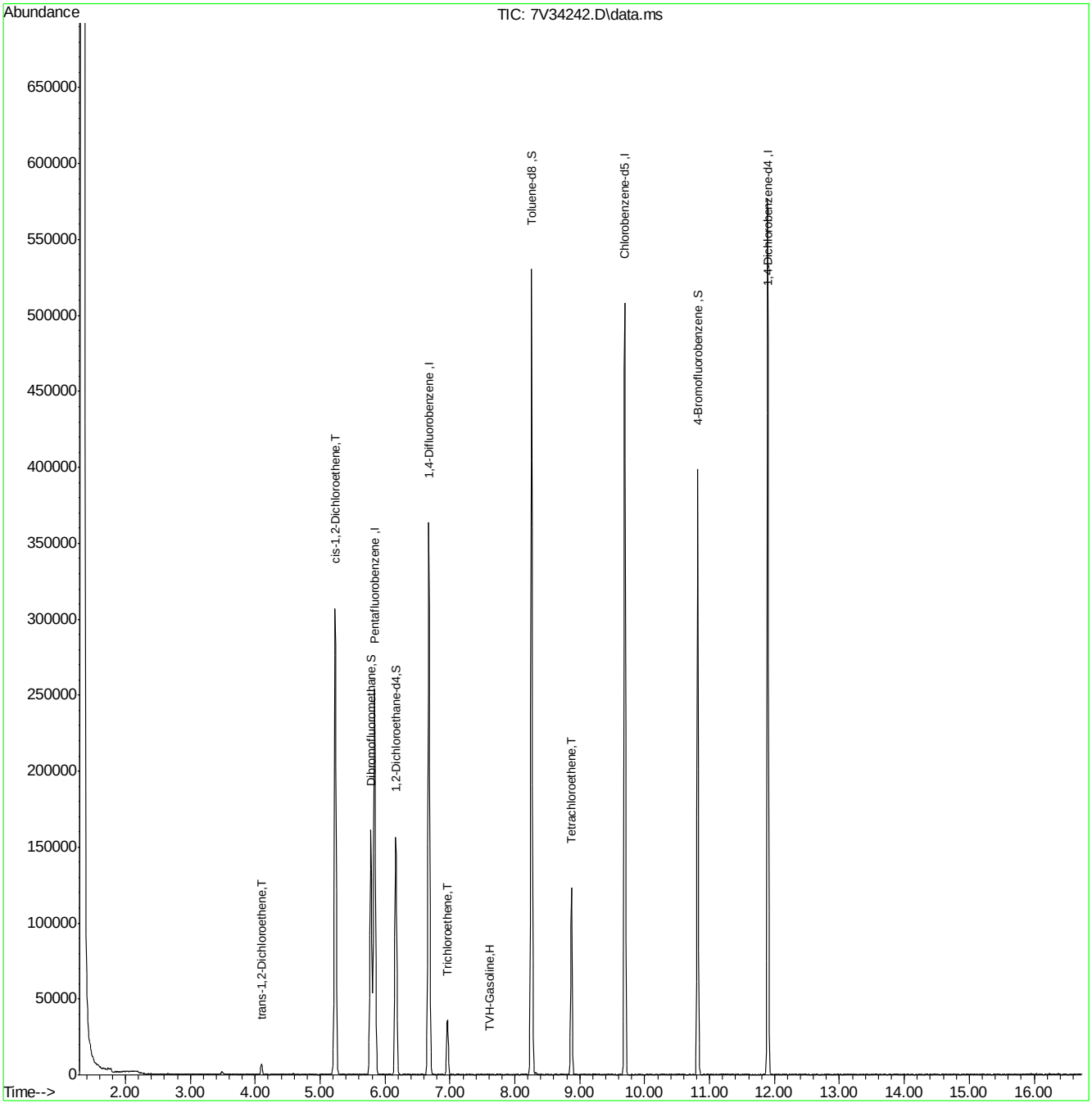
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.841	168	205871	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	323378	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	279999	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	146708	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	111030	49.69	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.38%			
41) 1,2-Dichloroethane-d4	6.164	102	22122	47.74	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 95.48%			
56) Toluene-d8	8.255	98	334832	49.73	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.46%			
76) 4-Bromofluorobenzene	10.815	95	125656	49.19	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 98.38%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	957935m	100.71	ug/L	
21) trans-1,2-Dichloroethene	4.097	96	2607	1.24	ug/L	94
29) cis-1,2-Dichloroethene	5.231	96	132484	55.23	ug/L	90
47) Trichloroethene	6.962	95	12179	5.00	ug/L	98
60) Tetrachloroethene	8.871	164	28256	15.27	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

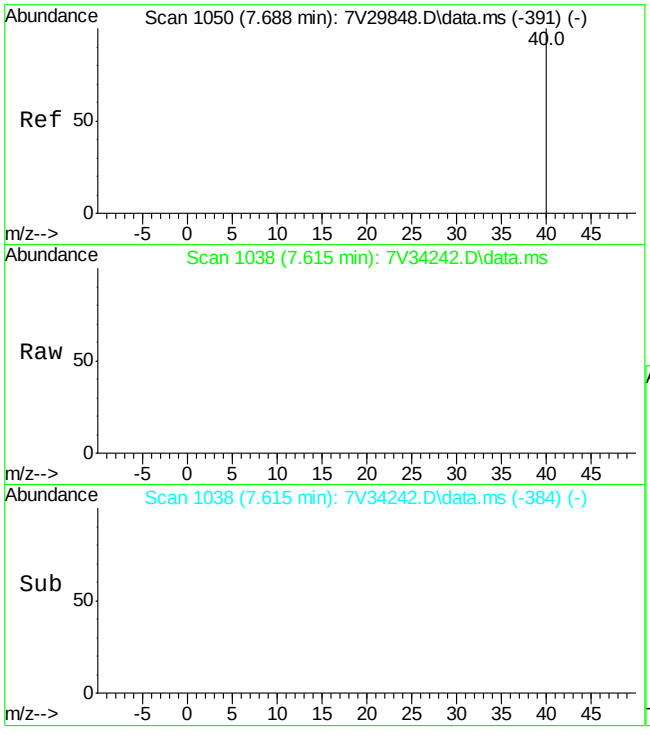
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34242.D
Acq On : 1 Jun 2016 8:29 pm
Operator : amandaj
Sample : D83090-7
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jun 02 12:06:59 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

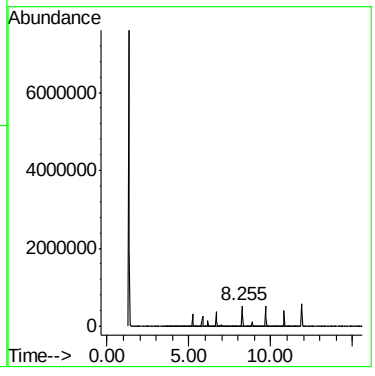


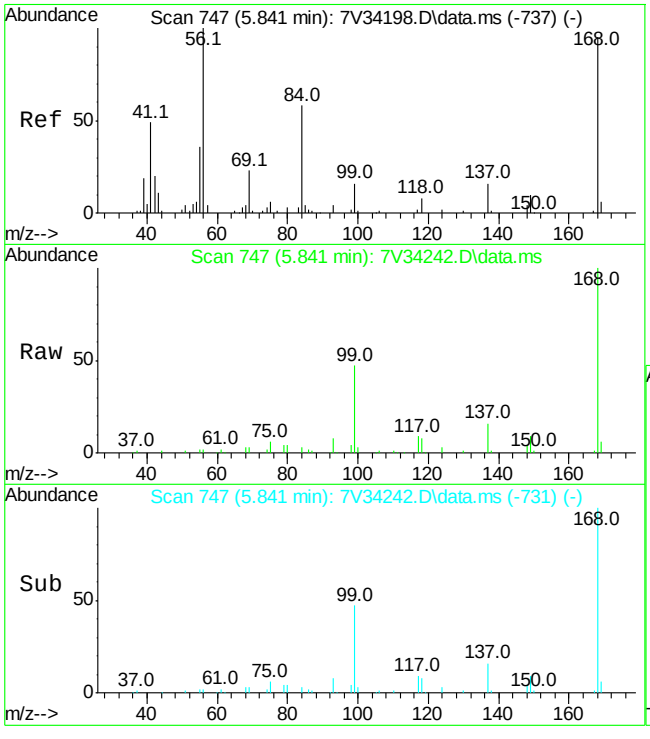
V7V1839F.M Thu Jun 02 13:00:03 2016 Page: 2



#1
TVH-Gasoline
Concen: 100.71 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion:TIC Resp: 957935

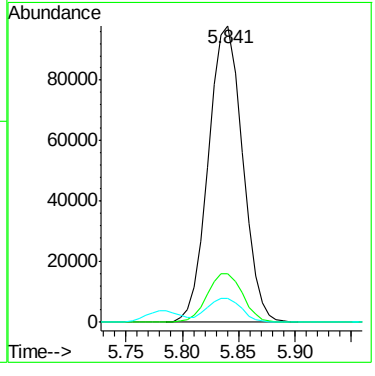


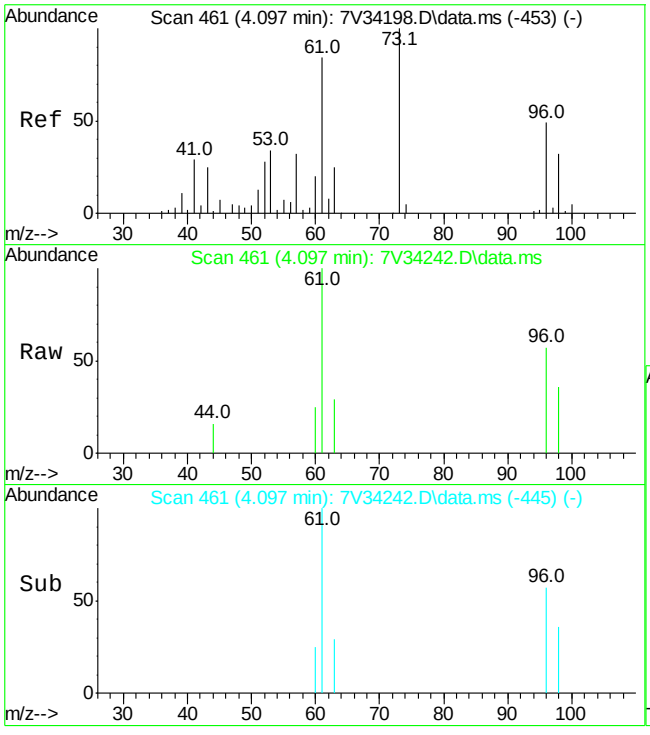


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.841 min Scan# 747
Delta R.T. -0.000 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion:168 Resp: 205871

Ion	Ratio	Lower	Upper
168	100		
137	16.9	0.0	36.8
93	8.2	0.0	28.3

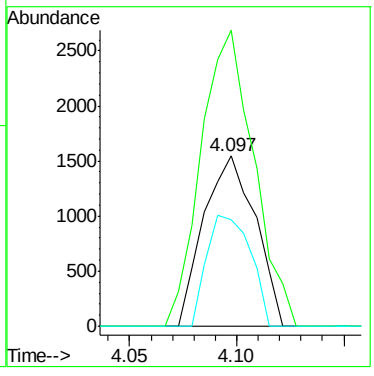


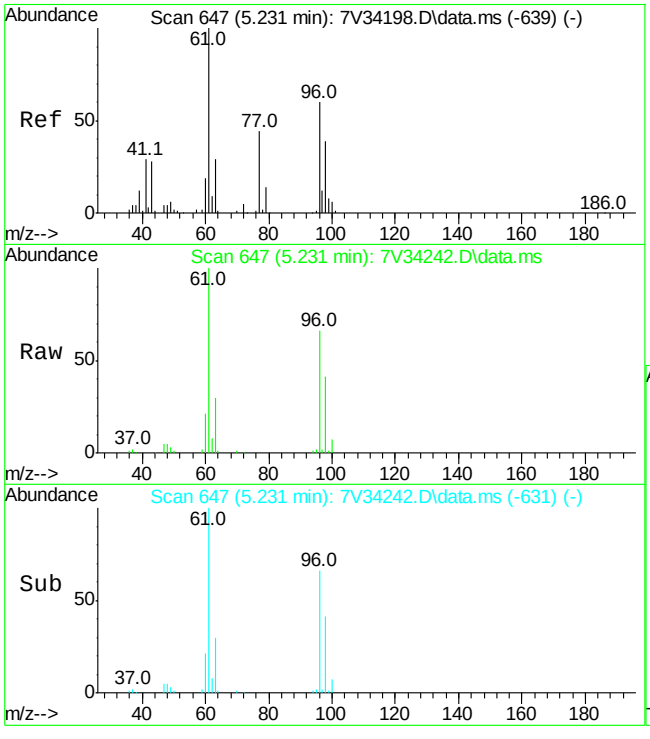


#21
trans-1,2-Dichloroethene
Concen: 1.24 ug/L
RT: 4.097 min Scan# 461
Delta R.T. 0.000 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion: 96 Resp: 2607

Ion	Ratio	Lower	Upper
96	100		
61	177.3	151.1	191.1
98	55.0	43.8	83.8

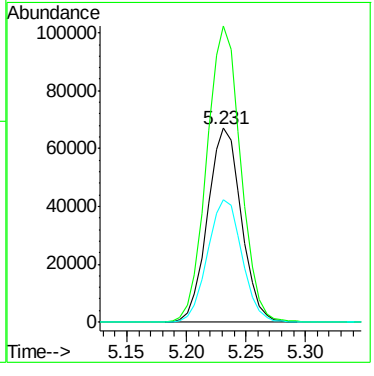




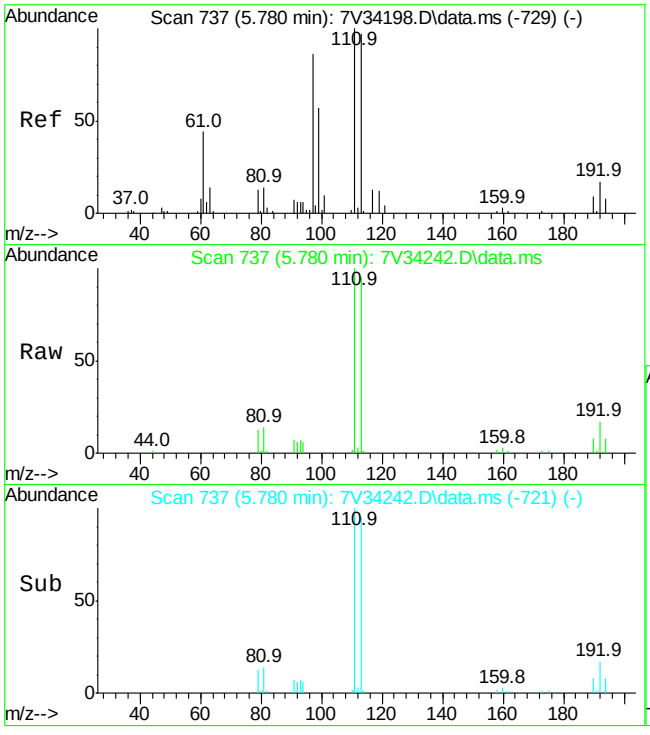
#29
cis-1,2-Dichloroethene
Concen: 55.23 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion: 96 Resp: 132484

Ion	Ratio	Lower	Upper
96	100		
61	153.4	151.8	191.8
98	64.3	44.4	84.4



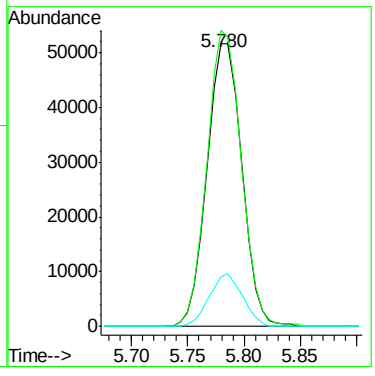
7.1.7

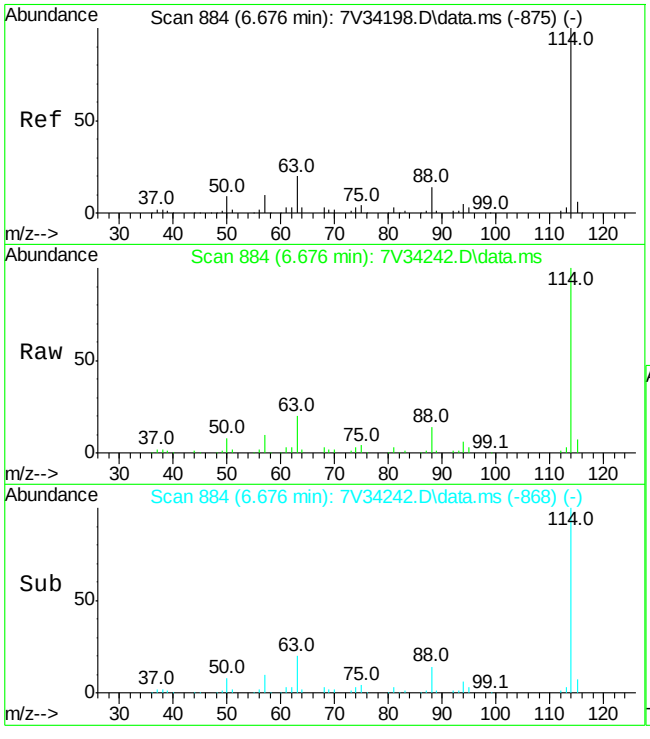


#35
Dibromofluoromethane
Concen: 49.69 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion:113 Resp: 111030

Ion	Ratio	Lower	Upper
113	100		
111	102.9	82.9	122.9
192	17.5	0.0	36.9

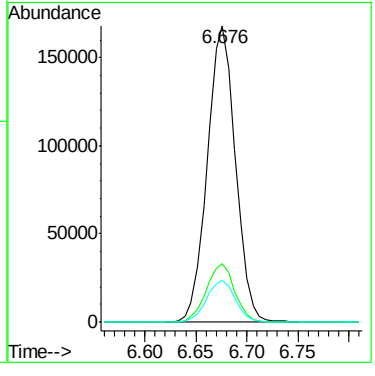


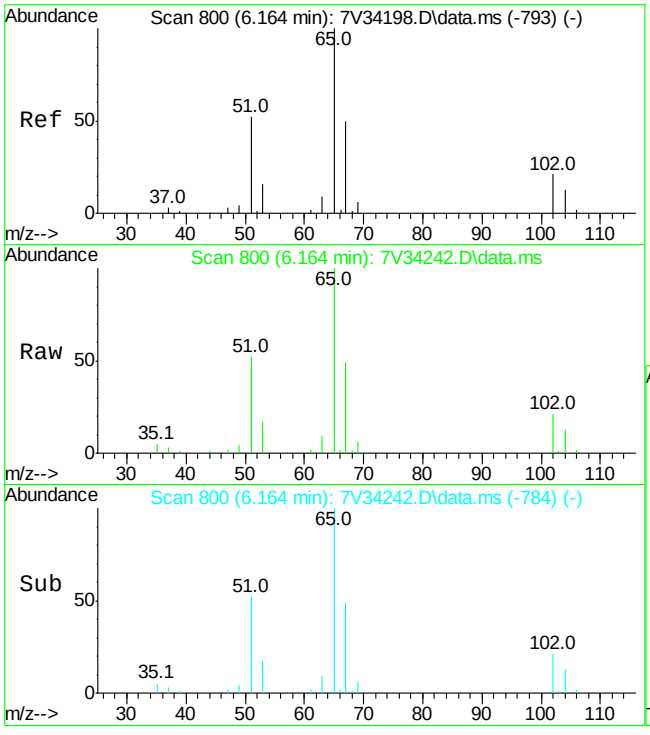


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion:114 Resp: 323378

Ion	Ratio	Lower	Upper
114	100		
63	19.7	0.0	39.6
88	14.2	0.0	34.3

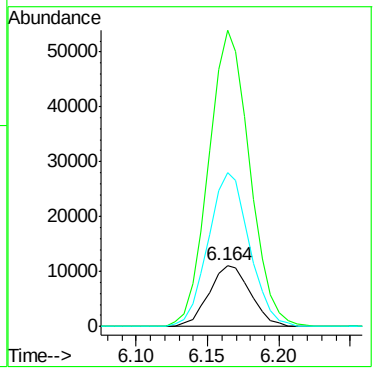


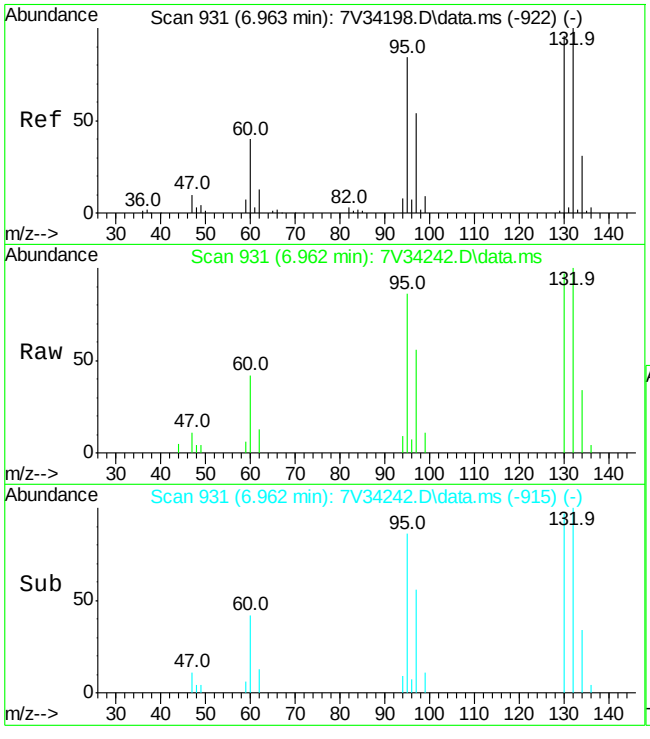


#41
1,2-Dichloroethane-d4
Concen: 47.74 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion:102 Resp: 22122

Ion	Ratio	Lower	Upper
102	100		
65	487.5	469.5	509.5
51	252.5	232.7	272.7

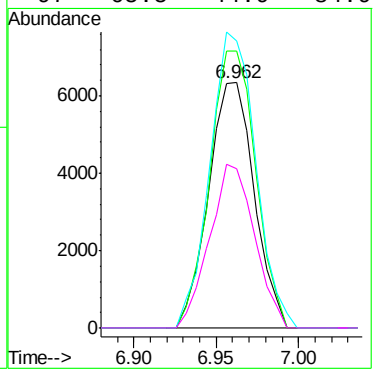


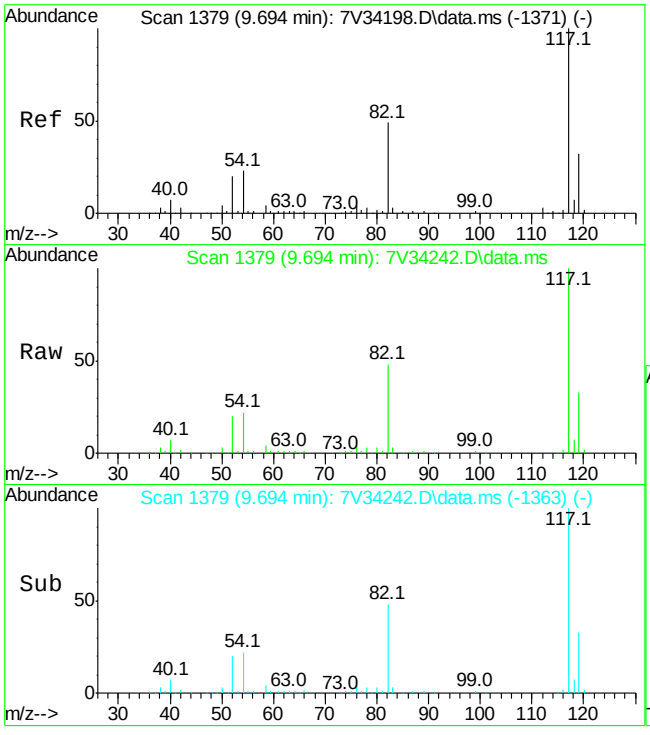


#47
Trichloroethene
Concen: 5.00 ug/L
RT: 6.962 min Scan# 931
Delta R.T. -0.001 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion: 95 Resp: 12179

Ion	Ratio	Lower	Upper
95	100		
130	113.6	93.2	133.2
132	120.7	95.9	135.9
97	65.5	44.9	84.9

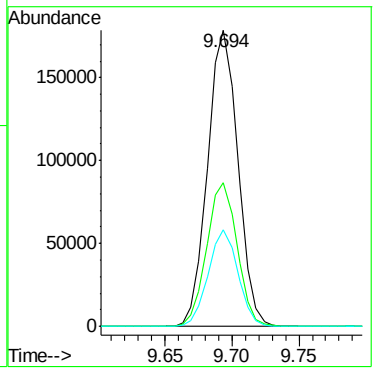


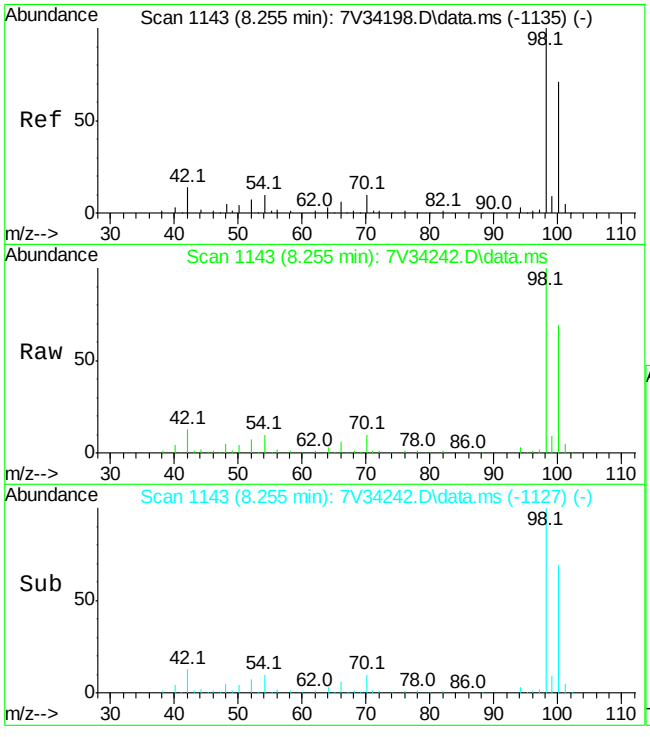


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion:117 Resp: 279999

Ion	Ratio	Lower	Upper
117	100		
82	48.5	28.7	68.7
119	32.0	12.2	52.2

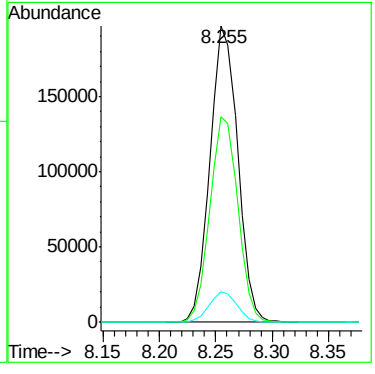


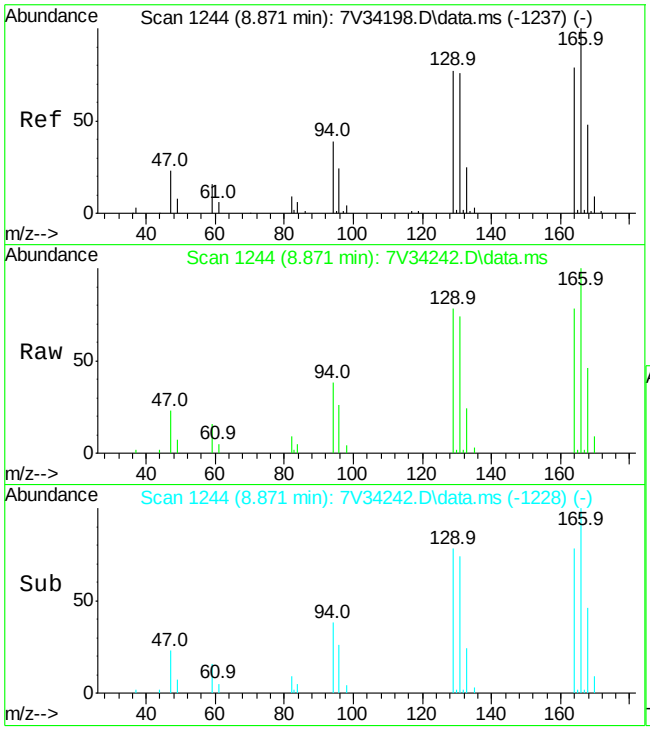


#56
Toluene-d8
Concen: 49.73 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion: 98 Resp: 334832

Ion	Ratio	Lower	Upper
98	100		
100	69.9	49.8	89.8
70	10.2	0.0	30.1

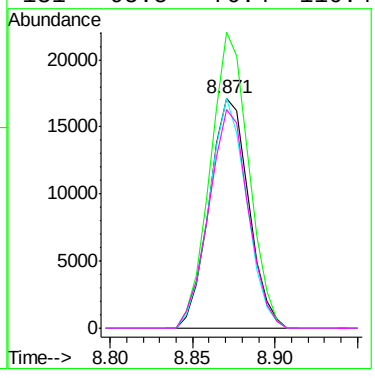


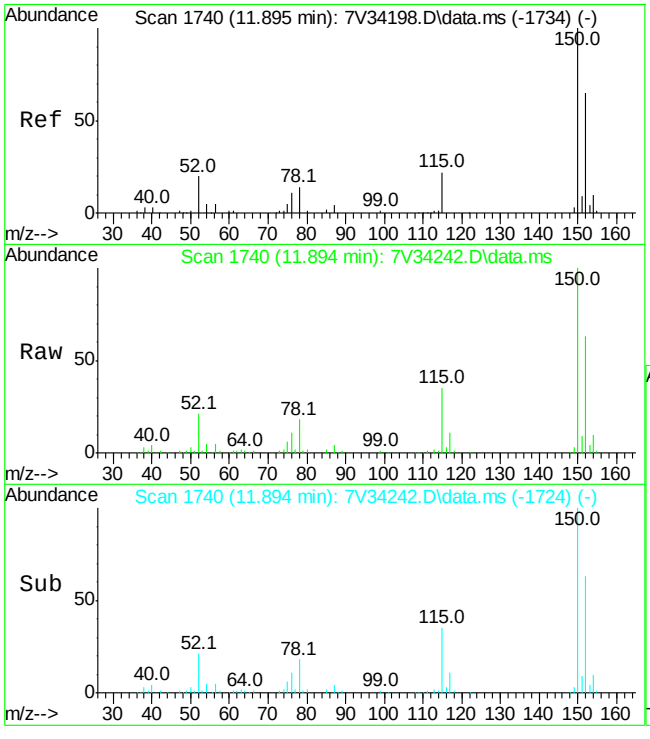


#60
Tetrachloroethene
Concen: 15.27 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion:164 Resp: 28256

Ion	Ratio	Lower	Upper
164	100		
166	125.8	107.5	147.5
129	95.2	76.8	116.8
131	95.5	76.4	116.4

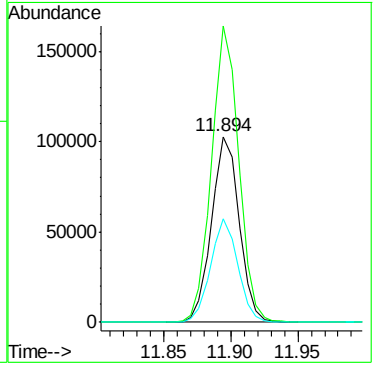


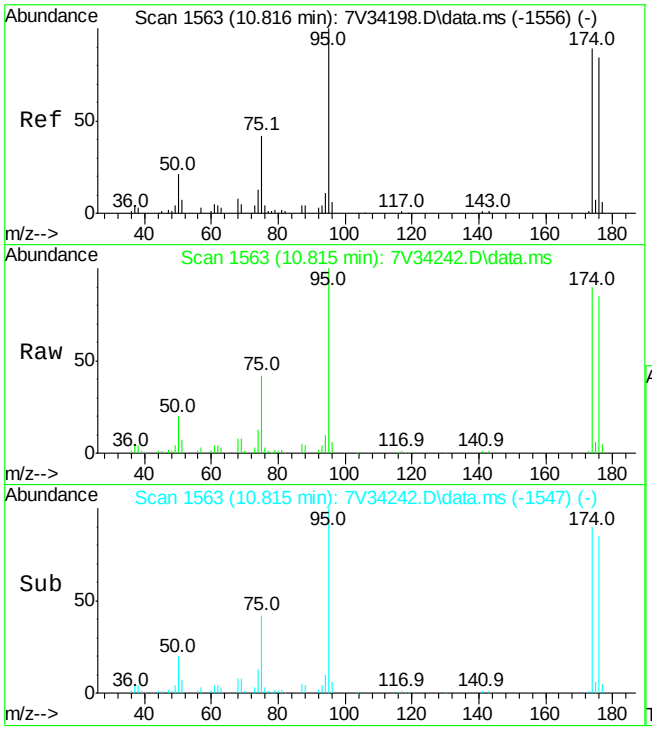


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion:152 Resp: 146708

Ion	Ratio	Lower	Upper
152	100		
150	157.3	154.9	194.9
115	54.7	34.6	74.6

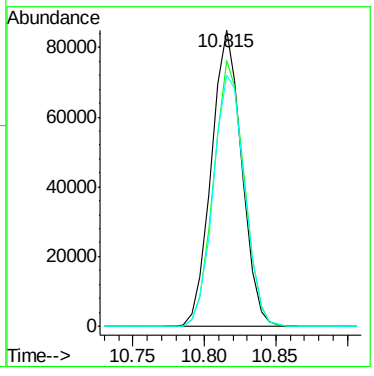




#76
4-Bromofluorobenzene
Concen: 49.19 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34242.D
Acq: 1 Jun 2016 8:29 pm

Tgt Ion: 95 Resp: 125656

Ion	Ratio	Lower	Upper
95	100		
174	90.3	70.3	110.3
176	87.7	67.4	107.4



7.1.7

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34243.D
Acq On : 1 Jun 2016 8:52 pm
Operator : amandaj
Sample : D83090-8
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Jun 02 12:12:25 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
2) Pentafluorobenzene	5.841	168	187922	50.00 ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	292776	50.00 ug/L	0.00
55) Chlorobenzene-d5	9.694	117	249309	50.00 ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	132762	50.00 ug/L	0.00
System Monitoring Compounds					
35) Dibromofluoromethane	5.786	113	99181	48.63 ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 97.26%		
41) 1,2-Dichloroethane-d4	6.170	102	20524	48.92 ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 97.84%		
56) Toluene-d8	8.255	98	299359	49.93 ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.86%		
76) 4-Bromofluorobenzene	10.816	95	112696	48.75 ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 97.50%		
Target Compounds					Qvalue
1) TVH-Gasoline	7.615	TIC	164589m	17.30 ug/L	
29) cis-1,2-Dichloroethene	5.237	96	8192	3.74 ug/L	91
36) 1,1,1-Trichloroethane	5.792	97	6606	2.32 ug/L	96
47) Trichloroethene	6.957	95	4235	1.92 ug/L	98
60) Tetrachloroethene	8.871	164	8240	5.00 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

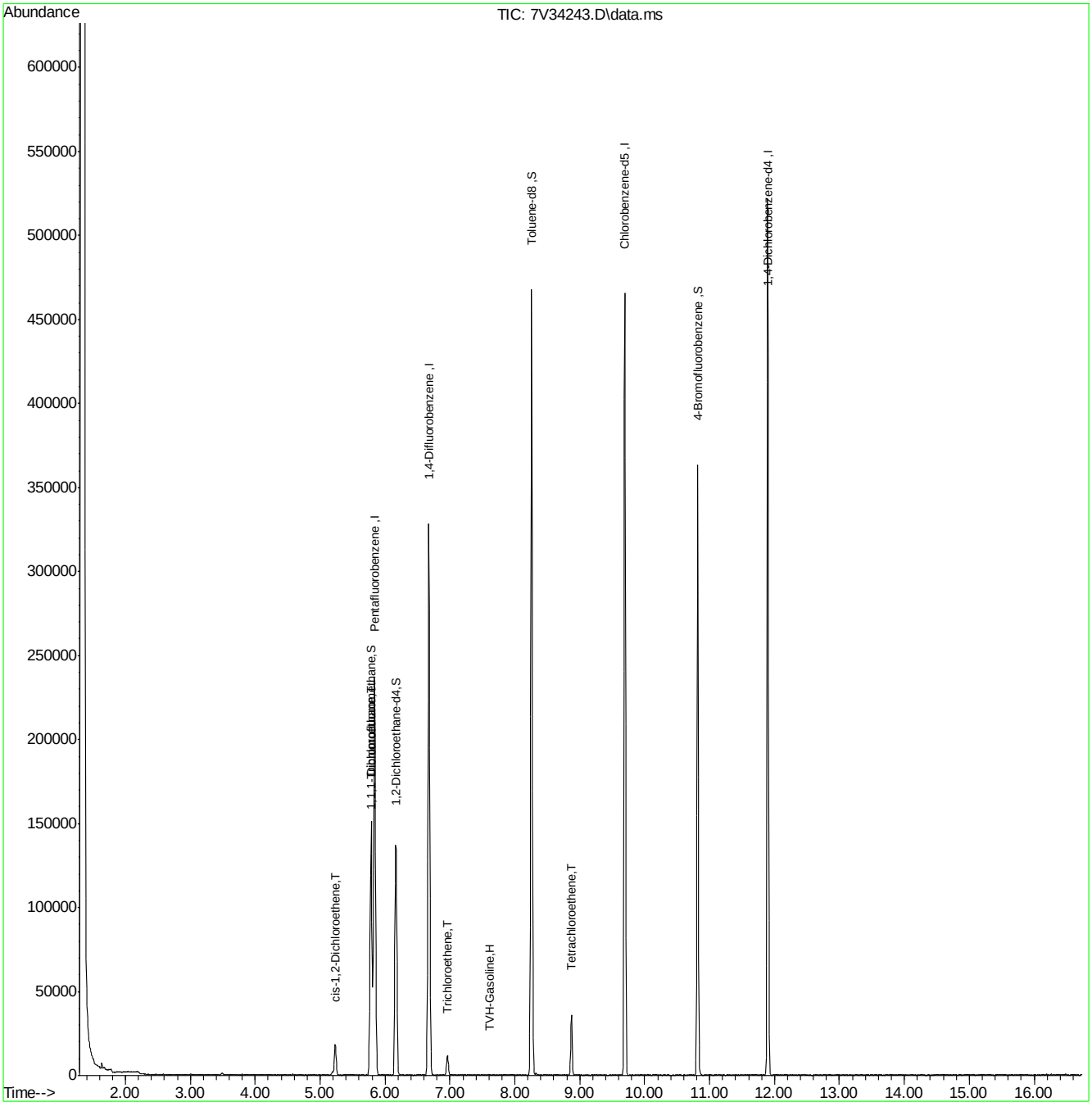
7.1.8

7

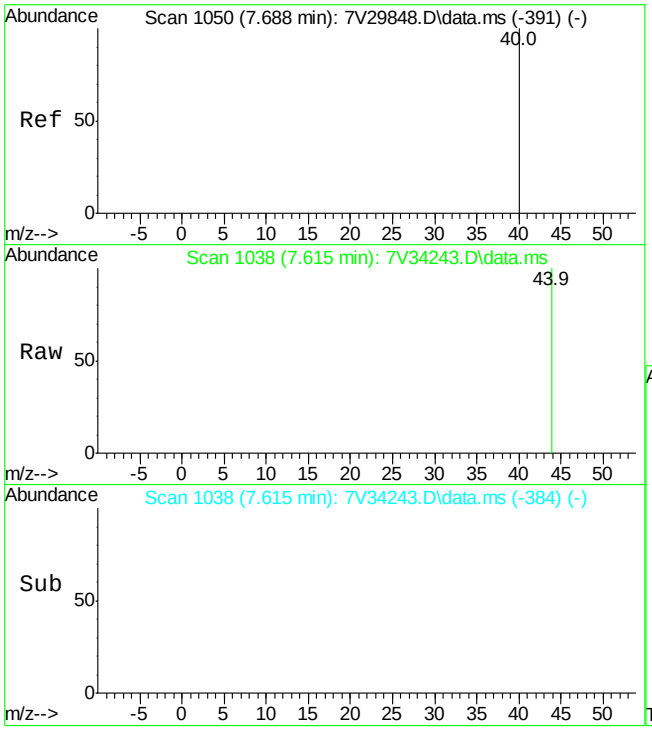
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34243.D
Acq On : 1 Jun 2016 8:52 pm
Operator : amandaj
Sample : D83090-8
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Jun 02 12:12:25 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

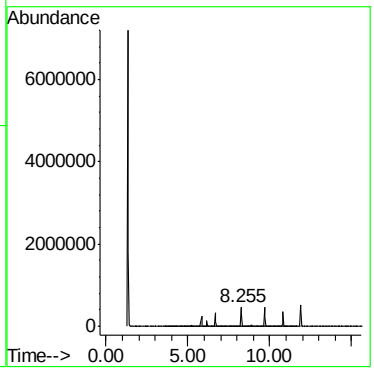


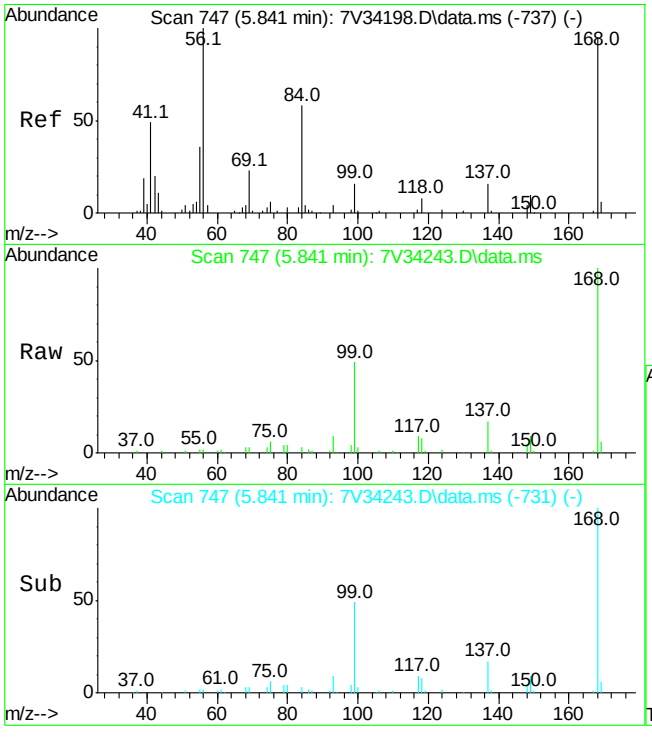
V7V1839F.M Thu Jun 02 13:00:09 2016 Page: 2



#1
TVH-Gasoline
Concen: 17.30 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion:TIC Resp: 164589

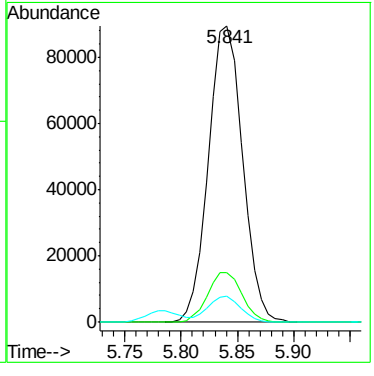


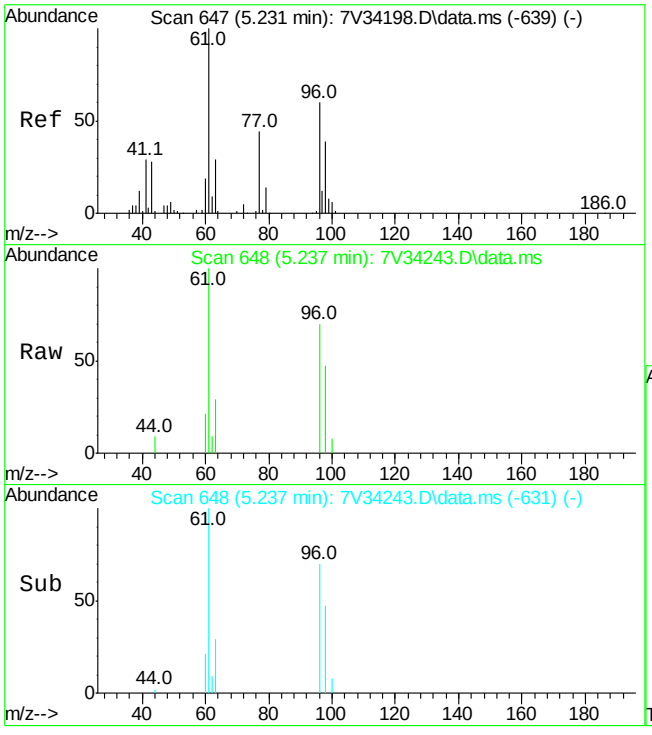


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.841 min Scan# 747
Delta R.T. 0.000 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion:168 Resp: 187922

Ion	Ratio	Lower	Upper
168	100		
137	16.7	0.0	36.8
93	8.2	0.0	28.3

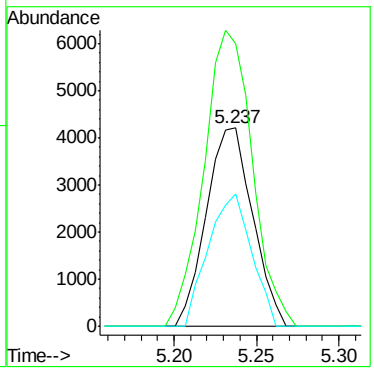


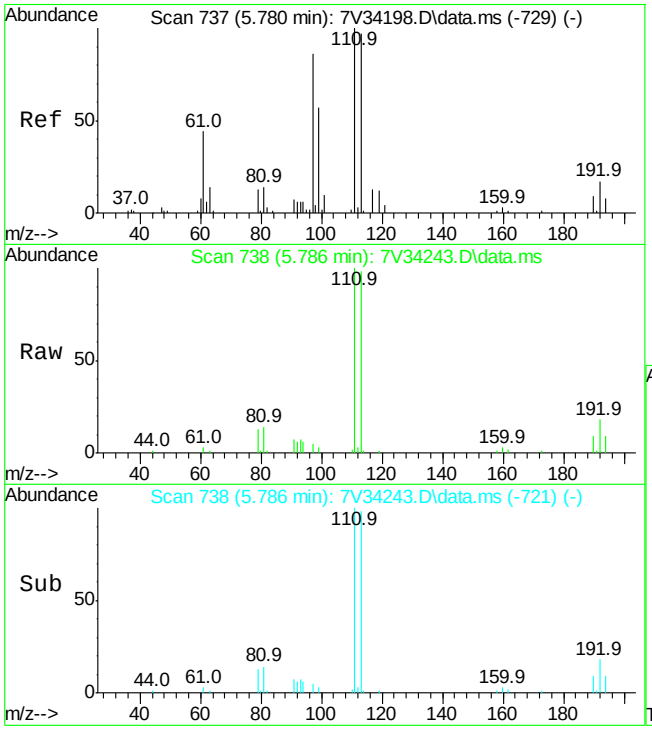


#29
cis-1,2-Dichloroethene
Concen: 3.74 ug/L
RT: 5.237 min Scan# 648
Delta R.T. 0.006 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion: 96 Resp: 8192

Ion	Ratio	Lower	Upper
96	100		
61	156.2	151.8	191.8
98	62.3	44.4	84.4

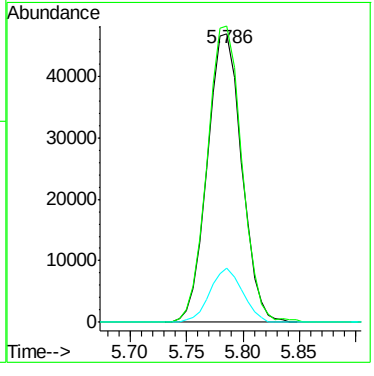


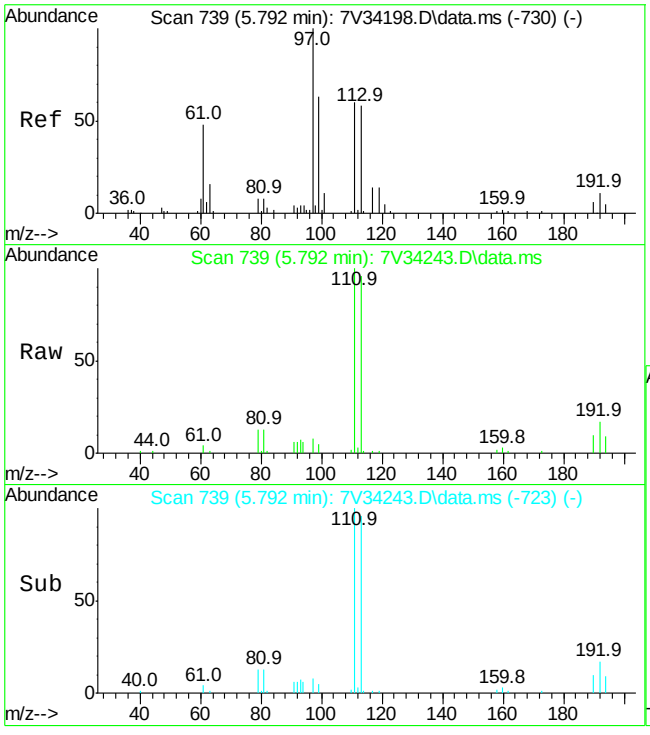


#35
Dibromofluoromethane
Concen: 48.63 ug/L
RT: 5.786 min Scan# 738
Delta R.T. 0.006 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion:113 Resp: 99181

Ion	Ratio	Lower	Upper
113	100		
111	103.3	82.9	122.9
192	17.5	0.0	36.9

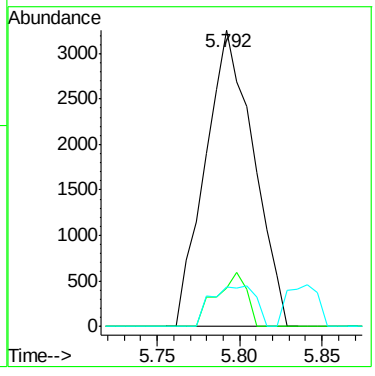


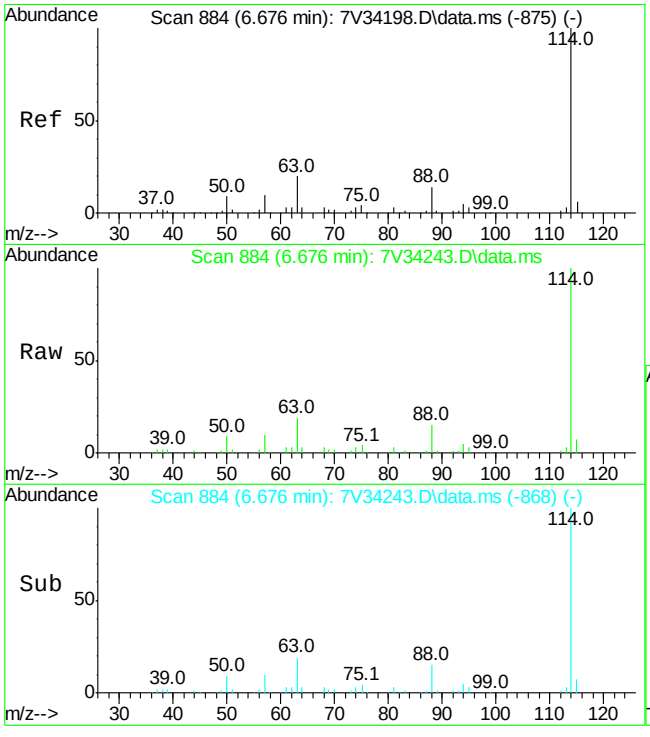


#36
1,1,1-Trichloroethane
Concen: 2.32 ug/L
RT: 5.792 min Scan# 739
Delta R.T. 0.000 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion: 97 Resp: 6606

Ion	Ratio	Lower	Upper
97	100		
63	12.7	0.0	35.6
119	13.3	0.0	33.5

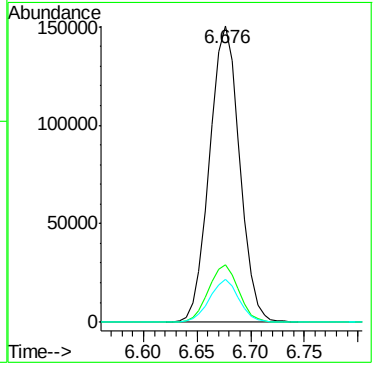


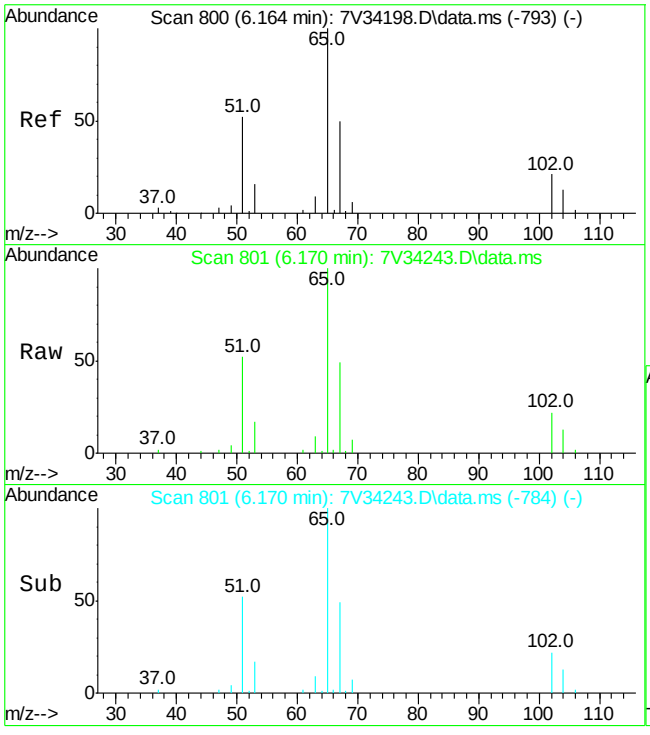


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. 0.000 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion:114 Resp: 292776

Ion	Ratio	Lower	Upper
114	100		
63	19.3	0.0	39.6
88	14.0	0.0	34.3

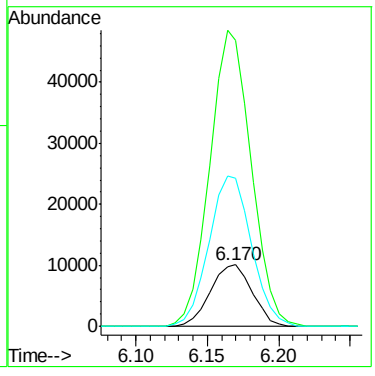


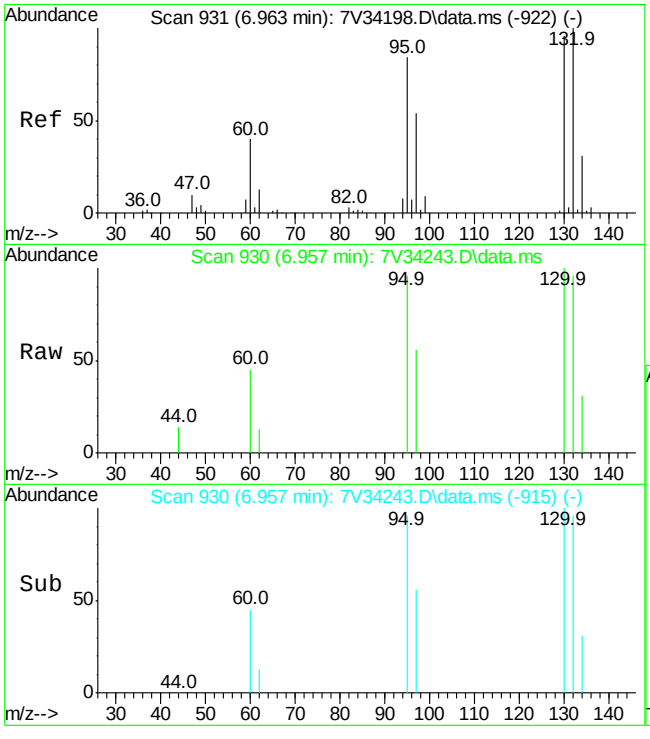


#41
1,2-Dichloroethane-d4
Concen: 48.92 ug/L
RT: 6.170 min Scan# 801
Delta R.T. 0.006 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion:102 Resp: 20524

Ion	Ratio	Lower	Upper
102	100		
65	476.4	469.5	509.5
51	248.6	232.7	272.7

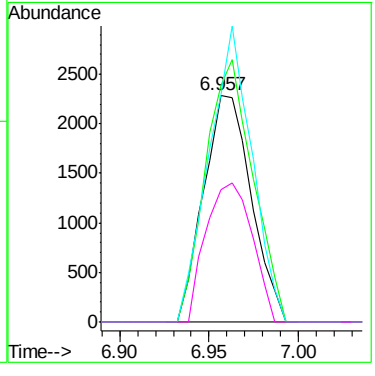


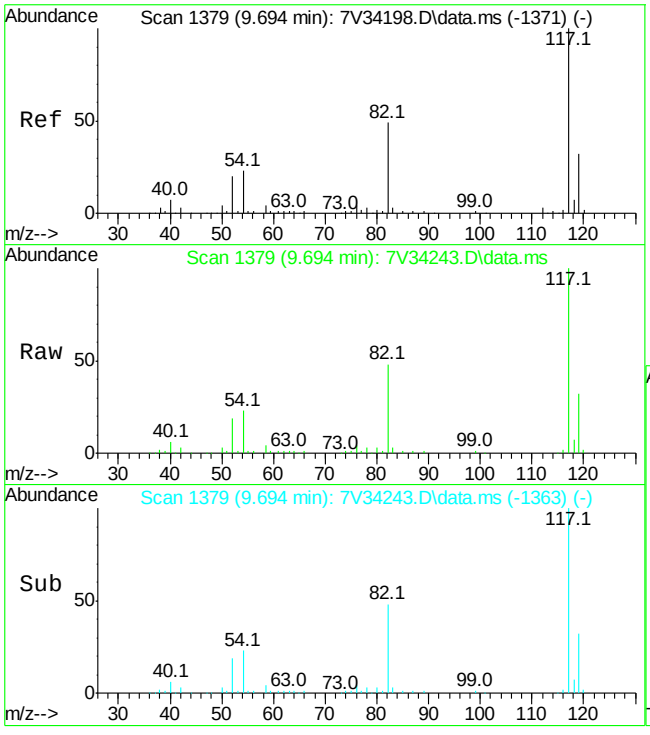


#47
Trichloroethene
Concen: 1.92 ug/L
RT: 6.957 min Scan# 930
Delta R.T. -0.006 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion: 95 Resp: 4235

Ion	Ratio	Lower	Upper
95	100		
130	114.4	93.2	133.2
132	117.3	95.9	135.9
97	59.5	44.9	84.9

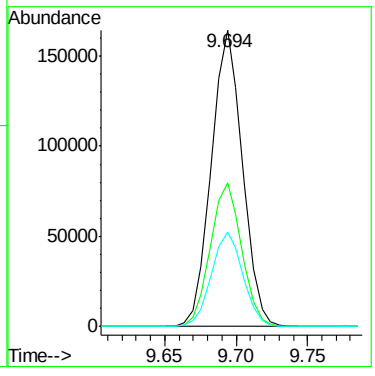


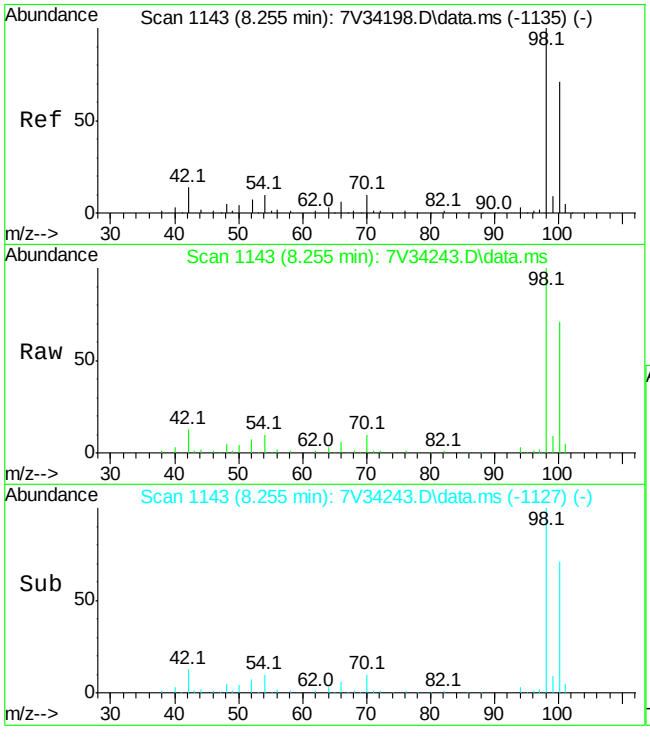


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. 0.000 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion:117 Resp: 249309

Ion	Ratio	Lower	Upper
117	100		
82	48.6	28.7	68.7
119	32.0	12.2	52.2

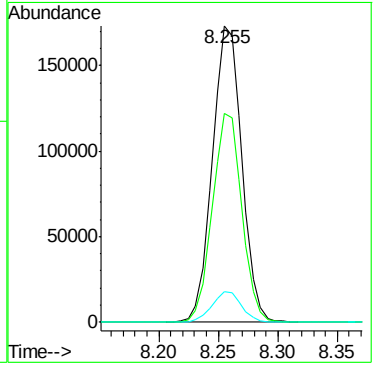


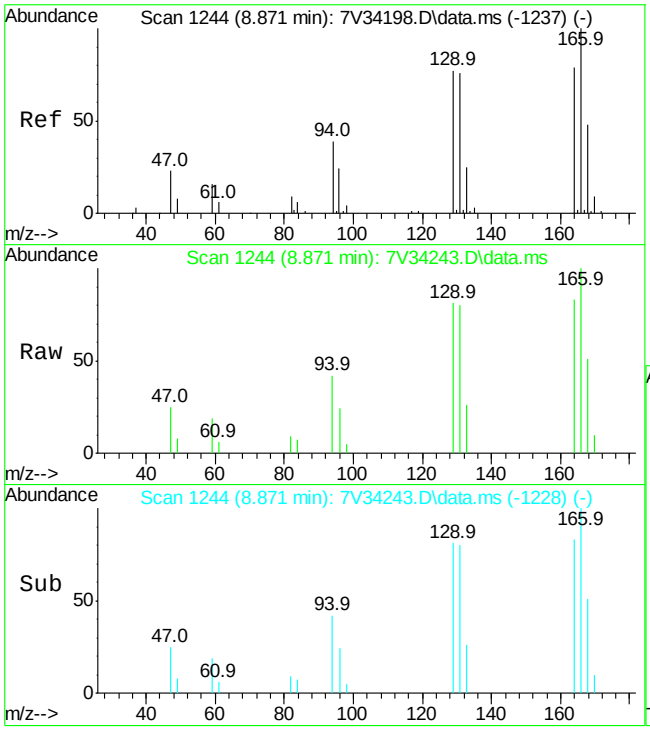


#56
Toluene-d8
Concen: 49.93 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. 0.000 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion: 98 Resp: 299359

Ion	Ratio	Lower	Upper
98	100		
100	70.2	49.8	89.8
70	10.2	0.0	30.1

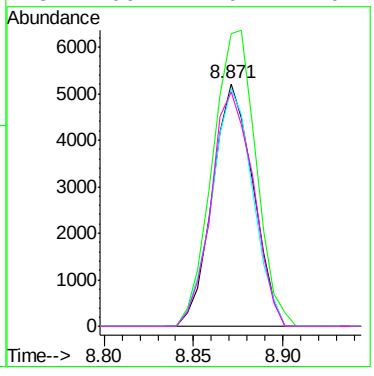


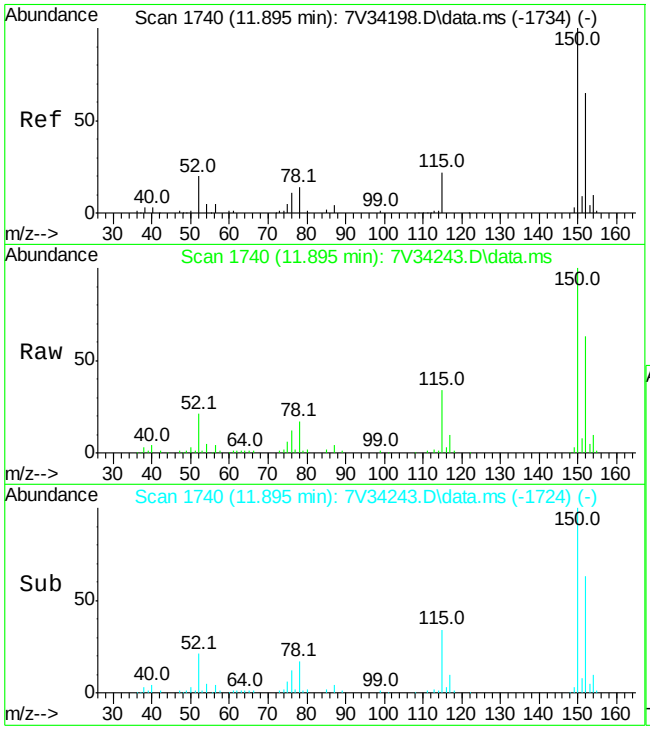


#60
Tetrachloroethene
Concen: 5.00 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion:164 Resp: 8240

Ion	Ratio	Lower	Upper
164	100		
166	130.7	107.5	147.5
129	98.8	76.8	116.8
131	100.2	76.4	116.4

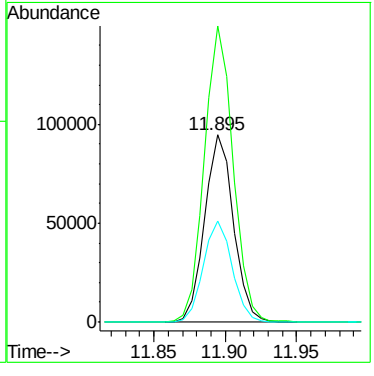


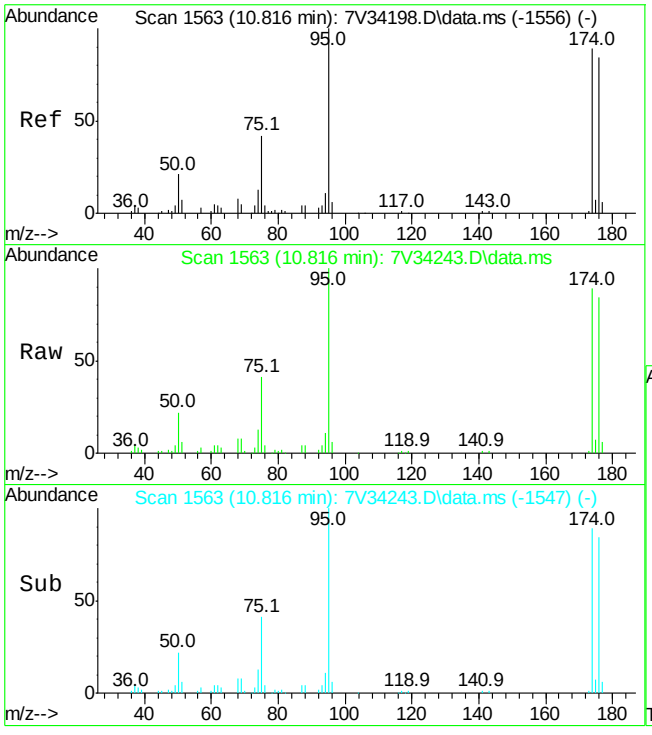


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. 0.000 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion:152 Resp: 132762

Ion	Ratio	Lower	Upper
152	100		
150	158.0	154.9	194.9
115	54.1	34.6	74.6

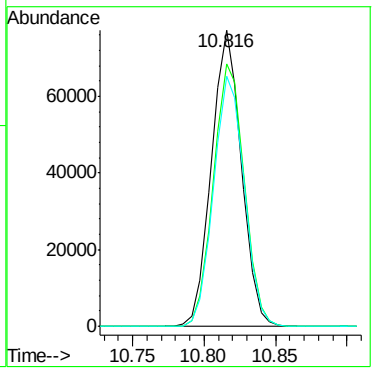




#76
4-Bromofluorobenzene
Concen: 48.75 ug/L
RT: 10.816 min Scan# 1563
Delta R.T. -0.000 min
Lab File: 7V34243.D
Acq: 1 Jun 2016 8:52 pm

Tgt Ion: 95 Resp: 112696

Ion	Ratio	Lower	Upper
95	100		
174	91.4	70.3	110.3
176	86.7	67.4	107.4



7.1.8

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34244.D
Acq On : 1 Jun 2016 9:15 pm
Operator : amandaj
Sample : D83090-9
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Jun 02 12:13:19 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	205580	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	328510	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	285798	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	148323	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	111512	49.98	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.96%			
41) 1,2-Dichloroethane-d4	6.164	102	23152	49.19	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 98.38%			
56) Toluene-d8	8.255	98	342272	49.80	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.60%			
76) 4-Bromofluorobenzene	10.815	95	128033	49.57	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 99.14%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	313303m	32.94	ug/L	
29) cis-1,2-Dichloroethene	5.225	96	7835	3.27	ug/L	95
47) Trichloroethene	6.956	95	4858	1.97	ug/L	97
60) Tetrachloroethene	8.871	164	27480	14.55	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

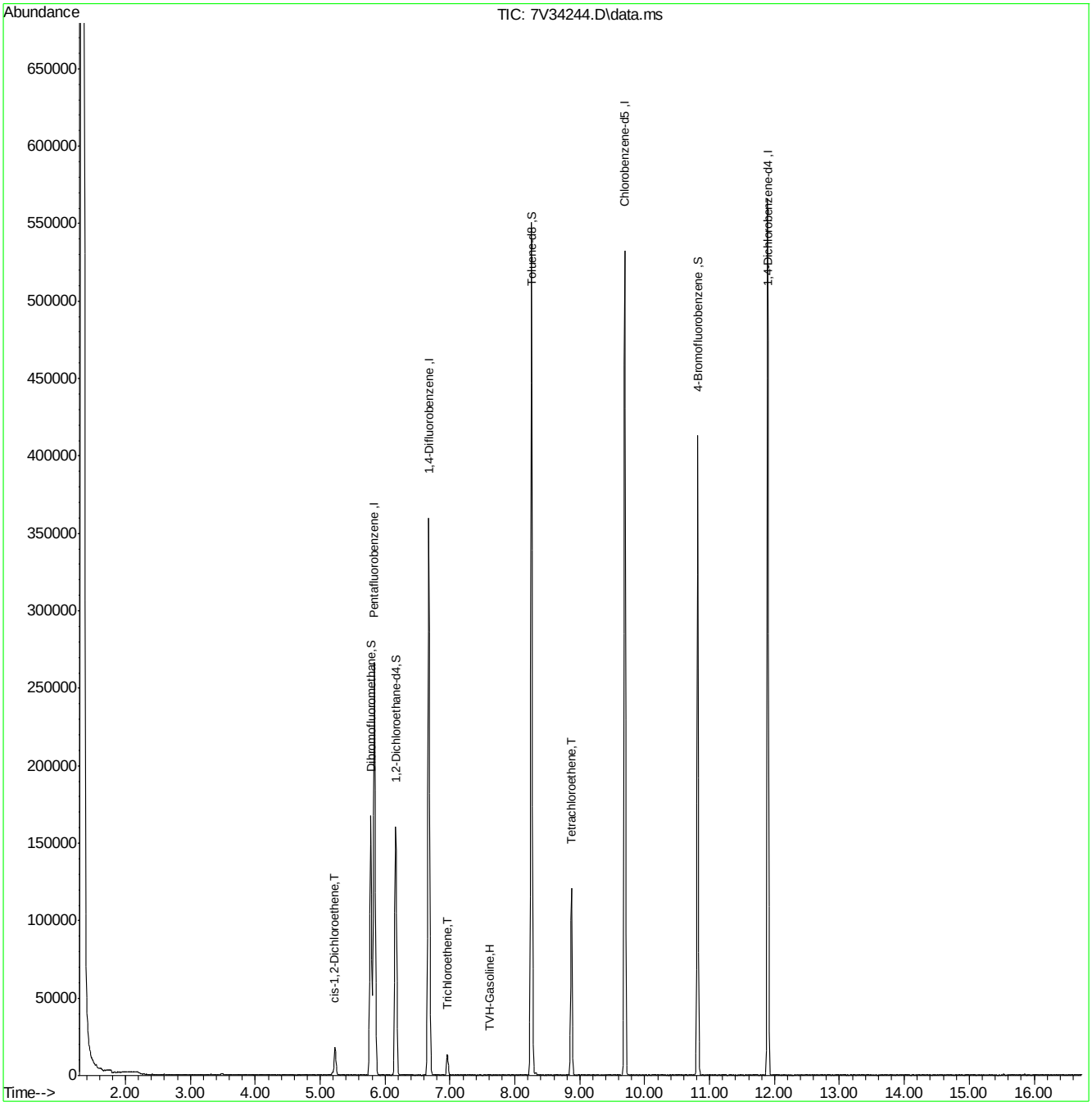
7.1.9

7

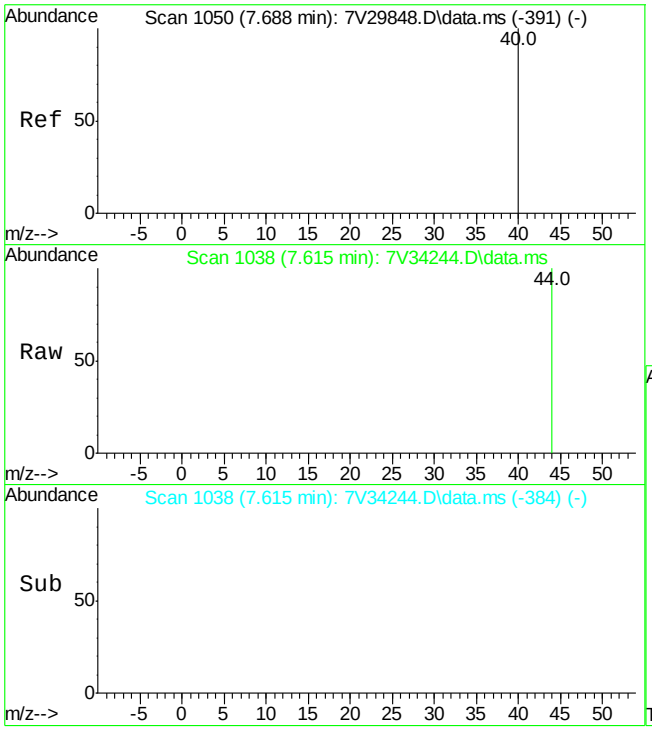
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34244.D
Acq On : 1 Jun 2016 9:15 pm
Operator : amandaj
Sample : D83090-9
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Jun 02 12:13:19 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

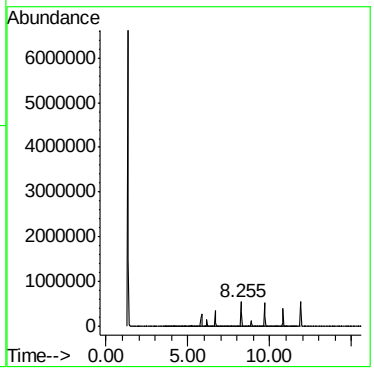


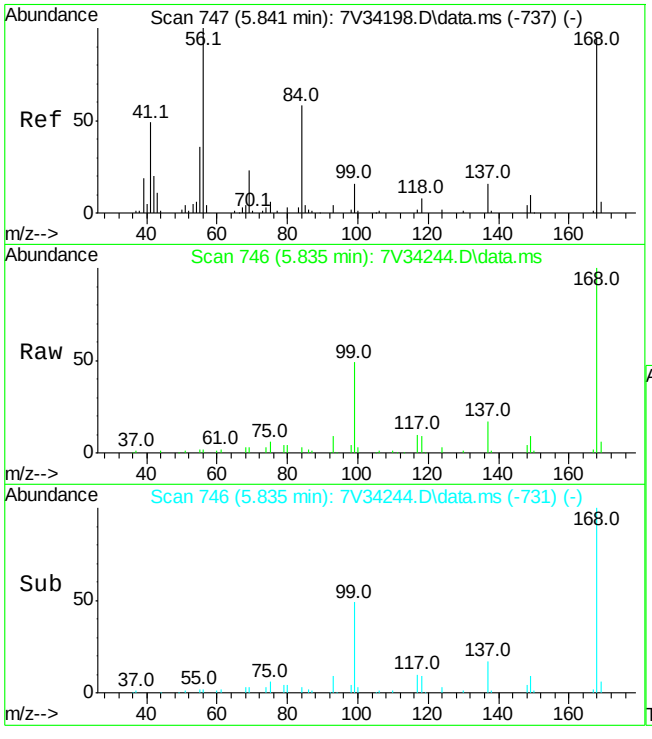
V7V1839F.M Thu Jun 02 13:00:15 2016 Page: 2



#1
TVH-Gasoline
Concen: 32.94 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion:TIC Resp: 313303

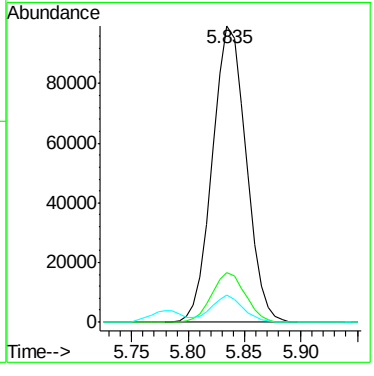


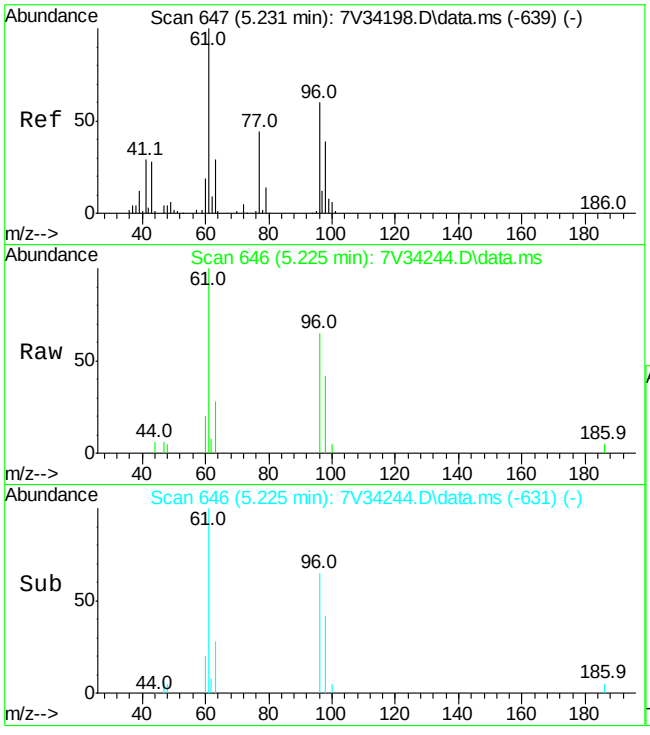


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion:168 Resp: 205580

Ion	Ratio	Lower	Upper
168	100		
137	16.6	0.0	36.8
93	8.3	0.0	28.3

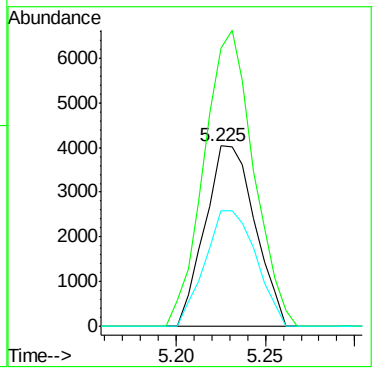


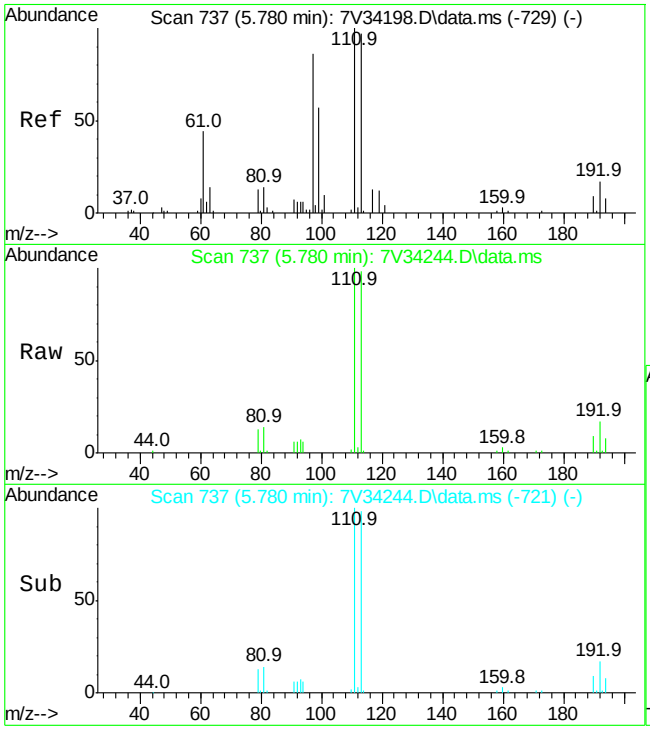


#29
cis-1,2-Dichloroethene
Concen: 3.27 ug/L
RT: 5.225 min Scan# 646
Delta R.T. -0.006 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion: 96 Resp: 7835

Ion	Ratio	Lower	Upper
96	100		
61	162.7	151.8	191.8
98	65.3	44.4	84.4

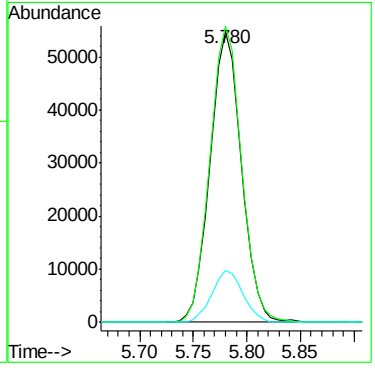


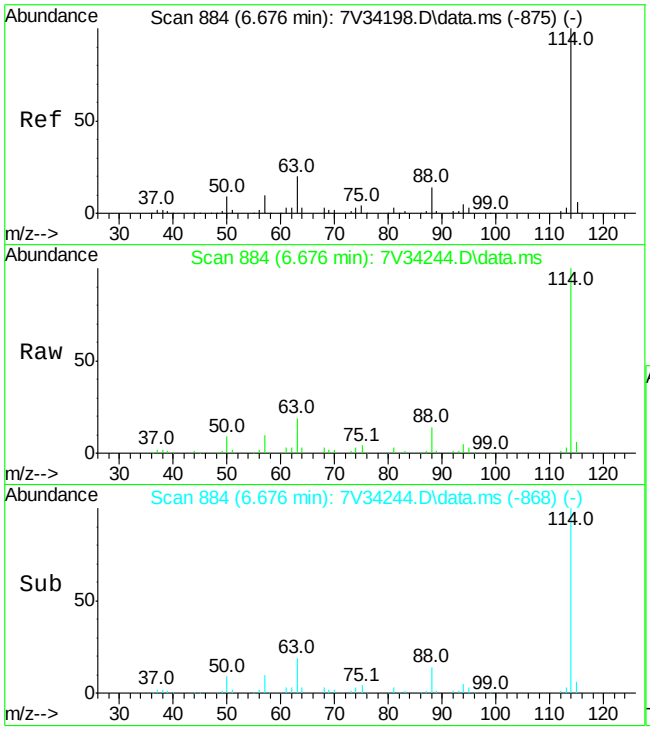


#35
Dibromofluoromethane
Concen: 49.98 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion:113 Resp: 111512

Ion	Ratio	Lower	Upper
113	100		
111	102.5	82.9	122.9
192	17.5	0.0	36.9

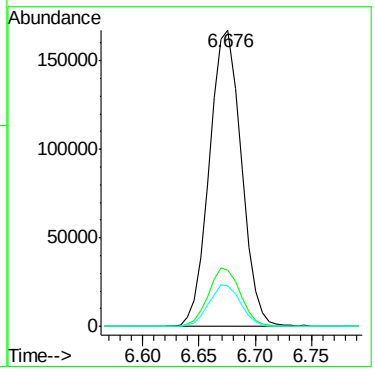


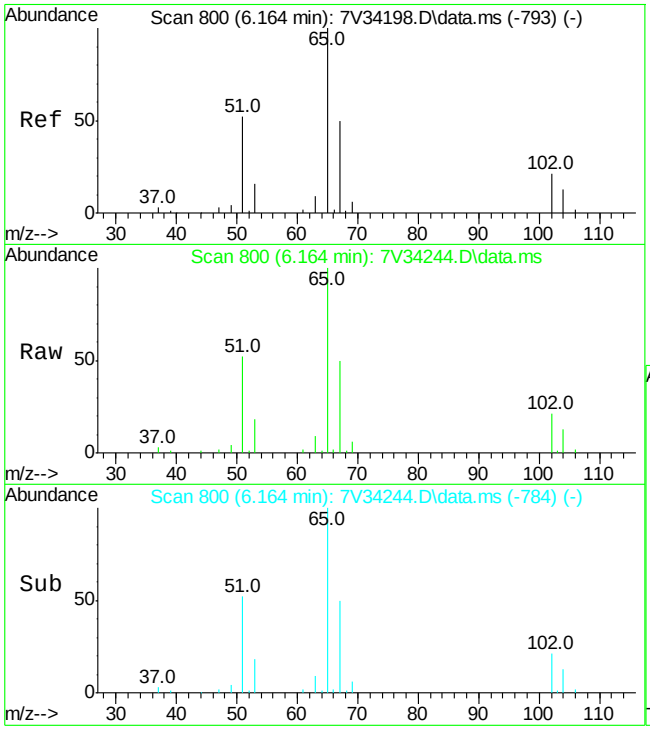


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion:114 Resp: 328510

Ion	Ratio	Lower	Upper
114	100		
63	19.6	0.0	39.6
88	13.9	0.0	34.3

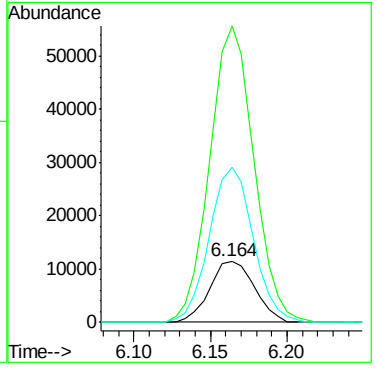


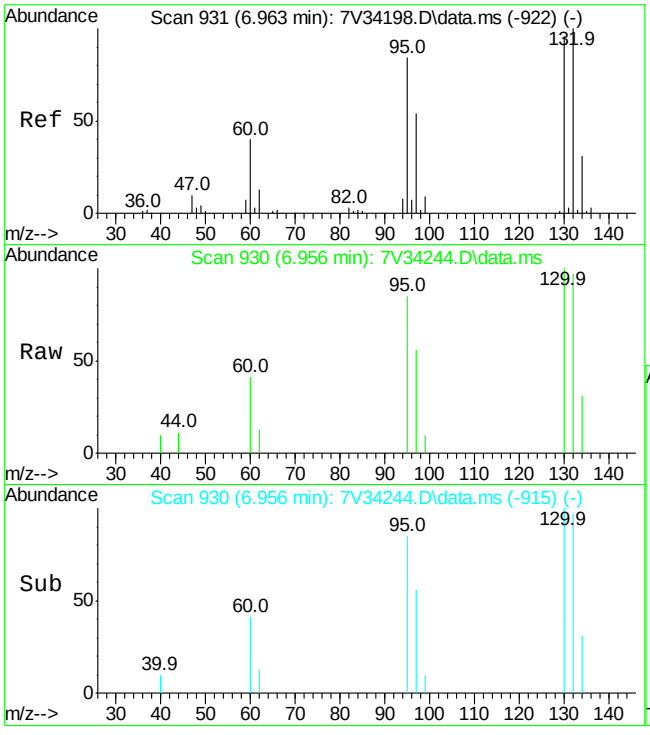


#41
1,2-Dichloroethane-d4
Concen: 49.19 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion:102 Resp: 23152

Ion	Ratio	Lower	Upper
102	100		
65	480.5	469.5	509.5
51	249.5	232.7	272.7

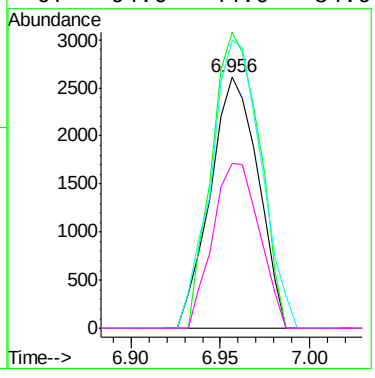


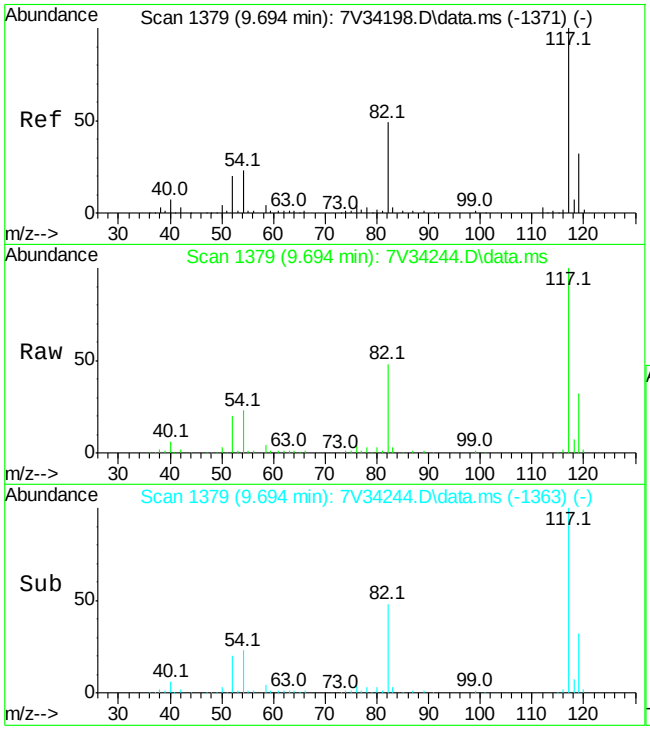


#47
Trichloroethene
Concen: 1.97 ug/L
RT: 6.956 min Scan# 930
Delta R.T. -0.007 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion: 95 Resp: 4858

Ion	Ratio	Lower	Upper
95	100		
130	116.7	93.2	133.2
132	120.2	95.9	135.9
97	64.0	44.9	84.9

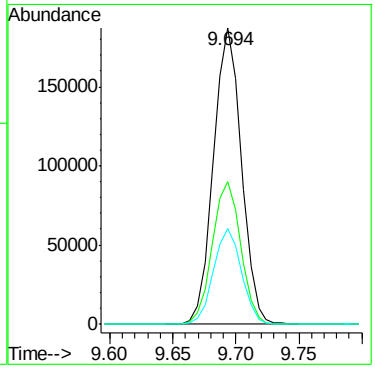


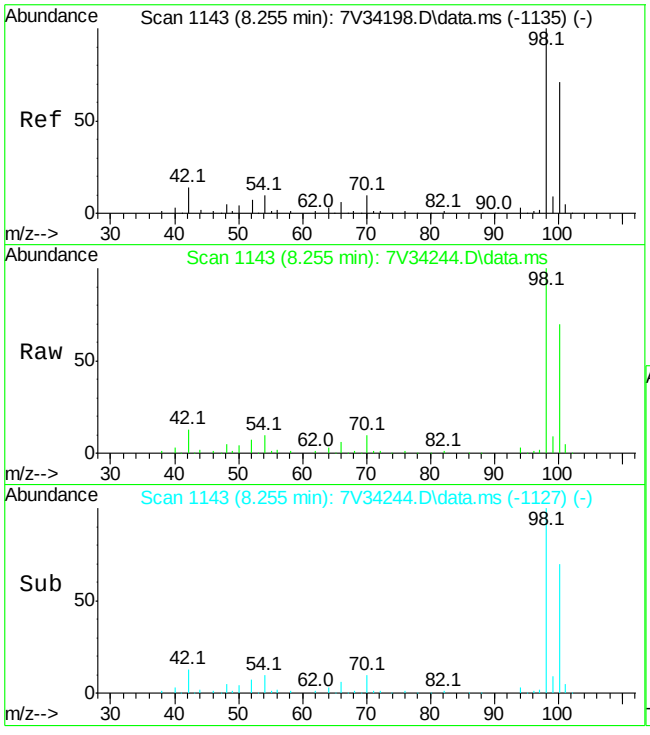


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion:117 Resp: 285798

Ion	Ratio	Lower	Upper
117	100		
82	48.8	28.7	68.7
119	32.2	12.2	52.2

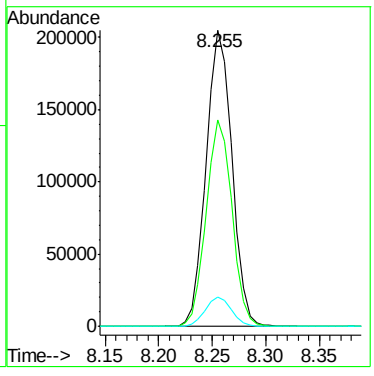


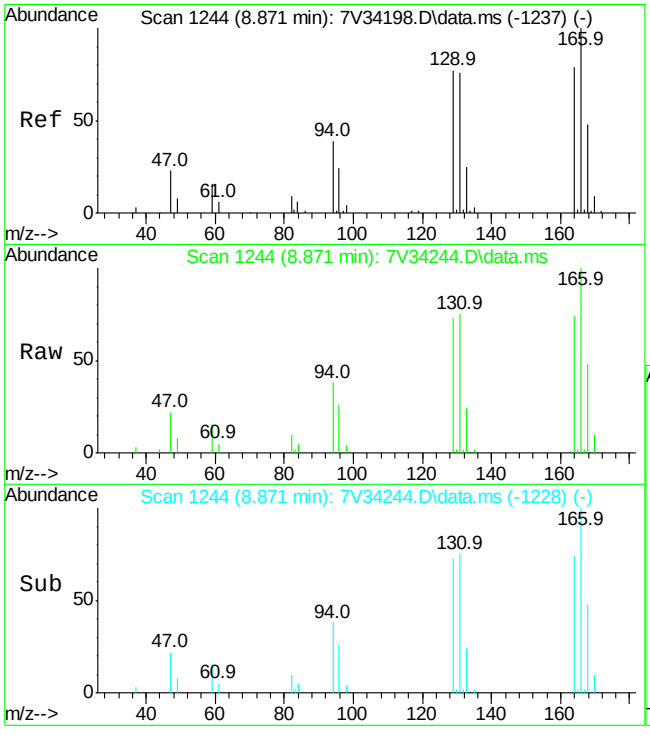


#56
Toluene-d8
Concen: 49.80 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion: 98 Resp: 342272

Ion	Ratio	Lower	Upper
98	100		
100	69.5	49.8	89.8
70	10.0	0.0	30.1

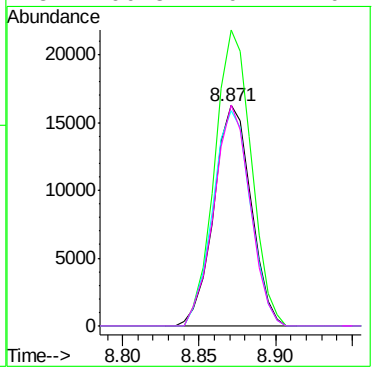


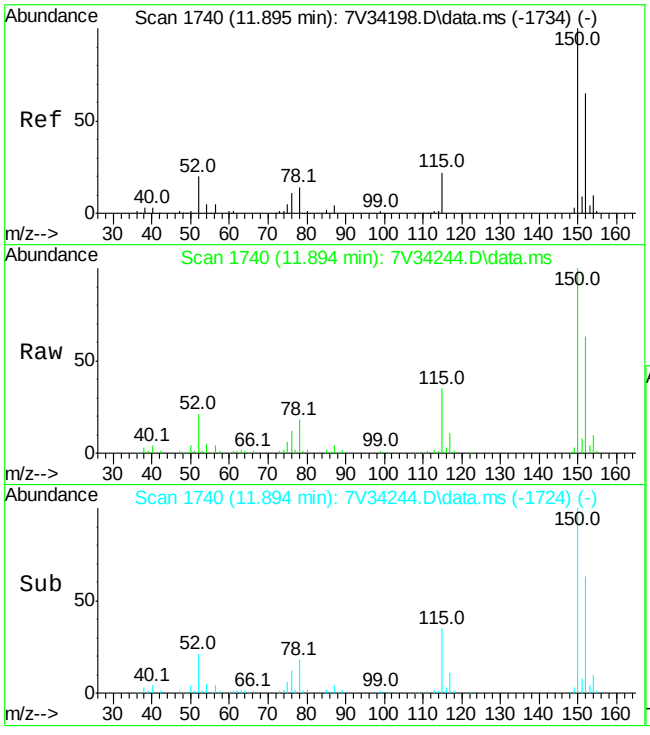


#60
Tetrachloroethene
Concen: 14.55 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion:164 Resp: 27480

Ion	Ratio	Lower	Upper
164	100		
166	131.7	107.5	147.5
129	98.8	76.8	116.8
131	96.8	76.4	116.4

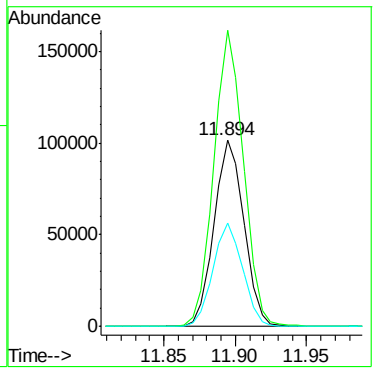


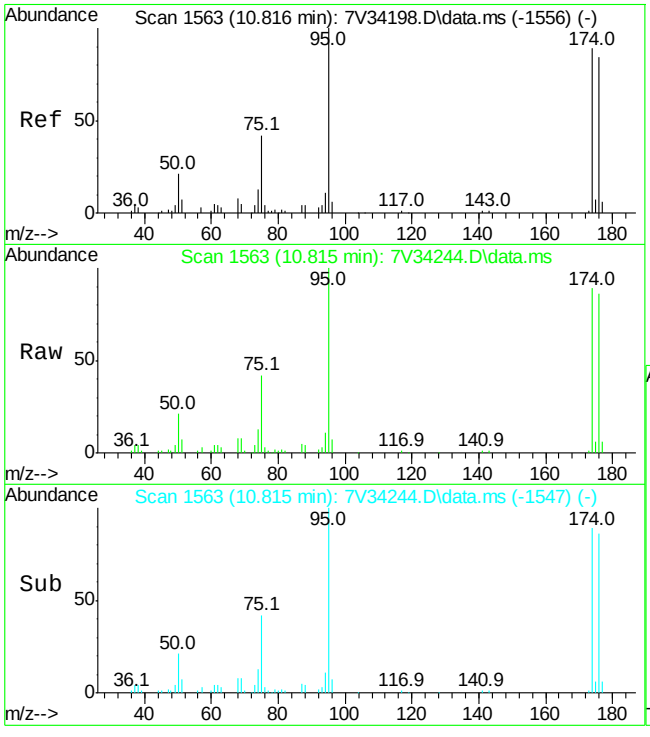


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion:152 Resp: 148323

Ion	Ratio	Lower	Upper
152	100		
150	157.3	154.9	194.9
115	54.8	34.6	74.6

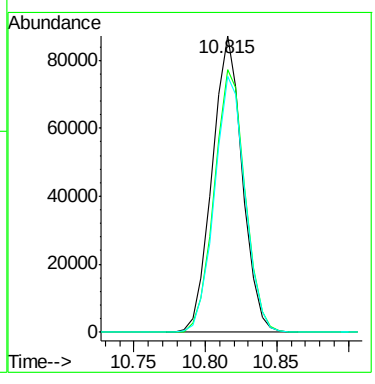




#76
4-Bromofluorobenzene
Concen: 49.57 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34244.D
Acq: 1 Jun 2016 9:15 pm

Tgt Ion: 95 Resp: 128033

Ion	Ratio	Lower	Upper
95	100		
174	90.3	70.3	110.3
176	87.6	67.4	107.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34245.D
Acq On : 1 Jun 2016 9:39 pm
Operator : amandaj
Sample : D83090-10
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Jun 02 12:15:29 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

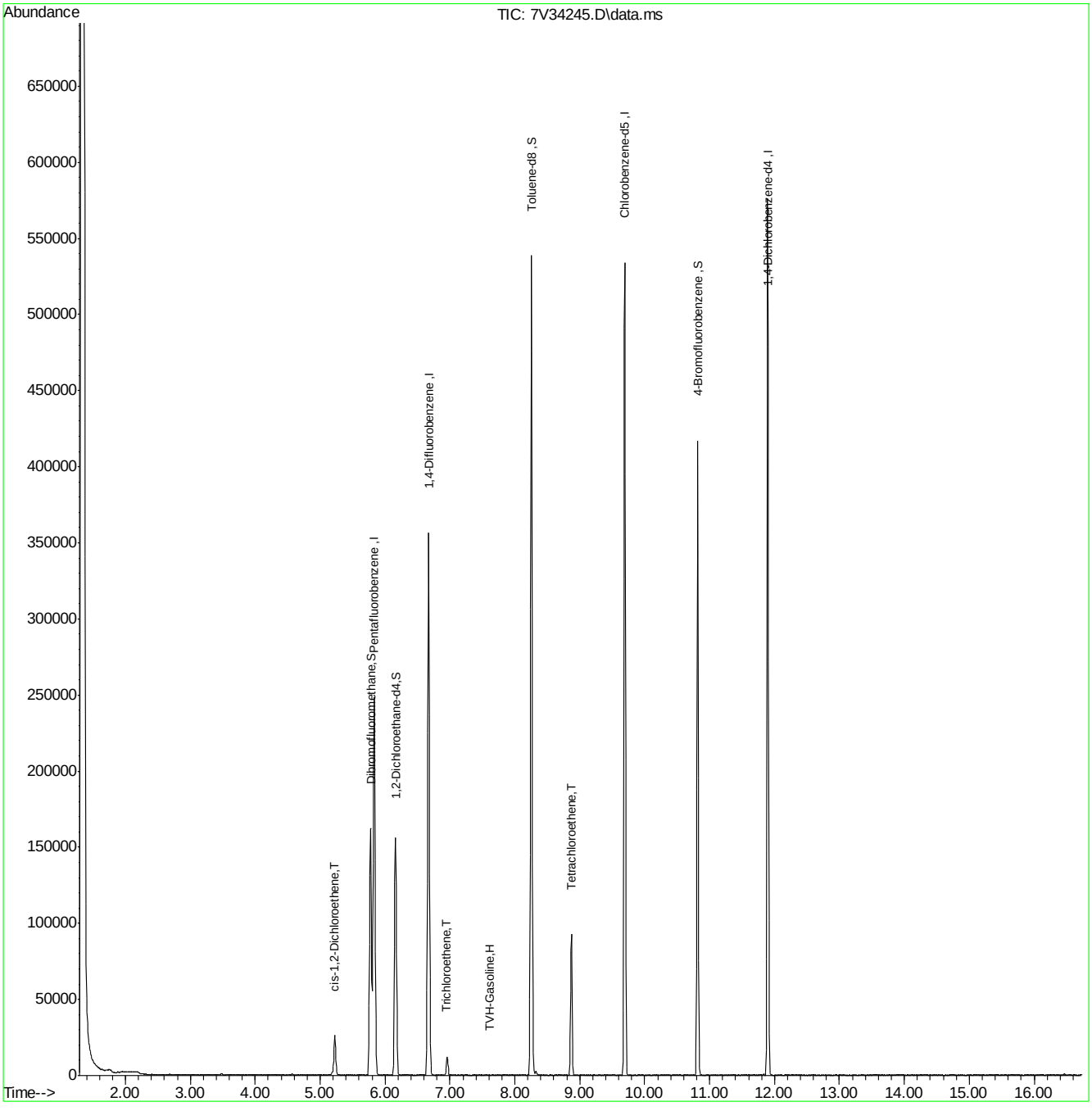
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	200873	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.670	114	320940	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	289643	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	147342	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	109851	50.39	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 100.78%			
41) 1,2-Dichloroethane-d4	6.164	102	23052	50.13	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 100.26%			
56) Toluene-d8	8.255	98	338295	48.57	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 97.14%			
76) 4-Bromofluorobenzene	10.815	95	129566	50.50	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 101.00%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	275968m	29.01	ug/L	
29) cis-1,2-Dichloroethene	5.225	96	11950	5.11	ug/L	91
47) Trichloroethene	6.950	95	4692	1.94	ug/L	94
60) Tetrachloroethene	8.871	164	21266	11.11	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

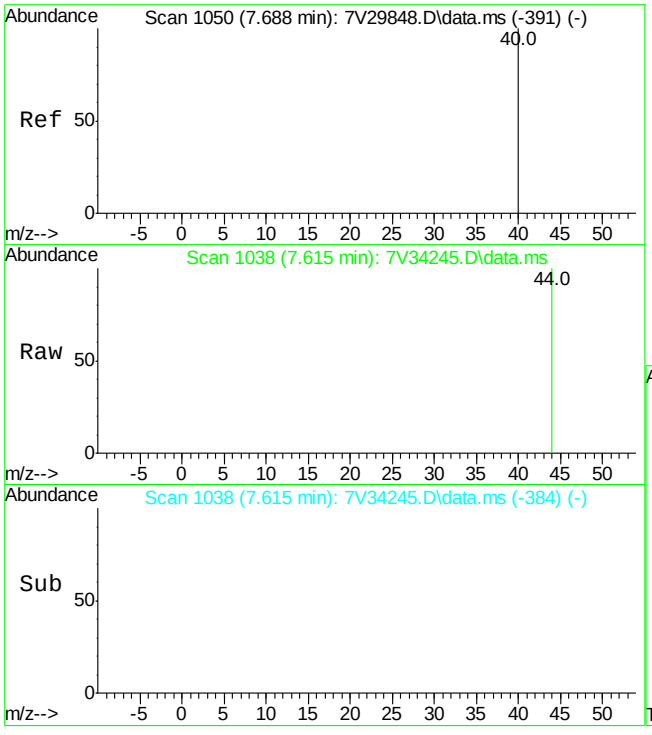
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34245.D
Acq On : 1 Jun 2016 9:39 pm
Operator : amandaj
Sample : D83090-10
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Jun 02 12:15:29 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

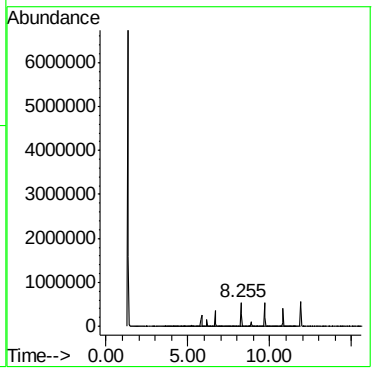


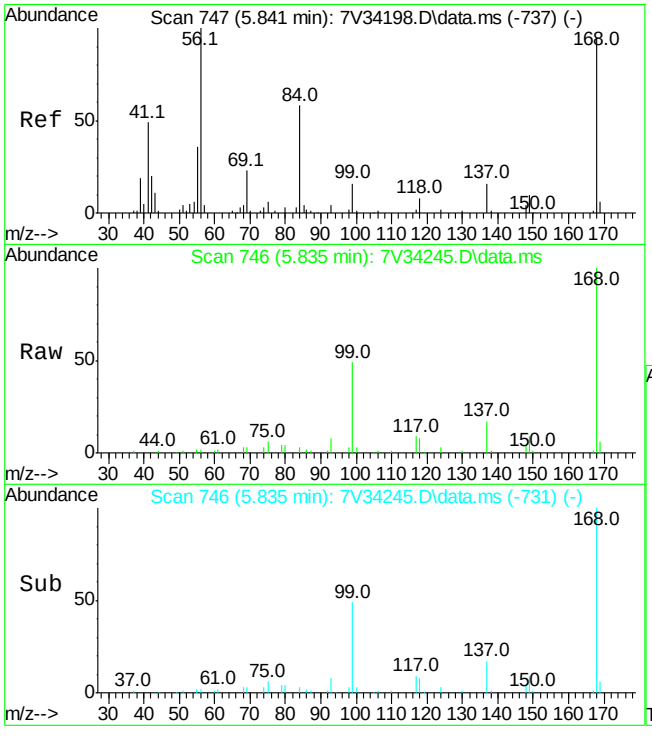
V7V1839F.M Thu Jun 02 13:00:20 2016 Page: 2



#1
TVH-Gasoline
Concen: 29.01 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

Tgt Ion:TIC Resp: 275968

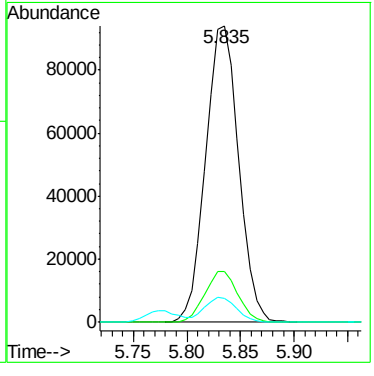


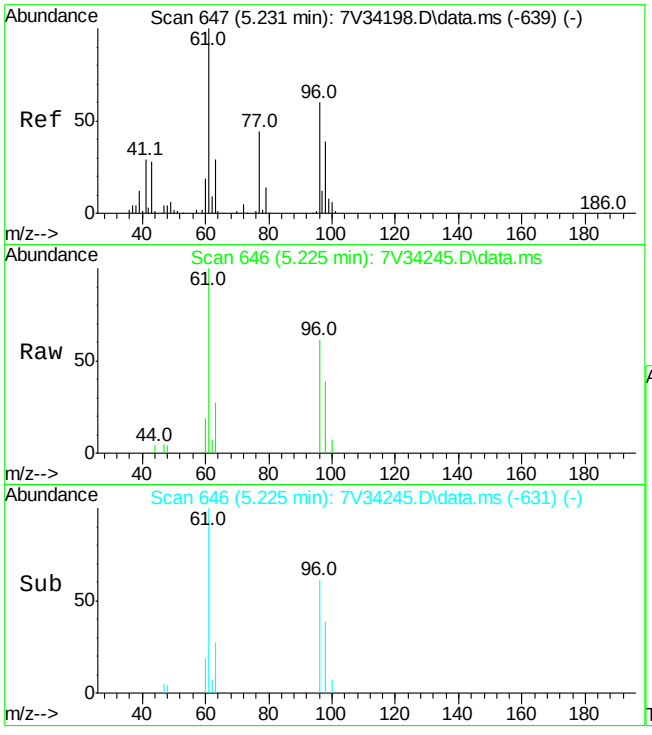


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

Tgt Ion:168 Resp: 200873

Ion	Ratio	Lower	Upper
168	100		
137	17.0	0.0	36.8
93	8.2	0.0	28.3

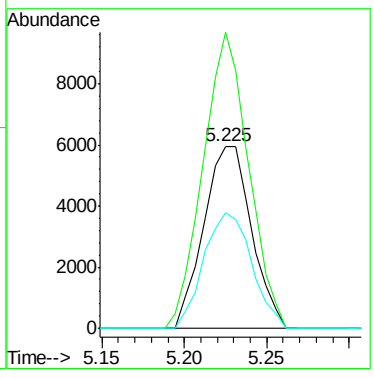


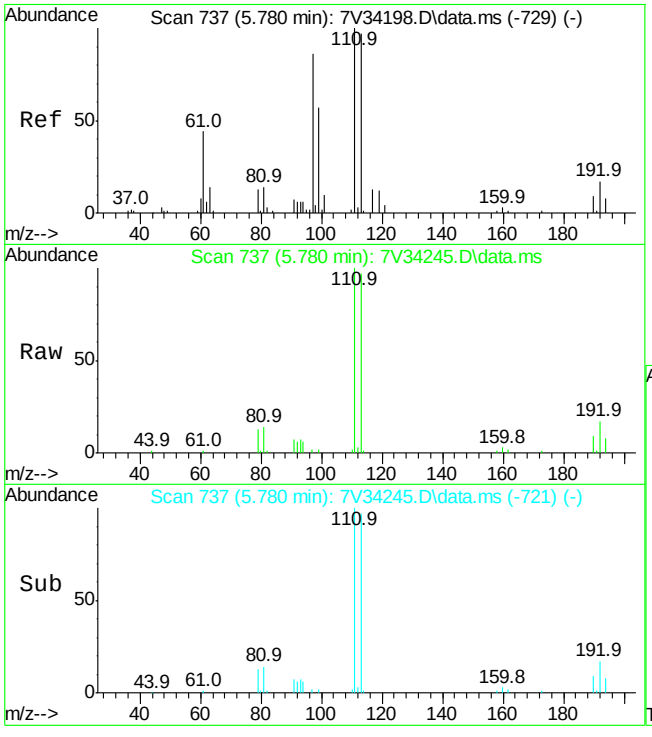


#29
cis-1,2-Dichloroethene
Concen: 5.11 ug/L
RT: 5.225 min Scan# 646
Delta R.T. -0.006 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

Tgt Ion: 96 Resp: 11950

Ion	Ratio	Lower	Upper
96	100		
61	154.6	151.8	191.8
98	63.6	44.4	84.4

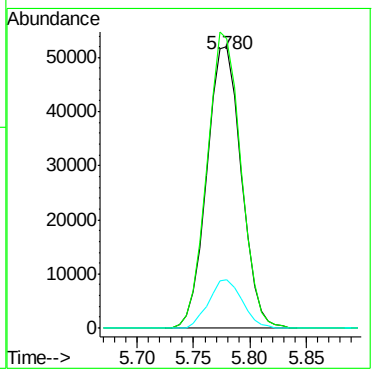


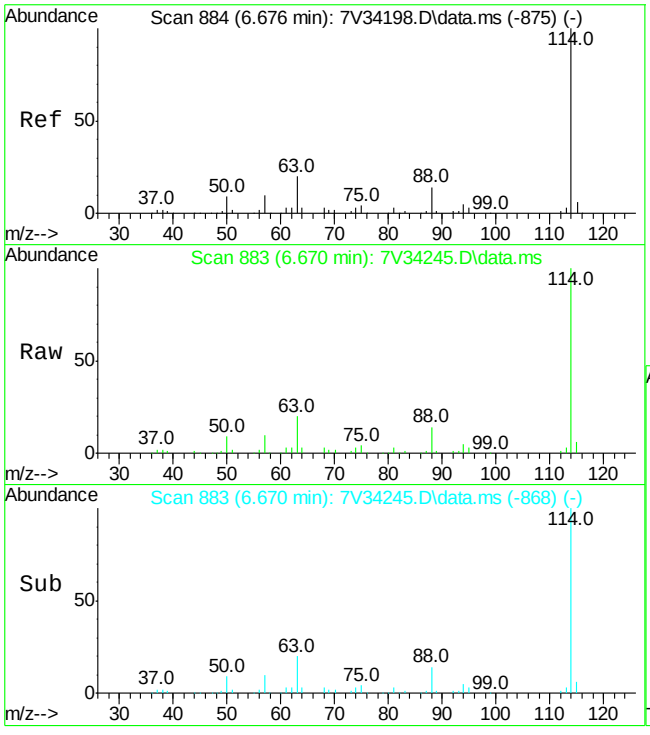


#35
Dibromofluoromethane
Concen: 50.39 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

Tgt Ion:113 Resp: 109851

Ion	Ratio	Lower	Upper
113	100		
111	103.3	82.9	122.9
192	16.7	0.0	36.9

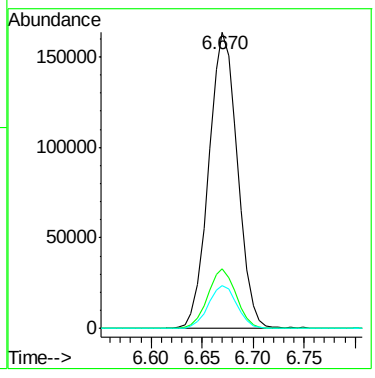


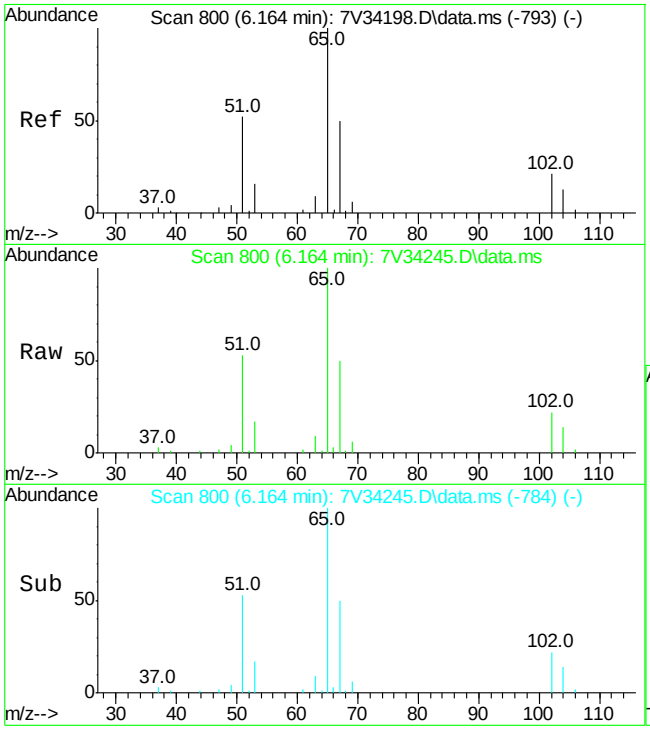


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.670 min Scan# 883
Delta R.T. -0.006 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

Tgt Ion:114 Resp: 320940

Ion	Ratio	Lower	Upper
114	100		
63	19.8	0.0	39.6
88	14.2	0.0	34.3

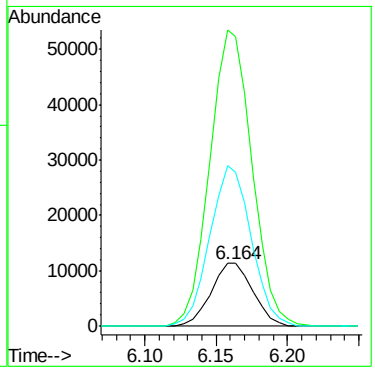


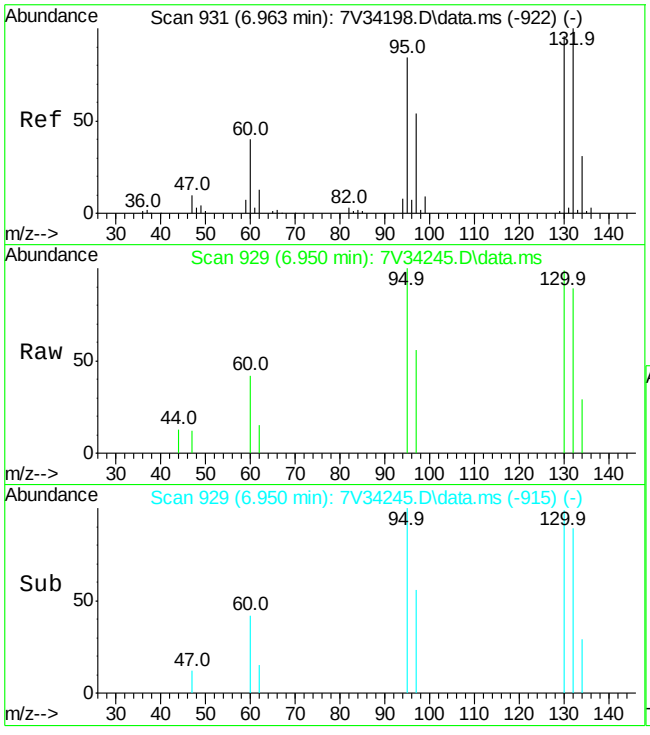


#41
1,2-Dichloroethane-d4
Concen: 50.13 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

Tgt Ion:102 Resp: 23052

Ion	Ratio	Lower	Upper
102	100		
65	476.3	469.5	509.5
51	252.8	232.7	272.7

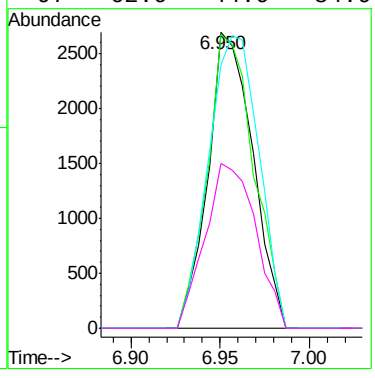


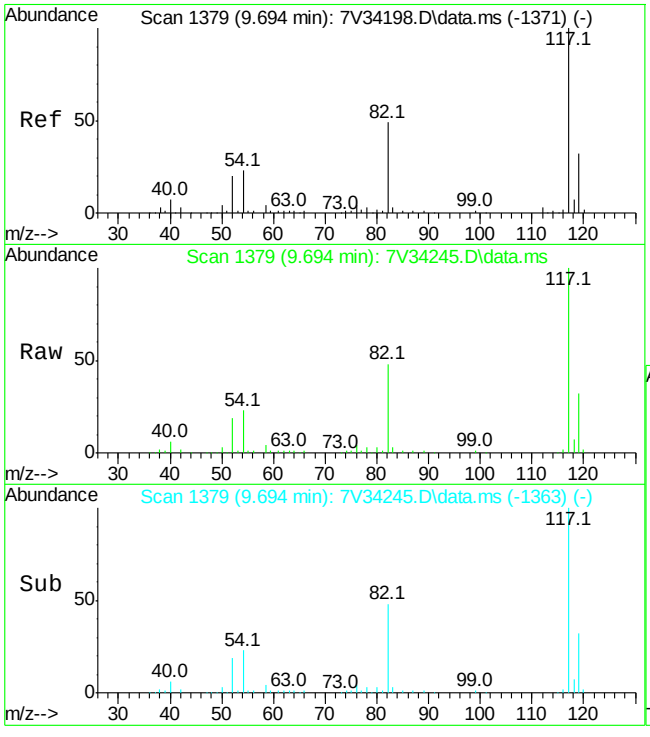


#47
Trichloroethene
Concen: 1.94 ug/L
RT: 6.950 min Scan# 929
Delta R.T. -0.013 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

Tgt Ion: 95 Resp: 4692

Ion	Ratio	Lower	Upper
95	100		
130	103.5	93.2	133.2
132	110.8	95.9	135.9
97	62.9	44.9	84.9

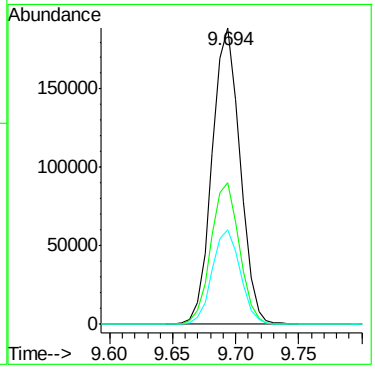




#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

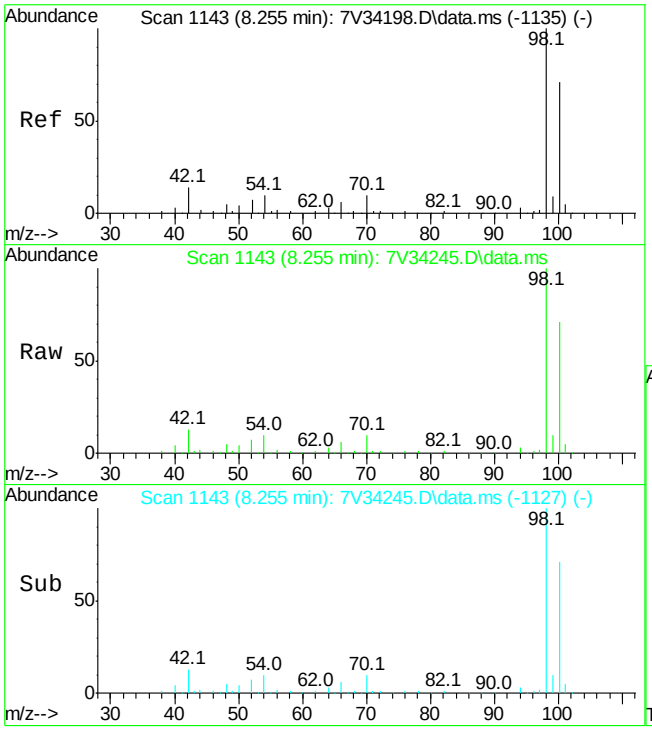
Tgt Ion:117 Resp: 289643

Ion	Ratio	Lower	Upper
117	100		
82	48.3	28.7	68.7
119	31.9	12.2	52.2



7.1.10

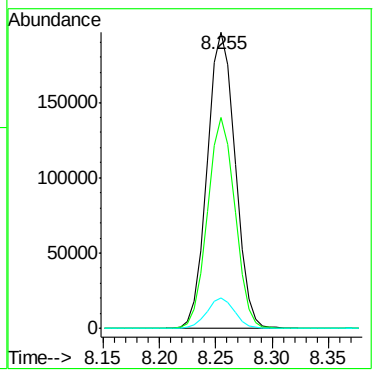
7

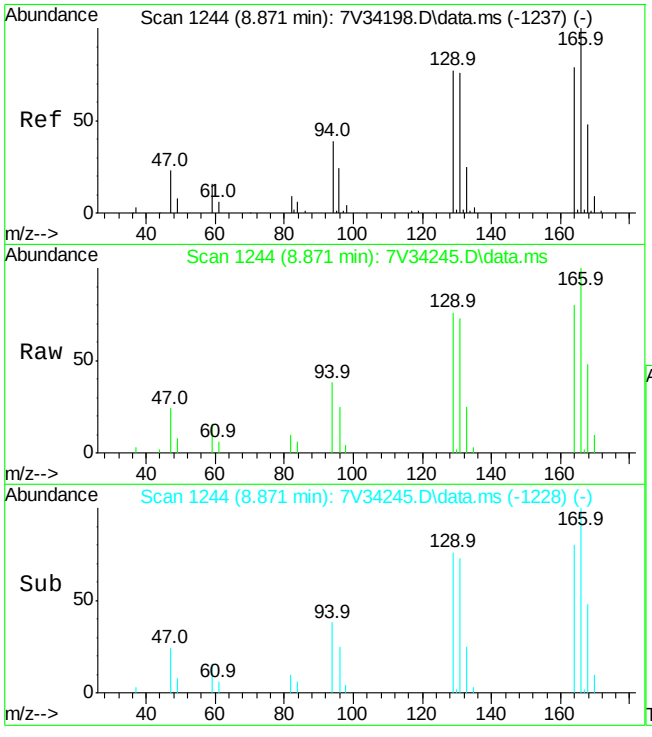


#56
Toluene-d8
Concen: 48.57 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

Tgt Ion: 98 Resp: 338295

Ion	Ratio	Lower	Upper
98	100		
100	69.8	49.8	89.8
70	10.1	0.0	30.1

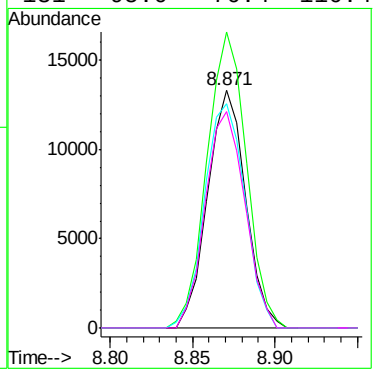


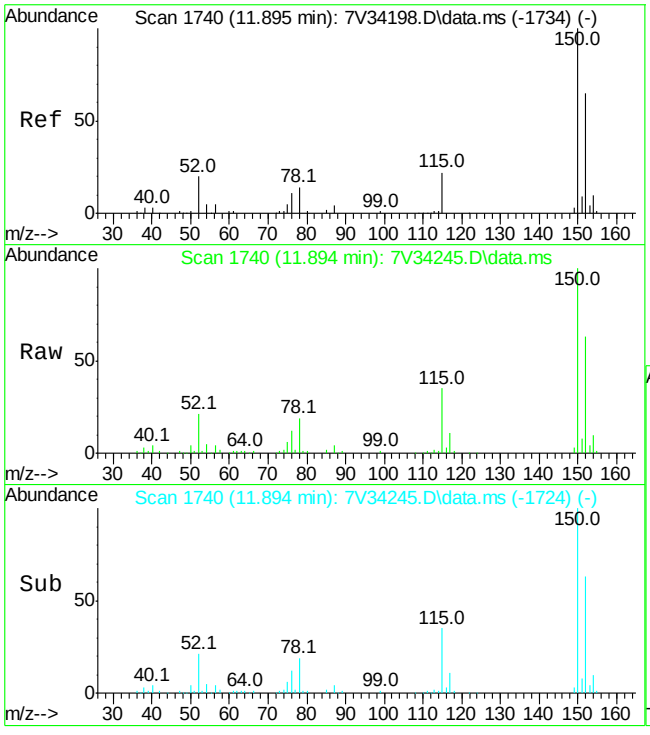


#60
Tetrachloroethene
Concen: 11.11 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

Tgt Ion:164 Resp: 21266

Ion	Ratio	Lower	Upper
164	100		
166	128.9	107.5	147.5
129	100.3	76.8	116.8
131	95.0	76.4	116.4

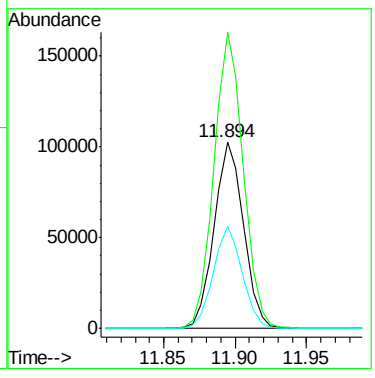


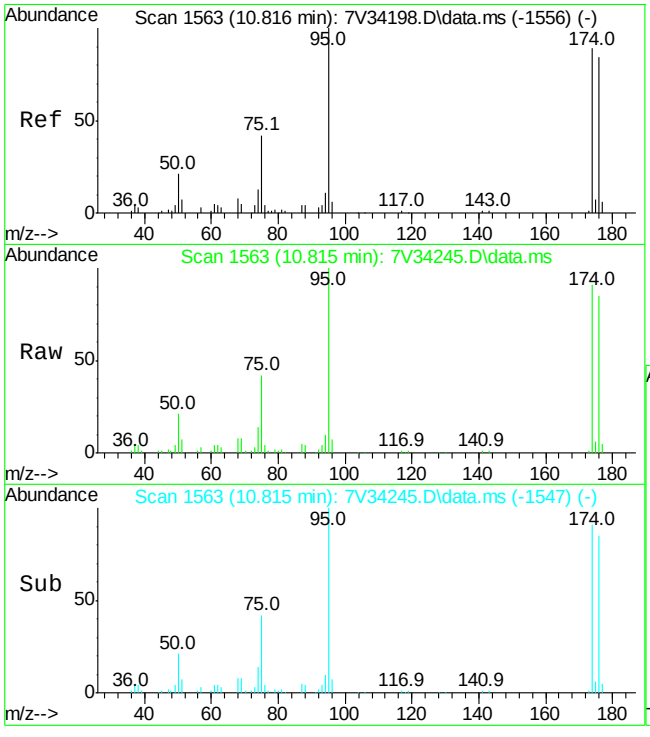


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

Tgt Ion:152 Resp: 147342

Ion	Ratio	Lower	Upper
152	100		
150	158.1	154.9	194.9
115	53.8	34.6	74.6

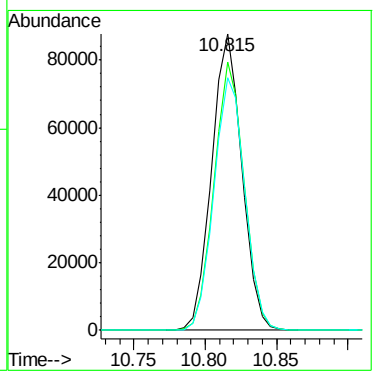




#76
4-Bromofluorobenzene
Concen: 50.50 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34245.D
Acq: 1 Jun 2016 9:39 pm

Tgt Ion: 95 Resp: 129566

Ion	Ratio	Lower	Upper
95	100		
174	90.0	70.3	110.3
176	86.7	67.4	107.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34221.D
Acq On : 1 Jun 2016 12:20 pm
Operator : amandaj
Sample : MB
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 02 10:50:33 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.841	168	214359	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	333556	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	290205	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	154265	50.00	ug/L	# 0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.786	113	111397	47.88	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 95.76%			
41) 1,2-Dichloroethane-d4	6.170	102	23747	49.69	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 99.38%			
56) Toluene-d8	8.255	98	347351	49.78	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.56%			
76) 4-Bromofluorobenzene	10.815	95	131036	48.78	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 97.56%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	226194m	23.78	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.2.1

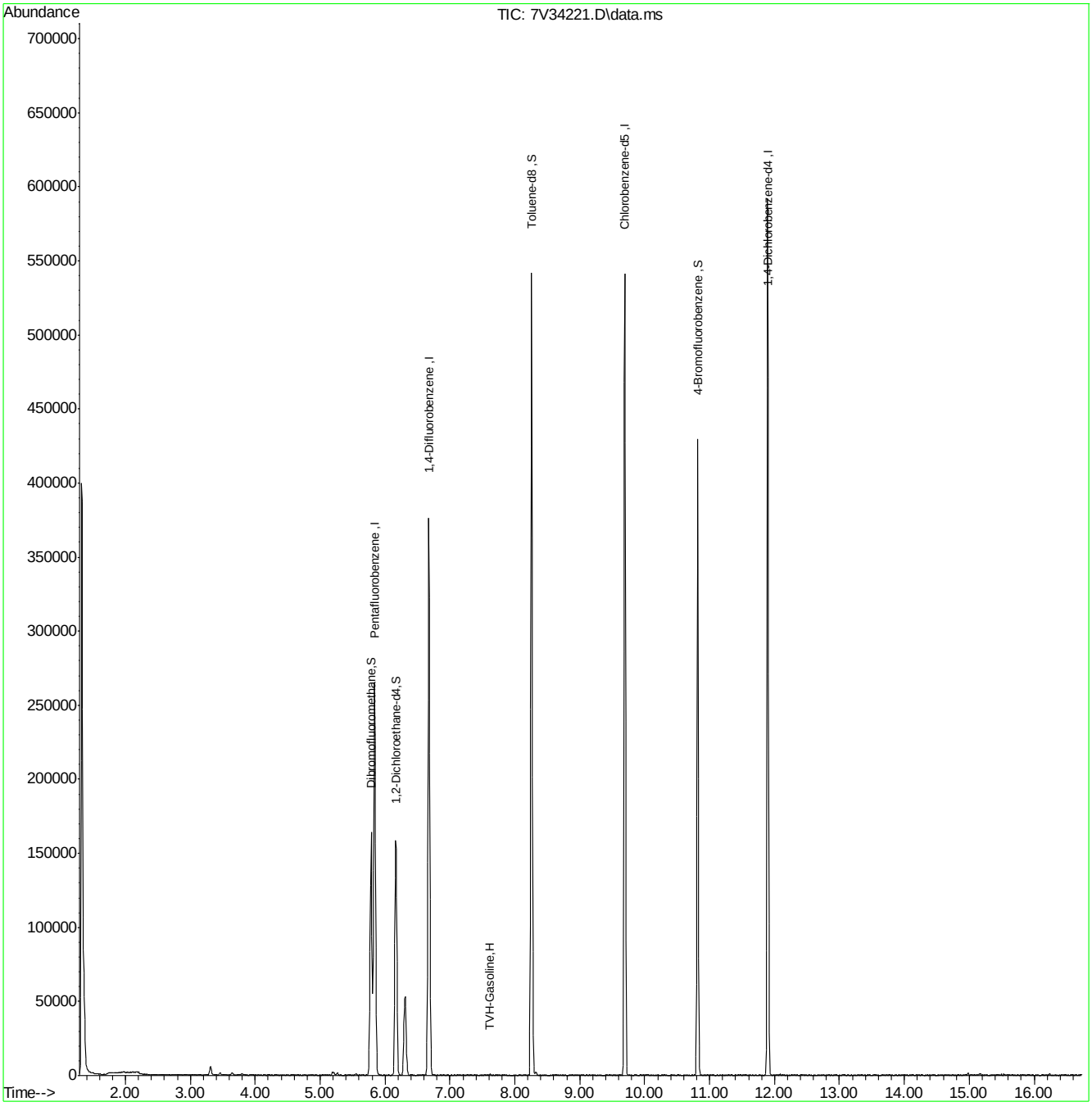
7

SGS ACCUTEST D83090

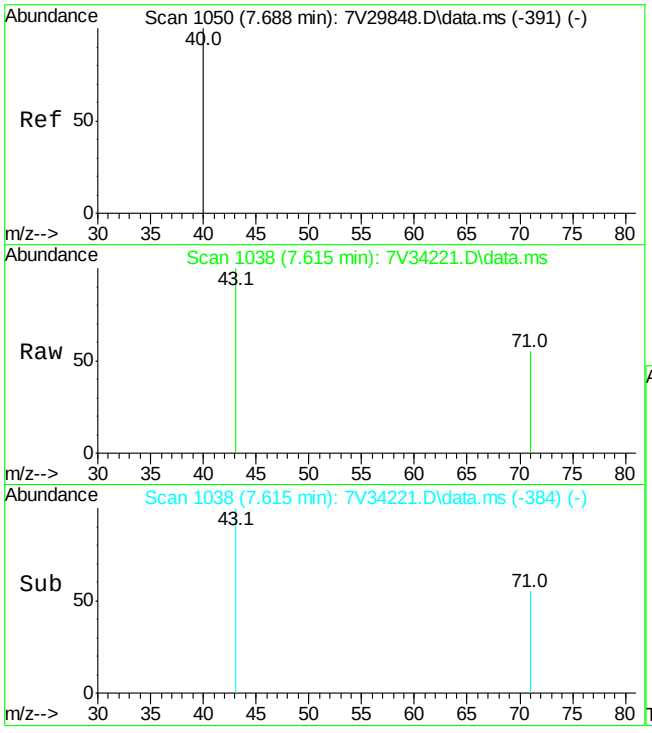
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34221.D
Acq On : 1 Jun 2016 12:20 pm
Operator : amandaj
Sample : MB
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 02 10:50:33 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

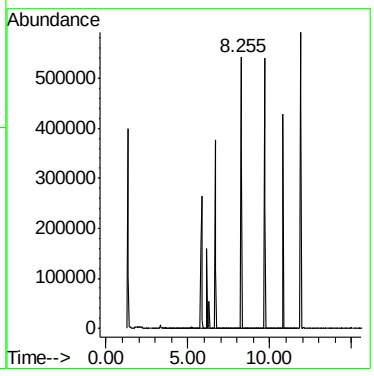


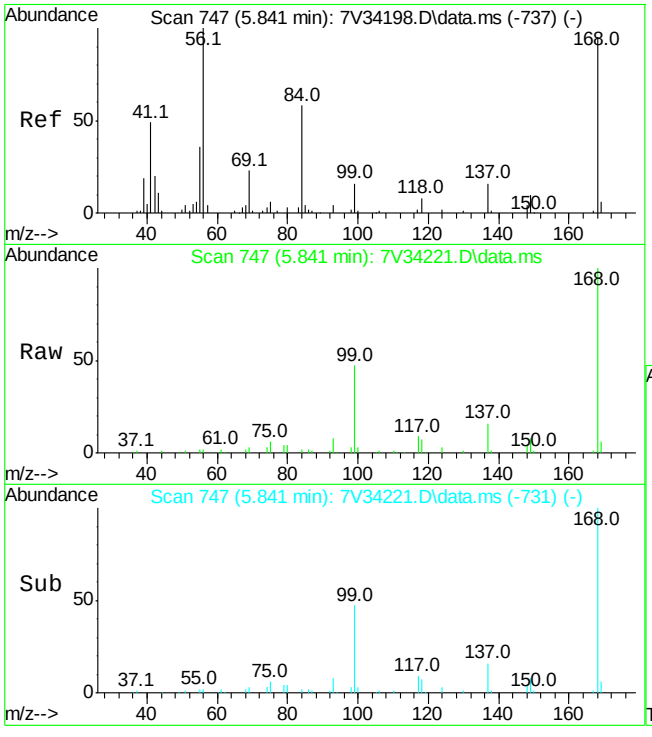
V7V1839F.M Thu Jun 02 12:57:24 2016 Page: 2



#1
TVH-Gasoline
Concen: 23.78 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion:TIC Resp: 226194

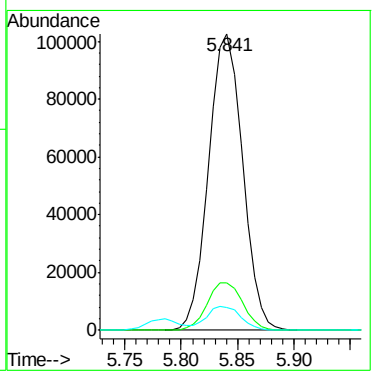


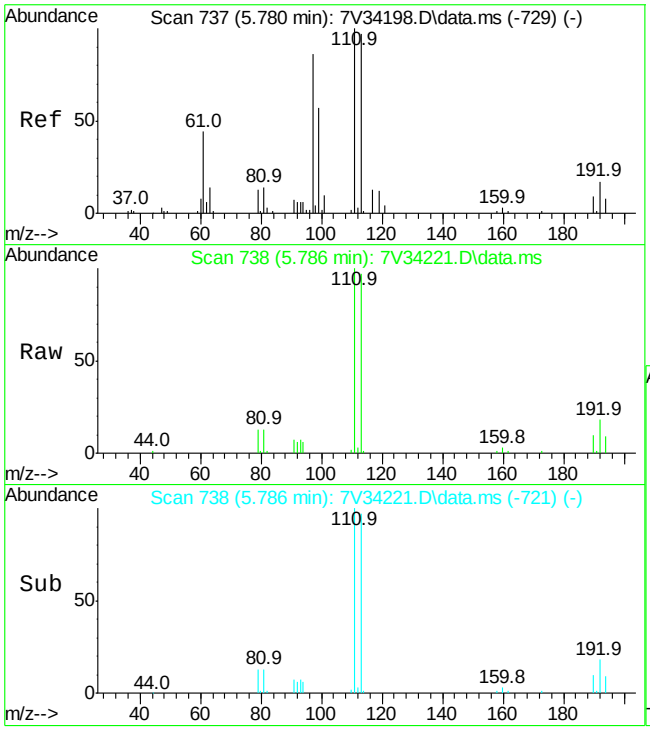


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.841 min Scan# 747
Delta R.T. -0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion:168 Resp: 214359

Ion	Ratio	Lower	Upper
168	100		
137	16.7	0.0	36.8
93	8.2	0.0	28.3

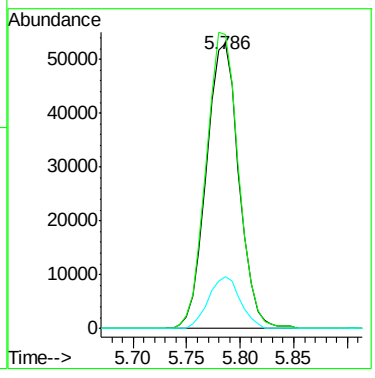


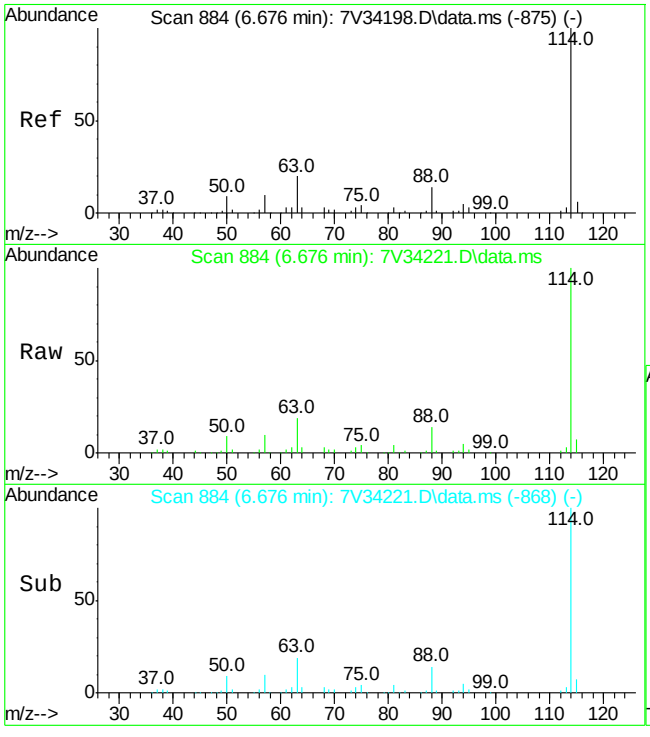


#35
Dibromofluoromethane
Concen: 47.88 ug/L
RT: 5.786 min Scan# 738
Delta R.T. 0.006 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion:113 Resp: 111397

Ion	Ratio	Lower	Upper
113	100		
111	103.6	82.9	122.9
192	17.6	0.0	36.9

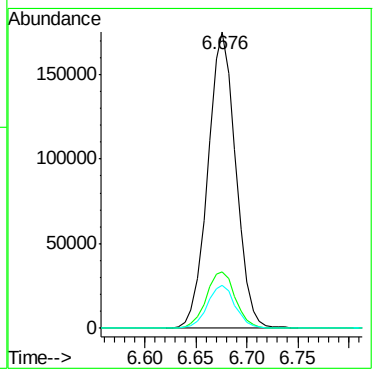




#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

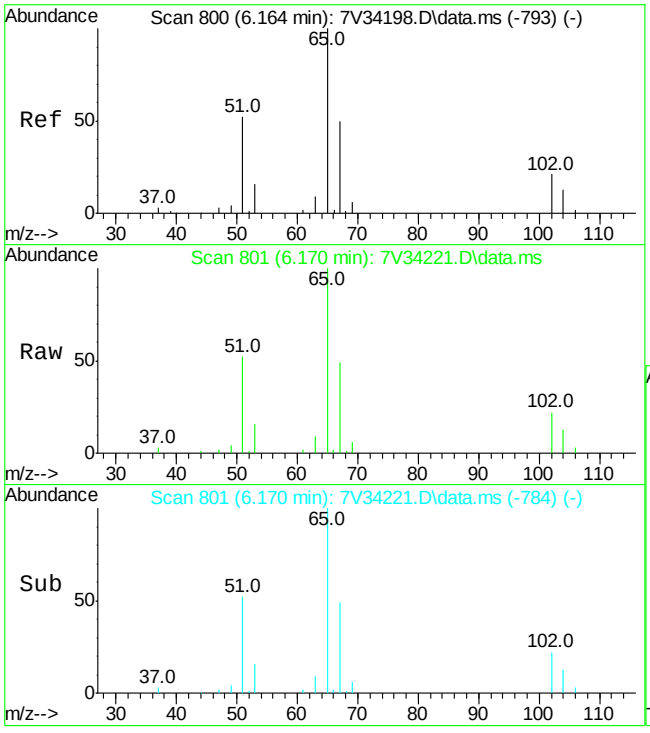
Tgt Ion:114 Resp: 333556

Ion	Ratio	Lower	Upper
114	100		
63	19.5	0.0	39.6
88	14.4	0.0	34.3



7.2.1

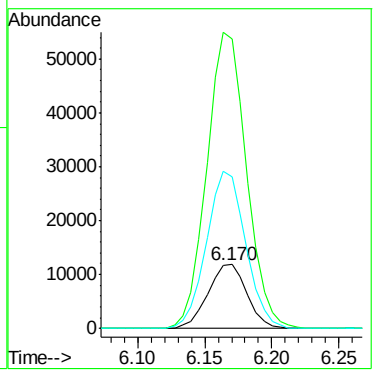
7

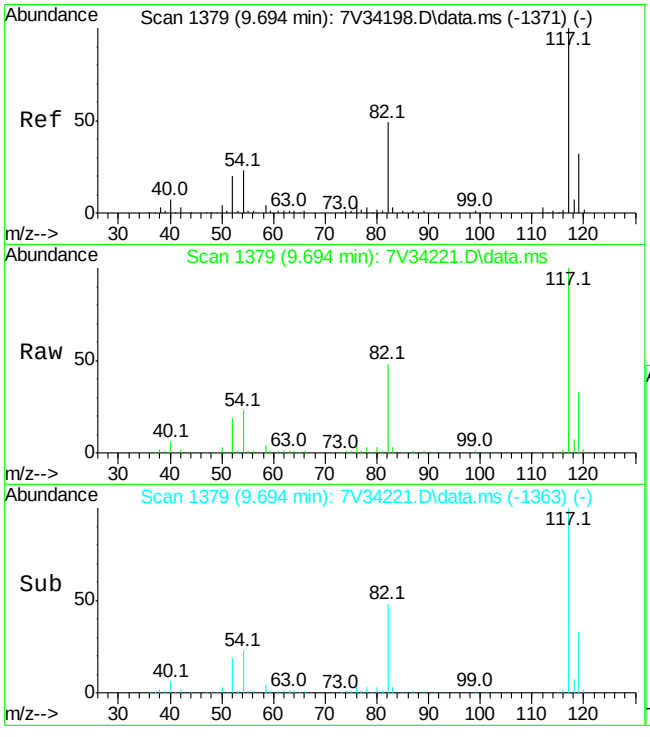


#41
1,2-Dichloroethane-d4
Concen: 49.69 ug/L
RT: 6.170 min Scan# 801
Delta R.T. 0.006 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion:102 Resp: 23747

Ion	Ratio	Lower	Upper
102	100		
65	474.3	469.5	509.5
51	247.7	232.7	272.7

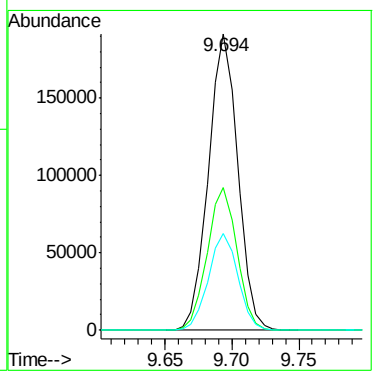




#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

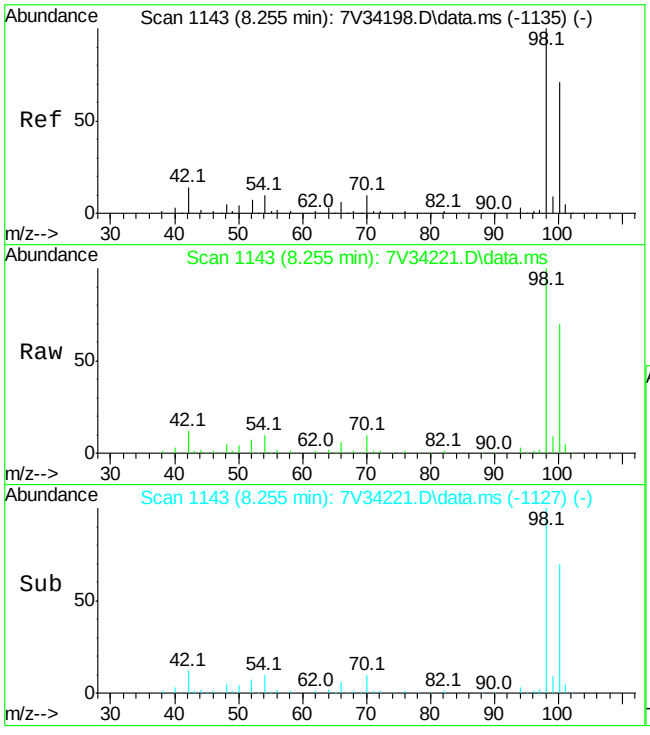
Tgt Ion:117 Resp: 290205

Ion	Ratio	Lower	Upper
117	100		
82	48.6	28.7	68.7
119	32.7	12.2	52.2



7.2.1

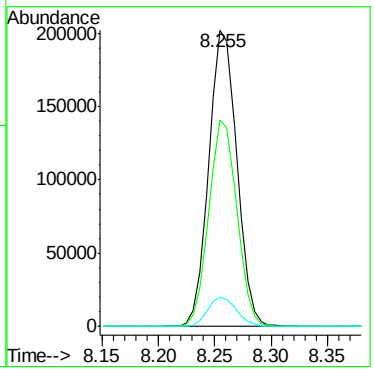
7

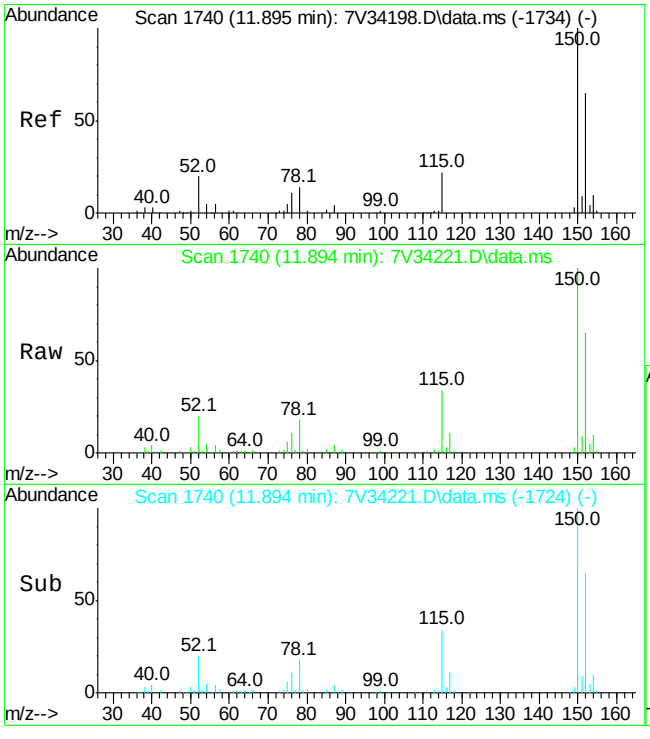


#56
Toluene-d8
Concen: 49.78 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion: 98 Resp: 347351

Ion	Ratio	Lower	Upper
98	100		
100	69.9	49.8	89.8
70	10.0	0.0	30.1

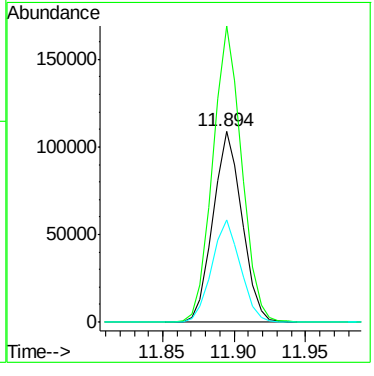




#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

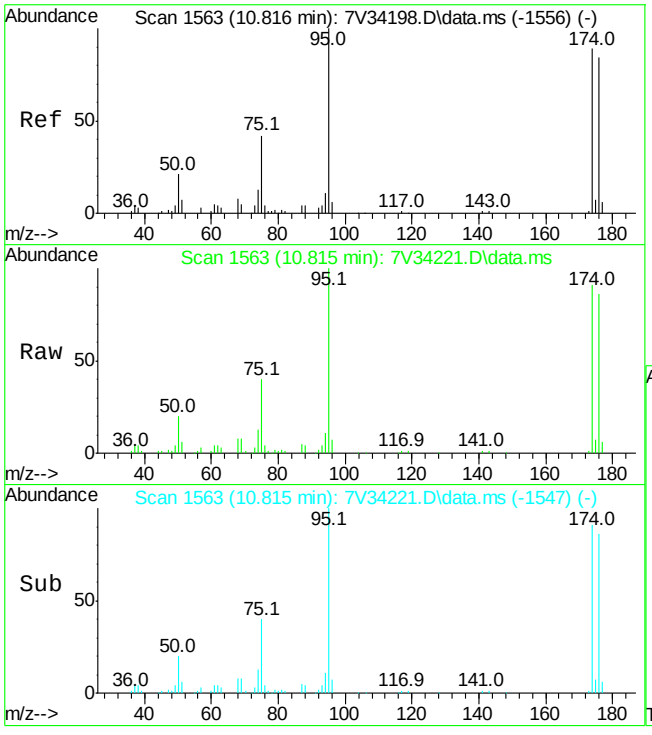
Tgt Ion:152 Resp: 154265

Ion	Ratio	Lower	Upper
152	100		
150	154.8	154.9	194.9#
115	53.1	34.6	74.6



7.2.1

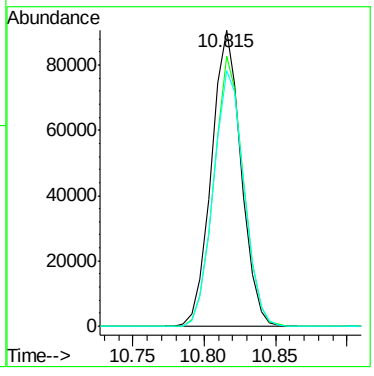
7



#76
4-Bromofluorobenzene
Concen: 48.78 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion: 95 Resp: 131036

Ion	Ratio	Lower	Upper
95	100		
174	90.8	70.3	110.3
176	88.8	67.4	107.4



7.2.1

7

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB798-MB	FB16802.D	1	05/31/16	JJ	n/a	n/a	GFB798

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

Blank Spike Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB798-BS	FB16803.D	10	05/31/16	JJ	n/a	n/a	GFB798

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	0.512	0.617	121	70-134
74-84-0	Ethane	0.923	1.10	119	70-137
74-85-1	Ethene	0.857	1.12	131	70-148

8.2.1

8

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D83090
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D83005-1MS	FB16808.D	10	05/31/16	JJ	n/a	n/a	GFB798
D83005-1MSD	FB16809.D	10	05/31/16	JJ	n/a	n/a	GFB798
D83005-1	FB16804.D	1	05/31/16	JJ	n/a	n/a	GFB798
D83005-1	FB16806.D	1	05/31/16	JJ	n/a	n/a	GFB798

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10

CAS No.	Compound	D83005-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
74-82-8	Methane	5.23 [b]		0.512	6.34	217* [a]	0.512	6.78	303* [a]	7	42-155/30
74-84-0	Ethane	0.0036		0.923	0.835	90	0.923	0.815	88	2	30-164/30
74-85-1	Ethene	ND [c]		0.857	0.859	100	0.857	0.844	98	2	34-178/30

(a) Outside control limits due to high level in sample relative to spike amount.
(b) Result is from Run #3.
(c) Result is from Run #2.

8.3.1

8

* = Outside of Control Limits.

GC Volatiles

Raw Data

Manual Integrations
APPROVED
(compounds with "m" flag)
Katie Michel
05/31/16 16:40

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16818.D     Vial: 19
Acq On    : 31 May 2016   2:23 pm                    Operator: JENNJ1
Sample    : D83090-4                                 Inst    : FID 4
Misc      : GC6186,GFB798,39,19,500,4,1              Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: May 31 14:16:34 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Tue May 24 14:02:15 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.43	44935	5.852	rawvpm
2)	Ethene	0.74	549	0.051	rawvpm
3)	Ethane	0.87	3132	0.290	rawvpm
4)	Propane	0.00	0	N.D.	rawvp

9.1.1

9

(f)=RT Delta > 1/2 Window (m)=manual int.

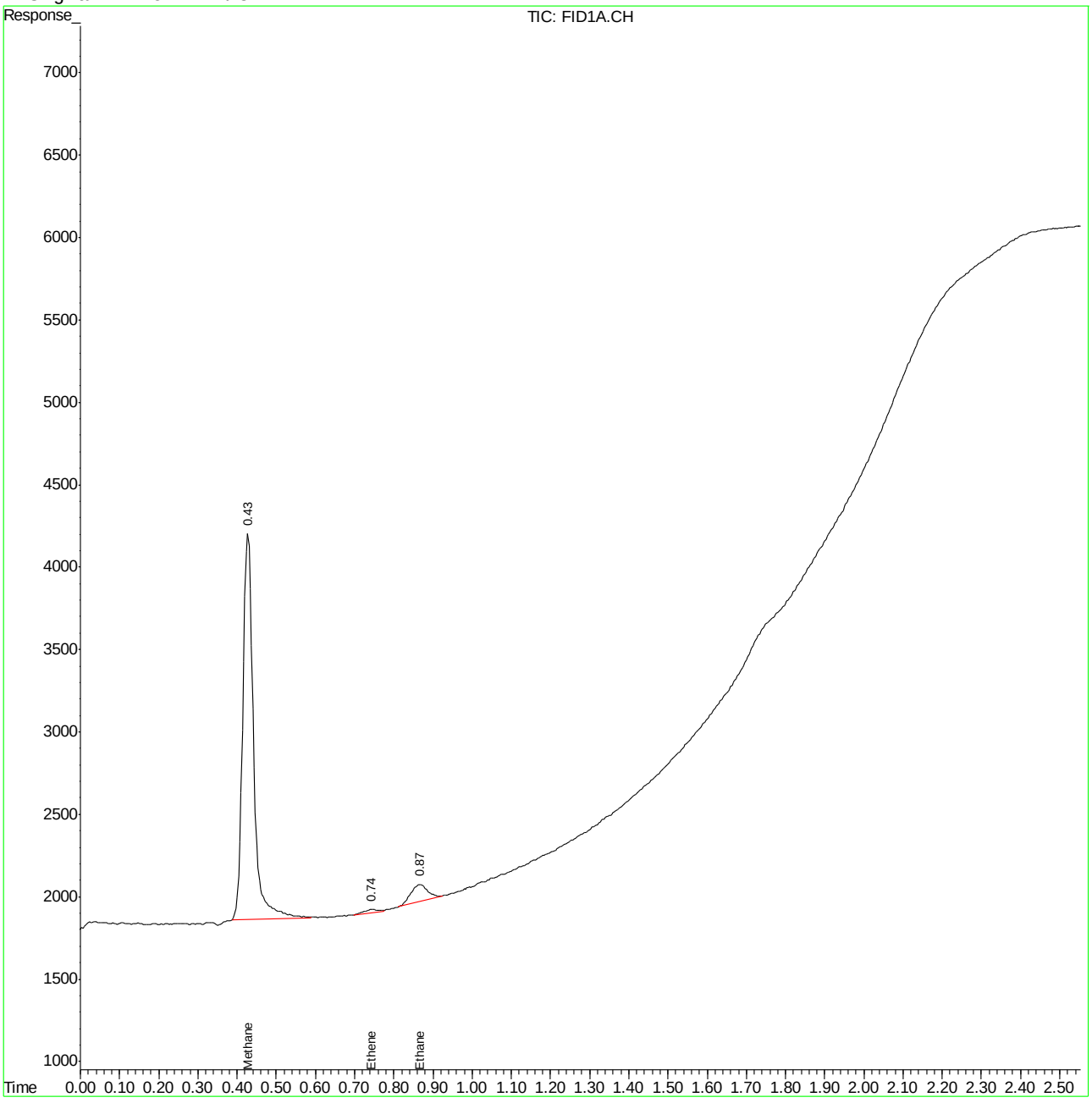
SGS ACCUTEST D83090

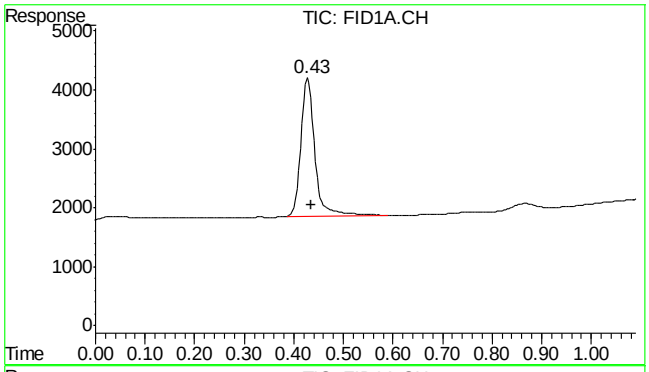
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16818.D Vial: 19
Acq On : 31 May 2016 2:23 pm Operator: JENNJ1
Sample : D83090-4 Inst : FID 4
Misc : GC6186,GFB798,39,19,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: May 31 14:17 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Tue May 24 14:02:15 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

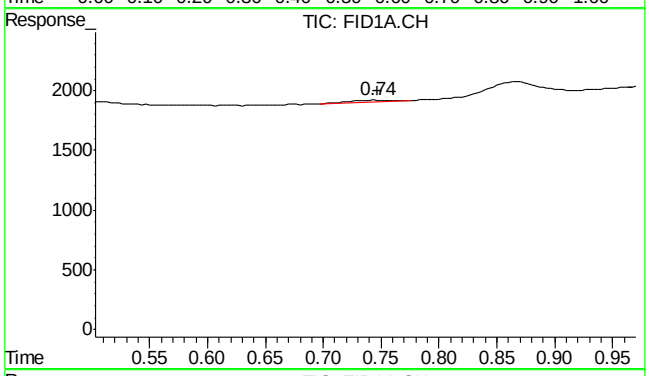
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





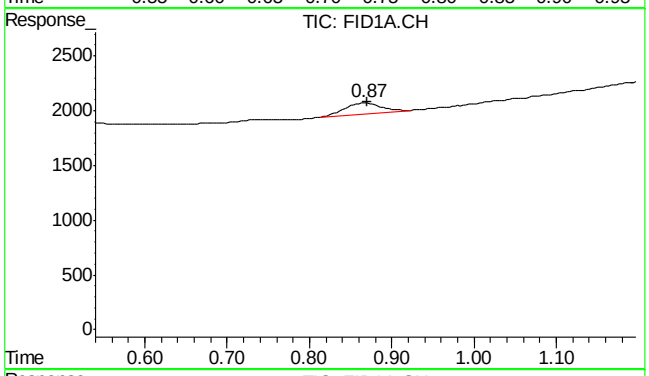
#1 Methane

R.T.: 0.427 min
Delta R.T.: -0.009 min
Response: 44935
Conc: 5.85 rawvppm m



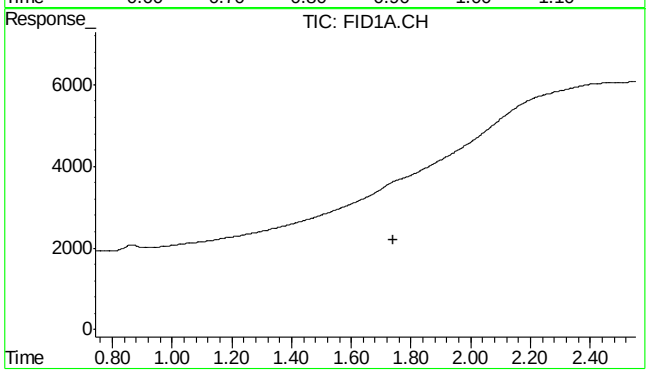
#2 Ethene

R.T.: 0.743 min
Delta R.T.: -0.004 min
Response: 549
Conc: 0.05 rawvppm m



#3 Ethane

R.T.: 0.867 min
Delta R.T.: -0.004 min
Response: 3132
Conc: 0.29 rawvppm m



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.741 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	D83090-4	**Sample Volume:**	39.0 ml
Lab FileID:	FB16818.D	**Headspace:**	4.0 ml
Injection Time:	05/31/16 14:23	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	19.0 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	5.85	36830	0.00044	mg/l
Ethane	74-84-0	30	0.29	25540	0.0	mg/l
Ethene	74-85-1	28	0.05	9960	0.0	mg/l
Propane	74-98-6	44	0	30408	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations
APPROVED
(compounds with "m" flag)
Katie Michel
05/31/16 16:40

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16819.D     Vial: 20
Acq On    : 31 May 2016   2:27 pm                    Operator: JENNJ1
Sample    : D83090-5                                 Inst    : FID 4
Misc      : GC6186,GFB798,39,19,500,4,1              Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: May 31 14:21:03 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Tue May 24 14:02:15 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.42	579871	108.580	rawvpm
2)	Ethene	0.74	2238	0.210	rawvpm
3)	Ethane	0.86	2135	0.198	rawvpm
4)	Propane	0.00	0	N.D.	rawvp

9.1.2

9

(f)=RT Delta > 1/2 Window (m)=manual int.

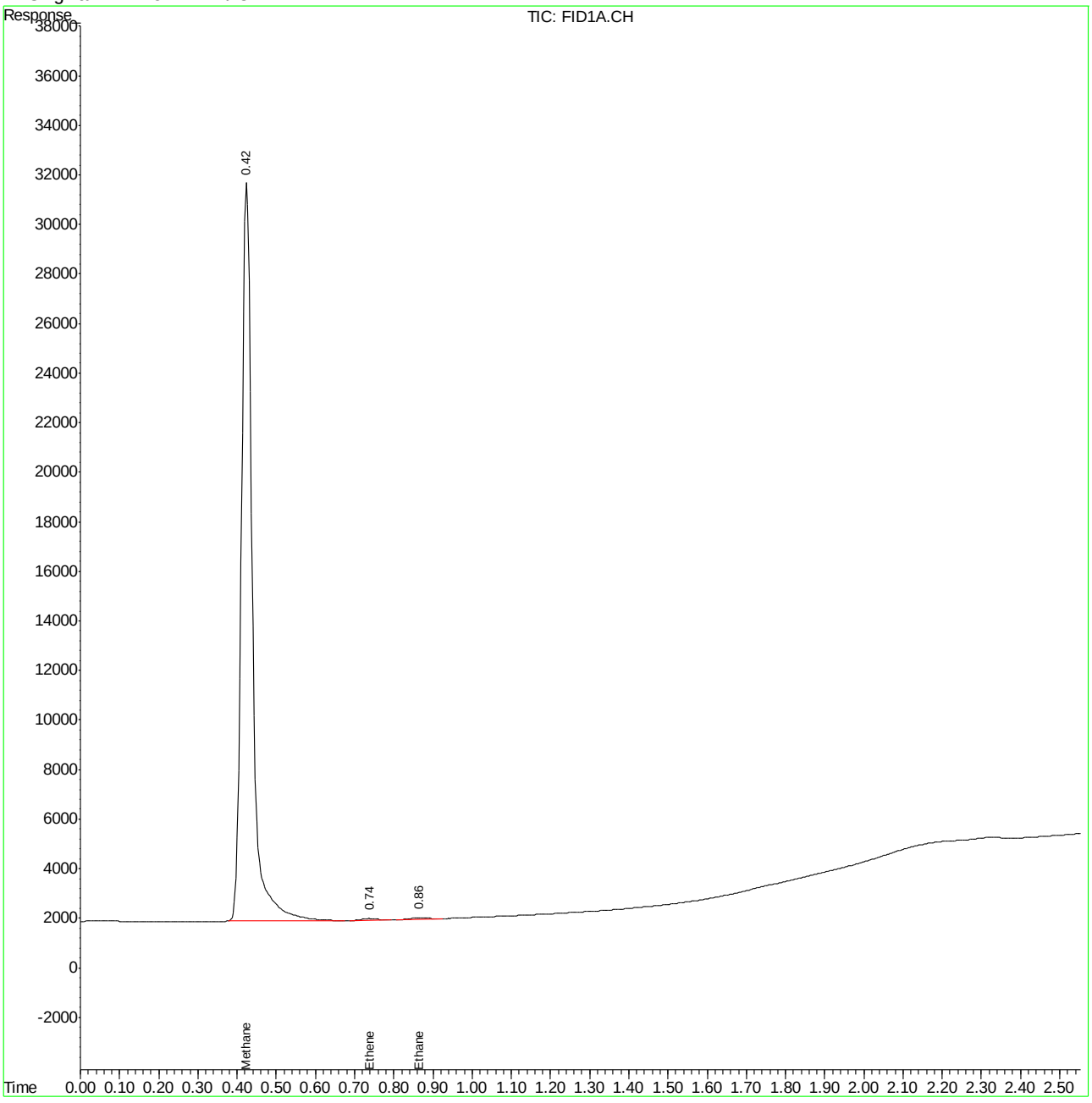
SGS ACCUTEST D83090

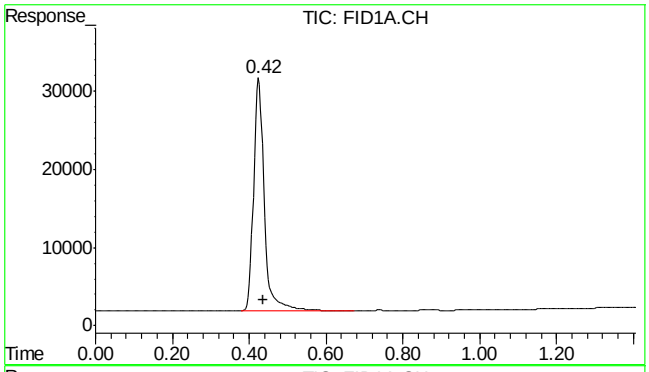
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16819.D Vial: 20
Acq On : 31 May 2016 2:27 pm Operator: JENNJ1
Sample : D83090-5 Inst : FID 4
Misc : GC6186,GFB798,39,19,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: May 31 14:21 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Tue May 24 14:02:15 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

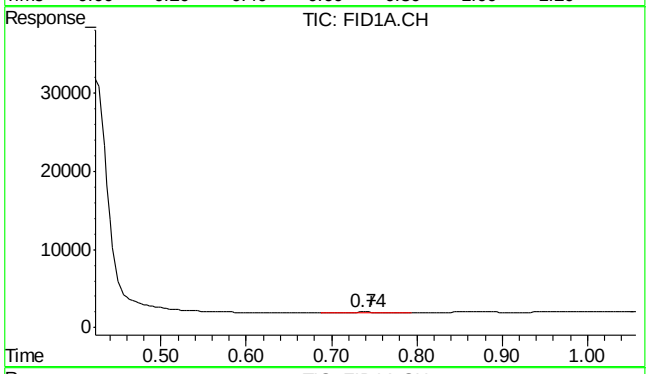
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





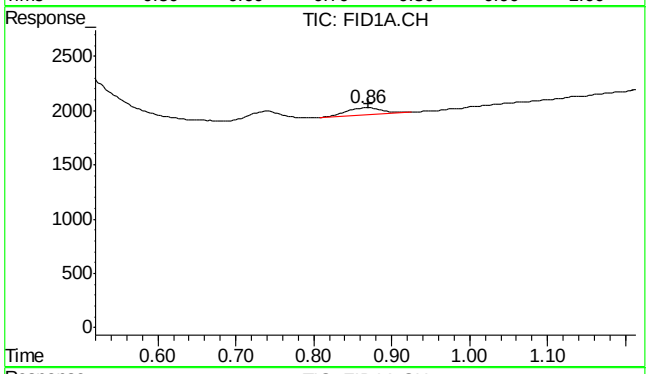
#1 Methane

R.T.: 0.424 min
Delta R.T.: -0.012 min
Response: 579871
Conc: 108.58 rawvppm m



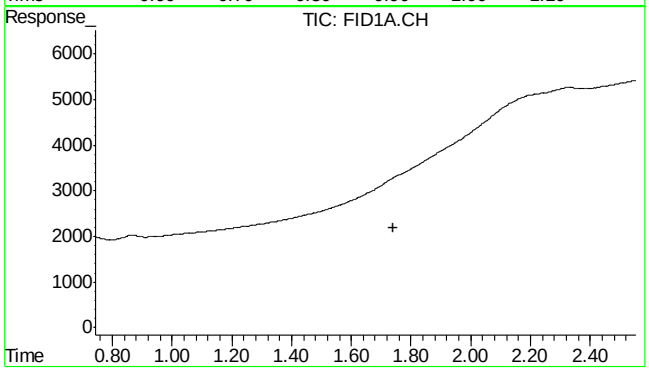
#2 Ethene

R.T.: 0.737 min
Delta R.T.: -0.011 min
Response: 2238
Conc: 0.21 rawvppm m



#3 Ethane

R.T.: 0.863 min
Delta R.T.: -0.008 min
Response: 2135
Conc: 0.20 rawvppm m



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.741 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	D83090-5	**Sample Volume:**	39.0 ml
Lab FileID:	FB16819.D	**Headspace:**	4.0 ml
Injection Time:	05/31/16 14:27	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	19.0 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	108.58	36830	0.0082	mg/l
Ethane	74-84-0	30	0.2	25540	0.0	mg/l
Ethene	74-85-1	28	0.21	9960	0.0	mg/l
Propane	74-98-6	44	0	30408	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations
APPROVED
(compounds with "m" flag)
Katie Michel
05/31/16 16:40

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16820.D     Vial: 21
Acq On    : 31 May 2016   2:32 pm                     Operator: JENNJ1
Sample    : D83090-6                                  Inst    : FID 4
Misc      : GC6186,GFB798,39,19,500,4,1               Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: May 31 14:26:26 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Tue May 24 14:02:15 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.43	22627964	4342.634	rawvp
2)	Ethene	0.73	7270	0.682	rawvpm
3)	Ethane	0.87	1366	0.126	rawvpm
4)	Propane	0.00	0	N.D.	rawvp

9.1.3

9

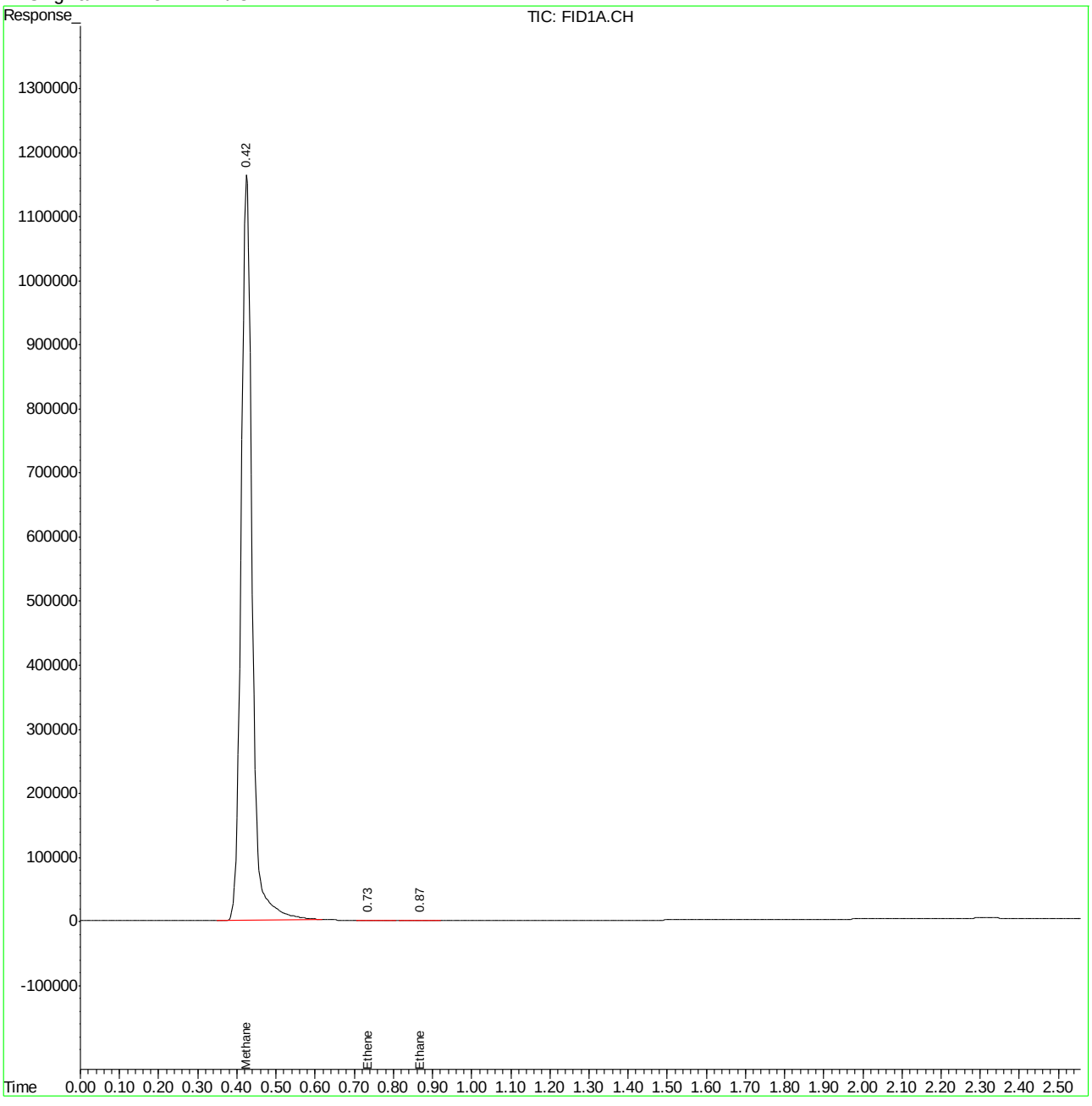
SGS ACCUTEST D83090

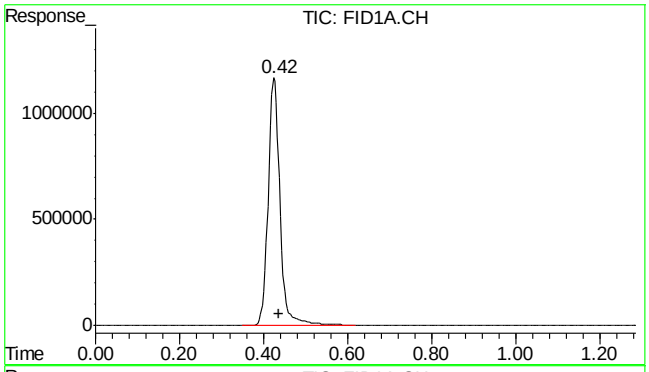
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16820.D Vial: 21
Acq On : 31 May 2016 2:32 pm Operator: JENNJ1
Sample : D83090-6 Inst : FID 4
Misc : GC6186,GFB798,39,19,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: May 31 14:26 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Tue May 24 14:02:15 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

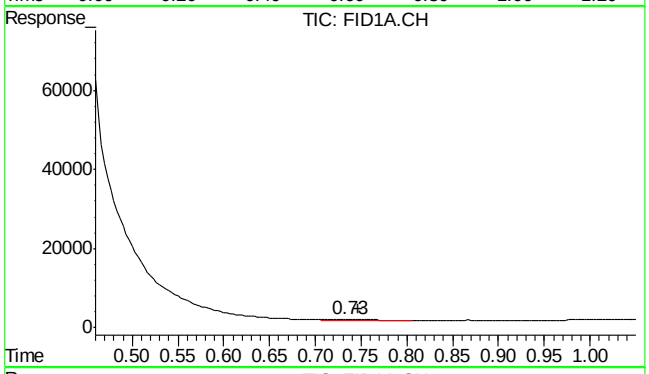
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





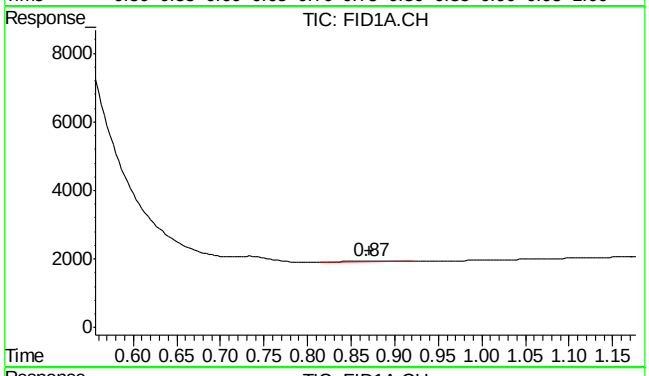
#1 Methane

R.T.: 0.426 min
Delta R.T.: -0.010 min
Response: 22627964
Conc: 4342.63 rawvppm



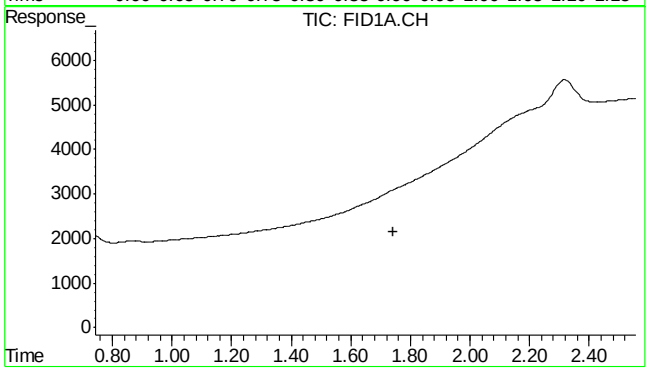
#2 Ethene

R.T.: 0.733 min
Delta R.T.: -0.014 min
Response: 7270
Conc: 0.68 rawvppm m



#3 Ethane

R.T.: 0.867 min
Delta R.T.: -0.004 min
Response: 1366
Conc: 0.13 rawvppm m



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.741 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	D83090-6	**Sample Volume:**	39.0 ml
Lab FileID:	FB16820.D	**Headspace:**	4.0 ml
Injection Time:	05/31/16 14:32	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	19.0 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	4342.63	36830	0.327	mg/l
Ethane	74-84-0	30	0.13	25540	0.0	mg/l
Ethene	74-85-1	28	0.68	9960	0.0	mg/l
Propane	74-98-6	44	0	30408	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations APPROVED (compounds with "m" flag)
Katie Michel
05/31/16 16:40

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16821.D     Vial: 22
Acq On    : 31 May 2016   2:37 pm                    Operator: JENNJ1
Sample    : D83090-7                                 Inst    : FID 4
Misc      : GC6186,GFB798,39,19,500,4,1              Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: May 31 14:31:02 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Tue May 24 14:02:15 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.42	31500	3.272	rawvpm
2)	Ethene	0.00	0	N.D.	rawvp
3)	Ethane	0.00	0	N.D.	rawvp
4)	Propane	0.00	0	N.D.	rawvp

9.1.4

9

(f)=RT Delta > 1/2 Window (m)=manual int.

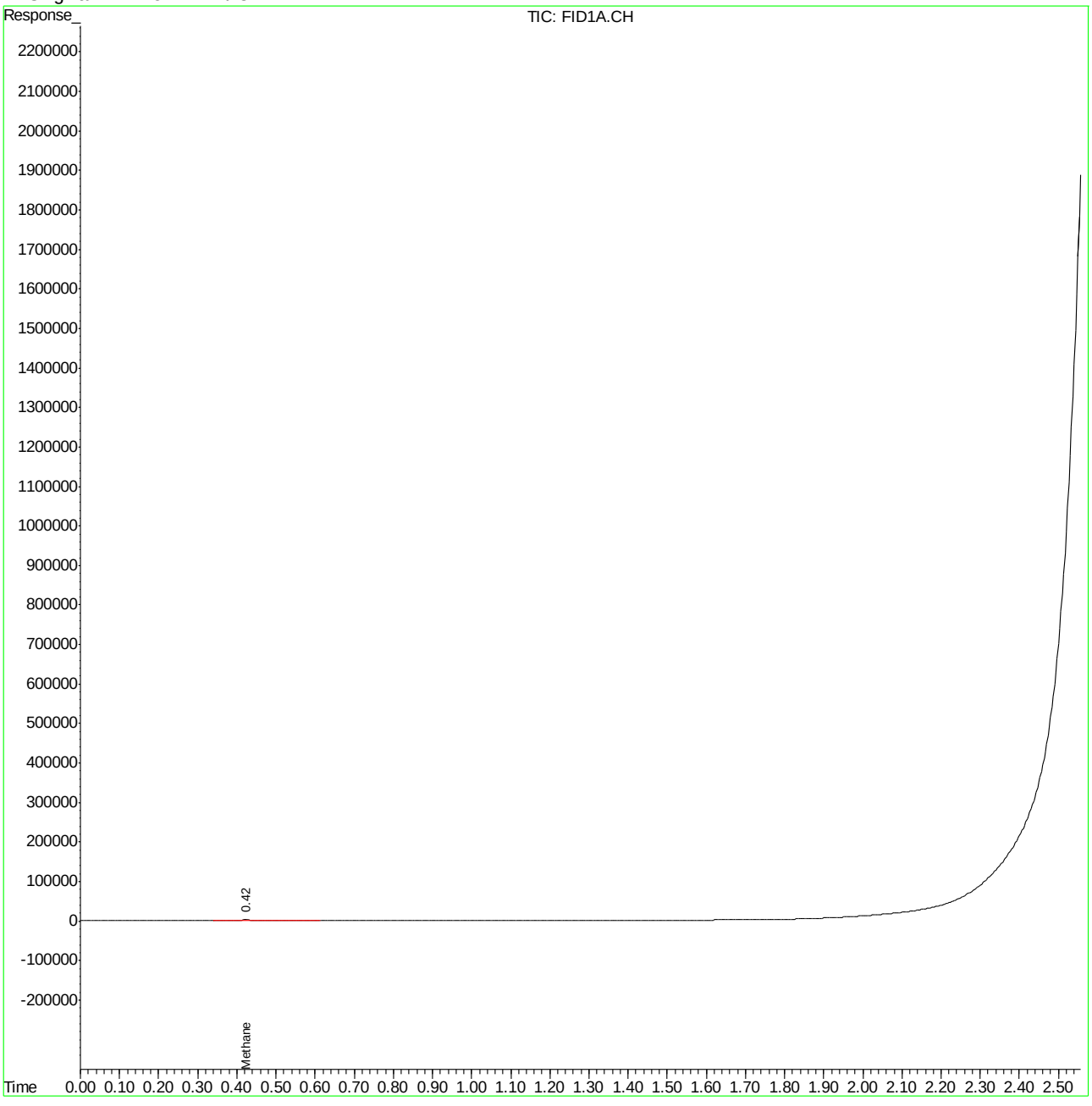
SGS ACCUTEST D83090

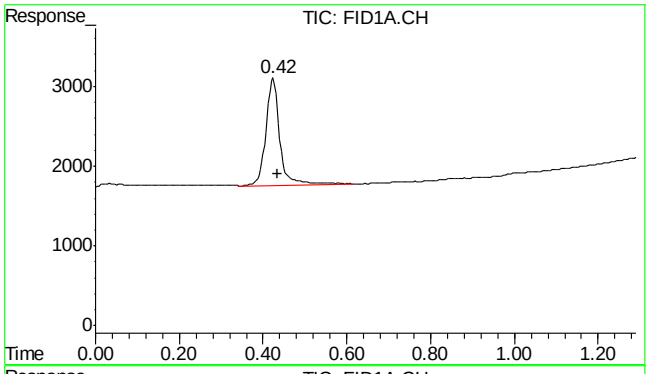
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16821.D Vial: 22
Acq On : 31 May 2016 2:37 pm Operator: JENNJ1
Sample : D83090-7 Inst : FID 4
Misc : GC6186,GFB798,39,19,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: May 31 14:32 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Tue May 24 14:02:15 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

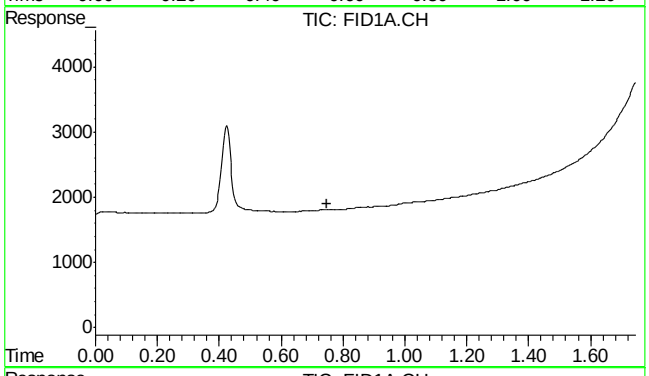
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





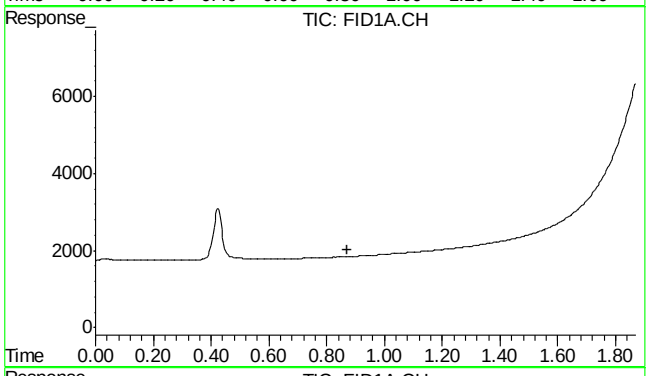
#1 Methane

R.T.: 0.423 min
Delta R.T.: -0.013 min
Response: 31500
Conc: 3.27 rawvppm m



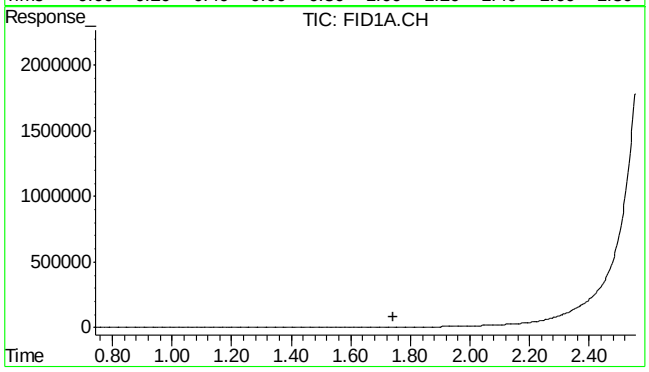
#2 Ethene

R.T.: 0.000 min
Exp R.T. : 0.747 min
Response: 0
Conc: N.D.



#3 Ethane

R.T.: 0.000 min
Exp R.T. : 0.871 min
Response: 0
Conc: N.D.



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.741 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	D83090-7	**Sample Volume:**	39.0 ml
Lab FileID:	FB16821.D	**Headspace:**	4.0 ml
Injection Time:	05/31/16 14:37	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	19.0 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	3.27	36830	0.0	mg/l
Ethane	74-84-0	30	0	25540	0.0	mg/l
Ethene	74-85-1	28	0	9960	0.0	mg/l
Propane	74-98-6	44	0	30408	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations APPROVED (compounds with "m" flag)
Katie Michel
05/31/16 16:40

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16823.D     Vial: 24
Acq On    : 31 May 2016   3:08 pm                     Operator: JENNJ1
Sample    : D83090-8                                  Inst    : FID 4
Misc      : GC6186,GFB798,39,19,500,4,1               Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: May 31 15:02:48 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Tue May 24 14:02:15 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.42	13320	N.D.	rawvpm
2)	Ethene	0.00	0	N.D.	rawvp
3)	Ethane	0.86	1415	0.131	rawvpm
4)	Propane	0.00	0	N.D.	rawvp

9.1.5

9

(f)=RT Delta > 1/2 Window (m)=manual int.

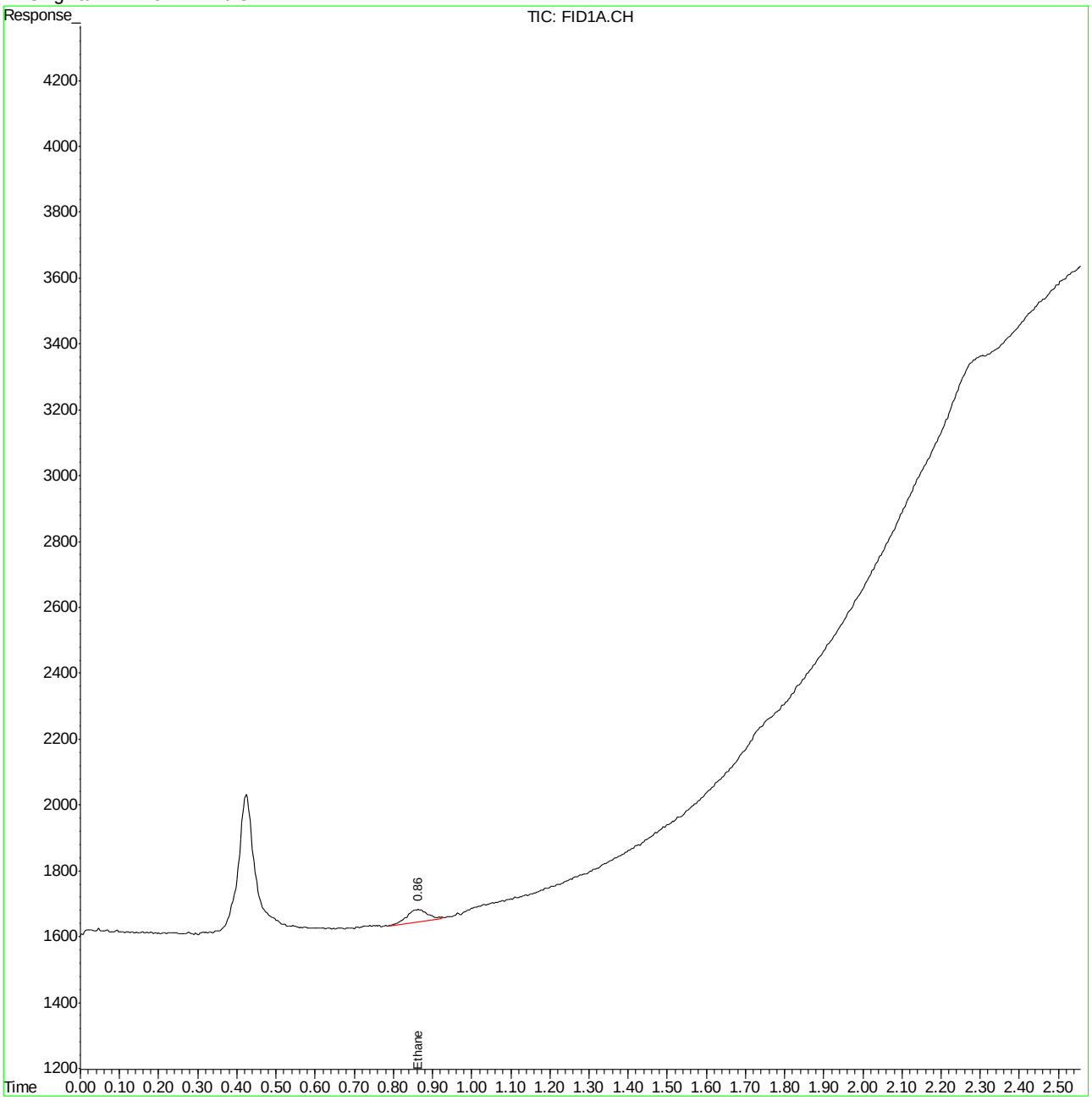
SGS ACCUTEST D83090

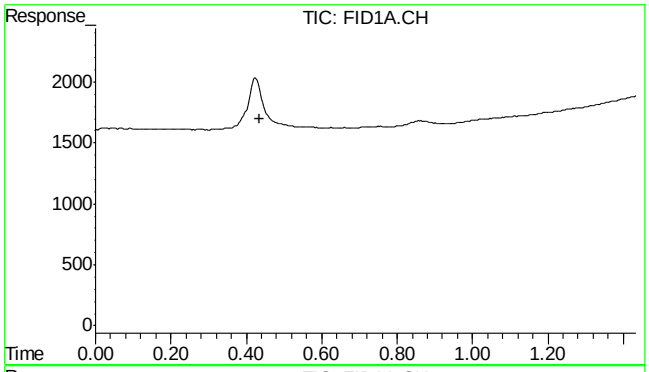
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16823.D Vial: 24
Acq On : 31 May 2016 3:08 pm Operator: JENNJ1
Sample : D83090-8 Inst : FID 4
Misc : GC6186,GFB798,39,19,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: May 31 15:03 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Tue May 24 14:02:15 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

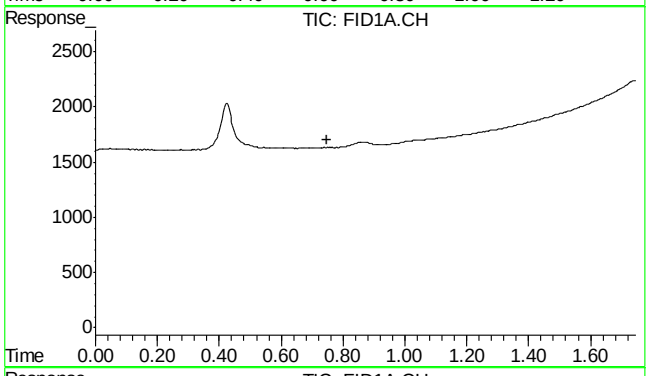
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





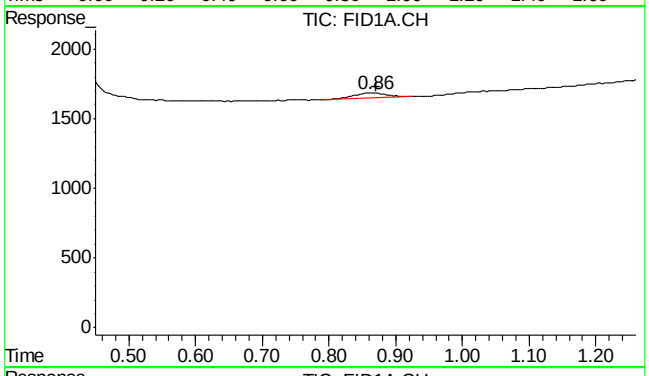
#1 Methane

R.T.: 0.423 min
Delta R.T.: -0.013 min
Response: 13320
Conc: N.D.



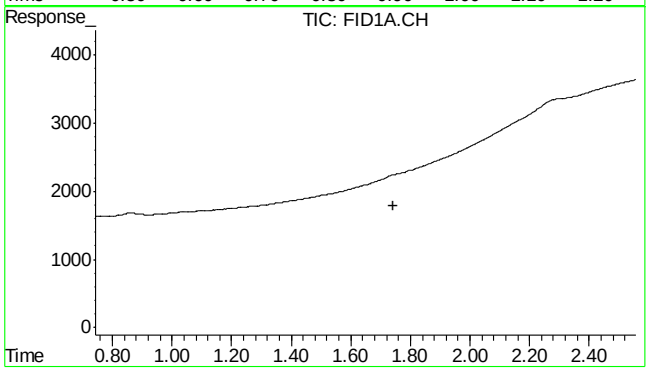
#2 Ethene

R.T.: 0.000 min
Exp R.T. : 0.747 min
Response: 0
Conc: N.D.



#3 Ethane

R.T.: 0.863 min
Delta R.T.: -0.008 min
Response: 1415
Conc: 0.13 rawvppm m



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.741 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	D83090-8	**Sample Volume:**	39.0 ml
Lab FileID:	FB16823.D	**Headspace:**	4.0 ml
Injection Time:	05/31/16 15:08	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	19.0 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	0	36830	0.0	mg/l
Ethane	74-84-0	30	0.13	25540	0.0	mg/l
Ethene	74-85-1	28	0	9960	0.0	mg/l
Propane	74-98-6	44	0	30408	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations
APPROVED
(compounds with "m" flag)
Katie Michel
05/31/16 16:40

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16824.D     Vial: 25
Acq On    : 31 May 2016   3:13 pm                    Operator: JENNJ1
Sample    : D83090-9                                 Inst    : FID 4
Misc      : GC6186,GFB798,39,19,500,4,1              Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: May 31 15:07:56 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Tue May 24 14:02:15 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.42	10345	N.D.	rawvpm
2)	Ethene	0.75	611	0.057	rawvpm
3)	Ethane	0.86	732	0.068	rawvpm
4)	Propane	0.00	0	N.D.	rawvp

9.1.6

9

(f)=RT Delta > 1/2 Window (m)=manual int.

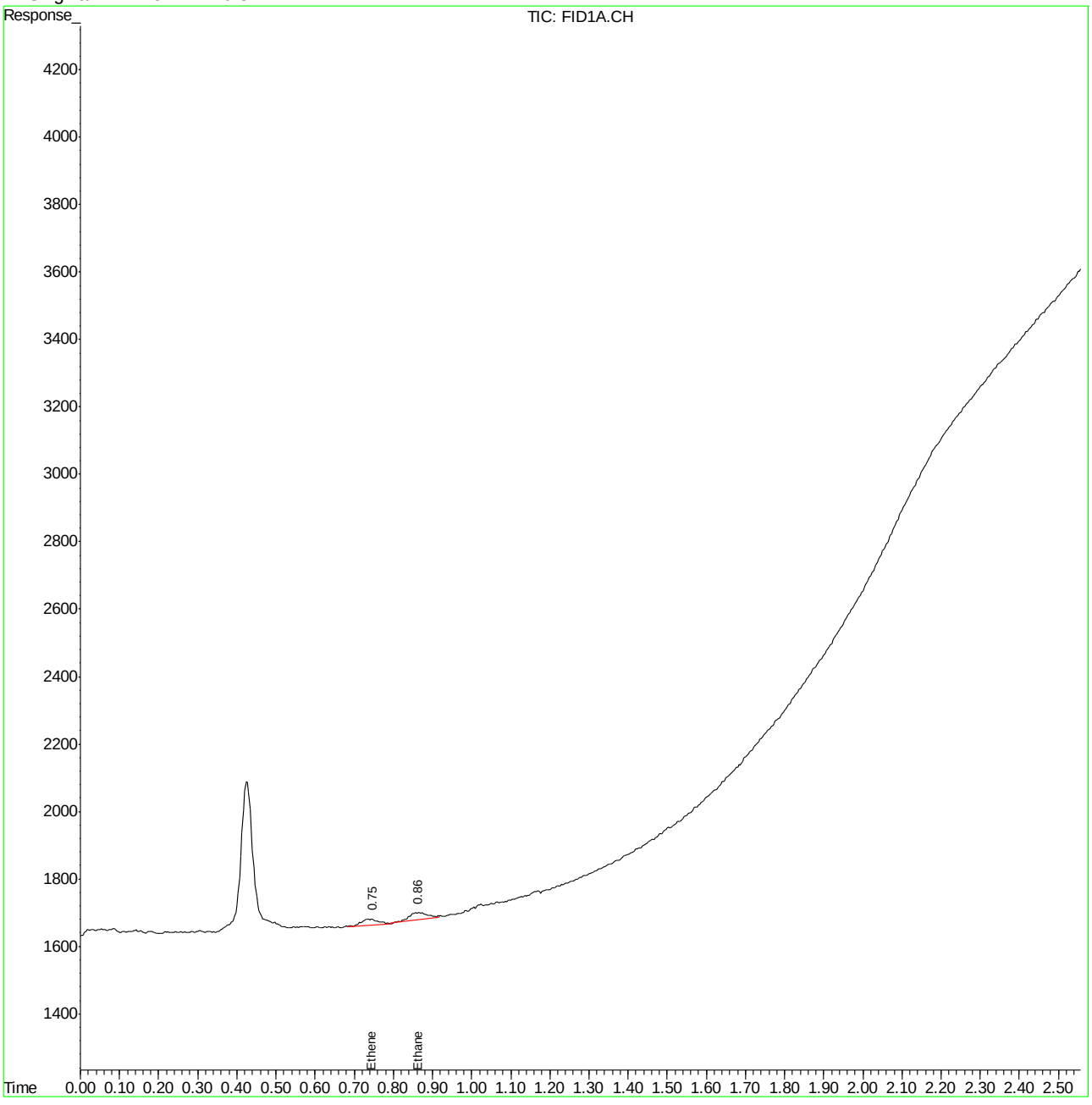
SGS ACCUTEST D83090

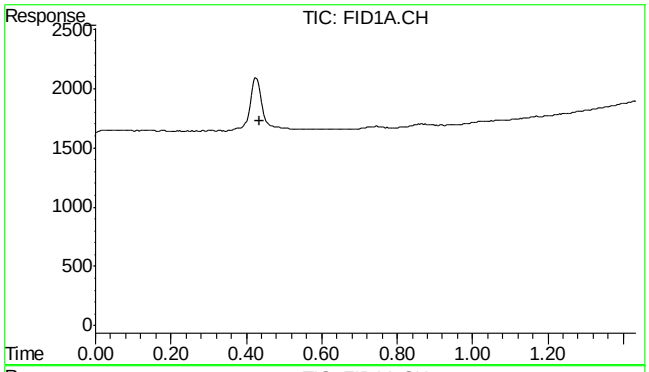
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16824.D Vial: 25
Acq On : 31 May 2016 3:13 pm Operator: JENNJ1
Sample : D83090-9 Inst : FID 4
Misc : GC6186,GFB798,39,19,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: May 31 15:08 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Tue May 24 14:02:15 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

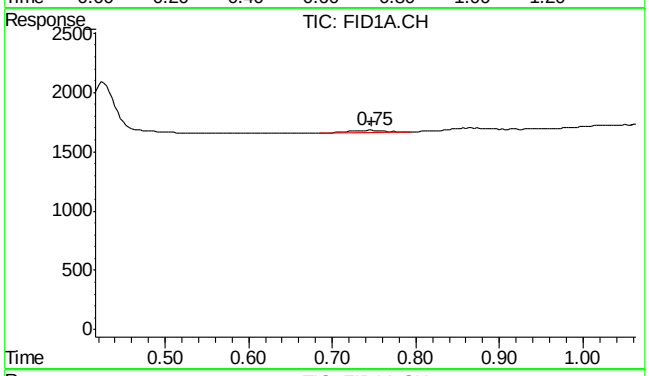
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





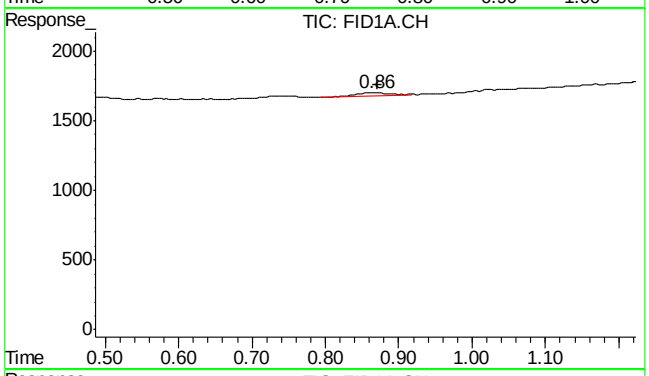
#1 Methane

R.T.: 0.425 min
Delta R.T.: -0.011 min
Response: 10345
Conc: N.D.



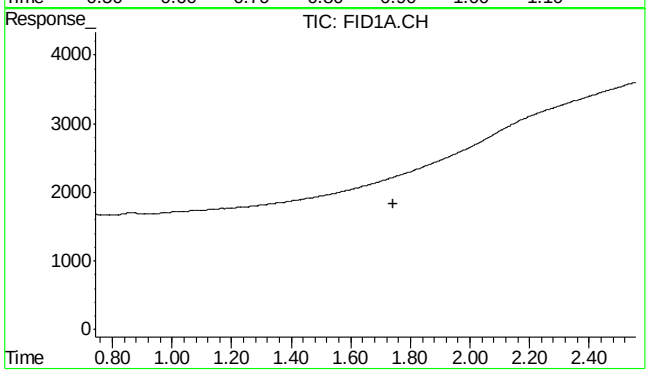
#2 Ethene

R.T.: 0.745 min
Delta R.T.: -0.002 min
Response: 611
Conc: 0.06 rawvppm m



#3 Ethane

R.T.: 0.863 min
Delta R.T.: -0.008 min
Response: 732
Conc: 0.07 rawvppm m



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.741 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	D83090-9	**Sample Volume:**	39.0 ml
Lab FileID:	FB16824.D	**Headspace:**	4.0 ml
Injection Time:	05/31/16 15:13	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	19.0 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	0	36830	0.0	mg/l
Ethane	74-84-0	30	0.07	25540	0.0	mg/l
Ethene	74-85-1	28	0.06	9960	0.0	mg/l
Propane	74-98-6	44	0	30408	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations
APPROVED
(compounds with "m" flag)
Katie Michel
05/31/16 16:40

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16825.D     Vial: 26
Acq On    : 31 May 2016   3:18 pm                    Operator: JENNJ1
Sample    : D83090-10                                Inst    : FID 4
Misc      : GC6186,GFB798,39,19,500,4,1              Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: May 31 15:14:43 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Tue May 24 14:02:15 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.42	17778	0.637	rawvpm
2)	Ethene	0.74	1546	0.145	rawvpm
3)	Ethane	0.87	695	0.064	rawvpm
4)	Propane	0.00	0	N.D.	rawvp

9.1.7

9

(f)=RT Delta > 1/2 Window (m)=manual int.

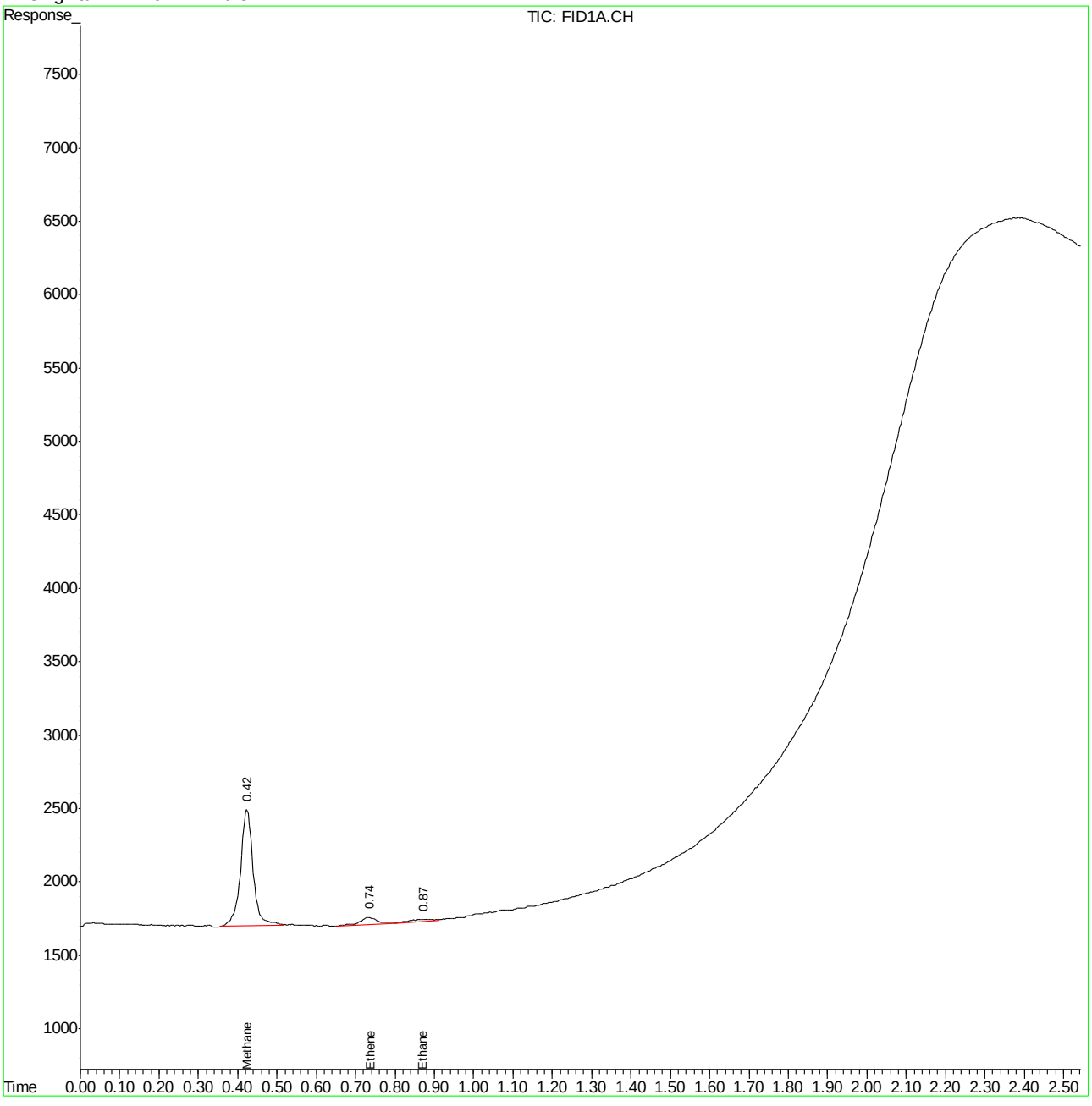
SGS ACCUTEST D83090

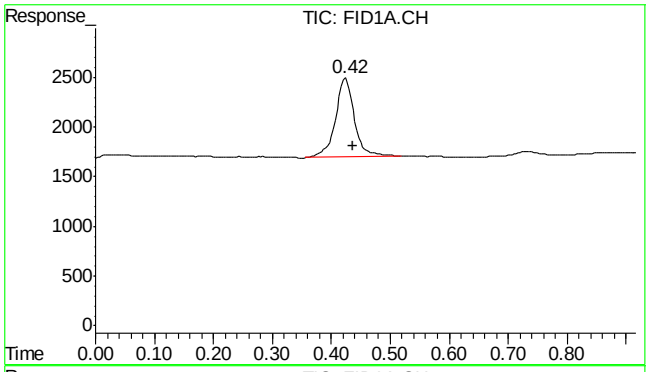
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16825.D Vial: 26
Acq On : 31 May 2016 3:18 pm Operator: JENNJ1
Sample : D83090-10 Inst : FID 4
Misc : GC6186,GFB798,39,19,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: May 31 15:15 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Tue May 24 14:02:15 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

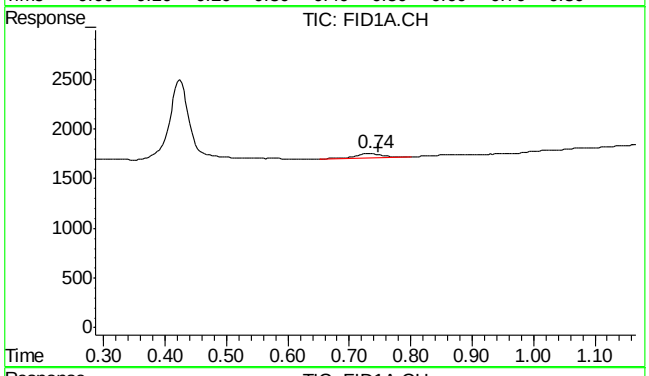
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





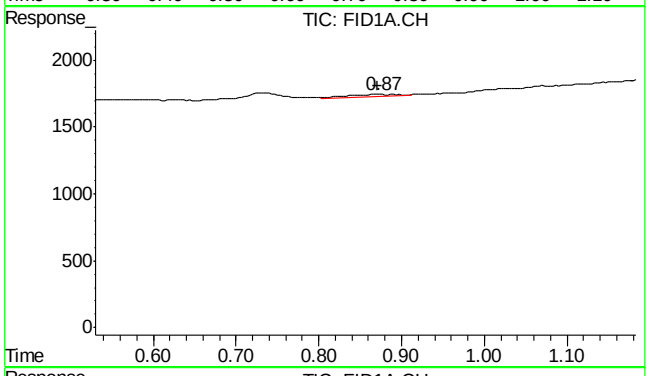
#1 Methane

R.T.: 0.423 min
Delta R.T.: -0.013 min
Response: 17778
Conc: 0.64 rawvppm m



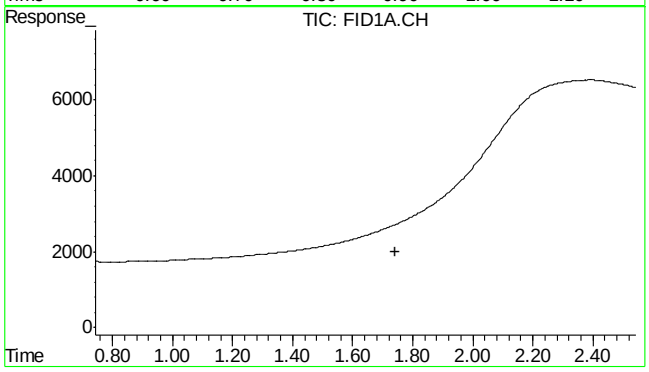
#2 Ethene

R.T.: 0.735 min
Delta R.T.: -0.012 min
Response: 1546
Conc: 0.15 rawvppm m



#3 Ethane

R.T.: 0.872 min
Delta R.T.: 0.000 min
Response: 695
Conc: 0.06 rawvppm m



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.741 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	D83090-10	**Sample Volume:**	39.0 ml
Lab FileID:	FB16825.D	**Headspace:**	4.0 ml
Injection Time:	05/31/16 15:18	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	19.0 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	0.64	36830	0.0	mg/l
Ethane	74-84-0	30	0.06	25540	0.0	mg/l
Ethene	74-85-1	28	0.15	9960	0.0	mg/l
Propane	74-98-6	44	0	30408	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16802.D     Vial: 3
Acq On    : 31 May 2016  10:38 am                    Operator: JENNJ1
Sample    : MB                                       Inst    : FID 4
Misc      : GC6186,GFB798,39,19,500,4,1              Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: May 31 10:35:09 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Tue May 24 14:02:15 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units	
	Target Compounds					
1)	Methane	0.44	9513	N.D.		rawvpm
2)	Ethene	0.00	0	N.D.		rawvp
3)	Ethane	0.00	0	N.D.		rawvp
4)	Propane	0.00	0	N.D.		rawvp

9.2.1

9

(f)=RT Delta > 1/2 Window (m)=manual int.

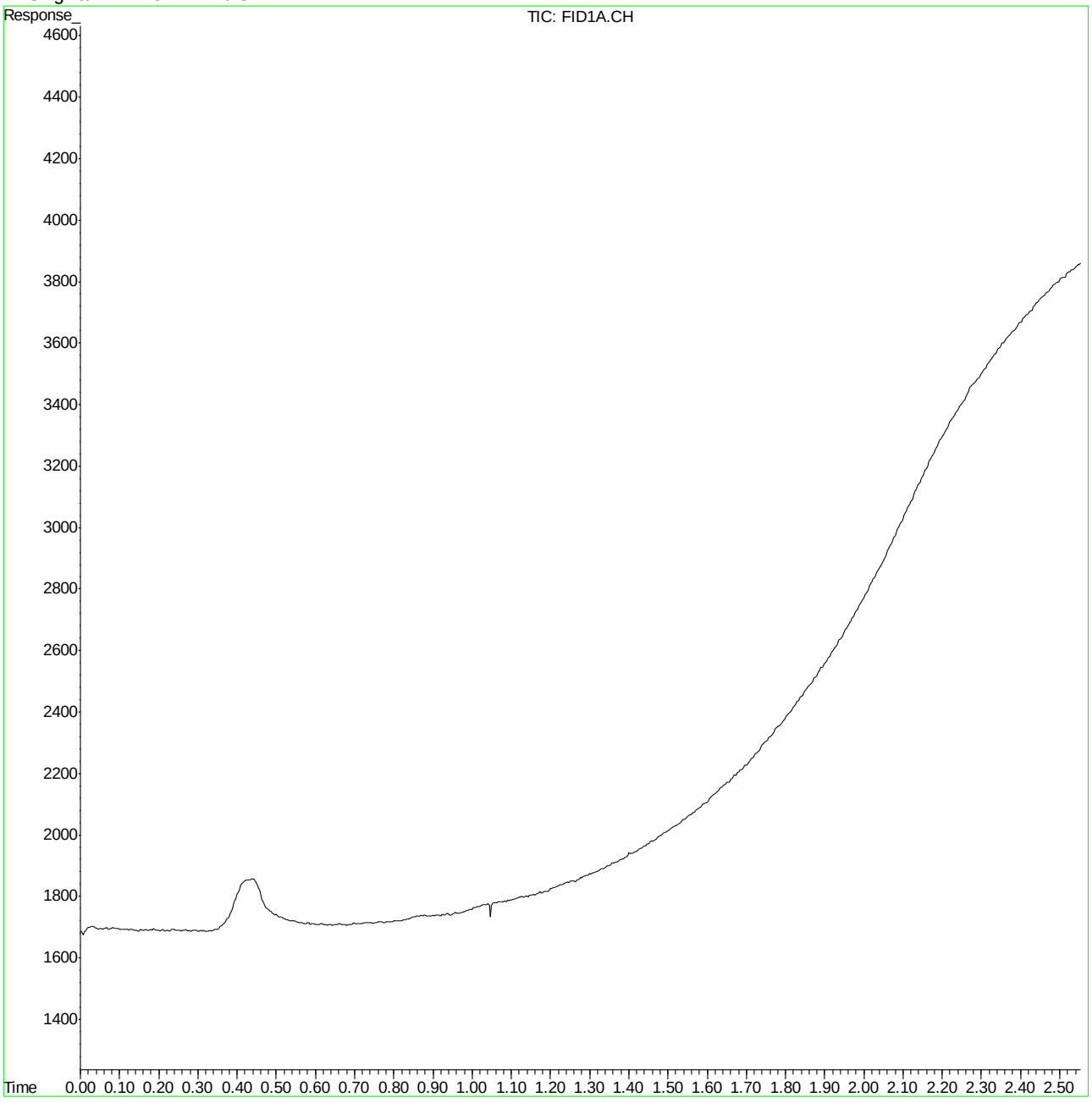
SGS ACCUTEST D83090

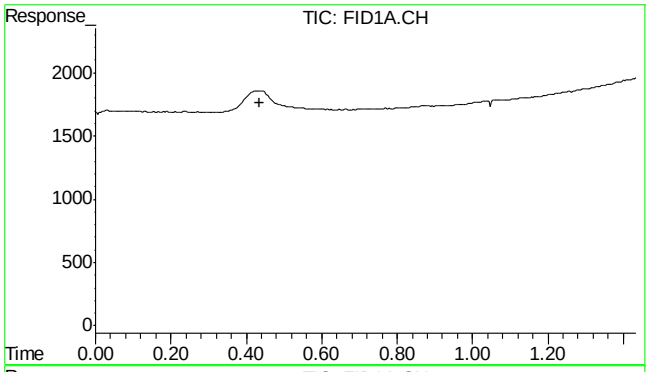
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\MAY\FB053116\FB16802.D Vial: 3
Acq On : 31 May 2016 10:38 am Operator: JENNJ1
Sample : MB Inst : FID 4
Misc : GC6186,GFB798,39,19,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: May 31 10:35 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Tue May 24 14:02:15 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

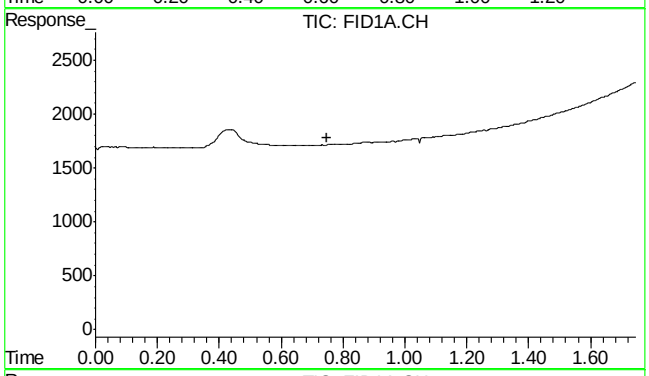
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





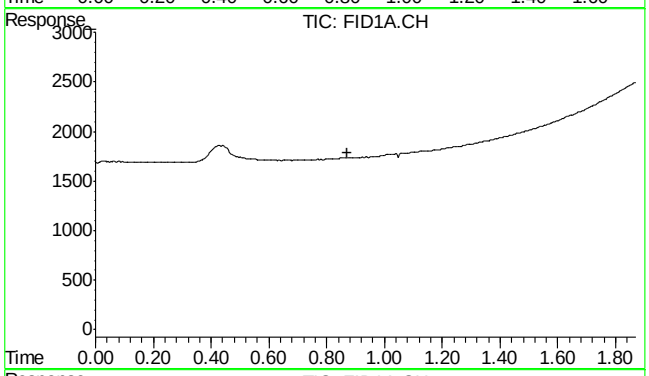
#1 Methane

R.T.: 0.438 min
Delta R.T.: 0.002 min
Response: 9513
Conc: N.D.



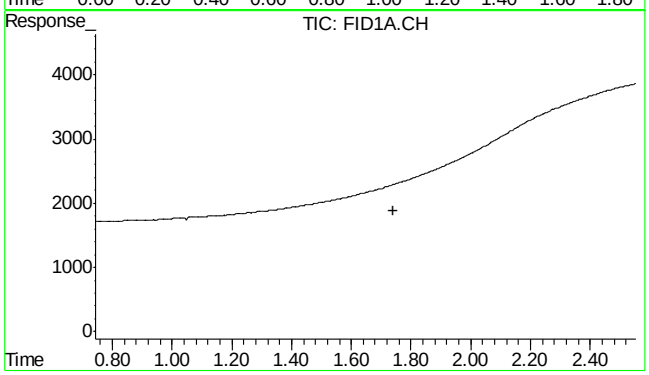
#2 Ethene

R.T.: 0.000 min
Exp R.T. : 0.747 min
Response: 0
Conc: N.D.



#3 Ethane

R.T.: 0.000 min
Exp R.T. : 0.871 min
Response: 0
Conc: N.D.



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.741 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	GFB798-MB	**Sample Volume:**	39.0 ml
Lab FileID:	FB16802.D	**Headspace:**	4.0 ml
Injection Time:	05/31/16 10:38	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	19.0 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	0	36830	0.0	mg/l
Ethane	74-84-0	30	0	25540	0.0	mg/l
Ethene	74-85-1	28	0	9960	0.0	mg/l
Propane	74-98-6	44	0	30408	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D83090
Account: LTENCODE - LT Environmental
Project: Gates-Boone, IA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Bromide	GP18019/GN34670	0.050	0.0	mg/l	0.5	0.475	95.0	90-110%
Chloride	GP18019/GN34670	0.50	0.0	mg/l	5	4.74	94.8	90-110%
Fluoride	GP18019/GN34670	0.10	0.0	mg/l	1	0.949	94.9	90-110%
Nitrogen, Nitrate	GP18019/GN34670	0.010	0.0	mg/l	0.1	0.0930	93.0	90-110%
Nitrogen, Nitrite	GP18019/GN34670	0.0040	0.0	mg/l	0.05	0.0483	96.6	90-110%
Sulfate	GP18019/GN34670	0.50	0.0	mg/l	5	4.65	93.0	90-110%

Associated Samples:
Batch GP18019: D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D83090
Account: LTENCODE - LT Environmental
Project: Gates-Boone, IA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP18019/GN34670	D83090-4	mg/l	0.0	5	4.8	96.0	80-120%
Bromide	GP18019/GN34670	D83090-7	mg/l	0.0	5	4.9	98.0	80-120%
Chloride	GP18019/GN34670	D83090-4	mg/l	23.1	50	72.6	99.0	80-120%
Chloride	GP18019/GN34670	D83090-7	mg/l	23.7	50	73.3	99.2	80-120%
Fluoride	GP18019/GN34670	D83090-4	mg/l	0.0	10	9.8	98.0	80-120%
Fluoride	GP18019/GN34670	D83090-7	mg/l	0.0	10	9.9	99.0	80-120%
Nitrogen, Nitrate	GP18019/GN34670	D83090-4	mg/l	0.083	1	1.0	91.7	80-120%
Nitrogen, Nitrate	GP18019/GN34670	D83090-7	mg/l	0.31	1	1.3	99.0	80-120%
Nitrogen, Nitrite	GP18019/GN34670	D83090-4	mg/l	0.0	0.5	0.49	98.0	80-120%
Nitrogen, Nitrite	GP18019/GN34670	D83090-7	mg/l	0.0	0.5	0.50	100.0	80-120%
Sulfate	GP18019/GN34670	D83090-4	mg/l	15.4	50	62.0	93.2	80-120%
Sulfate	GP18019/GN34670	D83090-7	mg/l	21.7	50	68.8	94.2	80-120%

Associated Samples:
Batch GP18019: D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D83090
Account: LTENCODE - LT Environmental
Project: Gates-Boone, IA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Bromide	GP18019/GN34670	D83090-4	mg/l	0.0	5	4.8	0.0	20%
Bromide	GP18019/GN34670	D83090-7	mg/l	0.0	5	4.9	0.0	20%
Chloride	GP18019/GN34670	D83090-4	mg/l	23.1	50	74.3	2.3	20%
Chloride	GP18019/GN34670	D83090-7	mg/l	23.7	50	73.7	0.5	20%
Fluoride	GP18019/GN34670	D83090-4	mg/l	0.0	10	10.0	2.0	20%
Fluoride	GP18019/GN34670	D83090-7	mg/l	0.0	10	9.9	0.0	20%
Nitrogen, Nitrate	GP18019/GN34670	D83090-4	mg/l	0.083	1	1.1	9.5	20%
Nitrogen, Nitrate	GP18019/GN34670	D83090-7	mg/l	0.31	1	1.3	0.0	20%
Nitrogen, Nitrite	GP18019/GN34670	D83090-4	mg/l	0.0	0.5	0.49	0.0	20%
Nitrogen, Nitrite	GP18019/GN34670	D83090-7	mg/l	0.0	0.5	0.50	0.0	20%
Sulfate	GP18019/GN34670	D83090-4	mg/l	15.4	50	62.2	0.3	20%
Sulfate	GP18019/GN34670	D83090-7	mg/l	21.7	50	68.9	0.1	20%

Associated Samples:
Batch GP18019: D83090-4, D83090-5, D83090-6, D83090-7, D83090-8, D83090-9, D83090-10
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

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e-Hardcopy 2.0
Automated Report

Technical Report for

LT Environmental

Gates-Boone, IA

Gate0901

SGS Accutest Job Number: D83120

Sampling Date: 05/25/16

Report to:

LT Environmental
4600 West 60th Avenue
Arvada, CO 80003
jbrown@ltenv.com

ATTN: John Brown

Total number of pages in report: **262**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman
Laboratory Director

Client Service contact: Renea Lewis 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), LA (LA150028), TX (T104704511), WY
CO (CO00049)

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SGS Accutest

Sample Summary

LT Environmental

Job No: D83120

Gates-Boone, IA
Project No: Gate0901

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D83120-1	05/25/16	12:45	BF	05/31/16	AQ	Water	PBW01
D83120-2	05/25/16	13:30	BF	05/31/16	AQ	Water	PBW02
D83120-3	05/25/16	14:00	BF	05/31/16	AQ	Water	EZ-26
D83120-4	05/25/16	14:30	BF	05/31/16	AQ	Water	EZ-27
D83120-5	05/25/16	15:00	BF	05/31/16	AQ	Water	TW-8
D83120-6	05/25/16	15:30	BF	05/31/16	AQ	Water	MPW-5
D83120-7	05/25/16	16:00	BF	05/31/16	AQ	Water	MPW-16
D83120-8	05/25/16	07:40	BF	05/31/16	AQ	Equipment Blank	EB

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: LT Environmental **Job No:** D83120

Site: Gates-Boone, IA **Report Date** 6/8/2016 9:23:51 AM

On 05/31/2016, 8 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.2 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D83120 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** V7V1840

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D83134-3MS, D83134-3MSD were used as the QC samples indicated.

Matrix: AQ **Batch ID:** V7V1842

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D83134-6MS, D83134-6MSD were used as the QC samples indicated.

Volatiles by GC By Method RSK175 MOD

Matrix: AQ **Batch ID:** GFB799

- All samples were analyzed within the recommended method holding time.
- Sample(s) D83120-2MS, D83120-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- D83120-3, 4: The pH of the sample was >2 at time of analysis.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix: AQ **Batch ID:** GP18038

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D83114-2MS, D83114-2MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Sulfate, Chloride analysis.
- D83120-3, 4, 6, 7 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM 2320B-2011

Matrix: AQ **Batch ID:** GN34738

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D83120-1DUP, D83120-1MS, D83120-1MSD were used as the QC samples for the Alkalinity, Total as CaCO3 analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D83120
Account: LT Environmental
Project: Gates-Boone, IA
Collected: 05/25/16

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D83120-1	**PBW01**					
cis-1,2-Dichloroethylene		2.1	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		5.5	1.0	0.50	ug/l	SW846 8260B
Trichloroethylene		0.65 J	1.0	0.50	ug/l	SW846 8260B
Alkalinity, Total as CaCO3		117	5.0		mg/l	SM 2320B-2011
Chloride		4.6	0.50		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate		1.4	0.10		mg/l	EPA 300.0/SW846 9056
Sulfate		10.5	0.50		mg/l	EPA 300.0/SW846 9056
D83120-2	**PBW02**					
cis-1,2-Dichloroethylene		44.6	2.0	1.0	ug/l	SW846 8260B
trans-1,2-Dichloroethylene		2.2	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		62.5	1.0	0.50	ug/l	SW846 8260B
Trichloroethylene		8.2	1.0	0.50	ug/l	SW846 8260B
Alkalinity, Total as CaCO3		471	5.0		mg/l	SM 2320B-2011
Chloride		126	10		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate		43.7	2.0		mg/l	EPA 300.0/SW846 9056
Sulfate		143	10		mg/l	EPA 300.0/SW846 9056
D83120-3	**EZ-26**					
m-Dichlorobenzene		0.62 J	1.0	0.50	ug/l	SW846 8260B
cis-1,2-Dichloroethylene		48.6	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		5.2	1.0	0.50	ug/l	SW846 8260B
Trichloroethylene		6.0	1.0	0.50	ug/l	SW846 8260B
Methane [a]		0.0292	0.00080	0.00040	mg/l	RSK175 MOD
Alkalinity, Total as CaCO3		235	5.0		mg/l	SM 2320B-2011
Chloride		26.1	2.5		mg/l	EPA 300.0/SW846 9056
Sulfate		22.8	0.50		mg/l	EPA 300.0/SW846 9056
D83120-4	**EZ-27**					
1,1-Dichloroethane		1.8 J	2.0	1.0	ug/l	SW846 8260B
cis-1,2-Dichloroethylene		307	20	10	ug/l	SW846 8260B
trans-1,2-Dichloroethylene		6.1	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		91.6	1.0	0.50	ug/l	SW846 8260B
Trichloroethylene		71.7	1.0	0.50	ug/l	SW846 8260B
Vinyl chloride		70.2	2.0	1.0	ug/l	SW846 8260B
Methane [a]		0.585	0.00080	0.00040	mg/l	RSK175 MOD
Ethane [a]		0.0017	0.0016	0.00080	mg/l	RSK175 MOD
Ethene [a]		0.0047	0.0024	0.0012	mg/l	RSK175 MOD
Alkalinity, Total as CaCO3		603	5.0		mg/l	SM 2320B-2011
Chloride		61.6	2.5		mg/l	EPA 300.0/SW846 9056

Summary of Hits

Job Number: D83120
Account: LT Environmental
Project: Gates-Boone, IA
Collected: 05/25/16

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Sulfate		21.2	1.0		mg/l	EPA 300.0/SW846 9056
D83120-5	**TW-8**					
1,1-Dichloroethane		2.9	2.0	1.0	ug/l	SW846 8260B
1,1-Dichloroethylene		5.3	2.0	1.0	ug/l	SW846 8260B
cis-1,2-Dichloroethylene		220	100	50	ug/l	SW846 8260B
trans-1,2-Dichloroethylene		3.2	2.0	1.0	ug/l	SW846 8260B
Tetrachloroethylene		2520	50	25	ug/l	SW846 8260B
1,1,1-Trichloroethane		39.6	2.0	1.0	ug/l	SW846 8260B
Trichloroethylene		39.4	1.0	0.50	ug/l	SW846 8260B
Vinyl chloride		11.3	2.0	1.0	ug/l	SW846 8260B
Methane		0.00044 J	0.00080	0.00040	mg/l	RSK175 MOD
Alkalinity, Total as CaCO3		306	5.0		mg/l	SM 2320B-2011
Chloride		19.4	0.50		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate		0.56	0.20		mg/l	EPA 300.0/SW846 9056
Sulfate		13.4	0.50		mg/l	EPA 300.0/SW846 9056
D83120-6	**MPW-5**					
1,1-Dichloroethane		2.2	2.0	1.0	ug/l	SW846 8260B
1,1-Dichloroethylene		17.8	2.0	1.0	ug/l	SW846 8260B
cis-1,2-Dichloroethylene		865	200	100	ug/l	SW846 8260B
trans-1,2-Dichloroethylene		7.7	2.0	1.0	ug/l	SW846 8260B
Ethylbenzene		3.1	1.0	0.50	ug/l	SW846 8260B
Methylene chloride		11.1	4.0	2.0	ug/l	SW846 8260B
4-Methyl-2-pentanone		28.7	5.0	2.5	ug/l	SW846 8260B
Tetrachloroethylene		7550	100	50	ug/l	SW846 8260B
Toluene		40.8	1.0	0.50	ug/l	SW846 8260B
1,1,1-Trichloroethane		2.4	2.0	1.0	ug/l	SW846 8260B
Trichloroethylene		365	100	50	ug/l	SW846 8260B
Vinyl chloride		13.8	2.0	1.0	ug/l	SW846 8260B
Xylene (total)		10.8	1.0	1.0	ug/l	SW846 8260B
Methane		0.0032	0.00080	0.00040	mg/l	RSK175 MOD
Ethane		0.0060	0.0016	0.00080	mg/l	RSK175 MOD
Ethene		0.0250	0.0024	0.0012	mg/l	RSK175 MOD
Alkalinity, Total as CaCO3		304	5.0		mg/l	SM 2320B-2011
Chloride		215	10		mg/l	EPA 300.0/SW846 9056
Sulfate		42.1	1.0		mg/l	EPA 300.0/SW846 9056
D83120-7	**MPW-16**					
1,1-Dichloroethane		2.0	2.0	1.0	ug/l	SW846 8260B
1,1-Dichloroethylene		16.1	2.0	1.0	ug/l	SW846 8260B
cis-1,2-Dichloroethylene		873	200	100	ug/l	SW846 8260B

Summary of Hits

Job Number: D83120
Account: LT Environmental
Project: Gates-Boone, IA
Collected: 05/25/16

Lab Sample ID Client Sample ID Analyte	Result/ Qual	RL	MDL	Units	Method
trans-1,2-Dichloroethylene	7.3	2.0	1.0	ug/l	SW846 8260B
Ethylbenzene	2.8	1.0	0.50	ug/l	SW846 8260B
Methylene chloride	9.4	4.0	2.0	ug/l	SW846 8260B
4-Methyl-2-pentanone	24.7	5.0	2.5	ug/l	SW846 8260B
Tetrachloroethylene	7840	100	50	ug/l	SW846 8260B
Toluene	35.9	1.0	0.50	ug/l	SW846 8260B
1,1,1-Trichloroethane	2.2	2.0	1.0	ug/l	SW846 8260B
Trichloroethylene	339	100	50	ug/l	SW846 8260B
Vinyl chloride	12.7	2.0	1.0	ug/l	SW846 8260B
Xylene (total)	10.1	1.0	1.0	ug/l	SW846 8260B
Methane	0.0456	0.00080	0.00040	mg/l	RSK175 MOD
Ethane	0.0977	0.0016	0.00080	mg/l	RSK175 MOD
Ethene	0.370	0.0024	0.0012	mg/l	RSK175 MOD
Alkalinity, Total as CaCO3	307	5.0		mg/l	SM 2320B-2011
Chloride	209	10		mg/l	EPA 300.0/SW846 9056
Sulfate	42.1	1.0		mg/l	EPA 300.0/SW846 9056
D83120-8 EB					
Chloroform	2.5	2.0	1.0	ug/l	SW846 8260B

(a) The pH of the sample was > 2 at time of analysis.

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID:	PBW01		
Lab Sample ID:	D83120-1	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34229.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	2.1	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW01		
Lab Sample ID:	D83120-1	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	5.5	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	0.65	1.0	0.50	ug/l	J
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW01		
Lab Sample ID:	D83120-1	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	97%		62-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	97%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	PBW01		
Lab Sample ID:	D83120-1	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16840.D	1	06/02/16	KM	n/a	n/a	GFB799
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.6 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW01		
Lab Sample ID:	D83120-1	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	117	5.0	mg/l	1	06/03/16	TJ	SM 2320B-2011
Chloride	4.6	0.50	mg/l	1	06/01/16 10:10	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrate	1.4	0.10	mg/l	10	06/01/16 13:00	JB	EPA 300.0/SW846 9056
Sulfate	10.5	0.50	mg/l	1	06/01/16 10:10	JB	EPA 300.0/SW846 9056

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	PBW02		
Lab Sample ID:	D83120-2	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34230.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	44.6	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	2.2	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW02		
Lab Sample ID:	D83120-2	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	62.5	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	8.2	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW02		
Lab Sample ID:	D83120-2	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	97%		62-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	97%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	PBW02		
Lab Sample ID:	D83120-2	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16831.D	1	06/02/16	KM	n/a	n/a	GFB799
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.6 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PBW02		
Lab Sample ID:	D83120-2	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	471	5.0	mg/l	1	06/03/16	TJ	SM 2320B-2011
Chloride	126	10	mg/l	20	06/01/16 13:13	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrate	43.7	2.0	mg/l	200	06/01/16 13:26	JB	EPA 300.0/SW846 9056
Sulfate	143	10	mg/l	20	06/01/16 13:13	JB	EPA 300.0/SW846 9056

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	EZ-26		
Lab Sample ID:	D83120-3	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34231.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	0.62	1.0	0.50	ug/l	J
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	48.6	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EZ-26		
Lab Sample ID:	D83120-3	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	5.2	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	6.0	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EZ-26		
Lab Sample ID:	D83120-3	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	99%		62-130%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	101%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	EZ-26		
Lab Sample ID:	D83120-3	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	FB16842.D	1	06/02/16	KM	n/a	n/a	GFB799
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.6 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.0292	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

(a) The pH of the sample was > 2 at time of analysis.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EZ-26		
Lab Sample ID:	D83120-3	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	235	5.0	mg/l	1	06/03/16	TJ	SM 2320B-2011
Chloride	26.1	2.5	mg/l	5	06/01/16 13:39	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrate [a]	< 0.050	0.050	mg/l	5	06/01/16 13:39	JB	EPA 300.0/SW846 9056
Sulfate	22.8	0.50	mg/l	1	06/01/16 10:36	JB	EPA 300.0/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	EZ-27		
Lab Sample ID:	D83120-4	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34232.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2	7V34289.D	10	06/02/16	TL	n/a	n/a	V7V1842

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	1.8	2.0	1.0	ug/l	J
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	307 [a]	20	10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	6.1	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EZ-27		
Lab Sample ID:	D83120-4	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	91.6	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	71.7	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	70.2	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%	106%	70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EZ-27		
Lab Sample ID:	D83120-4	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	99%	101%	62-130%
2037-26-5	Toluene-D8	100%	100%	70-130%
460-00-4	4-Bromofluorobenzene	100%	102%	69-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	EZ-27		
Lab Sample ID:	D83120-4	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	FB16841.D	1	06/02/16	KM	n/a	n/a	GFB799
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.6 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.585	0.00080	0.00040	mg/l	
74-84-0	Ethane	0.0017	0.0016	0.00080	mg/l	
74-85-1	Ethene	0.0047	0.0024	0.0012	mg/l	

(a) The pH of the sample was > 2 at time of analysis.

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EZ-27		
Lab Sample ID:	D83120-4	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	603	5.0	mg/l	1	06/03/16	TJ	SM 2320B-2011
Chloride	61.6	2.5	mg/l	5	06/01/16 13:52	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrate [a]	< 0.050	0.050	mg/l	5	06/01/16 13:52	JB	EPA 300.0/SW846 9056
Sulfate	21.2	1.0	mg/l	2	06/01/16 10:49	JB	EPA 300.0/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	TW-8		
Lab Sample ID:	D83120-5	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34233.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2	7V34290.D	50	06/02/16	TL	n/a	n/a	V7V1842

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	2.9	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	5.3	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	220 [a]	100	50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	3.2	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-8		
Lab Sample ID:	D83120-5	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	2520 [a]	50	25	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	39.6	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	39.4	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	11.3	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	106%	70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-8		
Lab Sample ID:	D83120-5	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	98%	101%	62-130%
2037-26-5	Toluene-D8	102%	99%	70-130%
460-00-4	4-Bromofluorobenzene	97%	99%	69-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	TW-8		
Lab Sample ID:	D83120-5	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16843.D	1	06/02/16	KM	n/a	n/a	GFB799
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.6 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.00044	0.00080	0.00040	mg/l	J
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TW-8		
Lab Sample ID:	D83120-5	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	306	5.0	mg/l	1	06/03/16	TJ	SM 2320B-2011
Chloride	19.4	0.50	mg/l	1	06/01/16 11:02	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrate	0.56	0.20	mg/l	20	06/01/16 14:05	JB	EPA 300.0/SW846 9056
Sulfate	13.4	0.50	mg/l	1	06/01/16 11:02	JB	EPA 300.0/SW846 9056

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	MPW-5		
Lab Sample ID:	D83120-6	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34234.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2	7V34291.D	100	06/02/16	TL	n/a	n/a	V7V1842

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	2.2	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	17.8	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	865 [a]	200	100	ug/l	
156-60-5	trans-1,2-Dichloroethylene	7.7	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MPW-5		
Lab Sample ID:	D83120-6	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	3.1	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	11.1	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	28.7	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	7550 [a]	100	50	ug/l	
108-88-3	Toluene	40.8	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	2.4	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	365 [a]	100	50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	13.8	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	10.8	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	106%	70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MPW-5		
Lab Sample ID:	D83120-6	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	99%	98%	62-130%
2037-26-5	Toluene-D8	103%	100%	70-130%
460-00-4	4-Bromofluorobenzene	97%	100%	69-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MPW-5		
Lab Sample ID:	D83120-6	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16844.D	1	06/02/16	KM	n/a	n/a	GFB799
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.6 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.0032	0.00080	0.00040	mg/l	
74-84-0	Ethane	0.0060	0.0016	0.00080	mg/l	
74-85-1	Ethene	0.0250	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MPW-5		
Lab Sample ID:	D83120-6	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	304	5.0	mg/l	1	06/03/16	TJ	SM 2320B-2011
Chloride	215	10	mg/l	20	06/01/16 16:27	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrate [a]	< 0.050	0.050	mg/l	5	06/01/16 16:14	JB	EPA 300.0/SW846 9056
Sulfate	42.1	1.0	mg/l	2	06/01/16 11:15	JB	EPA 300.0/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	MPW-16		
Lab Sample ID:	D83120-7	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34235.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2	7V34292.D	100	06/02/16	TL	n/a	n/a	V7V1842

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	2.0	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	16.1	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	873 [a]	200	100	ug/l	
156-60-5	trans-1,2-Dichloroethylene	7.3	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MPW-16		
Lab Sample ID:	D83120-7	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	2.8	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	9.4	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	24.7	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	7840 [a]	100	50	ug/l	
108-88-3	Toluene	35.9	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	2.2	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	339 [a]	100	50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	12.7	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	10.1	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	105%	70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MPW-16		
Lab Sample ID:	D83120-7	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	99%	97%	62-130%
2037-26-5	Toluene-D8	101%	100%	70-130%
460-00-4	4-Bromofluorobenzene	98%	100%	69-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MPW-16		
Lab Sample ID:	D83120-7	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16845.D	1	06/02/16	KM	n/a	n/a	GFB799
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.6 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.0456	0.00080	0.00040	mg/l	
74-84-0	Ethane	0.0977	0.0016	0.00080	mg/l	
74-85-1	Ethene	0.370	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MPW-16		
Lab Sample ID:	D83120-7	**Date Sampled:**	05/25/16
Matrix:	AQ - Water	**Date Received:**	05/31/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	307	5.0	mg/l	1	06/03/16	TJ	SM 2320B-2011
Chloride	209	10	mg/l	20	06/01/16 16:53	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrate [a]	< 0.050	0.050	mg/l	5	06/01/16 16:40	JB	EPA 300.0/SW846 9056
Sulfate	42.1	1.0	mg/l	2	06/01/16 11:28	JB	EPA 300.0/SW846 9056

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

SGS Accutest

Report of Analysis

Client Sample ID:	EB		
Lab Sample ID:	D83120-8	**Date Sampled:**	05/25/16
Matrix:	AQ - Equipment Blank	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V34227.D	1	06/01/16	AJ	n/a	n/a	V7V1840
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	2.5	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EB		
Lab Sample ID:	D83120-8	**Date Sampled:**	05/25/16
Matrix:	AQ - Equipment Blank	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EB		
Lab Sample ID:	D83120-8	**Date Sampled:**	05/25/16
Matrix:	AQ - Equipment Blank	**Date Received:**	05/31/16
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	98%		62-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	98%		69-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	EB		
Lab Sample ID:	D83120-8	**Date Sampled:**	05/25/16
Matrix:	AQ - Equipment Blank	**Date Received:**	05/31/16
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	Gates-Boone, IA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB16846.D	1	06/02/16	KM	n/a	n/a	GFB799
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.6 Deg. C
Run #2				

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EB		
Lab Sample ID:	D83120-8	**Date Sampled:**	05/25/16
Matrix:	AQ - Equipment Blank	**Date Received:**	05/31/16
		Percent Solids:	n/a
Project:	Gates-Boone, IA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	< 5.0	5.0	mg/l	1	06/03/16	TJ	SM 2320B-2011
Chloride	< 0.50	0.50	mg/l	1	06/01/16 12:08	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrate	< 0.010	0.010	mg/l	1	06/01/16 12:08	JB	EPA 300.0/SW846 9056
Sulfate	< 0.50	0.50	mg/l	1	06/01/16 12:08	JB	EPA 300.0/SW846 9056

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS ACCUTEST

CHAIN OF CUSTODY

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #:
SGS Accutest Quote #:
SGS Accutest Job #: D83120

Client / Reporting Information

Company Name: LTE
Street Address: 4600 W. 60th Ave
City: Arvada, CO 80003
Project Contact: John Brown
Phone #: (303) 433-9788
Sampler(s) Name(s): B. Finn

Project Information

Project Name: Gates - Boone
Street:
City: Boone
State: IA
Project #: Gate0901
Client Purchase Order #:
Project Manager: John Brown

Billing Information (If different from Report to)
Company Name:
Street Address:
City:
Attention:

Requested Analysis (see TEST CODE sheet)

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	VOC 8260B	MEE RSK 175	NO3, O, SO4, FE2, Alk	Chloride (A)							LAB USE ONLY
	PBW01		05/25/2016	1245	LTE	H_2O	11									X	X	X	X	(in second cooler)						01
	PBW02		05/25/2016	1330	LTE	H_2O	11									X	X	X	X							02
	EZ-26		05/25/2016	1400	LTE	H_2O	11									X	X	X	X							03
	EZ-27		05/25/2016	1430	LTE	H_2O	11									X	X	X	X							04
	TW-8		05/25/2016	1500	LTE	H_2O	11									X	X	X	X							05
	MPW-15		05/25/2016	1530	LTE	H_2O	11									X	X	X	X							06
	MPW-16		05/25/2016	1600	LTE	H_2O	11									X	X	X	X							07
	Trip Blank																									09
	Temp Blank																									—

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Turnaround Time (Business days)

- ☐ Std. 15 Business Days
- ☐ Std. 10 Business Days
- ☐ 5 Day RUSH
- ☐ 3 Day Emergency
- ☐ 2 Day Emergency
- ☐ 1 Day Emergency
- ☐

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ COMMBN
- ☐ COMMBN+
- ☐
- ☐ State Forms Required
- ☐ Send Forms to State
- ☐ Report by Fax
- ☐ Report by PDF
- ☐ EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

Please Contact John Brown regarding EDD & TAT
Run all out of hold time

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	05/25/2016 1615	1 [signature] 5/31/16 14:55	2		2
3		3	4		4
5		3	Custody Seal # HD ☐ Intact ☐ Not intact	Preserved where applicable ☐	On Ice ☐ Cooler Temp. 4.3 +0.0

QA 065-00 Rev. 1 1/21/2016

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D83120: Chain of Custody
Page 1 of 3

SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 2 OF 2

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking #	Bottle Order Control #
SGS Accutest Quote #	SGS Accutest Job # D 83120

Client / Reporting Information

Company Name	LTE
Street Address	4600 W. 60th Ave
City	Arvada, CO 80003
Project Contact	John, Brown
Phone #	(303) 433-9788
Sampler(s) Name(s)	B.Finn

Project Information

Project Name:	Gates-Boone
Street	
City	Boone
State	IA
Project #	Gate0901
Client Purchase Order #	
Project Manager	John Brown

Billing Information (If different from Report to)
Company Name
Street Address
City
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	VOC 8260B	MEE RSK175	NO3O, SO4, FE2, Alk	Chloride							LAB USE ONLY
	PBW01		05/25/2016	1245	LTE	H2O	11									X	X	X	X					ON	1ST	PAGE (01)
	EB		05/25/2016	0740	LTE	H2O	11									X	X	X	X							08
	Trip Blank																									09
	Temp Blank																									–

Turnaround Time (Business days)

- ☐ Std. 15 Business Days
- ☐ Std. 10 Business Days
- ☐ 5 Day RUSH
- ☐ 3 Day Emergency
- ☐ 2 Day Emergency
- ☐ 1 Day Emergency
- ☐

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ COMMBN
- ☐ COMMBN+
- ☐
- ☐ State Forms Required
- ☐ Send Forms to State
- ☐ Report by Fax
- ☐ Report by PDF
- ☐ EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

Please contact John Brown for EDD & TAT
Run all out of hold time

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	05/25/2016 2615	1 [signature] 5/31/16 14:55	2		2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4 QA 065-00 Rev. 1 1/21/2016
Relinquished by: 5	Date Time:	Received By: 3	Custody Seal # HD ☐ Intact ☐ Not intact	Preserved where applicable ☐	On Ice ☑ Cooler Temp. 4.2 TOBO

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D83120: Chain of Custody
Page 2 of 3

SGS Accutest Sample Receipt Summary

Job Number: D83120 **Client:** LT **Project:** GATES-BOONE

Date / Time Received: 5/31/2016 2:55:00 PM **Delivery Method:** **Airbill #'s:** HD

Cooler Temps (Initial/Adjusted): #1: (4.2/4.2);

Cooler Security	Y or N		Y or N
1. Custody Seals Present:	☑ ☐	3. COC Present:	☑ ☐
2. Custody Seals Intact:	☑ ☐	4. Smpl Dates/Time OK	☑ ☐

Cooler Temperature	Y or N
1. Temp criteria achieved:	☑ ☐
2. Cooler temp verification:	IR Gun;
3. Cooler media:	Ice (Bag)
4. No. Coolers:	1

Quality Control Preservation	Y or N	N/A
1. Trip Blank present / cooler:	☑ ☐	☐
2. Trip Blank listed on COC:	☑ ☐	☐
3. Samples preserved properly:	☑ ☐	
4. VOCs headspace free:	☑ ☐	☐

Comments

Sample Integrity - Documentation	Y or N
1. Sample labels present on bottles:	☑ ☐
2. Container labeling complete:	☑ ☐
3. Sample container label / COC agree:	☑ ☐

Sample Integrity - Condition	Y or N
1. Sample recvd within HT:	☑ ☐
2. All containers accounted for:	☑ ☐
3. Condition of sample:	Intact

Sample Integrity - Instructions	Y or N	N/A
1. Analysis requested is clear:	☑ ☐	
2. Bottles received for unspecified tests	☐ ☑	
3. Sufficient volume recvd for analysis:	☑ ☐	
4. Compositing instructions clear:	☐ ☐	☑
5. Filtering instructions clear:	☐ ☐	☑

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D83120: Chain of Custody
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GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-MB	7V34221.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Compound	Result	RL	MDL	Units	Q
108-86-1	Bromobenzene	ND	1.0	0.50	ug/l	
67-64-1	Acetone	ND	25	20	ug/l	
107-02-8	Acrolein	ND	10	7.0	ug/l	
107-13-1	Acrylonitrile	ND	5.0	4.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
74-97-5	Bromochloromethane	ND	2.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	1.0	ug/l	
75-25-2	Bromoform	ND	4.0	1.5	ug/l	
104-51-8	n-Butylbenzene	ND	1.0	0.60	ug/l	
135-98-8	sec-Butylbenzene	ND	1.0	0.60	ug/l	
98-06-6	tert-Butylbenzene	ND	1.0	0.60	ug/l	
75-15-0	Carbon disulfide	ND	4.0	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	4.0	2.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	2.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	1.0	0.50	ug/l	
106-43-4	p-Chlorotoluene	ND	1.0	0.50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.50	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.50	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	4.0	3.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	2.0	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	2.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	2.0	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	1.0	ug/l	

Method Blank Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-MB	7V34221.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.0	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	2.8	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.50	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.50	ug/l	
74-83-9	Methyl bromide	ND	4.0	2.0	ug/l	
74-87-3	Methyl chloride	ND	2.0	1.0	ug/l	
74-95-3	Methylene bromide	ND	2.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	4.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.70	ug/l	
91-20-3	Naphthalene	ND	4.0	2.0	ug/l	
103-65-1	n-Propylbenzene	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.50	ug/l	
75-69-4	Trichlorofluoromethane	ND	4.0	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	0.60	ug/l	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/l	
75-01-4	Vinyl chloride	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

Method Blank Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-MB	7V34221.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	62-130%
2037-26-5	Toluene-D8	100%	70-130%
460-00-4	4-Bromofluorobenzene	98%	69-130%

Method Blank Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1842-MB	7V34272.D	1	06/02/16	TL	n/a	n/a	V7V1842

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-4, D83120-5, D83120-6, D83120-7

CAS No.	Compound	Result	RL	MDL	Units	Q
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	70-130%
17060-07-0	1,2-Dichloroethane-D4	98%	62-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	98%	69-130%

Blank Spike Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-BS	7V34218.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
108-86-1	Bromobenzene	50	50.9	102	70-130
67-64-1	Acetone	250	227	91	10-190
107-02-8	Acrolein	250	257	103	10-281
107-13-1	Acrylonitrile	125	115	92	58-136
71-43-2	Benzene	50	48.7	97	70-130
74-97-5	Bromochloromethane	50	50.0	100	70-130
75-27-4	Bromodichloromethane	50	48.3	97	70-130
75-25-2	Bromoform	50	51.1	102	70-130
104-51-8	n-Butylbenzene	50	49.9	100	69-130
135-98-8	sec-Butylbenzene	50	50.1	100	70-130
98-06-6	tert-Butylbenzene	50	50.9	102	70-130
75-15-0	Carbon disulfide	50	47.9	96	50-133
56-23-5	Carbon tetrachloride	50	50.2	100	70-130
108-90-7	Chlorobenzene	50	49.0	98	70-130
75-00-3	Chloroethane	50	49.4	99	58-130
110-75-8	2-Chloroethyl vinyl ether	50	48.7	97	31-130
67-66-3	Chloroform	50	48.0	96	70-130
95-49-8	o-Chlorotoluene	50	49.6	99	70-130
106-43-4	p-Chlorotoluene	50	49.5	99	70-130
96-12-8	1,2-Dibromo-3-chloropropane	50	47.0	94	65-130
124-48-1	Dibromochloromethane	50	50.2	100	70-130
106-93-4	1,2-Dibromoethane	50	50.0	100	70-130
95-50-1	o-Dichlorobenzene	50	50.8	102	70-130
541-73-1	m-Dichlorobenzene	50	50.2	100	70-130
106-46-7	p-Dichlorobenzene	50	50.4	101	70-130
75-71-8	Dichlorodifluoromethane	50	48.6	97	10-223
75-34-3	1,1-Dichloroethane	50	48.4	97	65-130
107-06-2	1,2-Dichloroethane	50	47.7	95	67-131
75-35-4	1,1-Dichloroethylene	50	50.5	101	68-130
156-59-2	cis-1,2-Dichloroethylene	50	48.3	97	70-130
156-60-5	trans-1,2-Dichloroethylene	50	49.3	99	69-130
78-87-5	1,2-Dichloropropane	50	49.0	98	70-130
142-28-9	1,3-Dichloropropane	50	49.1	98	70-130
594-20-7	2,2-Dichloropropane	50	47.8	96	32-148
563-58-6	1,1-Dichloropropene	50	49.3	99	70-130
10061-01-5	cis-1,3-Dichloropropene	50	49.1	98	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-BS	7V34218.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-02-6	trans-1,3-Dichloropropene	50	49.4	99	70-130
100-41-4	Ethylbenzene	50	50.2	100	70-130
87-68-3	Hexachlorobutadiene	50	48.6	97	51-134
591-78-6	2-Hexanone	250	235	94	47-140
98-82-8	Isopropylbenzene	50	49.9	100	70-130
99-87-6	p-Isopropyltoluene	50	50.3	101	70-130
74-83-9	Methyl bromide	50	43.1	86	31-149
74-87-3	Methyl chloride	50	56.0	112	35-155
74-95-3	Methylene bromide	50	48.9	98	70-130
75-09-2	Methylene chloride	50	44.7	89	67-130
108-10-1	4-Methyl-2-pentanone	250	226	90	70-130
78-93-3	Methyl ethyl ketone	250	210	84	38-152
1634-04-4	Methyl Tert Butyl Ether	50	48.2	96	70-130
91-20-3	Naphthalene	50	49.5	99	61-130
103-65-1	n-Propylbenzene	50	50.8	102	70-130
100-42-5	Styrene	50	50.6	101	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	49.4	99	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	49.8	100	70-130
127-18-4	Tetrachloroethylene	50	50.5	101	70-130
108-88-3	Toluene	50	46.2	92	70-130
87-61-6	1,2,3-Trichlorobenzene	50	48.2	96	55-130
120-82-1	1,2,4-Trichlorobenzene	50	49.4	99	65-130
71-55-6	1,1,1-Trichloroethane	50	49.4	99	70-130
79-00-5	1,1,2-Trichloroethane	50	50.2	100	70-130
79-01-6	Trichloroethylene	50	49.2	98	70-130
75-69-4	Trichlorofluoromethane	50	48.7	97	68-146
96-18-4	1,2,3-Trichloropropane	50	53.3	107	70-130
95-63-6	1,2,4-Trimethylbenzene	50	50.5	101	70-130
108-67-8	1,3,5-Trimethylbenzene	50	50.4	101	70-130
108-05-4	Vinyl Acetate	250	231	92	50-133
75-01-4	Vinyl chloride	50	50.2	100	48-141
1330-20-7	Xylene (total)	150	149	99	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1840-BS	7V34218.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	70-130%
17060-07-0	1,2-Dichloroethane-D4	100%	62-130%
2037-26-5	Toluene-D8	100%	70-130%
460-00-4	4-Bromofluorobenzene	102%	69-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1842-BS	7V34269.D	1	06/02/16	TL	n/a	n/a	V7V1842

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-4, D83120-5, D83120-6, D83120-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
156-59-2	cis-1,2-Dichloroethylene	50	52.6	105	70-130
127-18-4	Tetrachloroethylene	50	50.3	101	70-130
79-01-6	Trichloroethylene	50	45.8	92	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	105%	70-130%
17060-07-0	1,2-Dichloroethane-D4	101%	62-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	102%	69-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V1842-BS	7V34271.D	1	06/02/16	TL	n/a	n/a	V7V1842

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-4, D83120-5, D83120-6, D83120-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	70-130%
17060-07-0	1,2-Dichloroethane-D4	100%	62-130%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	102%	69-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D83134-3MS	7V34223.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3MSD	7V34224.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3	7V34222.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Compound	D83134-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
108-86-1	Bromobenzene	ND		50	50.9	102	50	52.5	105	3	70-130/30
67-64-1	Acetone	ND		250	218	87	250	218	87	0	10-190/30
107-02-8	Acrolein	ND		250	267	107	250	272	109	2	10-281/30
107-13-1	Acrylonitrile	ND		125	119	95	125	119	95	0	47-151/30
71-43-2	Benzene	ND		50	50.3	101	50	50.6	101	1	62-130/30
74-97-5	Bromochloromethane	ND		50	51.5	103	50	52.6	105	2	70-130/30
75-27-4	Bromodichloromethane	ND		50	50.8	102	50	51.6	103	2	70-130/30
75-25-2	Bromoform	ND		50	53.7	107	50	53.1	106	1	70-130/30
104-51-8	n-Butylbenzene	ND		50	51.6	103	50	52.0	104	1	51-143/30
135-98-8	sec-Butylbenzene	ND		50	51.2	102	50	52.0	104	2	69-130/30
98-06-6	tert-Butylbenzene	ND		50	51.7	103	50	52.5	105	2	47-158/30
75-15-0	Carbon disulfide	ND		50	49.5	99	50	49.5	99	0	44-133/30
56-23-5	Carbon tetrachloride	ND		50	51.3	103	50	52.4	105	2	70-132/30
108-90-7	Chlorobenzene	ND		50	50.1	100	50	50.4	101	1	70-130/30
75-00-3	Chloroethane	ND		50	53.1	106	50	52.1	104	2	45-139/30
110-75-8	2-Chloroethyl vinyl ether	ND		50	50.9	102	50	51.0	102	0	10-130/30
67-66-3	Chloroform	ND		50	48.9	98	50	49.2	98	1	70-130/30
95-49-8	o-Chlorotoluene	ND		50	50.9	102	50	51.9	104	2	70-130/30
106-43-4	p-Chlorotoluene	ND		50	51.1	102	50	51.6	103	1	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND		50	48.8	98	50	49.5	99	1	62-130/30
124-48-1	Dibromochloromethane	ND		50	51.7	103	50	51.9	104	0	70-130/30
106-93-4	1,2-Dibromoethane	ND		50	51.0	102	50	51.3	103	1	70-130/30
95-50-1	o-Dichlorobenzene	ND		50	51.0	102	50	52.4	105	3	70-130/30
541-73-1	m-Dichlorobenzene	ND		50	51.4	103	50	52.2	104	2	70-130/30
106-46-7	p-Dichlorobenzene	ND		50	51.5	103	50	52.4	105	2	70-130/30
75-71-8	Dichlorodifluoromethane	ND		50	50.1	100	50	51.2	102	2	10-225/30
75-34-3	1,1-Dichloroethane	ND		50	48.5	97	50	49.6	99	2	63-131/30
107-06-2	1,2-Dichloroethane	ND		50	49.0	98	50	49.0	98	0	63-135/30
75-35-4	1,1-Dichloroethylene	ND		50	51.3	103	50	52.0	104	1	62-130/30
156-59-2	cis-1,2-Dichloroethylene	ND		50	50.6	101	50	50.6	101	0	70-130/30
156-60-5	trans-1,2-Dichloroethylene	ND		50	51.3	103	50	51.8	104	1	67-130/30
78-87-5	1,2-Dichloropropane	ND		50	50.4	101	50	50.4	101	0	70-130/30
142-28-9	1,3-Dichloropropane	ND		50	50.2	100	50	50.1	100	0	70-130/30
594-20-7	2,2-Dichloropropane	ND		50	50.1	100	50	50.8	102	1	32-153/30
563-58-6	1,1-Dichloropropene	ND		50	50.2	100	50	51.1	102	2	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND		50	51.1	102	50	52.0	104	2	68-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D83134-3MS	7V34223.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3MSD	7V34224.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3	7V34222.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Compound	D83134-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	ND		50	50.1	100	50	50.8	102	1	70-130/30
100-41-4	Ethylbenzene	ND		50	51.2	102	50	51.5	103	1	63-130/30
87-68-3	Hexachlorobutadiene	ND		50	50.3	101	50	50.4	101	0	41-140/30
591-78-6	2-Hexanone	ND		250	235	94	250	238	95	1	45-140/30
98-82-8	Isopropylbenzene	ND		50	51.4	103	50	51.7	103	1	70-130/30
99-87-6	p-Isopropyltoluene	ND		50	52.0	104	50	52.4	105	1	70-130/30
74-83-9	Methyl bromide	ND		50	48.2	96	50	48.1	96	0	15-151/30
74-87-3	Methyl chloride	ND		50	55.5	111	50	55.6	111	0	24-160/30
74-95-3	Methylene bromide	ND		50	51.5	103	50	52.0	104	1	70-130/30
75-09-2	Methylene chloride	ND		50	46.5	93	50	47.0	94	1	65-130/30
108-10-1	4-Methyl-2-pentanone	ND		250	240	96	250	244	98	2	70-130/30
78-93-3	Methyl ethyl ketone	ND		250	209	84	250	211	84	1	33-152/30
1634-04-4	Methyl Tert Butyl Ether	ND		50	49.4	99	50	50.1	100	1	69-130/30
91-20-3	Naphthalene	ND		50	51.0	102	50	51.7	103	1	55-130/30
103-65-1	n-Propylbenzene	ND		50	51.5	103	50	51.9	104	1	62-132/30
100-42-5	Styrene	ND		50	52.2	104	50	52.3	105	0	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		50	50.9	102	50	51.7	103	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	49.4	99	50	50.8	102	3	70-130/30
127-18-4	Tetrachloroethylene	ND		50	52.2	104	50	53.2	106	2	70-130/30
108-88-3	Toluene	ND		50	47.1	94	50	47.9	96	2	60-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		50	49.4	99	50	50.5	101	2	52-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		50	51.0	102	50	51.1	102	0	60-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	50.2	100	50	51.1	102	2	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		50	50.7	101	50	51.4	103	1	70-130/30
79-01-6	Trichloroethylene	ND		50	51.3	103	50	52.0	104	1	70-130/30
75-69-4	Trichlorofluoromethane	ND		50	51.1	102	50	51.4	103	1	54-157/30
96-18-4	1,2,3-Trichloropropane	ND		50	53.3	107	50	48.9	98	9	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		50	51.5	103	50	52.4	105	2	65-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		50	52.0	104	50	52.2	104	0	44-155/30
108-05-4	Vinyl Acetate	ND		250	238	95	250	242	97	2	50-133/30
75-01-4	Vinyl chloride	ND		50	52.2	104	50	51.9	104	1	37-146/30
1330-20-7	Xylene (total)	ND		150	153	102	150	154	103	1	67-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D83134-3MS	7V34223.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3MSD	7V34224.D	1	06/01/16	AJ	n/a	n/a	V7V1840
D83134-3	7V34222.D	1	06/01/16	AJ	n/a	n/a	V7V1840

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Surrogate Recoveries	MS	MSD	D83134-3	Limits
1868-53-7	Dibromofluoromethane	98%	99%	98%	70-130%
17060-07-0	1,2-Dichloroethane-D4	102%	100%	100%	62-130%
2037-26-5	Toluene-D8	99%	99%	101%	70-130%
460-00-4	4-Bromofluorobenzene	99%	99%	97%	69-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D83134-6MS	7V34274.D	1	06/02/16	TL	n/a	n/a	V7V1842
D83134-6MSD	7V34275.D	1	06/02/16	TL	n/a	n/a	V7V1842
D83134-6	7V34273.D	1	06/02/16	TL	n/a	n/a	V7V1842

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-4, D83120-5, D83120-6, D83120-7

CAS No.	Compound	D83134-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethylene	ND		50	49.1	98	50	47.6	95	3	70-130/30
127-18-4	Tetrachloroethylene	ND		50	47.9	96	50	45.9	92	4	70-130/30
79-01-6	Trichloroethylene	ND		50	43.6	87	50	41.7	83	4	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D83134-6	Limits
1868-53-7	Dibromofluoromethane	103%	104%	103%	70-130%
17060-07-0	1,2-Dichloroethane-D4	103%	101%	100%	62-130%
2037-26-5	Toluene-D8	101%	99%	100%	70-130%
460-00-4	4-Bromofluorobenzene	101%	105%	99%	69-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D83134-6MS	7V34276.D	1	06/02/16	TL	n/a	n/a	V7V1842
D83134-6MSD	7V34279.D	1	06/02/16	TL	n/a	n/a	V7V1842
D83134-6	7V34273.D	1	06/02/16	TL	n/a	n/a	V7V1842

The QC reported here applies to the following samples: **Method:** SW846 8260B

D83120-4, D83120-5, D83120-6, D83120-7

CAS No.	Compound	D83134-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD

CAS No.	Surrogate Recoveries	MS	MSD	D83134-6	Limits
1868-53-7	Dibromofluoromethane	105%	102%	103%	70-130%
17060-07-0	1,2-Dichloroethane-D4	98%	99%	100%	62-130%
2037-26-5	Toluene-D8	102%	99%	100%	70-130%
460-00-4	4-Bromofluorobenzene	99%	102%	99%	69-130%

* = Outside of Control Limits.

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34229.D
Acq On : 1 Jun 2016 3:26 pm
Operator : amandaj
Sample : D83120-1
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 02 11:21:21 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

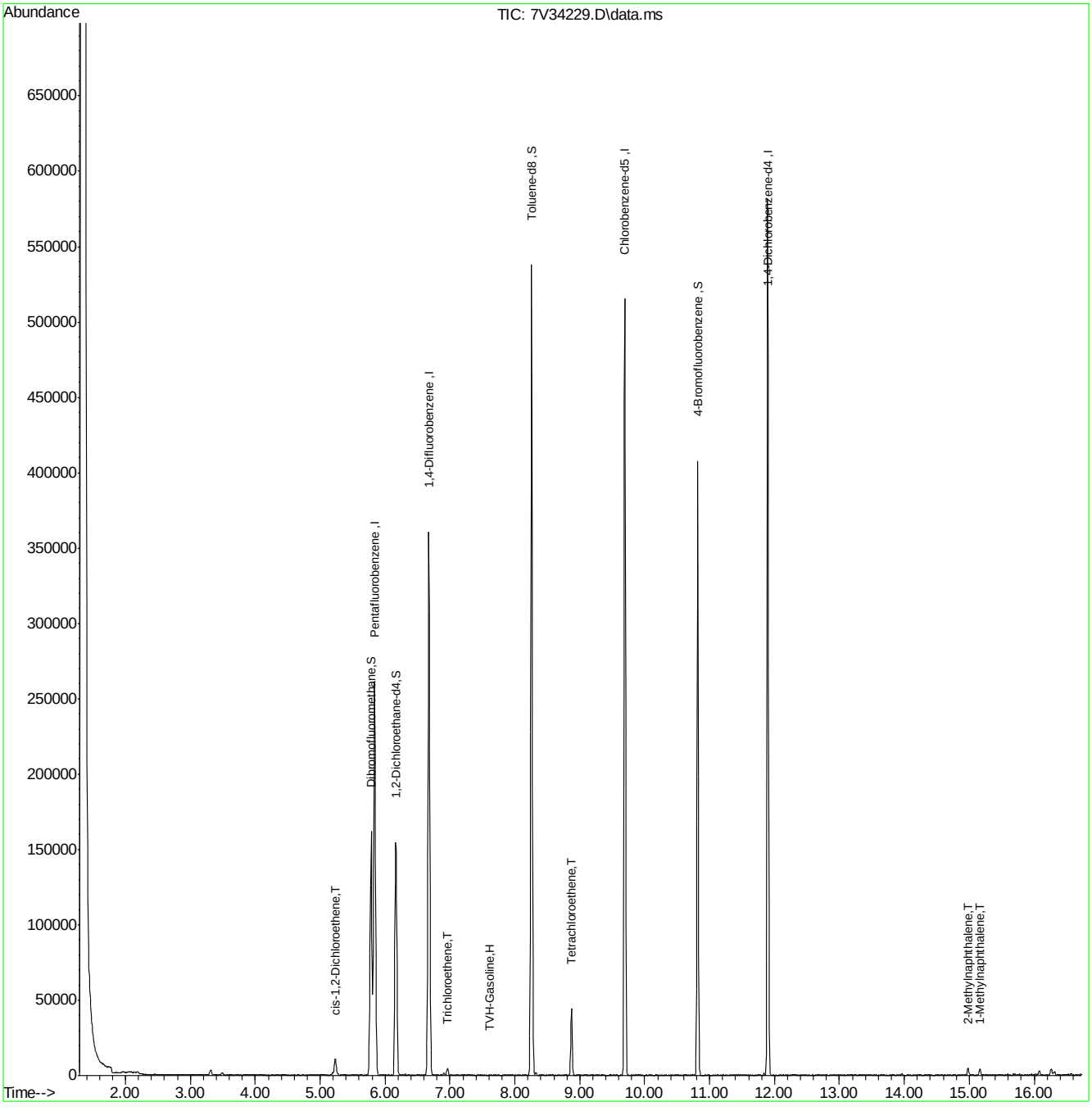
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.841	168	204821	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	321838	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	282127	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	149156	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.786	113	109379	49.20	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 98.40%			
41) 1,2-Dichloroethane-d4	6.164	102	22349	48.46	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 96.92%			
56) Toluene-d8	8.255	98	336970	49.67	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.34%			
76) 4-Bromofluorobenzene	10.815	95	125678	48.39	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 96.78%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	178126m	18.73	ug/L	
29) cis-1,2-Dichloroethene	5.231	96	5068	2.12	ug/L	90
47) Trichloroethene	6.962	95	1586	0.65	ug/L	88
60) Tetrachloroethene	8.871	164	10213	5.48	ug/L	98
98) 2-Methylnaphthalene	14.985	142	3419	1.54	ug/L	90
99) 1-Methylnaphthalene	15.162	142	2900	1.95	ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

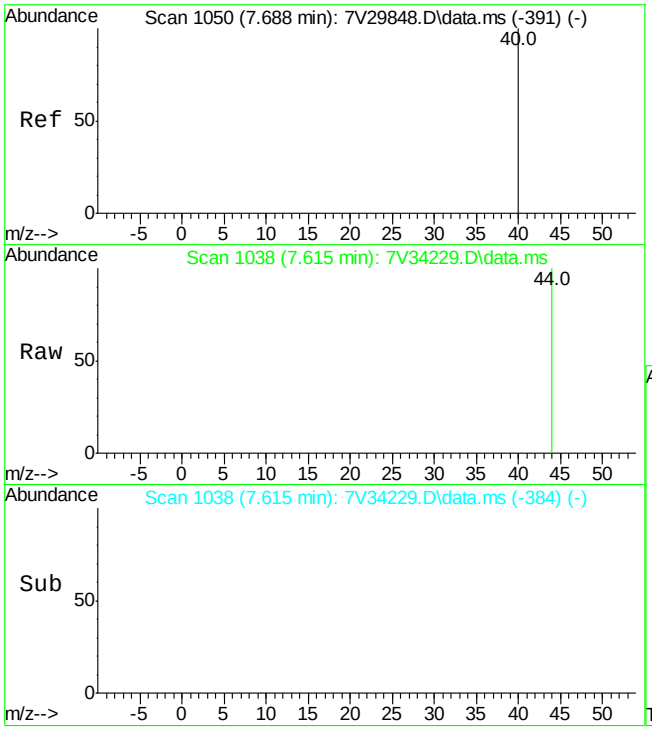
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34229.D
Acq On : 1 Jun 2016 3:26 pm
Operator : amandaj
Sample : D83120-1
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 02 11:21:21 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

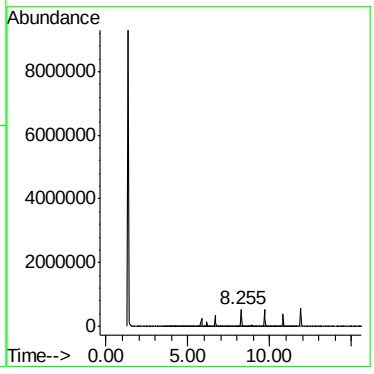


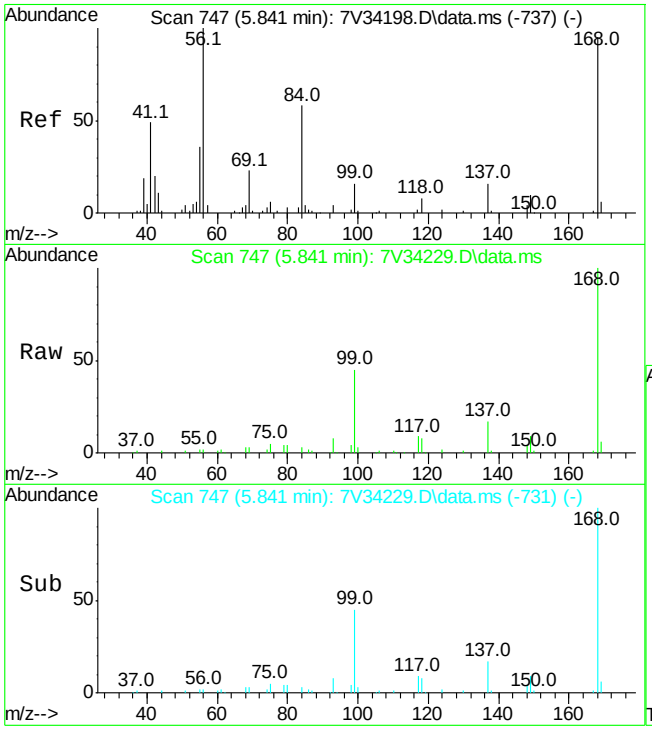
V7V1839F.M Thu Jun 02 12:58:41 2016 Page: 2



#1
TVH-Gasoline
Concen: 18.73 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion:TIC Resp: 178126

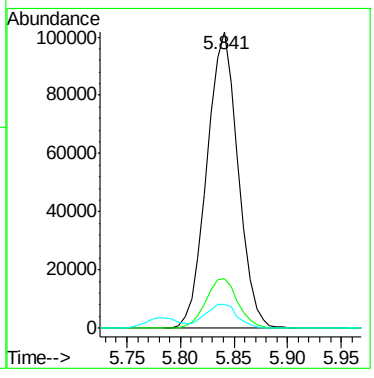


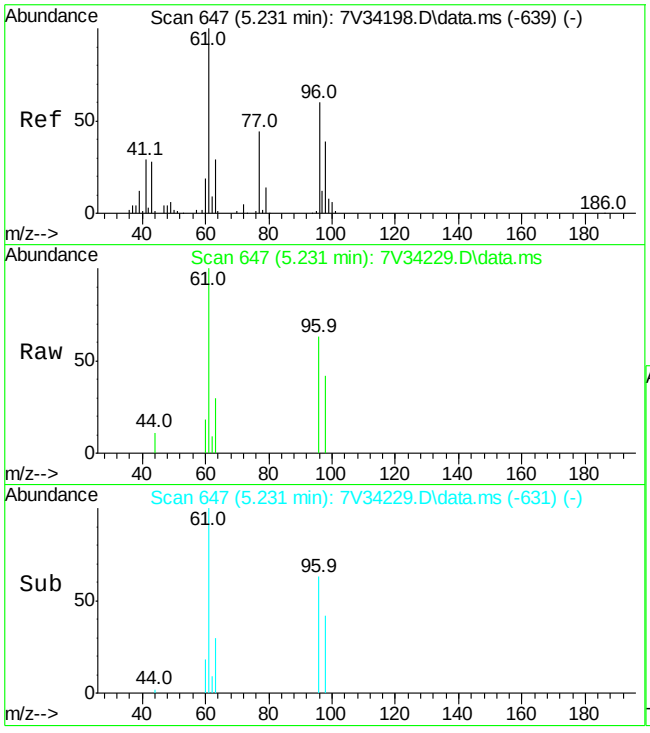


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.841 min Scan# 747
Delta R.T. -0.000 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion:168 Resp: 204821

Ion	Ratio	Lower	Upper
168	100		
137	16.9	0.0	36.8
93	8.0	0.0	28.3

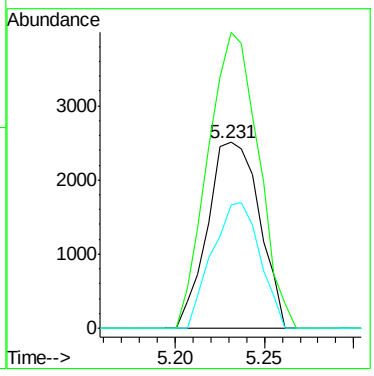


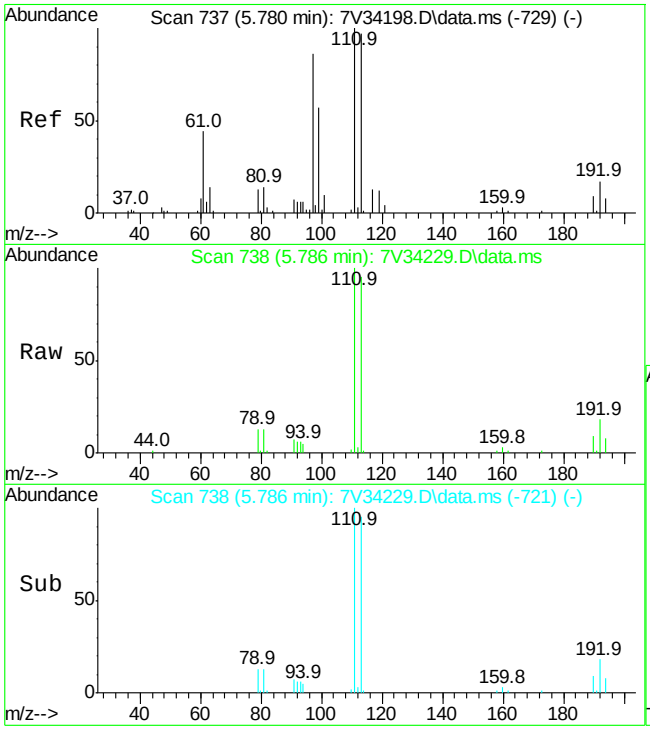


#29
cis-1,2-Dichloroethene
Concen: 2.12 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion: 96 Resp: 5068

Ion	Ratio	Lower	Upper
96	100		
61	154.7	151.8	191.8
98	61.9	44.4	84.4

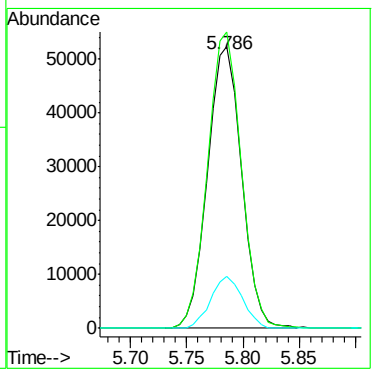


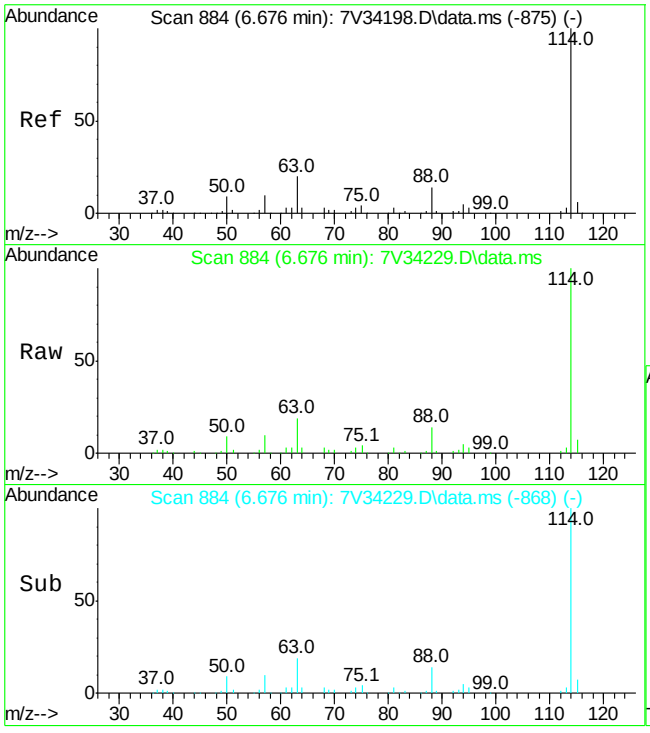


#35
Dibromofluoromethane
Concen: 49.20 ug/L
RT: 5.786 min Scan# 738
Delta R.T. 0.006 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion:113 Resp: 109379

Ion	Ratio	Lower	Upper
113	100		
111	103.7	82.9	122.9
192	17.1	0.0	36.9

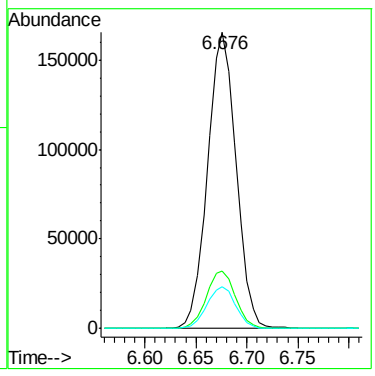


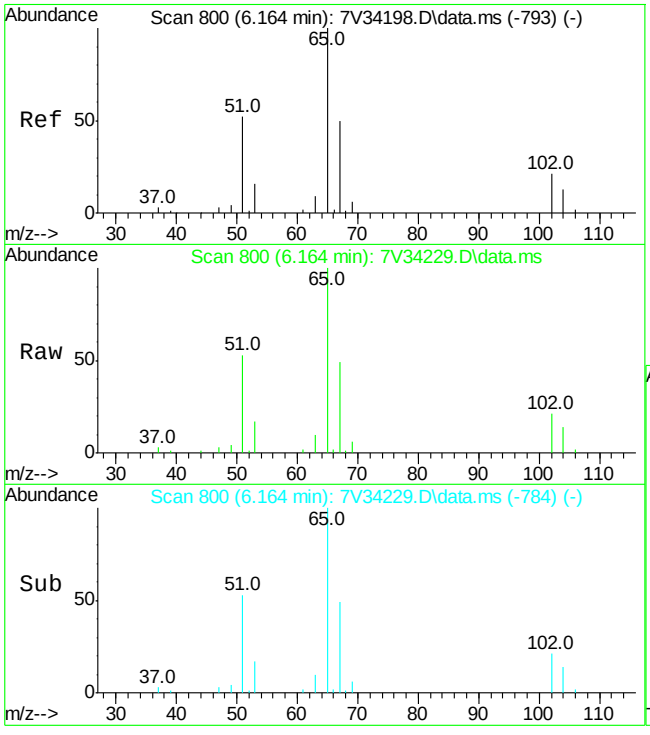


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion:114 Resp: 321838

Ion	Ratio	Lower	Upper
114	100		
63	19.6	0.0	39.6
88	14.3	0.0	34.3

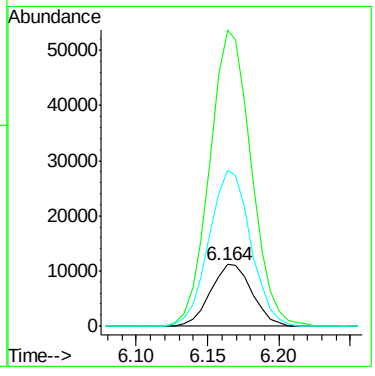


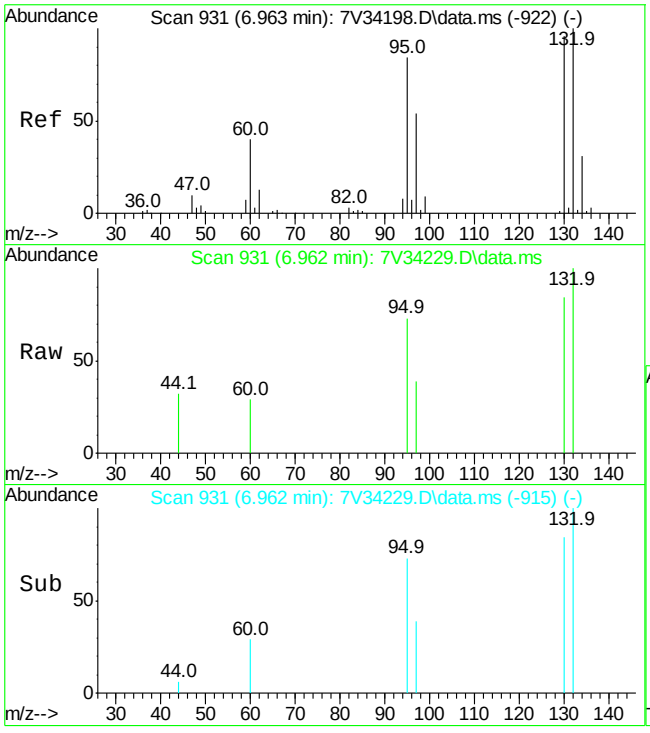


#41
1,2-Dichloroethane-d4
Concen: 48.46 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion:102 Resp: 22349

Ion	Ratio	Lower	Upper
102	100		
65	485.2	469.5	509.5
51	256.0	232.7	272.7

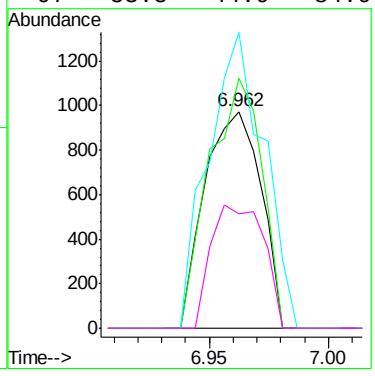


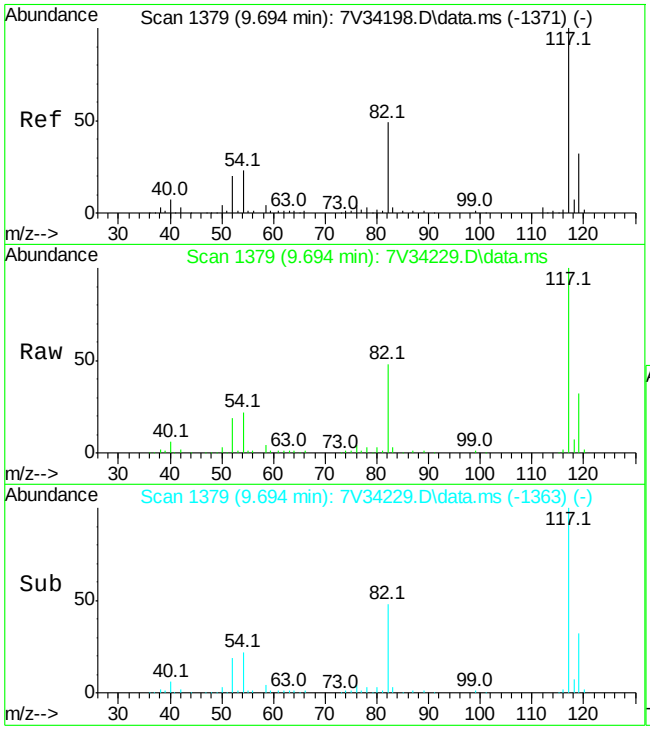


#47
Trichloroethene
Concen: 0.65 ug/L
RT: 6.962 min Scan# 931
Delta R.T. -0.001 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion: 95 Resp: 1586

Ion	Ratio	Lower	Upper
95	100		
130	108.2	93.2	133.2
132	134.6	95.9	135.9
97	53.5	44.9	84.9

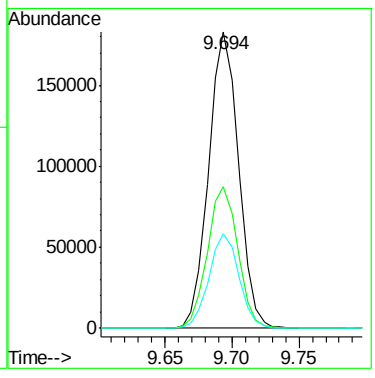


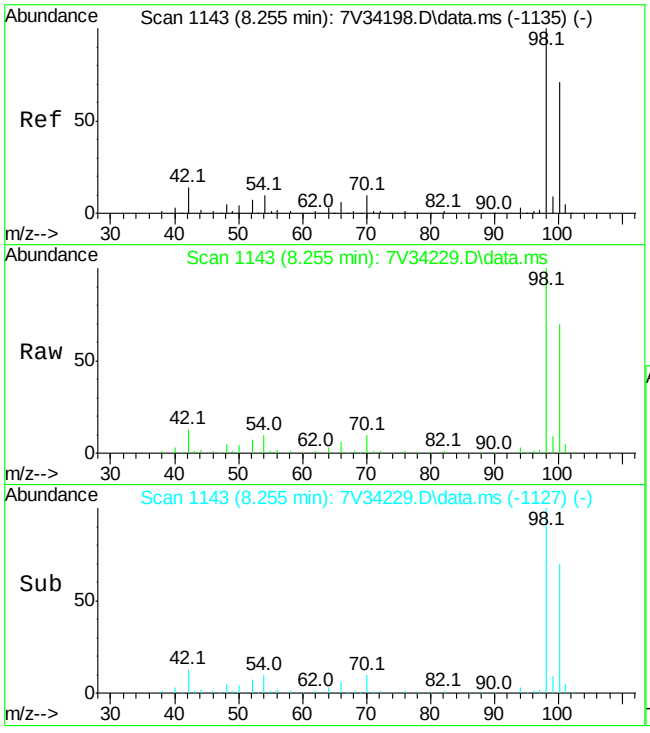


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion:117 Resp: 282127

Ion	Ratio	Lower	Upper
117	100		
82	48.4	28.7	68.7
119	31.9	12.2	52.2

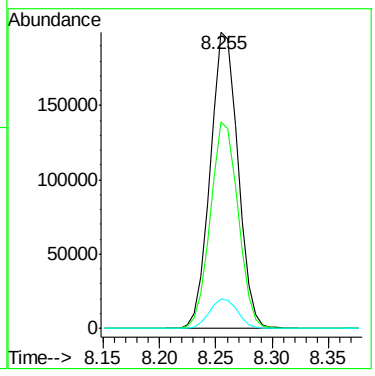


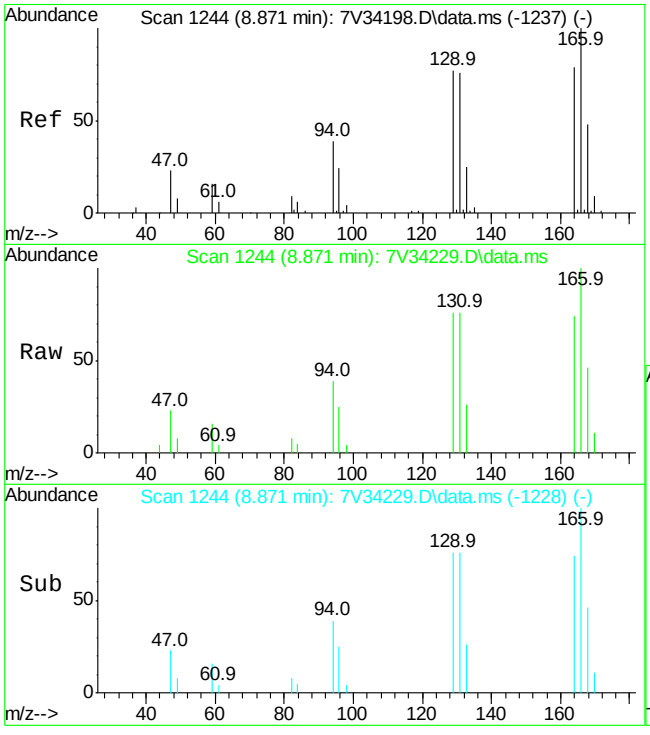


#56
Toluene-d8
Concen: 49.67 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion: 98 Resp: 336970

Ion	Ratio	Lower	Upper
98	100		
100	70.0	49.8	89.8
70	10.2	0.0	30.1

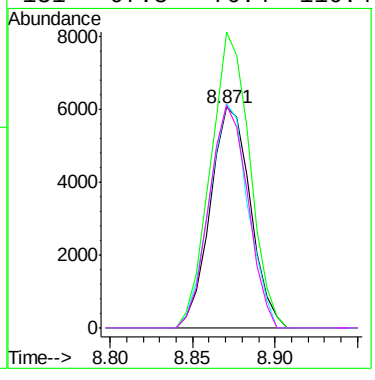


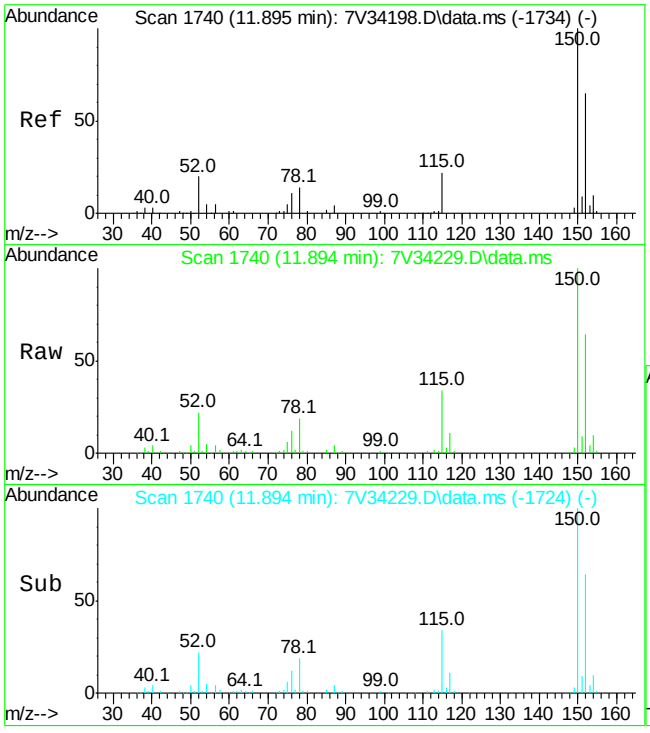


#60
Tetrachloroethene
Concen: 5.48 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion:164 Resp: 10213

Ion	Ratio	Lower	Upper
164	100		
166	130.9	107.5	147.5
129	98.5	76.8	116.8
131	97.3	76.4	116.4

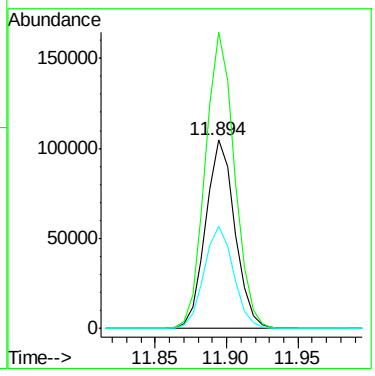


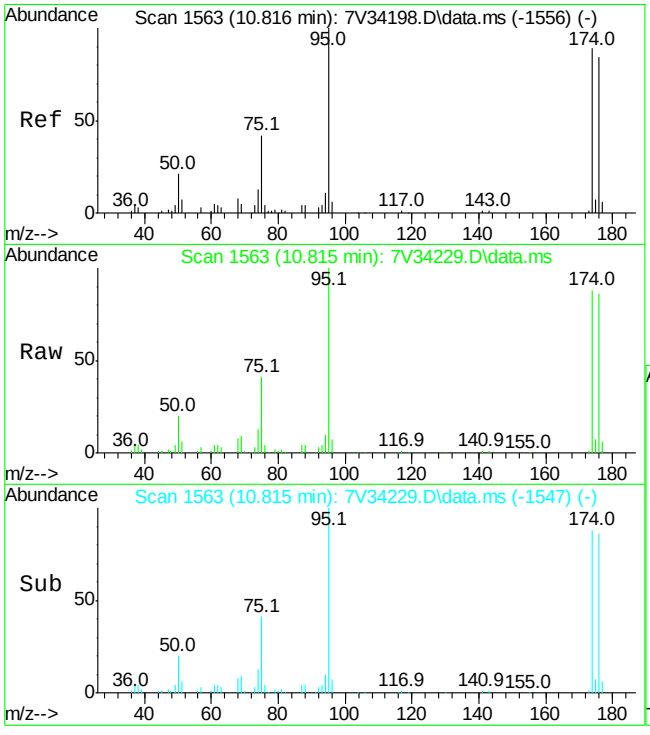


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion:152 Resp: 149156

Ion	Ratio	Lower	Upper
152	100		
150	157.0	154.9	194.9
115	54.3	34.6	74.6

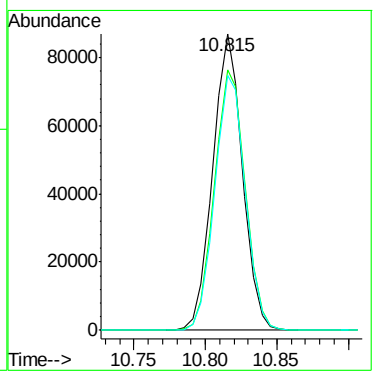


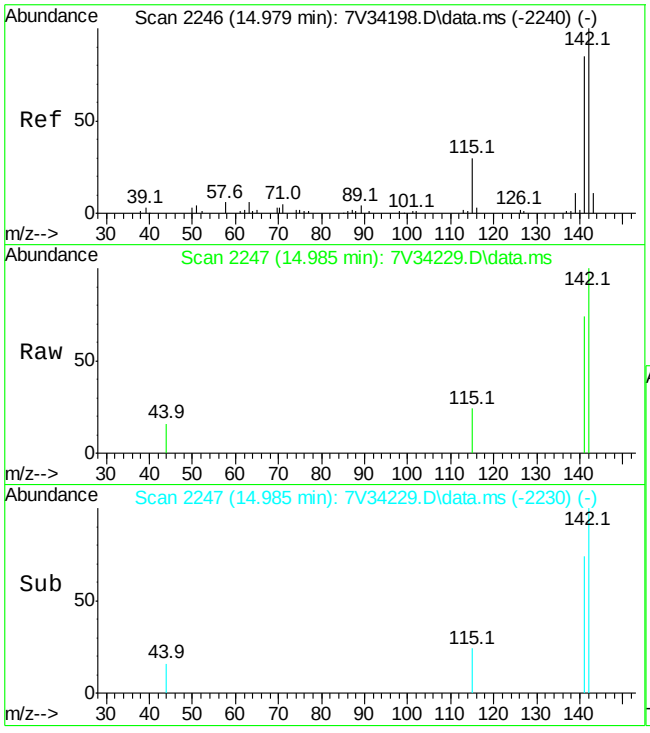


#76
4-Bromofluorobenzene
Concen: 48.39 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion: 95 Resp: 125678

Ion	Ratio	Lower	Upper
95	100		
174	91.2	70.3	110.3
176	88.4	67.4	107.4

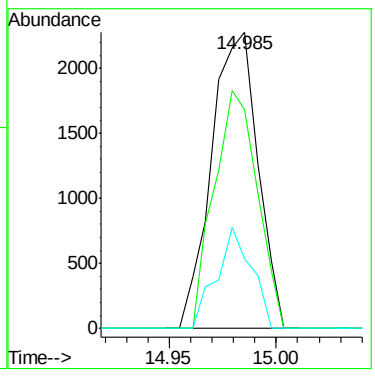


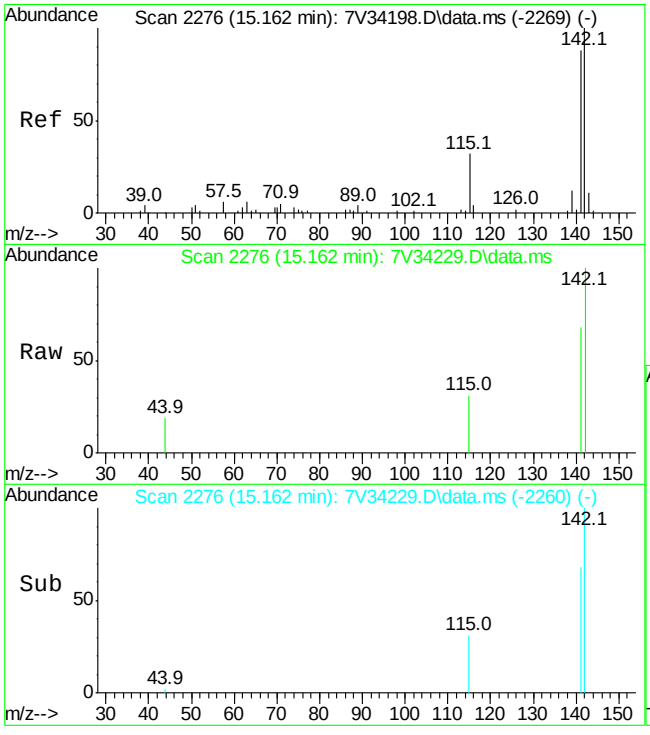


#98
2-Methylnaphthalene
Concen: 1.54 ug/L
RT: 14.985 min Scan# 2247
Delta R.T. 0.006 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion:142 Resp: 3419

Ion	Ratio	Lower	Upper
142	100		
141	75.0	65.3	105.3
115	25.8	9.7	49.7

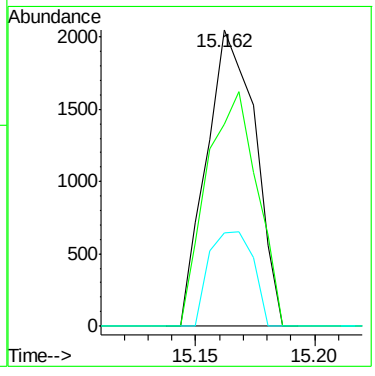




#99
1-Methylnaphthalene
Concen: 1.95 ug/L
RT: 15.162 min Scan# 2276
Delta R.T. 0.000 min
Lab File: 7V34229.D
Acq: 1 Jun 2016 3:26 pm

Tgt Ion:142 Resp: 2900

Ion	Ratio	Lower	Upper
142	100		
141	82.3	68.3	108.3
115	28.9	11.7	51.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34230.D
Acq On : 1 Jun 2016 3:49 pm
Operator : amandaj
Sample : D83120-2
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 02 11:23:34 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.841	168	199391	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	313359	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	274707	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	144322	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.786	113	105181	48.60	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 97.20%			
41) 1,2-Dichloroethane-d4	6.170	102	21722	48.38	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 96.76%			
56) Toluene-d8	8.255	98	323393	48.96	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 97.92%			
76) 4-Bromofluorobenzene	10.815	95	122411	48.71	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 97.42%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	1470778m	154.63	ug/L	
21) trans-1,2-Dichloroethene	4.097	96	4519	2.22	ug/L	98
29) cis-1,2-Dichloroethene	5.231	96	103513	44.56	ug/L #	89
47) Trichloroethene	6.956	95	19278	8.18	ug/L	98
60) Tetrachloroethene	8.871	164	113548	62.53	ug/L	99
89) 1,3-Dichlorobenzene	11.834	146	1480	0.30	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.1.2

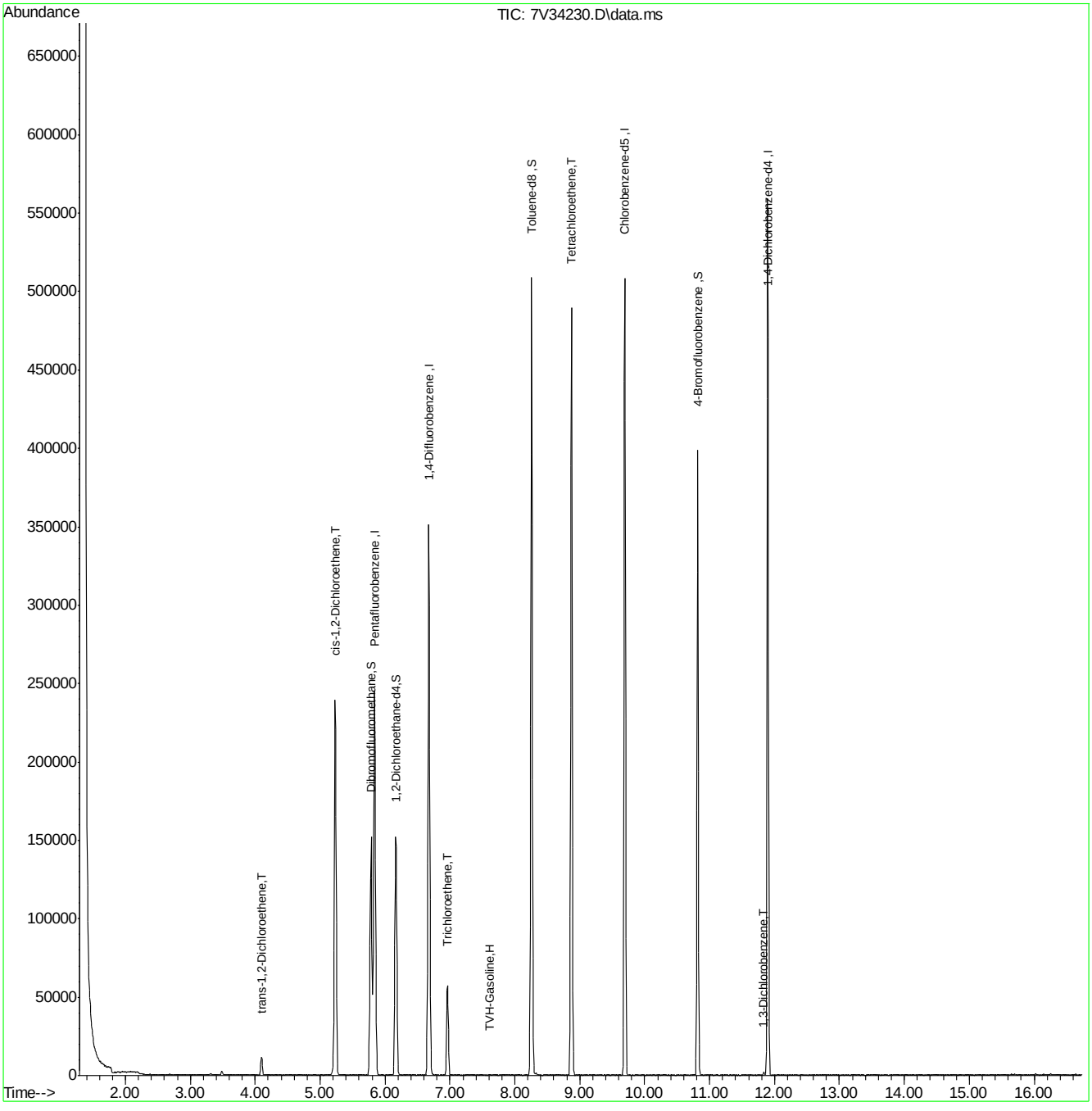
7

SGS ACCUTEST D83120

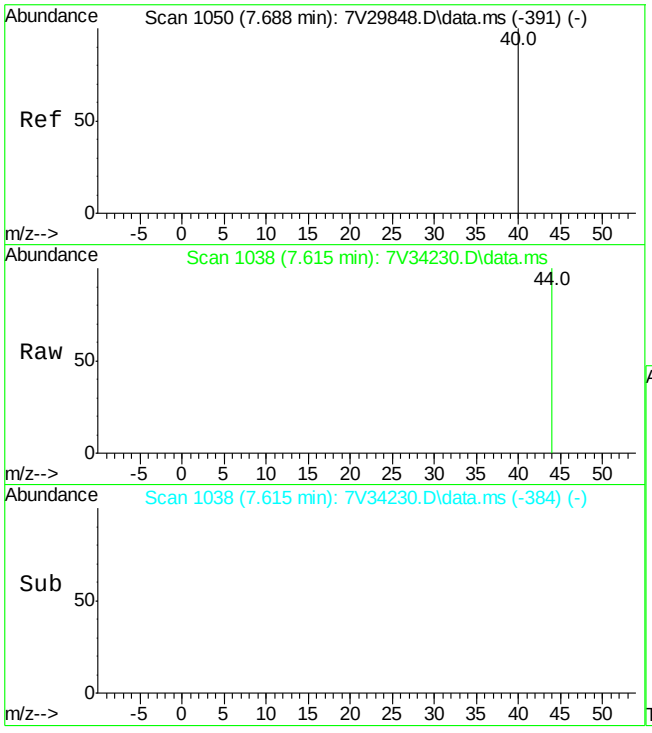
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34230.D
Acq On : 1 Jun 2016 3:49 pm
Operator : amandaj
Sample : D83120-2
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 02 11:23:34 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

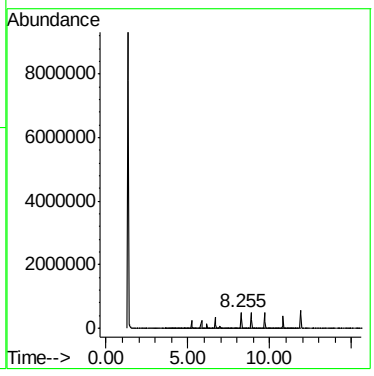


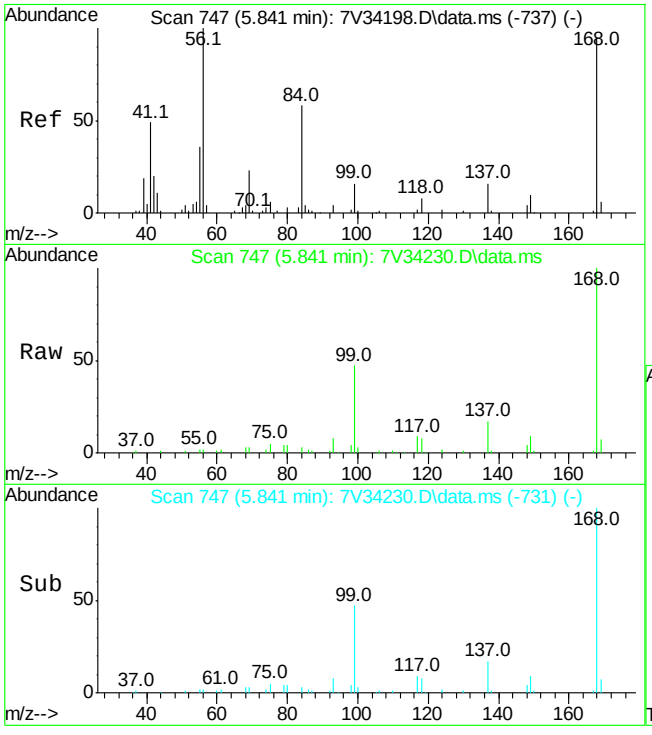
V7V1839F.M Thu Jun 02 12:58:48 2016 Page: 2



#1
TVH-Gasoline
Concen: 154.63 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion:TIC Resp: 1470778

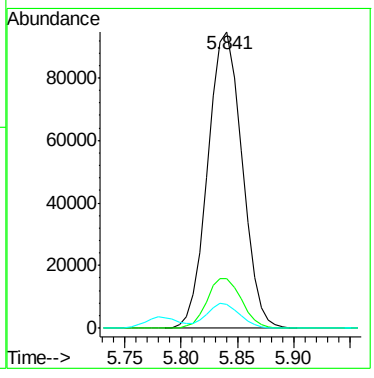


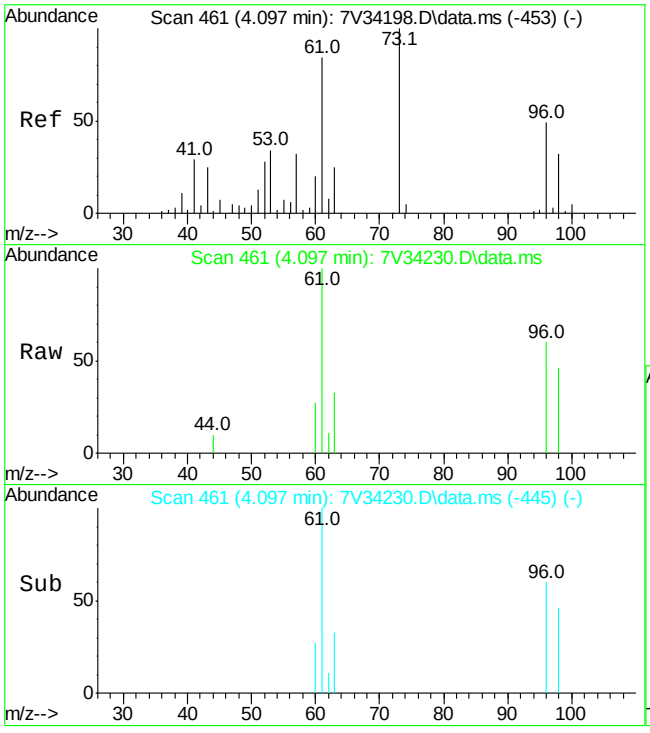


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.841 min Scan# 747
Delta R.T. -0.000 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion:168 Resp: 199391

Ion	Ratio	Lower	Upper
168	100		
137	16.8	0.0	36.8
93	8.1	0.0	28.3

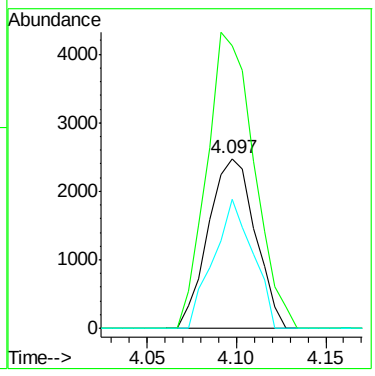


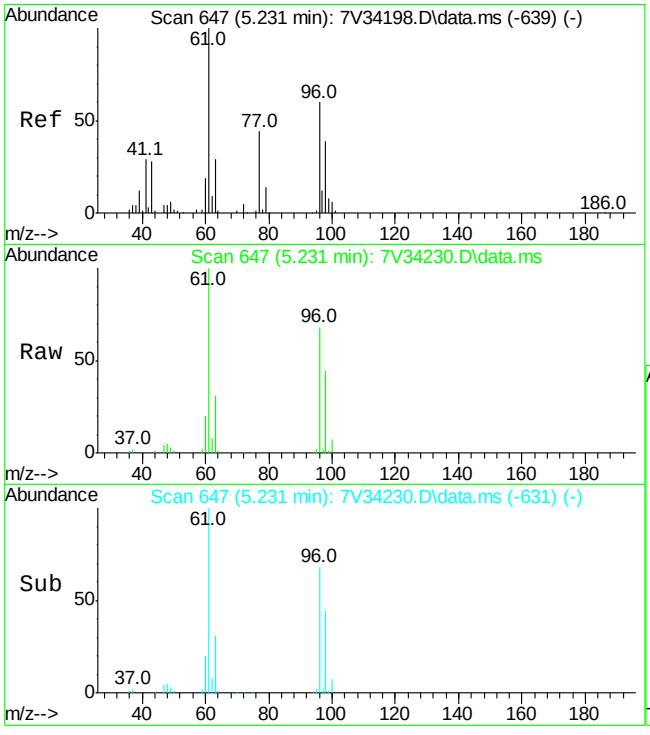


#21
trans-1,2-Dichloroethene
Concen: 2.22 ug/L
RT: 4.097 min Scan# 461
Delta R.T. 0.000 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion: 96 Resp: 4519

Ion	Ratio	Lower	Upper
96	100		
61	175.4	151.1	191.1
98	63.8	43.8	83.8

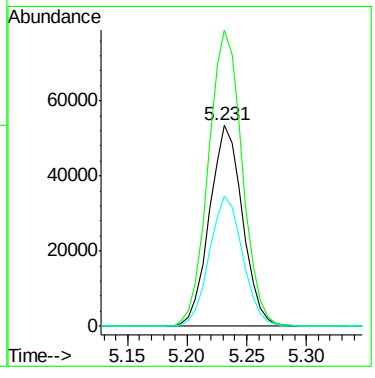


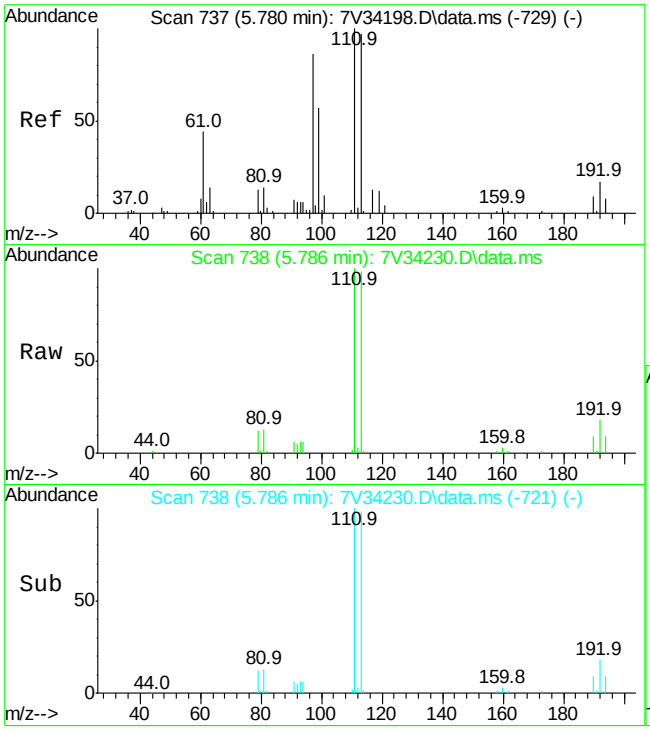


#29
cis-1,2-Dichloroethene
Concen: 44.56 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion: 96 Resp: 103513

Ion	Ratio	Lower	Upper
96	100		
61	150.9	151.8	191.8#
98	65.1	44.4	84.4

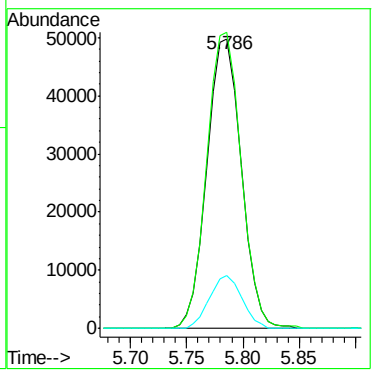


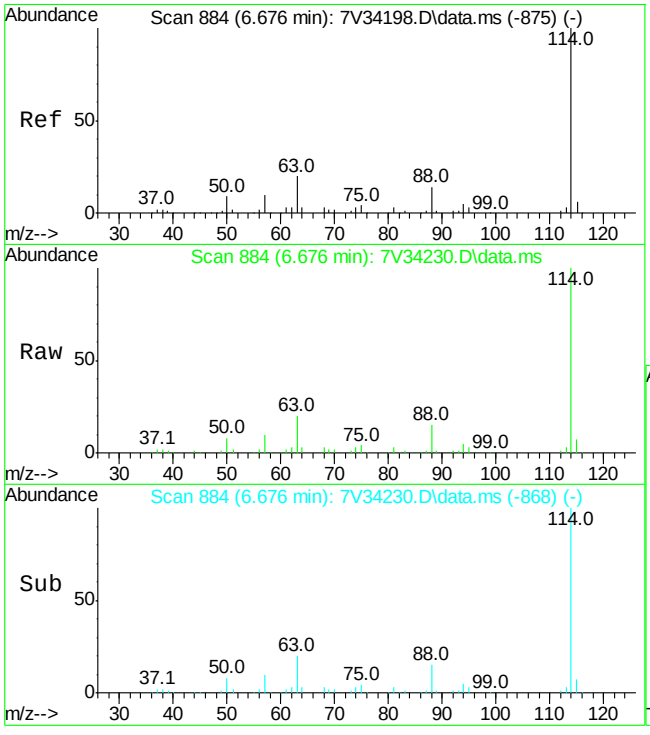


#35
Dibromofluoromethane
Concen: 48.60 ug/L
RT: 5.786 min Scan# 738
Delta R.T. 0.006 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion:113 Resp: 105181

Ion	Ratio	Lower	Upper
113	100		
111	102.6	82.9	122.9
192	17.1	0.0	36.9

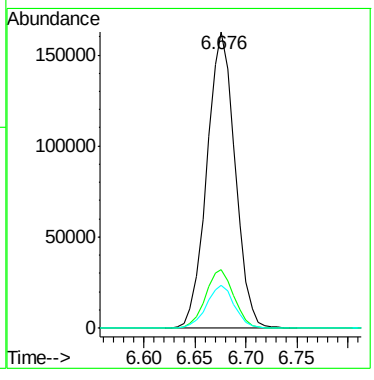


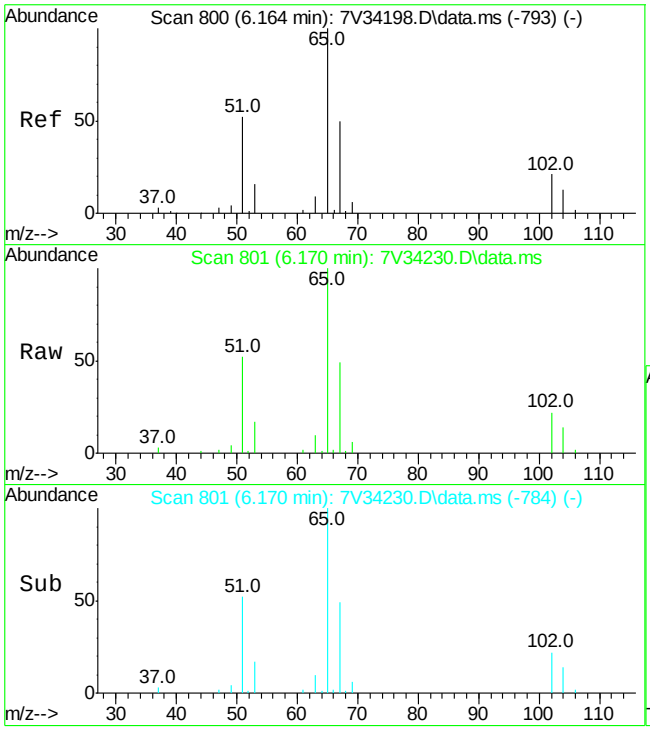


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion:114 Resp: 313359

Ion	Ratio	Lower	Upper
114	100		
63	19.6	0.0	39.6
88	14.1	0.0	34.3

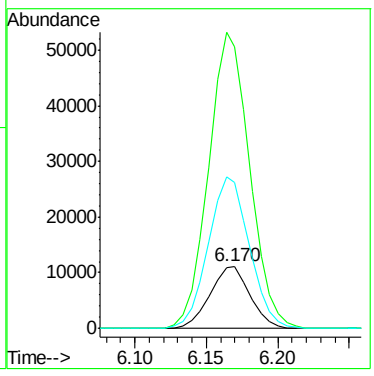


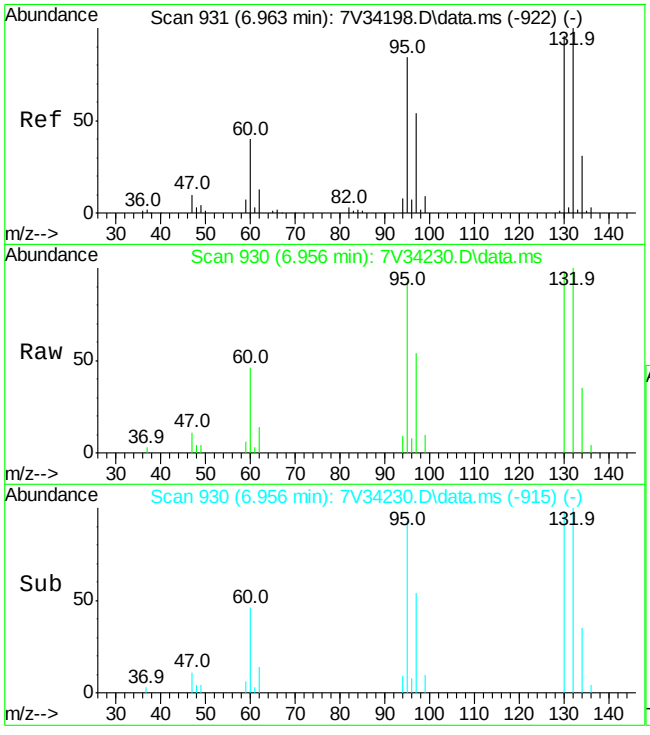


#41
1,2-Dichloroethane-d4
Concen: 48.38 ug/L
RT: 6.170 min Scan# 801
Delta R.T. 0.006 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion:102 Resp: 21722

Ion	Ratio	Lower	Upper
102	100		
65	488.9	469.5	509.5
51	251.4	232.7	272.7

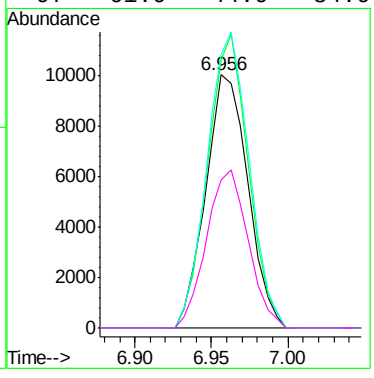


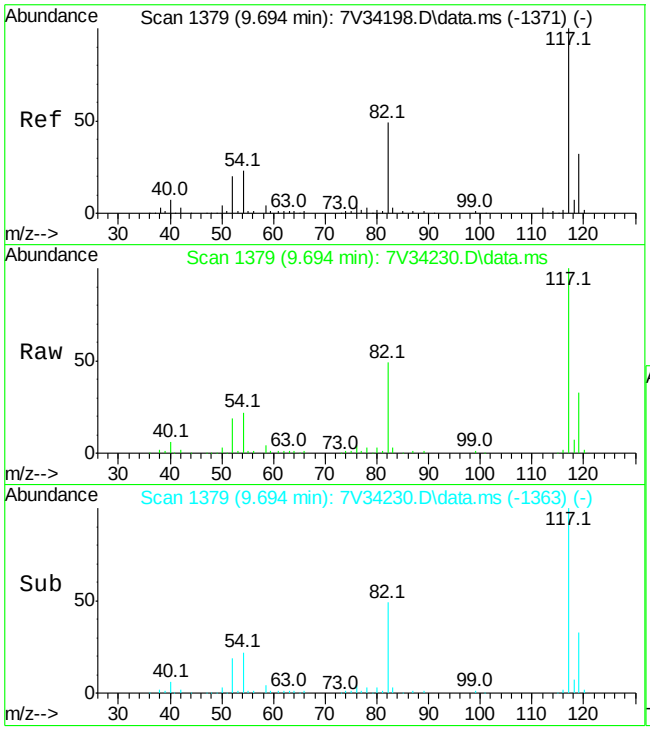


#47
Trichloroethene
Concen: 8.18 ug/L
RT: 6.956 min Scan# 930
Delta R.T. -0.007 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion: 95 Resp: 19278

Ion	Ratio	Lower	Upper
95	100		
130	111.7	93.2	133.2
132	115.4	95.9	135.9
97	61.9	44.9	84.9

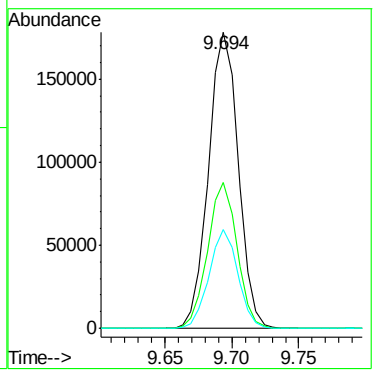


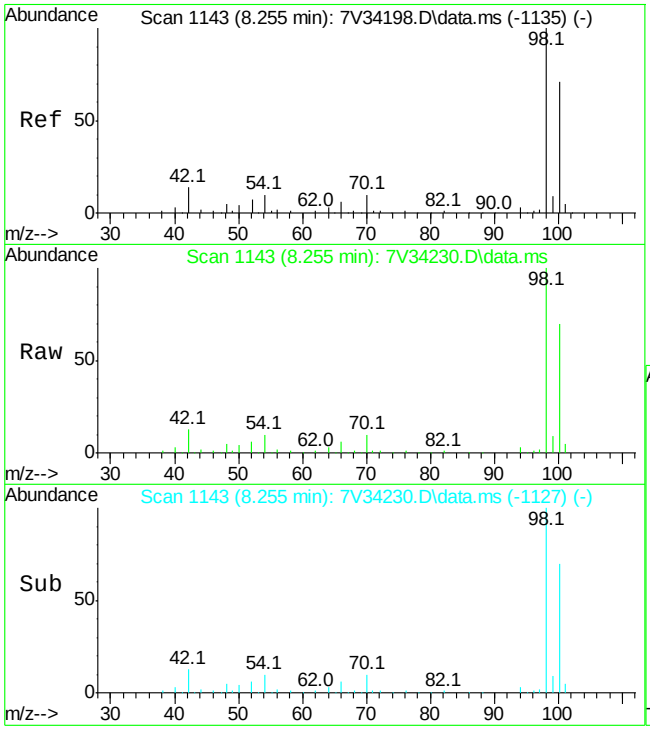


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion:117 Resp: 274707

Ion	Ratio	Lower	Upper
117	100		
82	48.6	28.7	68.7
119	32.3	12.2	52.2

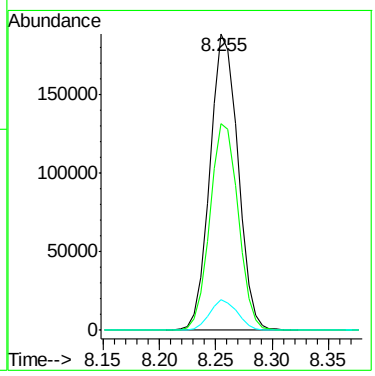


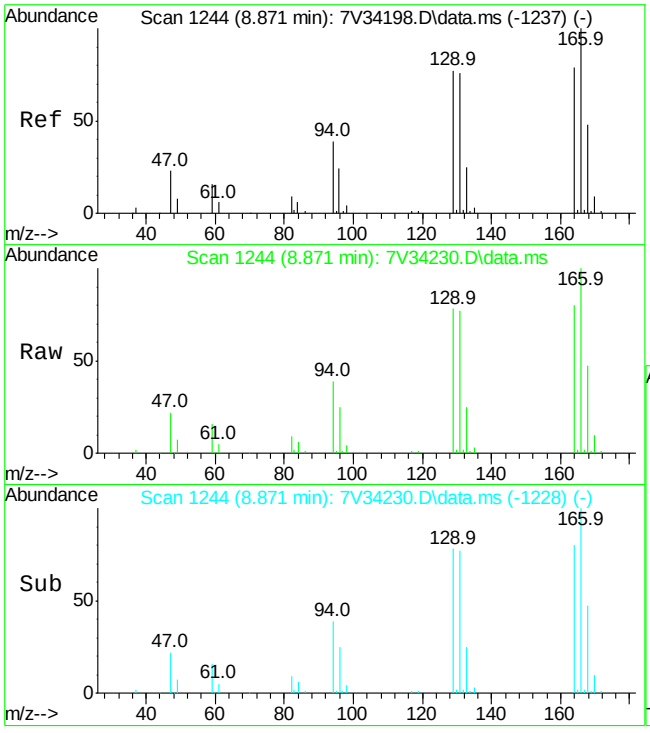


#56
Toluene-d8
Concen: 48.96 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion: 98 Resp: 323393

Ion	Ratio	Lower	Upper
98	100		
100	70.5	49.8	89.8
70	10.1	0.0	30.1

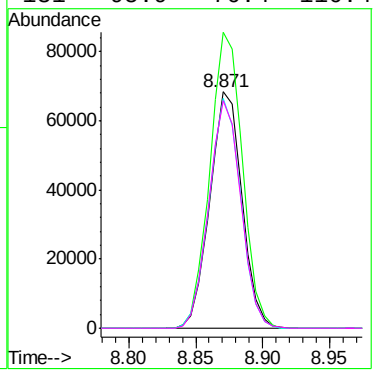


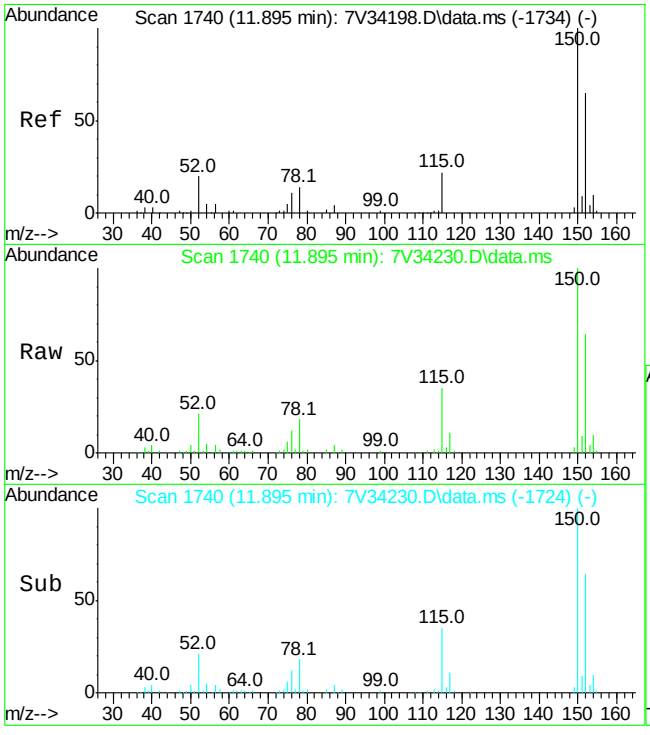


#60
Tetrachloroethene
Concen: 62.53 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion:164 Resp: 113548

Ion	Ratio	Lower	Upper
164	100		
166	126.8	107.5	147.5
129	96.2	76.8	116.8
131	95.9	76.4	116.4

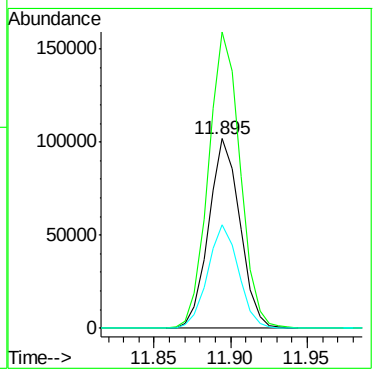


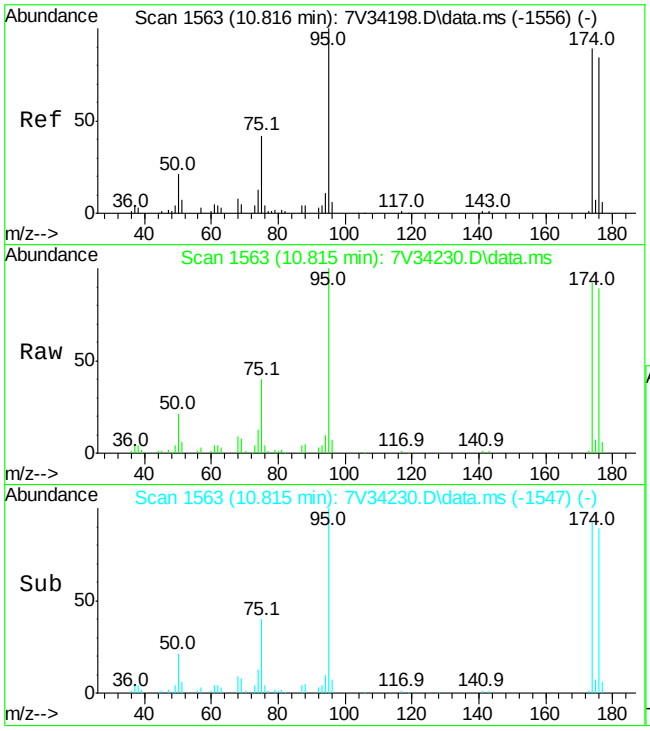


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion:152 Resp: 144322

Ion	Ratio	Lower	Upper
152	100		
150	158.1	154.9	194.9
115	53.7	34.6	74.6

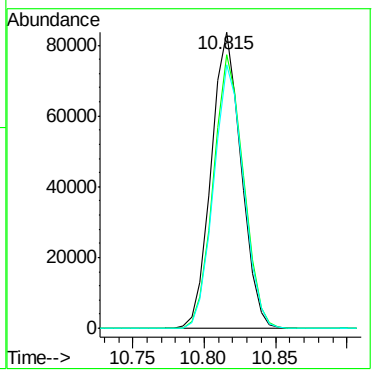


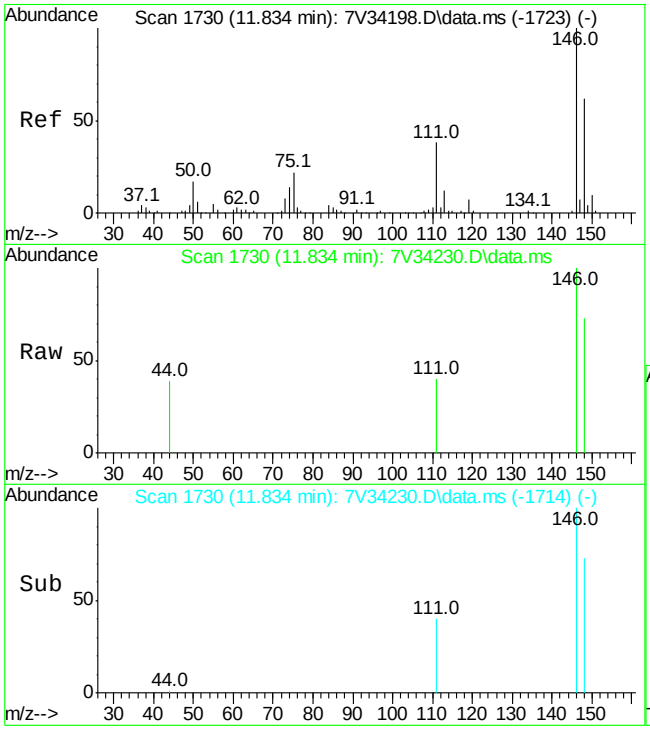


#76
4-Bromofluorobenzene
Concen: 48.71 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion: 95 Resp: 122411

Ion	Ratio	Lower	Upper
95	100		
174	92.4	70.3	110.3
176	88.8	67.4	107.4

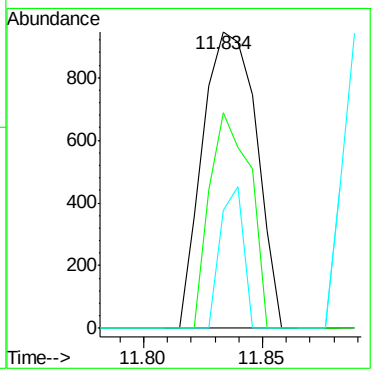




#89
1,3-Dichlorobenzene
Concen: 0.30 ug/L
RT: 11.834 min Scan# 1730
Delta R.T. -0.000 min
Lab File: 7V34230.D
Acq: 1 Jun 2016 3:49 pm

Tgt Ion:146 Resp: 1480

Ion	Ratio	Lower	Upper
146	100		
148	54.8	44.1	84.1
111	20.5	17.5	57.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34231.D
Acq On : 1 Jun 2016 4:12 pm
Operator : amandaj
Sample : D83120-3
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 02 11:26:00 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

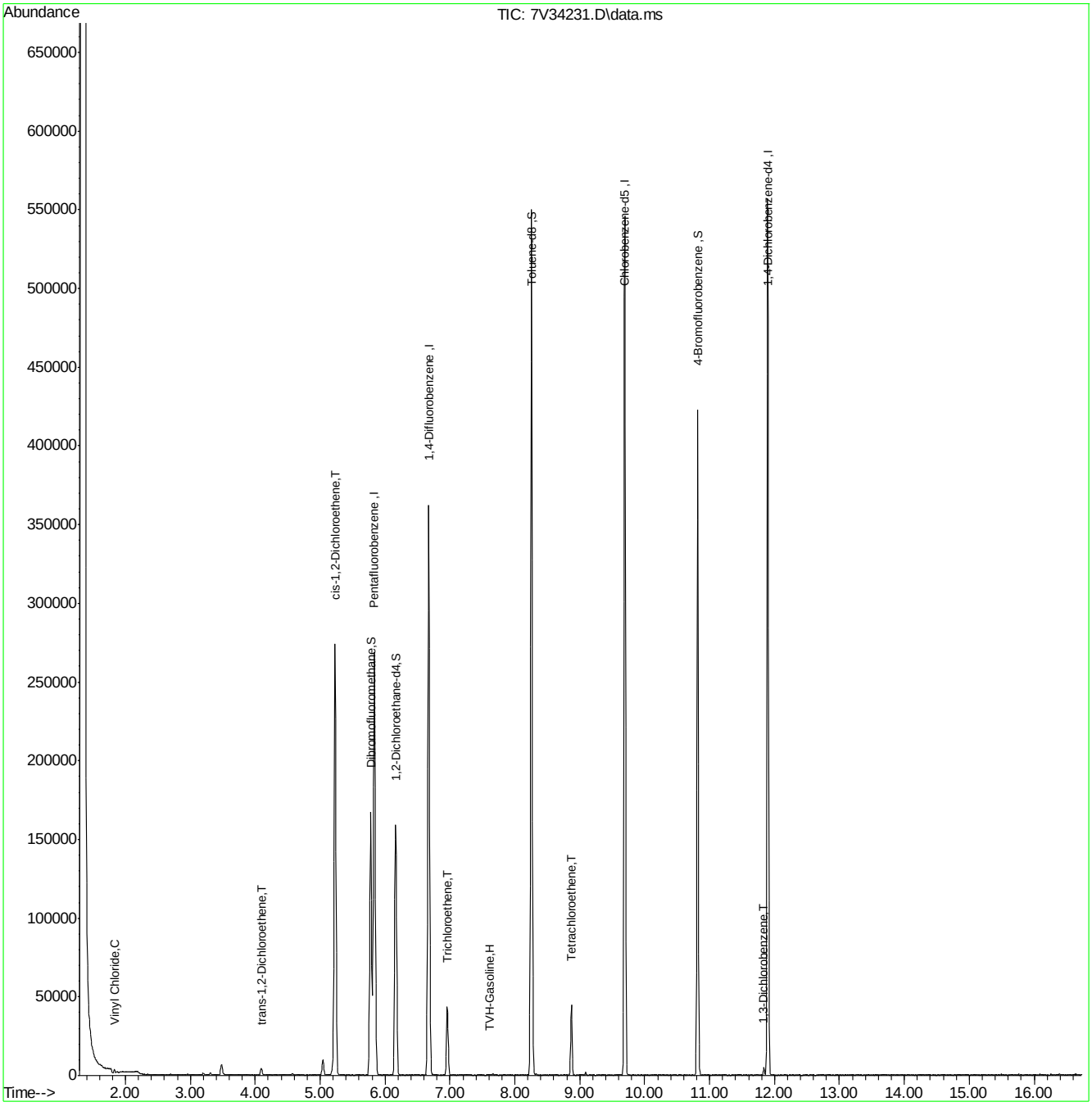
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	213822	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.670	114	328707	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	294510	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	149559	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	111030	47.84	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 95.68%			
41) 1,2-Dichloroethane-d4	6.164	102	23202	49.26	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 98.52%			
56) Toluene-d8	8.255	98	343621	48.52	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 97.04%			
76) 4-Bromofluorobenzene	10.816	95	130928	50.27	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 100.54%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	782822m	82.30	ug/L	
5) Vinyl Chloride	1.836	62	1795	0.80	ug/L	95
21) trans-1,2-Dichloroethene	4.097	96	1559	0.71	ug/L	88
29) cis-1,2-Dichloroethene	5.231	96	121050	48.59	ug/L	89
47) Trichloroethene	6.957	95	14913	6.03	ug/L	99
60) Tetrachloroethene	8.871	164	10116	5.20	ug/L	99
89) 1,3-Dichlorobenzene	11.834	146	3117	0.62	ug/L	95

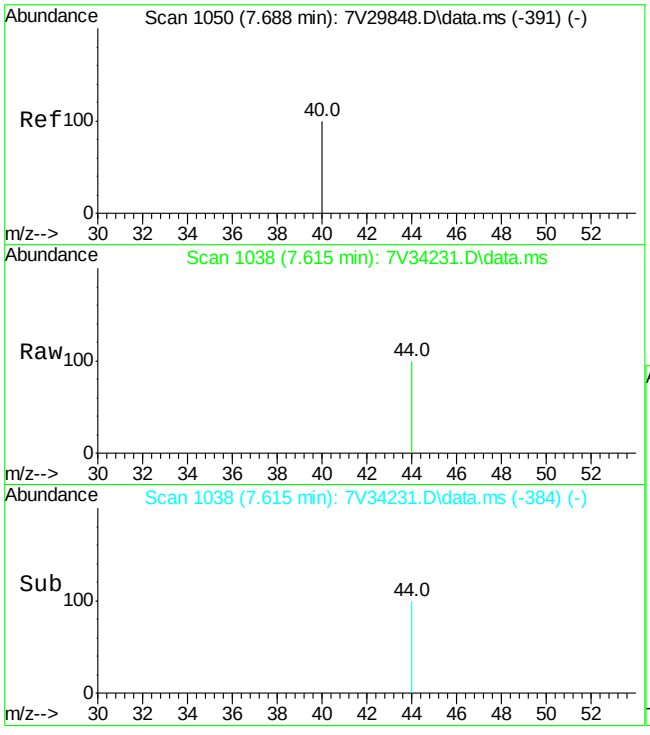
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34231.D
Acq On : 1 Jun 2016 4:12 pm
Operator : amandaj
Sample : D83120-3
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 17 Sample Multiplier: 1

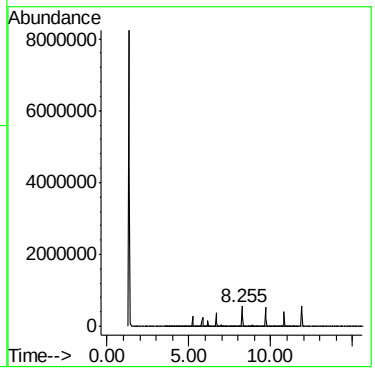
Quant Time: Jun 02 11:26:00 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

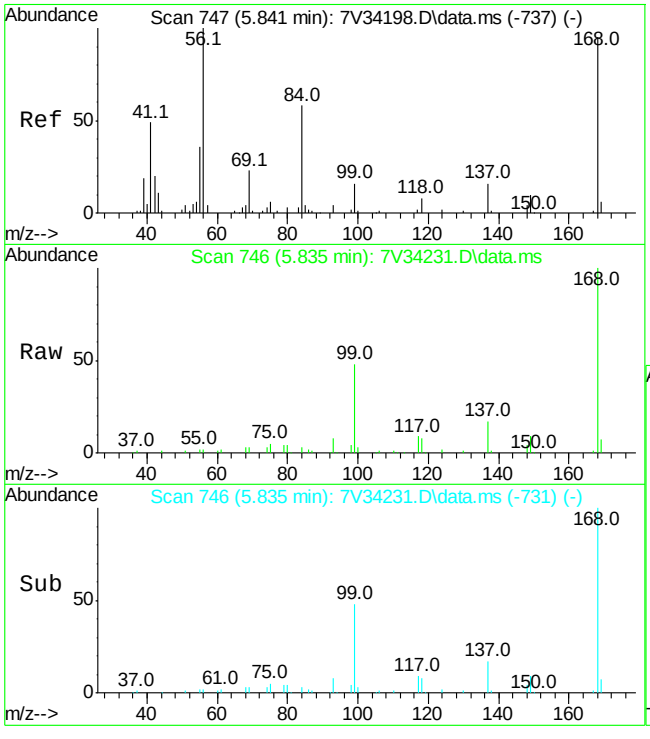




#1
TVH-Gasoline
Concen: 82.30 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion:TIC Resp: 782822

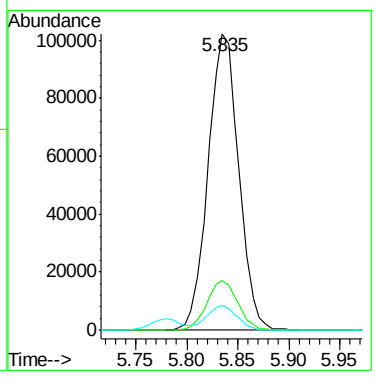


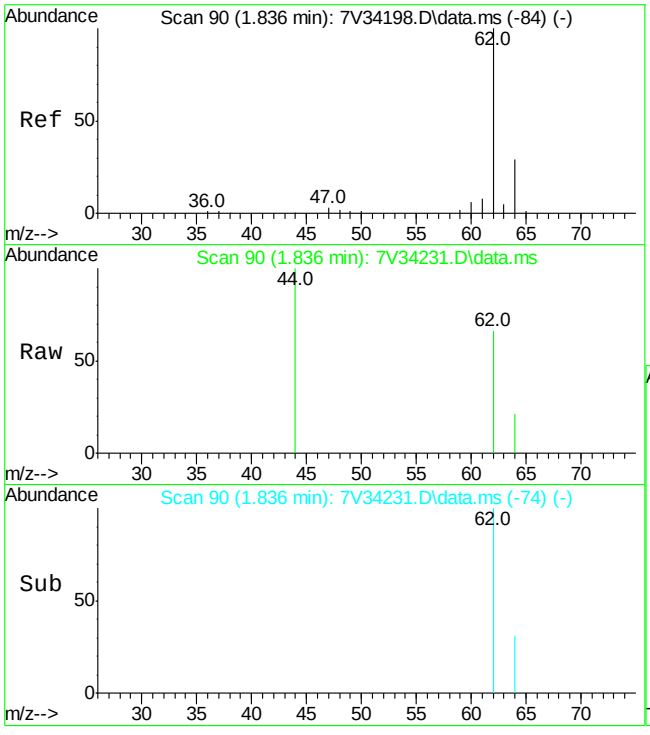


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion:168 Resp: 213822

Ion	Ratio	Lower	Upper
168	100		
137	16.7	0.0	36.8
93	8.0	0.0	28.3

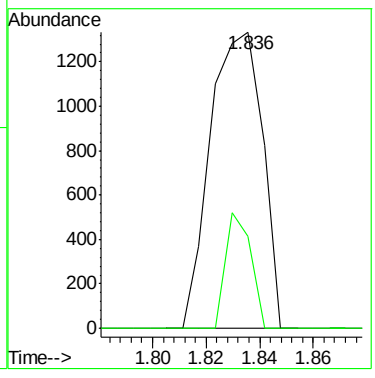


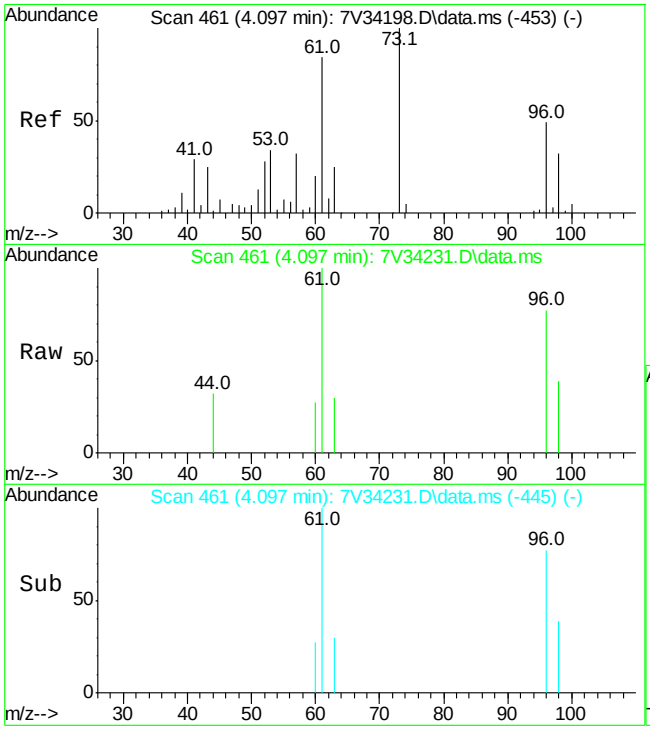


#5
Vinyl Chloride
Concen: 0.80 ug/L
RT: 1.836 min Scan# 90
Delta R.T. -0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion: 62 Resp: 1795

Ion	Ratio	Lower	Upper
62	100		
64	31.0	8.5	48.5

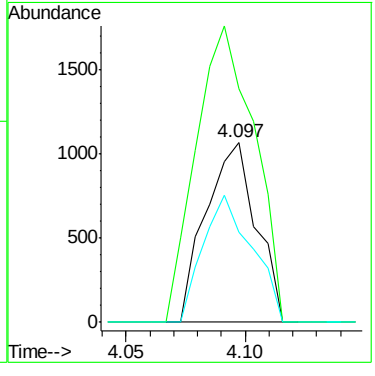


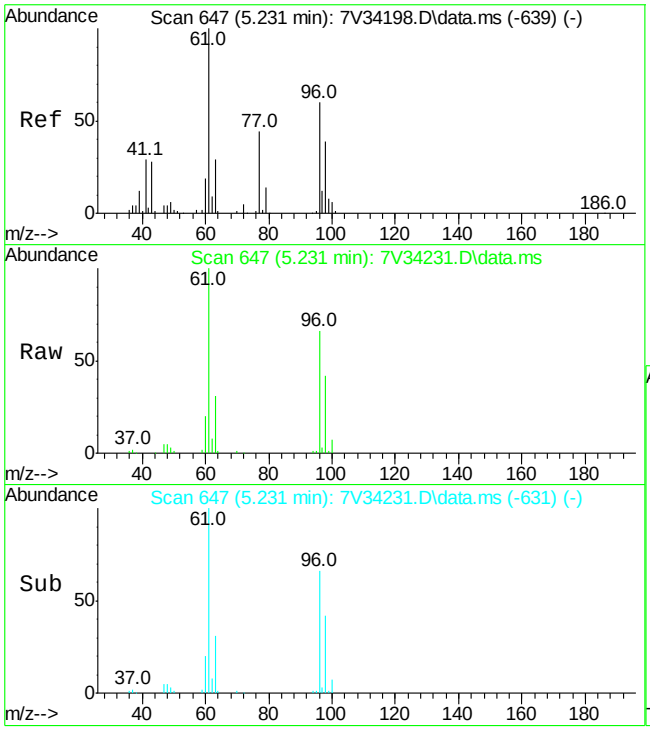


#21
trans-1,2-Dichloroethene
Concen: 0.71 ug/L
RT: 4.097 min Scan# 461
Delta R.T. 0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion: 96 Resp: 1559

Ion	Ratio	Lower	Upper
96	100		
61	191.0	151.1	191.1
98	68.7	43.8	83.8

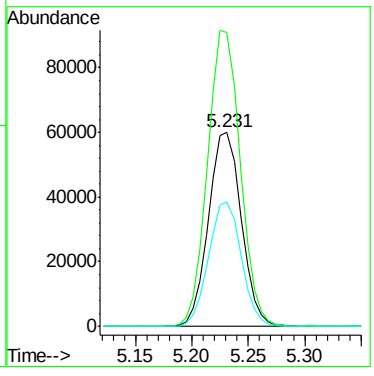


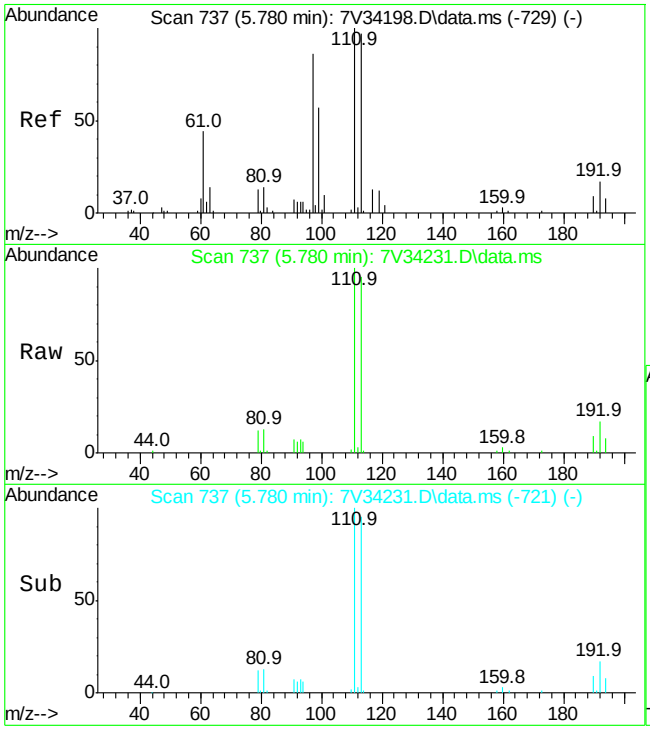


#29
cis-1,2-Dichloroethene
Concen: 48.59 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion: 96 Resp: 121050

Ion	Ratio	Lower	Upper
96	100		
61	152.0	151.8	191.8
98	63.6	44.4	84.4

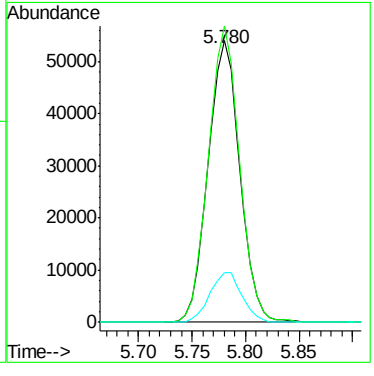


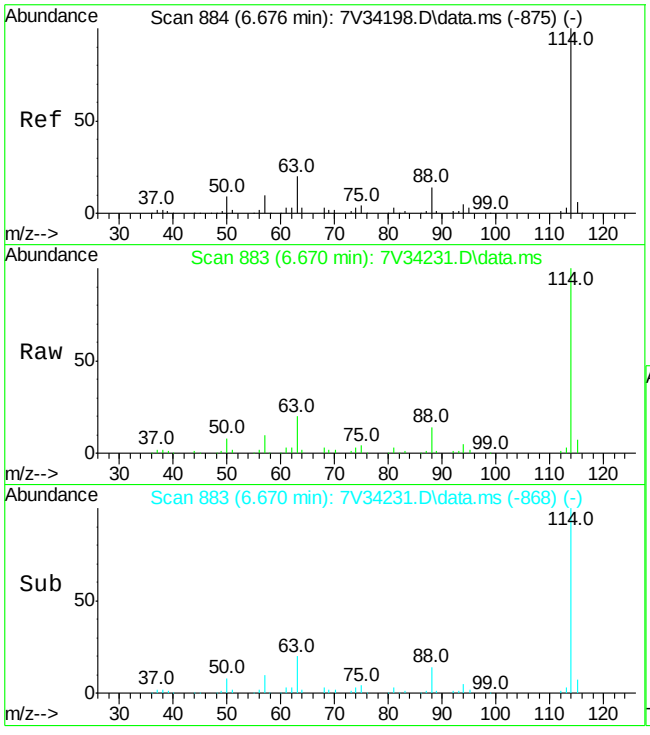


#35
Dibromofluoromethane
Concen: 47.84 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion:113 Resp: 111030

Ion	Ratio	Lower	Upper
113	100		
111	103.2	82.9	122.9
192	17.6	0.0	36.9

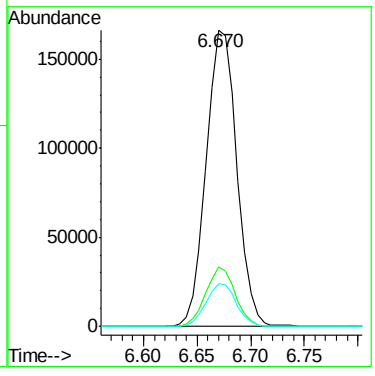


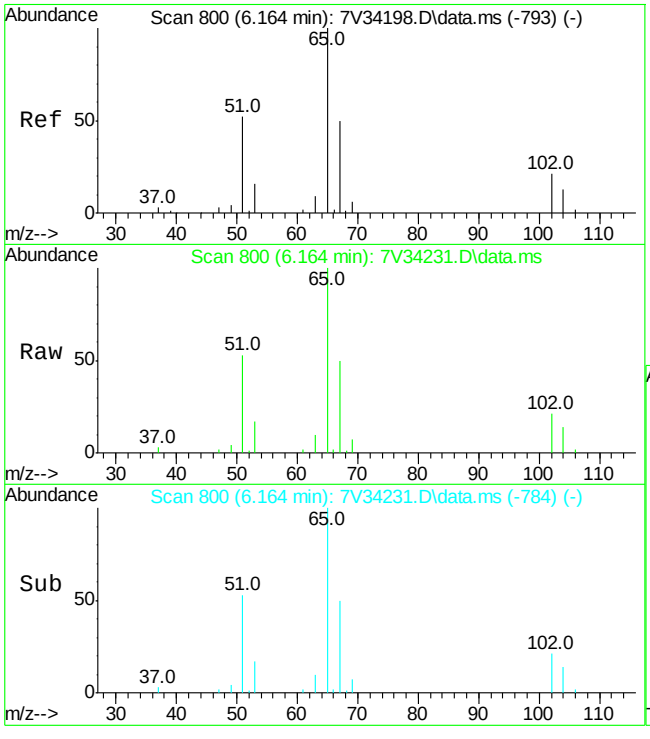


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.670 min Scan# 883
Delta R.T. -0.006 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion:114 Resp: 328707

Ion	Ratio	Lower	Upper
114	100		
63	19.1	0.0	39.6
88	14.2	0.0	34.3

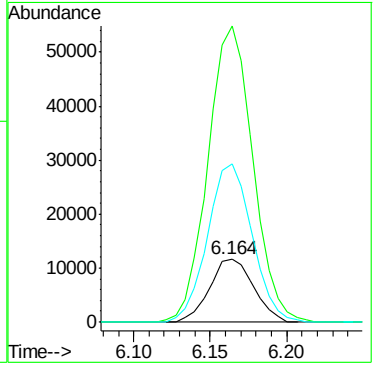


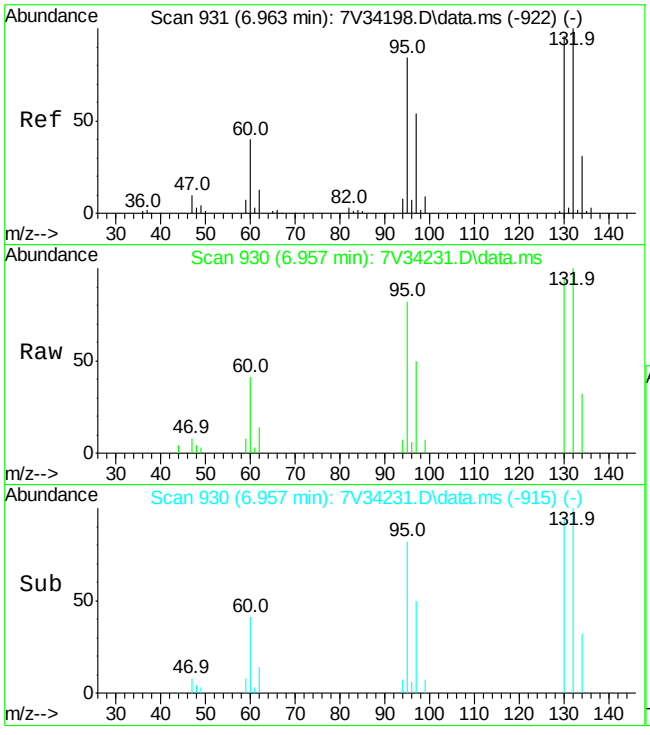


#41
1,2-Dichloroethane-d4
Concen: 49.26 ug/L
RT: 6.164 min Scan# 800
Delta R.T. 0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion:102 Resp: 23202

Ion	Ratio	Lower	Upper
102	100		
65	481.4	469.5	509.5
51	255.2	232.7	272.7

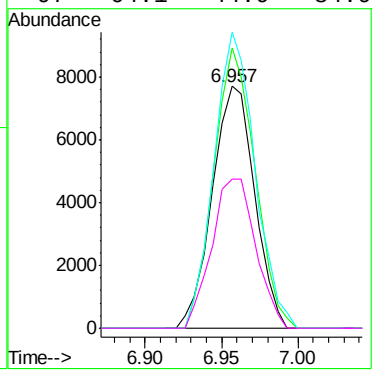


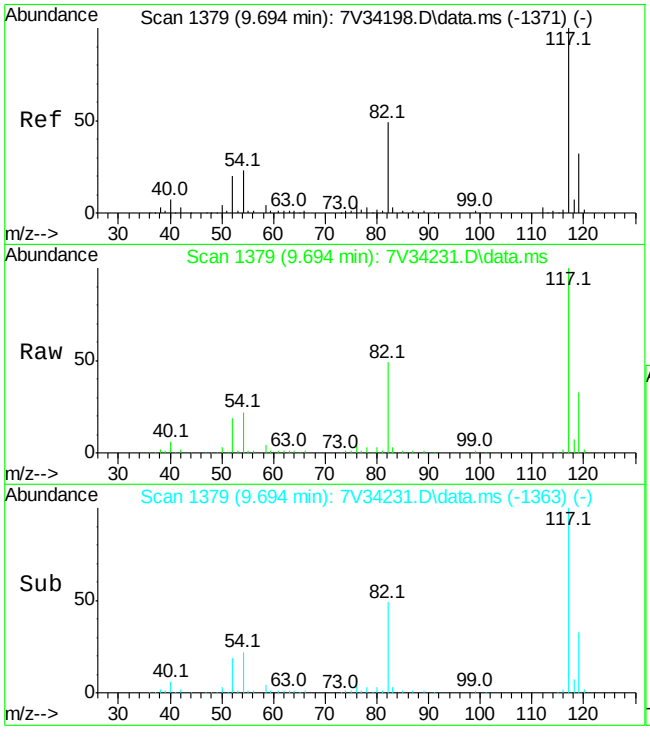


#47
Trichloroethene
Concen: 6.03 ug/L
RT: 6.957 min Scan# 930
Delta R.T. -0.006 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion: 95 Resp: 14913

Ion	Ratio	Lower	Upper
95	100		
130	112.4	93.2	133.2
132	118.2	95.9	135.9
97	64.1	44.9	84.9

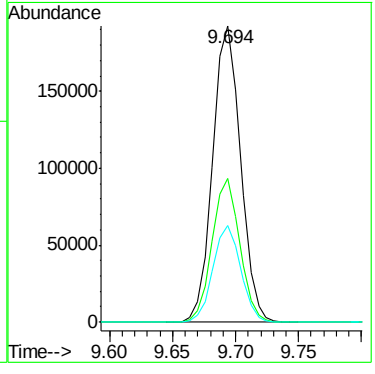


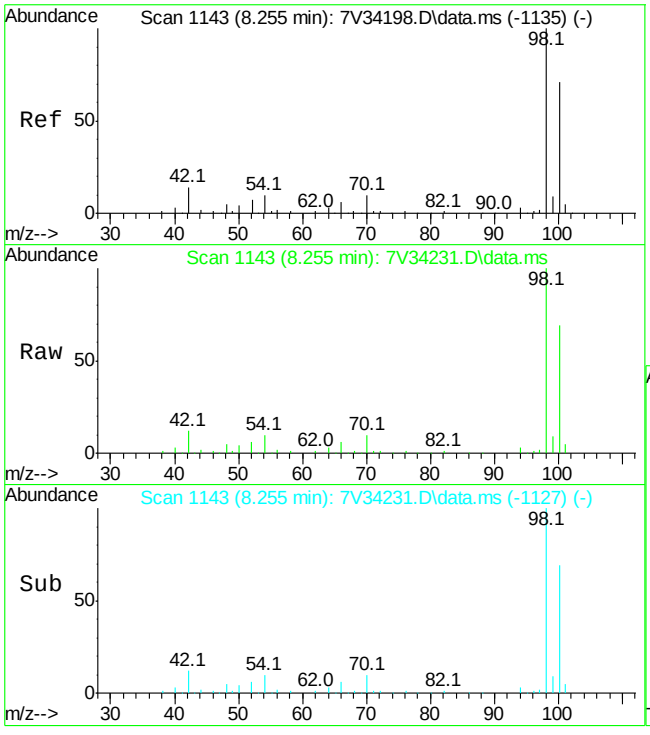


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. 0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion:117 Resp: 294510

Ion	Ratio	Lower	Upper
117	100		
82	48.1	28.7	68.7
119	32.4	12.2	52.2

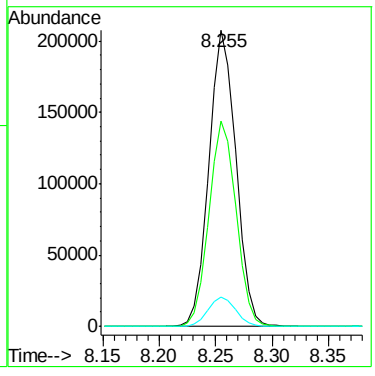


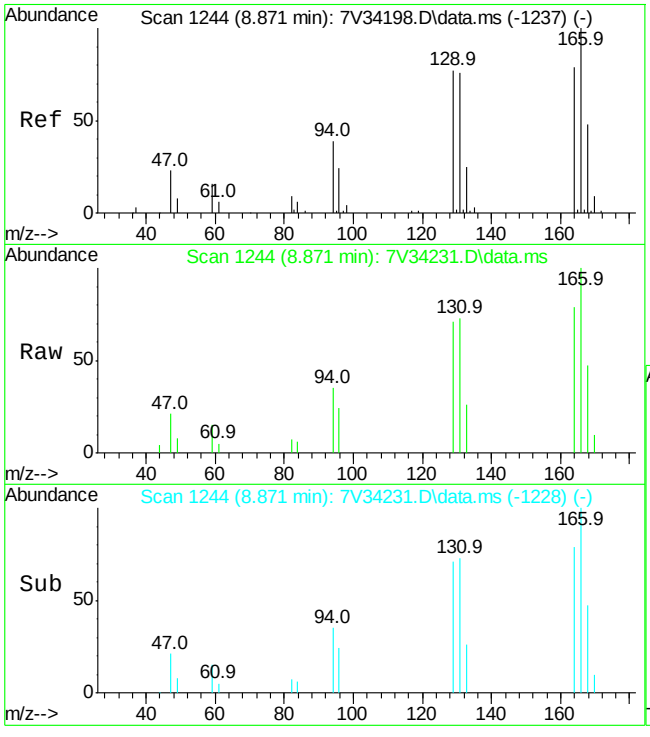


#56
Toluene-d8
Concen: 48.52 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. 0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion: 98 Resp: 343621

Ion	Ratio	Lower	Upper
98	100		
100	69.7	49.8	89.8
70	10.1	0.0	30.1

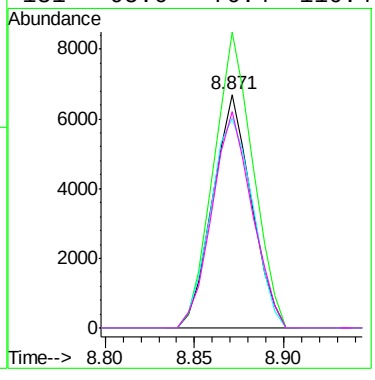


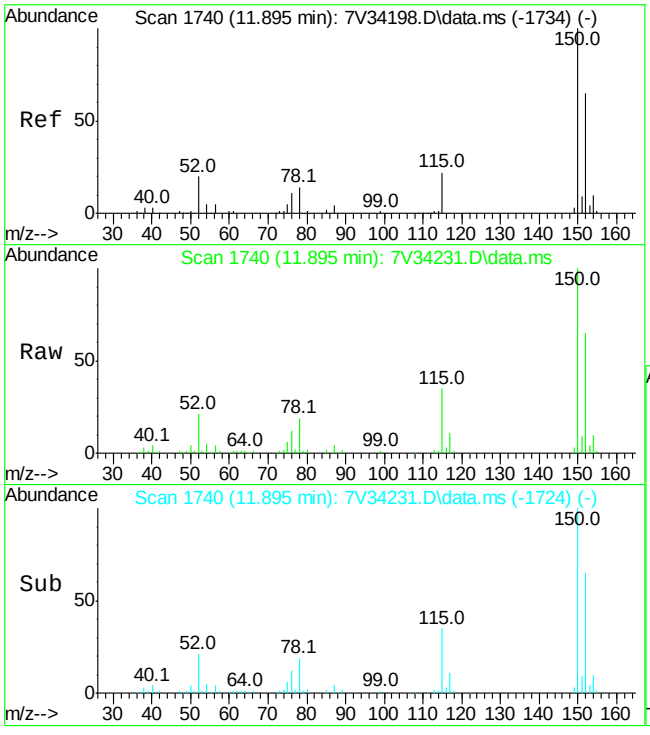


#60
Tetrachloroethene
Concen: 5.20 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion:164 Resp: 10116

Ion	Ratio	Lower	Upper
164	100		
166	128.4	107.5	147.5
129	98.0	76.8	116.8
131	95.6	76.4	116.4

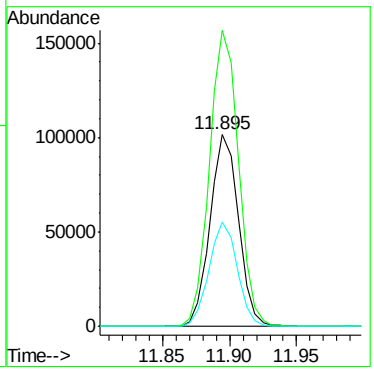


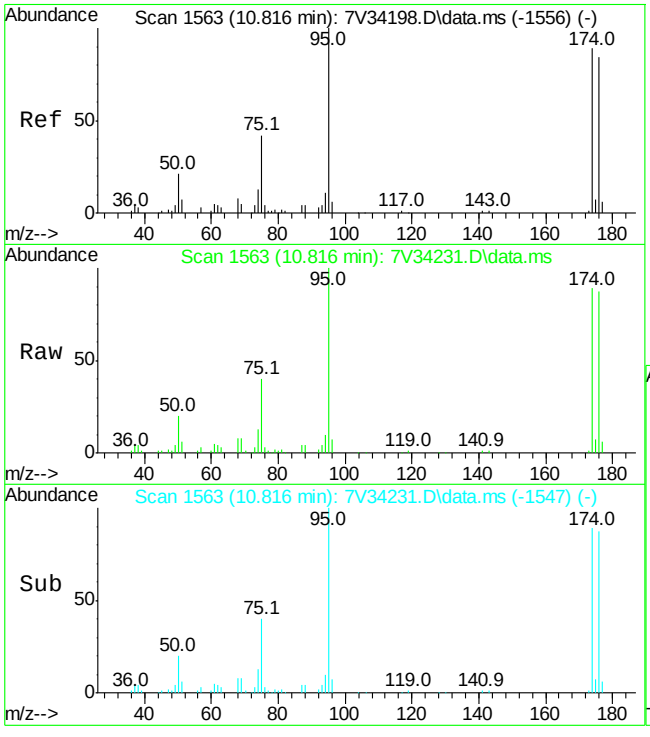


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. 0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion:152 Resp: 149559

Ion	Ratio	Lower	Upper
152	100		
150	157.1	154.9	194.9
115	54.1	34.6	74.6

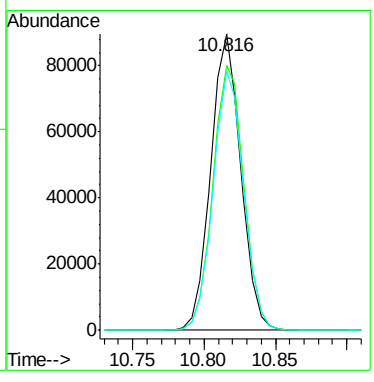


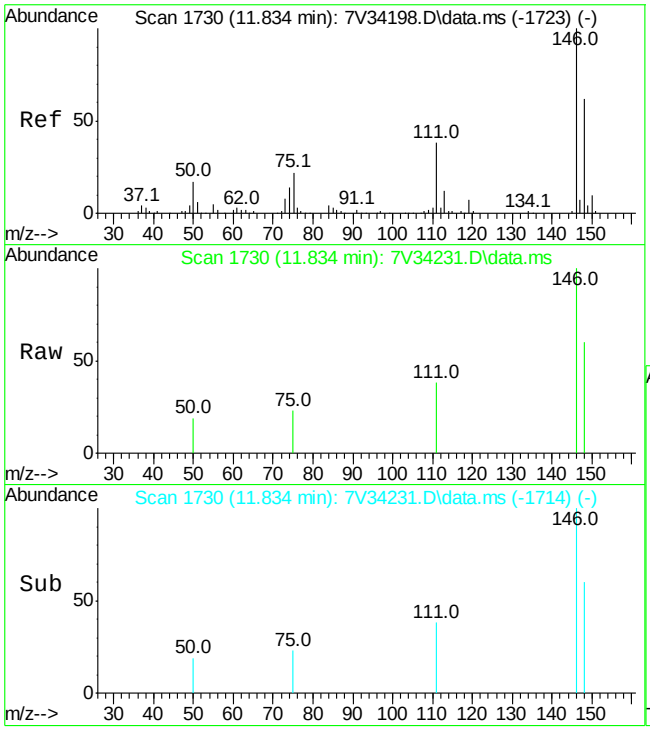


#76
4-Bromofluorobenzene
Concen: 50.27 ug/L
RT: 10.816 min Scan# 1563
Delta R.T. -0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion: 95 Resp: 130928

Ion	Ratio	Lower	Upper
95	100		
174	92.1	70.3	110.3
176	88.6	67.4	107.4

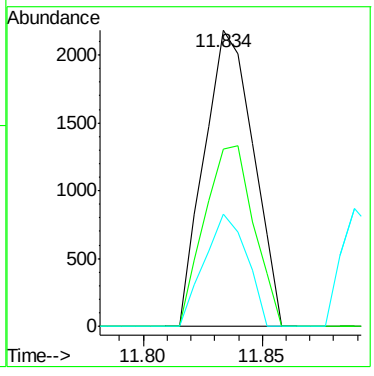




#89
1,3-Dichlorobenzene
Concen: 0.62 ug/L
RT: 11.834 min Scan# 1730
Delta R.T. -0.000 min
Lab File: 7V34231.D
Acq: 1 Jun 2016 4:12 pm

Tgt Ion:146 Resp: 3117

Ion	Ratio	Lower	Upper
146	100		
148	61.1	44.1	84.1
111	32.8	17.5	57.5



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34232.D
Acq On : 1 Jun 2016 4:36 pm
Operator : amandaj
Sample : D83120-4
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 03 08:37:23 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.841	168	207897	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	334679	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	291544	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	149766	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.786	113	114870	50.91	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 101.82%			
41) 1,2-Dichloroethane-d4	6.164	102	23738	49.50	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 99.00%			
56) Toluene-d8	8.255	98	349693	49.88	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.76%			
76) 4-Bromofluorobenzene	10.815	95	130491	50.04	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 100.08%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	6073471m	638.54	ug/L	
5) Vinyl Chloride	1.835	62	154047	70.22	ug/L	99
12) 1,1-Dichloroethene	3.232	96	1724	0.91	ug/L	95
14) Acetone	3.311	43	1702	Below Cal	#	42
21) trans-1,2-Dichloroethene	4.097	96	12901	6.08	ug/L	97
24) 1,1-Dichloroethane	4.573	63	7765	1.80	ug/L	94
29) cis-1,2-Dichloroethene	5.231	96	779538	321.84	ug/L	90
30) 2-Butanone	5.255	43	496	0.30	ug/L #	1
36) 1,1,1-Trichloroethane	5.798	97	1460	0.46	ug/L	65
37) Cyclohexane	5.835	56	4209	0.84	ug/L #	10
47) Trichloroethene	6.962	95	180673	71.74	ug/L	99
57) Toluene	8.322	92	2508	0.46	ug/L	99
60) Tetrachloroethene	8.871	164	176479	91.57	ug/L	99

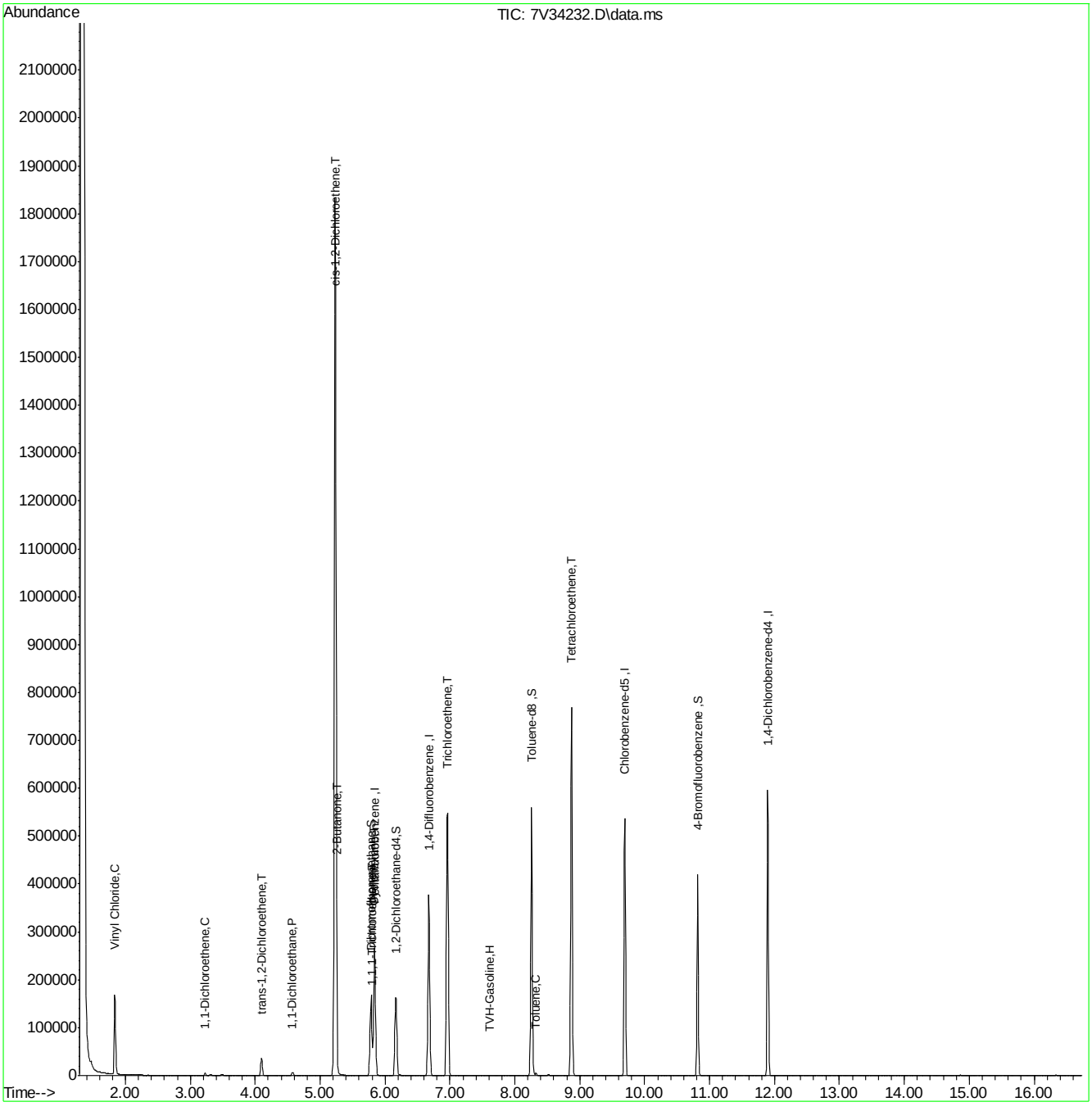
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST D83120

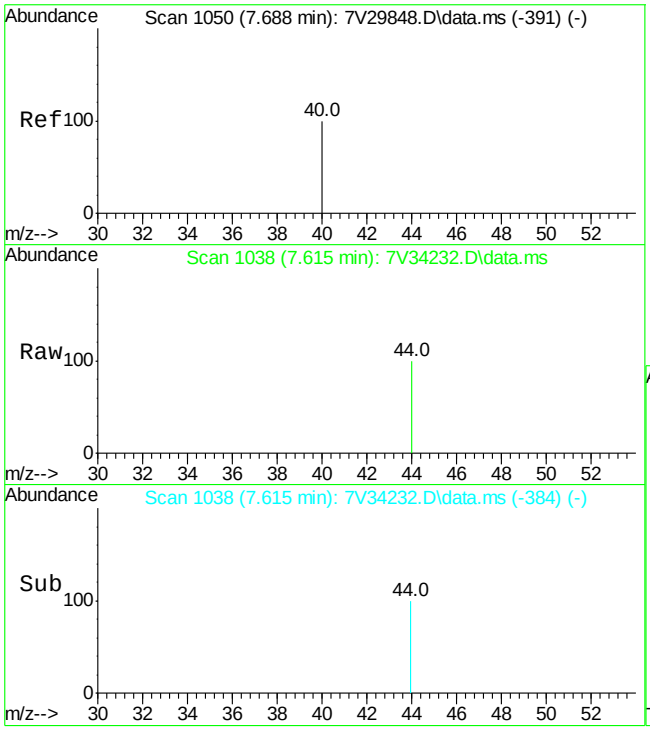
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34232.D
Acq On : 1 Jun 2016 4:36 pm
Operator : amandaj
Sample : D83120-4
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 03 08:37:23 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

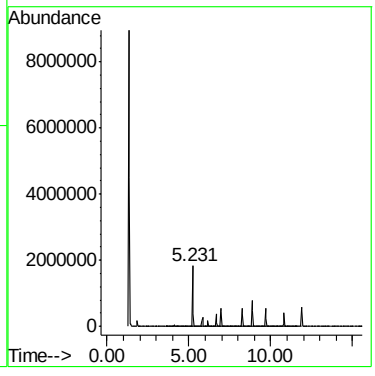


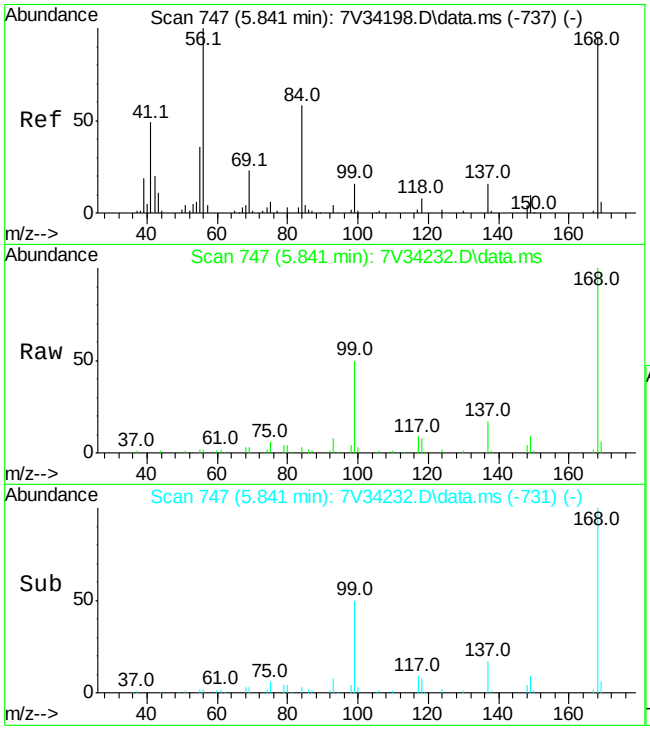
V7V1839F.M Fri Jun 03 08:37:25 2016 Page: 2



#1
TVH-Gasoline
Concen: 638.54 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion:TIC Resp: 6073471

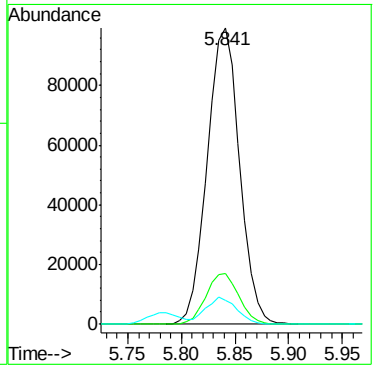


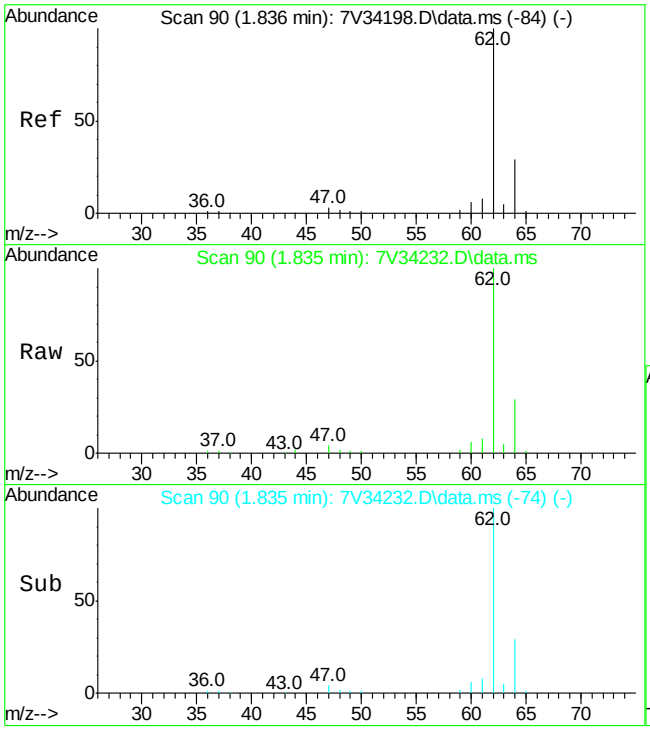


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.841 min Scan# 747
Delta R.T. -0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion:168 Resp: 207897

Ion	Ratio	Lower	Upper
168	100		
137	17.1	0.0	36.8
93	8.7	0.0	28.3

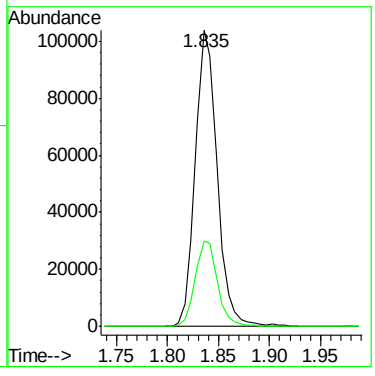


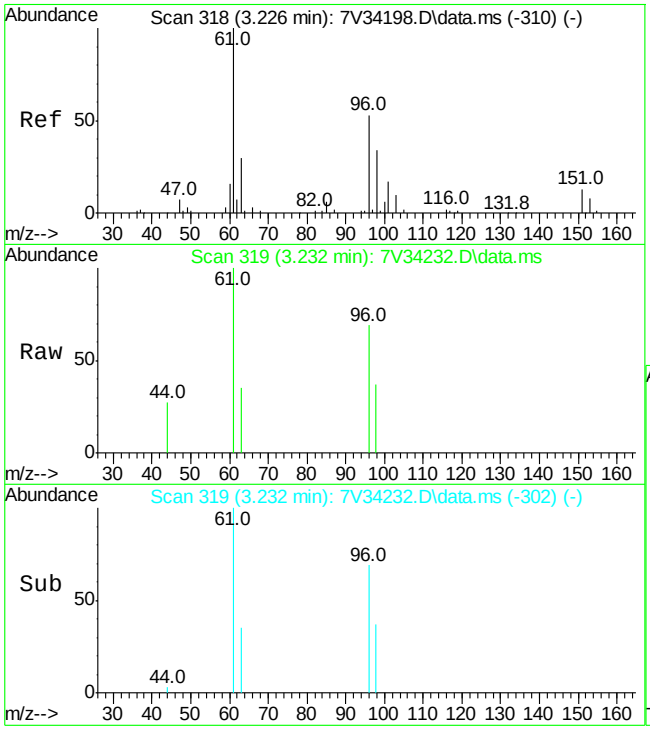


#5
Vinyl Chloride
Concen: 70.22 ug/L
RT: 1.835 min Scan# 90
Delta R.T. -0.001 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 62 Resp: 154047

Ion	Ratio	Lower	Upper
62	100		
64	28.9	8.5	48.5

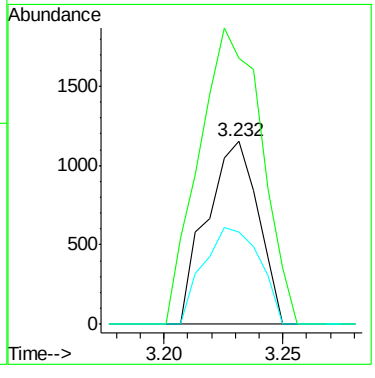


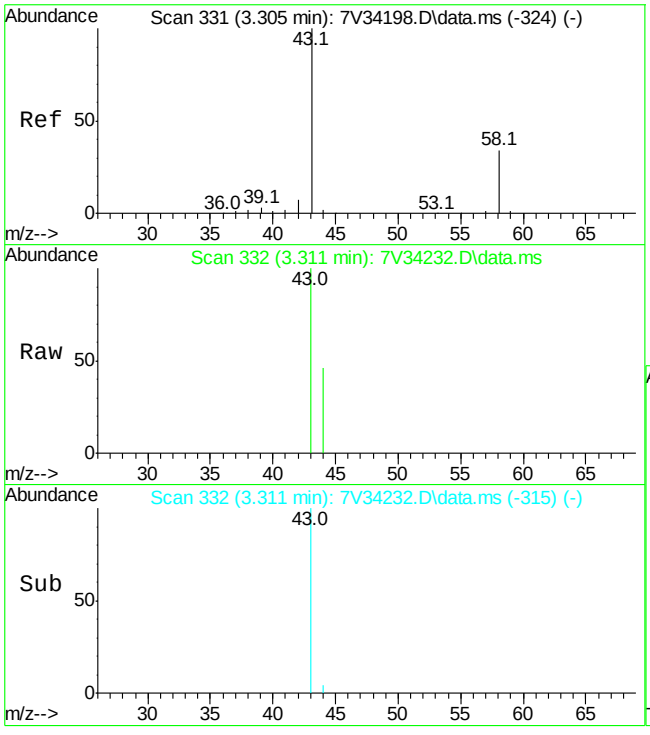


#12
1,1-Dichloroethene
Concen: 0.91 ug/L
RT: 3.232 min Scan# 319
Delta R.T. 0.006 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 96 Resp: 1724

Ion	Ratio	Lower	Upper
96	100		
61	197.1	167.7	207.7
63	58.1	36.4	76.4

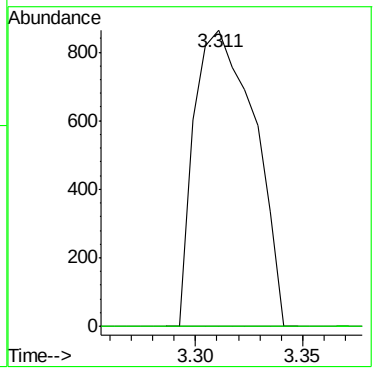


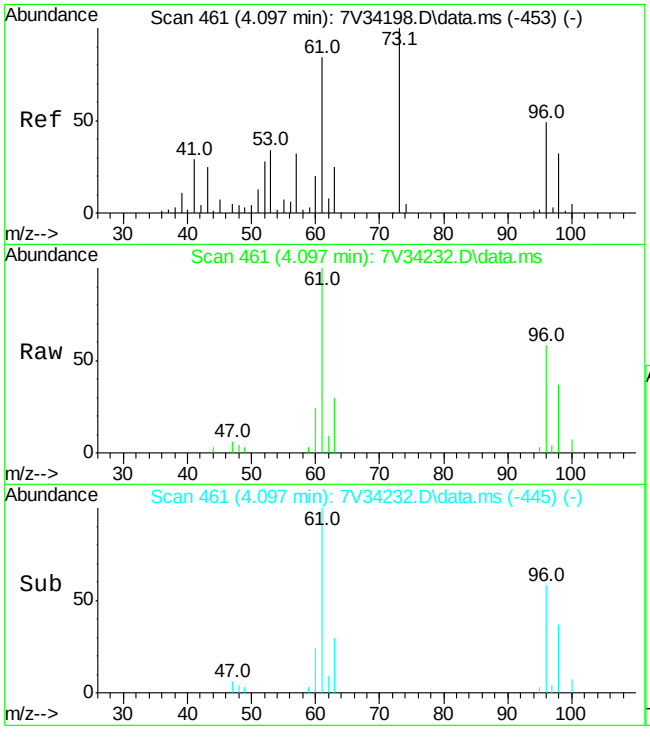


#14
Acetone
Concen: Below Cal
RT: 3.311 min Scan# 332
Delta R.T. 0.006 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 43 Resp: 1702

Ion	Ratio	Lower	Upper
43	100		
58	0.0	12.6	52.6#

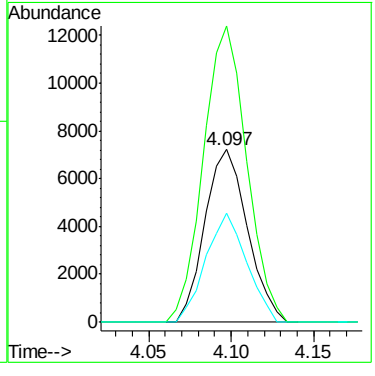




#21
trans-1,2-Dichloroethene
Concen: 6.08 ug/L
RT: 4.097 min Scan# 461
Delta R.T. 0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

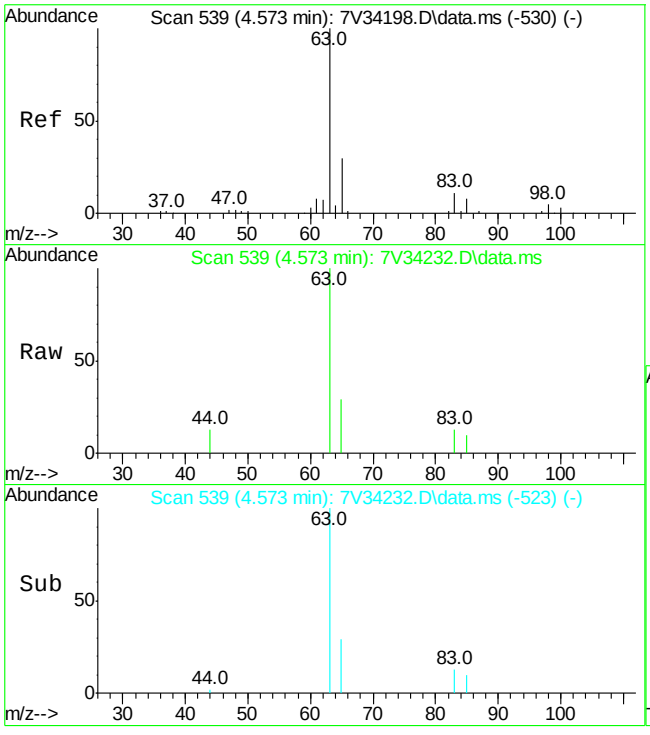
Tgt Ion: 96 Resp: 12901

Ion	Ratio	Lower	Upper
96	100		
61	174.0	151.1	191.1
98	60.5	43.8	83.8



7.1.4

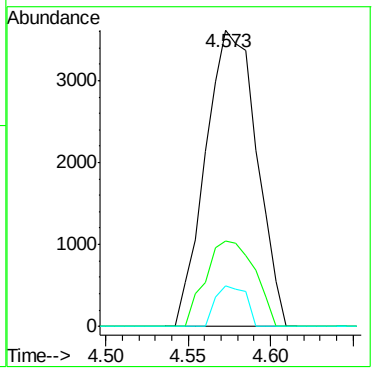
7

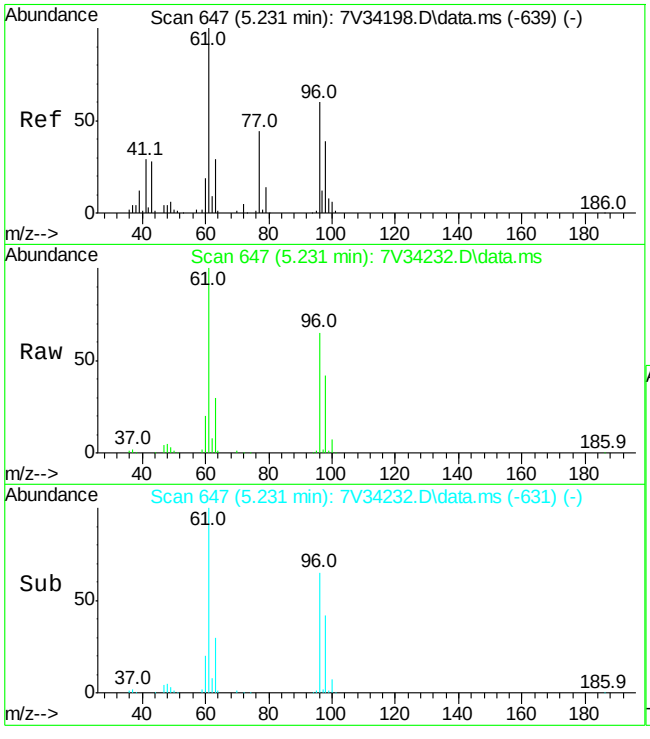


#24
1,1-Dichloroethane
Concen: 1.80 ug/L
RT: 4.573 min Scan# 539
Delta R.T. -0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 63 Resp: 7765

Ion	Ratio	Lower	Upper
63	100		
65	27.6	10.5	50.5
83	8.1	0.0	31.4

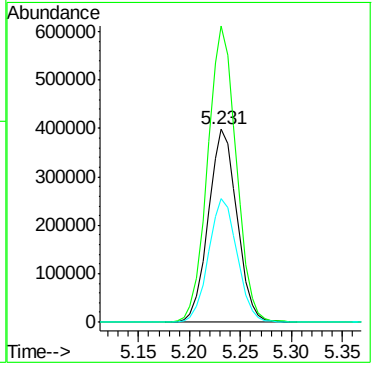


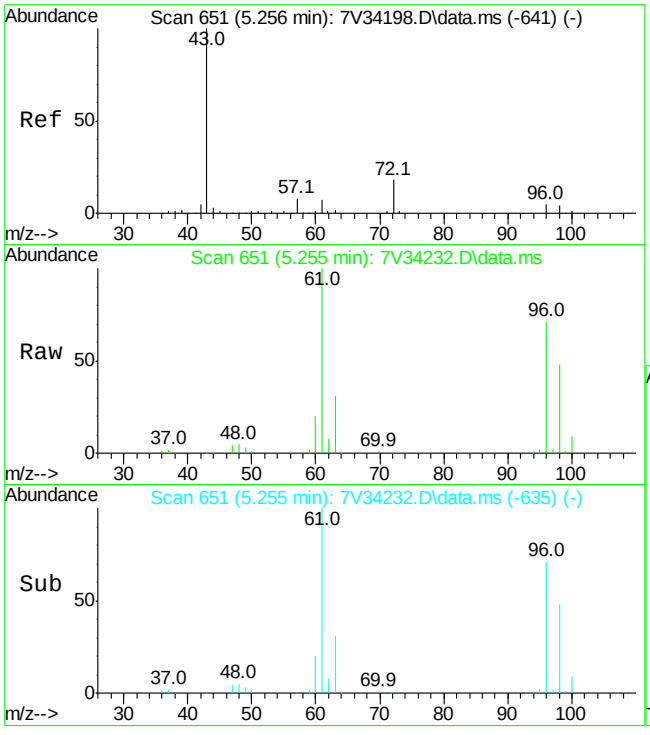


#29
cis-1,2-Dichloroethene
Concen: 321.84 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 96 Resp: 779538

Ion	Ratio	Lower	Upper
96	100		
61	153.2	151.8	191.8
98	64.1	44.4	84.4

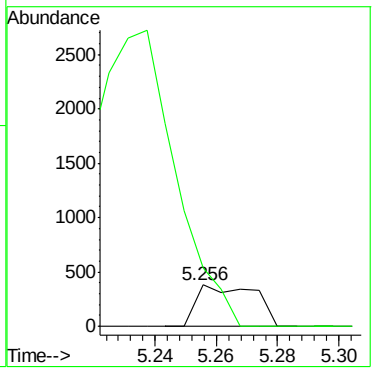


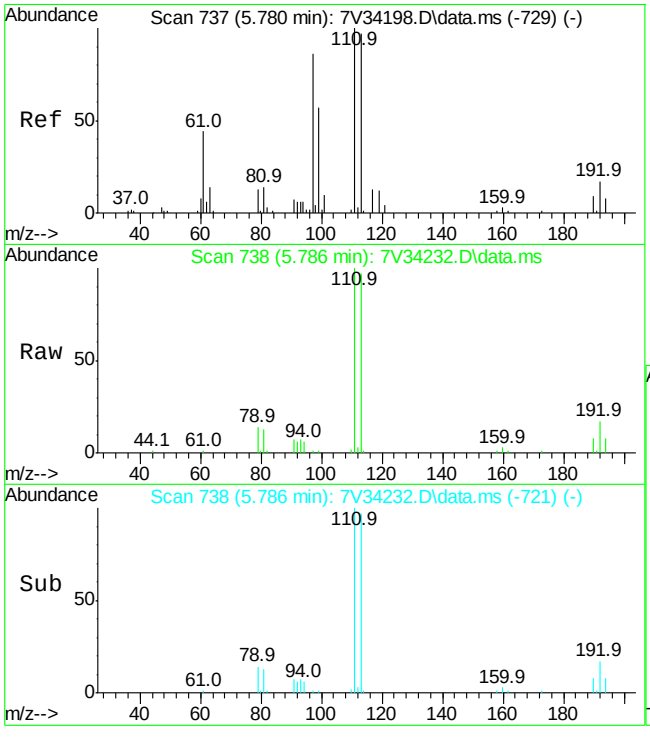


#30
2-Butanone
Concen: 0.30 ug/L
RT: 5.255 min Scan# 651
Delta R.T. -0.001 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 43 Resp: 496

Ion	Ratio	Lower	Upper
43	100		
72	1064.1	0.0	37.5#

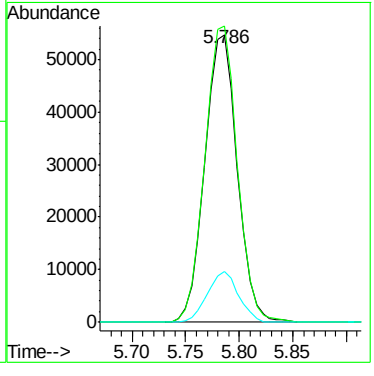


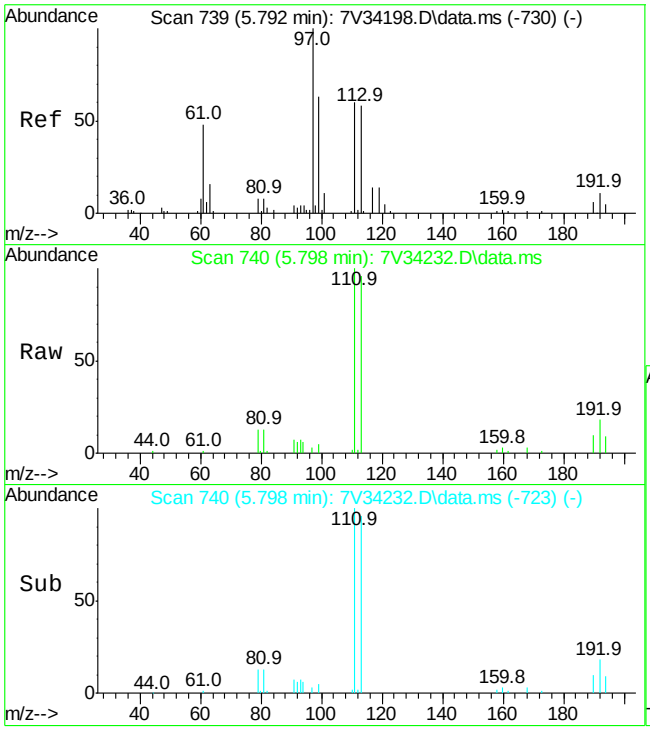


#35
Dibromofluoromethane
Concen: 50.91 ug/L
RT: 5.786 min Scan# 738
Delta R.T. 0.006 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion:113 Resp: 114870

Ion	Ratio	Lower	Upper
113	100		
111	102.7	82.9	122.9
192	16.7	0.0	36.9

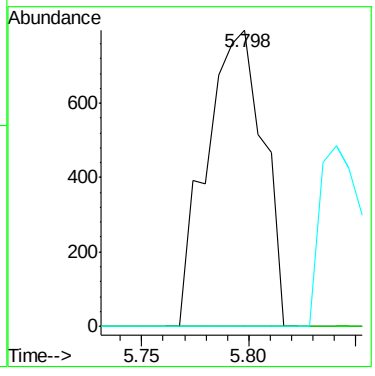


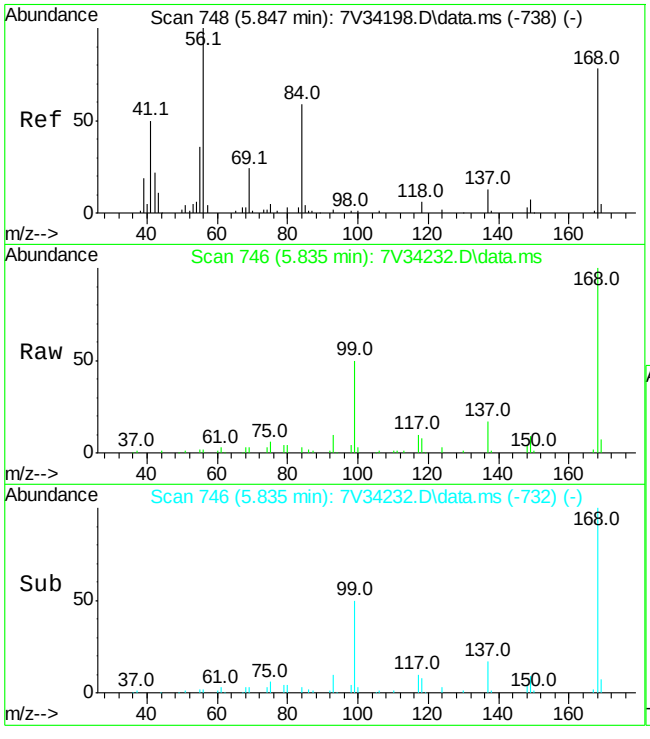


#36
1,1,1-Trichloroethane
Concen: 0.46 ug/L
RT: 5.798 min Scan# 740
Delta R.T. 0.006 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 97 Resp: 1460

Ion	Ratio	Lower	Upper
97	100		
63	0.0	0.0	35.6
119	0.0	0.0	33.5

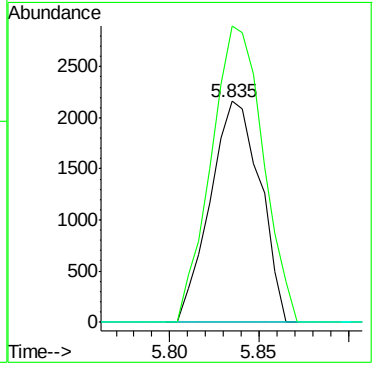


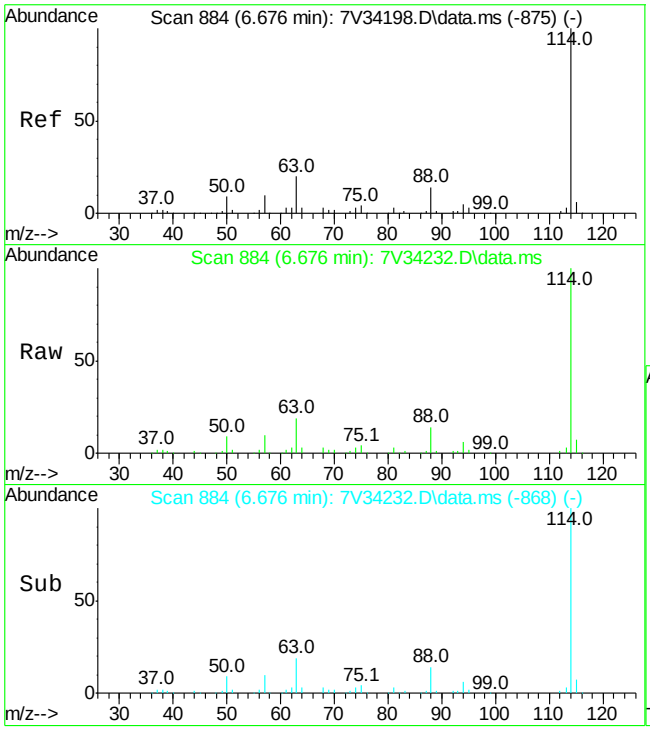


#37
Cyclohexane
Concen: 0.84 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.012 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 56 Resp: 4209

Ion	Ratio	Lower	Upper
56	100		
84	139.2	40.6	80.6#
41	0.0	30.3	70.3#

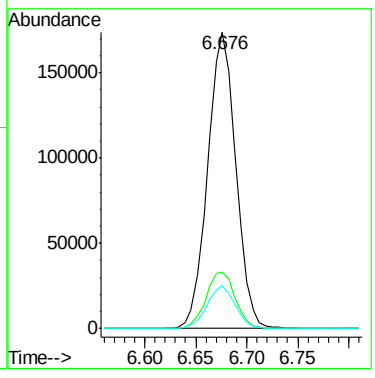


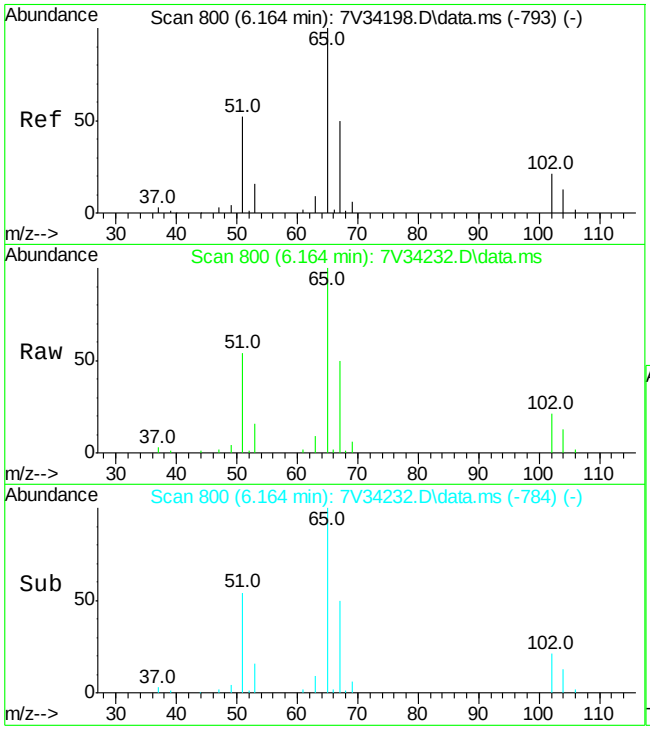


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion:114 Resp: 334679

Ion	Ratio	Lower	Upper
114	100		
63	19.6	0.0	39.6
88	14.2	0.0	34.3

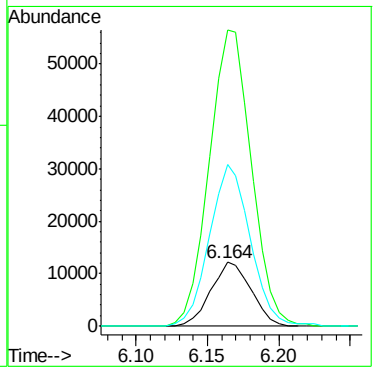


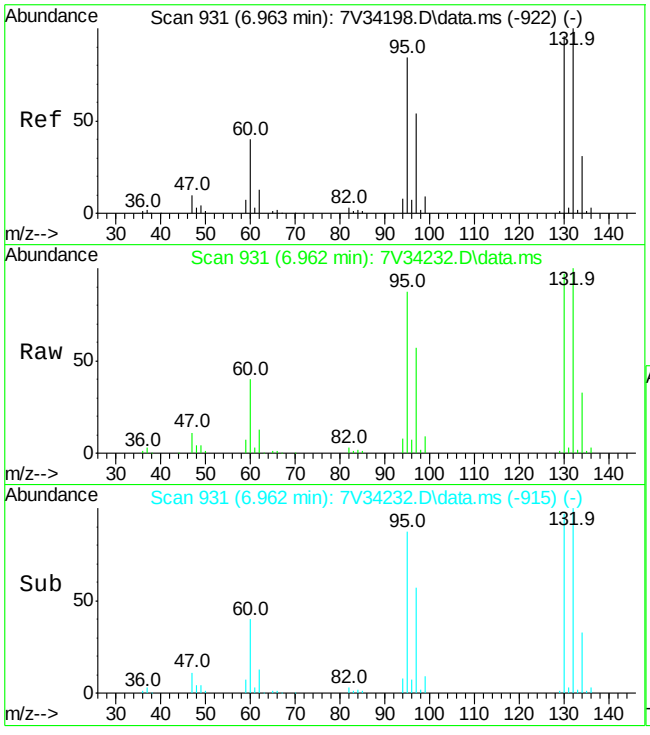


#41
1,2-Dichloroethane-d4
Concen: 49.50 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion:102 Resp: 23738

Ion	Ratio	Lower	Upper
102	100		
65	487.6	469.5	509.5
51	257.9	232.7	272.7

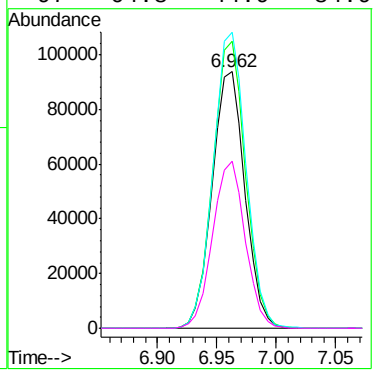


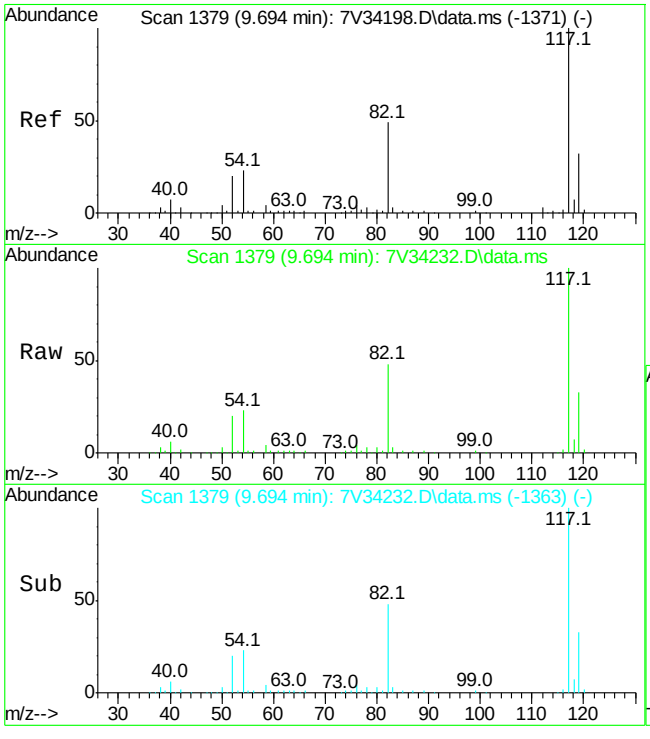


#47
Trichloroethene
Concen: 71.74 ug/L
RT: 6.962 min Scan# 931
Delta R.T. -0.001 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 95 Resp: 180673

Ion	Ratio	Lower	Upper
95	100		
130	111.8	93.2	133.2
132	115.8	95.9	135.9
97	64.8	44.9	84.9

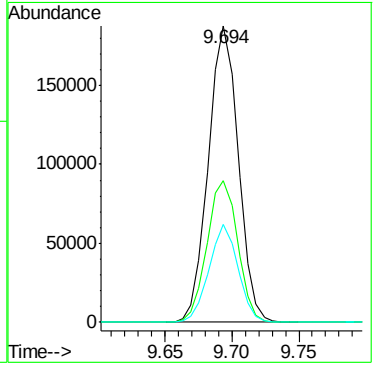




#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

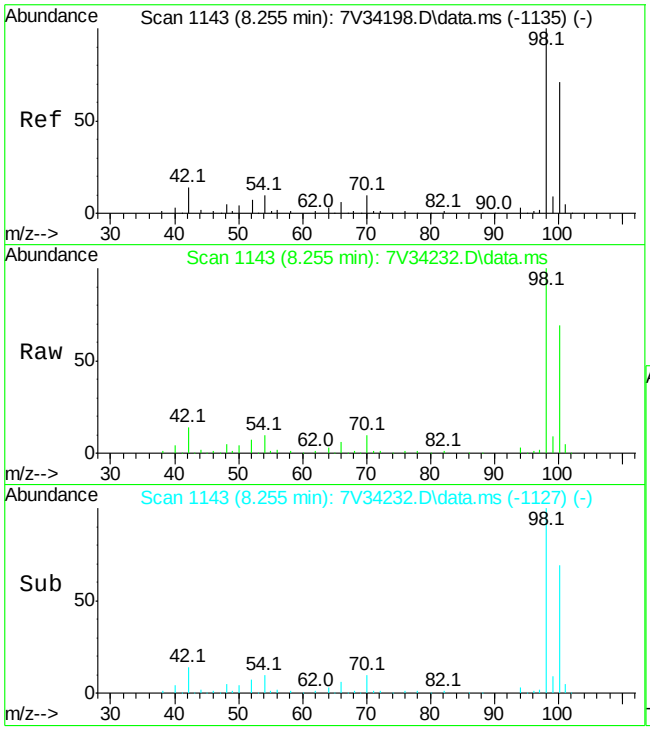
Tgt Ion:117 Resp: 291544

Ion	Ratio	Lower	Upper
117	100		
82	48.8	28.7	68.7
119	31.8	12.2	52.2



7.1.4

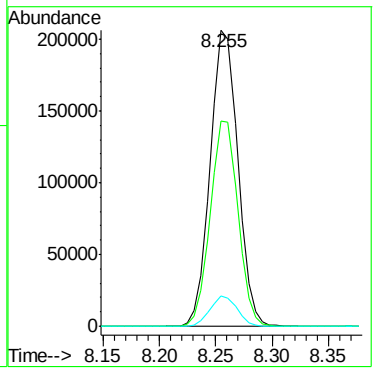
7

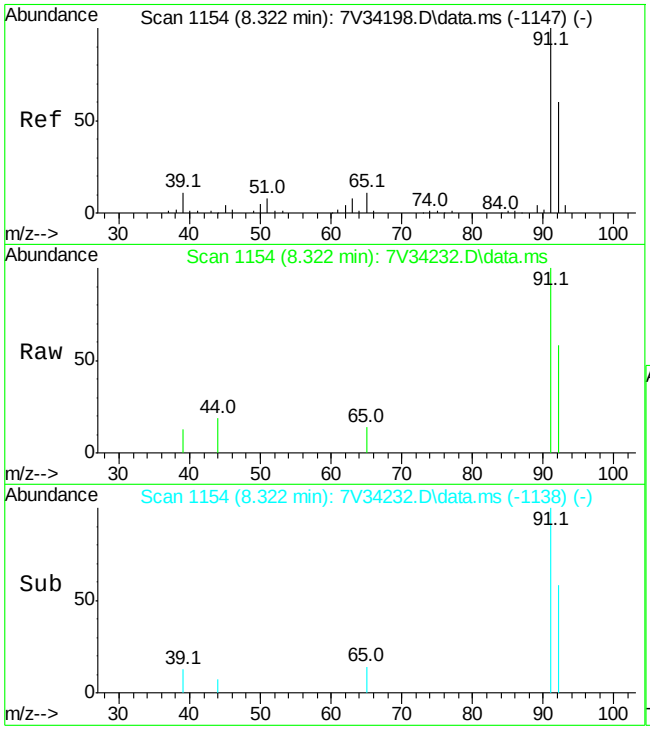


#56
Toluene-d8
Concen: 49.88 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 98 Resp: 349693

Ion	Ratio	Lower	Upper
98	100		
100	69.5	49.8	89.8
70	10.1	0.0	30.1

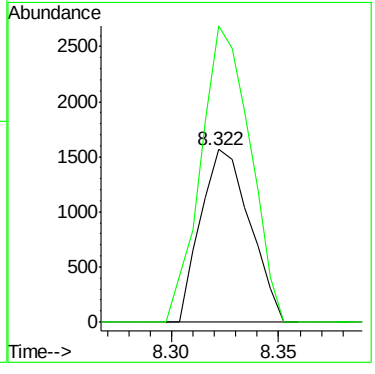


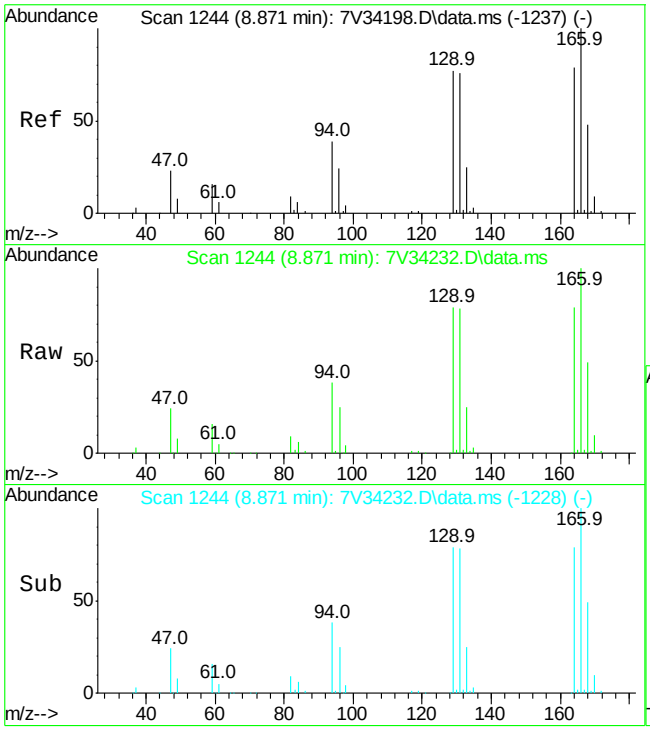


#57
Toluene
Concen: 0.46 ug/L
RT: 8.322 min Scan# 1154
Delta R.T. -0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 92 Resp: 2508

Ion	Ratio	Lower	Upper
92	100		
91	171.8	150.1	190.1

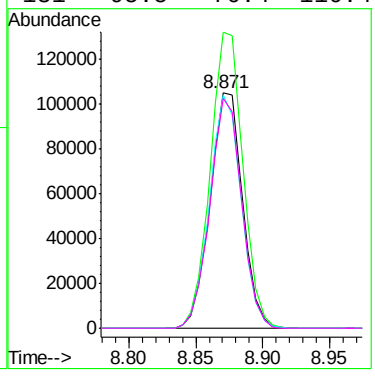


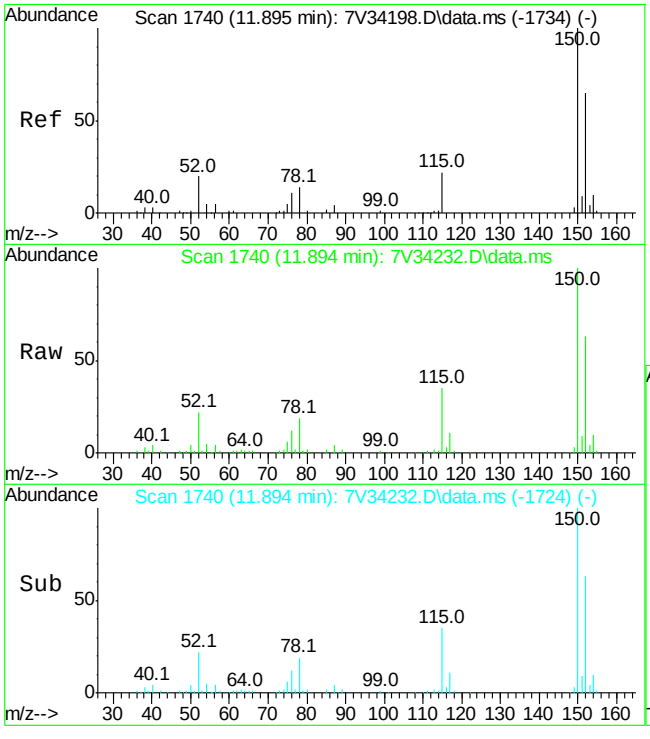


#60
Tetrachloroethene
Concen: 91.57 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion:164 Resp: 176479

Ion	Ratio	Lower	Upper
164	100		
166	126.5	107.5	147.5
129	96.6	76.8	116.8
131	95.5	76.4	116.4

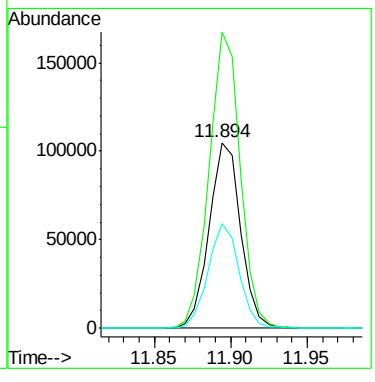


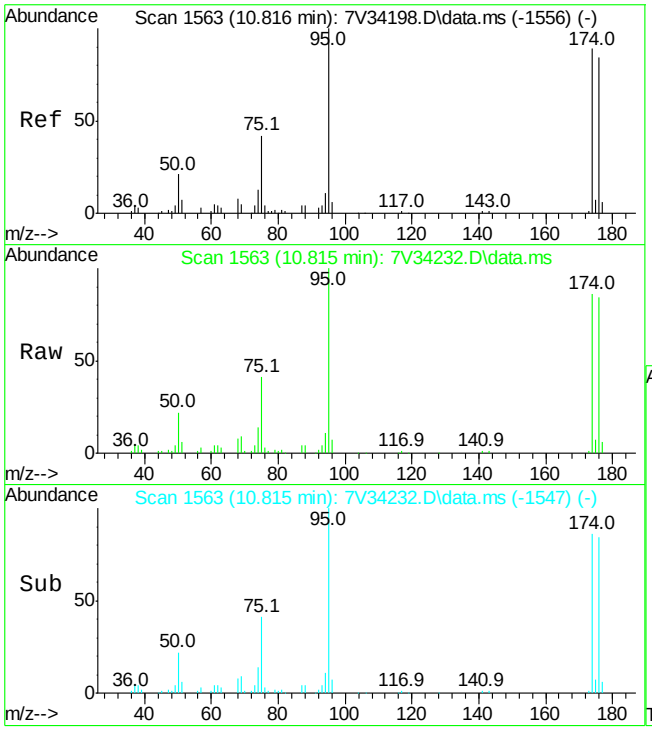


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion:152 Resp: 149766

Ion	Ratio	Lower	Upper
152	100		
150	158.4	154.9	194.9
115	55.7	34.6	74.6

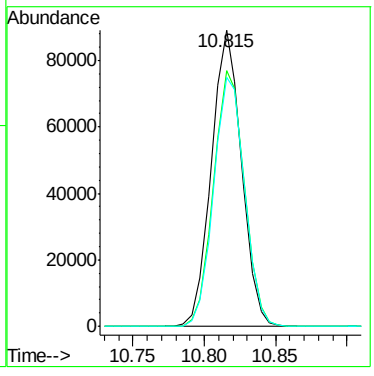




#76
4-Bromofluorobenzene
Concen: 50.04 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34232.D
Acq: 1 Jun 2016 4:36 pm

Tgt Ion: 95 Resp: 130491

Ion	Ratio	Lower	Upper
95	100		
174	88.3	70.3	110.3
176	86.4	67.4	107.4



SGS ACCUTEST D83120

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1842\
Data File : 7V34289.D
Acq On : 2 Jun 2016 5:12 pm
Operator : TamL
Sample : D83120-4
Misc : MS9182,V7V1842,,,,,10
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 03 12:04:06 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

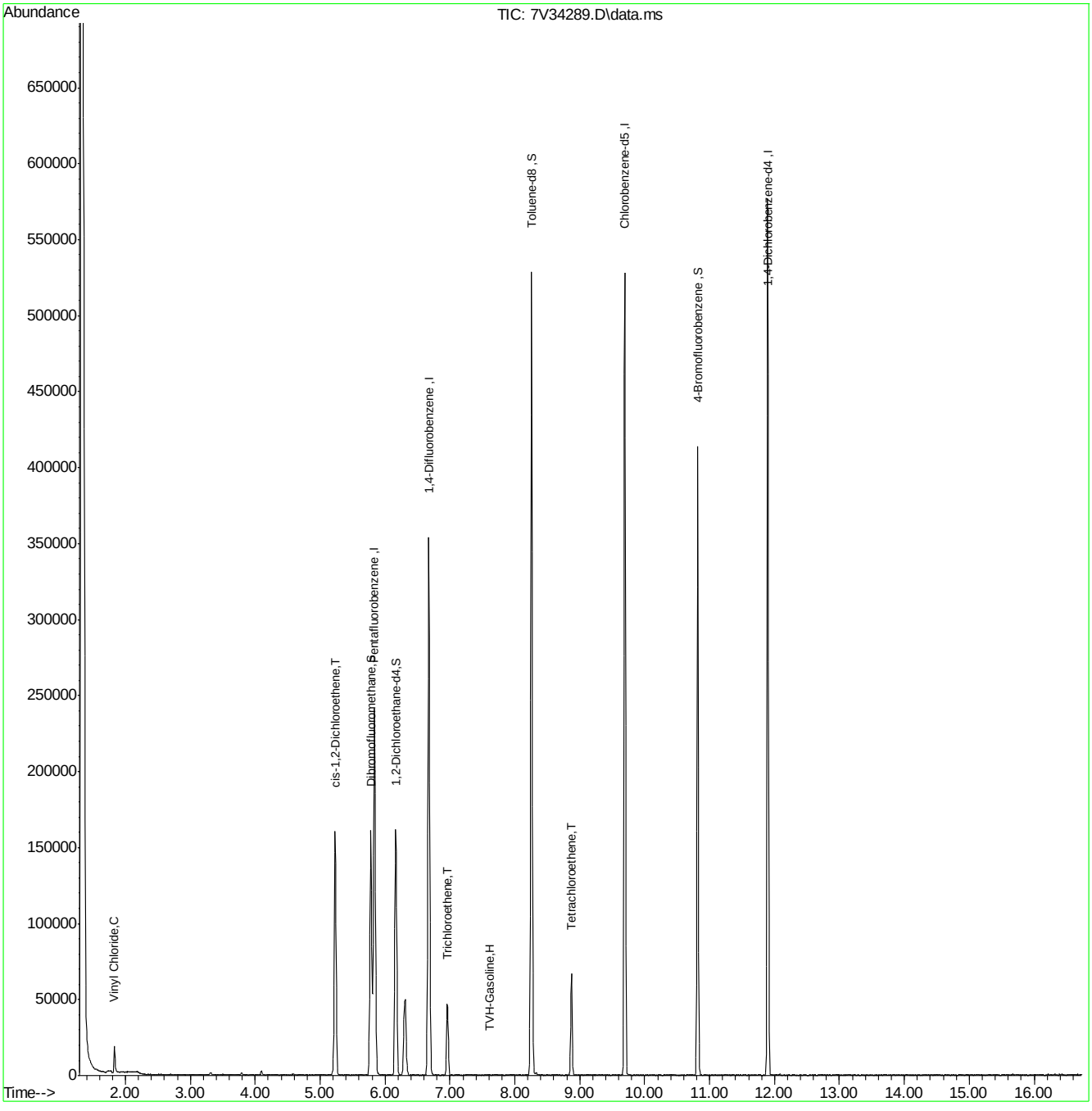
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	190089	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	314237	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	277438	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	142989	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	109656	53.15	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 106.30%			
41) 1,2-Dichloroethane-d4	6.164	102	22782	50.60	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 101.20%			
56) Toluene-d8	8.255	98	334153	50.09	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 100.18%			
76) 4-Bromofluorobenzene	10.815	95	126983	51.00	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 102.00%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	687380m	72.27	ug/L	
5) Vinyl Chloride	1.829	62	15189	7.57	ug/L	97
29) cis-1,2-Dichloroethene	5.231	96	67932	30.67	ug/L	90
47) Trichloroethene	6.956	95	15241	6.45	ug/L	97
60) Tetrachloroethene	8.871	164	14913	8.13	ug/L	98

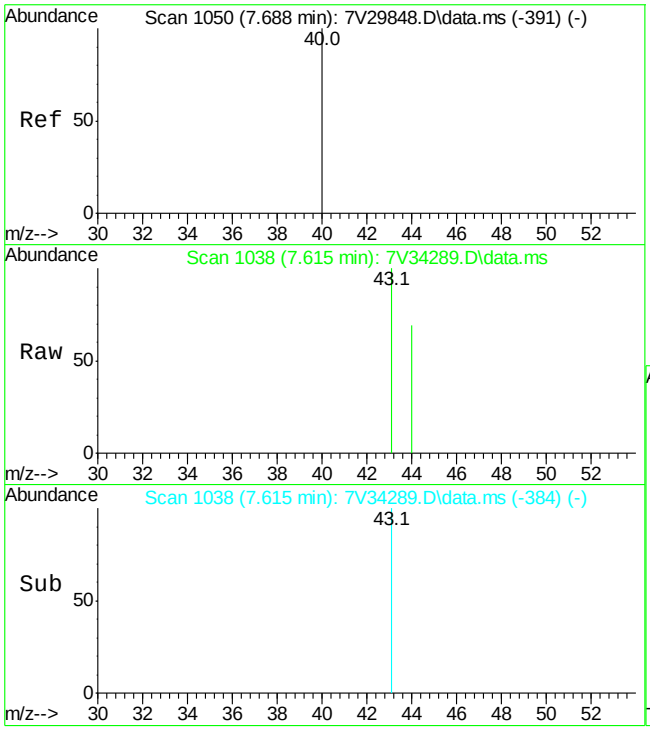
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1842\
Data File : 7V34289.D
Acq On : 2 Jun 2016 5:12 pm
Operator : TamL
Sample : D83120-4
Misc : MS9182,V7V1842,,,,,10
ALS Vial : 24 Sample Multiplier: 1

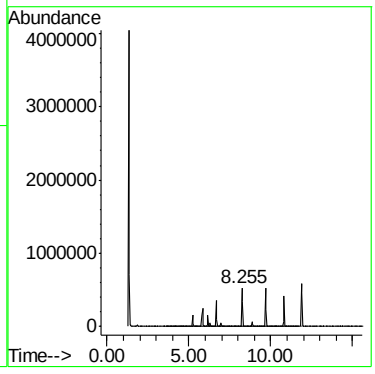
Quant Time: Jun 03 12:04:06 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

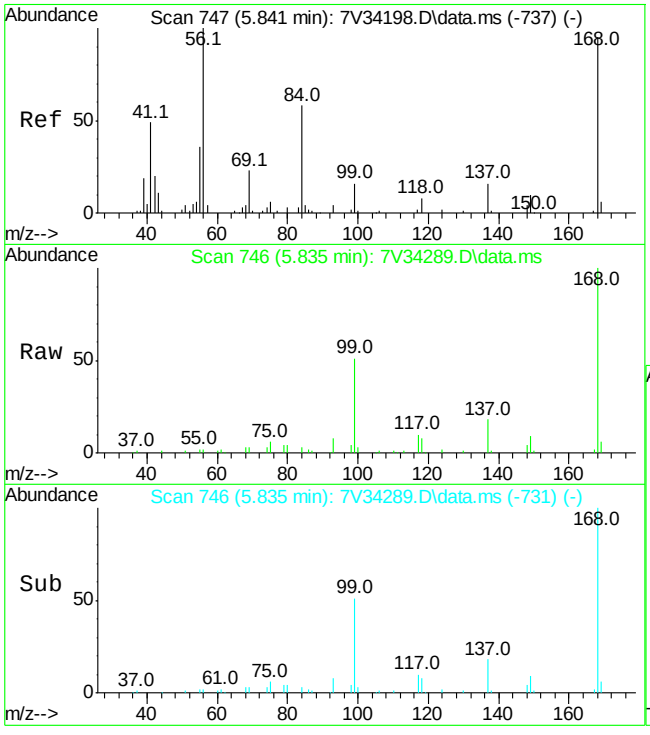




#1
TVH-Gasoline
Concen: 72.27 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion:TIC Resp: 687380

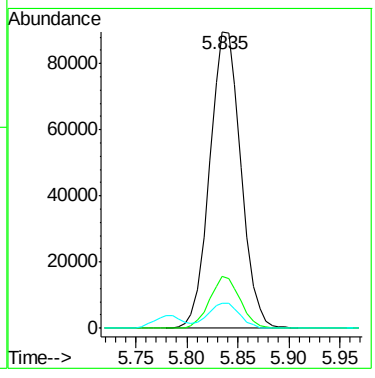


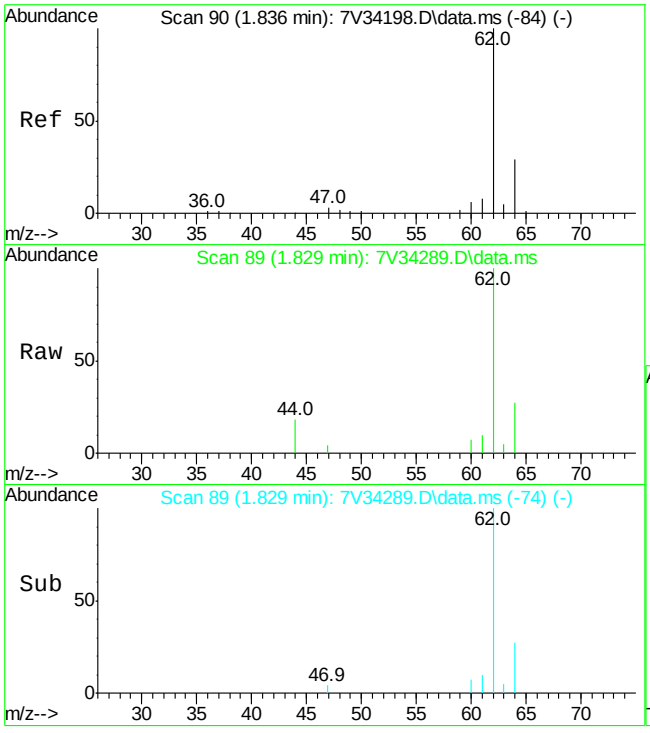


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion:168 Resp: 190089

Ion	Ratio	Lower	Upper
168	100		
137	16.9	0.0	36.8
93	8.4	0.0	28.3

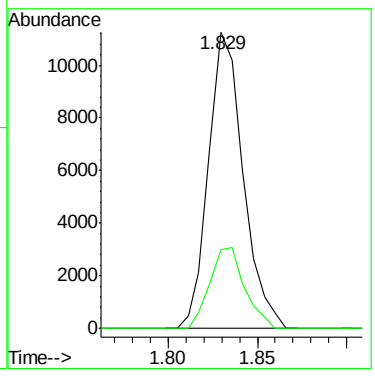


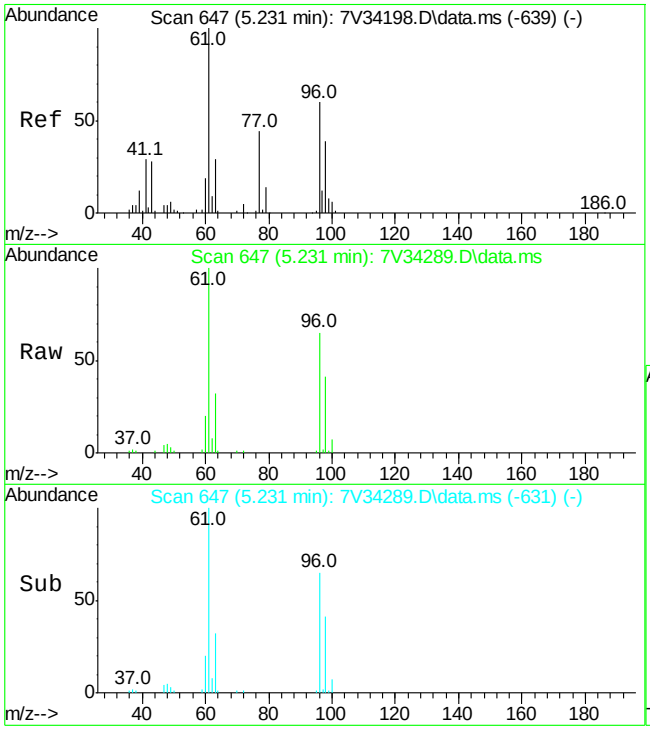


#5
Vinyl Chloride
Concen: 7.57 ug/L
RT: 1.829 min Scan# 89
Delta R.T. -0.007 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion: 62 Resp: 15189

Ion	Ratio	Lower	Upper
62	100		
64	26.7	8.5	48.5

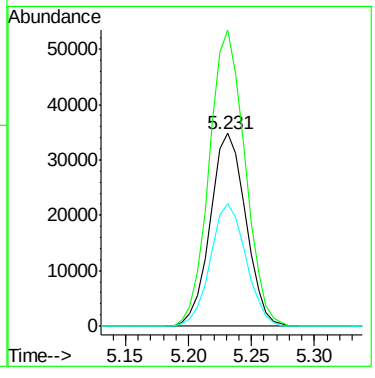


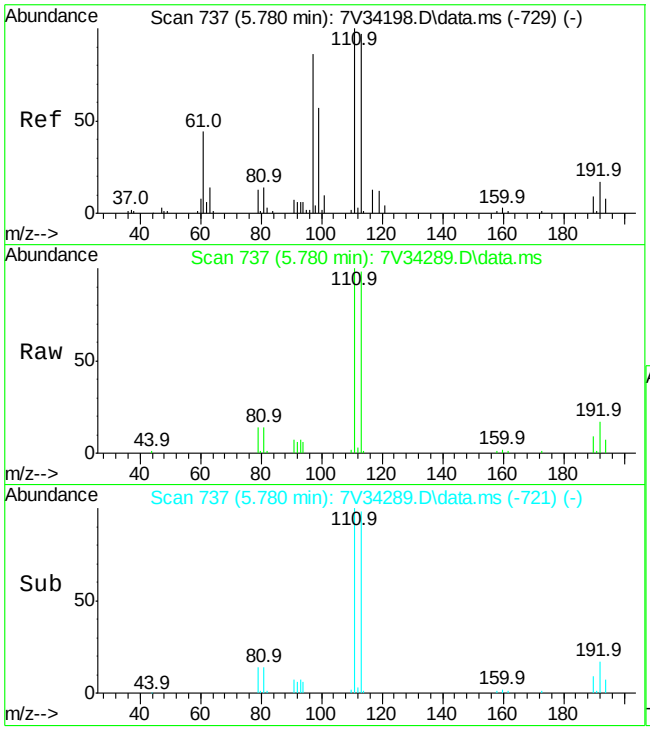


#29
cis-1,2-Dichloroethene
Concen: 30.67 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion: 96 Resp: 67932

Ion	Ratio	Lower	Upper
96	100		
61	154.4	151.8	191.8
98	63.2	44.4	84.4

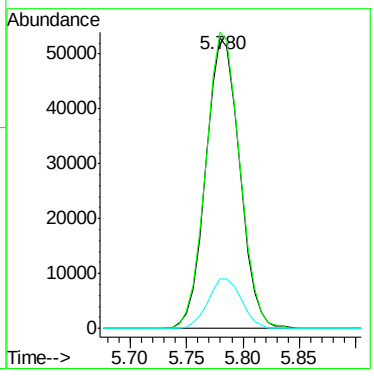


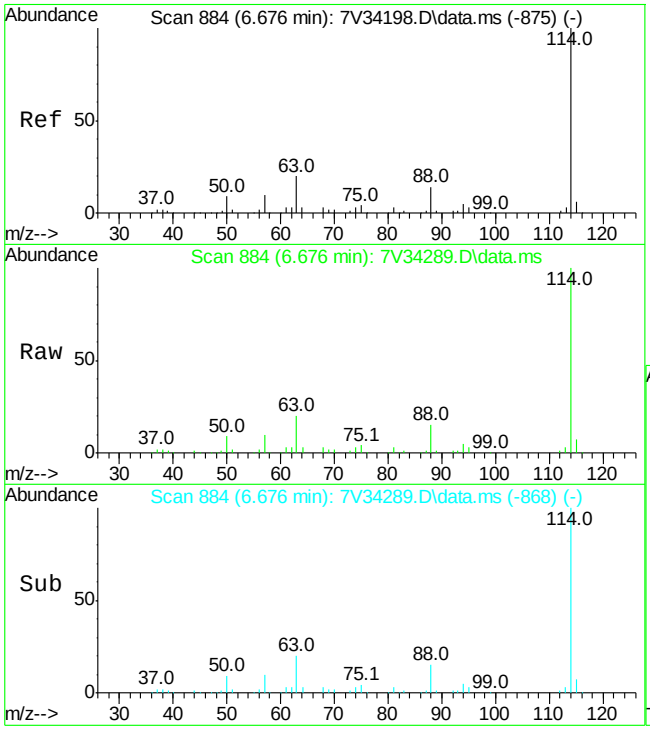


#35
Dibromofluoromethane
Concen: 53.15 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion:113 Resp: 109656

Ion	Ratio	Lower	Upper
113	100		
111	102.6	82.9	122.9
192	17.0	0.0	36.9

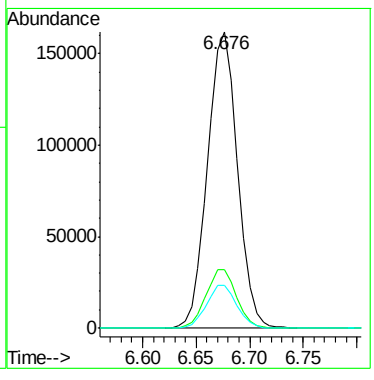


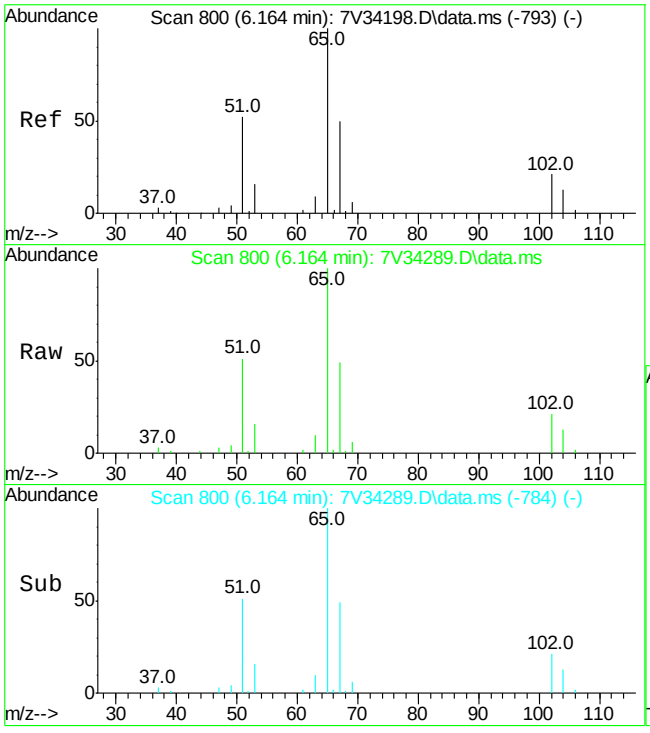


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion:114 Resp: 314237

Ion	Ratio	Lower	Upper
114	100		
63	20.0	0.0	39.6
88	14.4	0.0	34.3

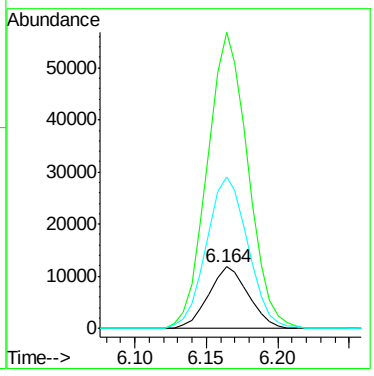


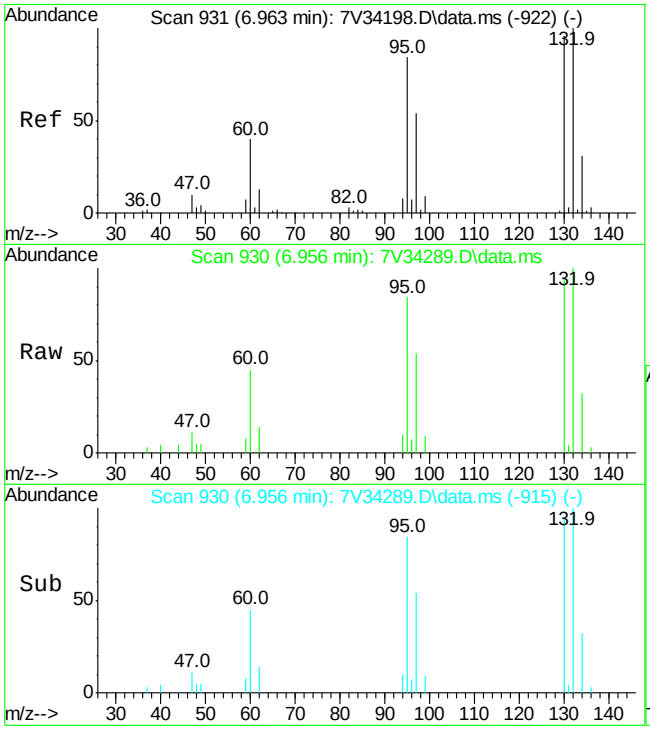


#41
1,2-Dichloroethane-d4
Concen: 50.60 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion:102 Resp: 22782

Ion	Ratio	Lower	Upper
102	100		
65	493.1	469.5	509.5
51	256.3	232.7	272.7

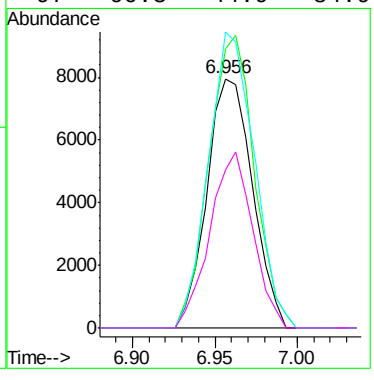


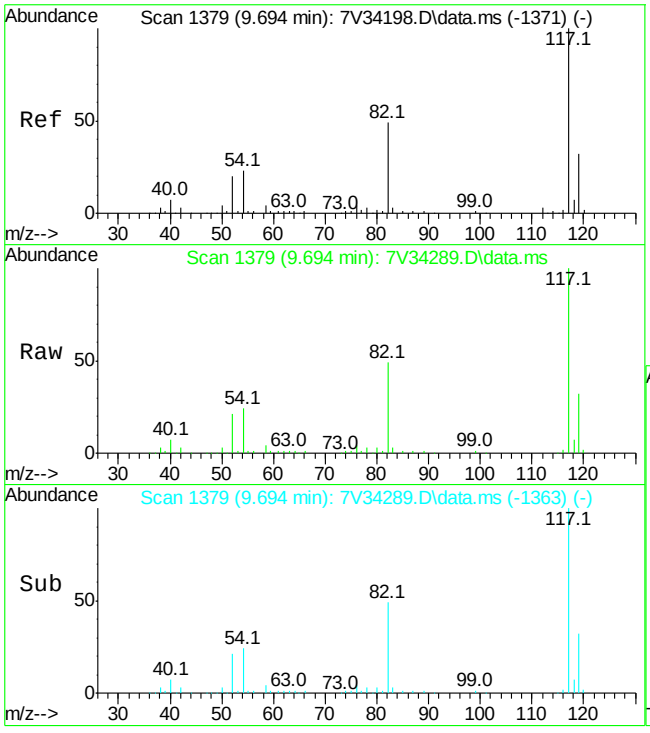


#47
Trichloroethene
Concen: 6.45 ug/L
RT: 6.956 min Scan# 930
Delta R.T. -0.007 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion: 95 Resp: 15241

Ion	Ratio	Lower	Upper
95	100		
130	117.3	93.2	133.2
132	119.0	95.9	135.9
97	66.3	44.9	84.9

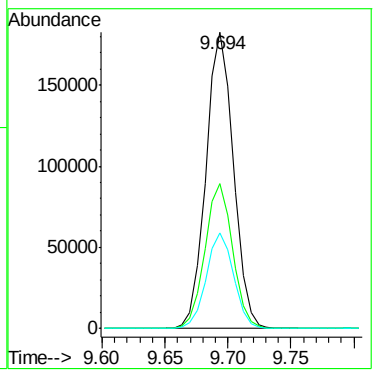


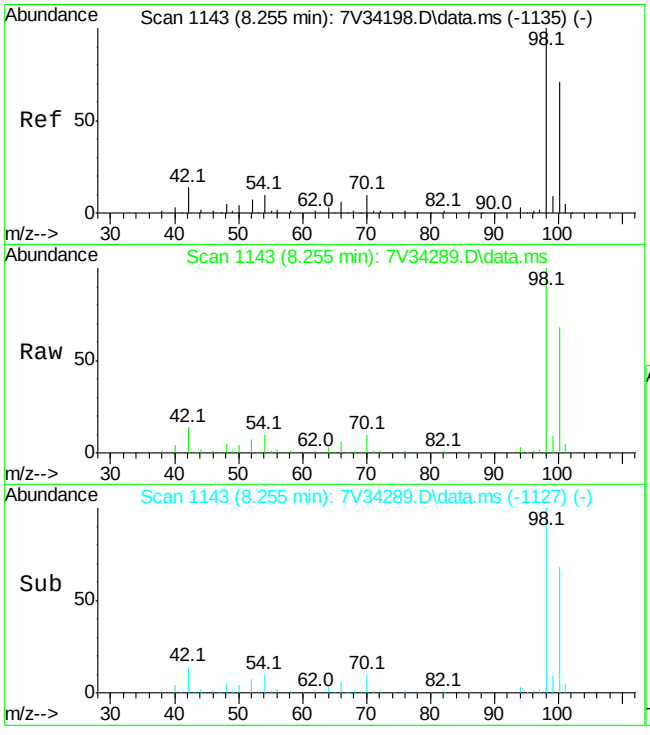


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion:117 Resp: 277438

Ion	Ratio	Lower	Upper
117	100		
82	49.2	28.7	68.7
119	32.0	12.2	52.2

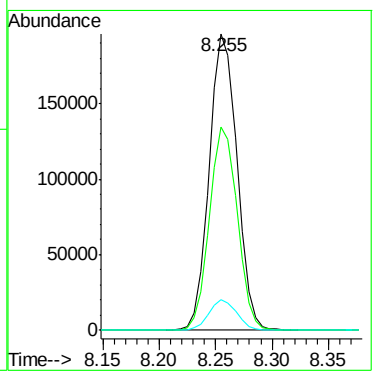


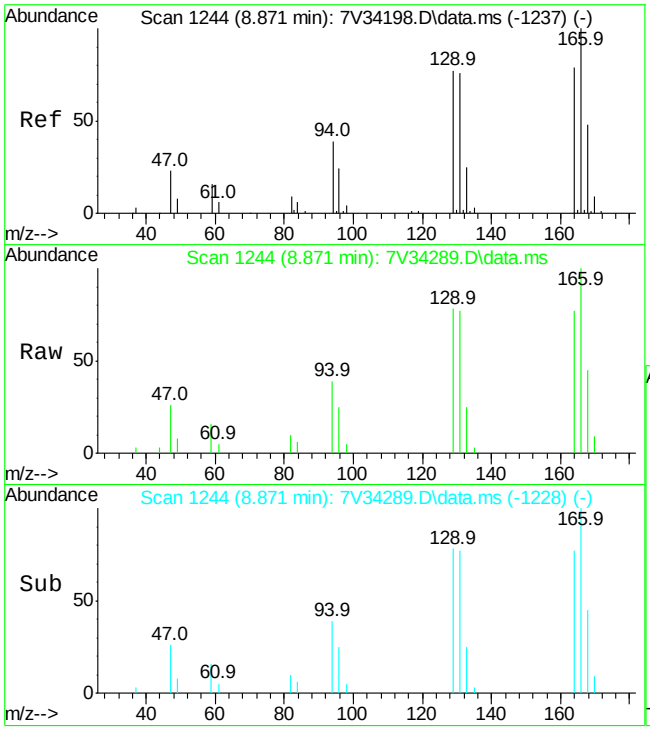


#56
Toluene-d8
Concen: 50.09 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. 0.000 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion: 98 Resp: 334153

Ion	Ratio	Lower	Upper
98	100		
100	68.7	49.8	89.8
70	10.2	0.0	30.1

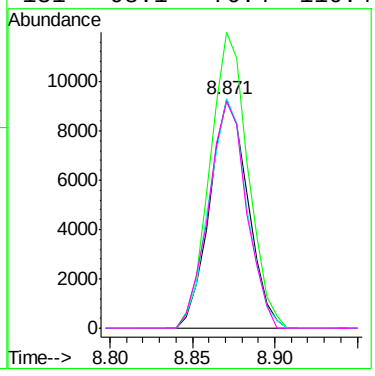


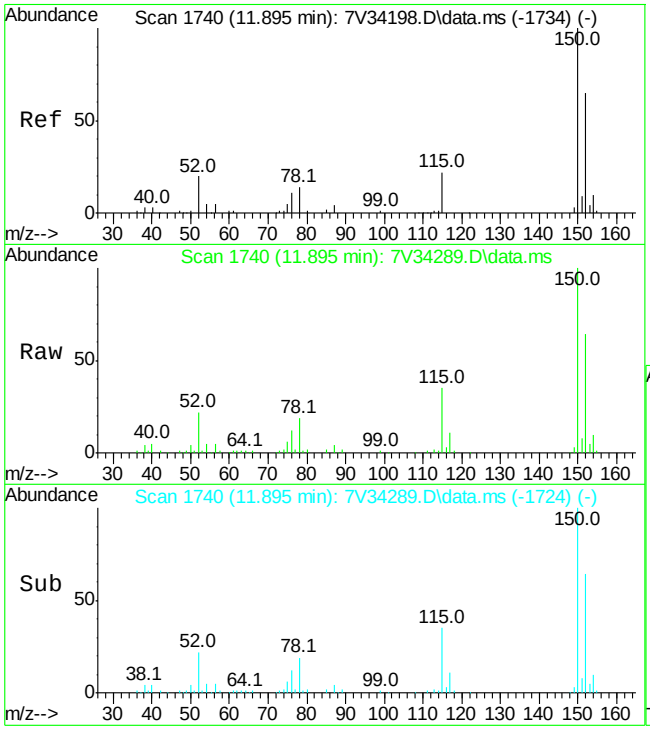


#60
Tetrachloroethene
Concen: 8.13 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion:164 Resp: 14913

Ion	Ratio	Lower	Upper
164	100		
166	128.8	107.5	147.5
129	98.9	76.8	116.8
131	98.1	76.4	116.4

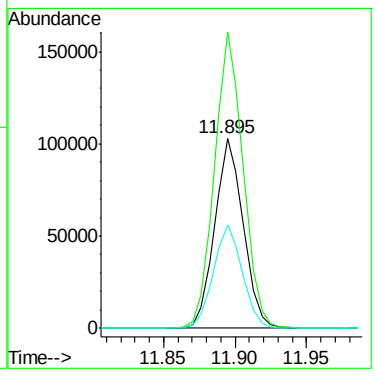


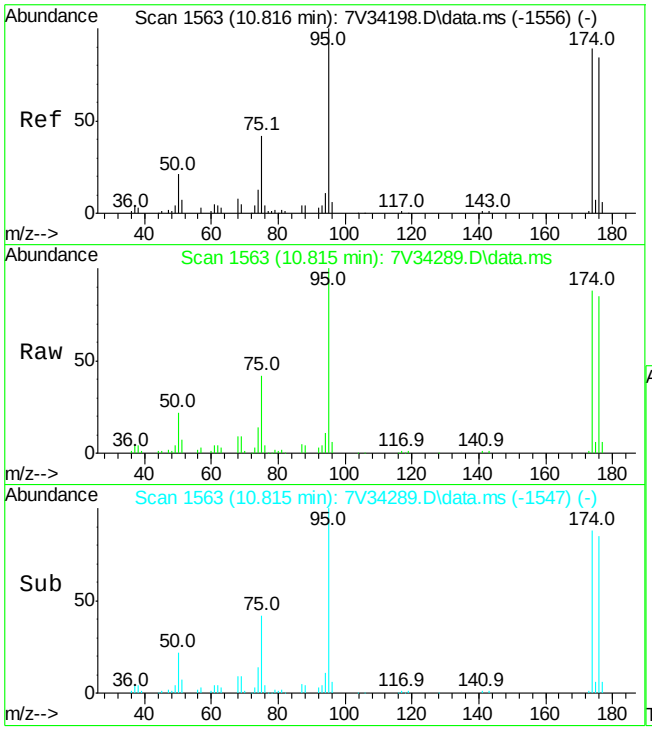


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion:152 Resp: 142989

Ion	Ratio	Lower	Upper
152	100		
150	156.6	154.9	194.9
115	54.9	34.6	74.6

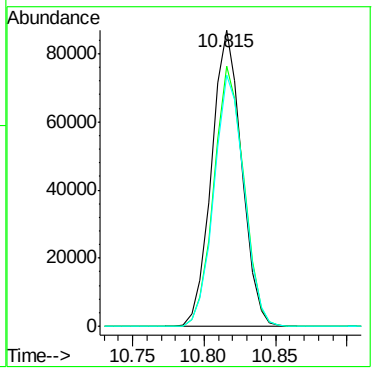




#76
4-Bromofluorobenzene
Concen: 51.00 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34289.D
Acq: 2 Jun 2016 5:12 pm

Tgt Ion: 95 Resp: 126983

Ion	Ratio	Lower	Upper
95	100		
174	87.6	70.3	110.3
176	85.2	67.4	107.4



7.1.5

7

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34233.D
Acq On : 1 Jun 2016 4:59 pm
Operator : amandaj
Sample : D83120-5
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 03 08:37:32 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

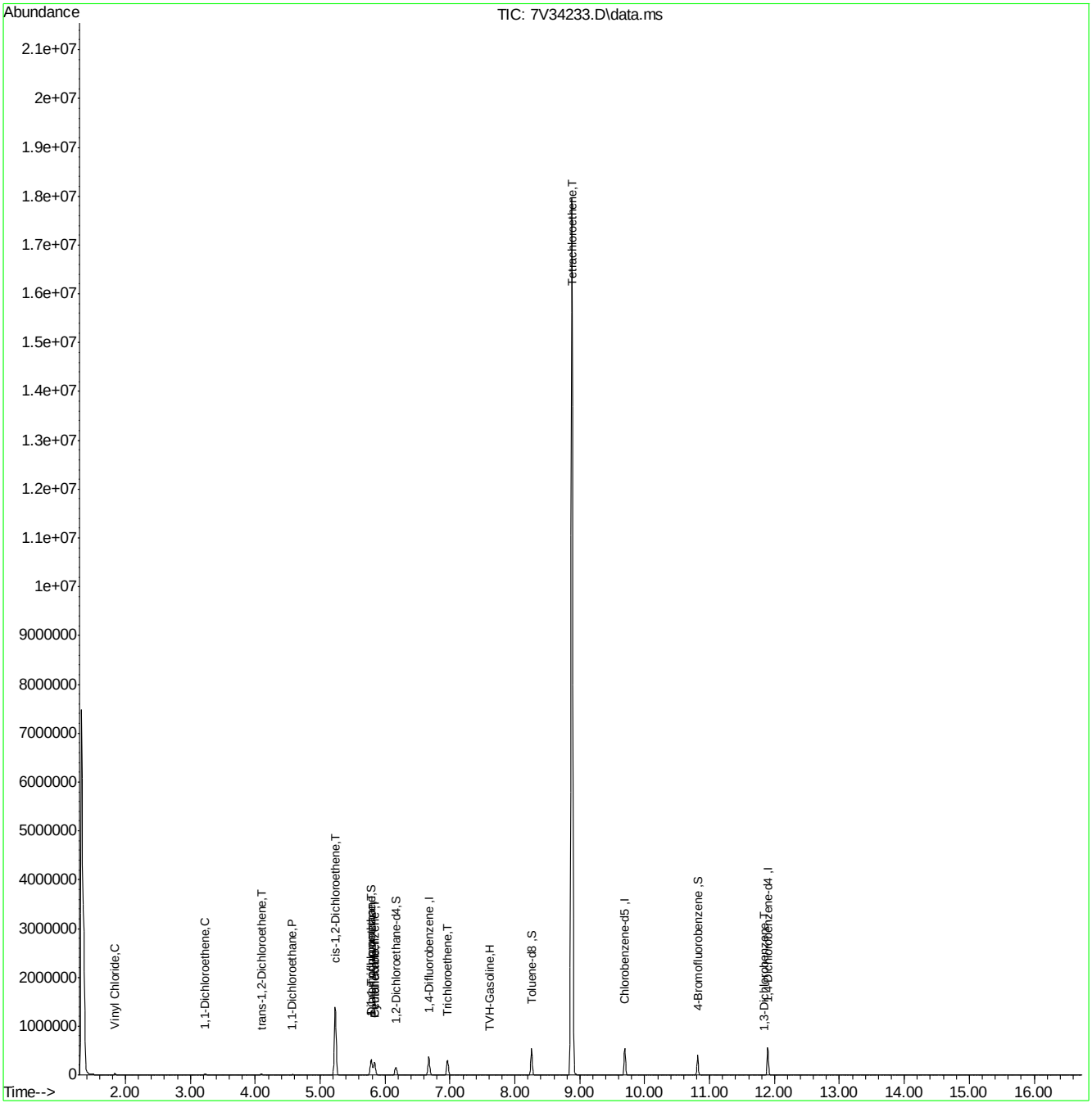
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.841	168	213159	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	335085	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	286395	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	151365	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.786	113	113538	49.08	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 98.16%			
41) 1,2-Dichloroethane-d4	6.164	102	23536	49.02	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 98.04%			
56) Toluene-d8	8.255	98	350079	50.83	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 101.66%			
76) 4-Bromofluorobenzene	10.815	95	127965	48.55	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 97.10%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	39010639m	4101.45	ug/L	
5) Vinyl Chloride	1.835	62	25405	11.29	ug/L	97
12) 1,1-Dichloroethene	3.231	96	10444	5.35	ug/L	96
14) Acetone	3.311	43	514	Below Cal	#	42
21) trans-1,2-Dichloroethene	4.097	96	7009	3.22	ug/L	97
24) 1,1-Dichloroethane	4.573	63	12735	2.88	ug/L	99
29) cis-1,2-Dichloroethene	5.231	96	607043	244.43	ug/L #	89
36) 1,1,1-Trichloroethane	5.792	97	127800	39.61	ug/L	97
37) Cyclohexane	5.841	56	3832	0.74	ug/L #	1
47) Trichloroethene	6.962	95	99337	39.39	ug/L	99
60) Tetrachloroethene	8.877	164	5001722	2642.00	ug/L	99
89) 1,3-Dichlorobenzene	11.839	146	1644	0.32	ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

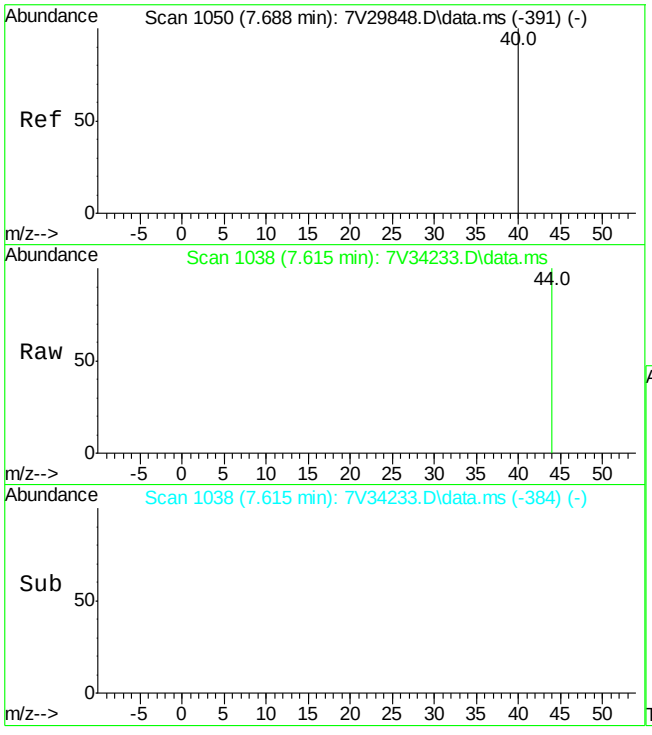
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34233.D
Acq On : 1 Jun 2016 4:59 pm
Operator : amandaj
Sample : D83120-5
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 03 08:37:32 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

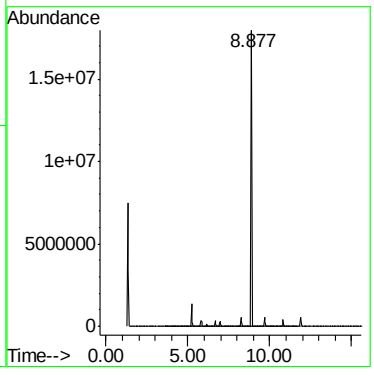


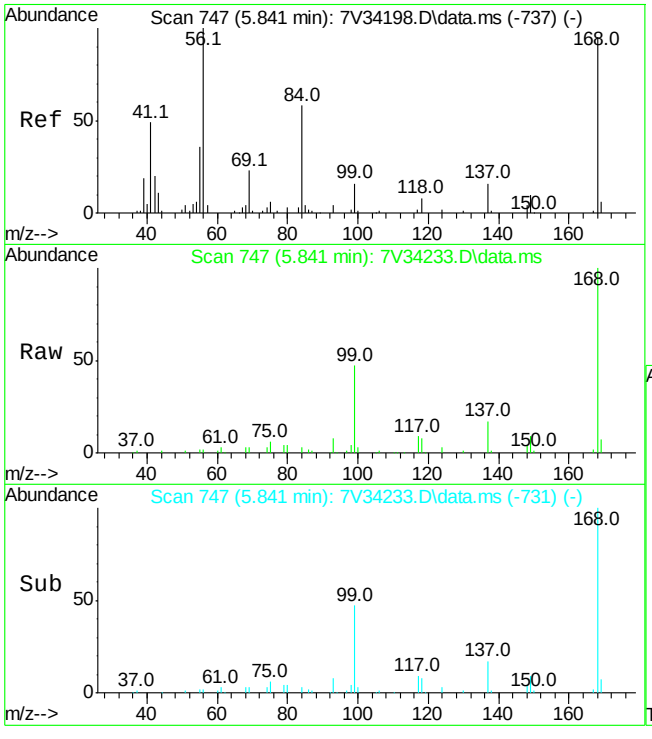
SGS ACCUTEST D83120



#1
TVH-Gasoline
Concen: 4101.45 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion:TIC Resp:39010639

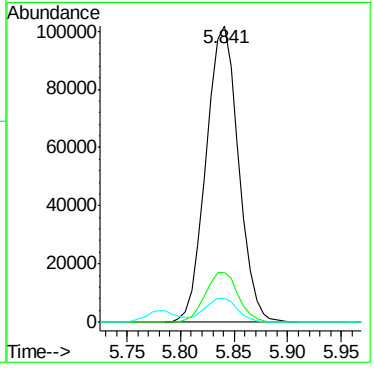


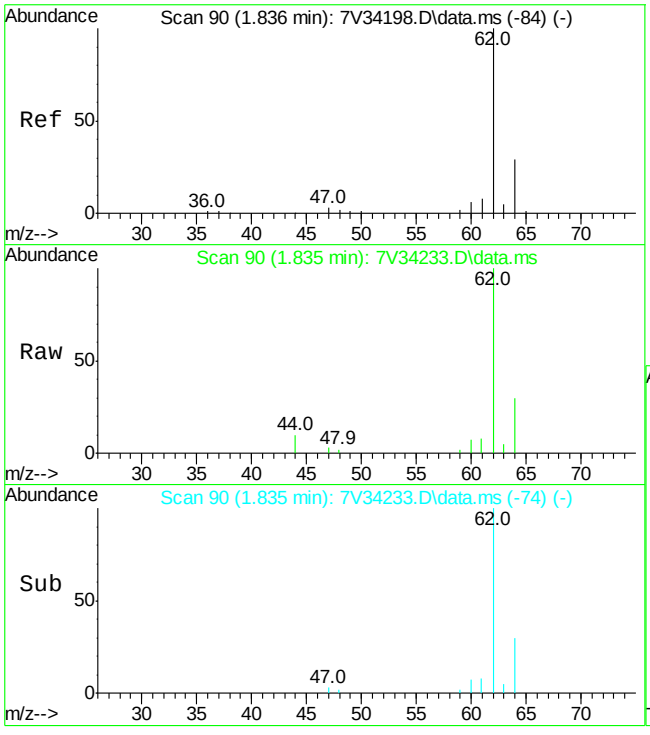


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.841 min Scan# 747
Delta R.T. -0.000 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion:168 Resp: 213159

Ion	Ratio	Lower	Upper
168	100		
137	17.0	0.0	36.8
93	8.2	0.0	28.3

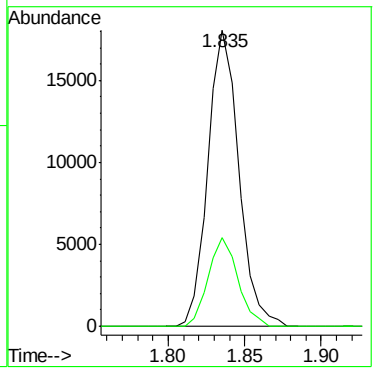


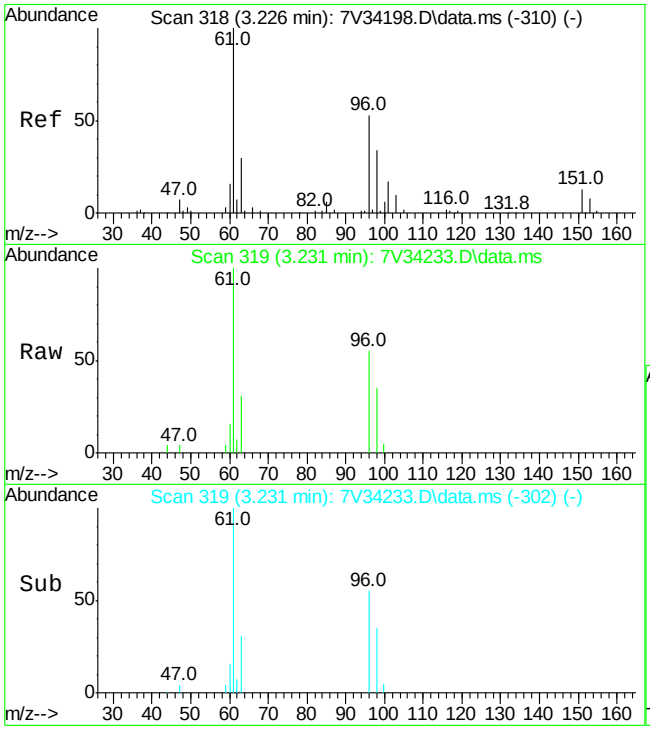


#5
Vinyl Chloride
Concen: 11.29 ug/L
RT: 1.835 min Scan# 90
Delta R.T. -0.001 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion: 62 Resp: 25405

Ion	Ratio	Lower	Upper
62	100		
64	30.1	8.5	48.5

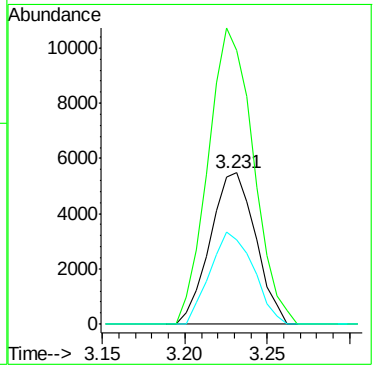




#12
1,1-Dichloroethene
Concen: 5.35 ug/L
RT: 3.231 min Scan# 319
Delta R.T. 0.005 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion: 96 Resp: 10444

Ion	Ratio	Lower	Upper
96	100		
61	194.9	167.7	207.7
63	58.3	36.4	76.4



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7.1.6 7

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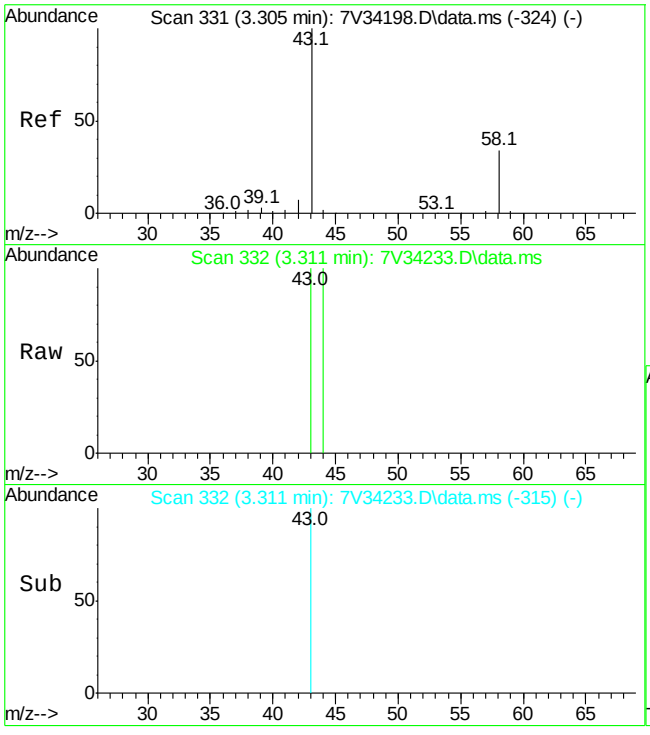
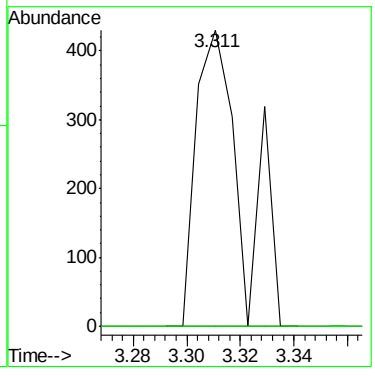
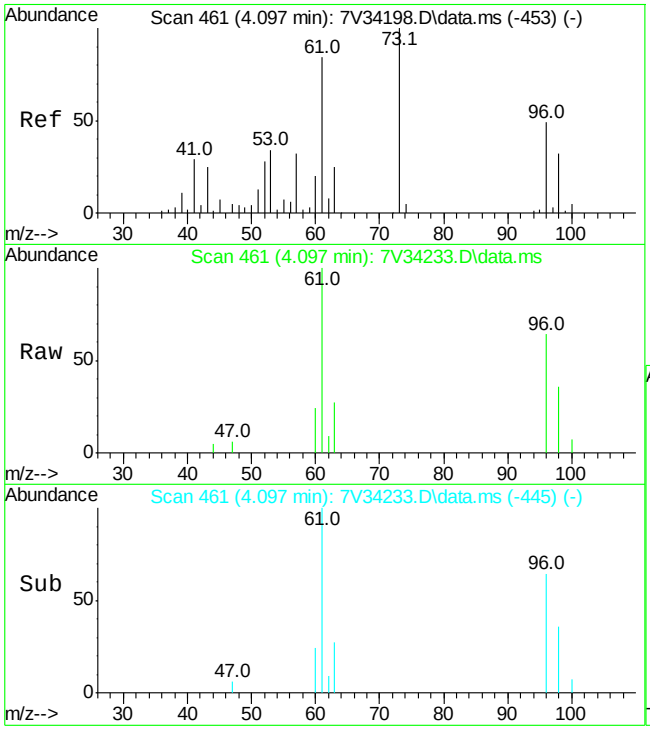


#14
Acetone
Concen: Below Cal
RT: 3.311 min Scan# 332
Delta R.T. 0.006 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion: 43 Resp: 514

Ion	Ratio	Lower	Upper
43	100		
58	0.0	12.6	52.6#

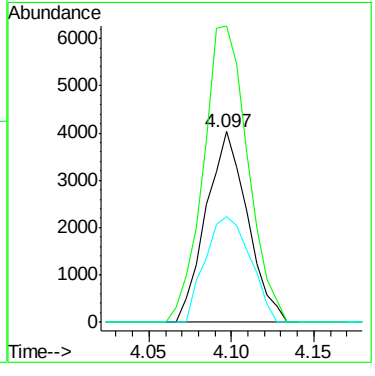


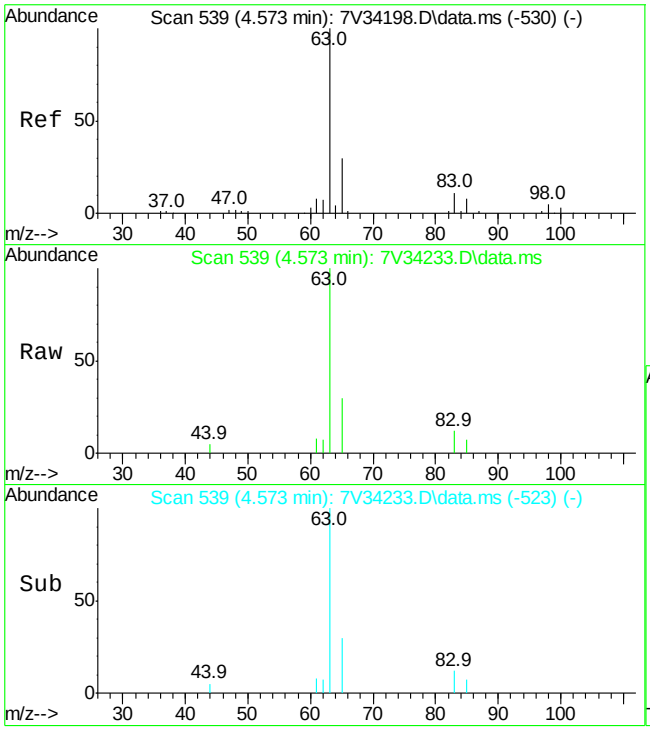


#21
trans-1,2-Dichloroethene
Concen: 3.22 ug/L
RT: 4.097 min Scan# 461
Delta R.T. 0.000 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion: 96 Resp: 7009

Ion	Ratio	Lower	Upper
96	100		
61	167.0	151.1	191.1
98	60.1	43.8	83.8

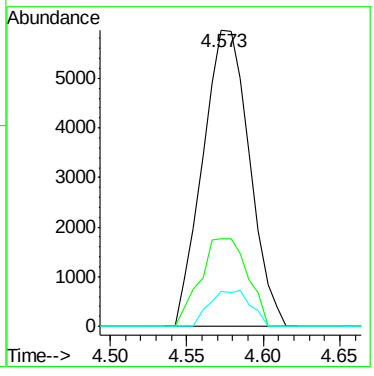


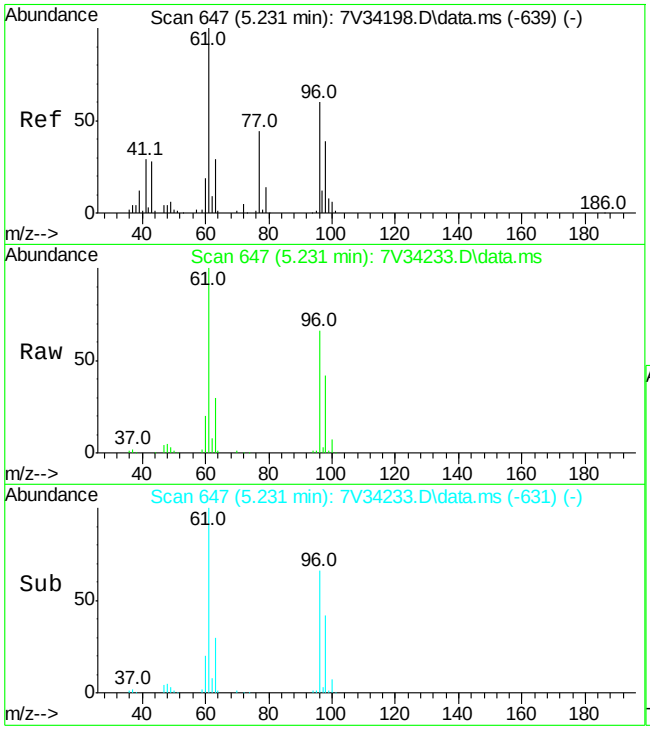


#24
1,1-Dichloroethane
Concen: 2.88 ug/L
RT: 4.573 min Scan# 539
Delta R.T. -0.000 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion: 63 Resp: 12735

Ion	Ratio	Lower	Upper
63	100		
65	29.9	10.5	50.5
83	10.6	0.0	31.4

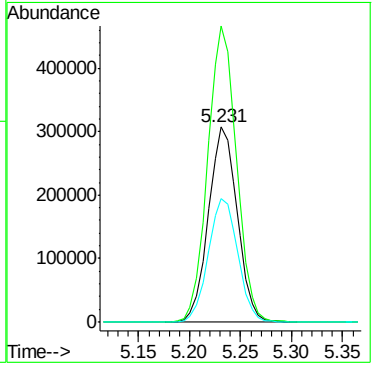




#29
cis-1,2-Dichloroethene
Concen: 244.43 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion: 96 Resp: 607043

Ion	Ratio	Lower	Upper
96	100		
61	151.0	151.8	191.8#
98	64.5	44.4	84.4



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7

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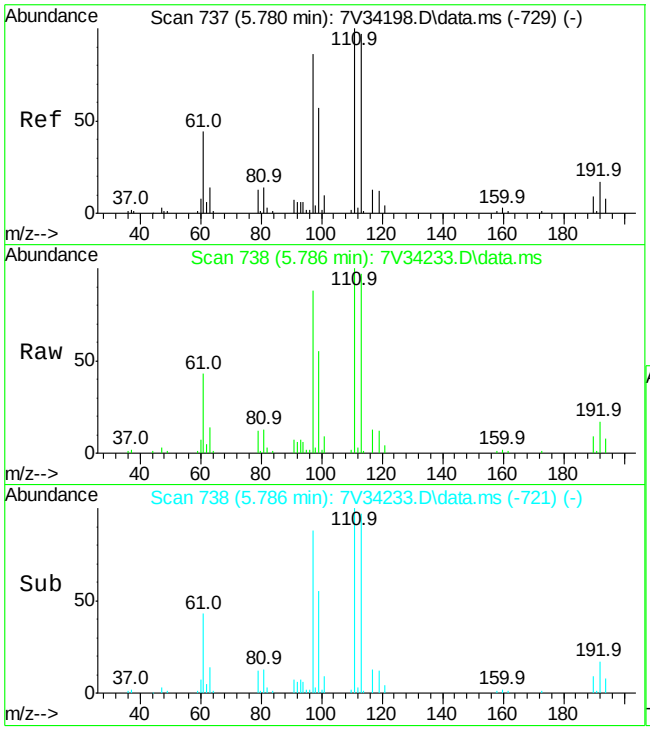
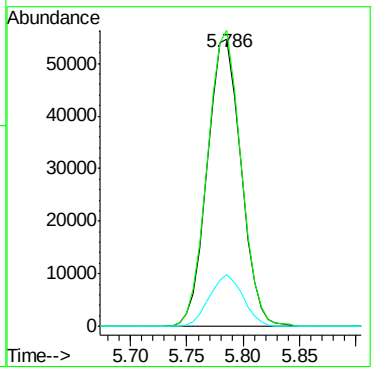
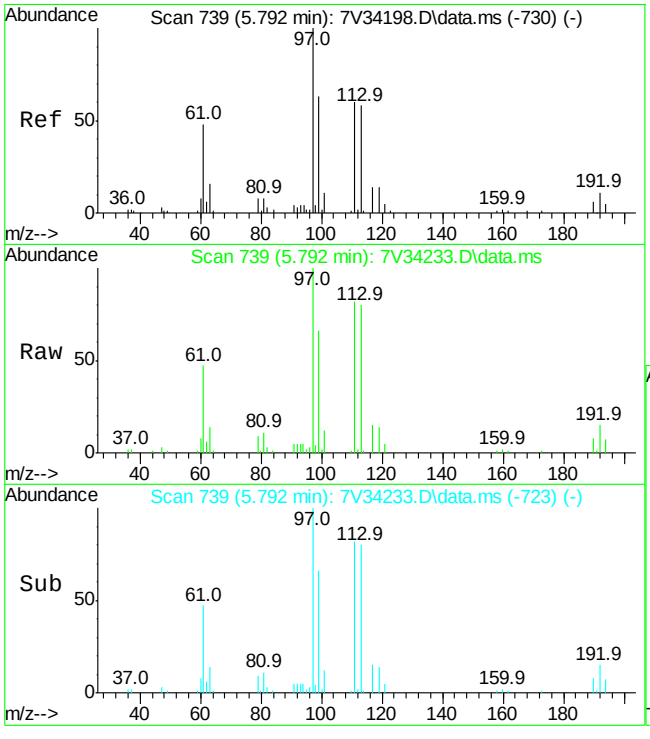


#35
Dibromofluoromethane
Concen: 49.08 ug/L
RT: 5.786 min Scan# 738
Delta R.T. 0.006 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion:113 Resp: 113538

Ion	Ratio	Lower	Upper
113	100		
111	102.4	82.9	122.9
192	17.8	0.0	36.9

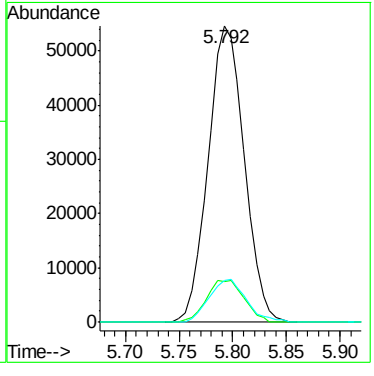


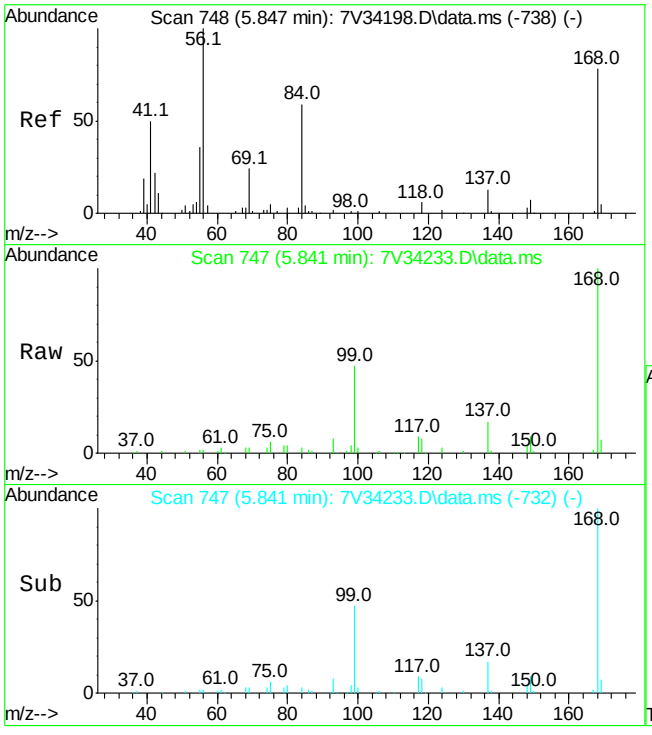


#36
1,1,1-Trichloroethane
Concen: 39.61 ug/L
RT: 5.792 min Scan# 739
Delta R.T. -0.000 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion: 97 Resp: 127800

Ion	Ratio	Lower	Upper
97	100		
63	13.9	0.0	35.6
119	14.1	0.0	33.5

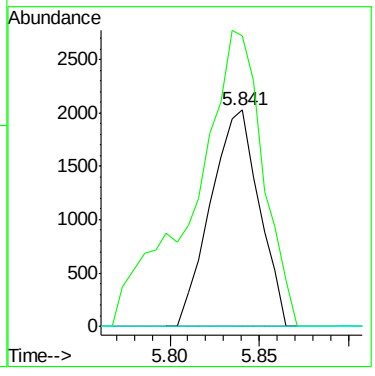


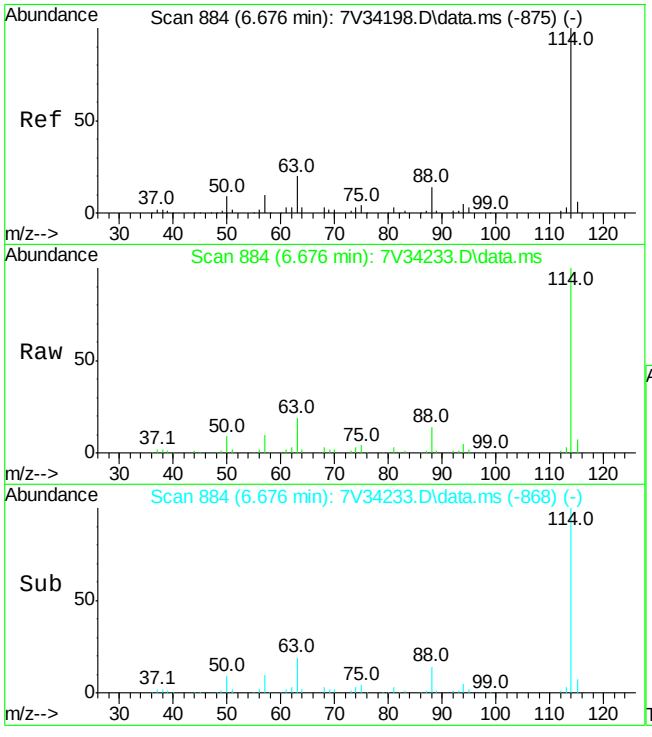


#37
Cyclohexane
Concen: 0.74 ug/L
RT: 5.841 min Scan# 747
Delta R.T. -0.006 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion: 56 Resp: 3832

Ion	Ratio	Lower	Upper
56	100		
84	195.3	40.6	80.6#
41	0.0	30.3	70.3#

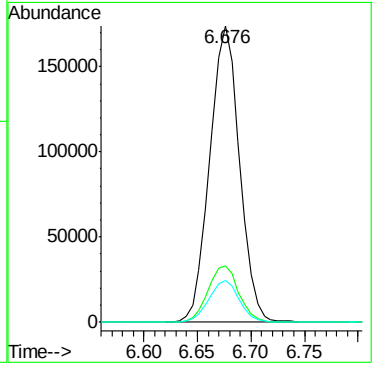


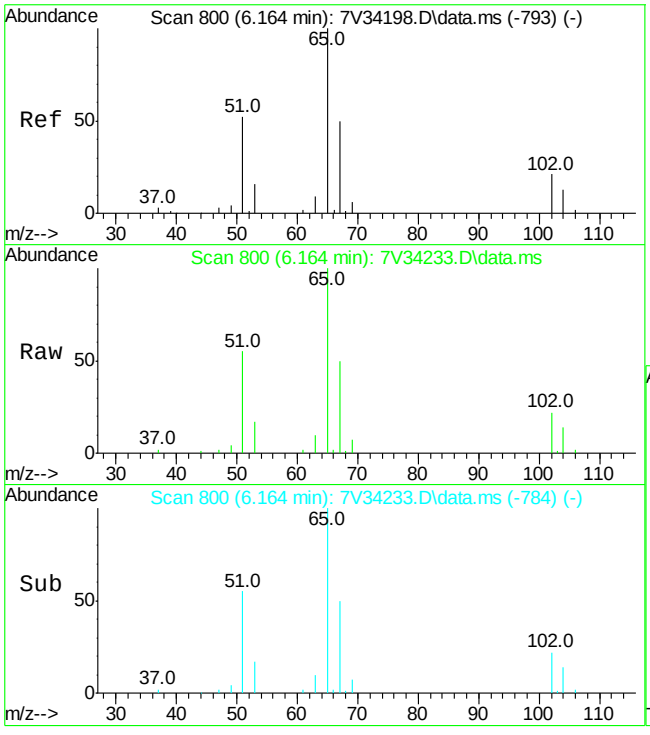


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion:114 Resp: 335085

Ion	Ratio	Lower	Upper
114	100		
63	19.5	0.0	39.6
88	14.1	0.0	34.3

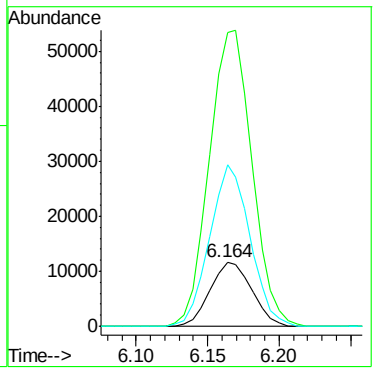


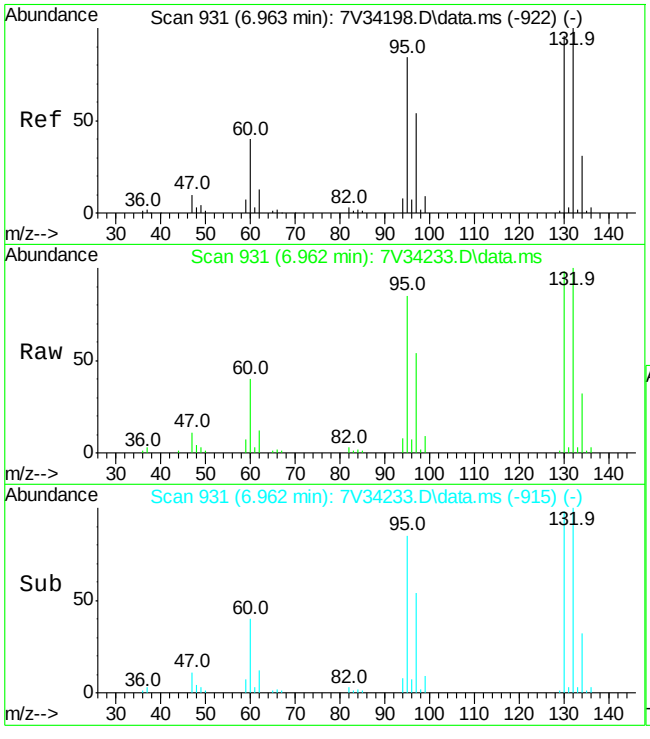


#41
1,2-Dichloroethane-d4
Concen: 49.02 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion:102 Resp: 23536

Ion	Ratio	Lower	Upper
102	100		
65	474.7	469.5	509.5
51	245.8	232.7	272.7

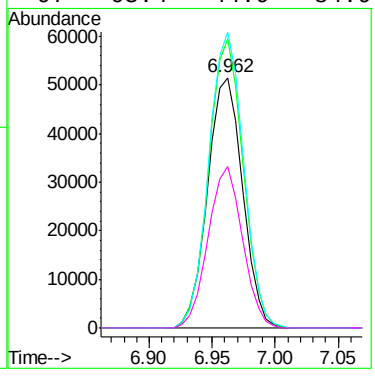


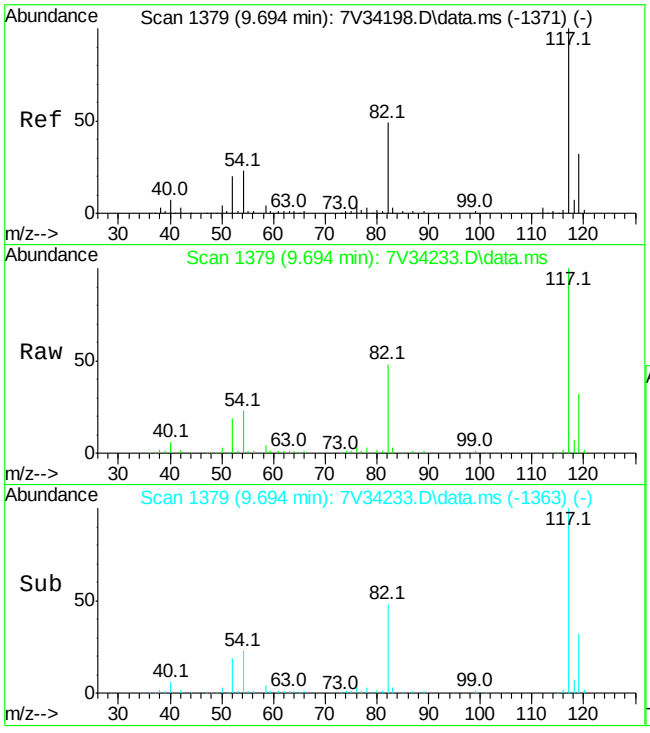


#47
Trichloroethene
Concen: 39.39 ug/L
RT: 6.962 min Scan# 931
Delta R.T. -0.001 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion: 95 Resp: 99337

Ion	Ratio	Lower	Upper
95	100		
130	113.6	93.2	133.2
132	117.2	95.9	135.9
97	63.4	44.9	84.9

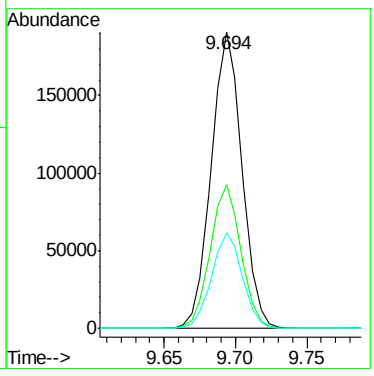


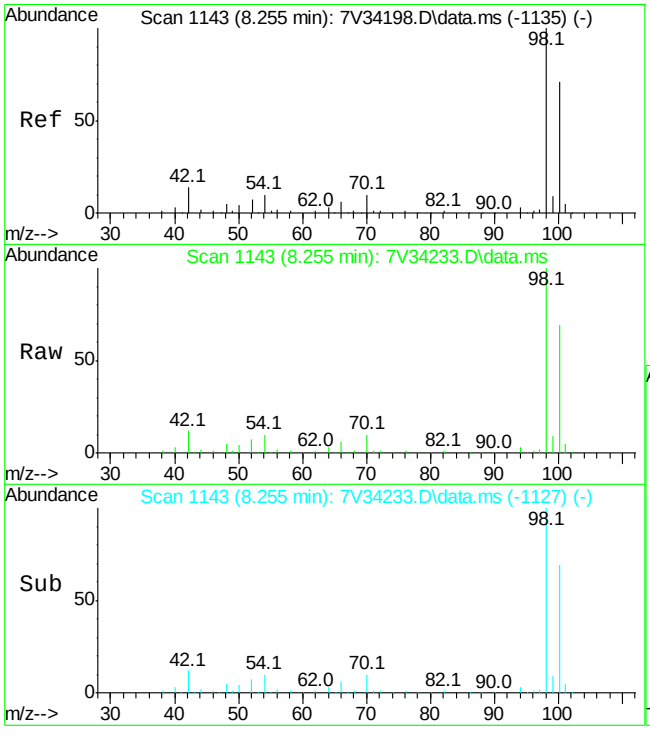


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion:117 Resp: 286395

Ion	Ratio	Lower	Upper
117	100		
82	48.3	28.7	68.7
119	32.3	12.2	52.2

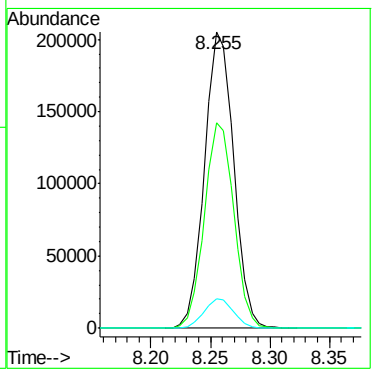


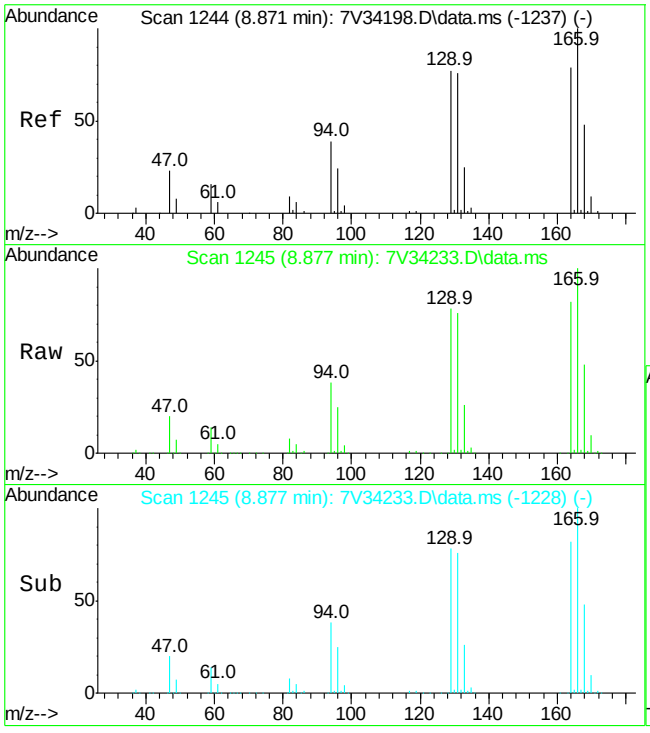


#56
Toluene-d8
Concen: 50.83 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion: 98 Resp: 350079

Ion	Ratio	Lower	Upper
98	100		
100	69.9	49.8	89.8
70	9.9	0.0	30.1

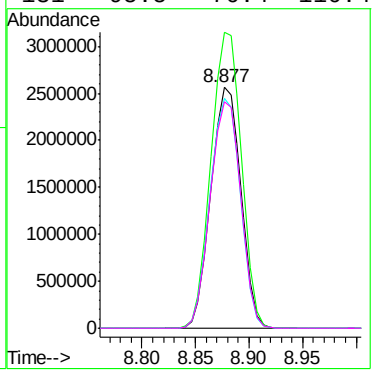


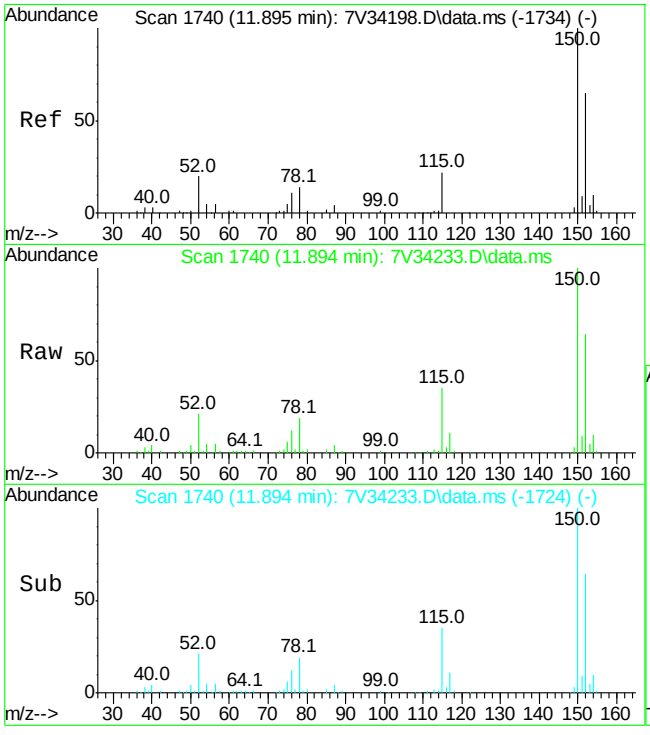


#60
Tetrachloroethene
Concen: 2642.00 ug/L
RT: 8.877 min Scan# 1245
Delta R.T. 0.006 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion:164 Resp: 5001722

Ion	Ratio	Lower	Upper
164	100		
166	124.6	107.5	147.5
129	96.4	76.8	116.8
131	95.5	76.4	116.4

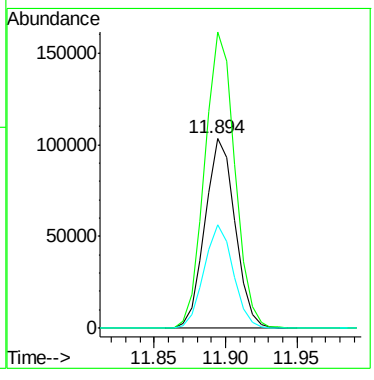




#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion:152 Resp: 151365

Ion	Ratio	Lower	Upper
152	100		
150	156.3	154.9	194.9
115	53.2	34.6	74.6



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7.1.6 7

130 of 262
SGS ACCUTEST D83120

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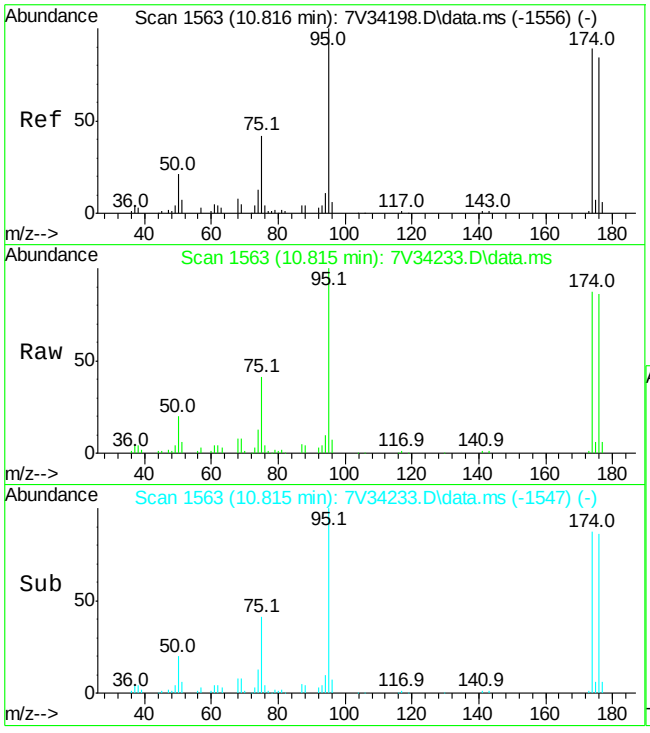
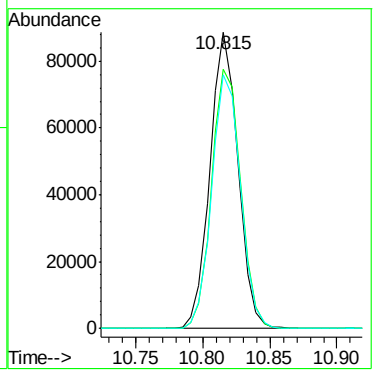
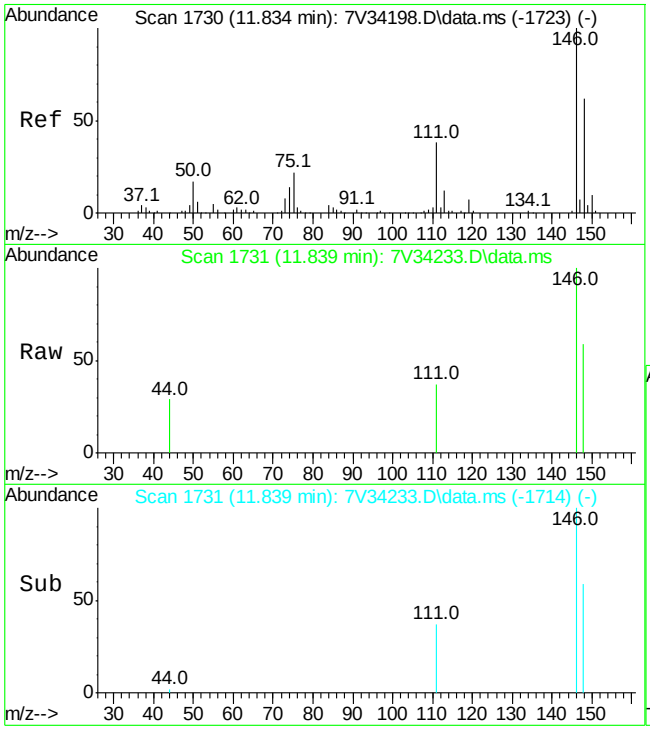


#76
4-Bromofluorobenzene
Concen: 48.55 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion: 95 Resp: 127965

Ion	Ratio	Lower	Upper
95	100		
174	90.9	70.3	110.3
176	88.2	67.4	107.4

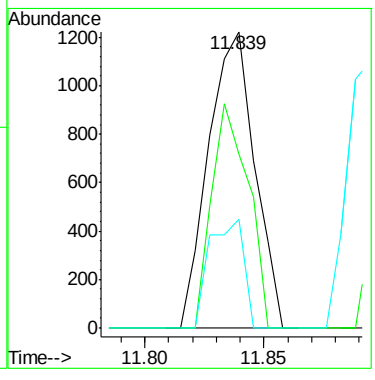




#89
1,3-Dichlorobenzene
Concen: 0.32 ug/L
RT: 11.839 min Scan# 1731
Delta R.T. 0.005 min
Lab File: 7V34233.D
Acq: 1 Jun 2016 4:59 pm

Tgt Ion:146 Resp: 1644

Ion	Ratio	Lower	Upper
146	100		
148	59.9	44.1	84.1
111	27.1	17.5	57.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1842\
Data File : 7V34290.D
Acq On : 2 Jun 2016 5:35 pm
Operator : TamL
Sample : D83120-5
Misc : MS9182,V7V1842,,,,,50
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 03 12:05:09 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

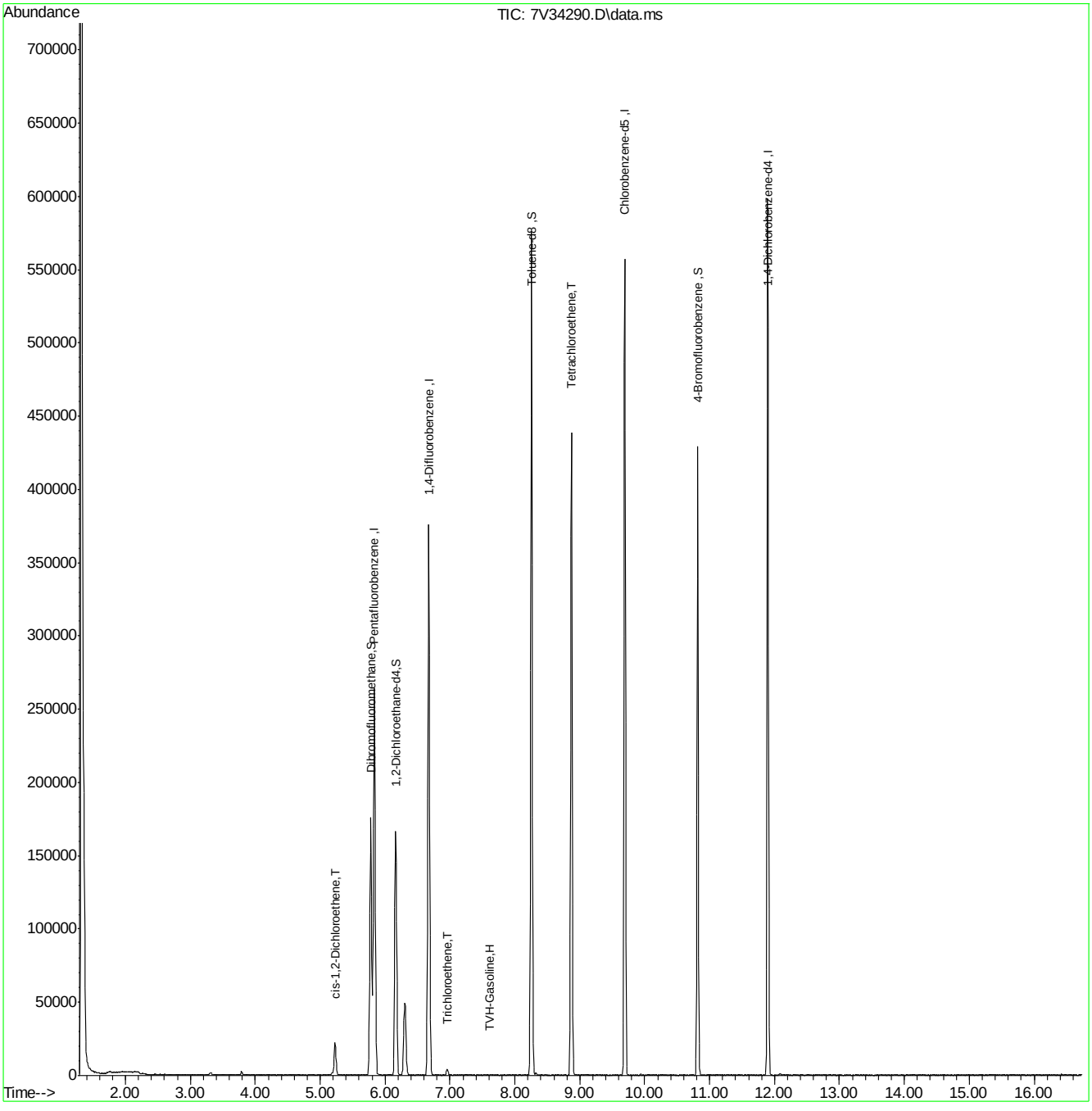
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	201798	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	333795	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	294634	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	151630	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	116223	53.07	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 106.14%			
41) 1,2-Dichloroethane-d4	6.164	102	24107	50.40	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 100.80%			
56) Toluene-d8	8.255	98	351651	49.63	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.26%			
76) 4-Bromofluorobenzene	10.815	95	131166	49.68	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 99.36%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	959190m	100.85	ug/L	
29) cis-1,2-Dichloroethene	5.231	96	10322	4.39	ug/L	89
47) Trichloroethene	6.956	95	1408	0.56	ug/L	97
60) Tetrachloroethene	8.871	164	97996	50.32	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

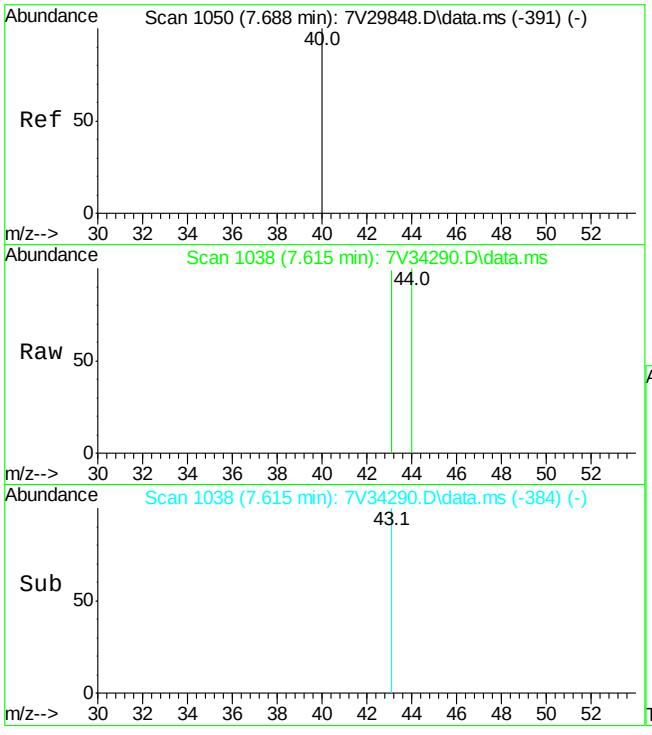
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1842\
Data File : 7V34290.D
Acq On : 2 Jun 2016 5:35 pm
Operator : TamL
Sample : D83120-5
Misc : MS9182,V7V1842,,,,,50
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 03 12:05:09 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

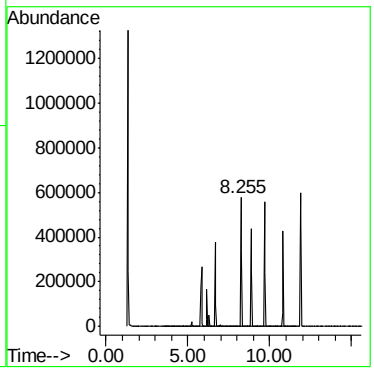


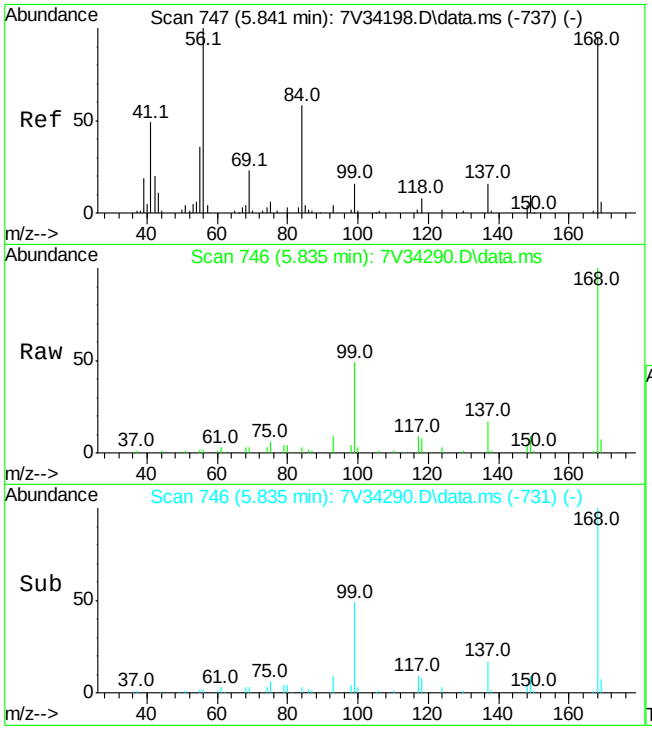
V7V1839F.M Fri Jun 03 14:18:12 2016 Page: 2



#1
TVH-Gasoline
Concen: 100.85 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion:TIC Resp: 959190

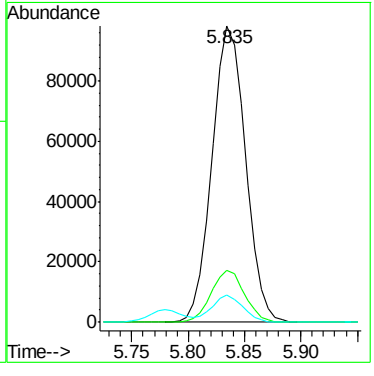


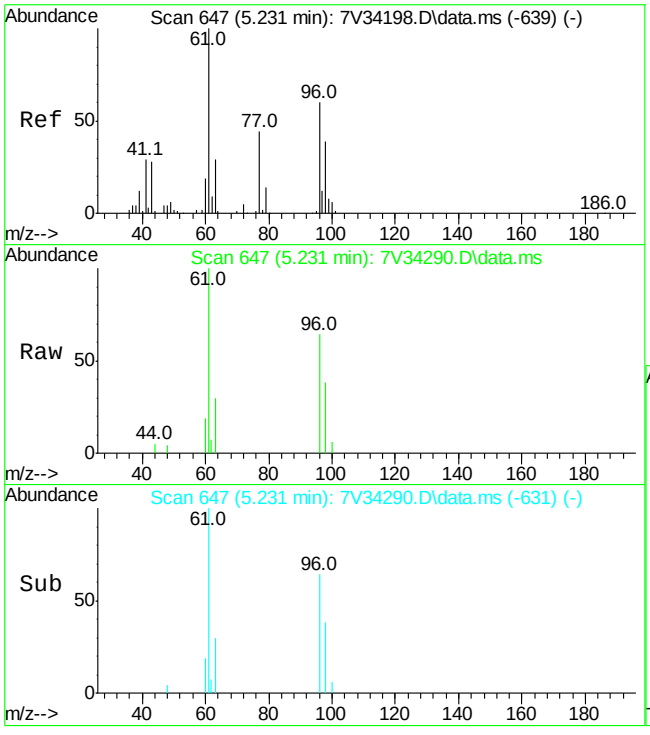


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion:168 Resp: 201798

Ion	Ratio	Lower	Upper
168	100		
137	17.2	0.0	36.8
93	8.4	0.0	28.3

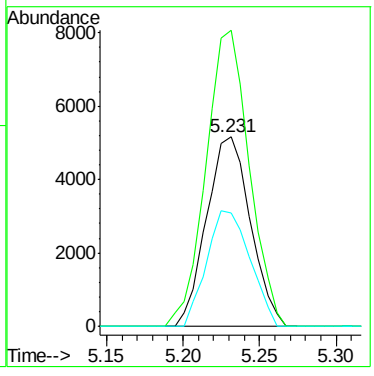


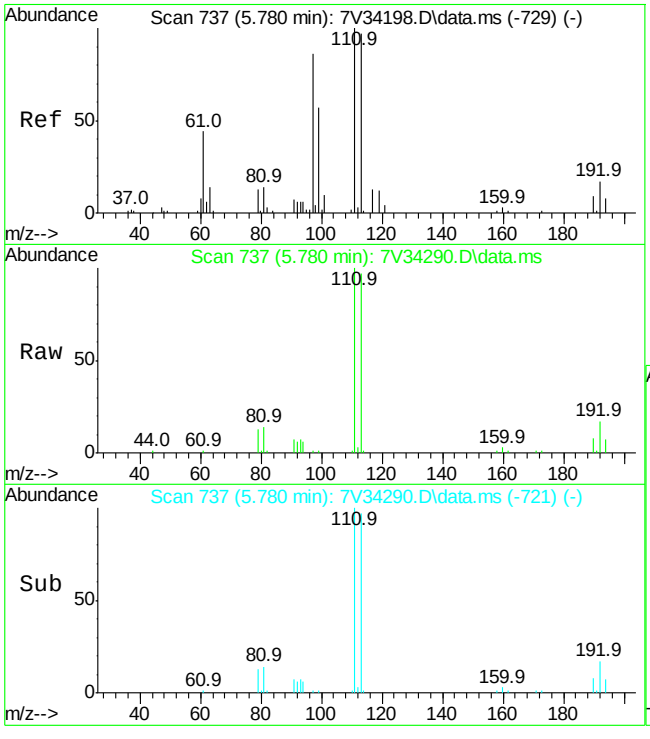


#29
cis-1,2-Dichloroethene
Concen: 4.39 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion: 96 Resp: 10322

Ion	Ratio	Lower	Upper
96	100		
61	154.1	151.8	191.8
98	60.1	44.4	84.4

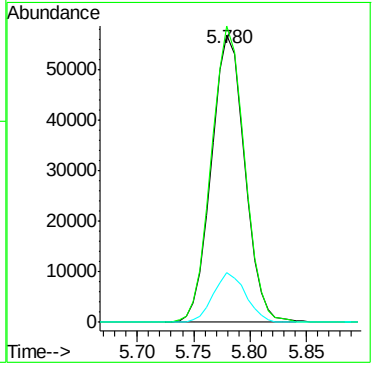


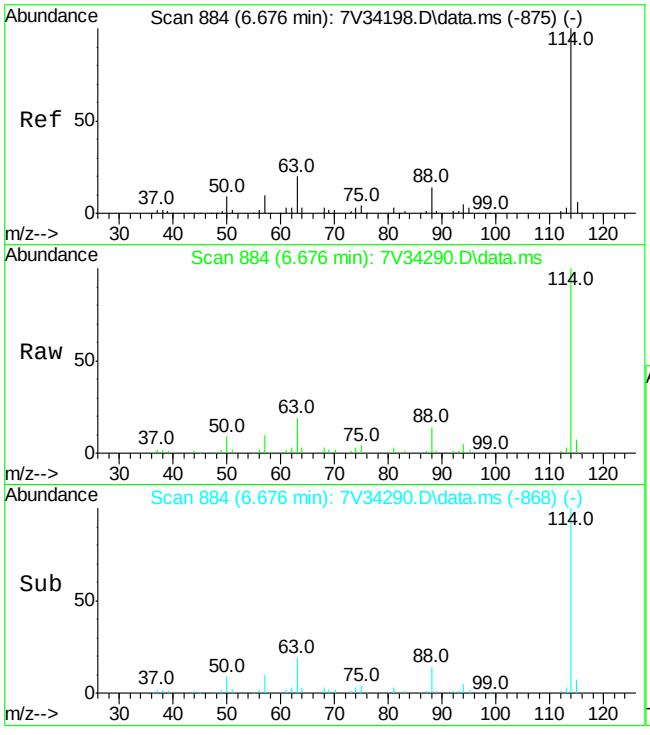


#35
Dibromofluoromethane
Concen: 53.07 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion:113 Resp: 116223

Ion	Ratio	Lower	Upper
113	100		
111	102.5	82.9	122.9
192	16.5	0.0	36.9

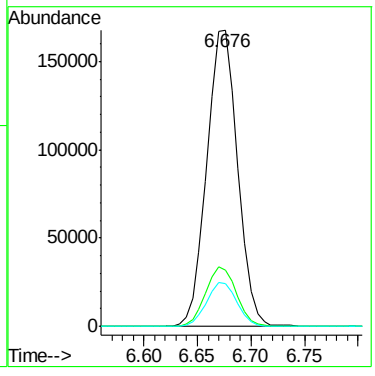


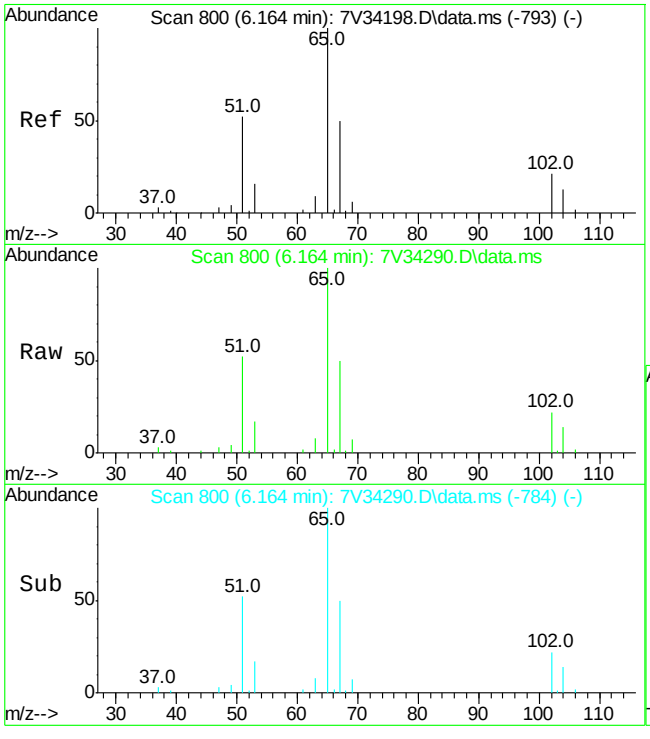


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion:114 Resp: 333795

Ion	Ratio	Lower	Upper
114	100		
63	20.0	0.0	39.6
88	14.5	0.0	34.3

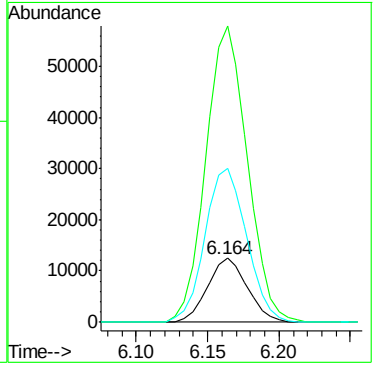


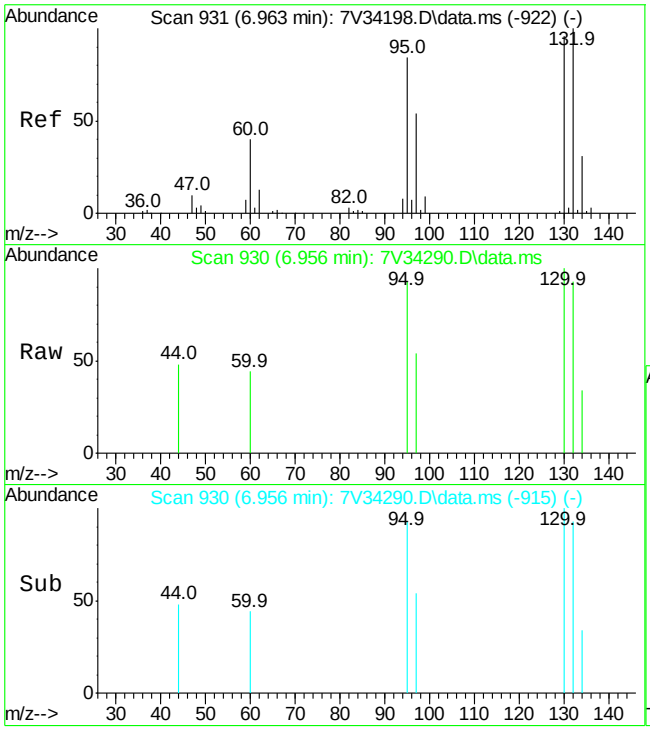


#41
1,2-Dichloroethane-d4
Concen: 50.40 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion:102 Resp: 24107

Ion	Ratio	Lower	Upper
102	100		
65	484.0	469.5	509.5
51	253.0	232.7	272.7

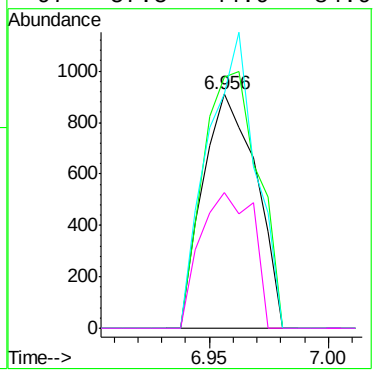


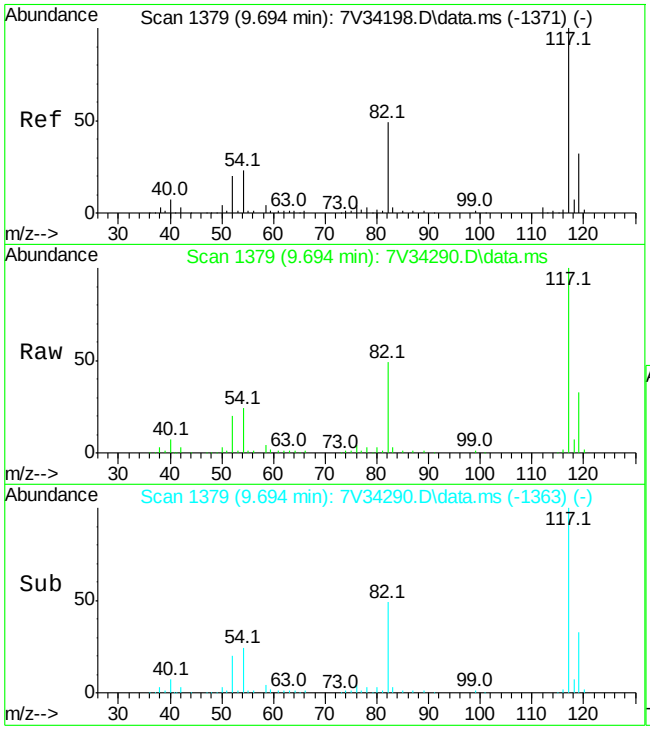


#47
Trichloroethene
Concen: 0.56 ug/L
RT: 6.956 min Scan# 930
Delta R.T. -0.007 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion: 95 Resp: 1408

Ion	Ratio	Lower	Upper
95	100		
130	112.9	93.2	133.2
132	113.6	95.9	135.9
97	57.5	44.9	84.9

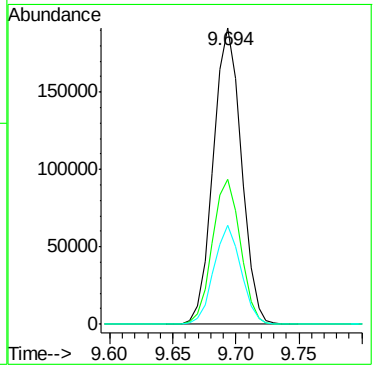


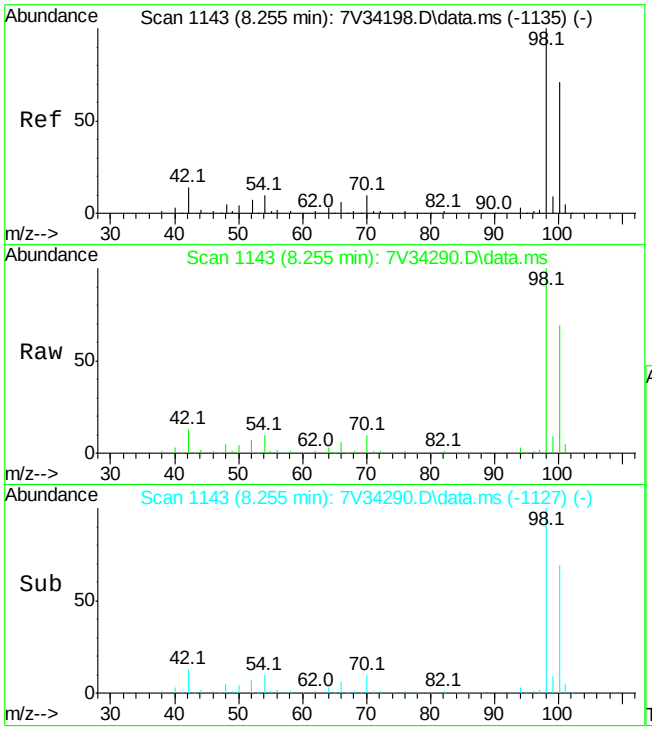


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion:117 Resp: 294634

Ion	Ratio	Lower	Upper
117	100		
82	48.8	28.7	68.7
119	32.2	12.2	52.2

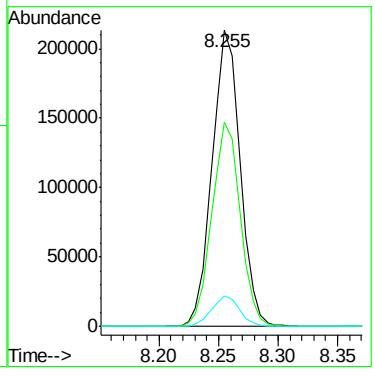


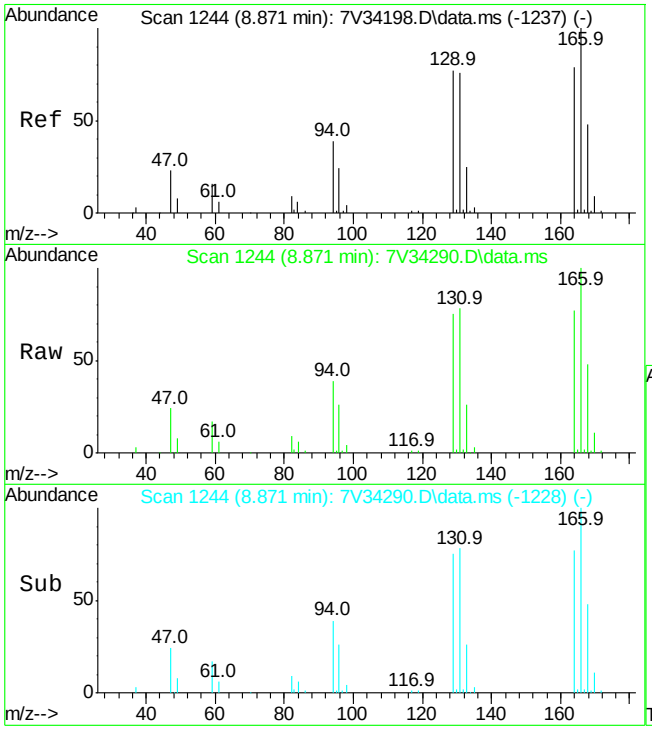


#56
Toluene-d8
Concen: 49.63 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion: 98 Resp: 351651

Ion	Ratio	Lower	Upper
98	100		
100	69.6	49.8	89.8
70	10.2	0.0	30.1

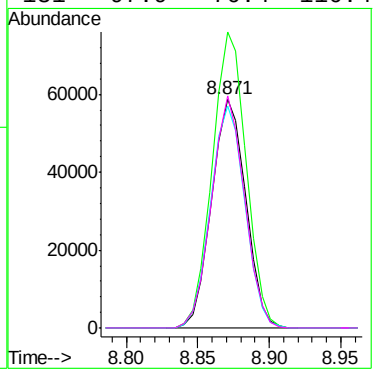


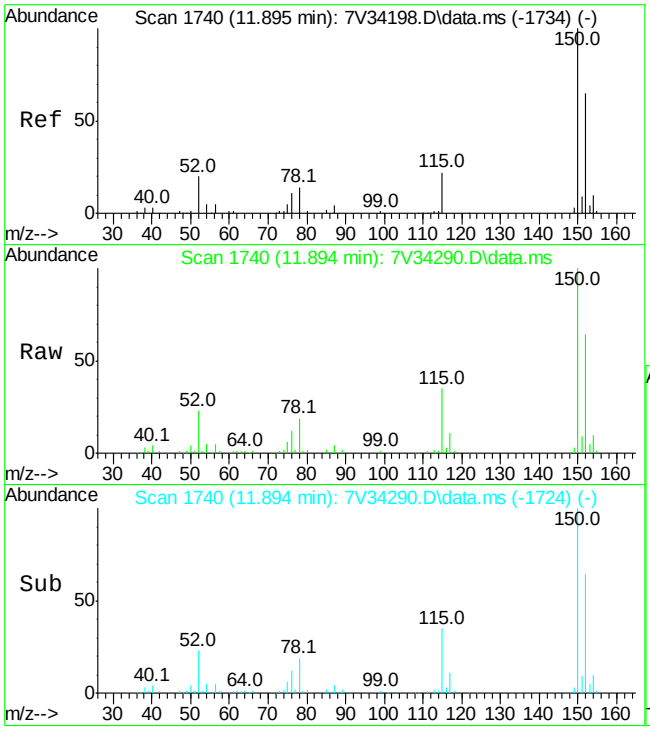


#60
Tetrachloroethene
Concen: 50.32 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion:164 Resp: 97996

Ion	Ratio	Lower	Upper
164	100		
166	128.5	107.5	147.5
129	97.2	76.8	116.8
131	97.9	76.4	116.4

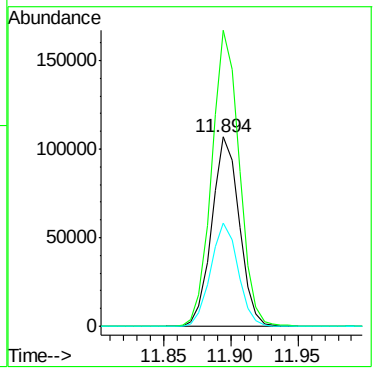


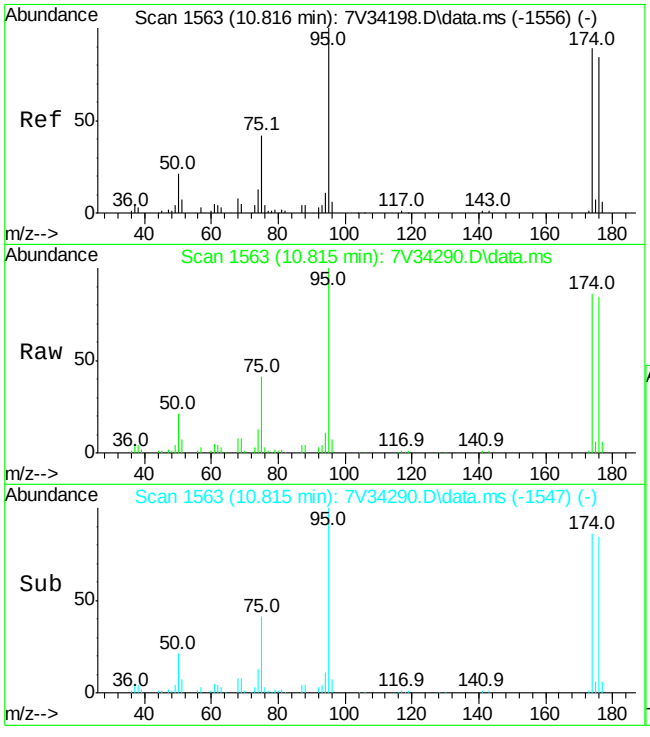


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion:152 Resp: 151630

Ion	Ratio	Lower	Upper
152	100		
150	156.3	154.9	194.9
115	54.6	34.6	74.6

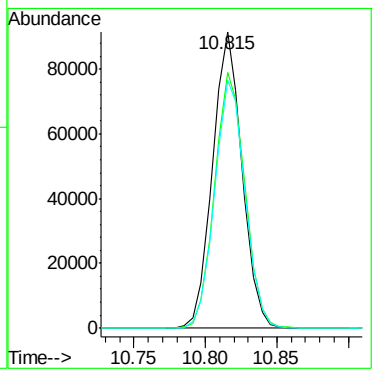




#76
4-Bromofluorobenzene
Concen: 49.68 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34290.D
Acq: 2 Jun 2016 5:35 pm

Tgt Ion: 95 Resp: 131166

Ion	Ratio	Lower	Upper
95	100		
174	88.7	70.3	110.3
176	86.0	67.4	107.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34234.D
Acq On : 1 Jun 2016 5:23 pm
Operator : amandaj
Sample : D83120-6
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 03 08:37:41 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

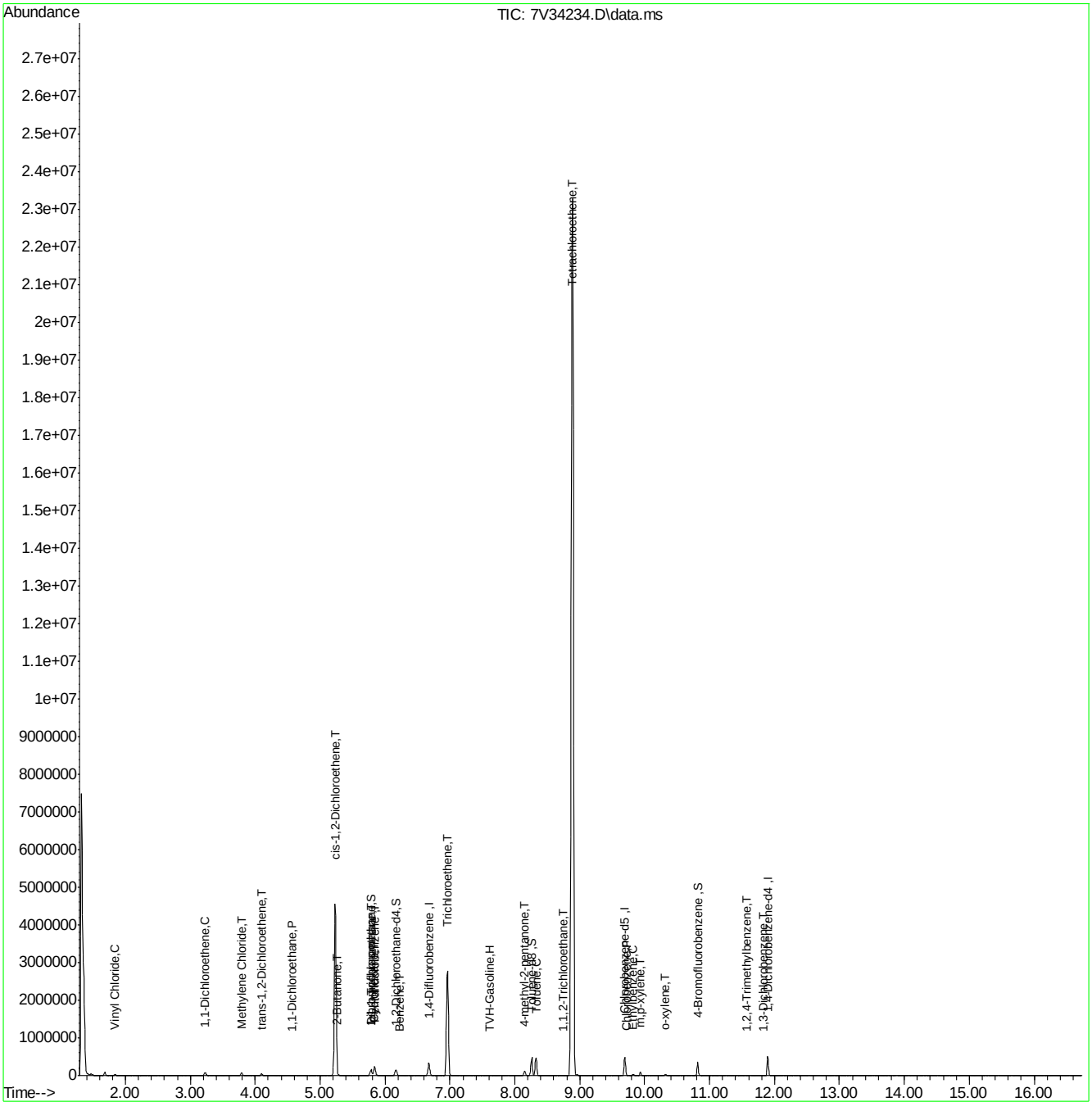
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.841	168	198964	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	308411	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	261500	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	134900	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.786	113	104577	48.43	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 96.86%			
41) 1,2-Dichloroethane-d4	6.164	102	21951	49.67	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 99.34%			
56) Toluene-d8	8.261	98	322951	51.36	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 102.72%			
76) 4-Bromofluorobenzene	10.815	95	113997	48.53	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 97.06%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	74389766m	7821.09	ug/L	
5) Vinyl Chloride	1.835	62	29038	13.83	ug/L	100
12) 1,1-Dichloroethene	3.225	96	32509	17.84	ug/L	99
14) Acetone	3.311	43	947	Below Cal	#	42
18) Methylene Chloride	3.792	84	25510	11.13	ug/L	98
21) trans-1,2-Dichloroethene	4.097	96	15720	7.75	ug/L	98
24) 1,1-Dichloroethane	4.573	63	9044	2.19	ug/L	97
29) cis-1,2-Dichloroethene	5.231	96	2024986	873.56	ug/L #	89
30) 2-Butanone	5.268	43	448	0.28	ug/L #	1
36) 1,1,1-Trichloroethane	5.792	97	7273	2.41	ug/L	97
37) Cyclohexane	5.835	56	3498	0.73	ug/L #	1
42) Benzene	6.219	78	3061	0.43	ug/L	90
47) Trichloroethene	6.963	95	920054	396.42	ug/L	100
54) 4-methyl-2-pentanone	8.151	43	86115	28.73	ug/L	99
57) Toluene	8.328	92	198870	40.82	ug/L	99
59) 1,1,2-Trichloroethane	8.743	83	915	0.63	ug/L #	34
60) Tetrachloroethene	8.889	164	8506164	4920.85	ug/L	95
65) Chlorobenzene	9.724	112	1698	0.30	ug/L	94
67) Ethylbenzene	9.822	91	26327	3.12	ug/L	97
68) m,p-xylene	9.938	91	52542	8.00	ug/L	100
69) o-xylene	10.316	91	19166	2.84	ug/L	100
86) 1,2,4-Trimethylbenzene	11.565	105	3220	0.45	ug/L	98
89) 1,3-Dichlorobenzene	11.834	146	1886	0.41	ug/L	80

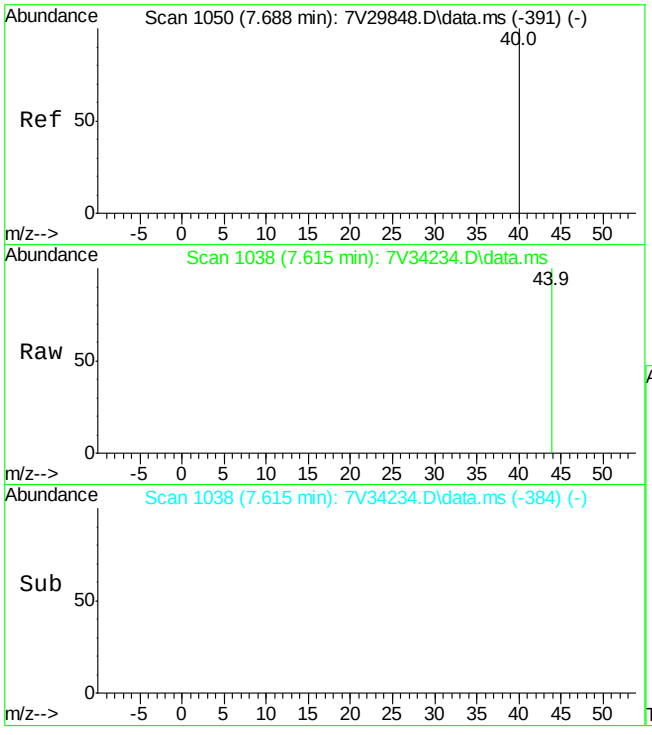
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34234.D
Acq On : 1 Jun 2016 5:23 pm
Operator : amandaj
Sample : D83120-6
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 20 Sample Multiplier: 1

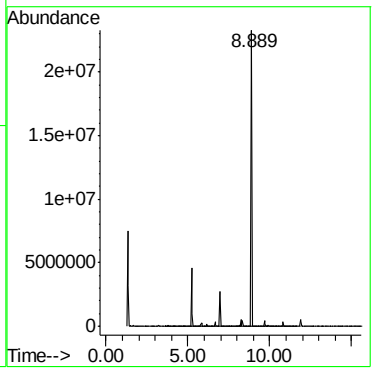
Quant Time: Jun 03 08:37:41 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

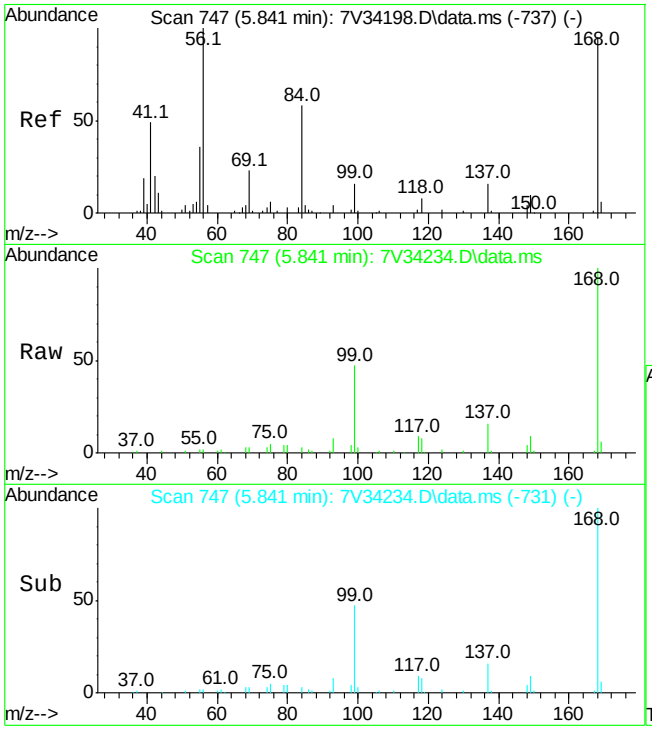




#1
TVH-Gasoline
Concen: 7821.09 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion:TIC Resp:74389766

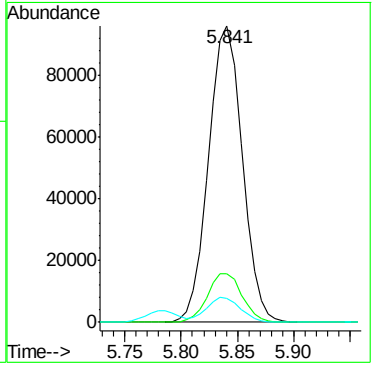


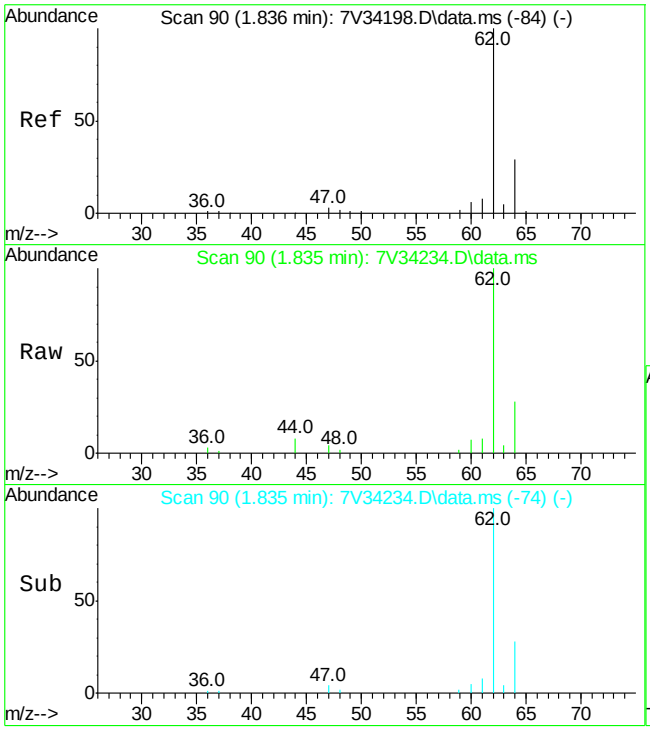


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.841 min Scan# 747
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion:168 Resp: 198964

Ion	Ratio	Lower	Upper
168	100		
137	16.7	0.0	36.8
93	8.2	0.0	28.3

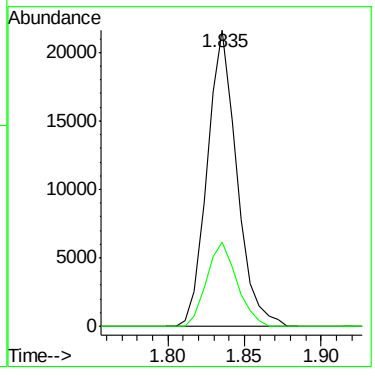


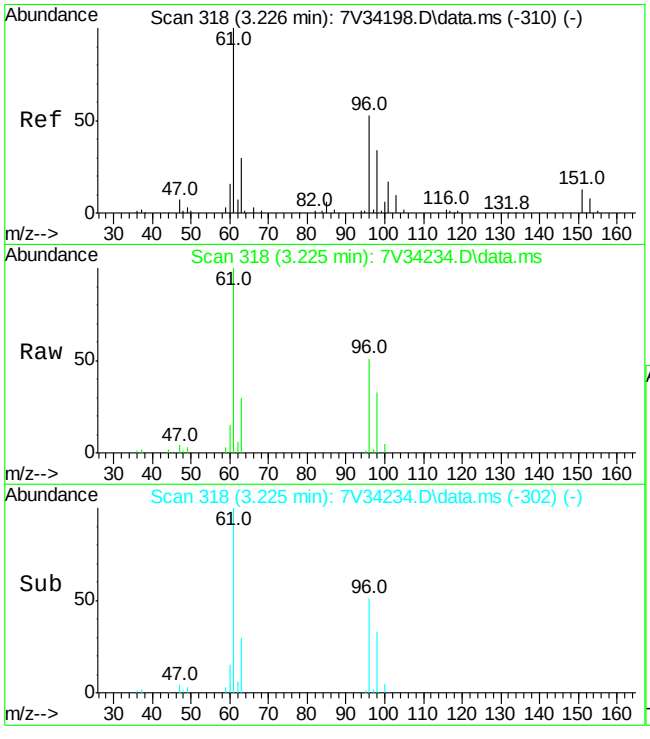


#5
Vinyl Chloride
Concen: 13.83 ug/L
RT: 1.835 min Scan# 90
Delta R.T. -0.001 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 62 Resp: 29038

Ion	Ratio	Lower	Upper
62	100		
64	28.5	8.5	48.5

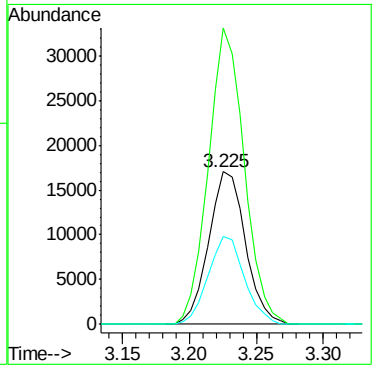


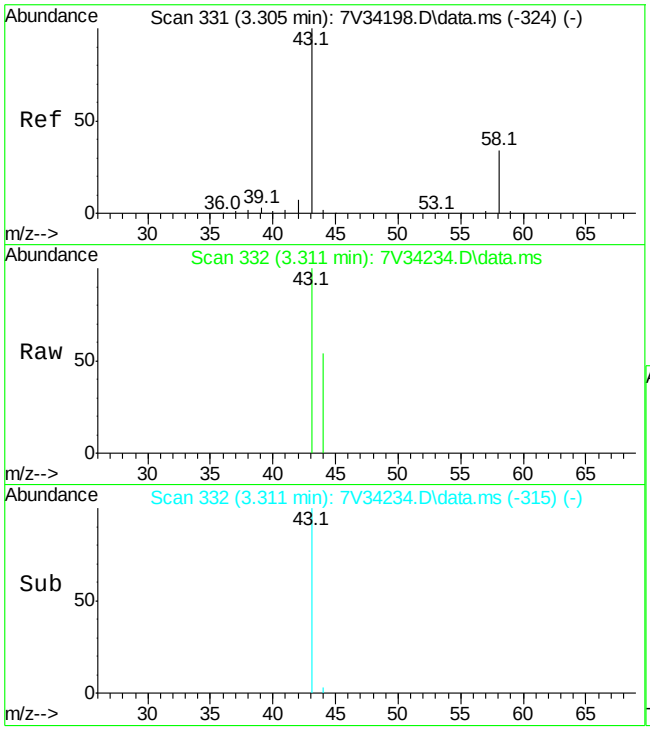


#12
1,1-Dichloroethene
Concen: 17.84 ug/L
RT: 3.225 min Scan# 318
Delta R.T. -0.001 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 96 Resp: 32509

Ion	Ratio	Lower	Upper
96	100		
61	188.8	167.7	207.7
63	56.6	36.4	76.4

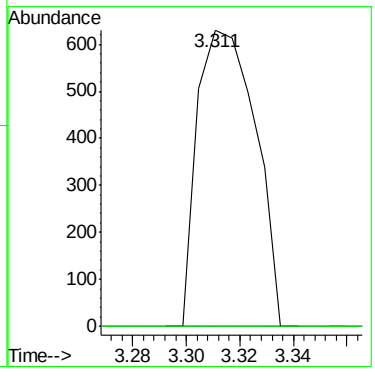


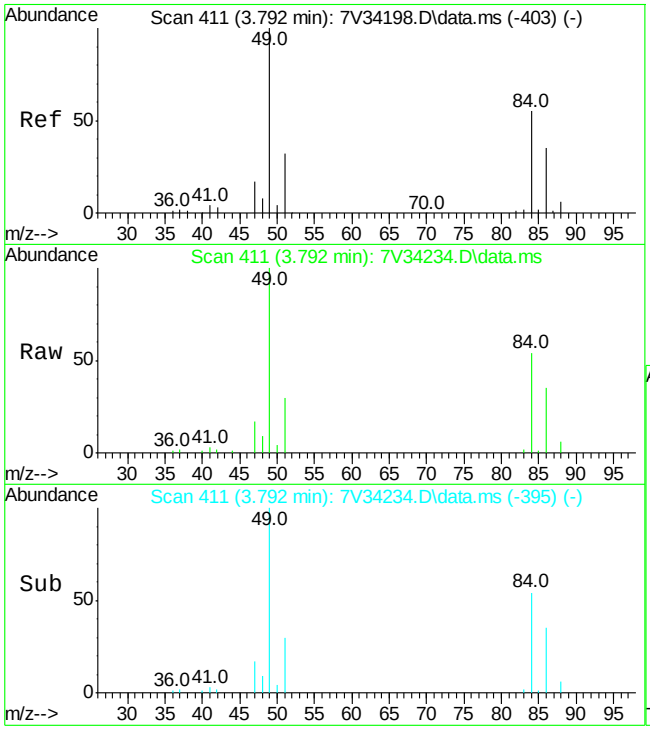


#14
Acetone
Concen: Below Cal
RT: 3.311 min Scan# 332
Delta R.T. 0.006 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 43 Resp: 947

Ion	Ratio	Lower	Upper
43	100		
58	0.0	12.6	52.6#

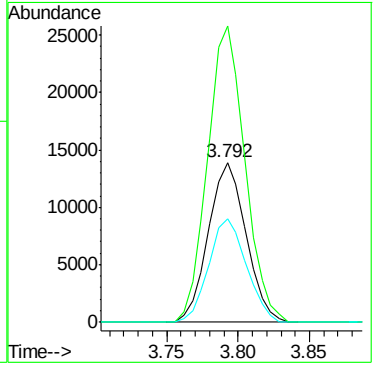


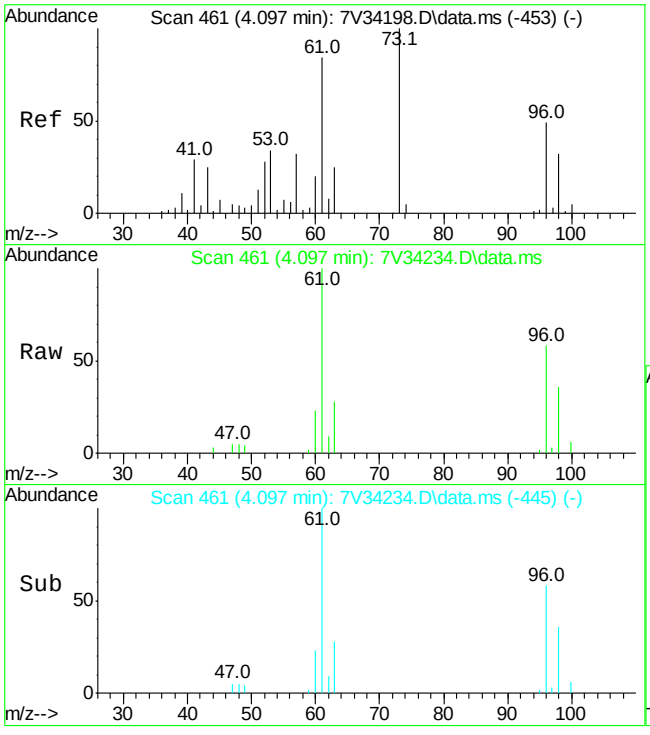


#18
Methylene Chloride
Concen: 11.13 ug/L
RT: 3.792 min Scan# 411
Delta R.T. 0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 84 Resp: 25510

Ion	Ratio	Lower	Upper
84	100		
49	183.8	167.4	207.4
86	64.6	45.3	85.3

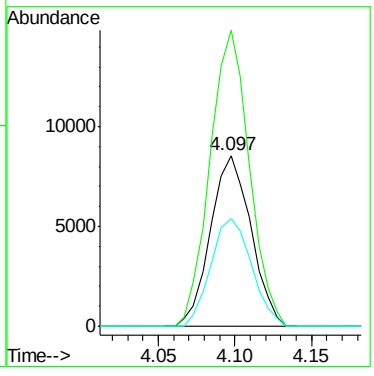


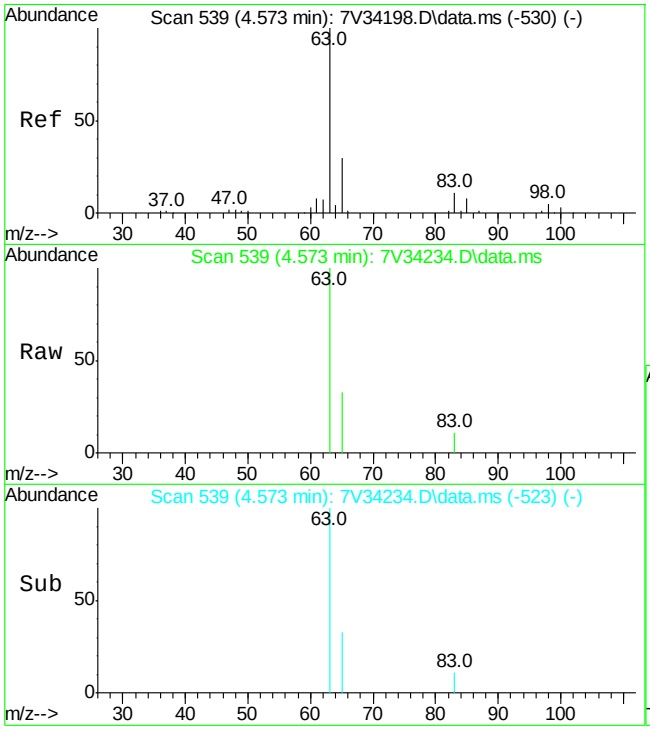


#21
trans-1,2-Dichloroethene
Concen: 7.75 ug/L
RT: 4.097 min Scan# 461
Delta R.T. 0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 96 Resp: 15720

Ion	Ratio	Lower	Upper
96	100		
61	168.4	151.1	191.1
98	63.3	43.8	83.8

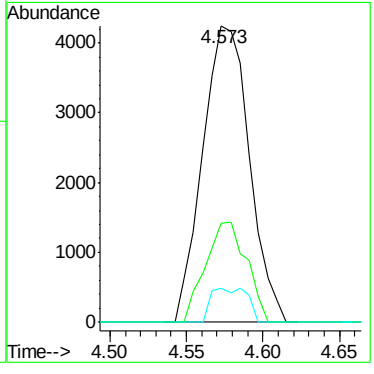


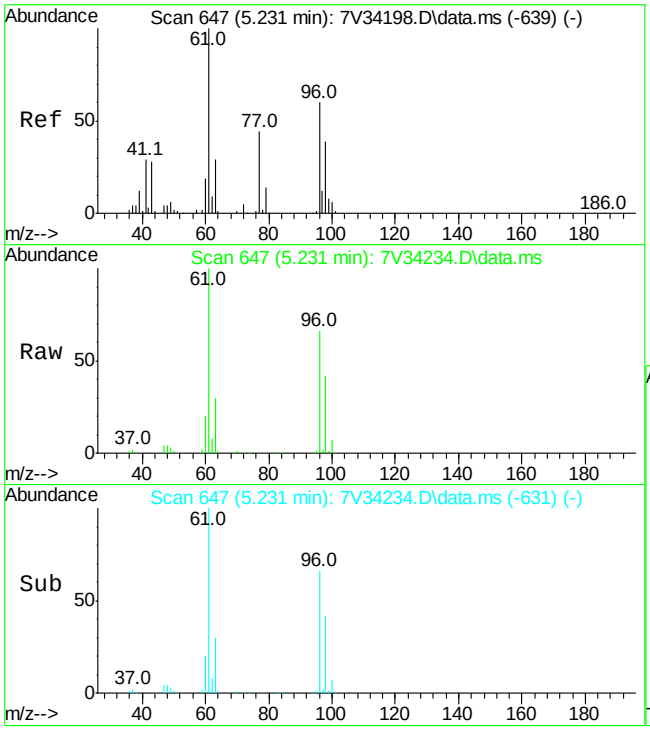


#24
1,1-Dichloroethane
Concen: 2.19 ug/L
RT: 4.573 min Scan# 539
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 63 Resp: 9044

Ion	Ratio	Lower	Upper
63	100		
65	29.4	10.5	50.5
83	9.0	0.0	31.4

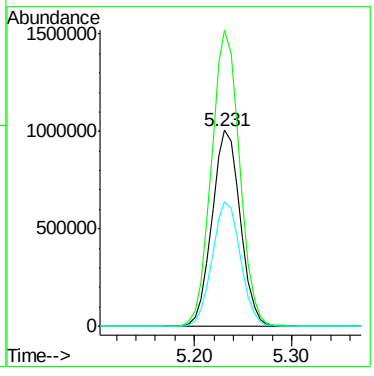


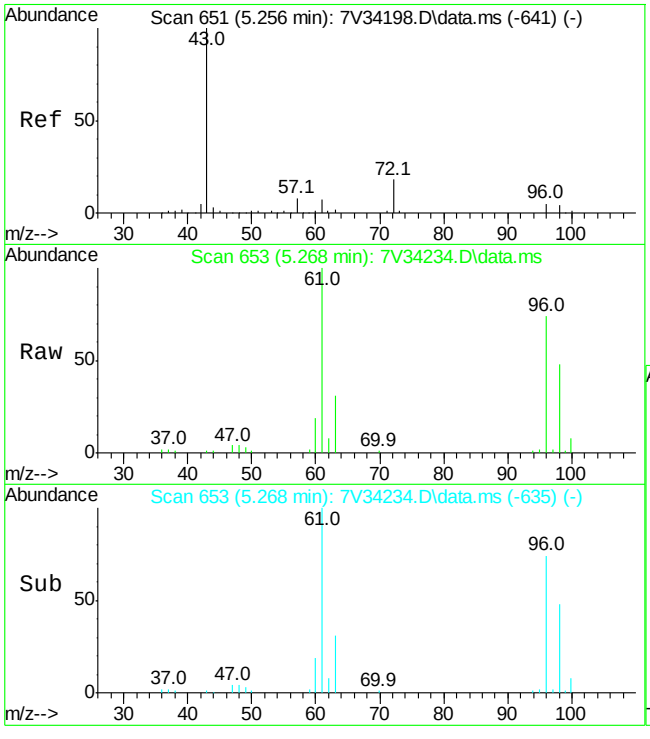


#29
cis-1,2-Dichloroethene
Concen: 873.56 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 96 Resp: 2024986

Ion	Ratio	Lower	Upper
96	100		
61	150.4	151.8	191.8#
98	63.8	44.4	84.4

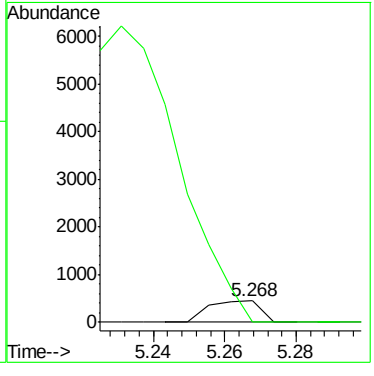


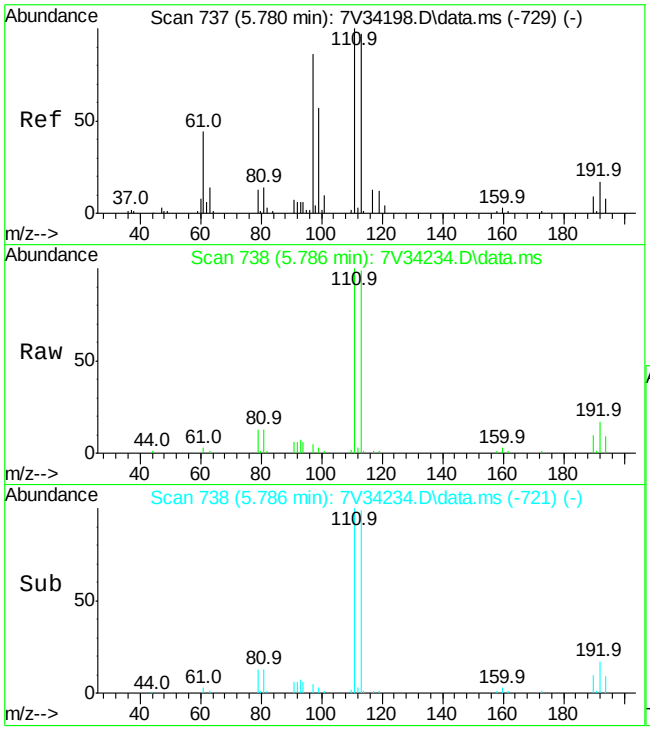


#30
2-Butanone
Concen: 0.28 ug/L
RT: 5.268 min Scan# 653
Delta R.T. 0.012 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 43 Resp: 448

Ion	Ratio	Lower	Upper
43	100		
72	2812.3	0.0	37.5#

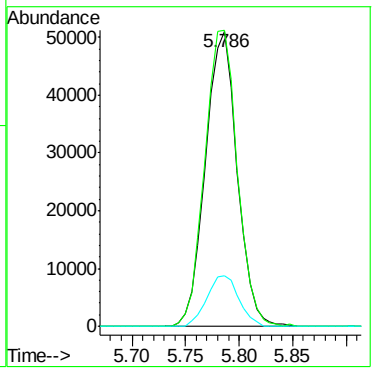


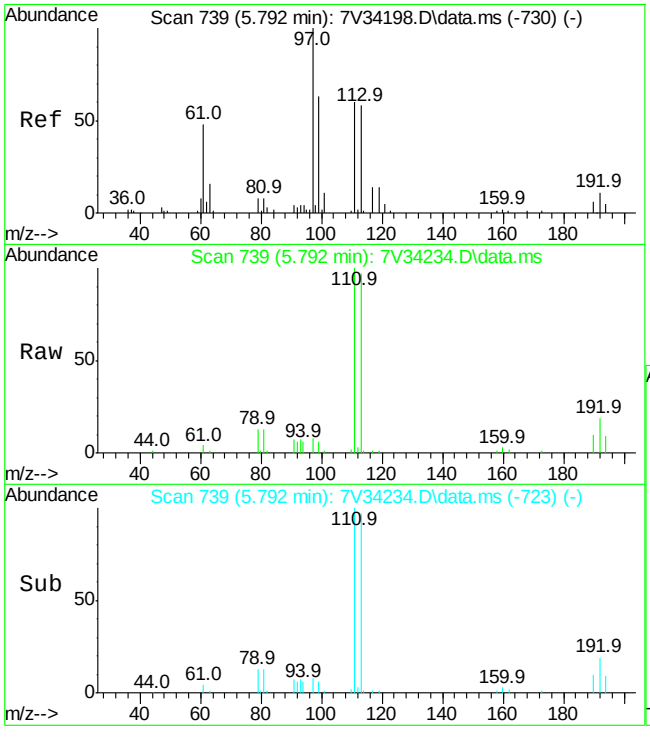


#35
Dibromofluoromethane
Concen: 48.43 ug/L
RT: 5.786 min Scan# 738
Delta R.T. 0.006 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion:113 Resp: 104577

Ion	Ratio	Lower	Upper
113	100		
111	103.1	82.9	122.9
192	17.4	0.0	36.9

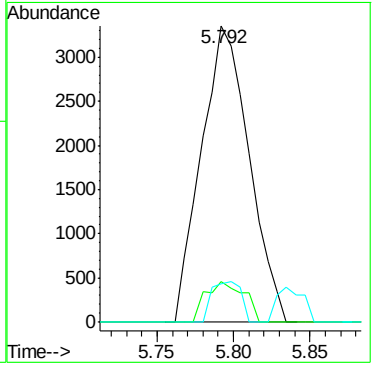


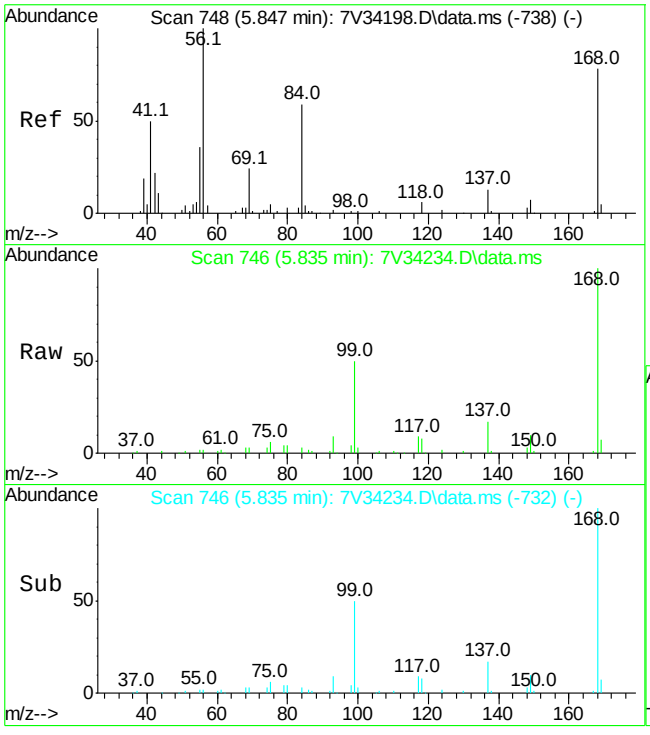


#36
1,1,1-Trichloroethane
Concen: 2.41 ug/L
RT: 5.792 min Scan# 739
Delta R.T. 0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 97 Resp: 7273

Ion	Ratio	Lower	Upper
97	100		
63	13.6	0.0	35.6
119	12.9	0.0	33.5

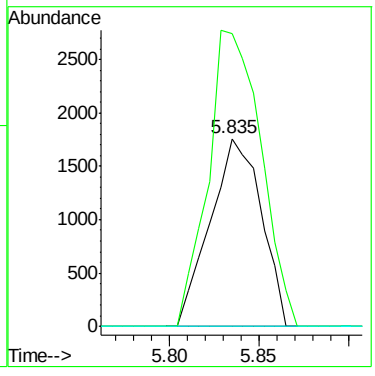


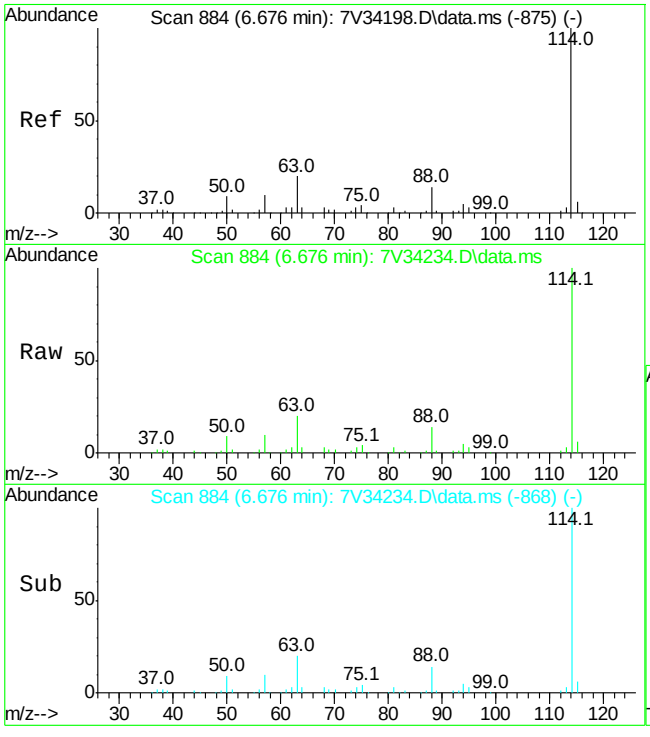


#37
Cyclohexane
Concen: 0.73 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.012 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 56 Resp: 3498

Ion	Ratio	Lower	Upper
56	100		
84	163.1	40.6	80.6#
41	0.0	30.3	70.3#

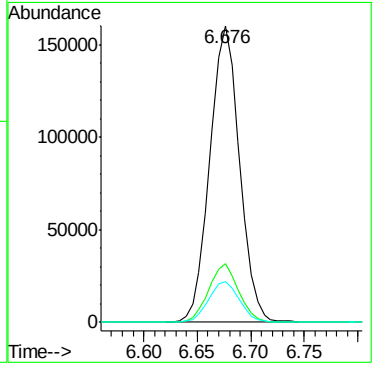


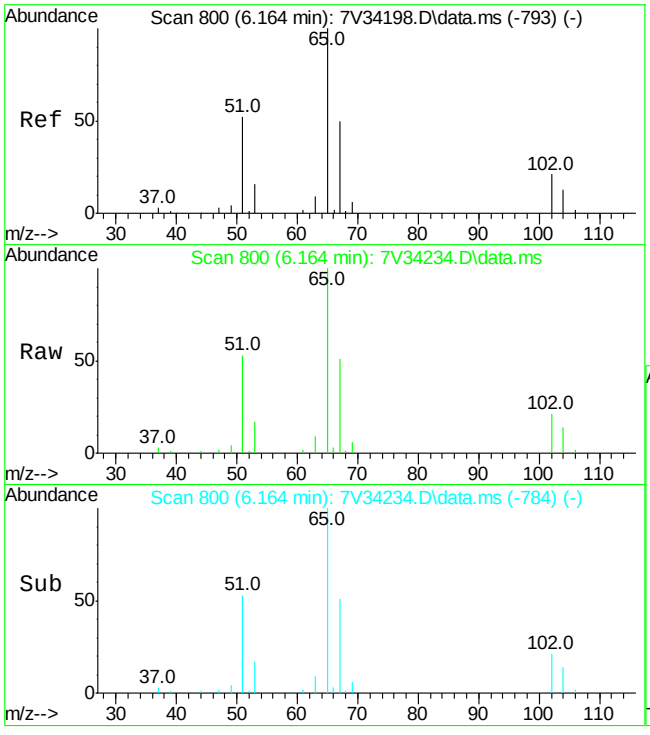


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion:114 Resp: 308411

Ion	Ratio	Lower	Upper
114	100		
63	19.5	0.0	39.6
88	14.1	0.0	34.3

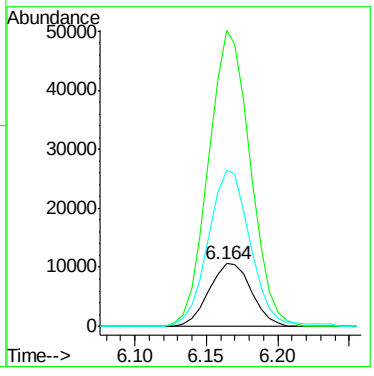


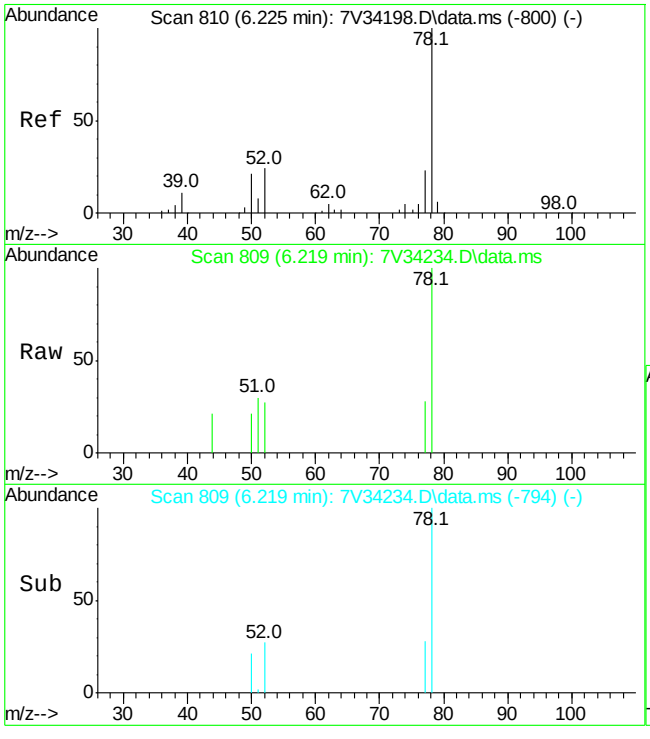


#41
1,2-Dichloroethane-d4
Concen: 49.67 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion:102 Resp: 21951

Ion	Ratio	Lower	Upper
102	100		
65	463.5	469.5	509.5#
51	248.5	232.7	272.7

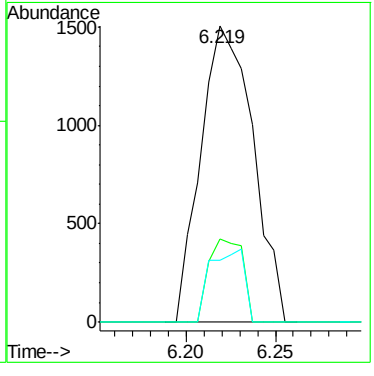


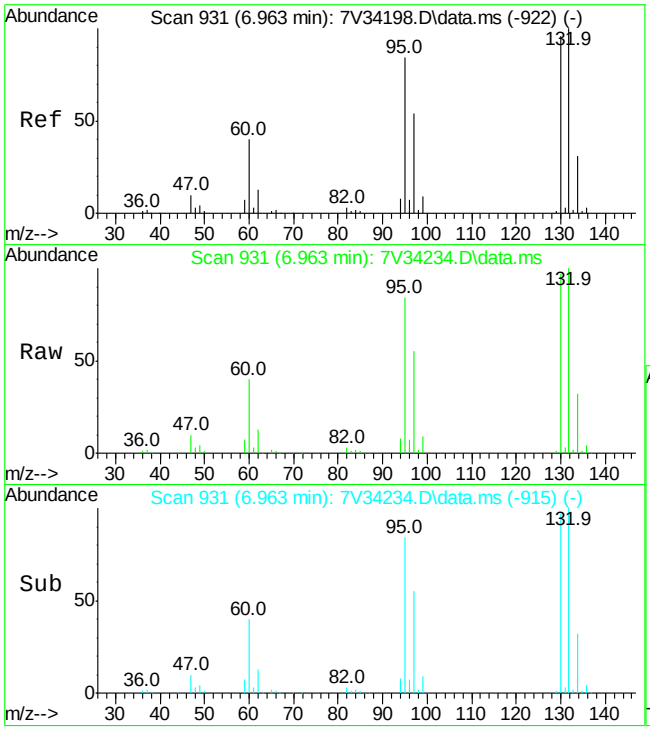


#42
Benzene
Concen: 0.43 ug/L
RT: 6.219 min Scan# 809
Delta R.T. -0.006 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 78 Resp: 3061

Ion	Ratio	Lower	Upper
78	100		
77	18.2	2.6	42.6
50	16.1	1.2	41.2

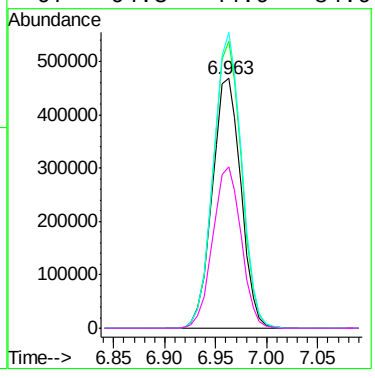


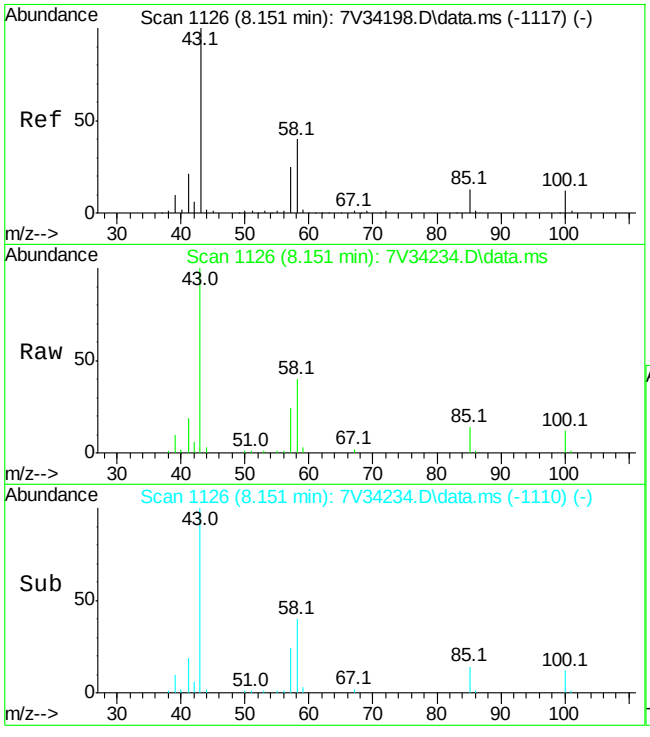


#47
Trichloroethene
Concen: 396.42 ug/L
RT: 6.963 min Scan# 931
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 95 Resp: 920054

Ion	Ratio	Lower	Upper
95	100		
130	113.4	93.2	133.2
132	116.2	95.9	135.9
97	64.3	44.9	84.9

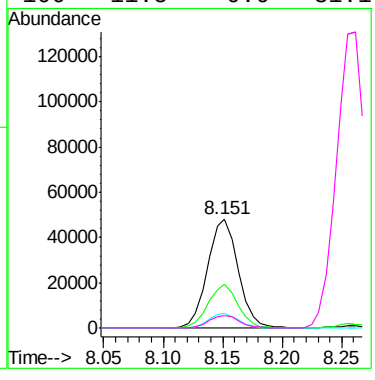


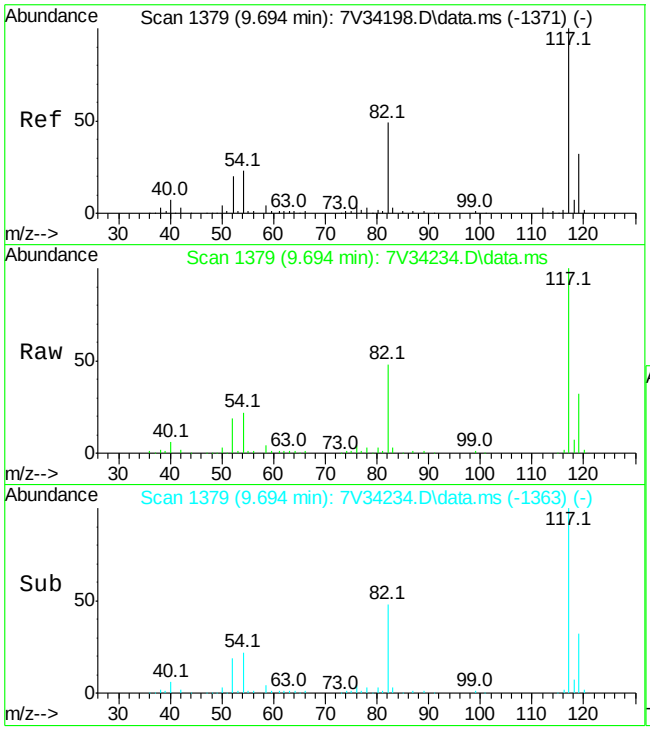


#54
4-methyl-2-pentanone
Concen: 28.73 ug/L
RT: 8.151 min Scan# 1126
Delta R.T. 0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 43 Resp: 86115

Ion	Ratio	Lower	Upper
43	100		
58	39.0	19.8	59.8
85	12.8	0.0	32.5
100	11.5	0.0	31.1

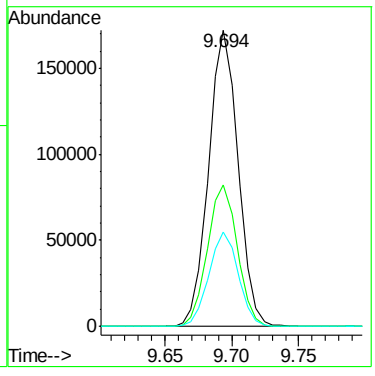


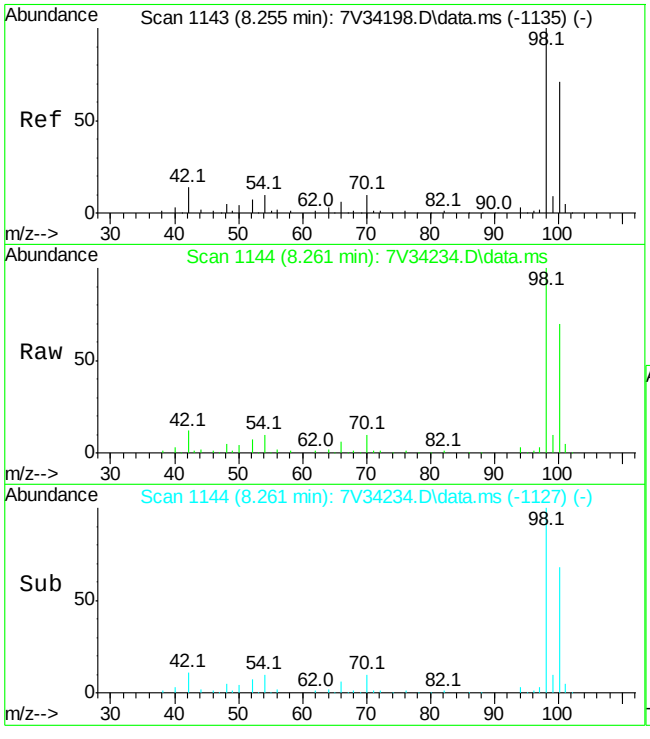


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion:117 Resp: 261500

Ion	Ratio	Lower	Upper
117	100		
82	48.5	28.7	68.7
119	32.0	12.2	52.2

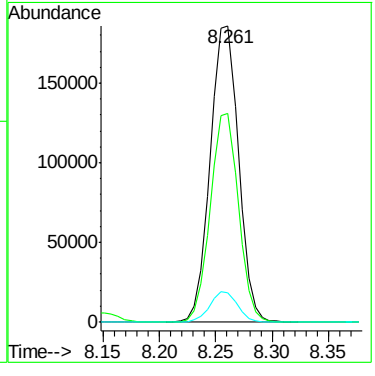


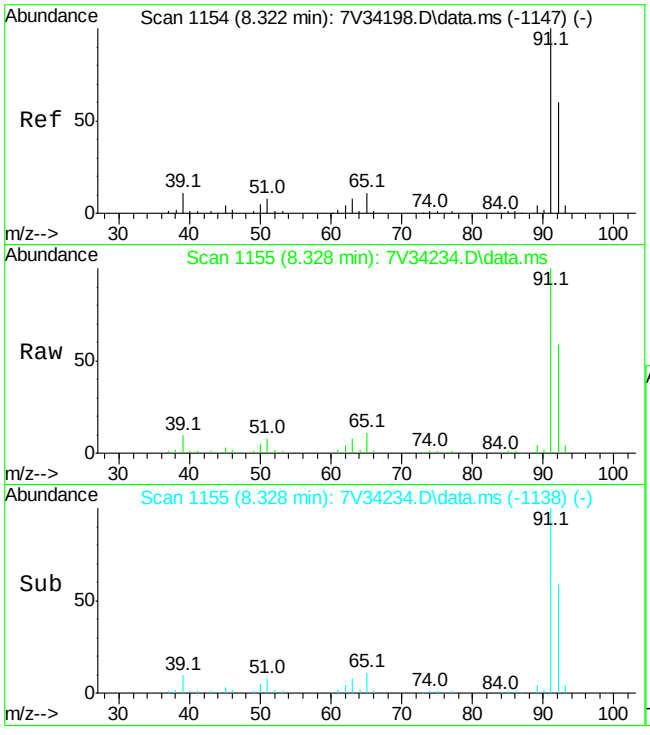


#56
Toluene-d8
Concen: 51.36 ug/L
RT: 8.261 min Scan# 1144
Delta R.T. 0.006 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 98 Resp: 322951

Ion	Ratio	Lower	Upper
98	100		
100	69.9	49.8	89.8
70	9.8	0.0	30.1

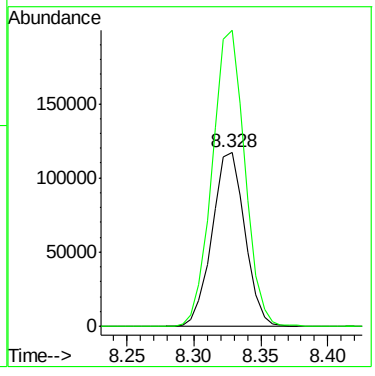


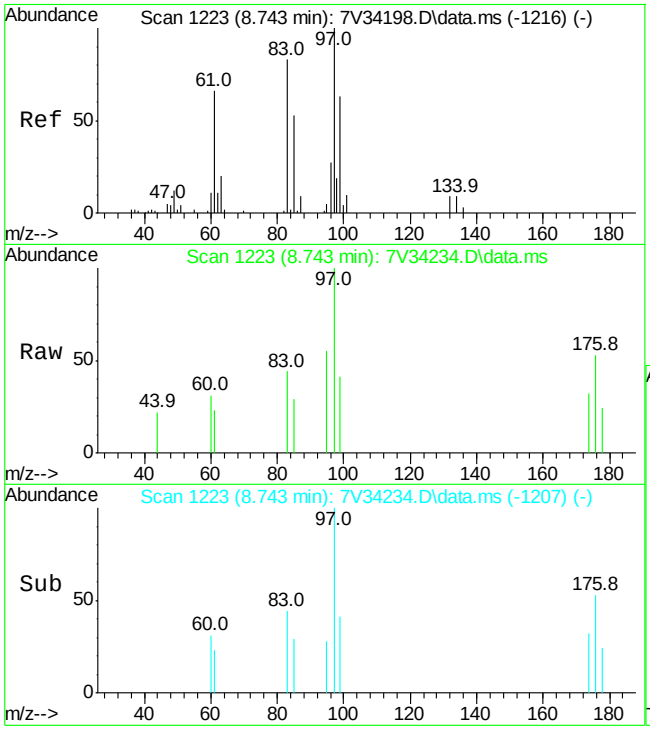


#57
Toluene
Concen: 40.82 ug/L
RT: 8.328 min Scan# 1155
Delta R.T. 0.006 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 92 Resp: 198870

Ion	Ratio	Lower	Upper
92	100		
91	169.4	150.1	190.1

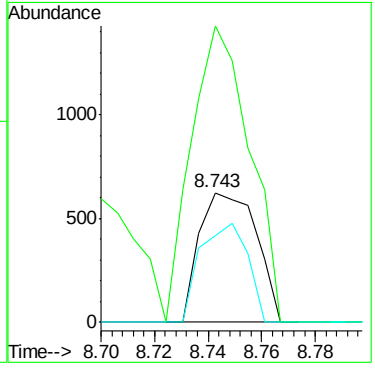


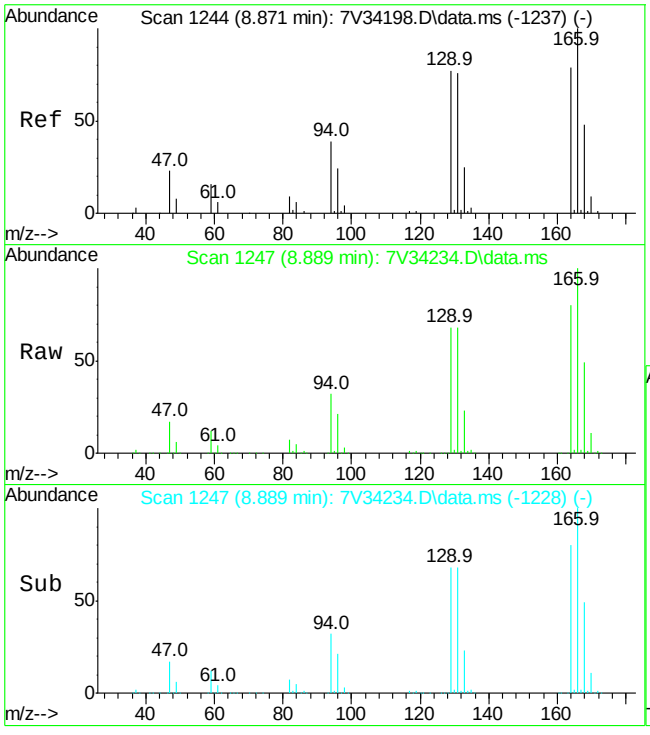


#59
1,1,2-Trichloroethane
Concen: 0.63 ug/L
RT: 8.743 min Scan# 1223
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 83 Resp: 915

Ion	Ratio	Lower	Upper
83	100		
97	229.4	100.1	140.1#
85	66.6	43.3	83.3

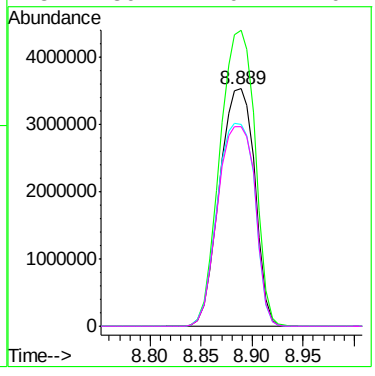


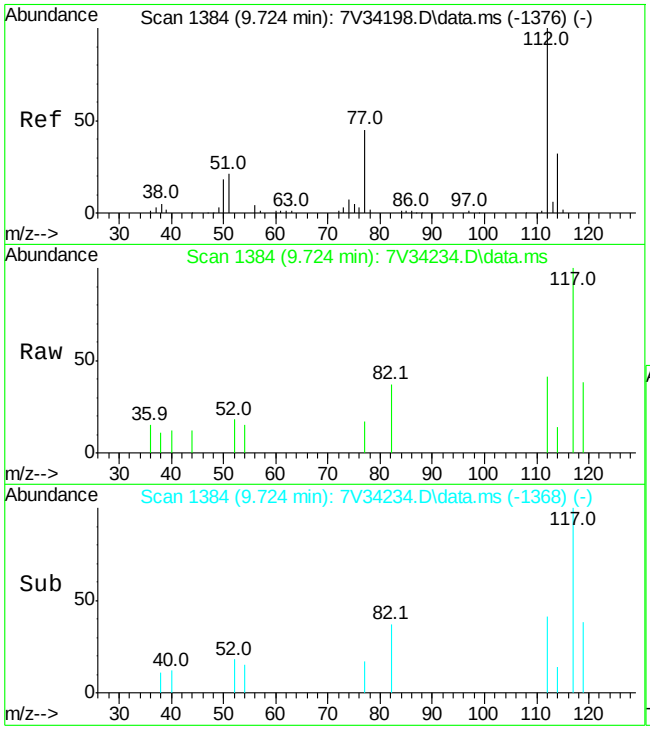


#60
Tetrachloroethene
Concen: 4920.85 ug/L
RT: 8.889 min Scan# 1247
Delta R.T. 0.018 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion:164 Resp: 8506164

Ion	Ratio	Lower	Upper
164	100		
166	124.2	107.5	147.5
129	91.1	76.8	116.8
131	89.7	76.4	116.4

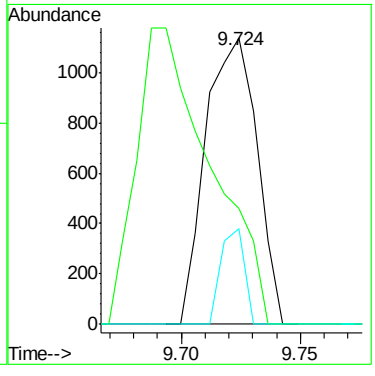


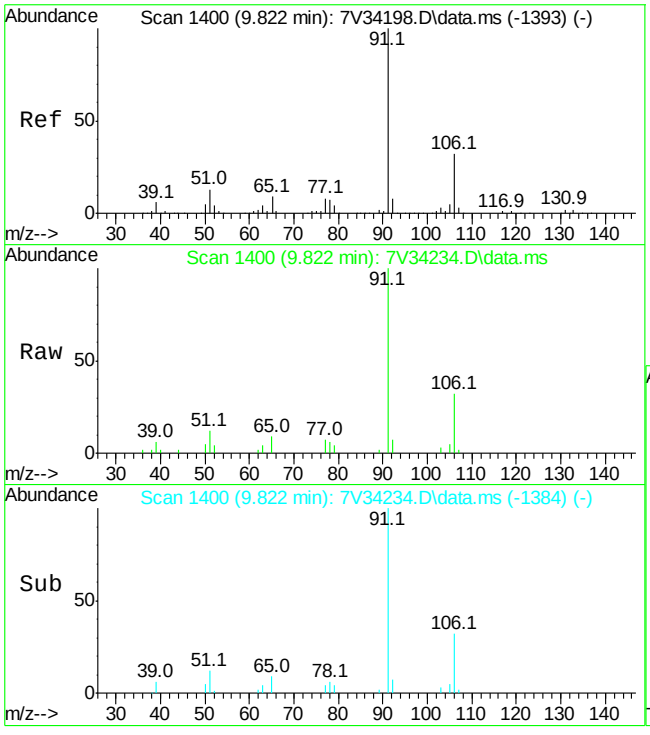


#65
Chlorobenzene
Concen: 0.30 ug/L
RT: 9.724 min Scan# 1384
Delta R.T. 0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion:112 Resp: 1698

Ion	Ratio	Lower	Upper
112	100		
77	40.3	25.2	65.2
114	33.5	11.9	51.9

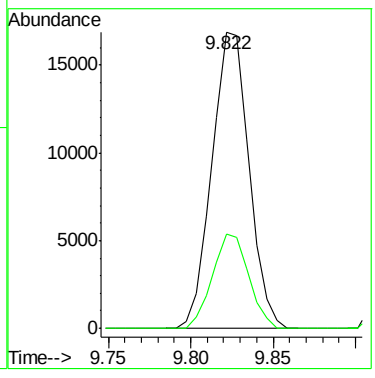


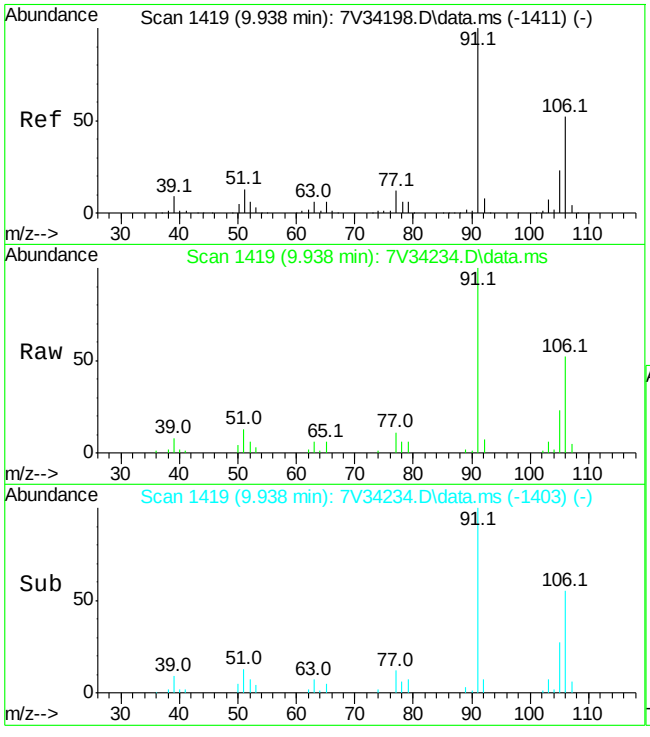


#67
Ethylbenzene
Concen: 3.12 ug/L
RT: 9.822 min Scan# 1400
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 91 Resp: 26327

Ion	Ratio	Lower	Upper
91	100		
106	30.9	12.8	52.8

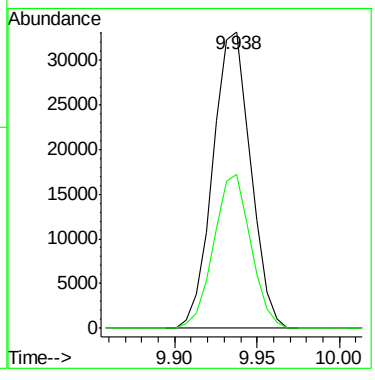


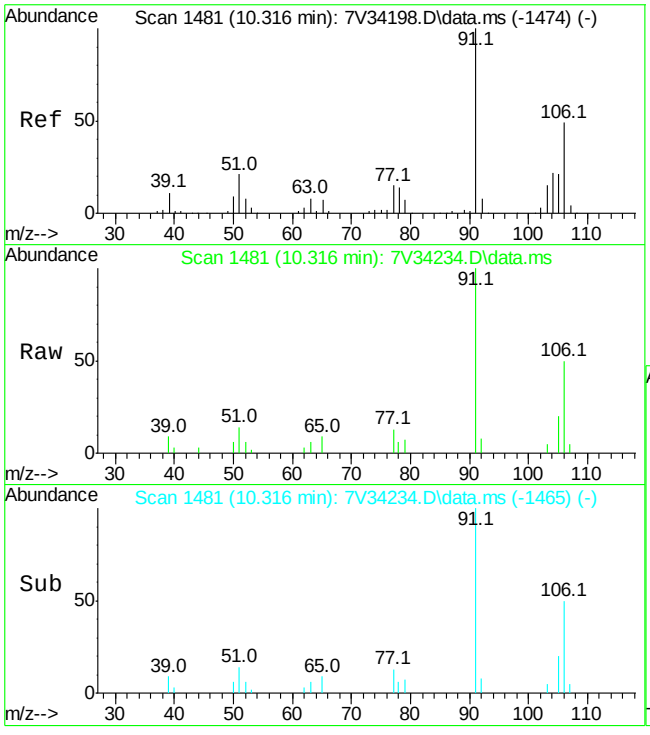


#68
m,p-xylene
Concen: 8.00 ug/L
RT: 9.938 min Scan# 1419
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 91 Resp: 52542

Ion	Ratio	Lower	Upper
91	100		
106	50.8	31.1	71.1

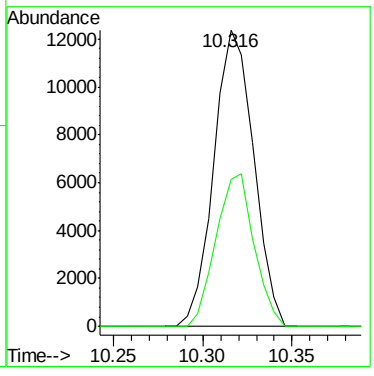


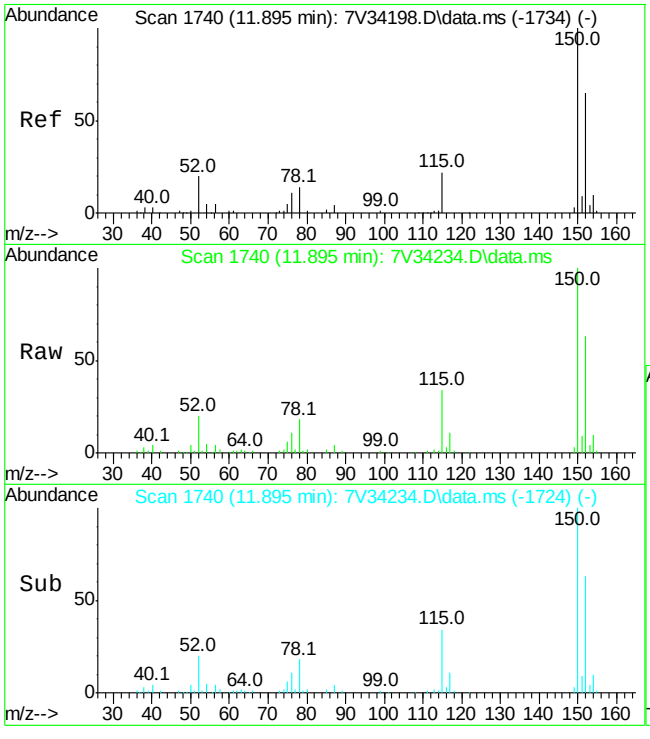


#69
o-xylene
Concen: 2.84 ug/L
RT: 10.316 min Scan# 1481
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 91 Resp: 19166

Ion	Ratio	Lower	Upper
91	100		
106	49.3	29.0	69.0

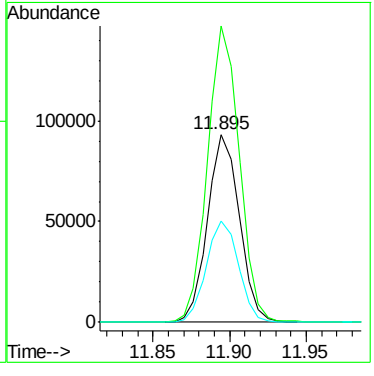


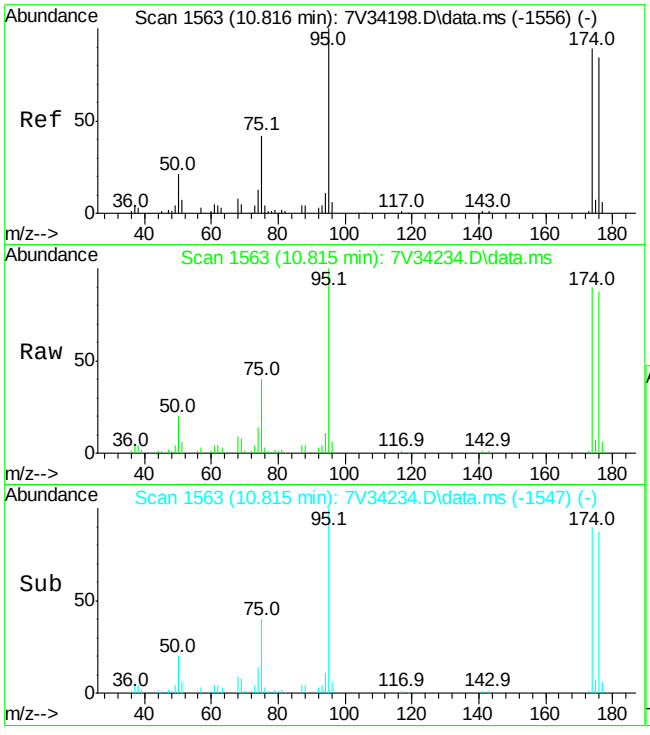


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion:152 Resp: 134900

Ion	Ratio	Lower	Upper
152	100		
150	158.0	154.9	194.9
115	54.4	34.6	74.6

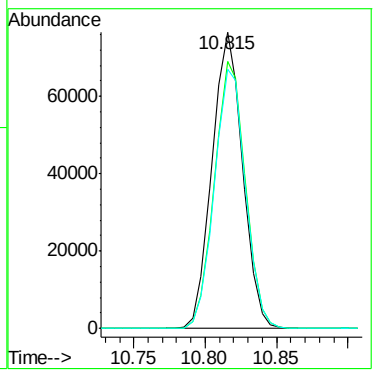


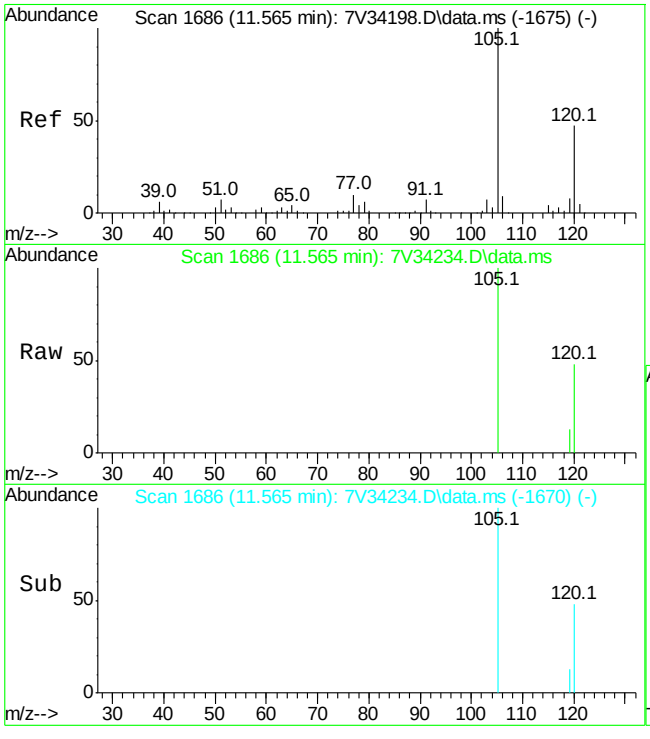


#76
4-Bromofluorobenzene
Concen: 48.53 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion: 95 Resp: 113997

Ion	Ratio	Lower	Upper
95	100		
174	91.1	70.3	110.3
176	88.9	67.4	107.4

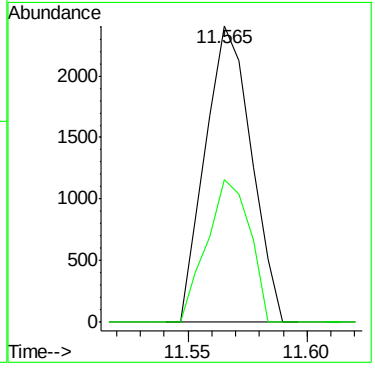


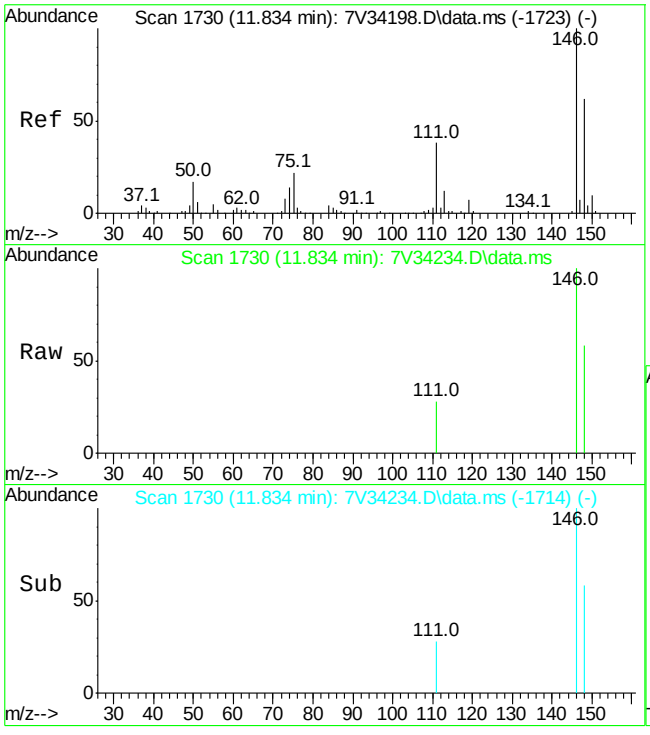


#86
1,2,4-Trimethylbenzene
Concen: 0.45 ug/L
RT: 11.565 min Scan# 1686
Delta R.T. 0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion:105 Resp: 3220

Ion	Ratio	Lower	Upper
105	100		
120	45.0	26.1	66.1

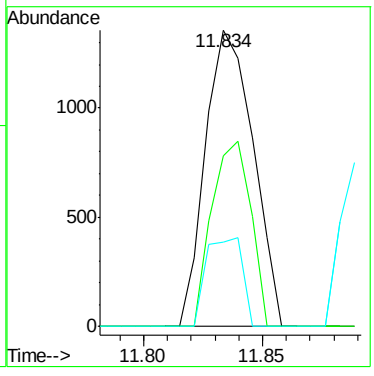




#89
1,3-Dichlorobenzene
Concen: 0.41 ug/L
RT: 11.834 min Scan# 1730
Delta R.T. -0.000 min
Lab File: 7V34234.D
Acq: 1 Jun 2016 5:23 pm

Tgt Ion:146 Resp: 1886

Ion	Ratio	Lower	Upper
146	100		
148	50.8	44.1	84.1
111	22.6	17.5	57.5



7.1.8

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1842\
Data File : 7V34291.D
Acq On : 2 Jun 2016 5:58 pm
Operator : TamL
Sample : D83120-6
Misc : MS9182,V7V1842,,,,,100
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 03 12:06:27 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

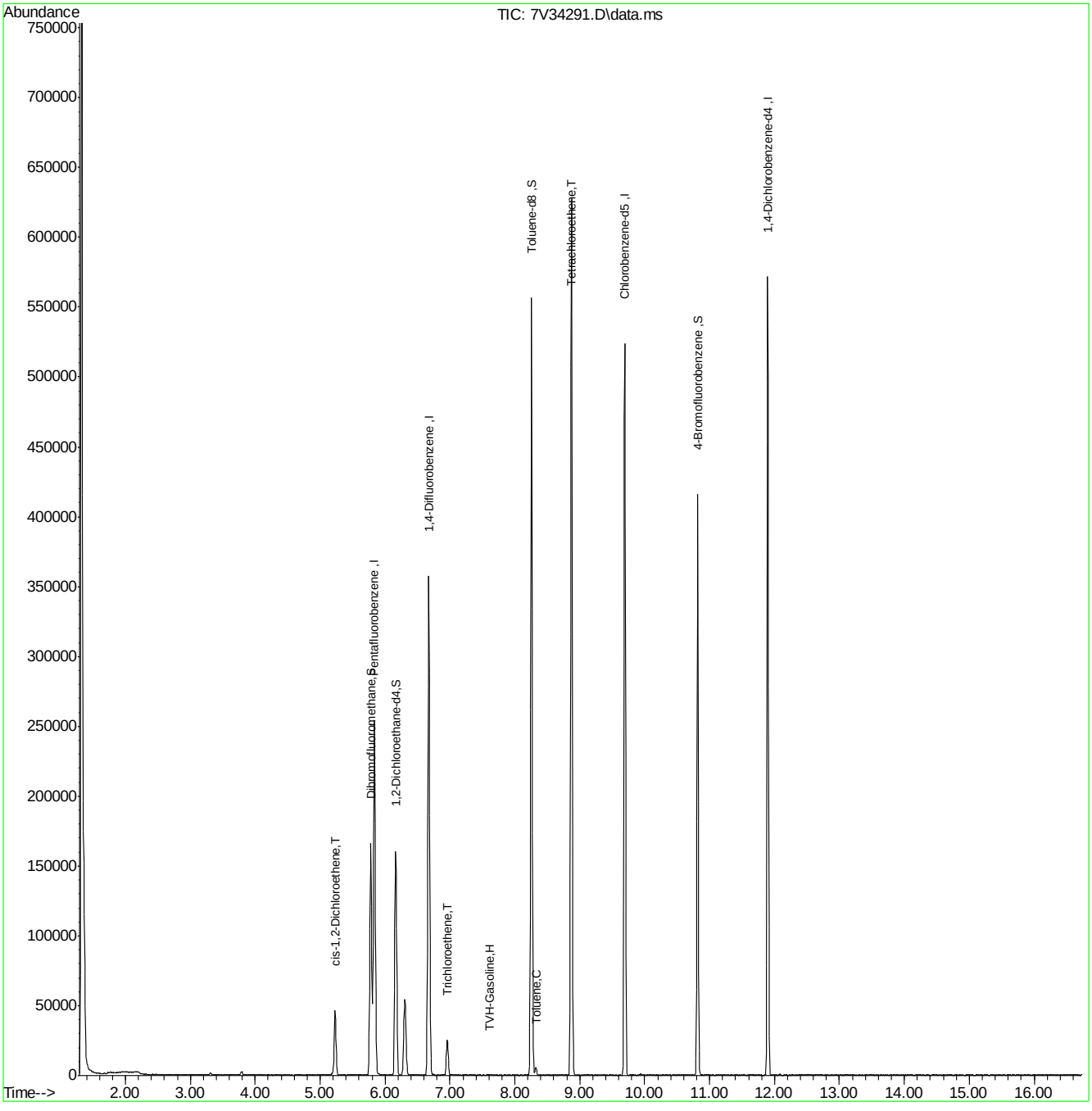
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	195310	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	325352	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	281897	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	147468	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	111856	52.77	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 105.54%			
41) 1,2-Dichloroethane-d4	6.164	102	22740	48.78	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 97.56%			
56) Toluene-d8	8.255	98	339795	50.13	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 100.26%			
76) 4-Bromofluorobenzene	10.815	95	128585	50.07	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 100.14%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	1362699m	143.27	ug/L	
29) cis-1,2-Dichloroethene	5.231	96	19681	8.65	ug/L	92
47) Trichloroethene	6.956	95	8925	3.65	ug/L	96
57) Toluene	8.328	92	2754	0.52	ug/L	92
60) Tetrachloroethene	8.871	164	140721	75.52	ug/L	100

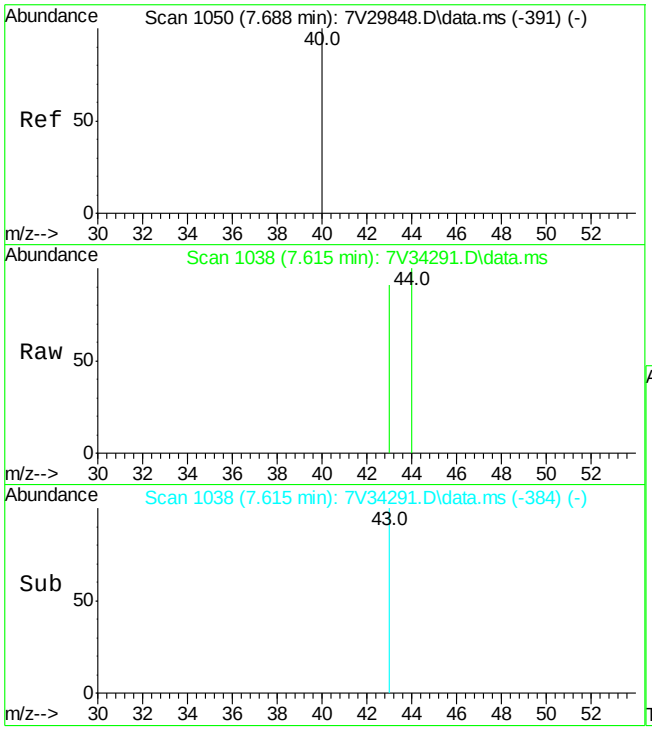
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1842\
Data File : 7V34291.D
Acq On : 2 Jun 2016 5:58 pm
Operator : TamL
Sample : D83120-6
Misc : MS9182,V7V1842,,,,,100
ALS Vial : 26 Sample Multiplier: 1

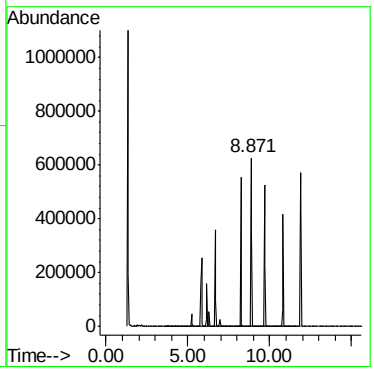
Quant Time: Jun 03 12:06:27 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

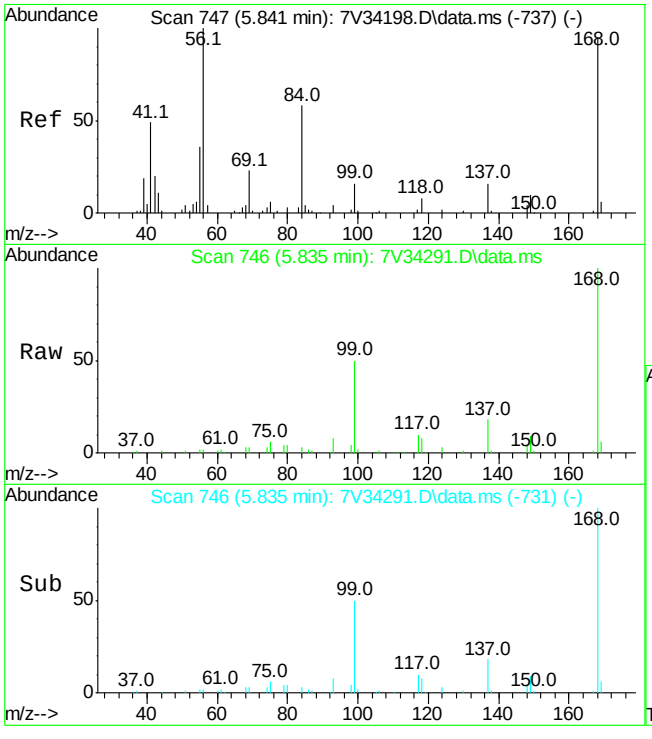




#1
TVH-Gasoline
Concen: 143.27 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion:TIC Resp: 1362699

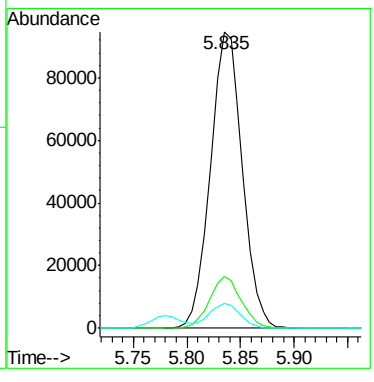


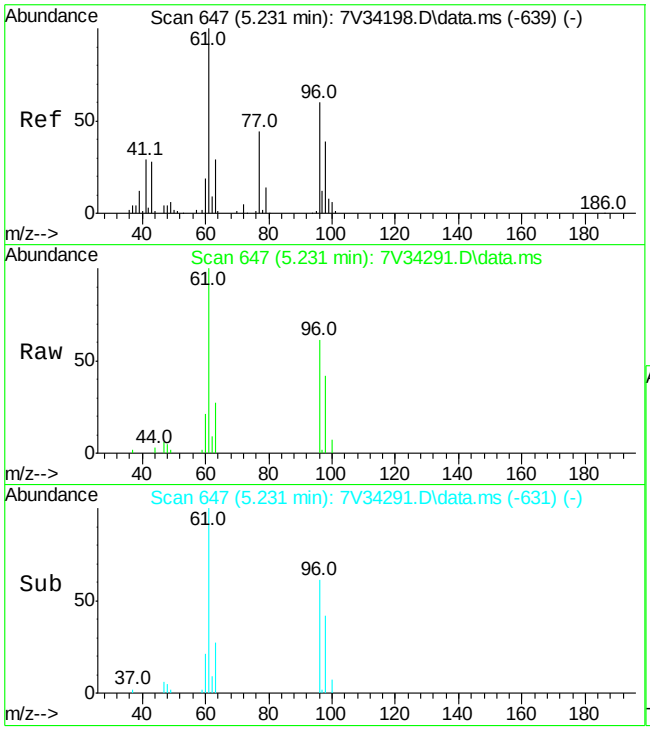


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion:168 Resp: 195310

Ion	Ratio	Lower	Upper
168	100		
137	17.3	0.0	36.8
93	8.0	0.0	28.3

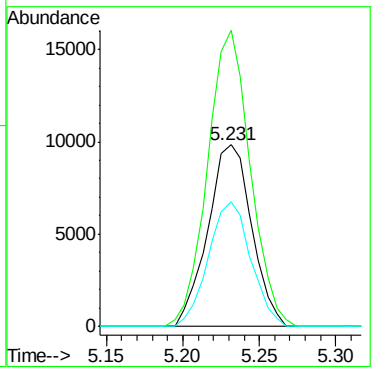


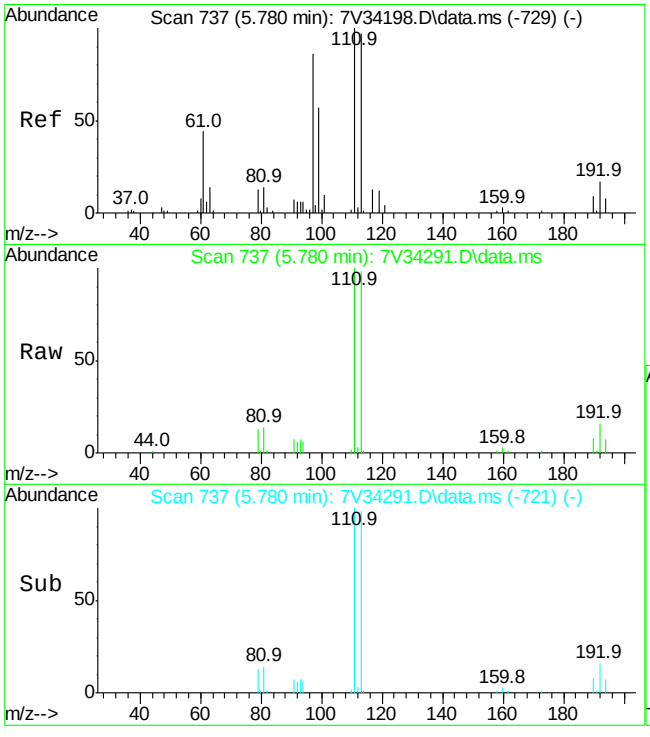


#29
cis-1,2-Dichloroethene
Concen: 8.65 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion: 96 Resp: 19681

Ion	Ratio	Lower	Upper
96	100		
61	158.2	151.8	191.8
98	66.0	44.4	84.4

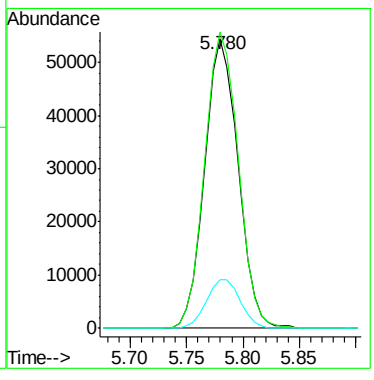


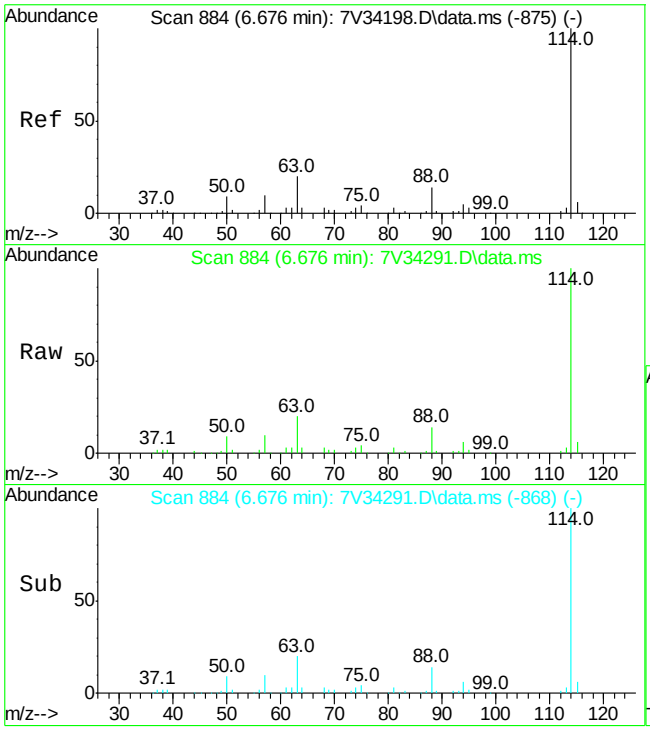


#35
Dibromofluoromethane
Concen: 52.77 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion:113 Resp: 111856

Ion	Ratio	Lower	Upper
113	100		
111	103.1	82.9	122.9
192	16.8	0.0	36.9

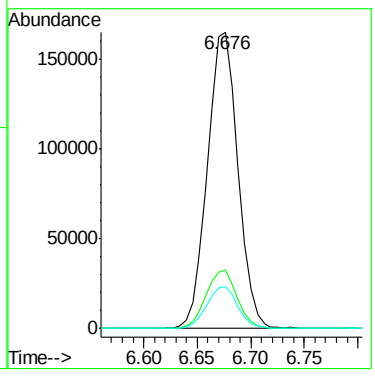


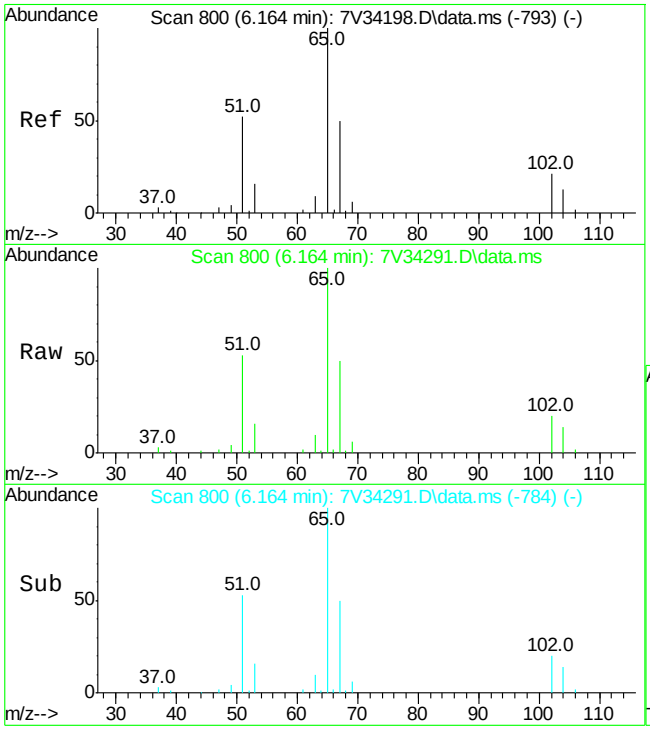


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion:114 Resp: 325352

Ion	Ratio	Lower	Upper
114	100		
63	19.7	0.0	39.6
88	14.1	0.0	34.3

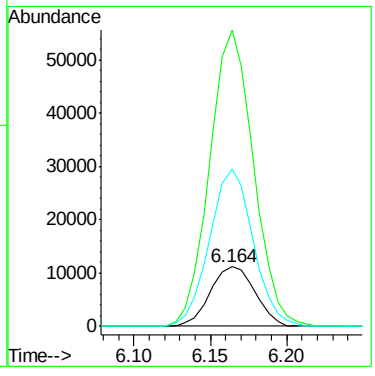


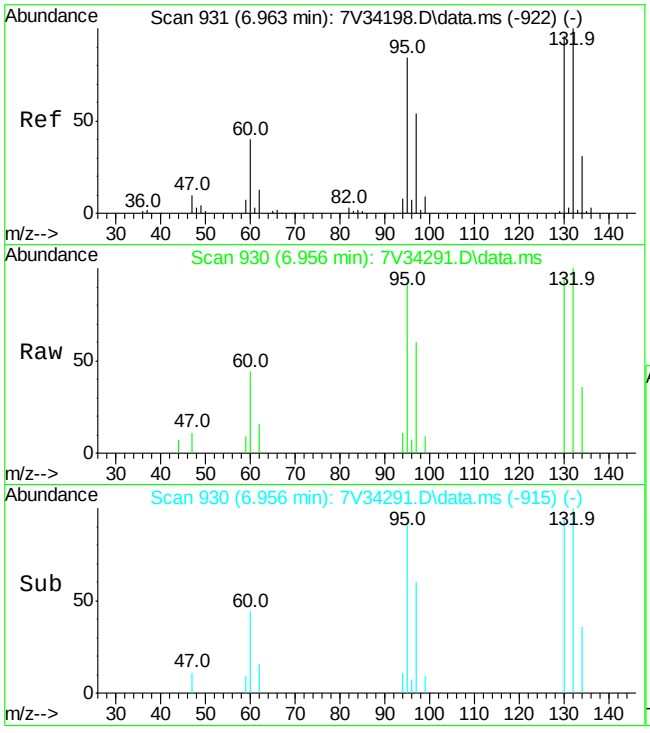


#41
1,2-Dichloroethane-d4
Concen: 48.78 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion:102 Resp: 22740

Ion	Ratio	Lower	Upper
102	100		
65	488.4	469.5	509.5
51	257.6	232.7	272.7

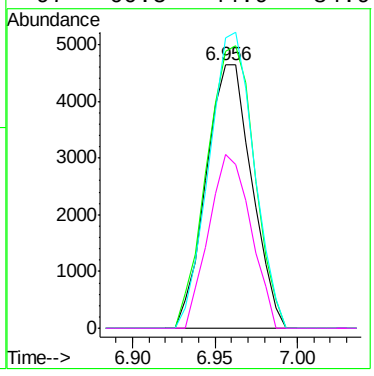


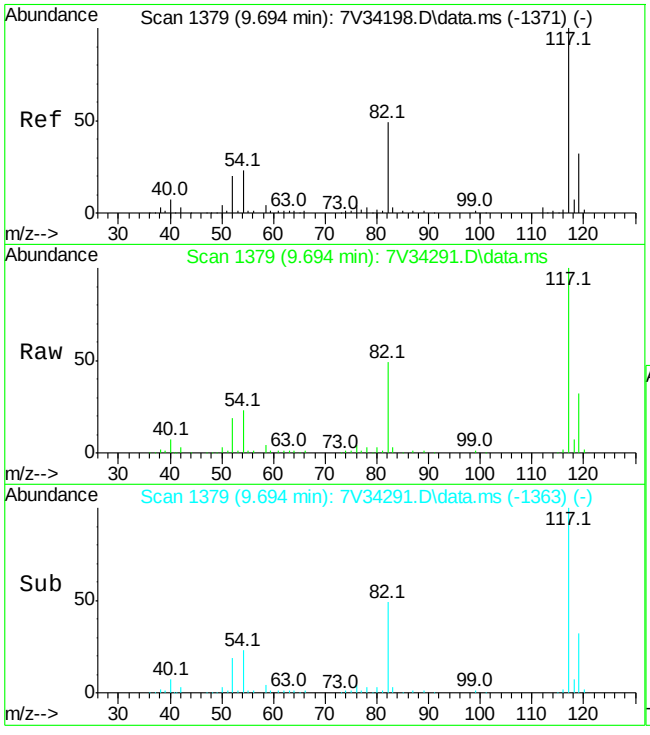


#47
Trichloroethene
Concen: 3.65 ug/L
RT: 6.956 min Scan# 930
Delta R.T. -0.007 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion: 95 Resp: 8925

Ion	Ratio	Lower	Upper
95	100		
130	111.3	93.2	133.2
132	110.1	95.9	135.9
97	60.5	44.9	84.9

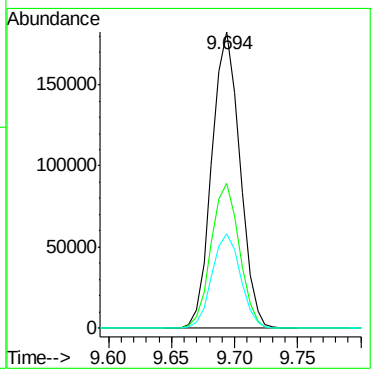


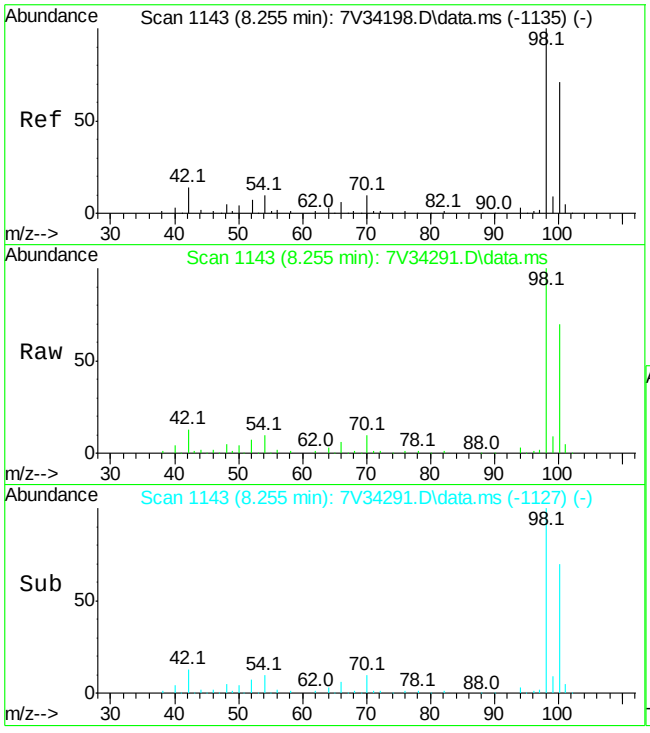


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion:117 Resp: 281897

Ion	Ratio	Lower	Upper
117	100		
82	49.1	28.7	68.7
119	32.2	12.2	52.2

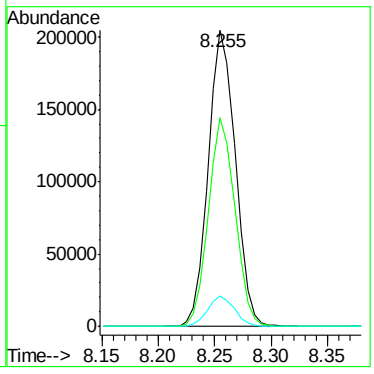


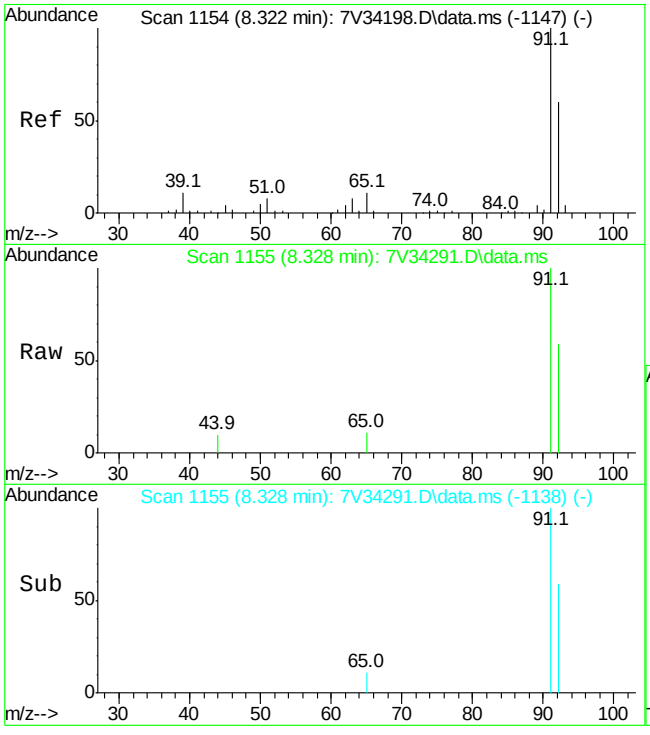


#56
Toluene-d8
Concen: 50.13 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion: 98 Resp: 339795

Ion	Ratio	Lower	Upper
98	100		
100	69.3	49.8	89.8
70	10.0	0.0	30.1

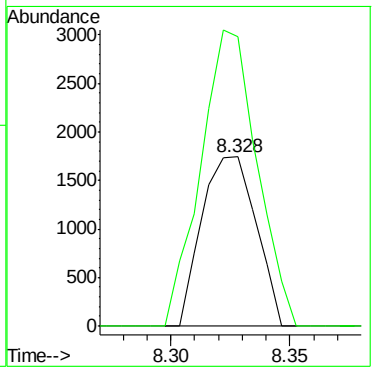


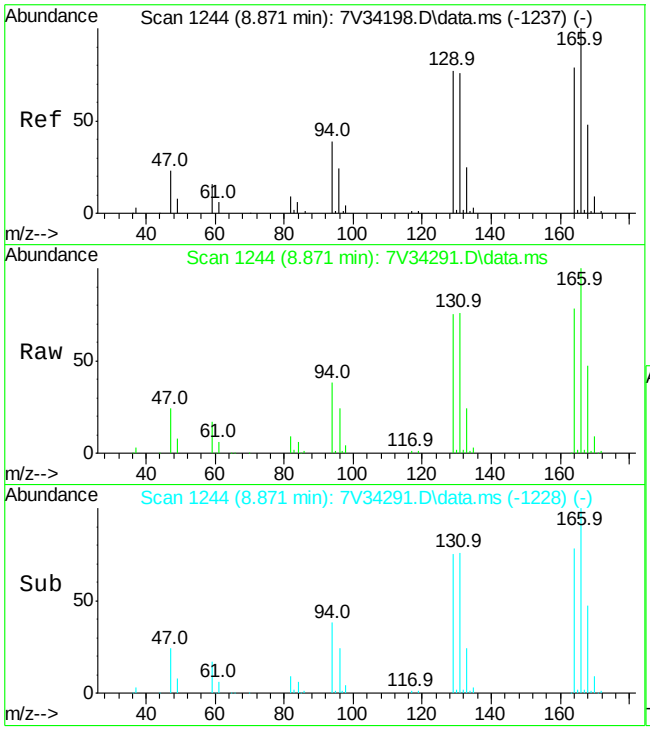


#57
Toluene
Concen: 0.52 ug/L
RT: 8.328 min Scan# 1155
Delta R.T. 0.006 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion: 92 Resp: 2754

Ion	Ratio	Lower	Upper
92	100		
91	180.8	150.1	190.1

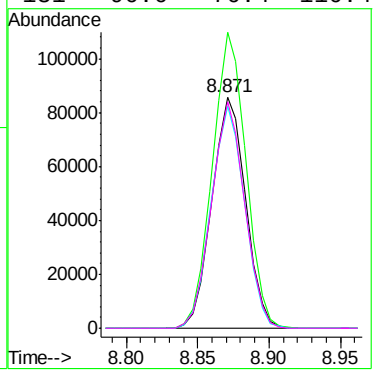


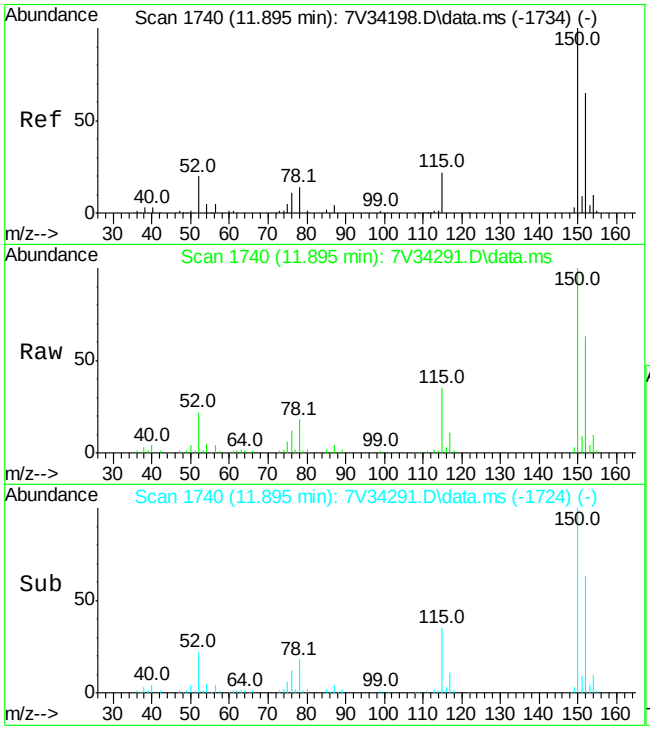


#60
Tetrachloroethene
Concen: 75.52 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion:164 Resp: 140721

Ion	Ratio	Lower	Upper
164	100		
166	127.7	107.5	147.5
129	95.8	76.8	116.8
131	96.6	76.4	116.4

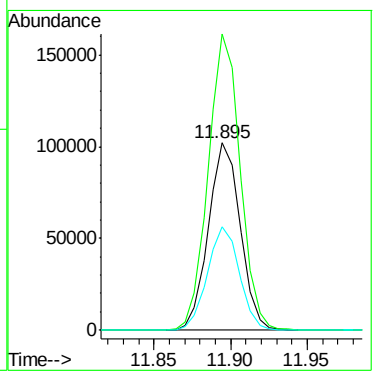


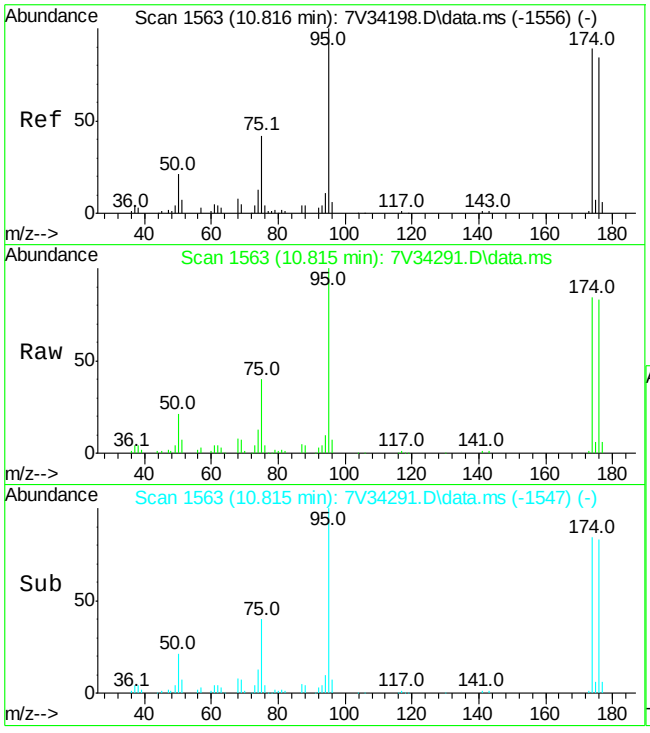


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion:152 Resp: 147468

Ion	Ratio	Lower	Upper
152	100		
150	158.4	154.9	194.9
115	55.3	34.6	74.6

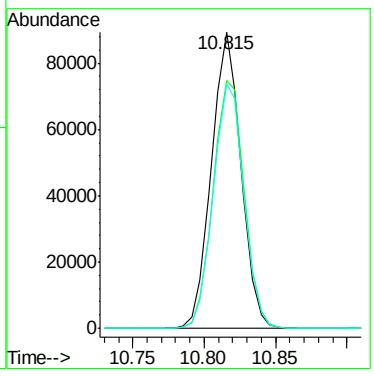




#76
4-Bromofluorobenzene
Concen: 50.07 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34291.D
Acq: 2 Jun 2016 5:58 pm

Tgt Ion: 95 Resp: 128585

Ion	Ratio	Lower	Upper
95	100		
174	88.4	70.3	110.3
176	85.7	67.4	107.4



7.1.9

7

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34235.D
Acq On : 1 Jun 2016 5:45 pm
Operator : amandaj
Sample : D83120-7
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 03 08:37:50 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	211968	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	335470	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	285364	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	146247	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	114268	49.67	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.34%			
41) 1,2-Dichloroethane-d4	6.164	102	23745	49.40	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 98.80%			
56) Toluene-d8	8.255	98	347125	50.59	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 101.18%			
76) 4-Bromofluorobenzene	10.815	95	124724	48.98	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 97.96%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	73888044m	7768.34	ug/L	
5) Vinyl Chloride	1.829	62	28466	12.73	ug/L	95
7) Chloroethane	2.335	64	368	0.31	ug/L #	44
12) 1,1-Dichloroethene	3.225	96	31179	16.06	ug/L	98
14) Acetone	3.317	43	1112	Below Cal	#	42
18) Methylene Chloride	3.792	84	22854	9.36	ug/L	97
21) trans-1,2-Dichloroethene	4.097	96	15816	7.32	ug/L	99
24) 1,1-Dichloroethane	4.573	63	8990	2.05	ug/L	93
29) cis-1,2-Dichloroethene	5.231	96	2010959	814.29	ug/L #	89
30) 2-Butanone	5.262	43	733	0.43	ug/L #	1
36) 1,1,1-Trichloroethane	5.792	97	7043	2.19	ug/L	98
37) Cyclohexane	5.835	56	3859	0.75	ug/L #	12
42) Benzene	6.219	78	3017	0.39	ug/L	90
47) Trichloroethene	6.956	95	892040	353.35	ug/L	100
54) 4-methyl-2-pentanone	8.151	43	80627	24.73	ug/L	100
57) Toluene	8.328	92	191031	35.93	ug/L	99
59) 1,1,2-Trichloroethane	8.743	83	891	0.56	ug/L #	59
60) Tetrachloroethene	8.883	164	8438682	4473.56	ug/L	95
67) Ethylbenzene	9.822	91	25565	2.78	ug/L	97
68) m,p-xylene	9.938	91	52913	7.39	ug/L	98
69) o-xylene	10.316	91	20122	2.73	ug/L	97
75) Cyclohexanone	10.815	55	116	1.10	ug/L #	1
86) 1,2,4-Trimethylbenzene	11.565	105	3001	0.39	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.1.10

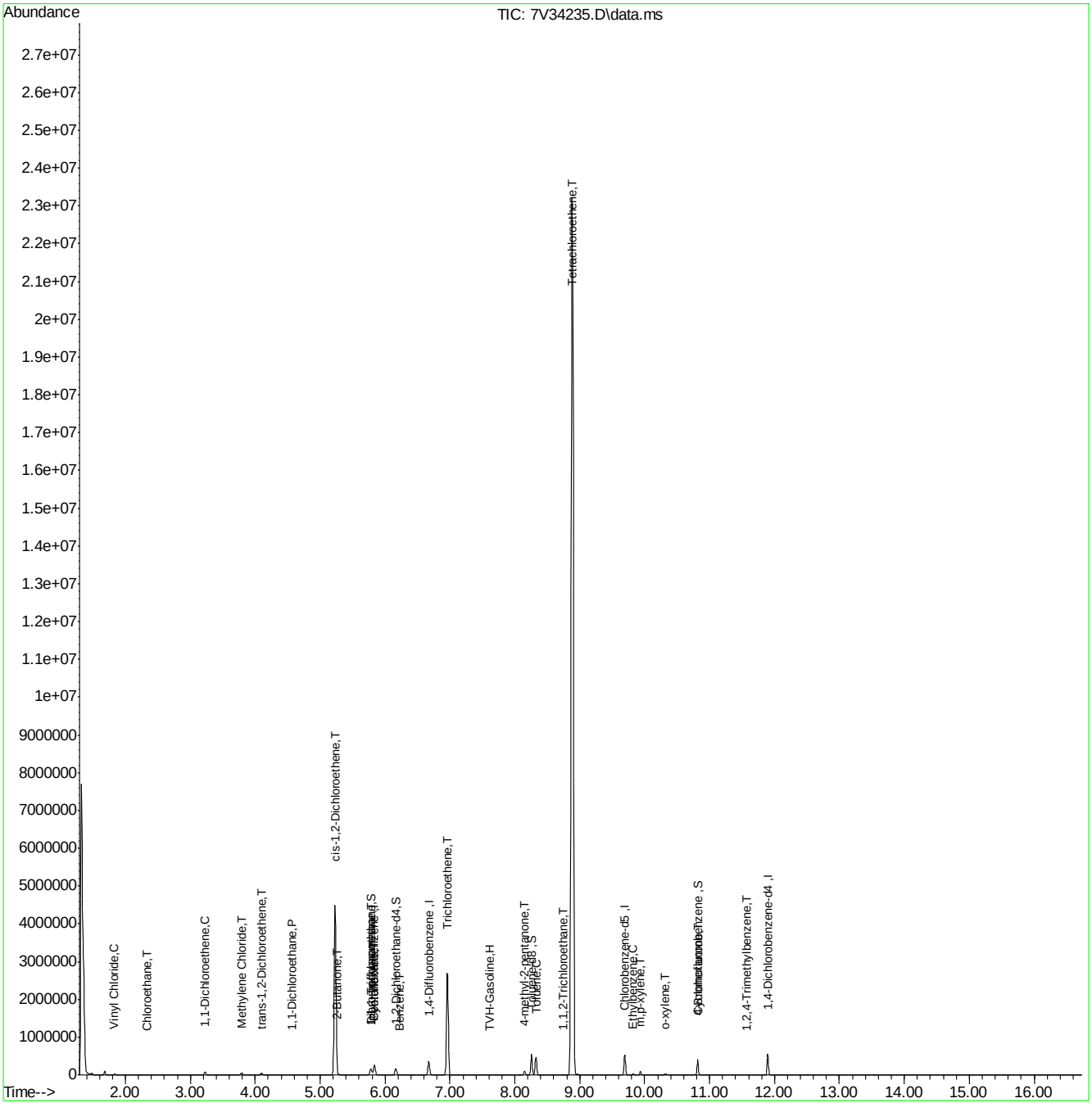
7

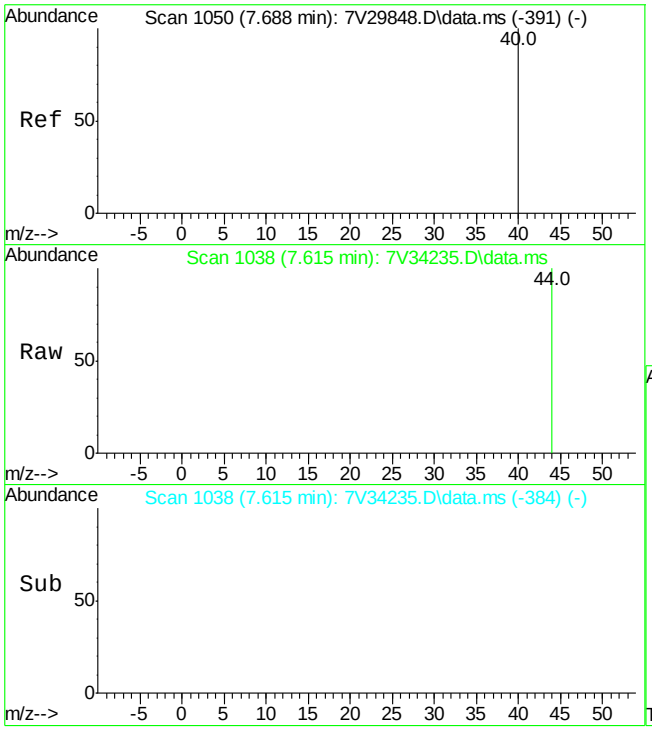
SGS ACCUTEST D83120

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34235.D
Acq On : 1 Jun 2016 5:45 pm
Operator : amandaj
Sample : D83120-7
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 21 Sample Multiplier: 1

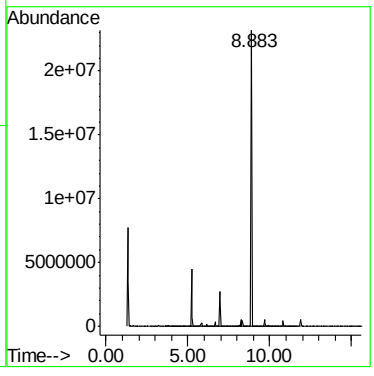
Quant Time: Jun 03 08:37:50 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

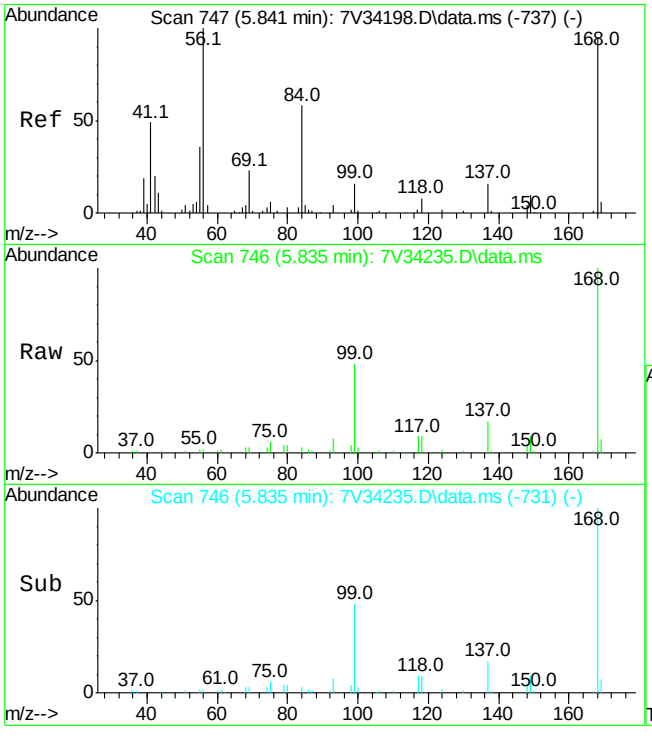




#1
TVH-Gasoline
Concen: 7768.34 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion:TIC Resp:73888044

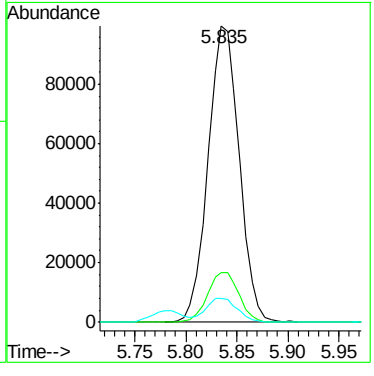


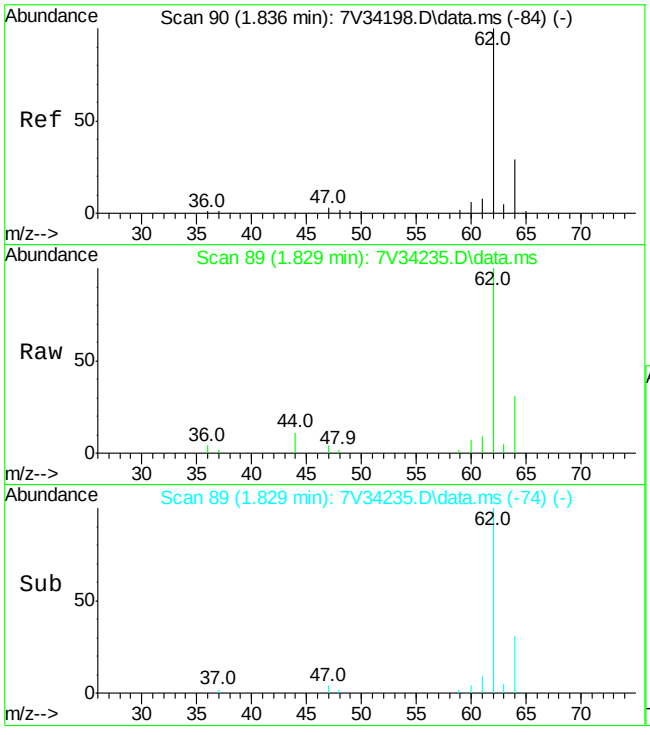


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion:168 Resp: 211968

Ion	Ratio	Lower	Upper
168	100		
137	16.9	0.0	36.8
93	8.1	0.0	28.3

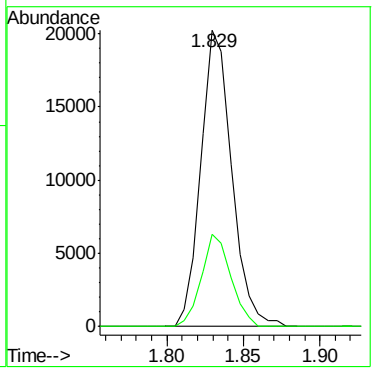


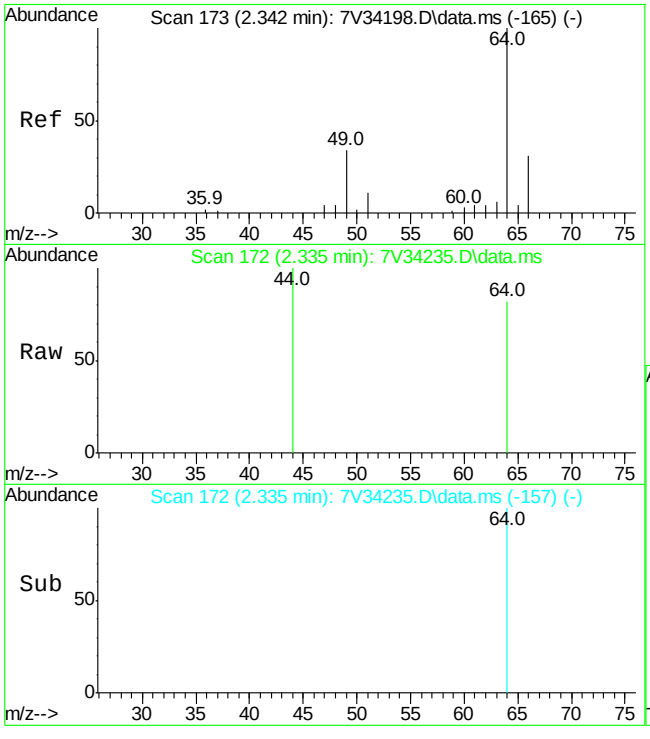


#5
Vinyl Chloride
Concen: 12.73 ug/L
RT: 1.829 min Scan# 89
Delta R.T. -0.007 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 62 Resp: 28466

Ion	Ratio	Lower	Upper
62	100		
64	31.0	8.5	48.5

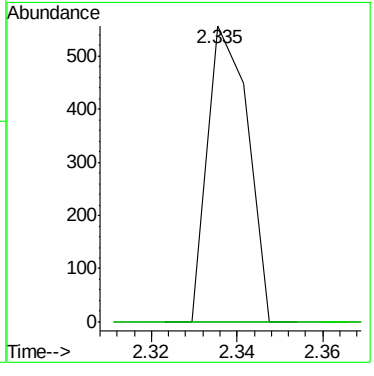


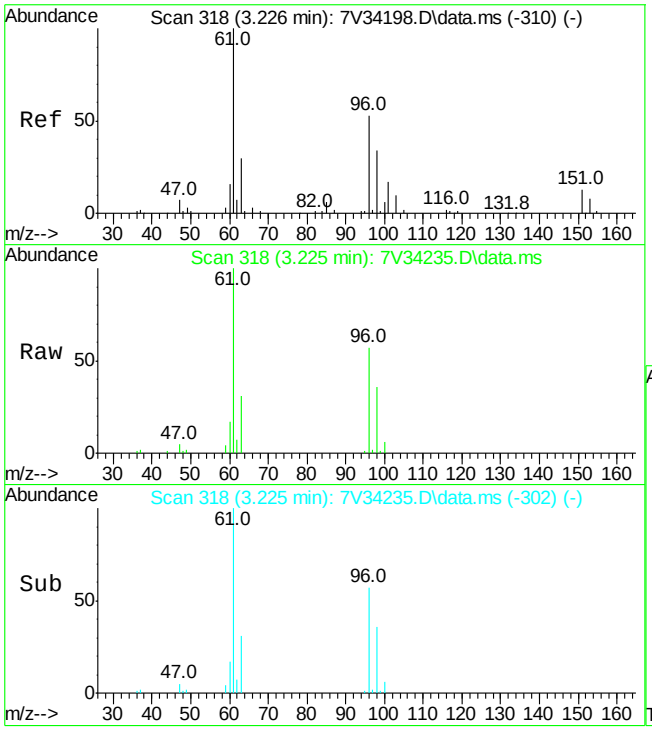


#7
Chloroethane
Concen: 0.31 ug/L
RT: 2.335 min Scan# 172
Delta R.T. -0.007 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 64 Resp: 368

Ion	Ratio	Lower	Upper
64	100		
66	0.0	10.6	50.6#

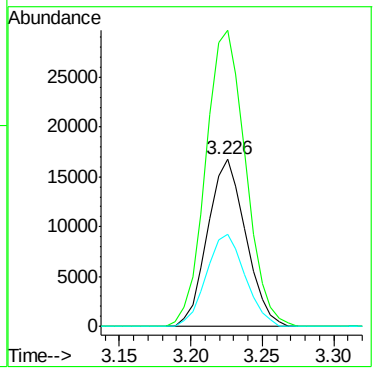


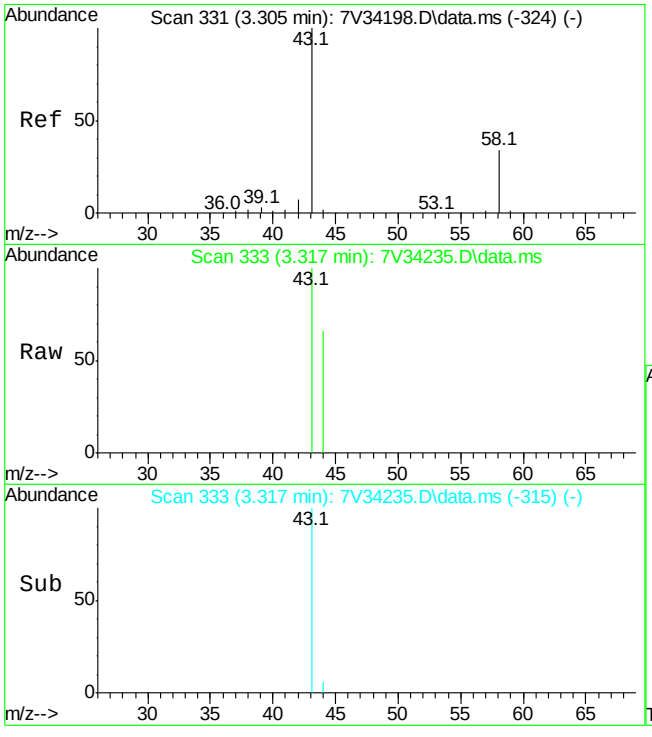


#12
1,1-Dichloroethene
Concen: 16.06 ug/L
RT: 3.225 min Scan# 318
Delta R.T. -0.001 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 96 Resp: 31179

Ion	Ratio	Lower	Upper
96	100		
61	184.9	167.7	207.7
63	56.1	36.4	76.4

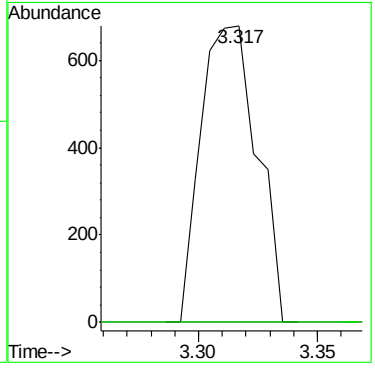


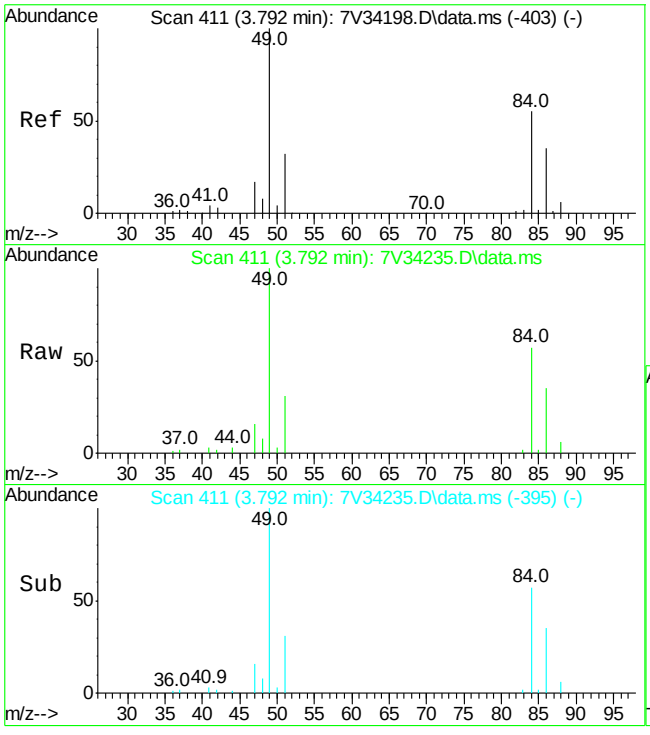


#14
Acetone
Concen: Below Cal
RT: 3.317 min Scan# 333
Delta R.T. 0.012 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 43 Resp: 1112

Ion	Ratio	Lower	Upper
43	100		
58	0.0	12.6	52.6#

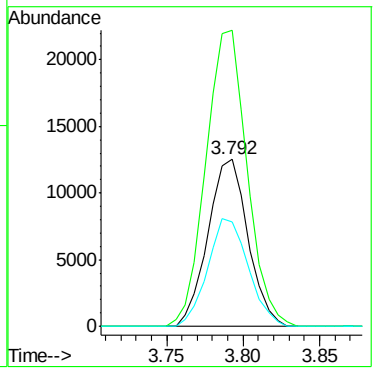


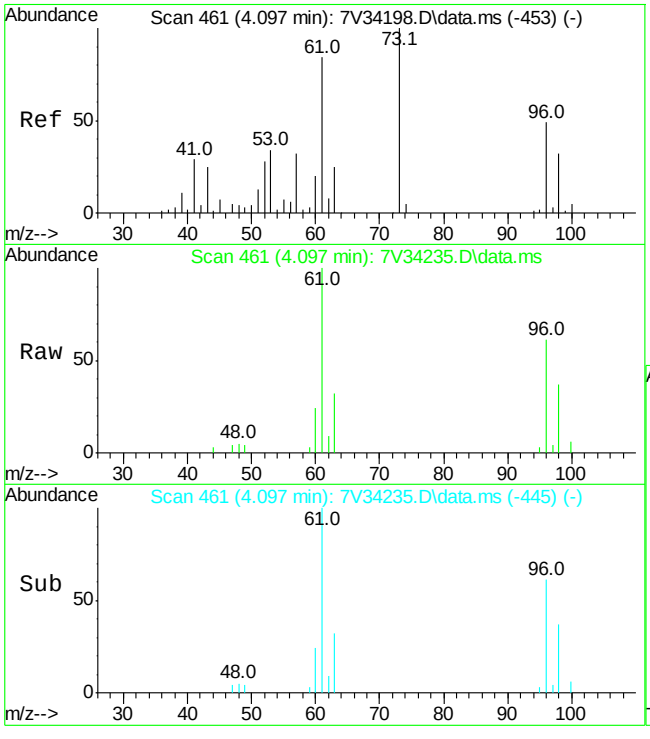


#18
Methylene Chloride
Concen: 9.36 ug/L
RT: 3.792 min Scan# 411
Delta R.T. 0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 84 Resp: 22854

Ion	Ratio	Lower	Upper
84	100		
49	182.1	167.4	207.4
86	65.6	45.3	85.3

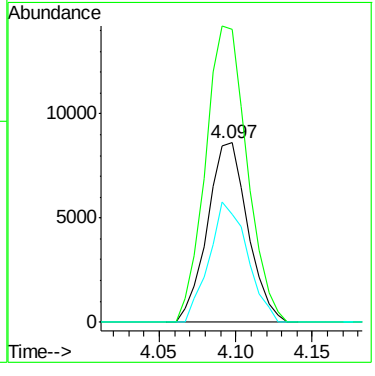


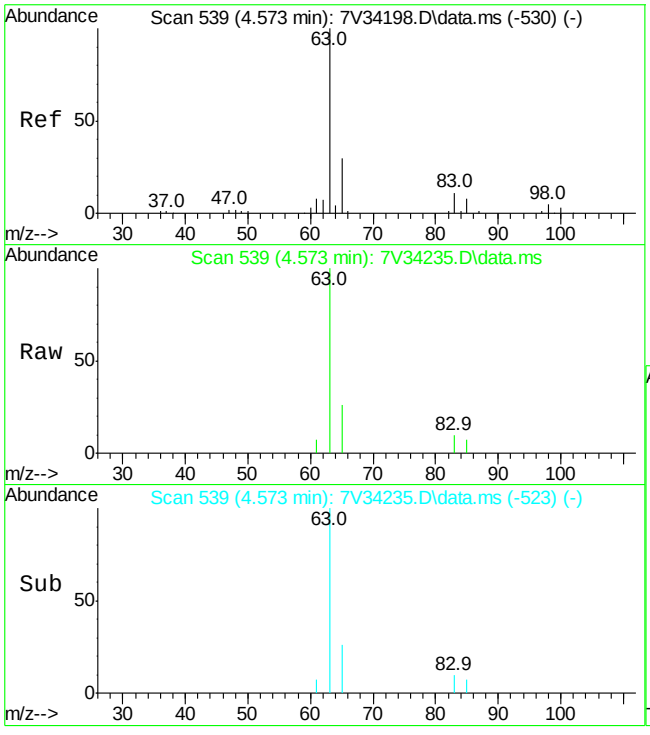


#21
trans-1,2-Dichloroethene
Concen: 7.32 ug/L
RT: 4.097 min Scan# 461
Delta R.T. 0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 96 Resp: 15816

Ion	Ratio	Lower	Upper
96	100		
61	169.9	151.1	191.1
98	63.3	43.8	83.8

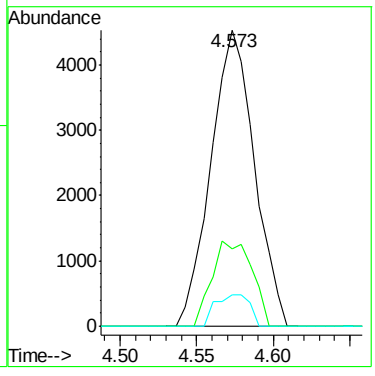


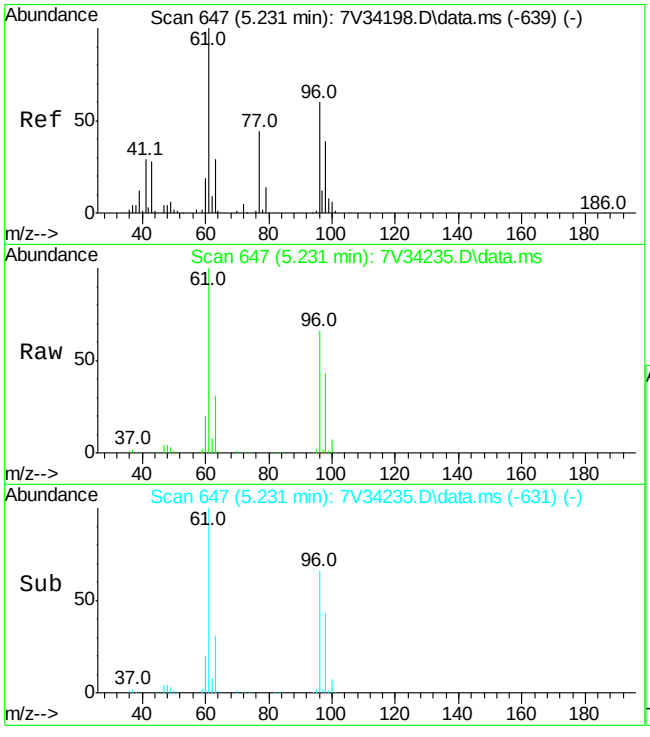


#24
1,1-Dichloroethane
Concen: 2.05 ug/L
RT: 4.573 min Scan# 539
Delta R.T. -0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 63 Resp: 8990

Ion	Ratio	Lower	Upper
63	100		
65	26.5	10.5	50.5
83	8.5	0.0	31.4

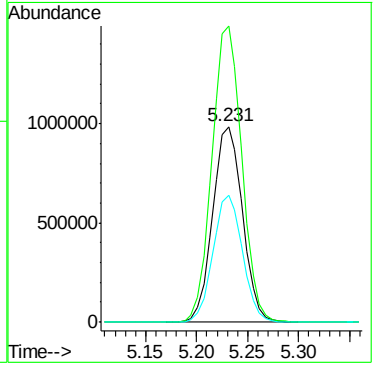


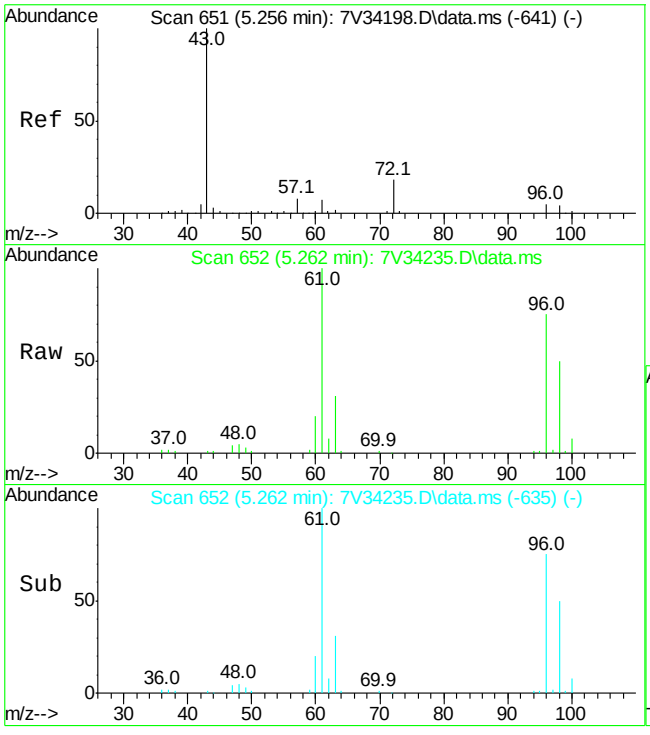


#29
cis-1,2-Dichloroethene
Concen: 814.29 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 96 Resp: 2010959

Ion	Ratio	Lower	Upper
96	100		
61	151.5	151.8	191.8#
98	64.2	44.4	84.4

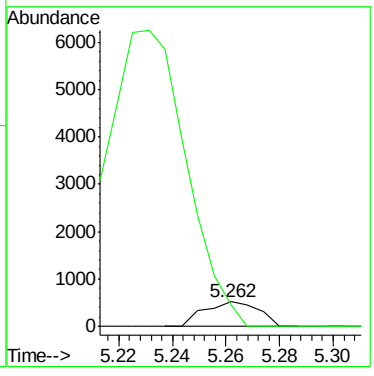


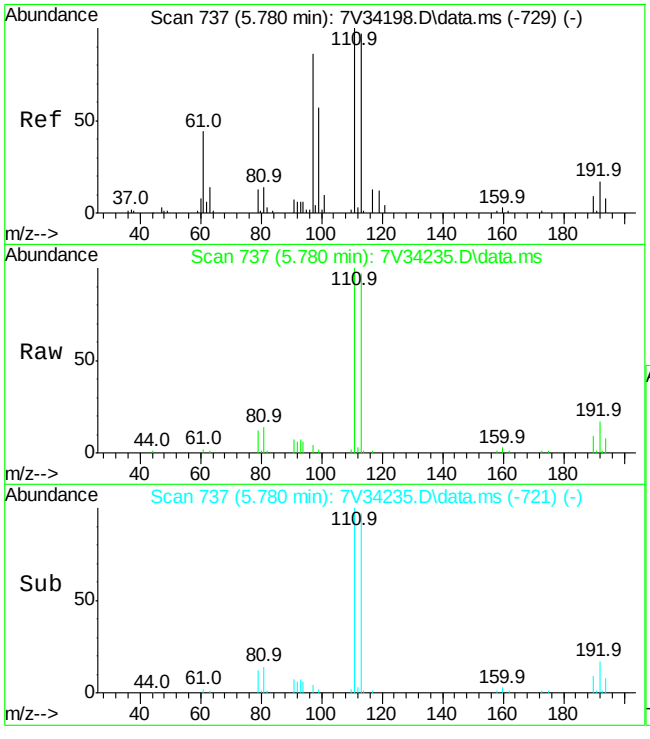


#30
2-Butanone
Concen: 0.43 ug/L
RT: 5.262 min Scan# 652
Delta R.T. 0.006 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 43 Resp: 733

Ion	Ratio	Lower	Upper
43	100		
72	1787.4	0.0	37.5#

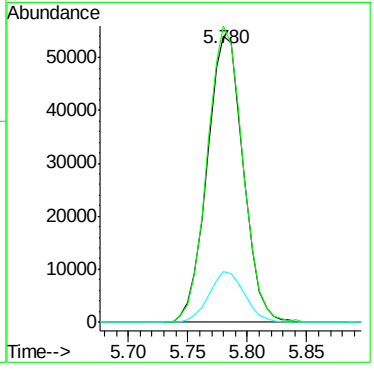


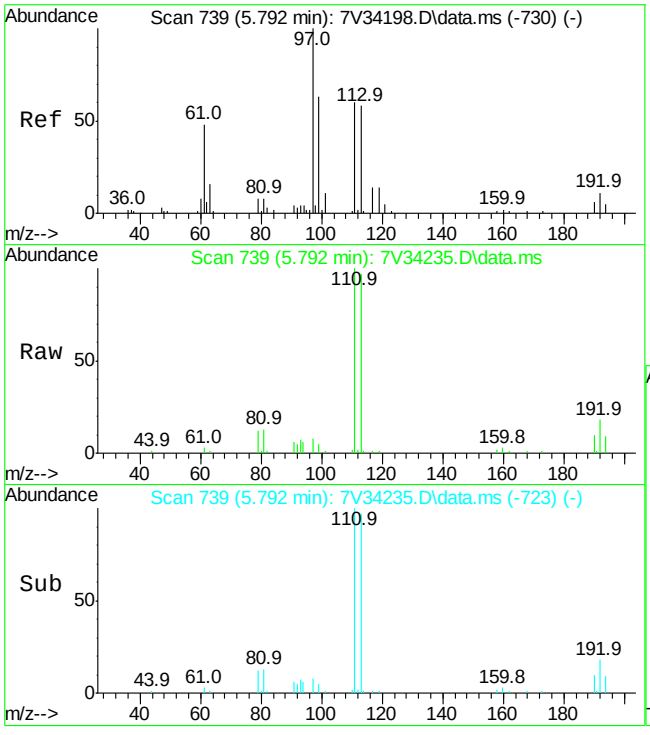


#35
Dibromofluoromethane
Concen: 49.67 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion:113 Resp: 114268

Ion	Ratio	Lower	Upper
113	100		
111	101.9	82.9	122.9
192	17.4	0.0	36.9

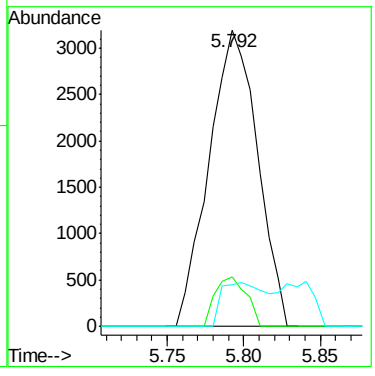


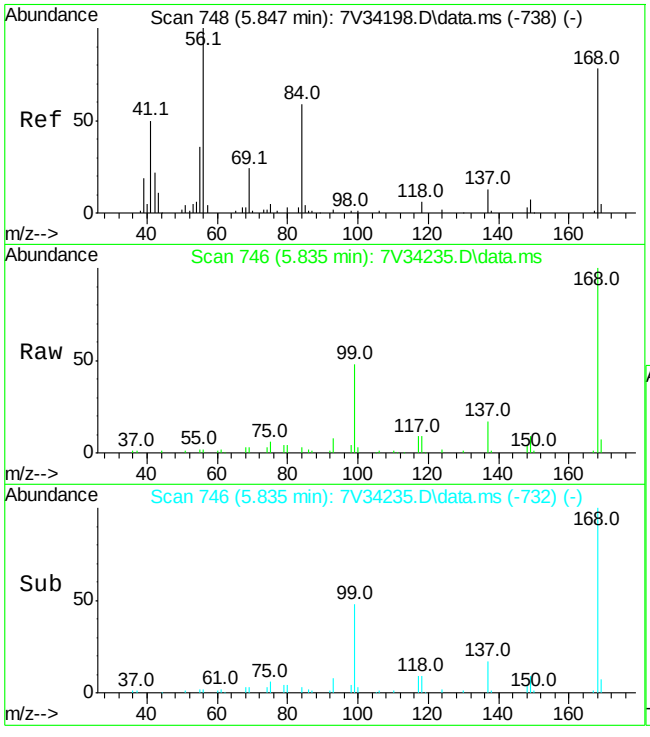


#36
1,1,1-Trichloroethane
Concen: 2.19 ug/L
RT: 5.792 min Scan# 739
Delta R.T. 0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 97 Resp: 7043

Ion	Ratio	Lower	Upper
97	100		
63	16.8	0.0	35.6
119	14.2	0.0	33.5

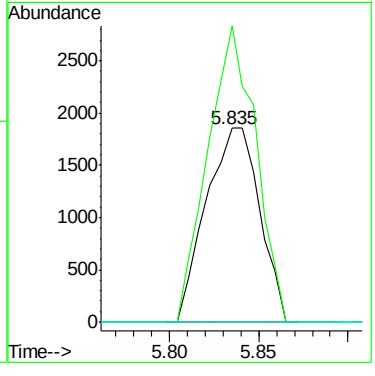


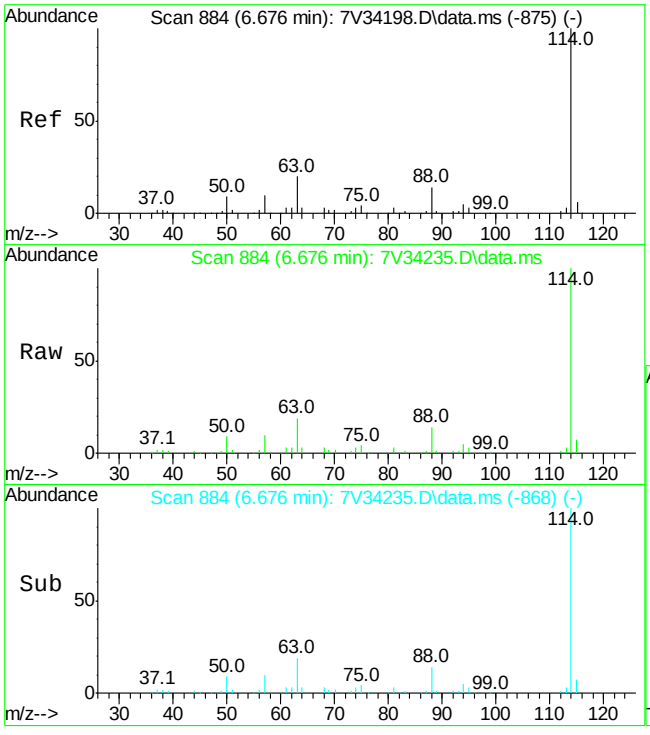


#37
Cyclohexane
Concen: 0.75 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.012 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 56 Resp: 3859

Ion	Ratio	Lower	Upper
56	100		
84	137.2	40.6	80.6#
41	0.0	30.3	70.3#

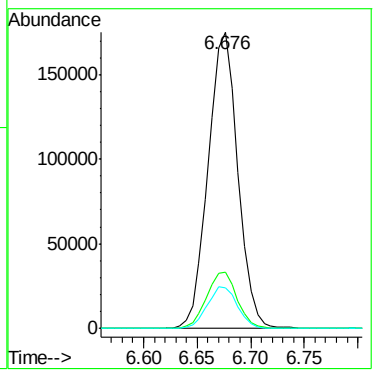


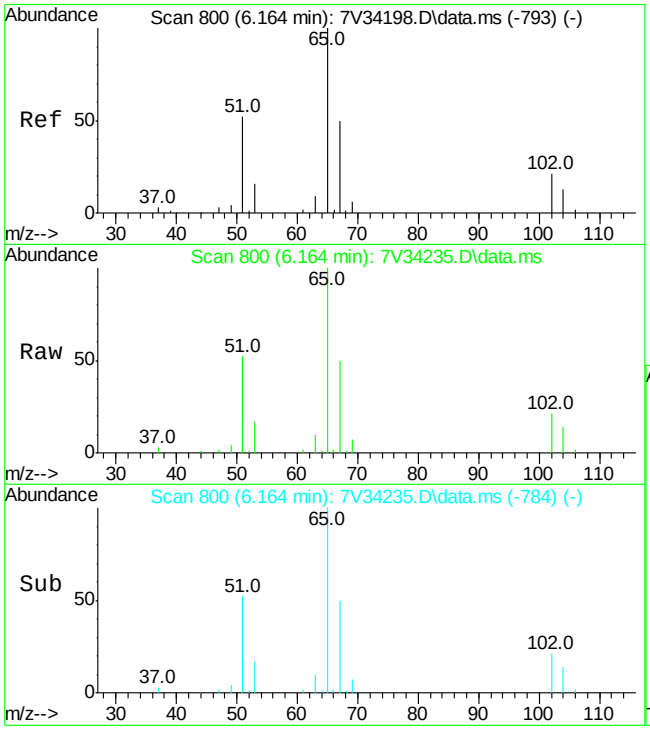


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion:114 Resp: 335470

Ion	Ratio	Lower	Upper
114	100		
63	19.3	0.0	39.6
88	14.2	0.0	34.3

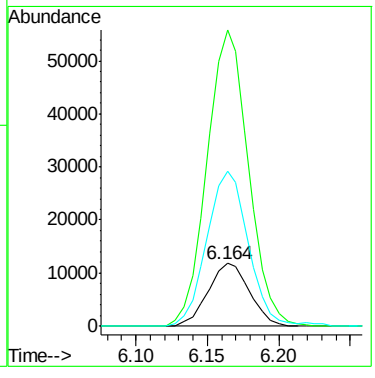


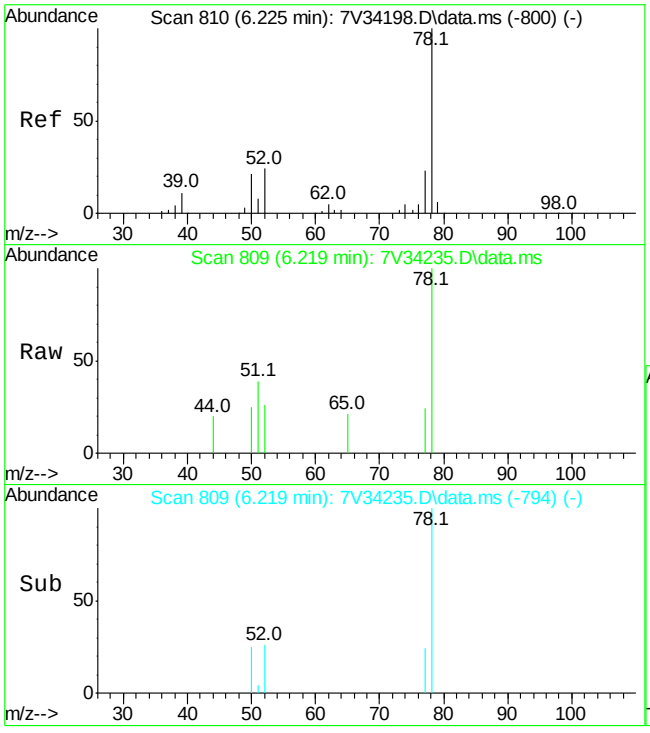


#41
1,2-Dichloroethane-d4
Concen: 49.40 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion:102 Resp: 23745

Ion	Ratio	Lower	Upper
102	100		
65	472.7	469.5	509.5
51	249.3	232.7	272.7

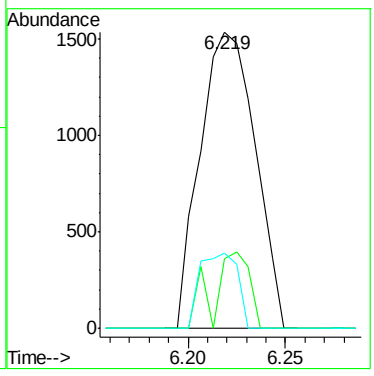


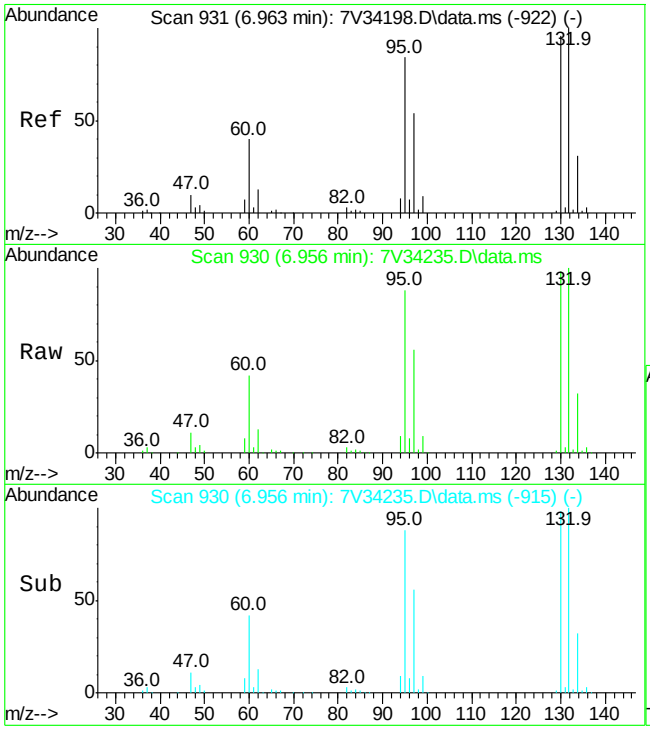


#42
Benzene
Concen: 0.39 ug/L
RT: 6.219 min Scan# 809
Delta R.T. -0.006 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 78 Resp: 3017

Ion	Ratio	Lower	Upper
78	100		
77	17.0	2.6	42.6
50	17.4	1.2	41.2

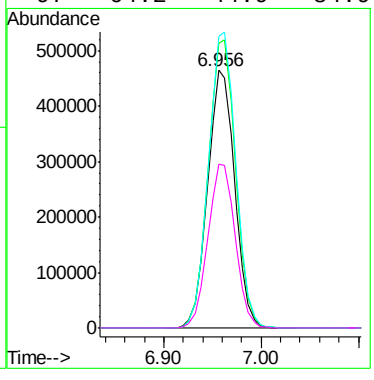


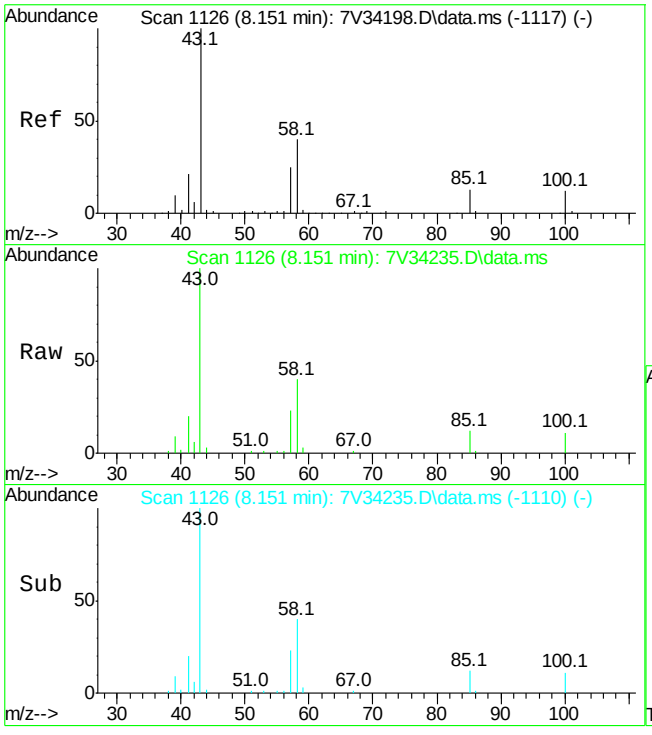


#47
Trichloroethene
Concen: 353.35 ug/L
RT: 6.956 min Scan# 930
Delta R.T. -0.007 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 95 Resp: 892040

Ion	Ratio	Lower	Upper
95	100		
130	113.1	93.2	133.2
132	115.9	95.9	135.9
97	64.2	44.9	84.9

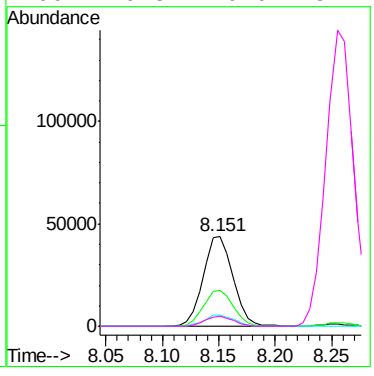


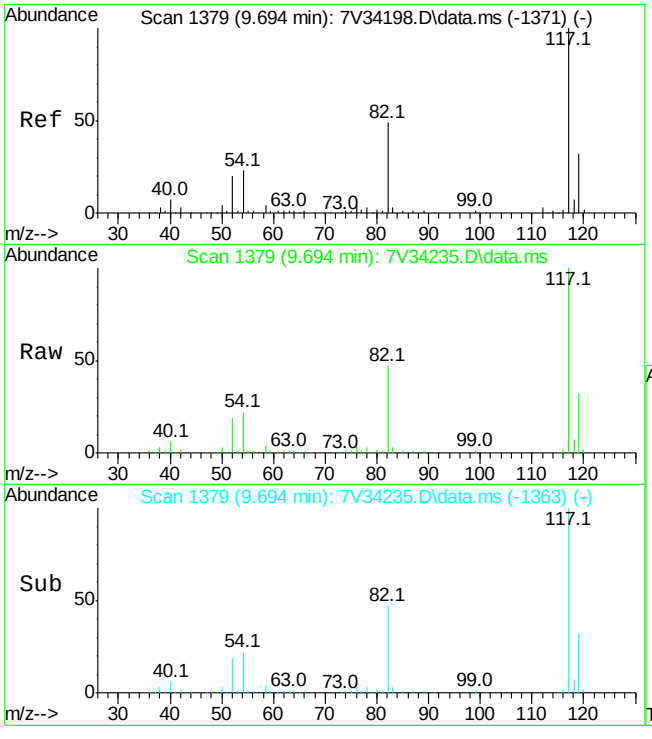


#54
4-methyl-2-pentanone
Concen: 24.73 ug/L
RT: 8.151 min Scan# 1126
Delta R.T. 0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 43 Resp: 80627

Ion	Ratio	Lower	Upper
43	100		
58	39.7	19.8	59.8
85	12.5	0.0	32.5
100	10.8	0.0	31.1

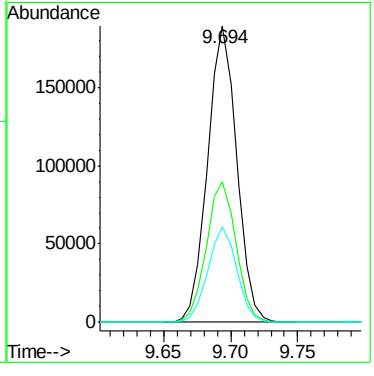




#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

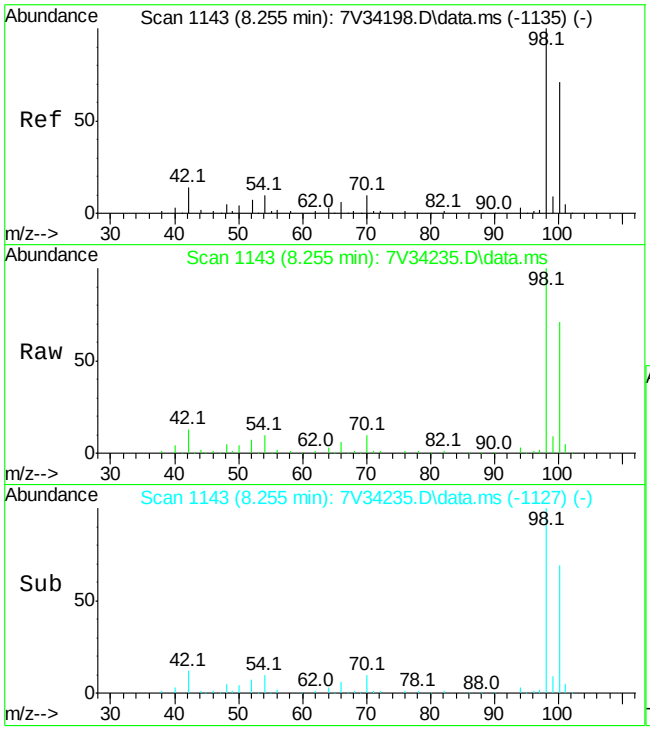
Tgt Ion:117 Resp: 285364

Ion	Ratio	Lower	Upper
117	100		
82	48.1	28.7	68.7
119	31.9	12.2	52.2



7.1.10

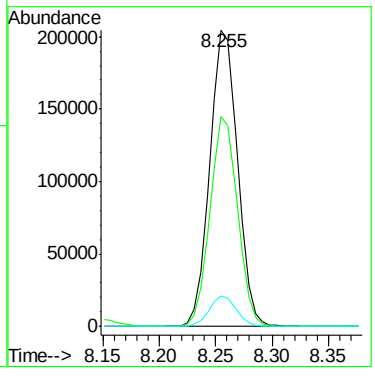
7

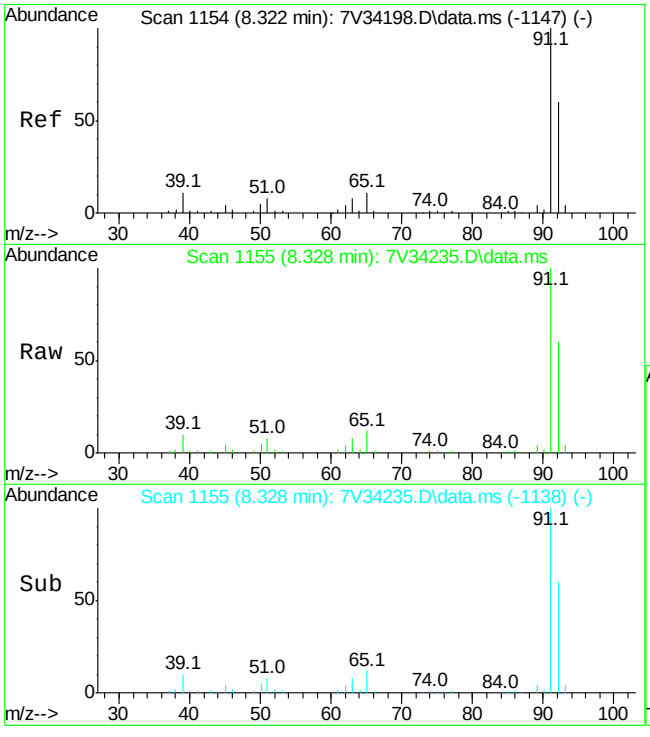


#56
Toluene-d8
Concen: 50.59 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. 0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 98 Resp: 347125

Ion	Ratio	Lower	Upper
98	100		
100	70.3	49.8	89.8
70	10.0	0.0	30.1

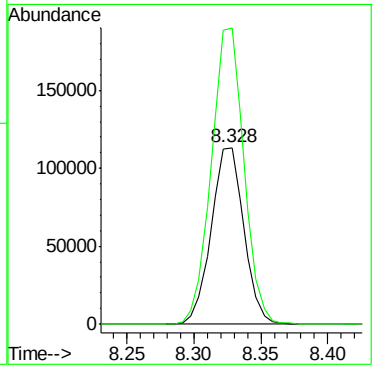


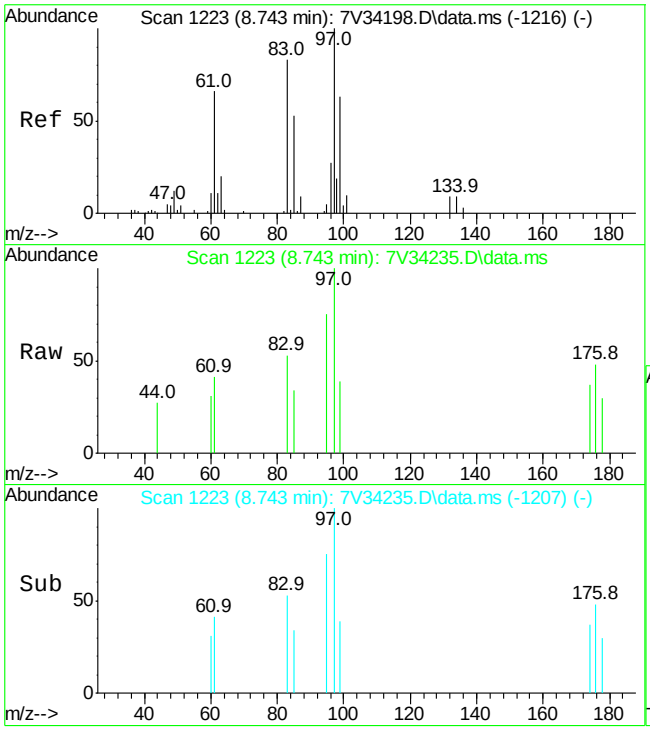


#57
Toluene
Concen: 35.93 ug/L
RT: 8.328 min Scan# 1155
Delta R.T. 0.006 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 92 Resp: 191031

Ion	Ratio	Lower	Upper
92	100		
91	168.3	150.1	190.1

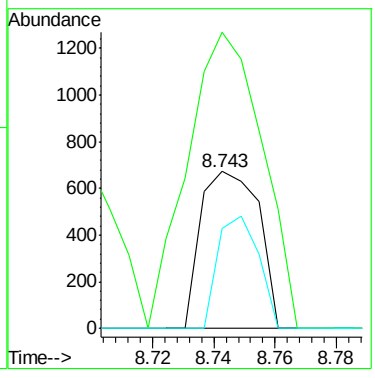


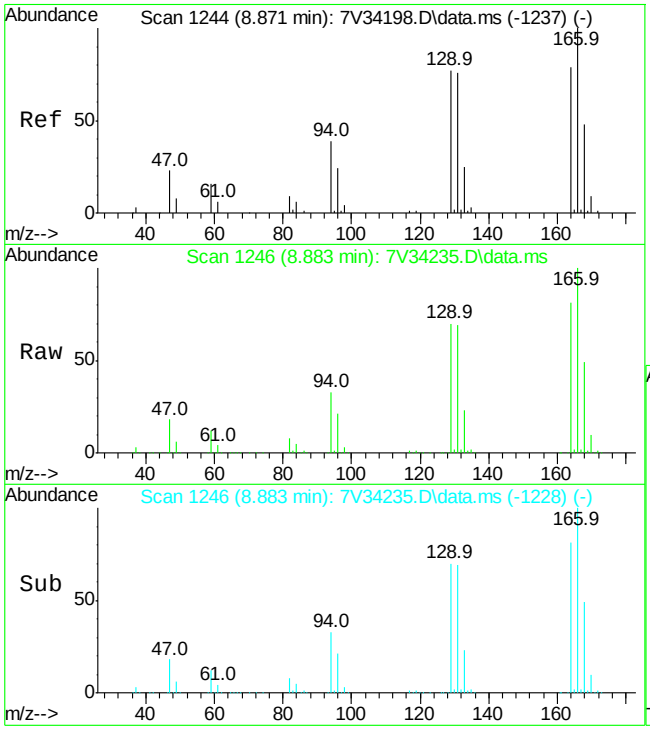


#59
1,1,2-Trichloroethane
Concen: 0.56 ug/L
RT: 8.743 min Scan# 1223
Delta R.T. -0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 83 Resp: 891

Ion	Ratio	Lower	Upper
83	100		
97	188.8	100.1	140.1#
85	63.4	43.3	83.3

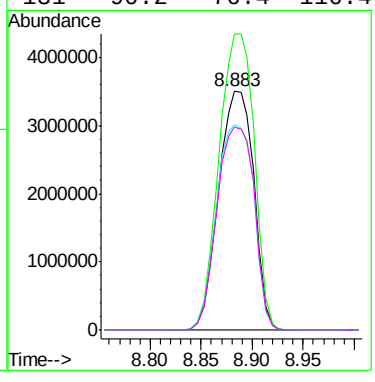


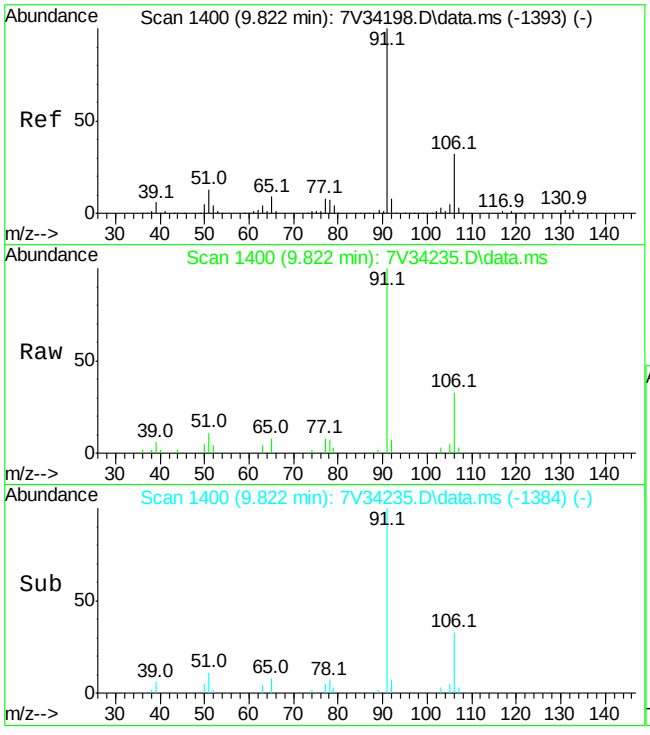


#60
Tetrachloroethene
Concen: 4473.56 ug/L
RT: 8.883 min Scan# 1246
Delta R.T. 0.012 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion:164 Resp: 8438682

Ion	Ratio	Lower	Upper
164	100		
166	124.6	107.5	147.5
129	91.4	76.8	116.8
131	90.2	76.4	116.4

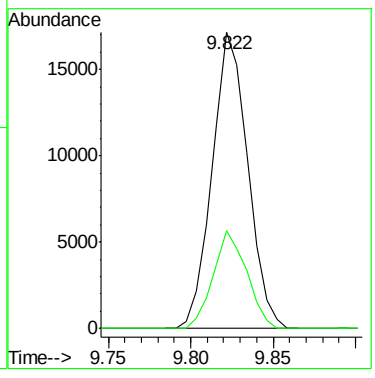


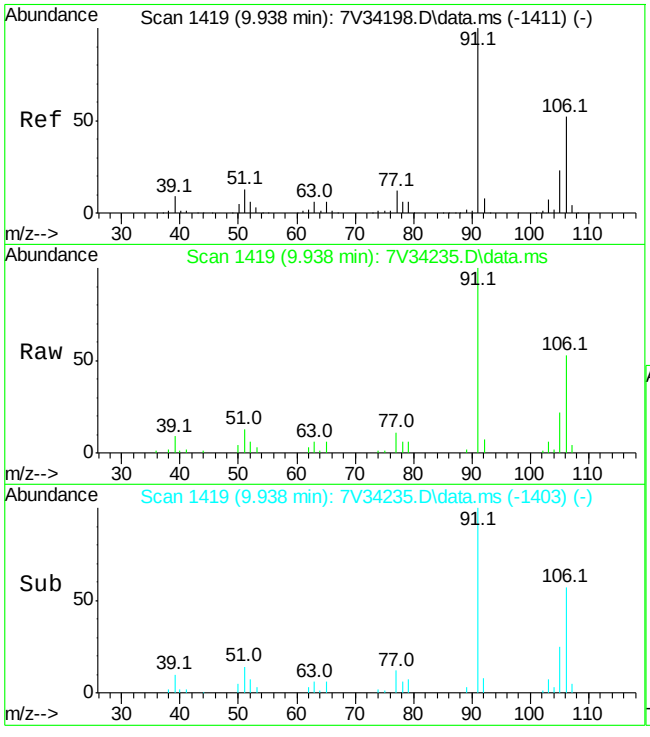


#67
Ethylbenzene
Concen: 2.78 ug/L
RT: 9.822 min Scan# 1400
Delta R.T. -0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 91 Resp: 25565

Ion	Ratio	Lower	Upper
91	100		
106	30.9	12.8	52.8

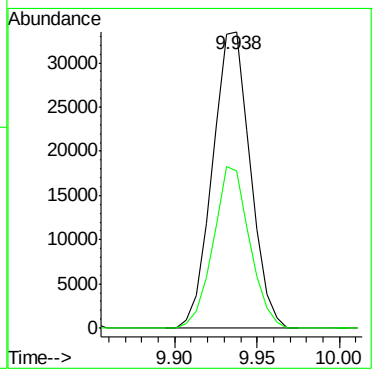


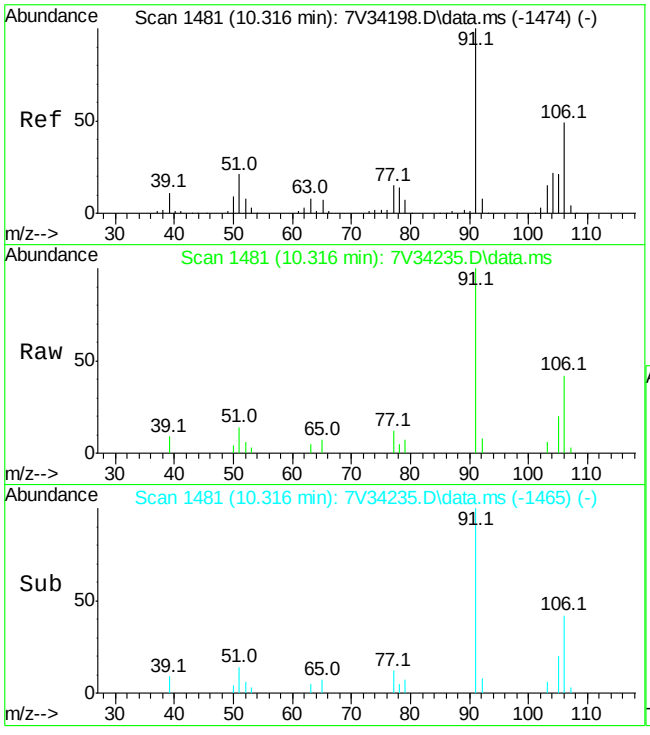


#68
m,p-xylene
Concen: 7.39 ug/L
RT: 9.938 min Scan# 1419
Delta R.T. -0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 91 Resp: 52913

Ion	Ratio	Lower	Upper
91	100		
106	52.7	31.1	71.1

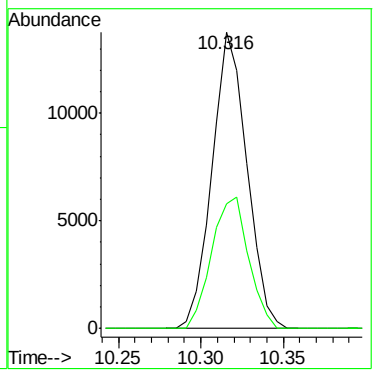


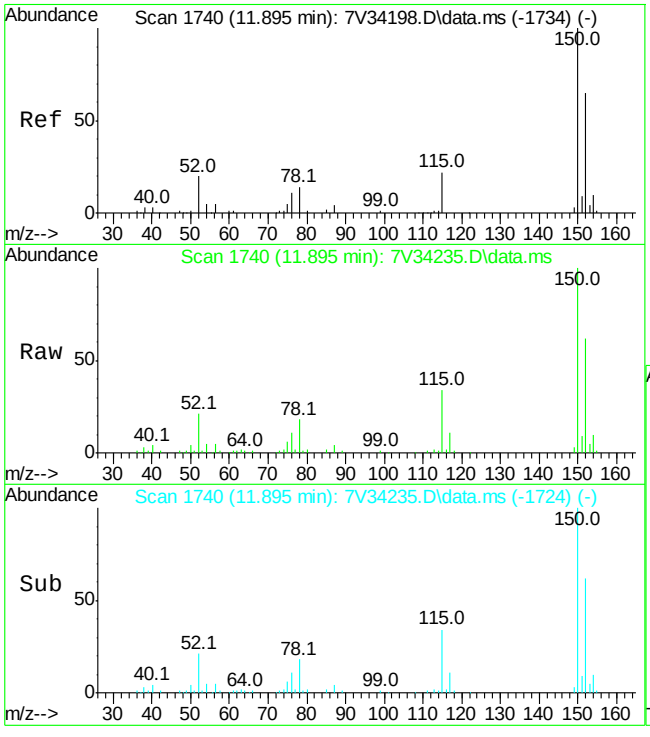


#69
o-xylene
Concen: 2.73 ug/L
RT: 10.316 min Scan# 1481
Delta R.T. -0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 91 Resp: 20122

Ion	Ratio	Lower	Upper
91	100		
106	47.0	29.0	69.0

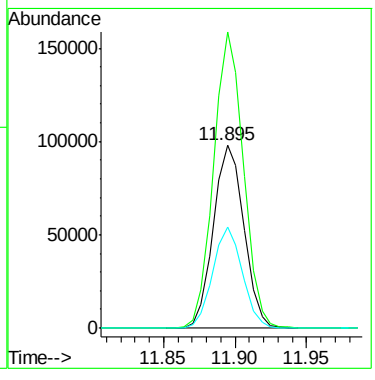


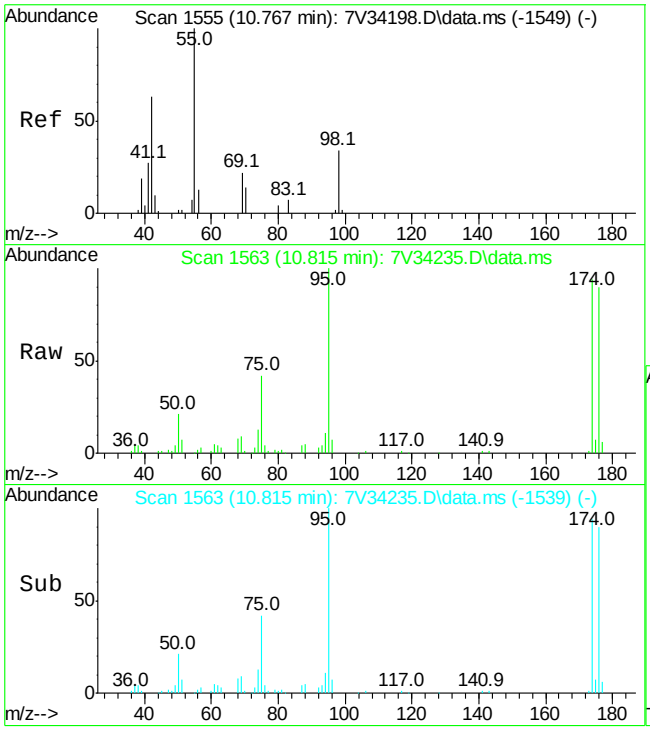


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion:152 Resp: 146247

Ion	Ratio	Lower	Upper
152	100		
150	157.7	154.9	194.9
115	53.4	34.6	74.6

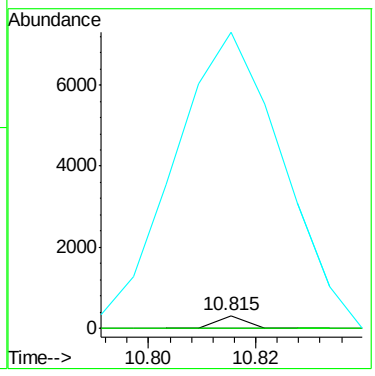


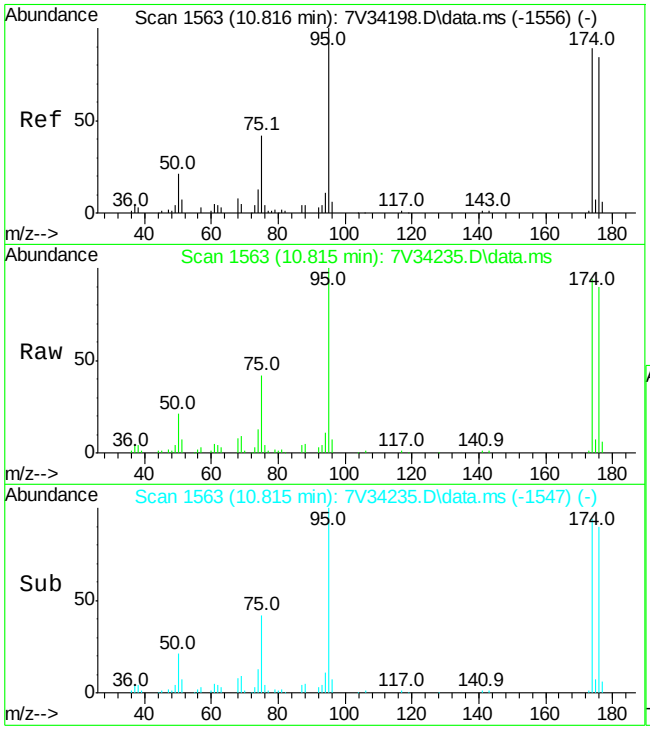


#75
Cyclohexanone
Concen: 1.10 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. 0.048 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 55 Resp: 116

Ion	Ratio	Lower	Upper
55	100		
98	0.0	14.1	54.1#
69	2304.1	1.9	41.9#

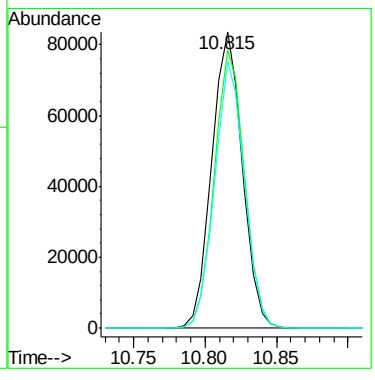


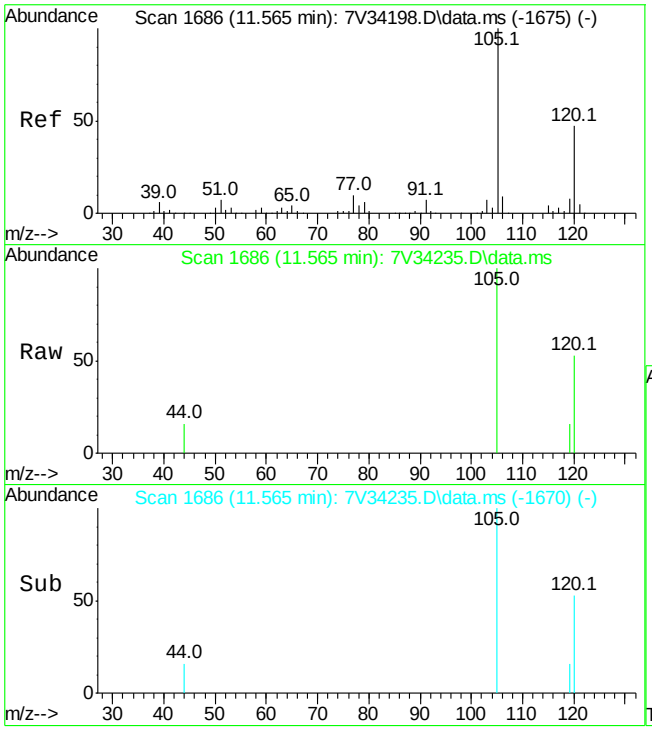


#76
4-Bromofluorobenzene
Concen: 48.98 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion: 95 Resp: 124724

Ion	Ratio	Lower	Upper
95	100		
174	92.6	70.3	110.3
176	87.9	67.4	107.4

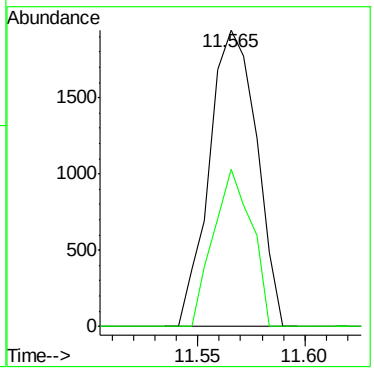




#86
1,2,4-Trimethylbenzene
Concen: 0.39 ug/L
RT: 11.565 min Scan# 1686
Delta R.T. 0.000 min
Lab File: 7V34235.D
Acq: 1 Jun 2016 5:45 pm

Tgt Ion:105 Resp: 3001

Ion	Ratio	Lower	Upper
105	100		
120	42.9	26.1	66.1



7.1.10

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1842\
Data File : 7V34292.D
Acq On : 2 Jun 2016 6:22 pm
Operator : TamL
Sample : D83120-7
Misc : MS9182,V7V1842,,,,,100
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 03 12:07:41 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	196406	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	323954	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	282118	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	142645	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	112345	52.70	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 105.40%			
41) 1,2-Dichloroethane-d4	6.164	102	22537	48.55	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 97.10%			
56) Toluene-d8	8.255	98	340167	50.14	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 100.28%			
76) 4-Bromofluorobenzene	10.815	95	123837	49.86	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 99.72%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	1375723m	144.64	ug/L	
18) Methylene Chloride	3.792	84	952	0.42	ug/L	94
29) cis-1,2-Dichloroethene	5.231	96	19972	8.73	ug/L	91
47) Trichloroethene	6.956	95	8257	3.39	ug/L	98
57) Toluene	8.322	92	2775	0.53	ug/L	98
60) Tetrachloroethene	8.871	164	146183	78.39	ug/L	99

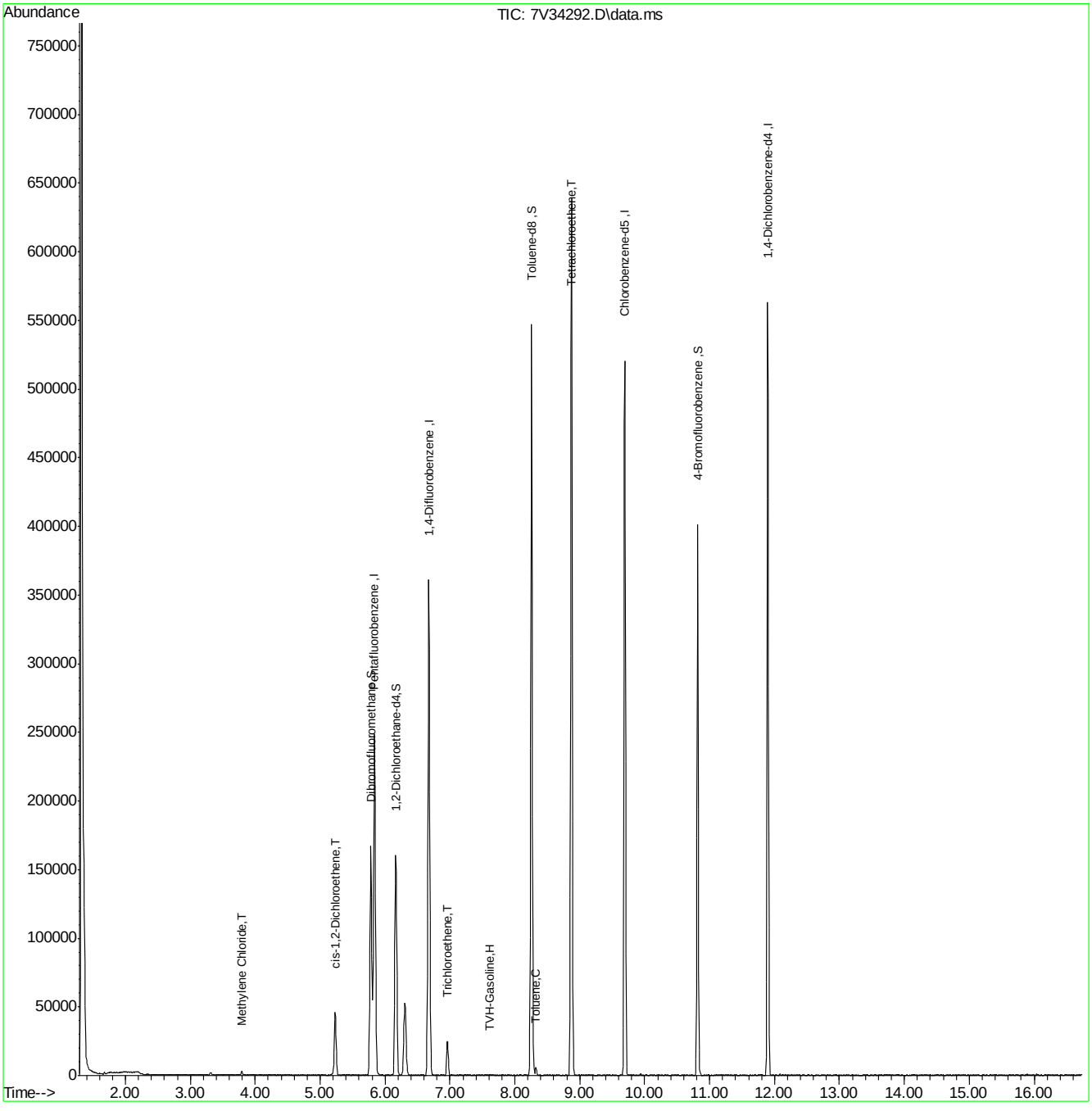
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST D83120

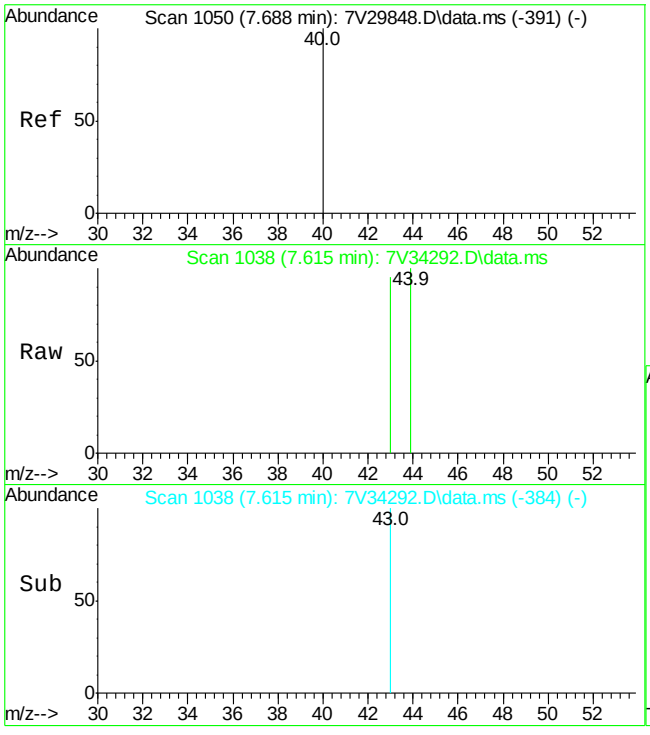
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1842\
Data File : 7V34292.D
Acq On : 2 Jun 2016 6:22 pm
Operator : TamL
Sample : D83120-7
Misc : MS9182,V7V1842,,,,,100
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 03 12:07:41 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

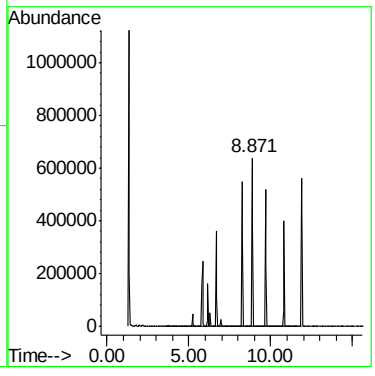


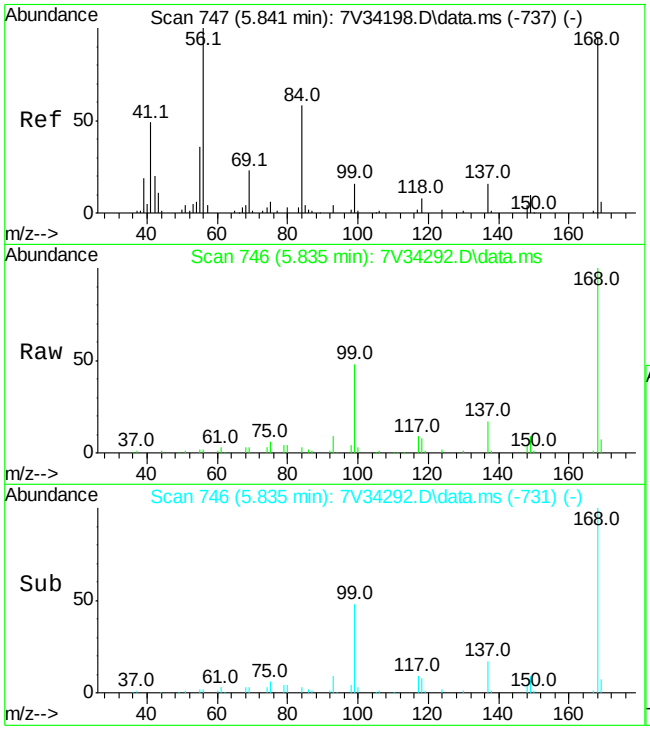
V7V1839F.M Fri Jun 03 14:18:20 2016 Page: 2



#1
TVH-Gasoline
Concen: 144.64 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion:TIC Resp: 1375723

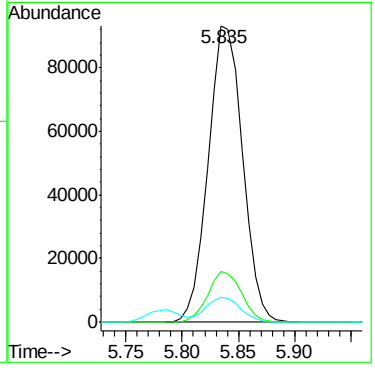


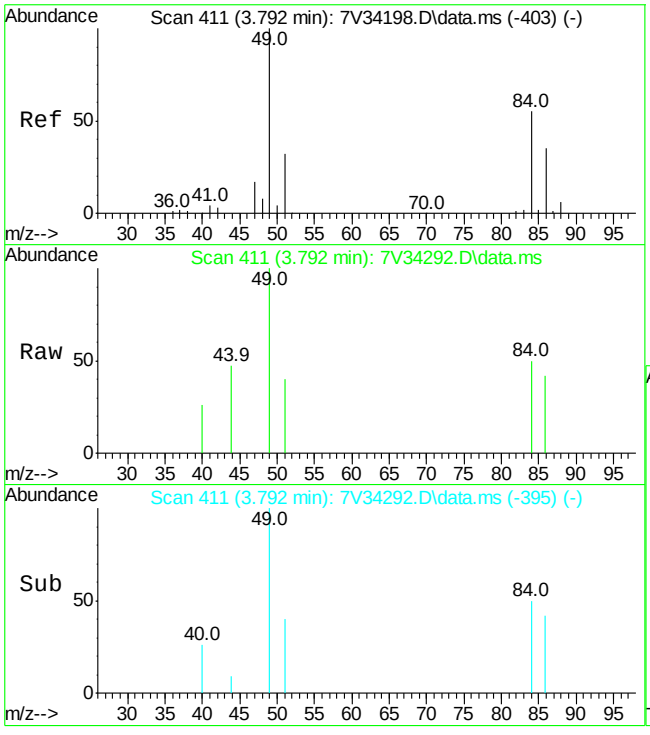


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion:168 Resp: 196406

Ion	Ratio	Lower	Upper
168	100		
137	16.8	0.0	36.8
93	8.5	0.0	28.3

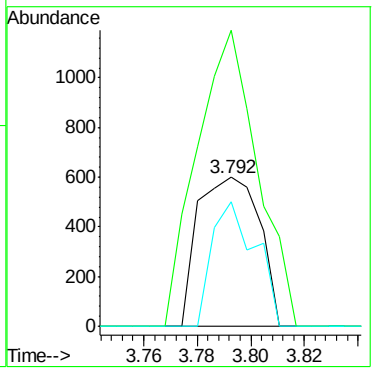


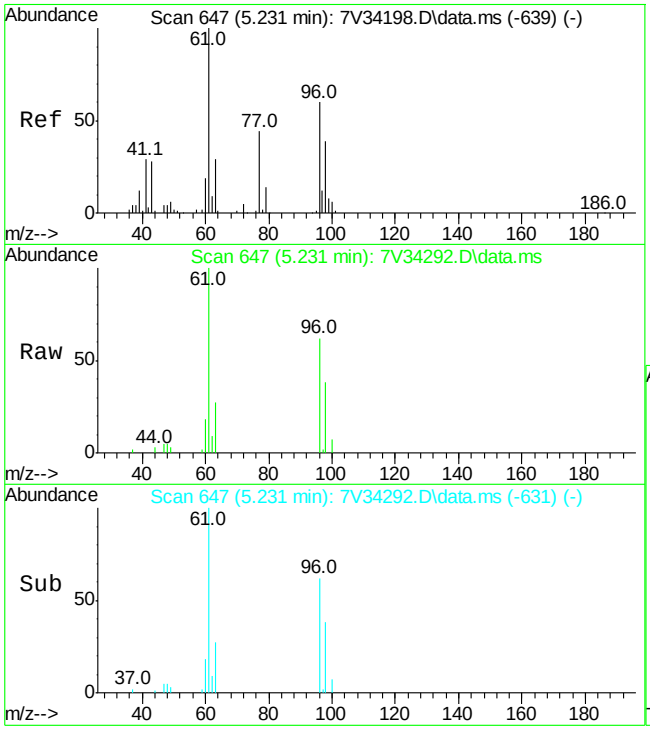


#18
Methylene Chloride
Concen: 0.42 ug/L
RT: 3.792 min Scan# 411
Delta R.T. 0.000 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion: 84 Resp: 952

Ion	Ratio	Lower	Upper
84	100		
49	195.4	167.4	207.4
86	59.1	45.3	85.3

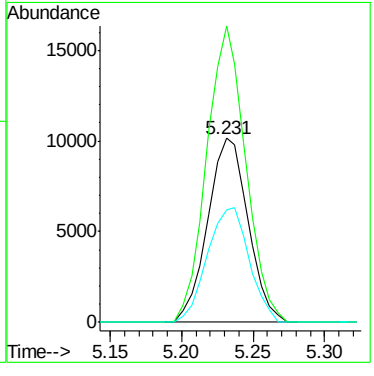


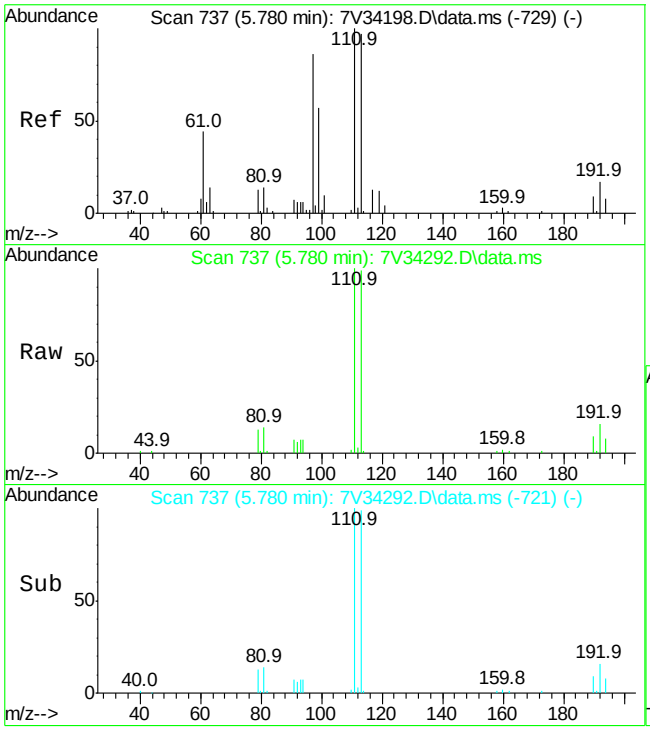


#29
cis-1,2-Dichloroethene
Concen: 8.73 ug/L
RT: 5.231 min Scan# 647
Delta R.T. 0.000 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion: 96 Resp: 19972

Ion	Ratio	Lower	Upper
96	100		
61	154.8	151.8	191.8
98	64.3	44.4	84.4

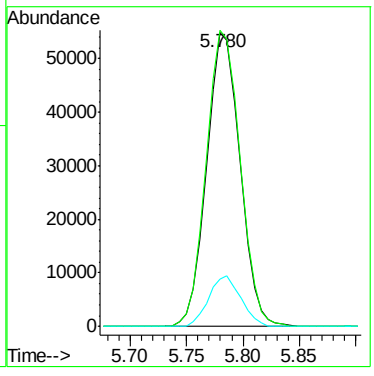


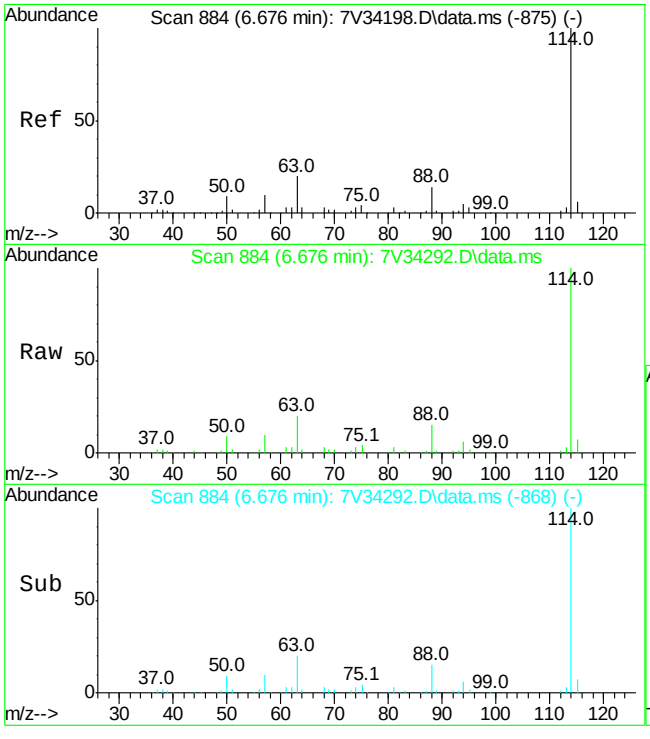


#35
Dibromofluoromethane
Concen: 52.70 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion:113 Resp: 112345

Ion	Ratio	Lower	Upper
113	100		
111	102.6	82.9	122.9
192	16.5	0.0	36.9

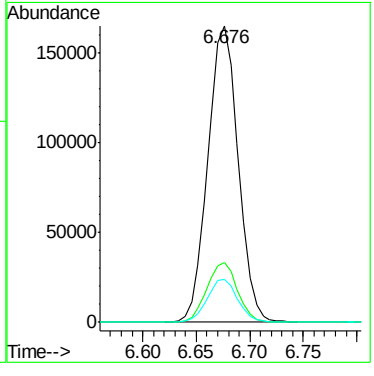


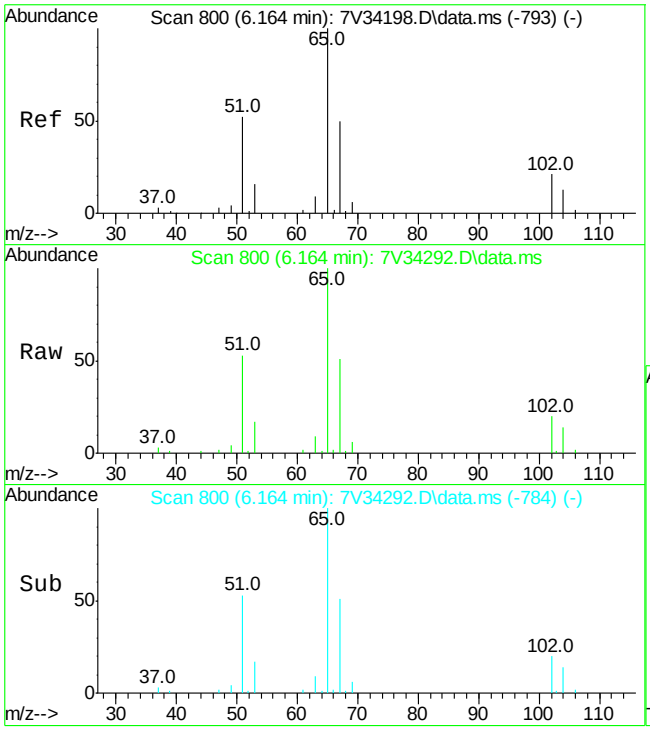


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion:114 Resp: 323954

Ion	Ratio	Lower	Upper
114	100		
63	20.0	0.0	39.6
88	14.3	0.0	34.3

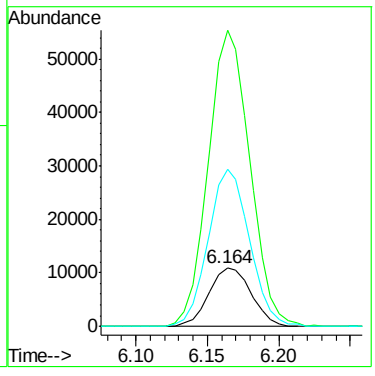


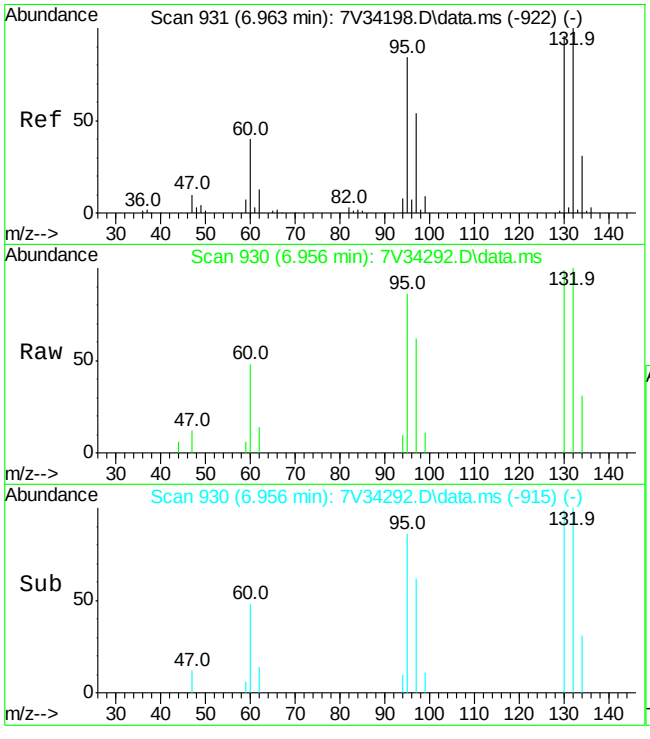


#41
1,2-Dichloroethane-d4
Concen: 48.55 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion:102 Resp: 22537

Ion	Ratio	Lower	Upper
102	100		
65	497.8	469.5	509.5
51	261.7	232.7	272.7

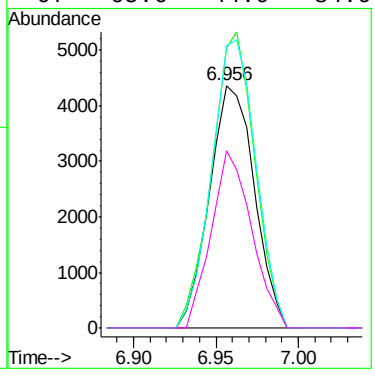


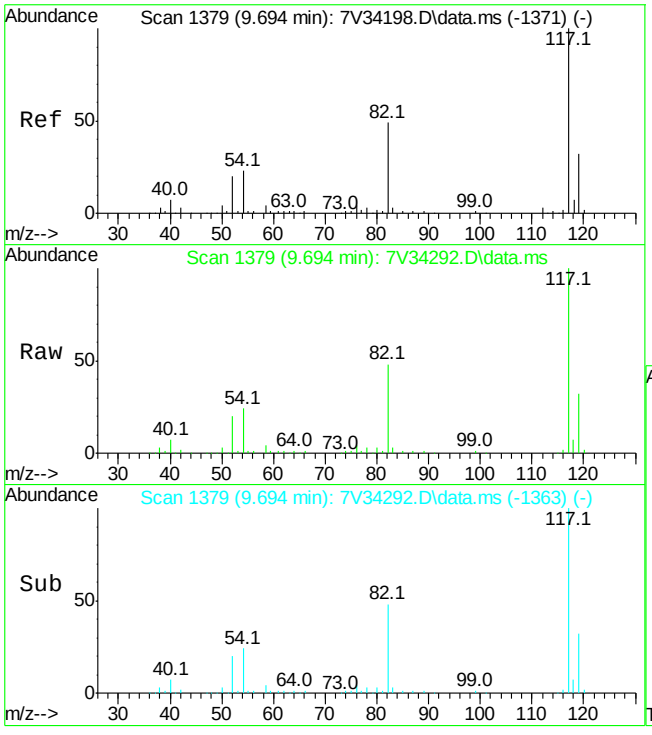


#47
Trichloroethene
Concen: 3.39 ug/L
RT: 6.956 min Scan# 930
Delta R.T. -0.007 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion: 95 Resp: 8257

Ion	Ratio	Lower	Upper
95	100		
130	116.4	93.2	133.2
132	116.7	95.9	135.9
97	65.6	44.9	84.9

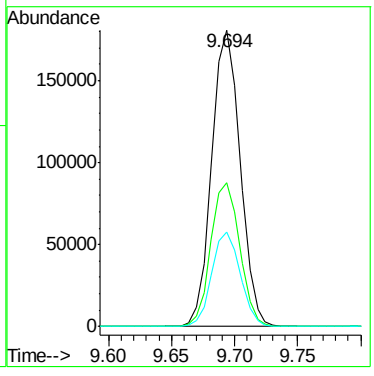


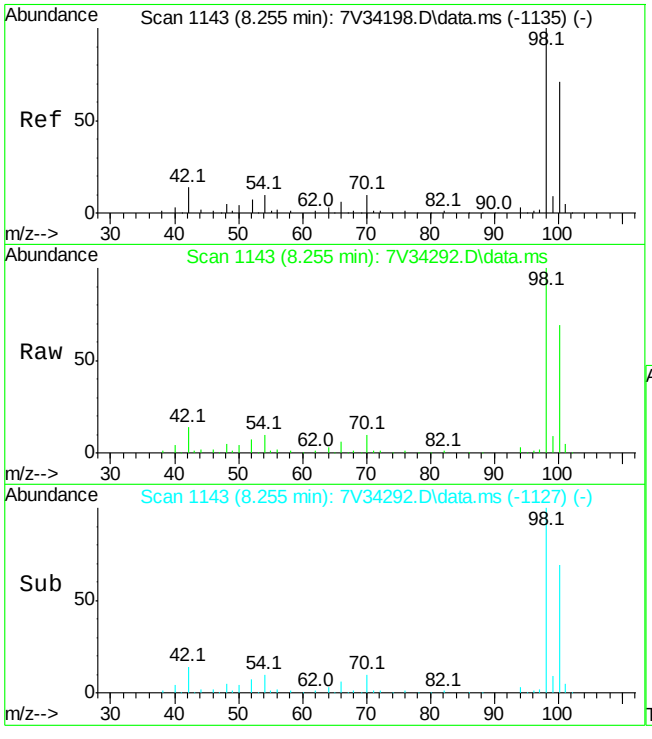


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion:117 Resp: 282118

Ion	Ratio	Lower	Upper
117	100		
82	49.0	28.7	68.7
119	31.8	12.2	52.2

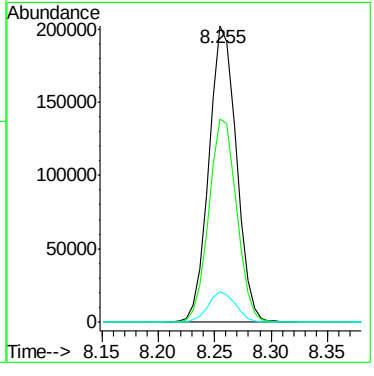


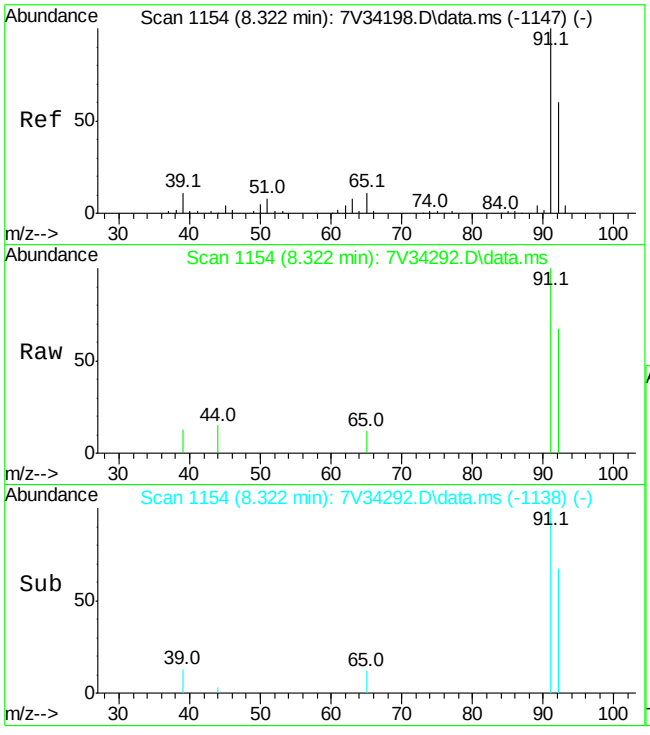


#56
Toluene-d8
Concen: 50.14 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion: 98 Resp: 340167

Ion	Ratio	Lower	Upper
98	100		
100	69.3	49.8	89.8
70	10.2	0.0	30.1

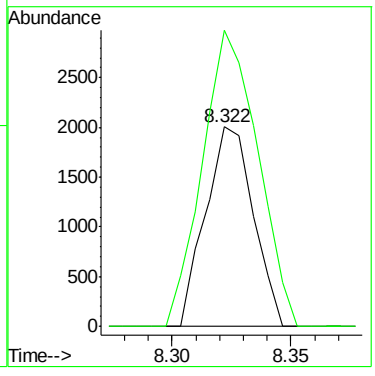


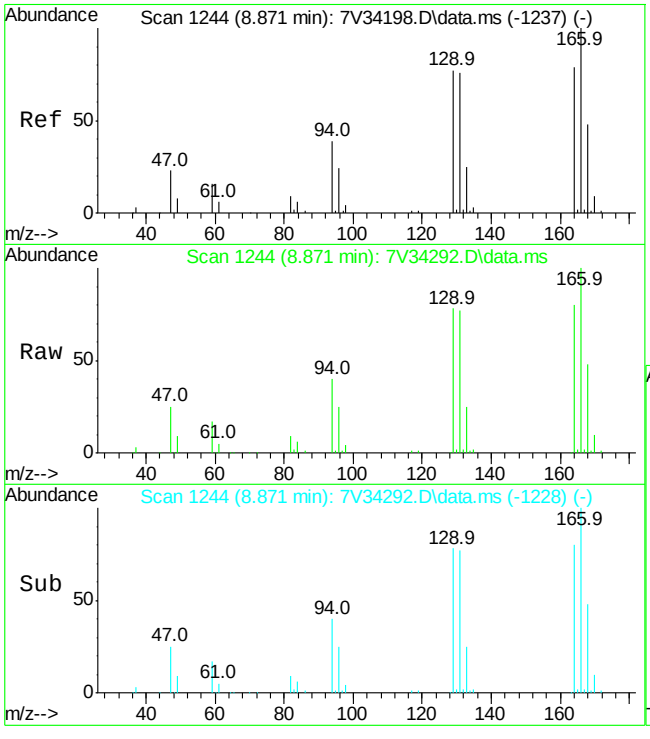


#57
Toluene
Concen: 0.53 ug/L
RT: 8.322 min Scan# 1154
Delta R.T. 0.000 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion: 92 Resp: 2775

Ion	Ratio	Lower	Upper
92	100		
91	172.7	150.1	190.1

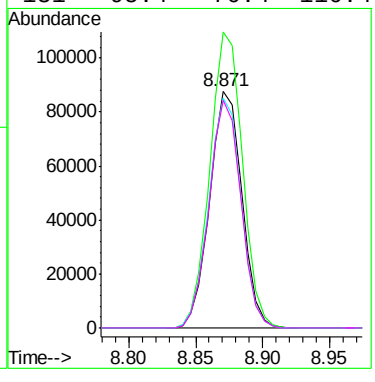


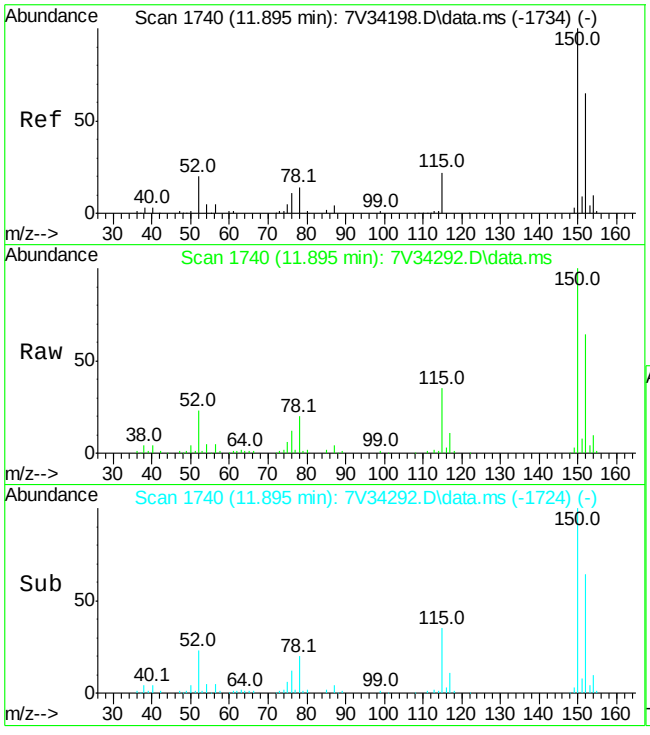


#60
Tetrachloroethene
Concen: 78.39 ug/L
RT: 8.871 min Scan# 1244
Delta R.T. -0.000 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion:164 Resp: 146183

Ion	Ratio	Lower	Upper
164	100		
166	126.8	107.5	147.5
129	97.0	76.8	116.8
131	95.4	76.4	116.4

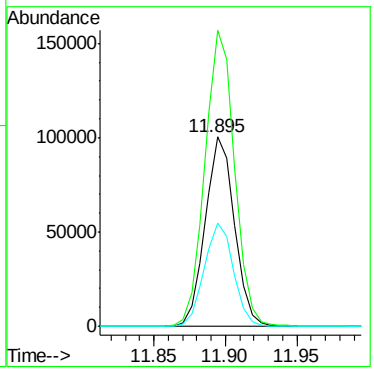


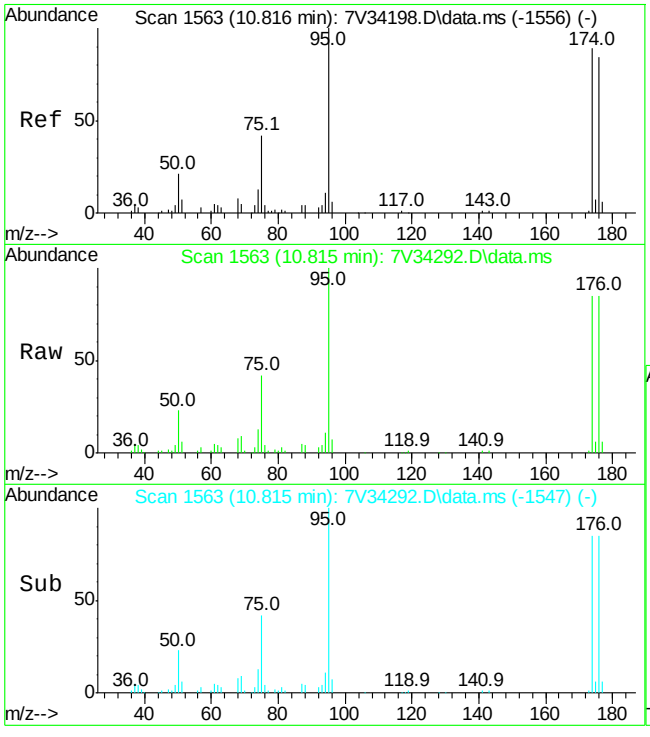


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion:152 Resp: 142645

Ion	Ratio	Lower	Upper
152	100		
150	158.4	154.9	194.9
115	54.5	34.6	74.6

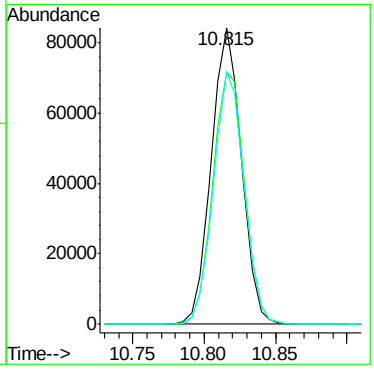




#76
4-Bromofluorobenzene
Concen: 49.86 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34292.D
Acq: 2 Jun 2016 6:22 pm

Tgt Ion: 95 Resp: 123837

Ion	Ratio	Lower	Upper
95	100		
174	89.4	70.3	110.3
176	86.6	67.4	107.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34227.D
Acq On : 1 Jun 2016 2:39 pm
Operator : amandaj
Sample : D83120-8
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 02 11:16:14 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

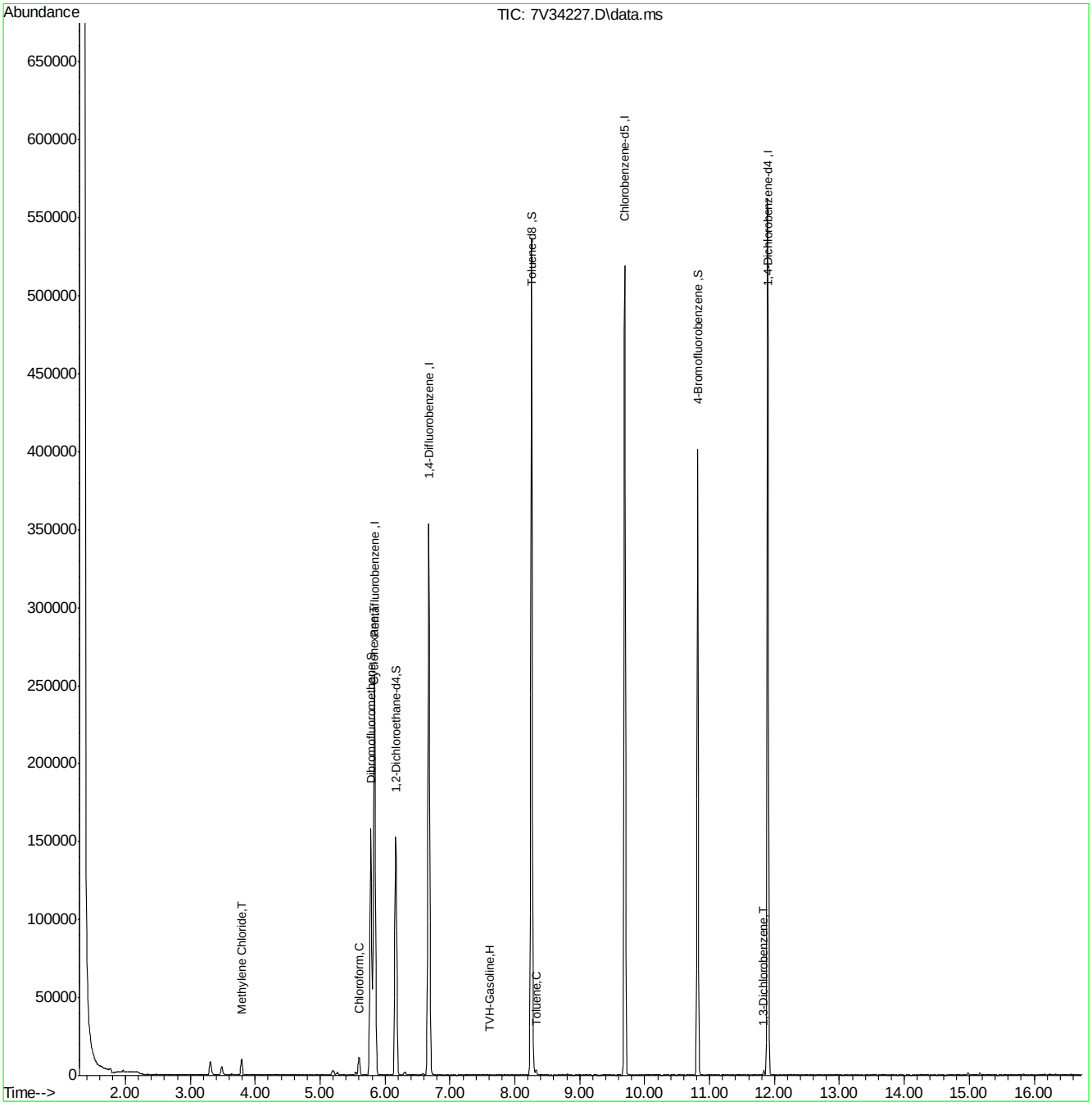
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.841	168	208982	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	323230	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	281119	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.895	152	148255	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	108690	47.92	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 95.84%			
41) 1,2-Dichloroethane-d4	6.164	102	22662	48.93	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 97.86%			
56) Toluene-d8	8.255	98	335763	49.67	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.34%			
76) 4-Bromofluorobenzene	10.816	95	125875	48.76	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 97.52%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	149773m	15.75	ug/L	
18) Methylene Chloride	3.793	84	3998	1.66	ug/L	98
34) Chloroform	5.597	83	9917	2.55	ug/L	100
37) Cyclohexane	5.829	56	3841	0.76	ug/L #	8
57) Toluene	8.328	92	1814	0.35	ug/L	88
89) 1,3-Dichlorobenzene	11.834	146	2069	0.41	ug/L	91

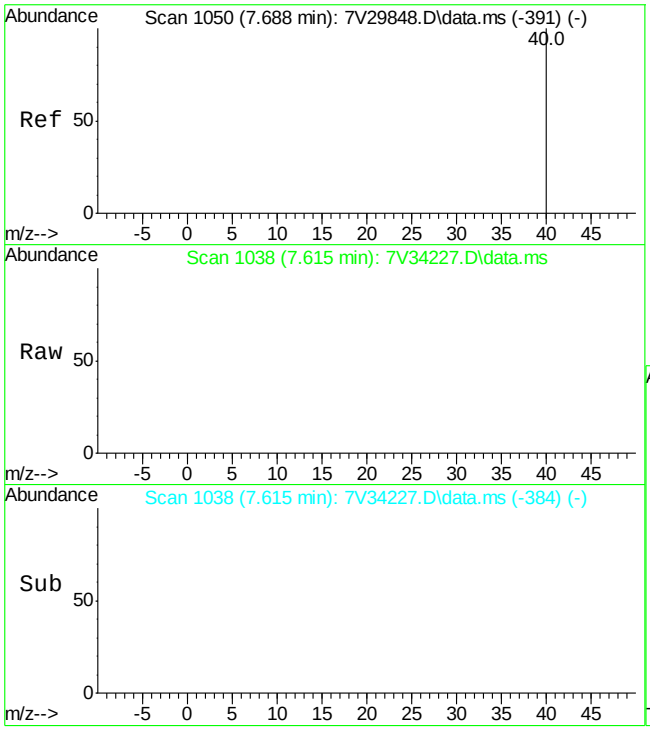
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34227.D
Acq On : 1 Jun 2016 2:39 pm
Operator : amandaj
Sample : D83120-8
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 13 Sample Multiplier: 1

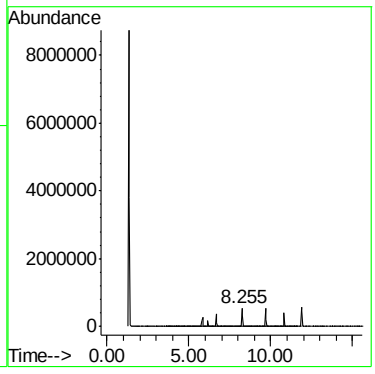
Quant Time: Jun 02 11:16:14 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

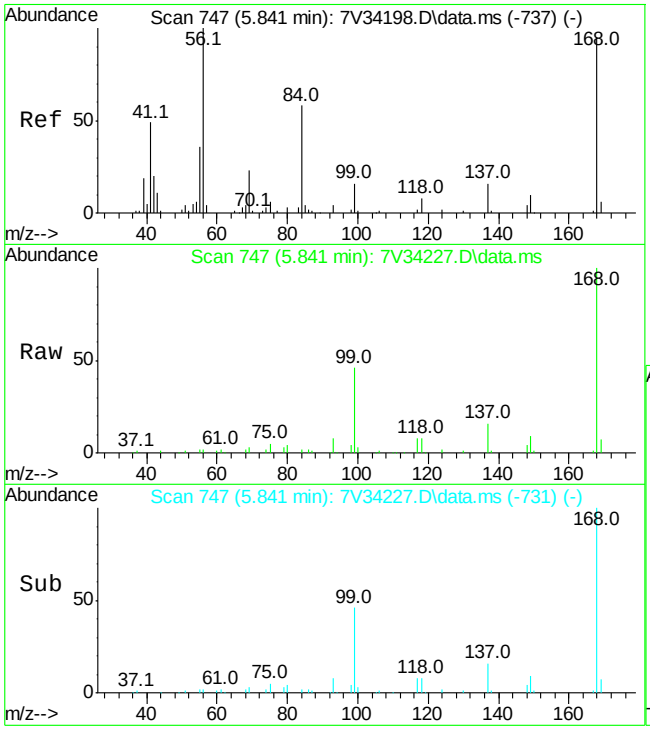




#1
TVH-Gasoline
Concen: 15.75 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion:TIC Resp: 149773

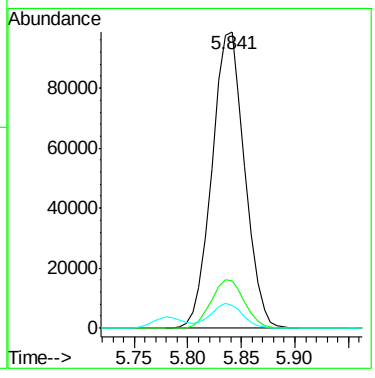


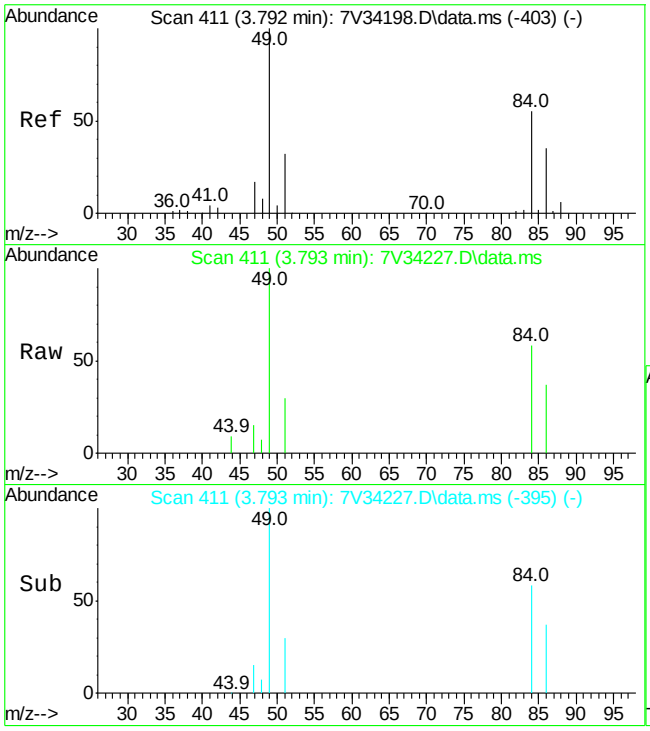


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.841 min Scan# 747
Delta R.T. 0.000 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion:168 Resp: 208982

Ion	Ratio	Lower	Upper
168	100		
137	16.5	0.0	36.8
93	8.1	0.0	28.3

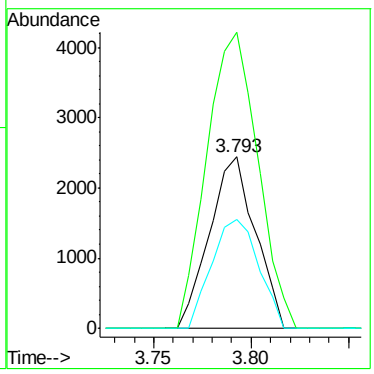


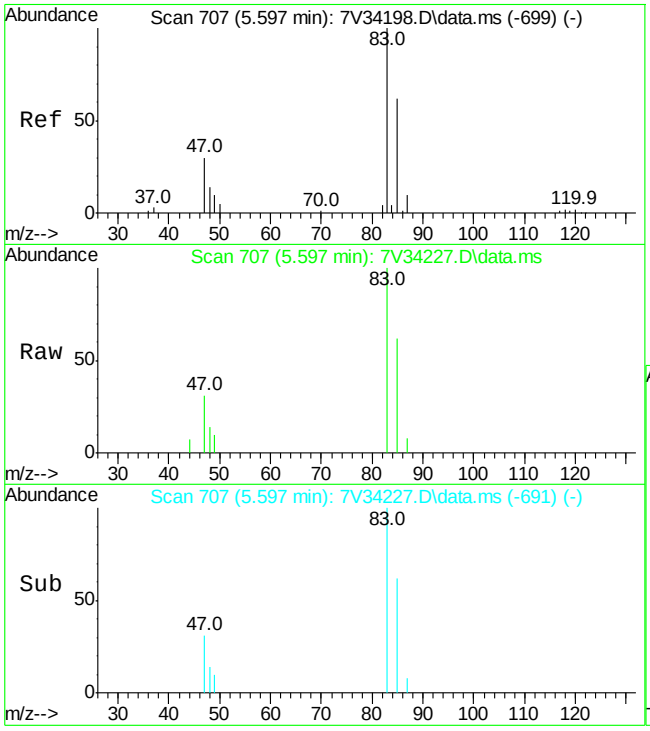


#18
Methylene Chloride
Concen: 1.66 ug/L
RT: 3.793 min Scan# 411
Delta R.T. 0.001 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion: 84 Resp: 3998

Ion	Ratio	Lower	Upper
84	100		
49	191.5	167.4	207.4
86	64.9	45.3	85.3

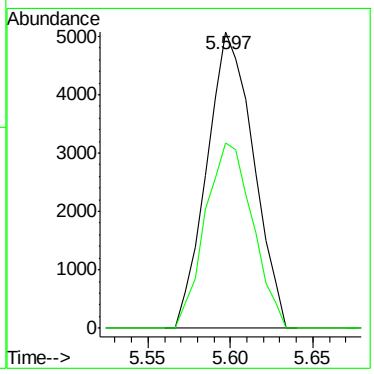


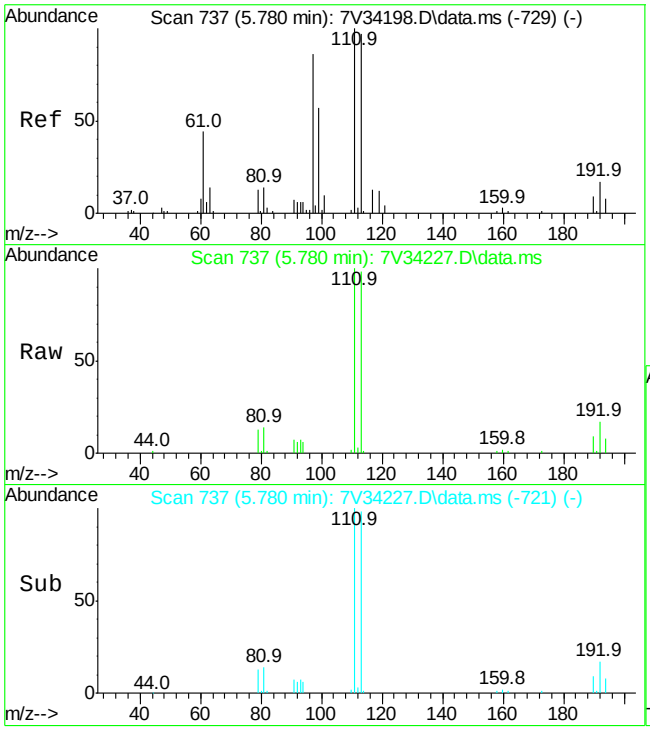


#34
Chloroform
Concen: 2.55 ug/L
RT: 5.597 min Scan# 707
Delta R.T. 0.000 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion: 83 Resp: 9917

Ion	Ratio	Lower	Upper
83	100		
85	63.5	43.4	83.4

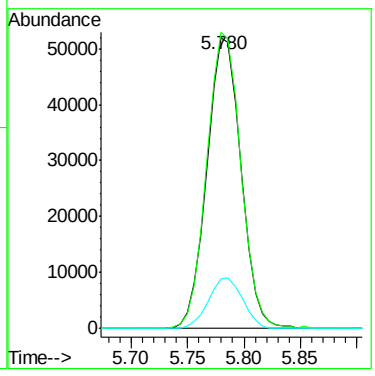


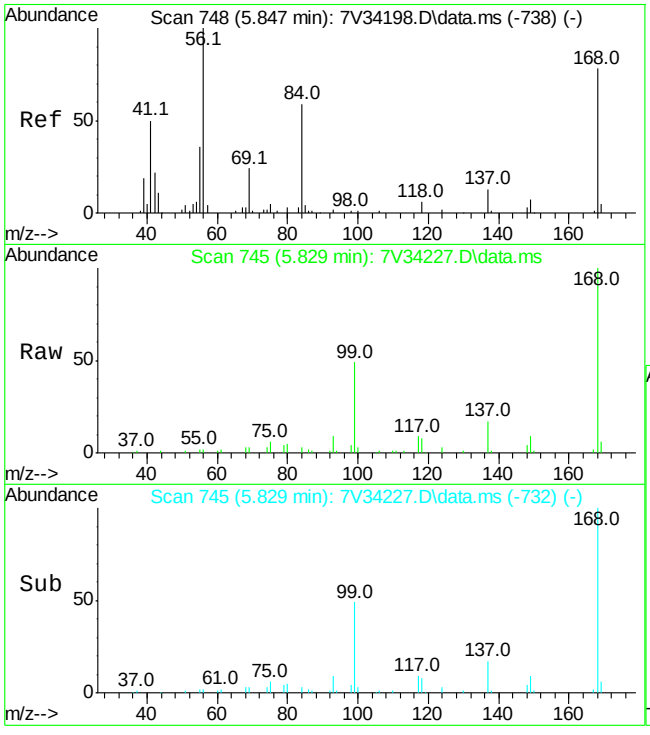


#35
Dibromofluoromethane
Concen: 47.92 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion:113 Resp: 108690

Ion	Ratio	Lower	Upper
113	100		
111	101.9	82.9	122.9
192	17.3	0.0	36.9

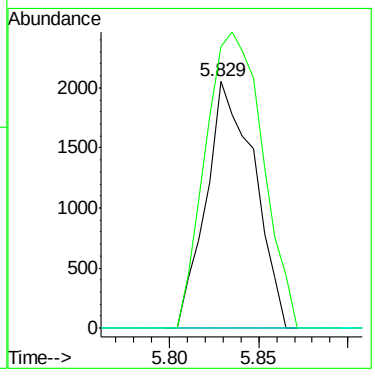


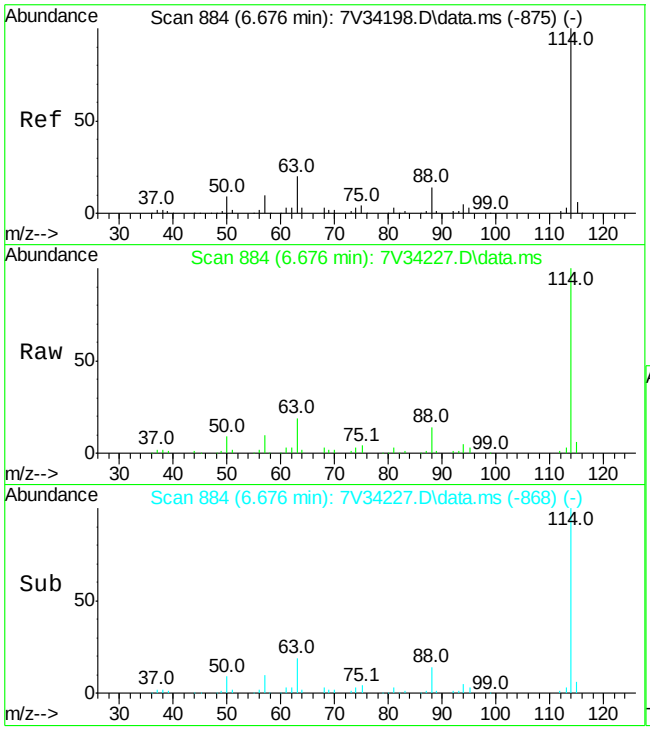


#37
Cyclohexane
Concen: 0.76 ug/L
RT: 5.829 min Scan# 745
Delta R.T. -0.018 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion: 56 Resp: 3841

Ion	Ratio	Lower	Upper
56	100		
84	142.9	40.6	80.6#
41	0.0	30.3	70.3#

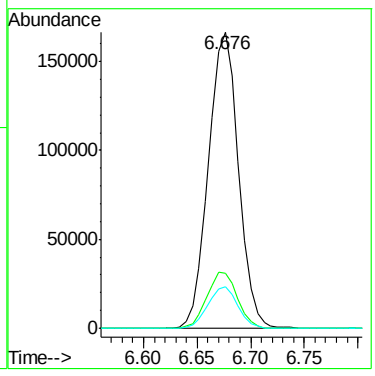


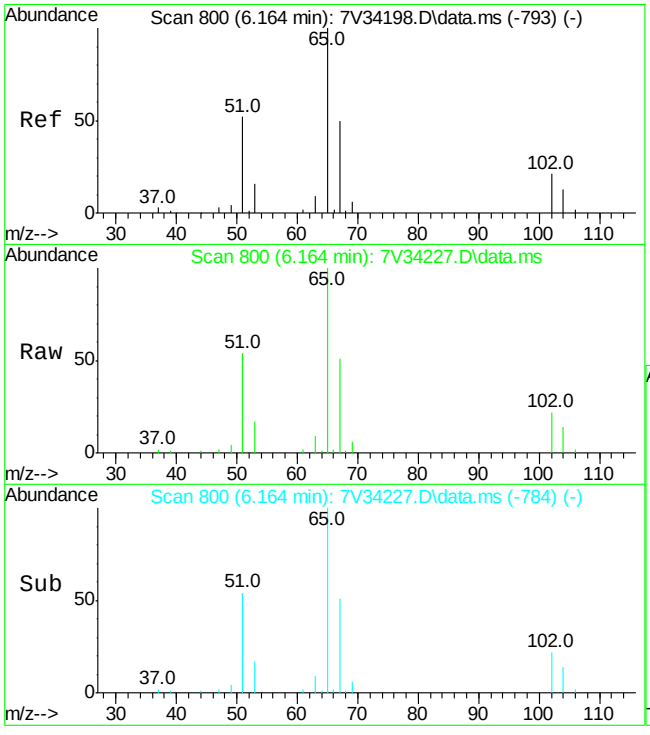


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. 0.000 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion:114 Resp: 323230

Ion	Ratio	Lower	Upper
114	100		
63	19.2	0.0	39.6
88	13.9	0.0	34.3

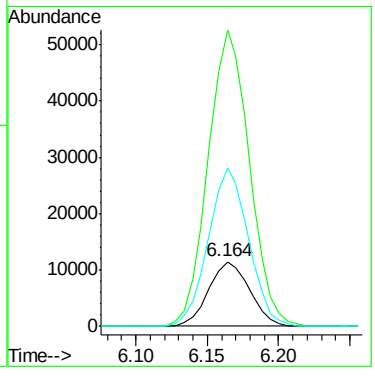


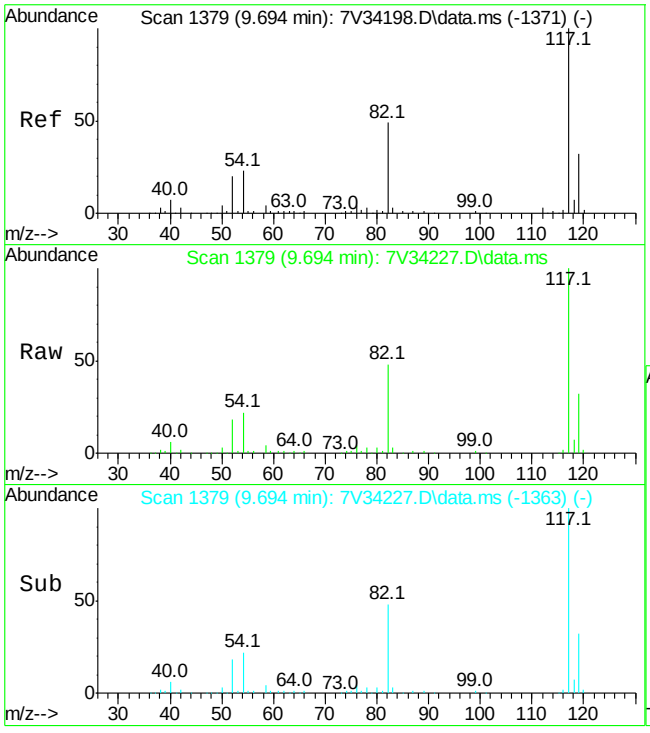


#41
1,2-Dichloroethane-d4
Concen: 48.93 ug/L
RT: 6.164 min Scan# 800
Delta R.T. 0.000 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion:102 Resp: 22662

Ion	Ratio	Lower	Upper
102	100		
65	466.5	469.5	509.5#
51	242.8	232.7	272.7

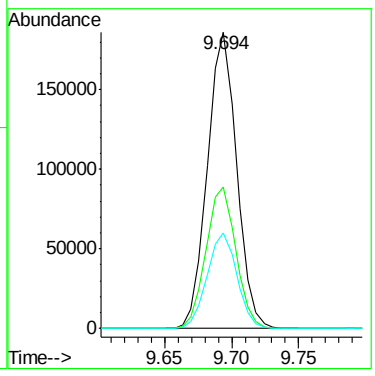


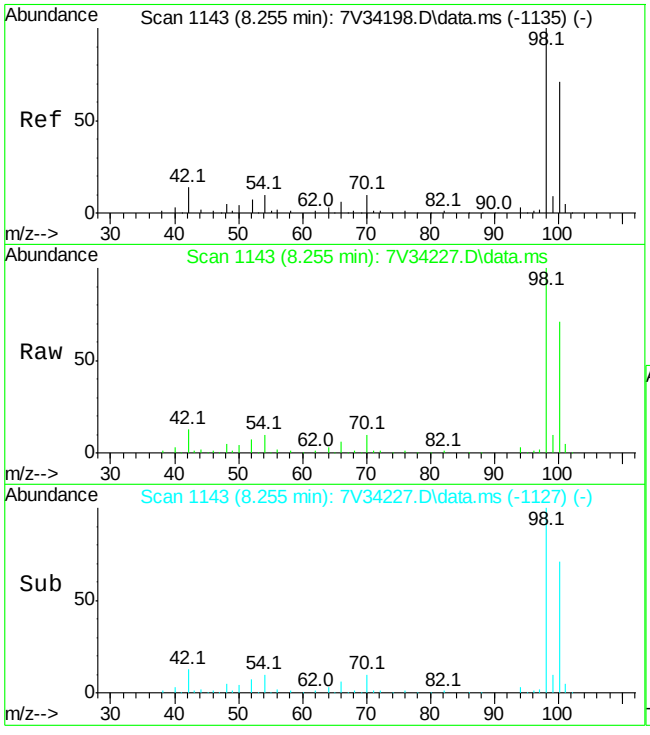


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. 0.000 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion:117 Resp: 281119

Ion	Ratio	Lower	Upper
117	100		
82	48.6	28.7	68.7
119	32.6	12.2	52.2

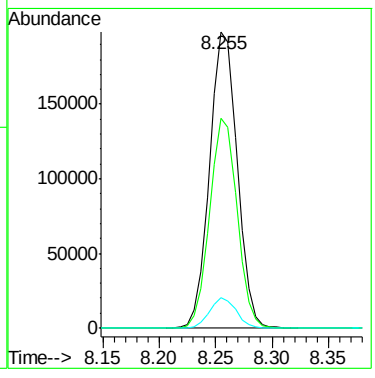


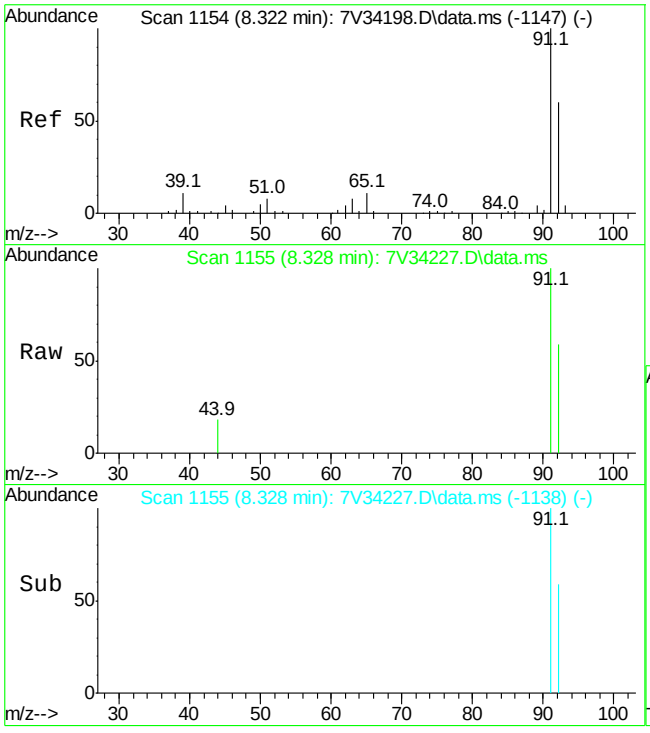


#56
Toluene-d8
Concen: 49.67 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. 0.000 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion: 98 Resp: 335763

Ion	Ratio	Lower	Upper
98	100		
100	70.3	49.8	89.8
70	9.9	0.0	30.1

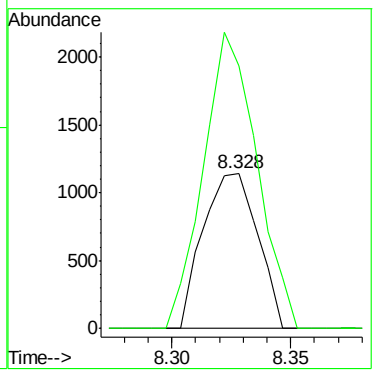


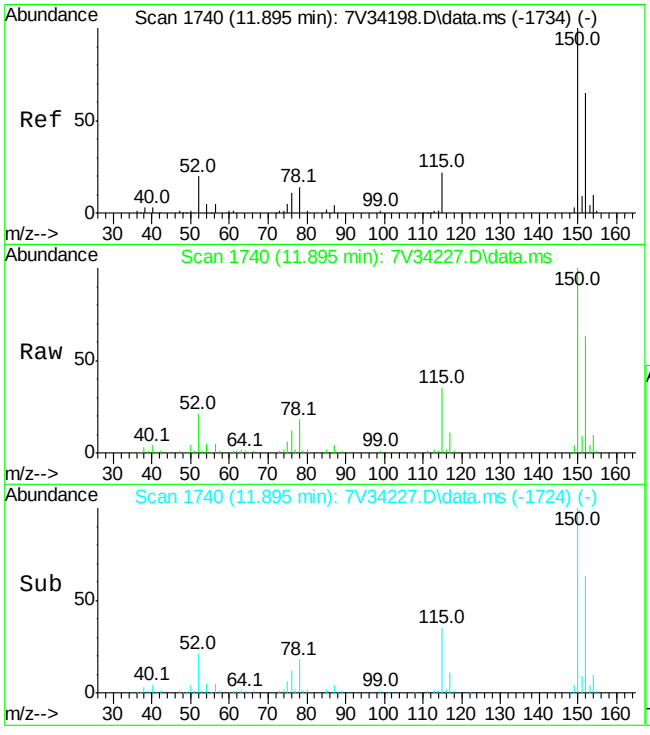


#57
Toluene
Concen: 0.35 ug/L
RT: 8.328 min Scan# 1155
Delta R.T. 0.006 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion: 92 Resp: 1814

Ion	Ratio	Lower	Upper
92	100		
91	186.7	150.1	190.1

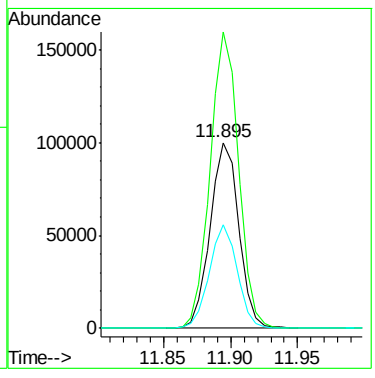


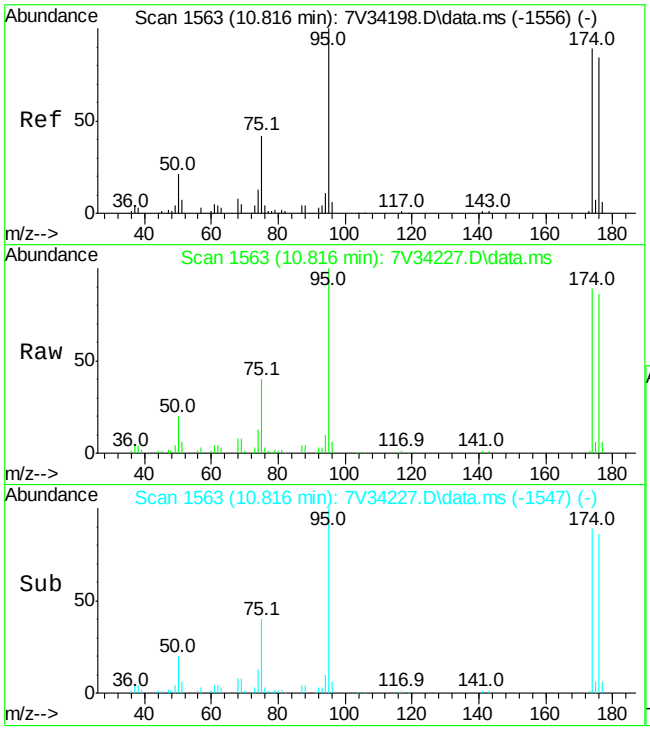


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.895 min Scan# 1740
Delta R.T. 0.000 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion:152 Resp: 148255

Ion	Ratio	Lower	Upper
152	100		
150	157.9	154.9	194.9
115	54.0	34.6	74.6

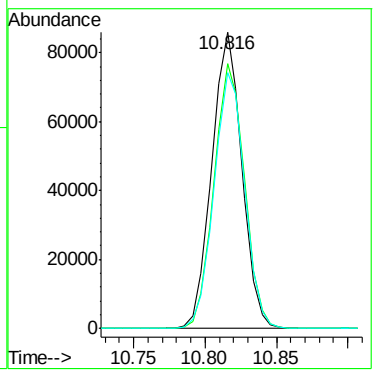


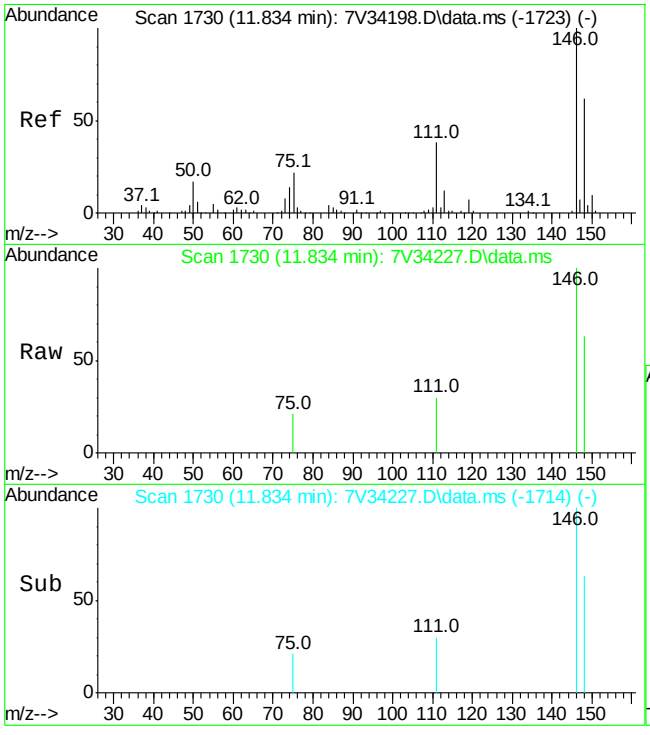


#76
4-Bromofluorobenzene
Concen: 48.76 ug/L
RT: 10.816 min Scan# 1563
Delta R.T. -0.000 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion: 95 Resp: 125875

Ion	Ratio	Lower	Upper
95	100		
174	90.6	70.3	110.3
176	87.9	67.4	107.4

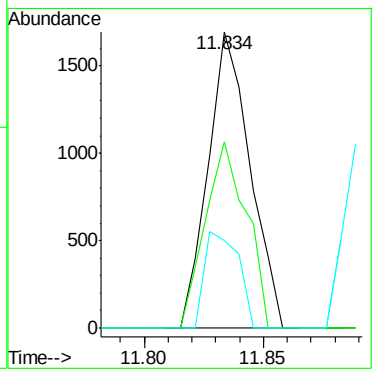




#89
1,3-Dichlorobenzene
Concen: 0.41 ug/L
RT: 11.834 min Scan# 1730
Delta R.T. -0.000 min
Lab File: 7V34227.D
Acq: 1 Jun 2016 2:39 pm

Tgt Ion:146 Resp: 2069

Ion	Ratio	Lower	Upper
146	100		
148	61.4	44.1	84.1
111	26.1	17.5	57.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34221.D
Acq On : 1 Jun 2016 12:20 pm
Operator : amandaj
Sample : MB
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 02 10:50:33 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.841	168	214359	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.676	114	333556	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	290205	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	154265	50.00	ug/L	# 0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.786	113	111397	47.88	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 95.76%			
41) 1,2-Dichloroethane-d4	6.170	102	23747	49.69	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 99.38%			
56) Toluene-d8	8.255	98	347351	49.78	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 99.56%			
76) 4-Bromofluorobenzene	10.815	95	131036	48.78	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 97.56%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	226194m	23.78	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

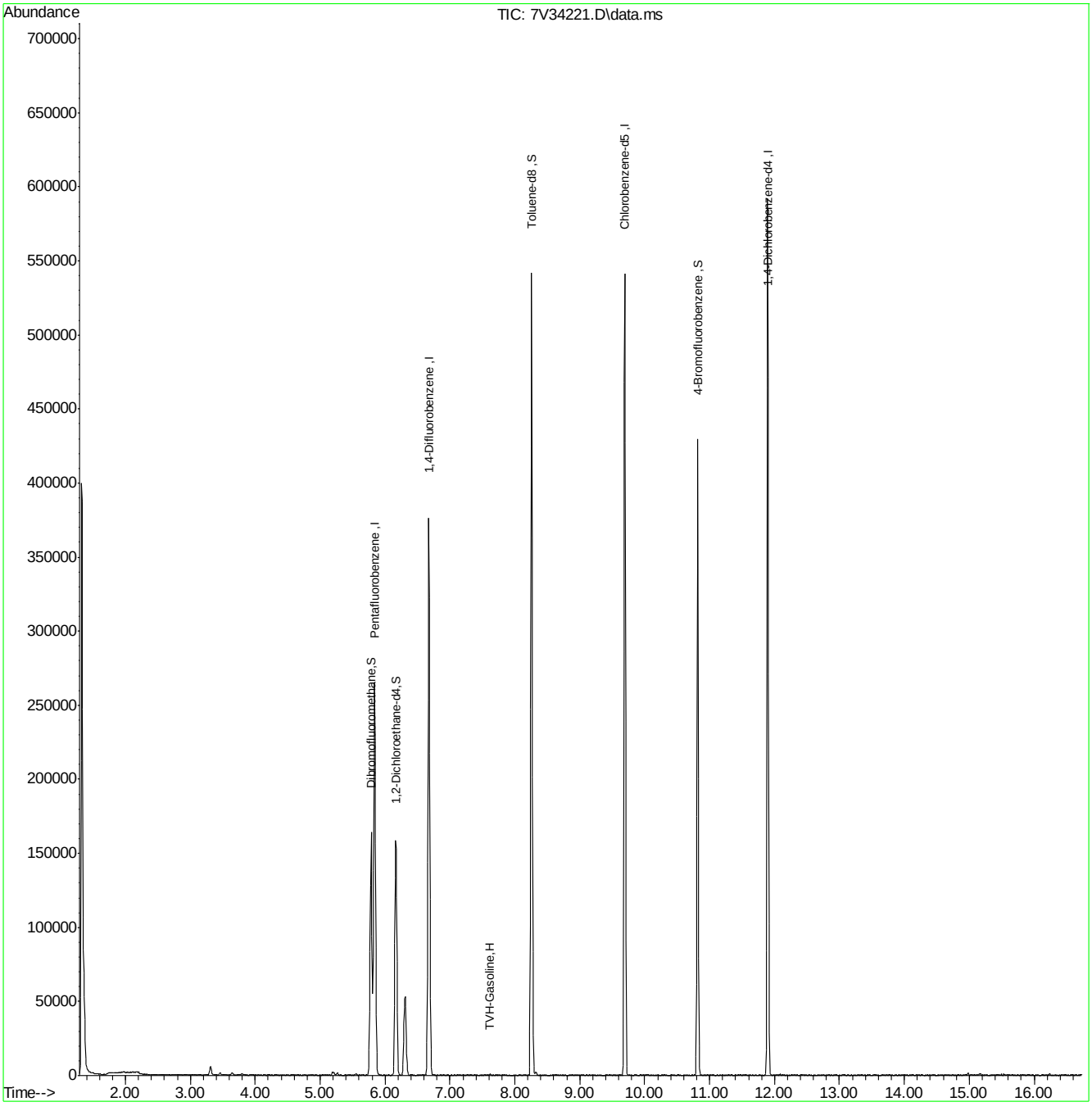
7.2.1

7

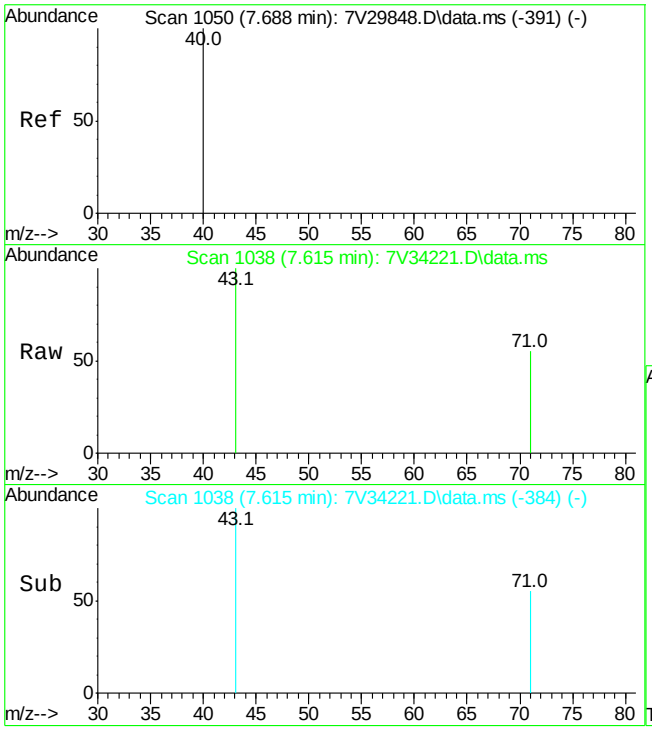
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1840\
Data File : 7V34221.D
Acq On : 1 Jun 2016 12:20 pm
Operator : amandaj
Sample : MB
Misc : MS9178,V7V1840,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 02 10:50:33 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

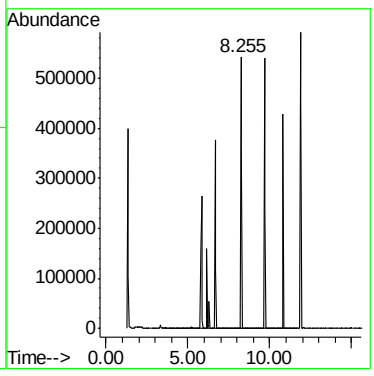


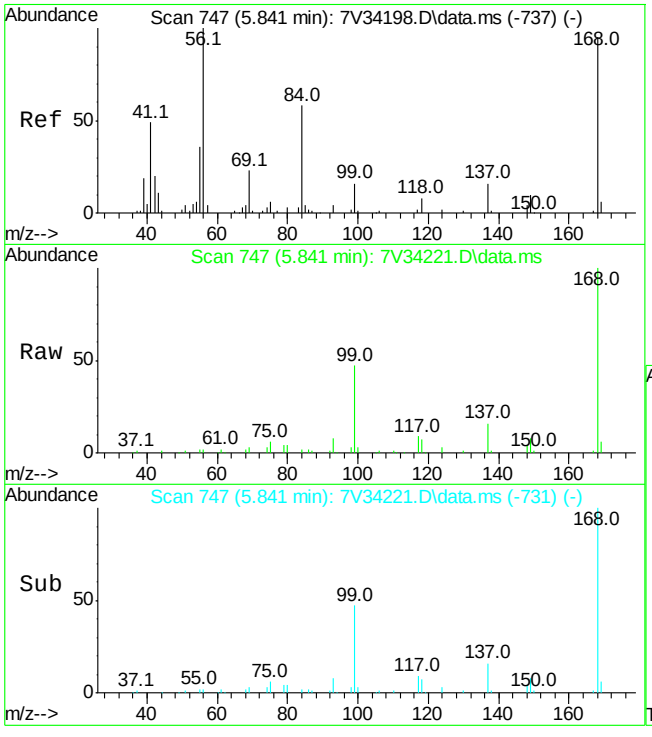
V7V1839F.M Thu Jun 02 12:57:24 2016 Page: 2



#1
TVH-Gasoline
Concen: 23.78 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion:TIC Resp: 226194

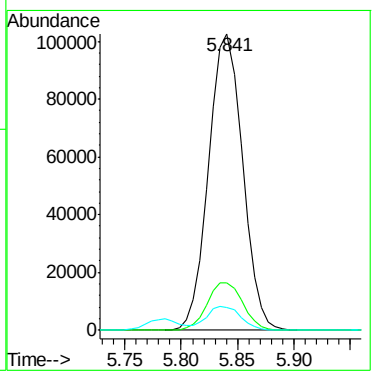


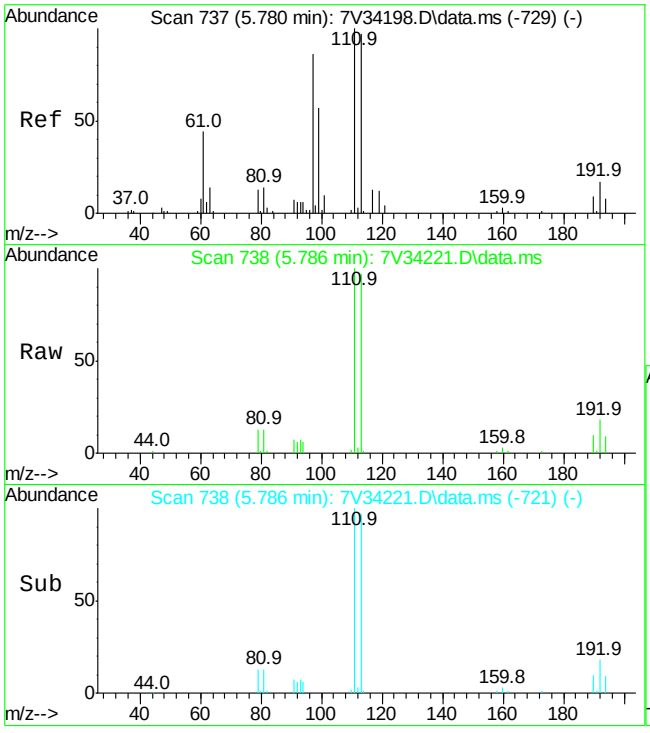


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.841 min Scan# 747
Delta R.T. -0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion:168 Resp: 214359

Ion	Ratio	Lower	Upper
168	100		
137	16.7	0.0	36.8
93	8.2	0.0	28.3

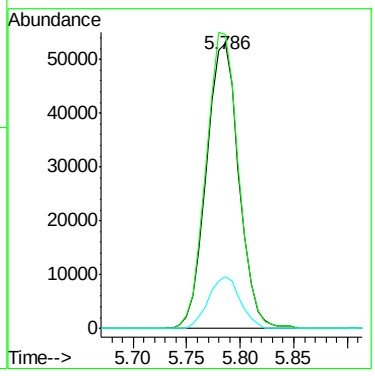


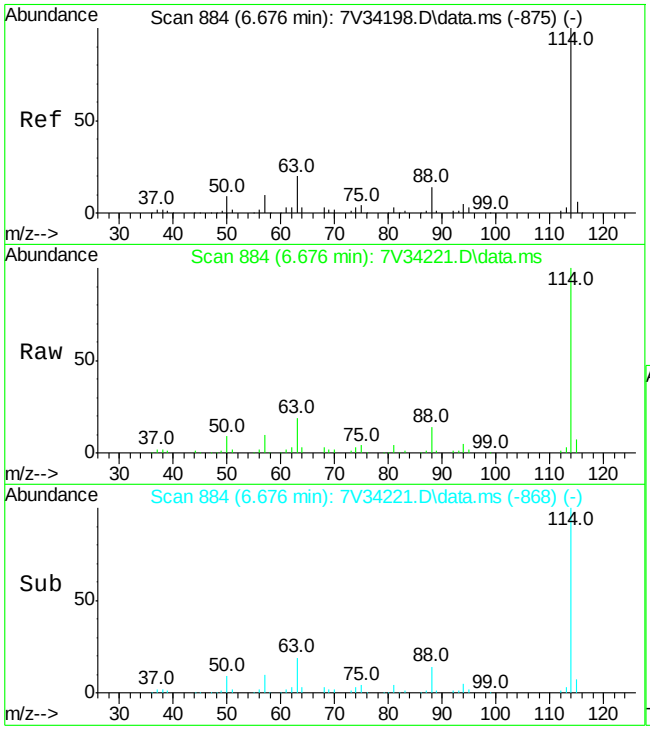


#35
Dibromofluoromethane
Concen: 47.88 ug/L
RT: 5.786 min Scan# 738
Delta R.T. 0.006 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion:113 Resp: 111397

Ion	Ratio	Lower	Upper
113	100		
111	103.6	82.9	122.9
192	17.6	0.0	36.9

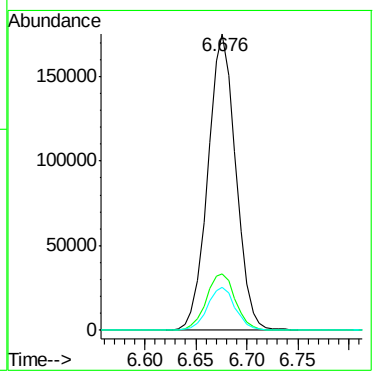




#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.676 min Scan# 884
Delta R.T. -0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

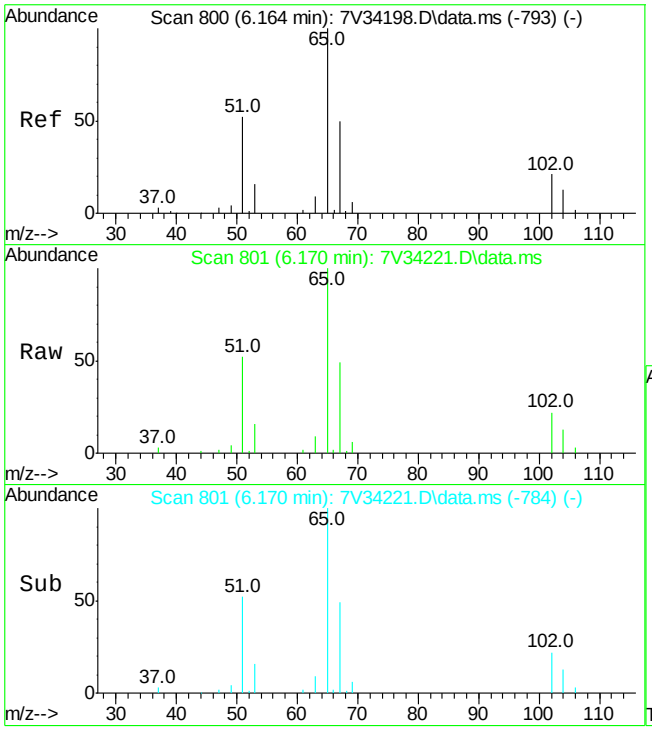
Tgt Ion:114 Resp: 333556

Ion	Ratio	Lower	Upper
114	100		
63	19.5	0.0	39.6
88	14.4	0.0	34.3



7.2.1

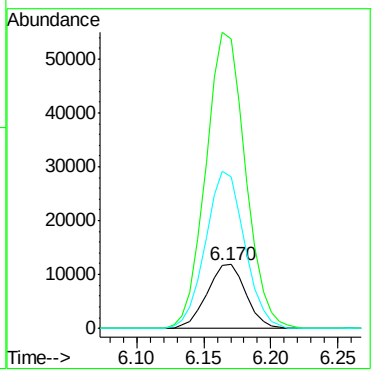
7

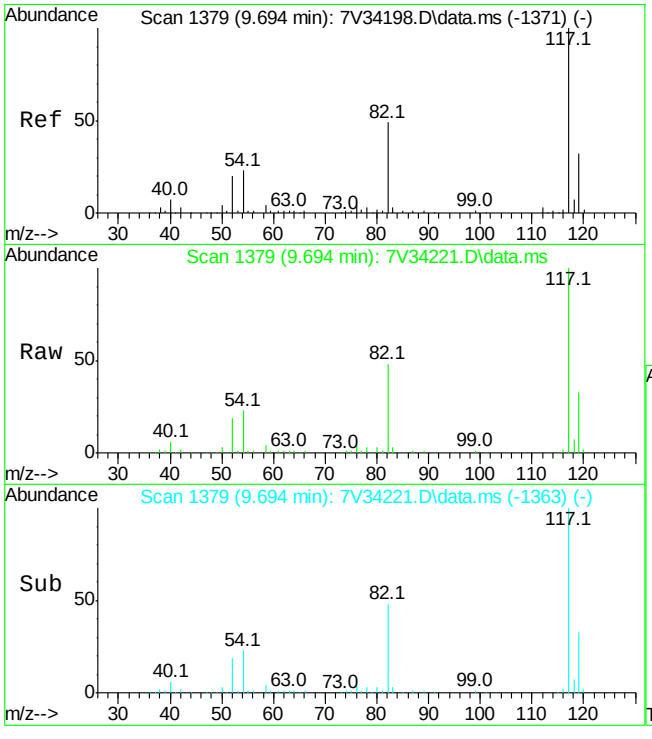


#41
1,2-Dichloroethane-d4
Concen: 49.69 ug/L
RT: 6.170 min Scan# 801
Delta R.T. 0.006 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion:102 Resp: 23747

Ion	Ratio	Lower	Upper
102	100		
65	474.3	469.5	509.5
51	247.7	232.7	272.7

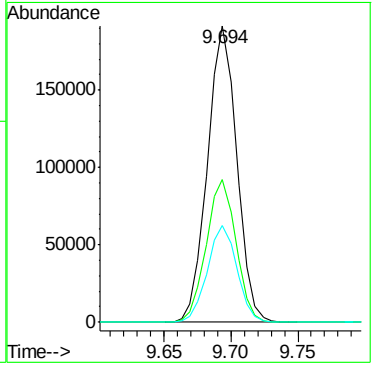




#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

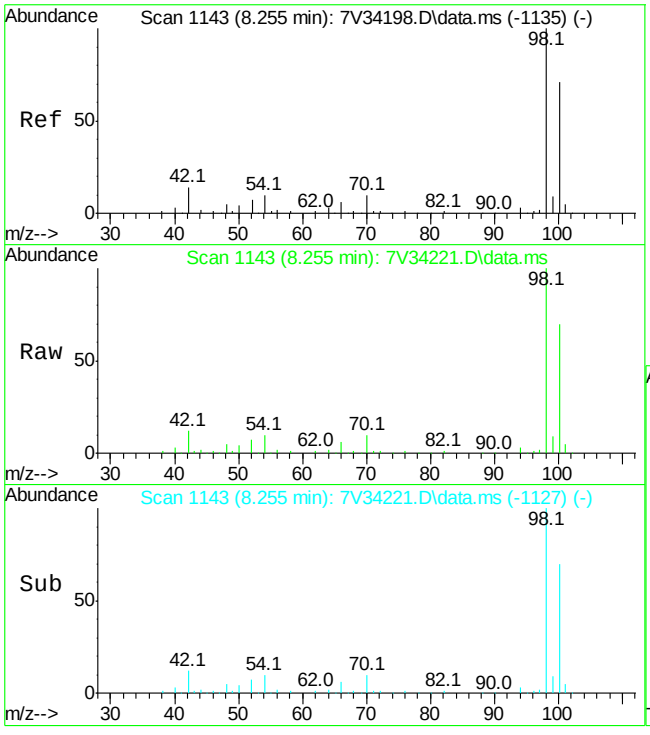
Tgt Ion:117 Resp: 290205

Ion	Ratio	Lower	Upper
117	100		
82	48.6	28.7	68.7
119	32.7	12.2	52.2



7.2.1

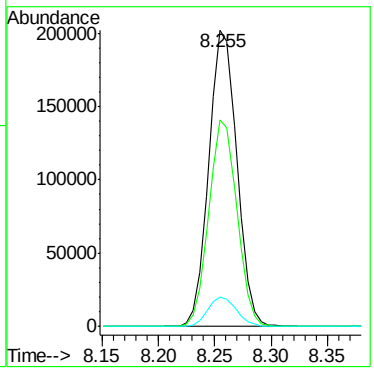
7

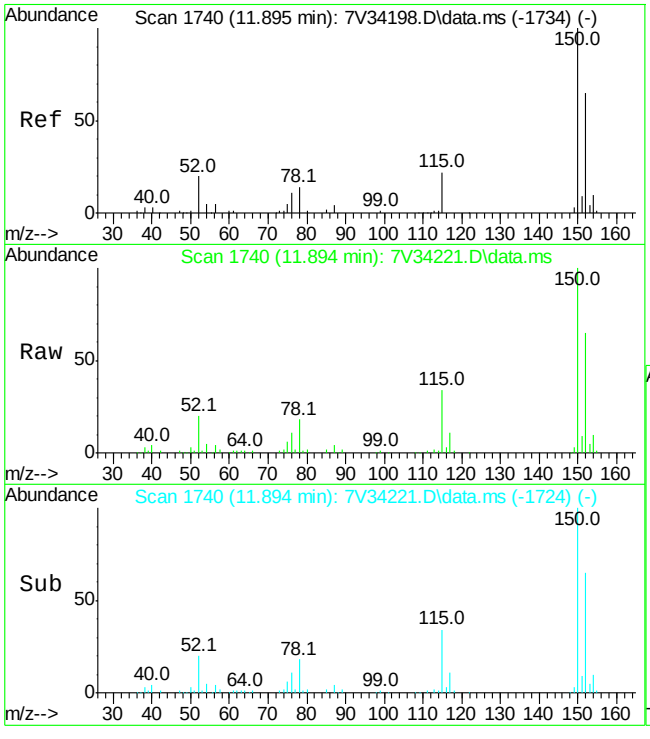


#56
Toluene-d8
Concen: 49.78 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion: 98 Resp: 347351

Ion	Ratio	Lower	Upper
98	100		
100	69.9	49.8	89.8
70	10.0	0.0	30.1

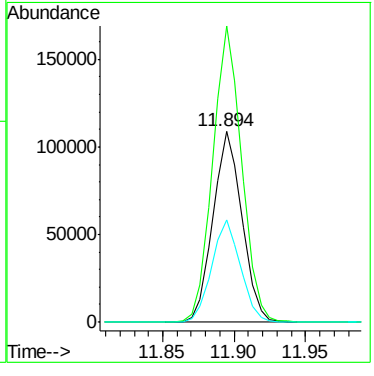


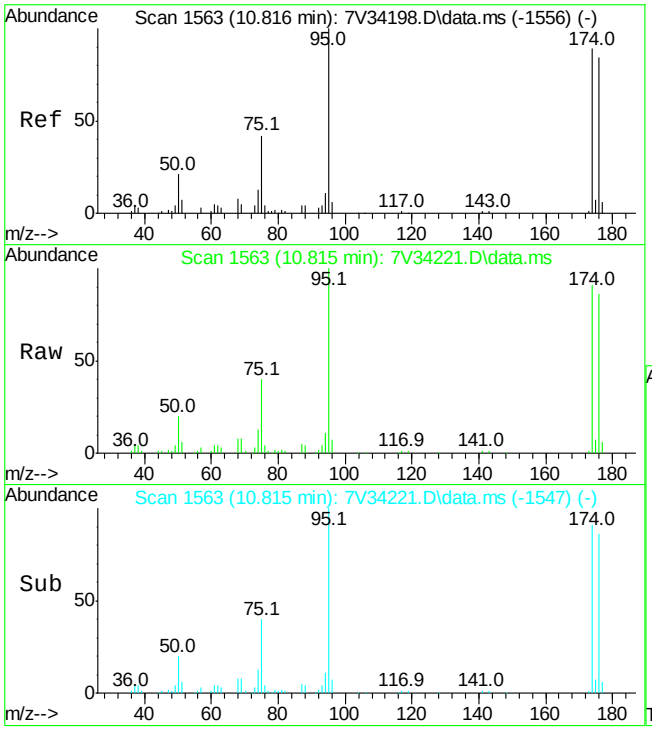


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion:152 Resp: 154265

Ion	Ratio	Lower	Upper
152	100		
150	154.8	154.9	194.9#
115	53.1	34.6	74.6

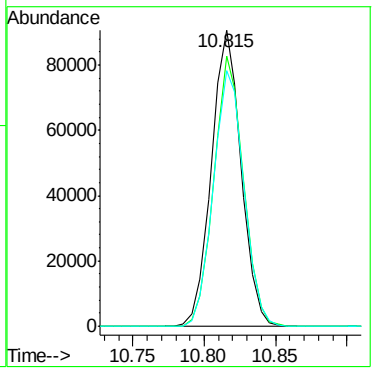




#76
4-Bromofluorobenzene
Concen: 48.78 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34221.D
Acq: 1 Jun 2016 12:20 pm

Tgt Ion: 95 Resp: 131036

Ion	Ratio	Lower	Upper
95	100		
174	90.8	70.3	110.3
176	88.8	67.4	107.4



7.2.1

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1842\
Data File : 7V34272.D
Acq On : 2 Jun 2016 10:36 am
Operator : TamL
Sample : MB
Misc : MS9182,V7V1842,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 03 11:04:57 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

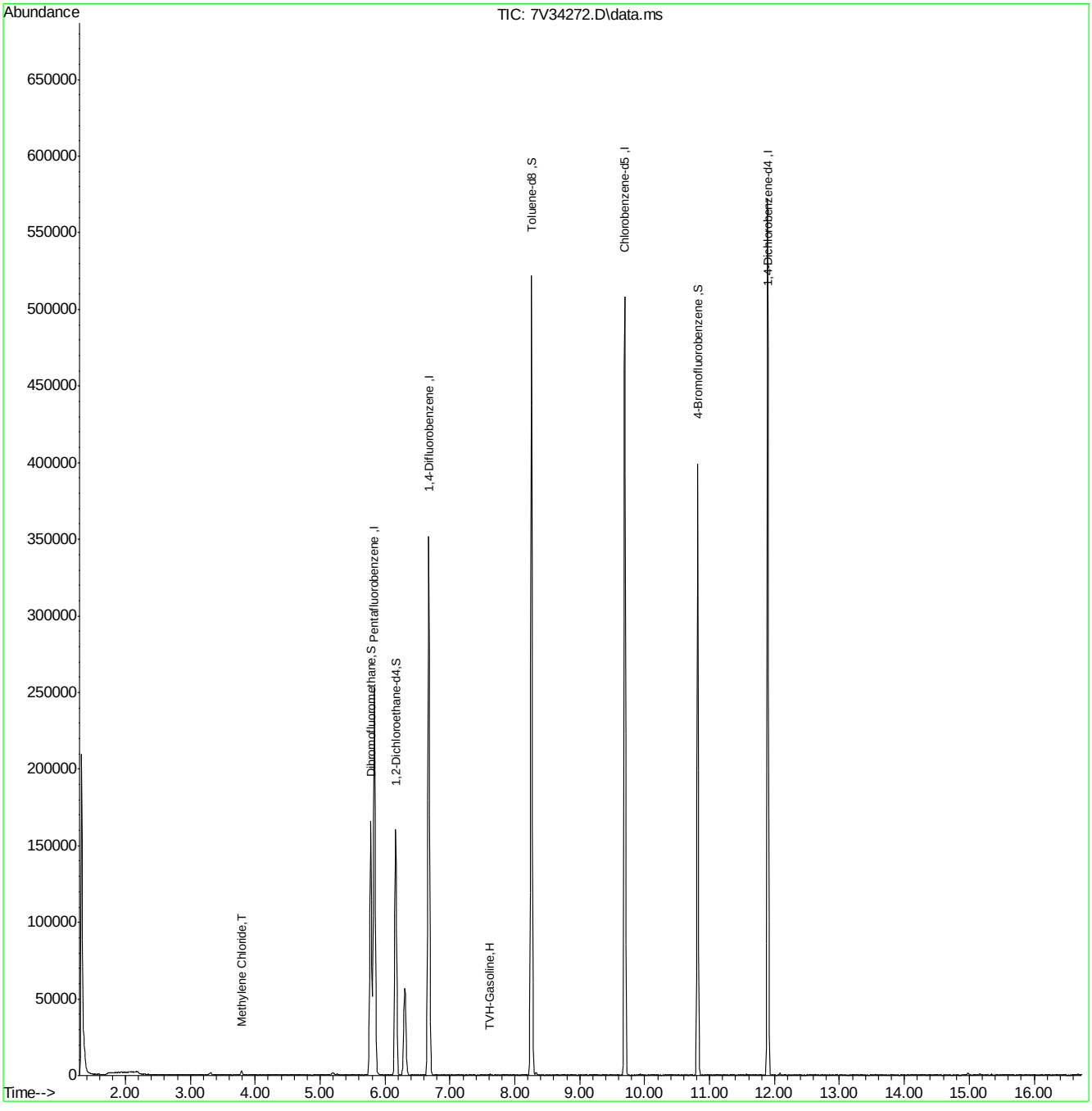
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
2) Pentafluorobenzene	5.835	168	201194	50.00	ug/L	0.00
40) 1,4-Difluorobenzene	6.670	114	323043	50.00	ug/L	0.00
55) Chlorobenzene-d5	9.694	117	284097	50.00	ug/L	0.00
74) 1,4-Dichlorobenzene-d4	11.894	152	149737	50.00	ug/L	0.00
System Monitoring Compounds						
35) Dibromofluoromethane	5.780	113	110531	50.62	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 101.24%			
41) 1,2-Dichloroethane-d4	6.164	102	22617	48.86	ug/L	0.00
Spiked Amount 50.000	Range 62 - 130		Recovery = 97.72%			
56) Toluene-d8	8.255	98	334825	49.01	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 98.02%			
76) 4-Bromofluorobenzene	10.815	95	127472	48.89	ug/L	0.00
Spiked Amount 50.000	Range 69 - 130		Recovery = 97.78%			
Target Compounds						Qvalue
1) TVH-Gasoline	7.615	TIC	216614m	22.77	ug/L	
18) Methylene Chloride	3.786	84	1175	0.51	ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

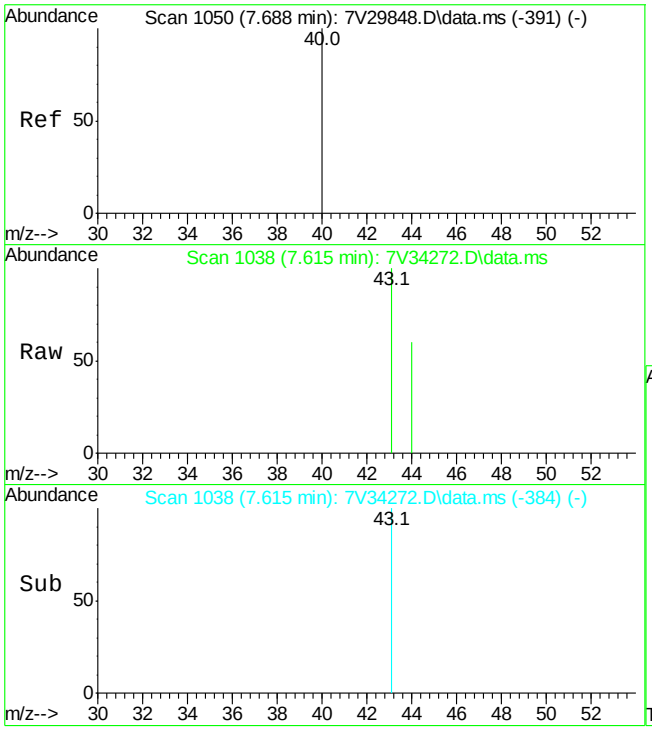
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7V1842\
Data File : 7V34272.D
Acq On : 2 Jun 2016 10:36 am
Operator : TamL
Sample : MB
Misc : MS9182,V7V1842,,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 03 11:04:57 2016
Quant Method : C:\msdchem\1\methods\V7V1839F.M
Quant Title : 8260
QLast Update : Wed Jun 01 10:22:48 2016
Response via : Initial Calibration

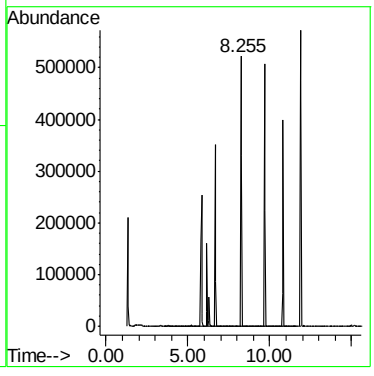


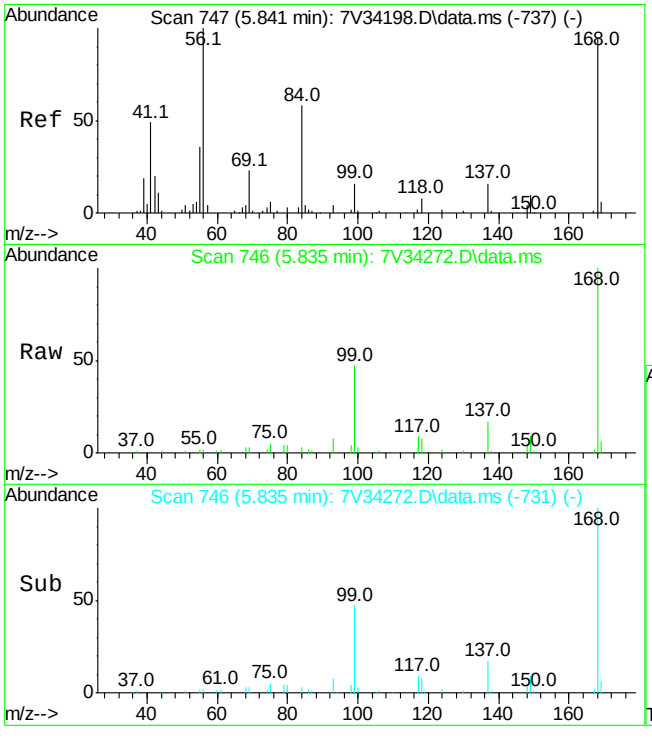
V7V1839F.M Fri Jun 03 14:16:48 2016 Page: 2



#1
TVH-Gasoline
Concen: 22.77 ug/L m
RT: 7.615 min Scan# 1038
Delta R.T. 0.000 min
Lab File: 7V34272.D
Acq: 2 Jun 2016 10:36 am

Tgt Ion:TIC Resp: 216614

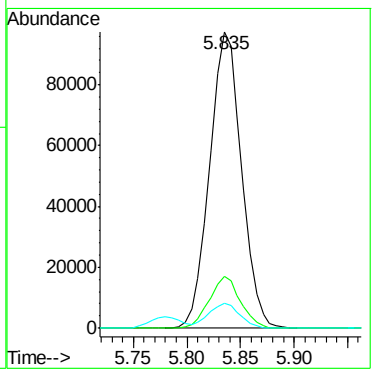


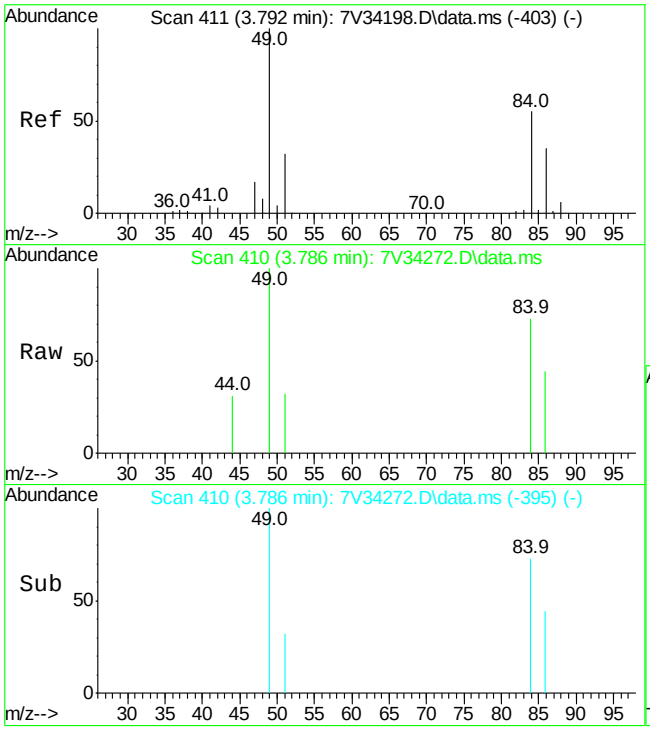


#2
Pentafluorobenzene
Concen: 50.00 ug/L
RT: 5.835 min Scan# 746
Delta R.T. -0.006 min
Lab File: 7V34272.D
Acq: 2 Jun 2016 10:36 am

Tgt Ion:168 Resp: 201194

Ion	Ratio	Lower	Upper
168	100		
137	16.7	0.0	36.8
93	8.1	0.0	28.3

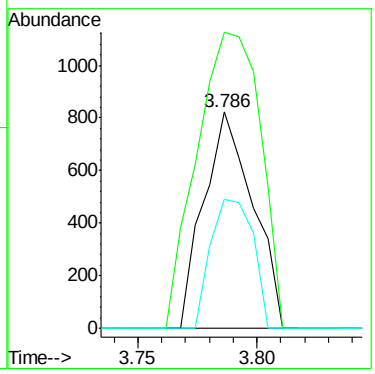


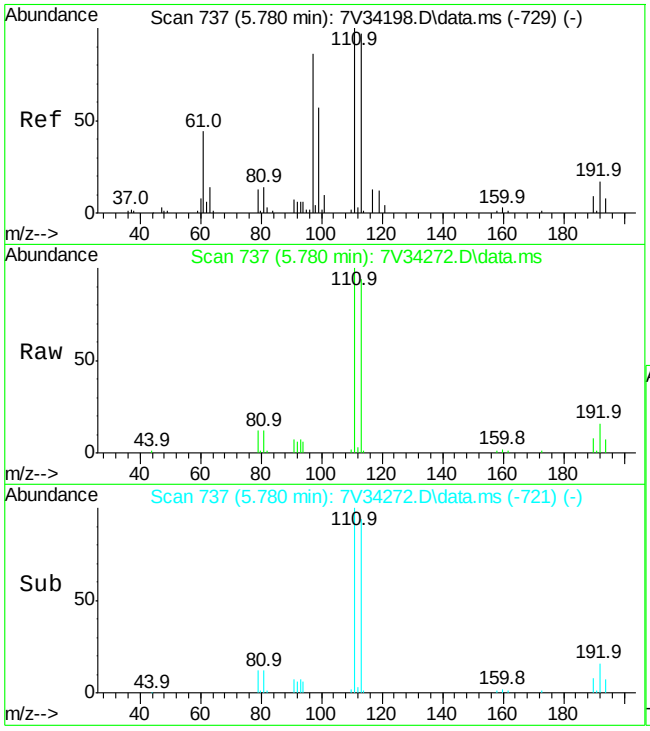


#18
Methylene Chloride
Concen: 0.51 ug/L
RT: 3.786 min Scan# 410
Delta R.T. -0.006 min
Lab File: 7V34272.D
Acq: 2 Jun 2016 10:36 am

Tgt Ion: 84 Resp: 1175

Ion	Ratio	Lower	Upper
84	100		
49	177.3	167.4	207.4
86	51.1	45.3	85.3

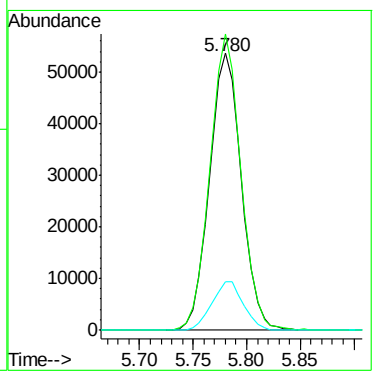


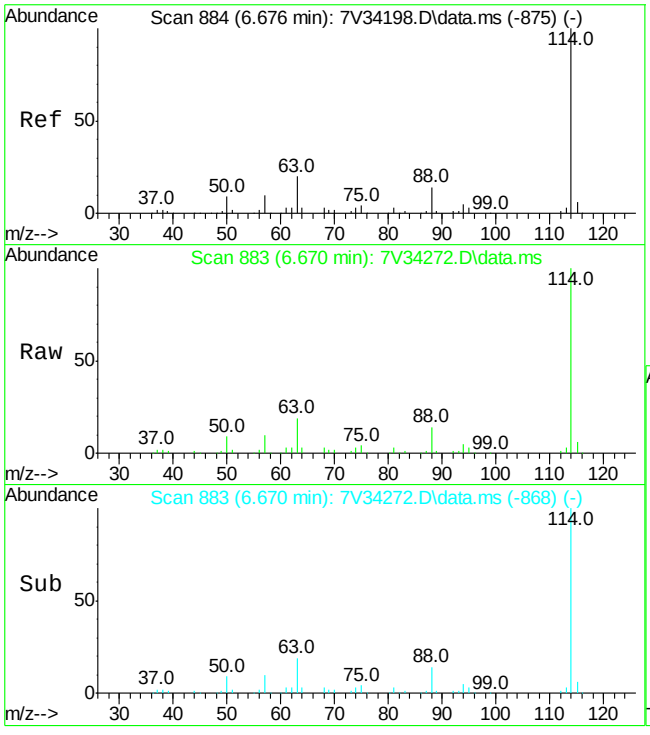


#35
Dibromofluoromethane
Concen: 50.62 ug/L
RT: 5.780 min Scan# 737
Delta R.T. -0.000 min
Lab File: 7V34272.D
Acq: 2 Jun 2016 10:36 am

Tgt Ion:113 Resp: 110531

Ion	Ratio	Lower	Upper
113	100		
111	103.7	82.9	122.9
192	17.2	0.0	36.9

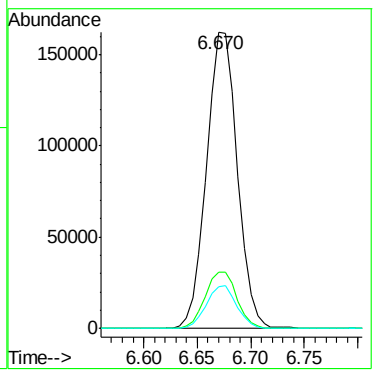


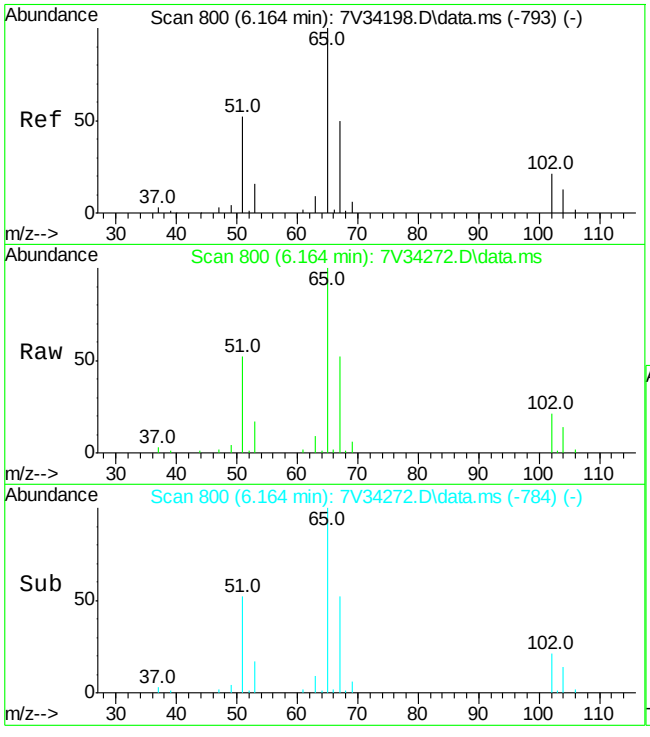


#40
1,4-Difluorobenzene
Concen: 50.00 ug/L
RT: 6.670 min Scan# 883
Delta R.T. -0.006 min
Lab File: 7V34272.D
Acq: 2 Jun 2016 10:36 am

Tgt Ion:114 Resp: 323043

Ion	Ratio	Lower	Upper
114	100		
63	19.5	0.0	39.6
88	14.0	0.0	34.3

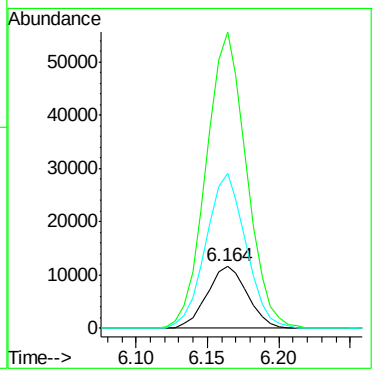


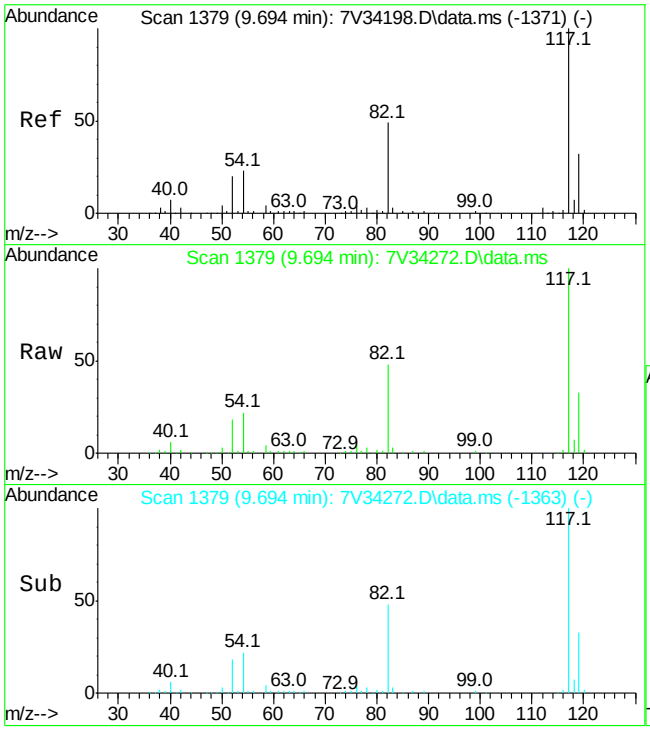


#41
1,2-Dichloroethane-d4
Concen: 48.86 ug/L
RT: 6.164 min Scan# 800
Delta R.T. -0.000 min
Lab File: 7V34272.D
Acq: 2 Jun 2016 10:36 am

Tgt Ion:102 Resp: 22617

Ion	Ratio	Lower	Upper
102	100		
65	481.3	469.5	509.5
51	249.6	232.7	272.7

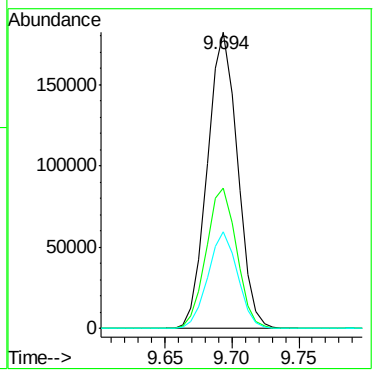


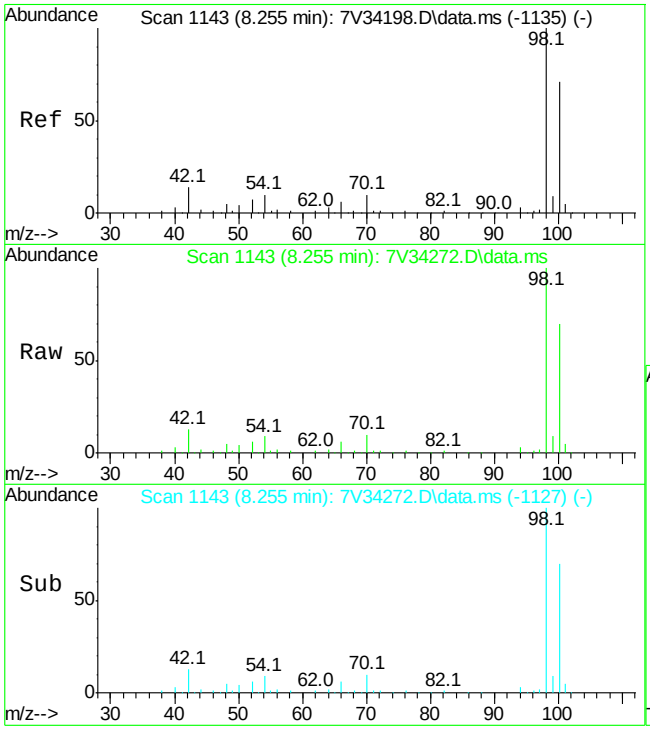


#55
Chlorobenzene-d5
Concen: 50.00 ug/L
RT: 9.694 min Scan# 1379
Delta R.T. -0.000 min
Lab File: 7V34272.D
Acq: 2 Jun 2016 10:36 am

Tgt Ion:117 Resp: 284097

Ion	Ratio	Lower	Upper
117	100		
82	47.9	28.7	68.7
119	32.0	12.2	52.2

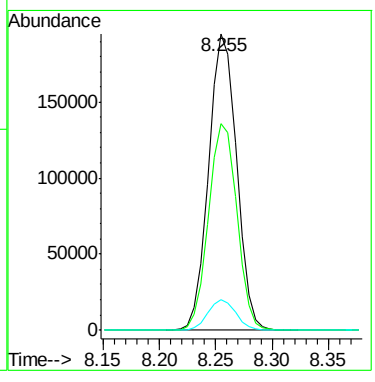




#56
Toluene-d8
Concen: 49.01 ug/L
RT: 8.255 min Scan# 1143
Delta R.T. -0.000 min
Lab File: 7V34272.D
Acq: 2 Jun 2016 10:36 am

Tgt Ion: 98 Resp: 334825

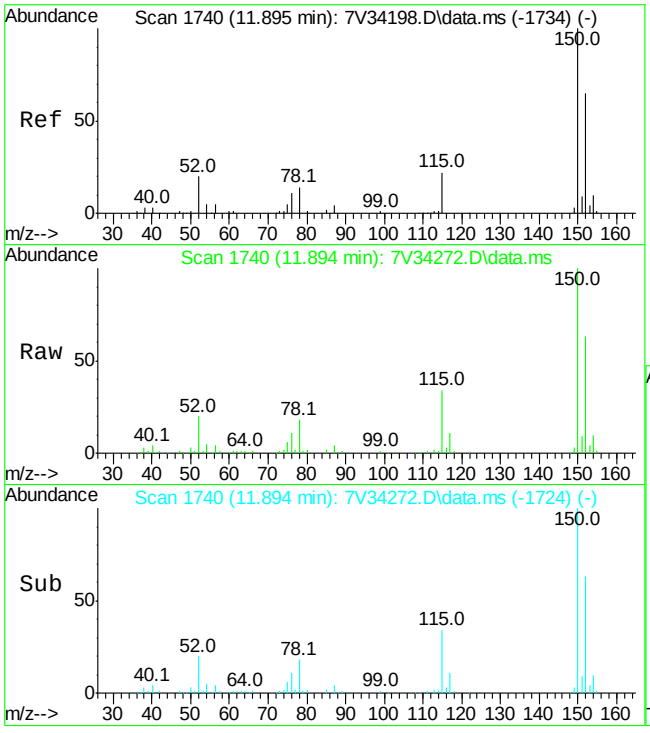
Ion	Ratio	Lower	Upper
98	100		
100	70.4	49.8	89.8
70	10.1	0.0	30.1



7.2.2

7

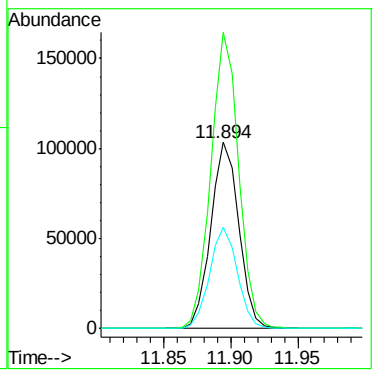
SGS ACCUTEST D83120

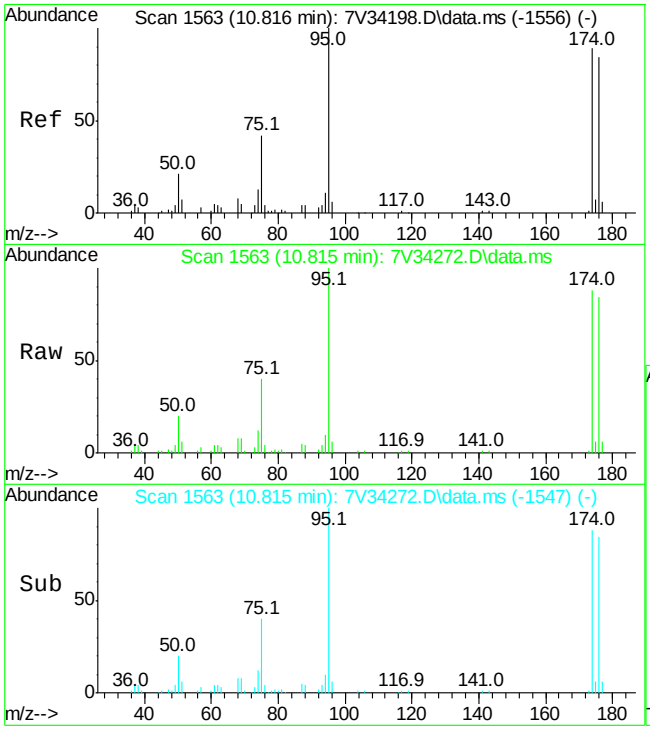


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/L
RT: 11.894 min Scan# 1740
Delta R.T. -0.000 min
Lab File: 7V34272.D
Acq: 2 Jun 2016 10:36 am

Tgt Ion:152 Resp: 149737

Ion	Ratio	Lower	Upper
152	100		
150	157.3	154.9	194.9
115	53.8	34.6	74.6

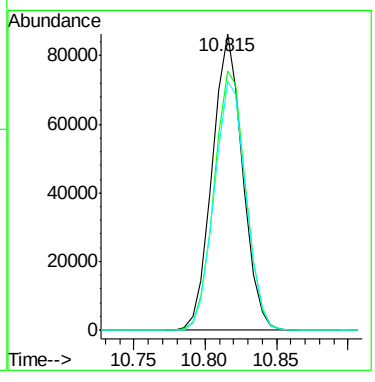




#76
4-Bromofluorobenzene
Concen: 48.89 ug/L
RT: 10.815 min Scan# 1563
Delta R.T. -0.001 min
Lab File: 7V34272.D
Acq: 2 Jun 2016 10:36 am

Tgt Ion: 95 Resp: 127472

Ion	Ratio	Lower	Upper
95	100		
174	91.2	70.3	110.3
176	87.6	67.4	107.4



GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB799-MB	FB16829.D	1	06/02/16	KM	n/a	n/a	GFB799

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-85-1	Ethene	ND	0.0024	0.0012	mg/l	

Blank Spike Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB799-BS	FB16830.D	10	06/02/16	KM	n/a	n/a	GFB799

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	0.512	0.514	100	70-134
74-84-0	Ethane	0.923	0.912	99	70-137
74-85-1	Ethene	0.857	0.916	107	70-148

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D83120
Account: LTENCODE LT Environmental
Project: Gates-Boone, IA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D83120-2MS	FB16832.D	10	06/02/16	KM	n/a	n/a	GFB799
D83120-2MSD	FB16833.D	10	06/02/16	KM	n/a	n/a	GFB799
D83120-2	FB16831.D	1	06/02/16	KM	n/a	n/a	GFB799

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8

CAS No.	Compound	D83120-2 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
74-82-8	Methane	ND		0.512	0.466	91	0.512	0.468	91	0	42-155/30
74-84-0	Ethane	ND		0.923	0.828	90	0.923	0.831	90	0	30-164/30
74-85-1	Ethene	ND		0.857	0.849	99	0.857	0.848	99	0	34-178/30

8.3.1

8

* = Outside of Control Limits.

GC Volatiles

Raw Data

Manual Integrations
APPROVED
(compounds with "m" flag)
Janis Kardatzke
06/07/16 18:46

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16840.D    Vial: 14
Acq On    :  2 Jun 2016   1:43 pm                    Operator: KATIEM1
Sample    : D83120-1                                 Inst    : FID 4
Misc      : GC6191,GFB799,39,20.6,500,4,1            Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: Jun 02 13:38:48 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Thu Jun 02 11:48:35 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.43	10018	N.D.	rawvpm
2)	Ethene	0.74	2734	0.256	rawvpm
3)	Ethane	0.87	1180	0.109	rawvpm
4)	Propane	0.00	0	N.D.	rawvp

9.1.1

9

(f)=RT Delta > 1/2 Window (m)=manual int.

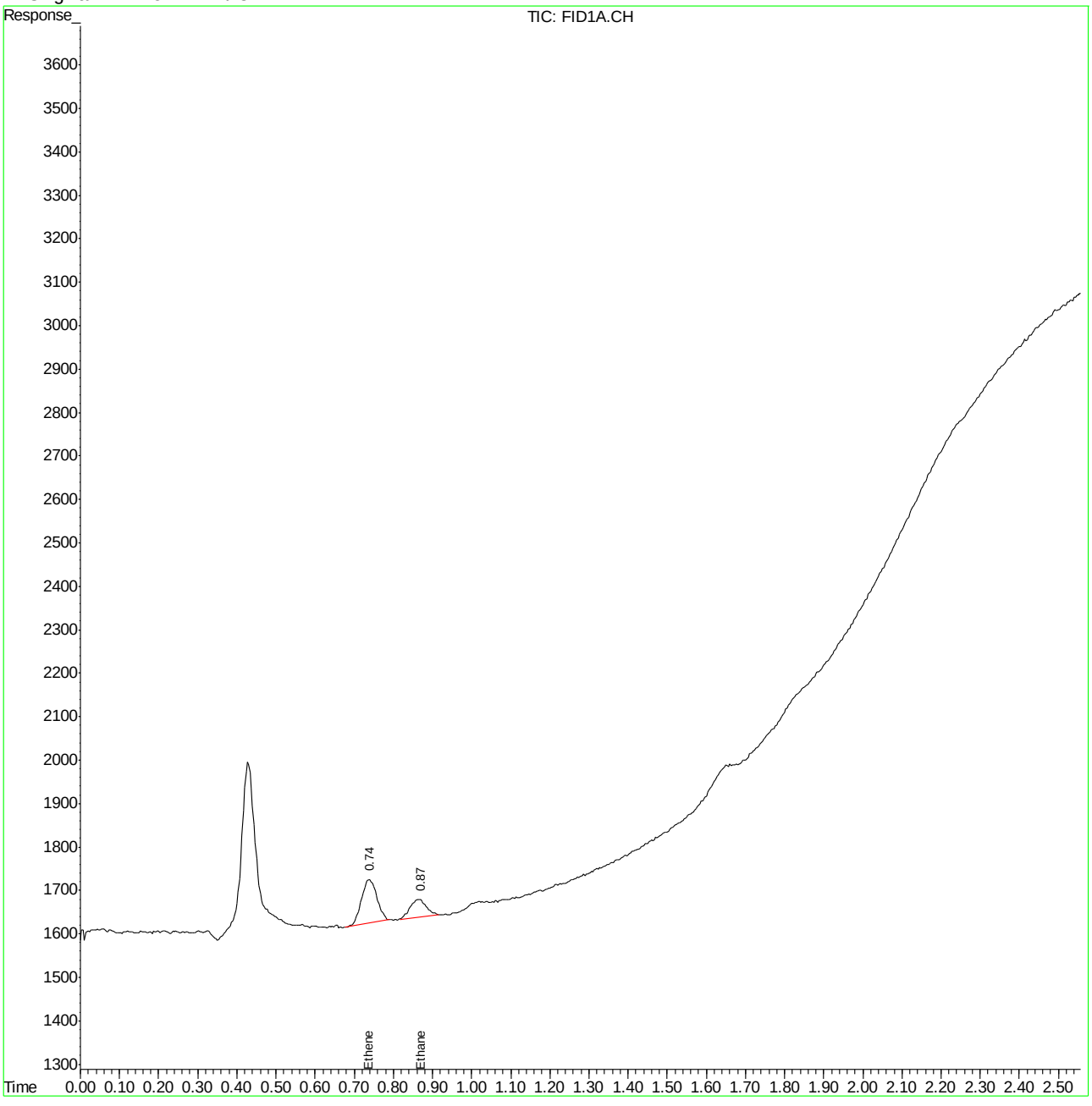
SGS ACCUTEST D83120

Quantitation Report (QT Reviewed)

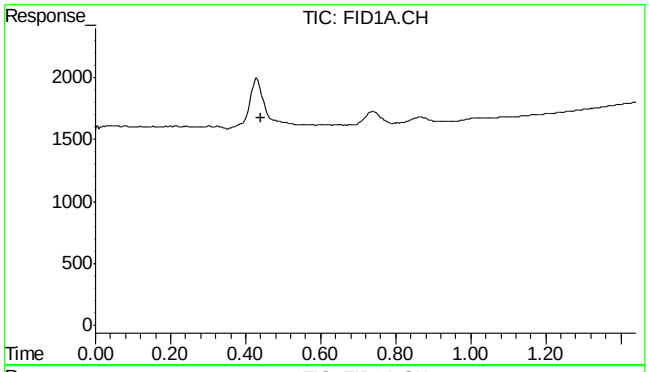
Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16840.D Vial: 14
Acq On : 2 Jun 2016 1:43 pm Operator: KATIEM1
Sample : D83120-1 Inst : FID 4
Misc : GC6191,GFB799,39,20.6,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 2 13:39 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Thu Jun 02 11:48:35 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in

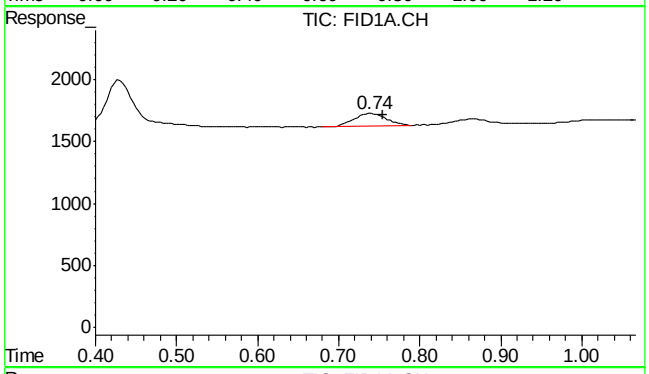


FB16840.D MEEP-GFB764.M Thu Jun 02 15:38:41 2016 GCFA Page 2



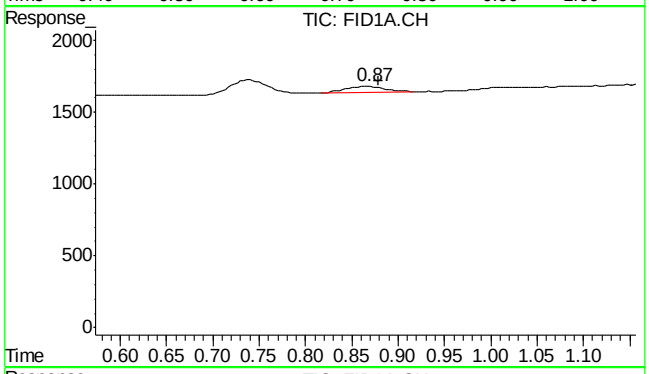
#1 Methane

R.T.: 0.428 min
Delta R.T.: -0.014 min
Response: 10018
Conc: N.D.



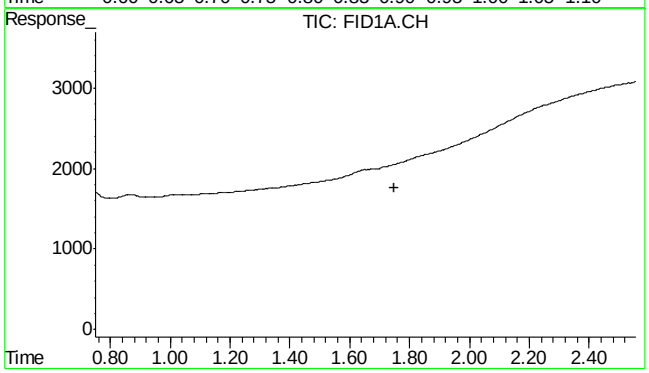
#2 Ethene

R.T.: 0.738 min
Delta R.T.: -0.016 min
Response: 2734
Conc: 0.26 rawvppm m



#3 Ethane

R.T.: 0.869 min
Delta R.T.: -0.010 min
Response: 1180
Conc: 0.11 rawvppm m



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.750 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	D83120-1	**Sample Volume:**	39.0 ml
Lab FileID:	FB16840.D	**Headspace:**	4.0 ml
Injection Time:	06/02/16 13:43	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	20.6 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	0	38340	0.0	mg/l
Ethane	74-84-0	30	0.11	27080	0.0	mg/l
Ethene	74-85-1	28	0.26	10440	0.0	mg/l
Propane	74-98-6	44	0	32552	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations
APPROVED
(compounds with "m" flag)
Janis Kardatzke
06/07/16 18:46

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16831.D    Vial: 5
Acq On    :  2 Jun 2016  12:48 pm                        Operator: KATIEM1
Sample    : D83120-2                                     Inst    : FID 4
Misc      : GC6191,GFB799,39,20.6,500,4,1                Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: Jun 02 12:44:09 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Thu Jun 02 11:48:35 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.43	14769	0.059	rawvpm
2)	Ethene	0.74	2061	0.193	rawvpm
3)	Ethane	0.86	1320	0.122	rawvpm
4)	Propane	0.00	0	N.D.	rawvp

9.1.2

9

(f)=RT Delta > 1/2 Window (m)=manual int.

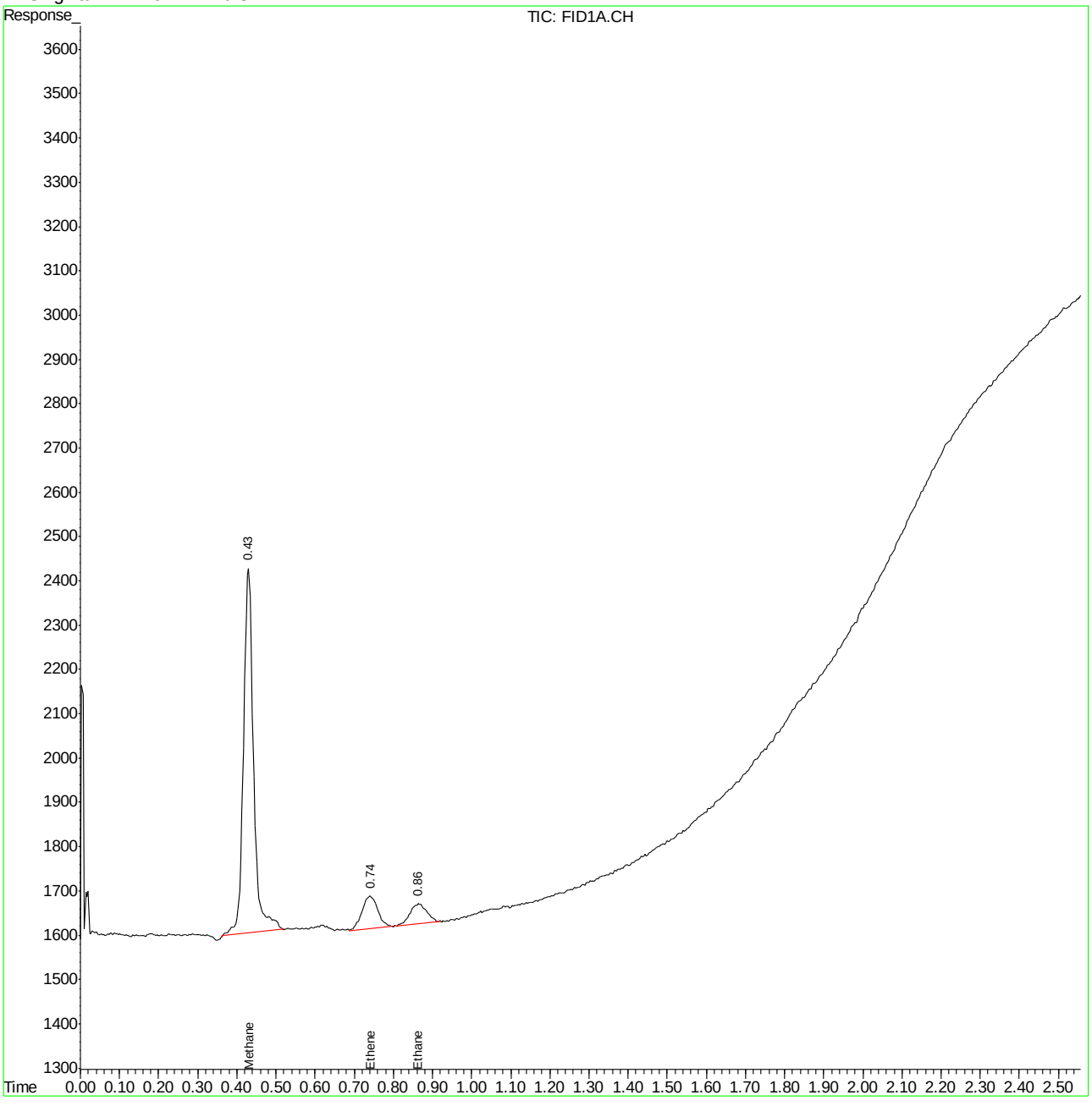
SGS ACCUTEST D83120

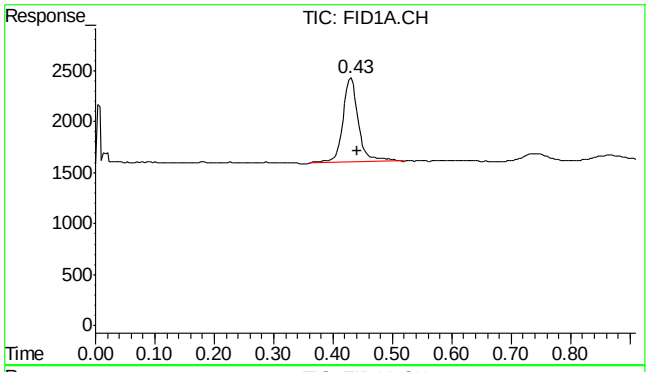
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16831.D Vial: 5
Acq On : 2 Jun 2016 12:48 pm Operator: KATIEM1
Sample : D83120-2 Inst : FID 4
Misc : GC6191,GFB799,39,20.6,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 2 12:45 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Thu Jun 02 11:48:35 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

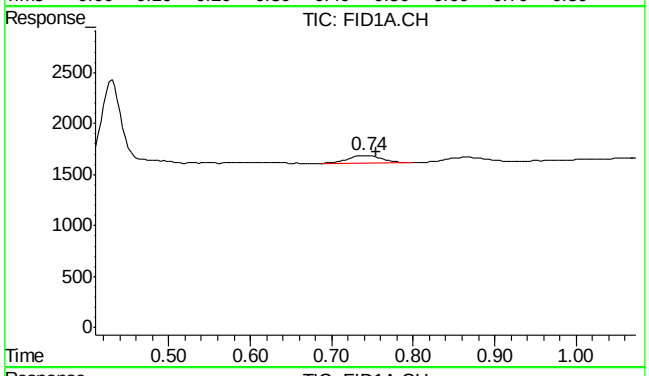
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





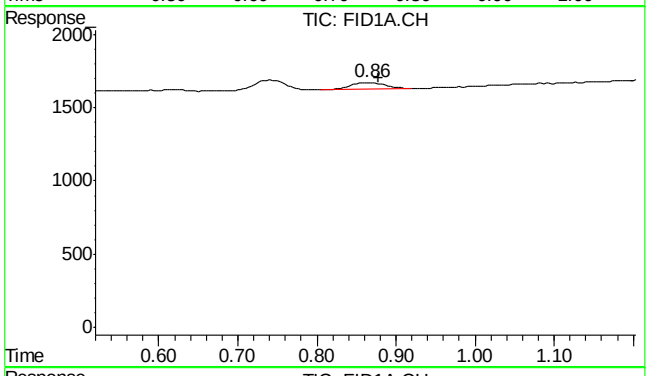
#1 Methane

R.T.: 0.429 min
Delta R.T.: -0.012 min
Response: 14769
Conc: 0.06 rawvppm m



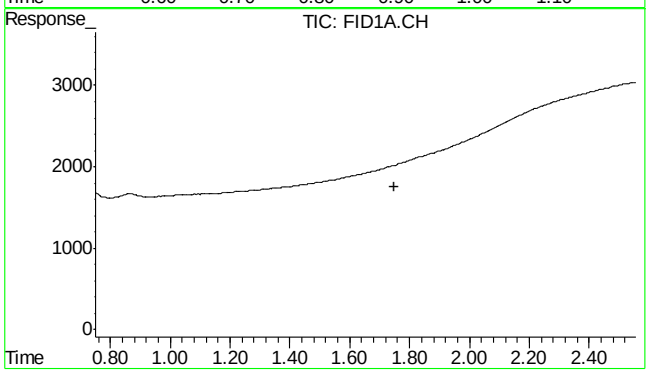
#2 Ethene

R.T.: 0.740 min
Delta R.T.: -0.015 min
Response: 2061
Conc: 0.19 rawvppm m



#3 Ethane

R.T.: 0.863 min
Delta R.T.: -0.015 min
Response: 1320
Conc: 0.12 rawvppm m



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.750 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	D83120-2	**Sample Volume:**	39.0 ml
Lab FileID:	FB16831.D	**Headspace:**	4.0 ml
Injection Time:	06/02/16 12:48	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	20.6 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	0.06	38340	0.0	mg/l
Ethane	74-84-0	30	0.12	27080	0.0	mg/l
Ethene	74-85-1	28	0.19	10440	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920

Manual Integrations APPROVED (compounds with "m" flag)
Janis Kardatzke
06/07/16 18:46

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16842.D    Vial: 16
Acq On    :  2 Jun 2016   1:52 pm                        Operator: KATIEM1
Sample    : D83120-3                                     Inst    : FID 4
Misc      : GC6191,GFB799,39,20.6,500,4,1                Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: Jun 02 13:47:32 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Thu Jun 02 11:48:35 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.43	2068876	394.524	rawvpm
2)	Ethene	0.75	4264	0.400	rawvpm
3)	Ethane	0.87	24456	2.263	rawvpm
4)	Propane	1.75	11700	0.750	rawvpm

9.1.3

9

(f)=RT Delta > 1/2 Window (m)=manual int.

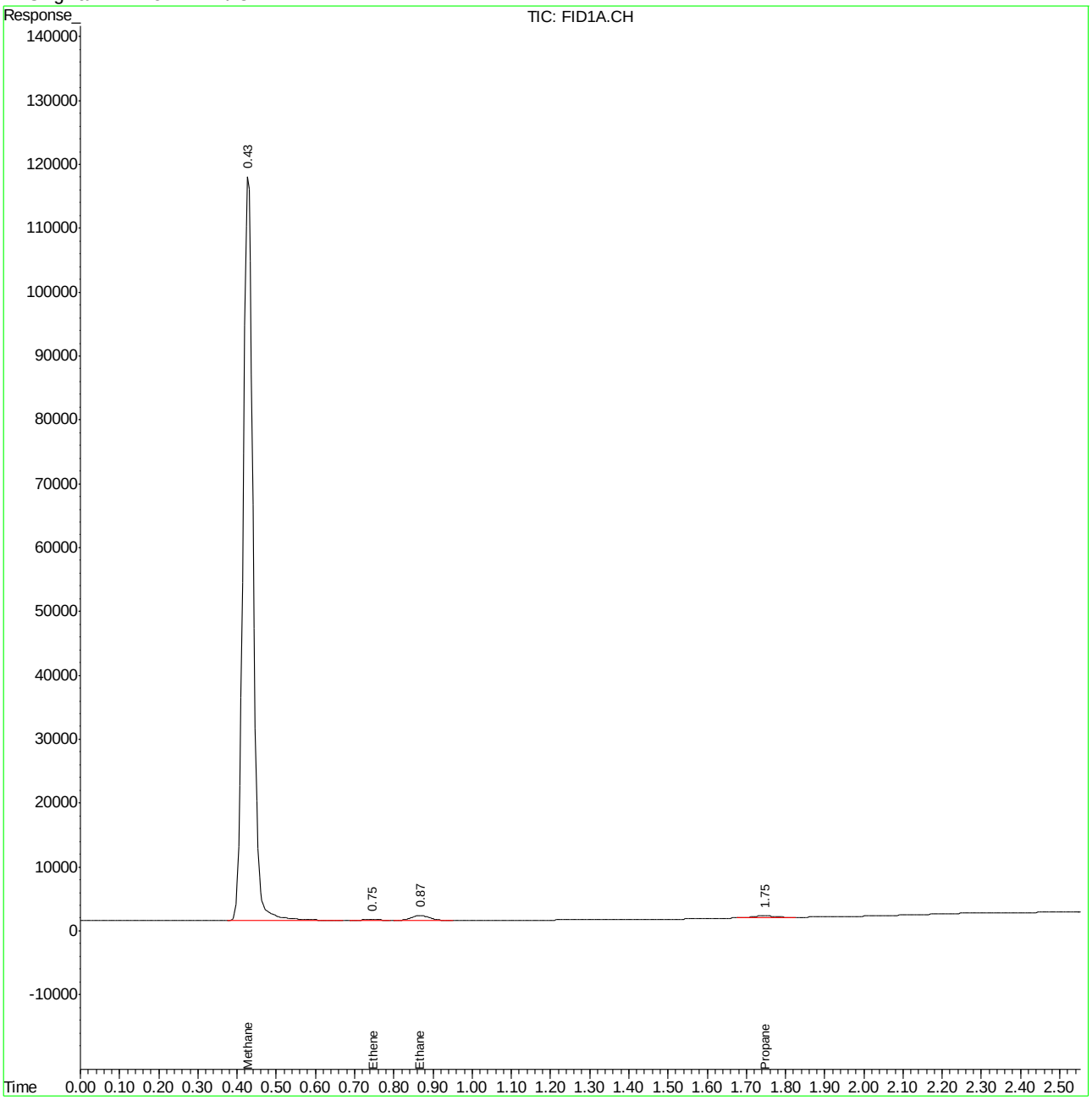
SGS ACCUTEST D83120

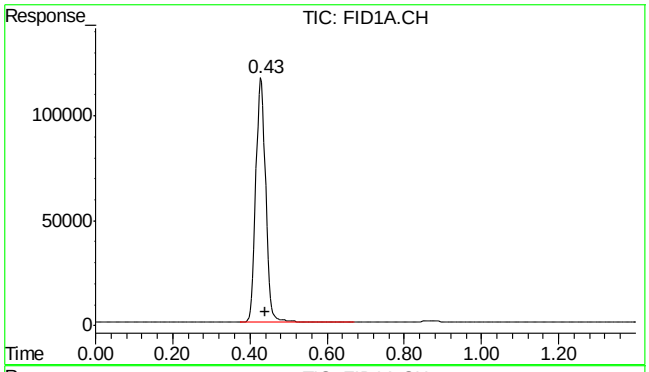
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16842.D Vial: 16
Acq On : 2 Jun 2016 1:52 pm Operator: KATIEM1
Sample : D83120-3 Inst : FID 4
Misc : GC6191,GFB799,39,20.6,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 2 13:48 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Thu Jun 02 11:48:35 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

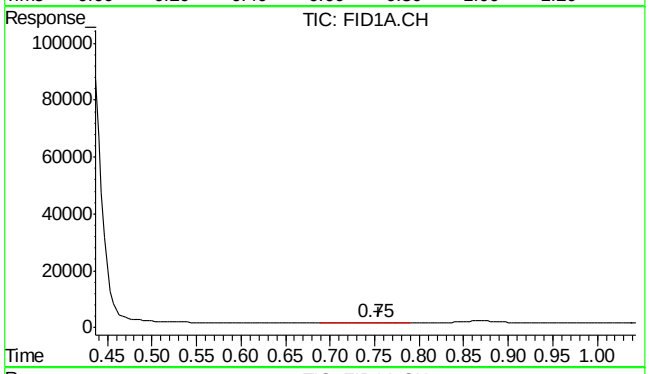
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





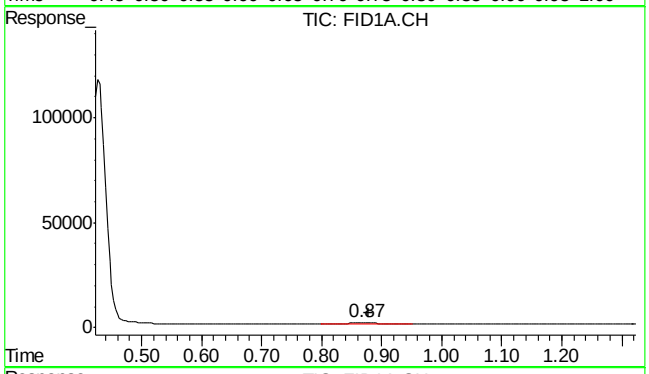
#1 Methane

R.T.: 0.428 min
Delta R.T.: -0.014 min
Response: 2068876
Conc: 394.52 rawvppm m



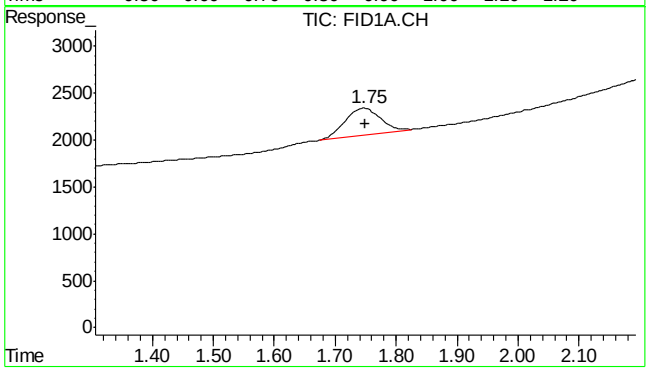
#2 Ethene

R.T.: 0.746 min
Delta R.T.: -0.009 min
Response: 4264
Conc: 0.40 rawvppm m



#3 Ethane

R.T.: 0.868 min
Delta R.T.: -0.011 min
Response: 24456
Conc: 2.26 rawvppm m



#4 Propane

R.T.: 1.747 min
Delta R.T.: -0.003 min
Response: 11700
Conc: 0.75 rawvppm m

Dissolved Gases Raw Data Summary

Sample Number:	D83120-3	**Sample Volume:**	39.0 ml
Lab FileID:	FB16842.D	**Headspace:**	4.0 ml
Injection Time:	06/02/16 13:52	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	20.6 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	394.52	38340	0.0292	mg/l
Ethane	74-84-0	30	2.26	27080	0.0	mg/l
Ethene	74-85-1	28	0.4	10440	0.0	mg/l
Propane	74-98-6	44	0.75	32552	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations
APPROVED
(compounds with "m" flag)
Janis Kardatzke
06/07/16 18:46

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16841.D    Vial: 15
Acq On    :  2 Jun 2016   1:47 pm                    Operator: KATIEM1
Sample    : D83120-4                                 Inst    : FID 4
Misc      : GC6191,GFB799,39,20.6,500,4,1            Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: Jun 02 13:40:50 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Thu Jun 02 11:48:35 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.43	41136696	7896.998	rawvp
2)	Ethene	0.74	212623	19.946	rawvpm
3)	Ethane	0.87	117106	10.835	rawvpm
4)	Propane	1.74	28159	1.806	rawvpm

9.1.4

9

(f)=RT Delta > 1/2 Window (m)=manual int.

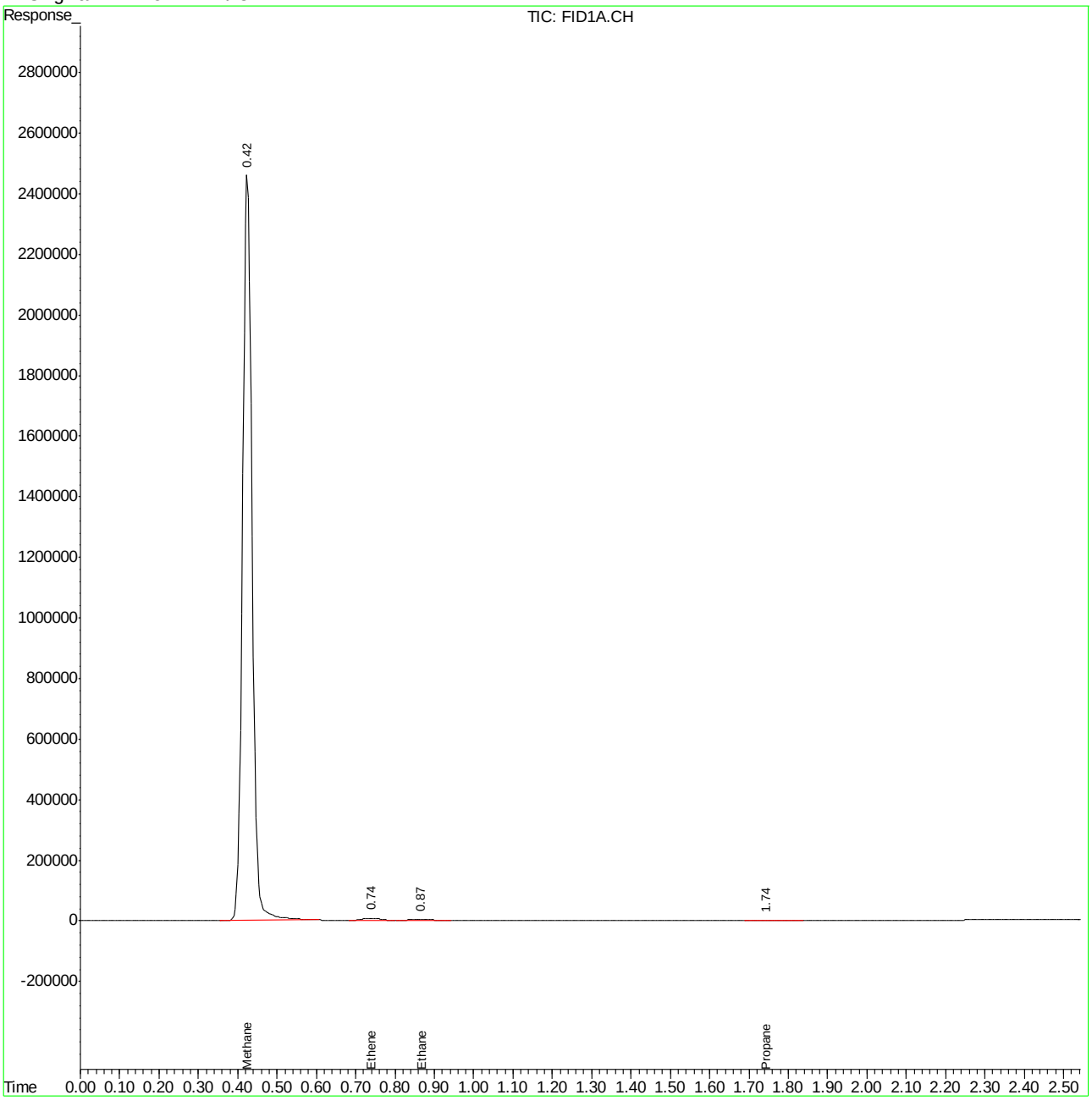
SGS ACCUTEST D83120

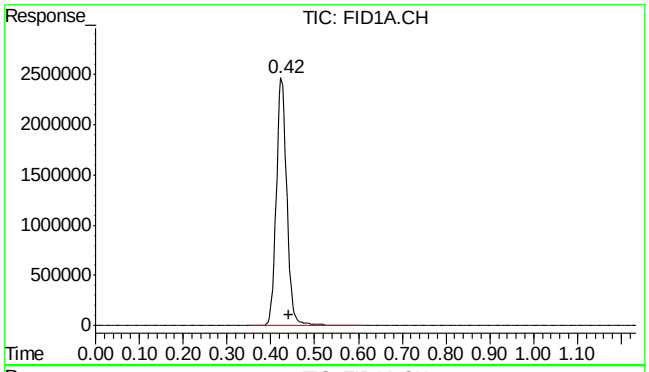
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16841.D Vial: 15
Acq On : 2 Jun 2016 1:47 pm Operator: KATIEM1
Sample : D83120-4 Inst : FID 4
Misc : GC6191,GFB799,39,20.6,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 2 13:41 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Thu Jun 02 11:48:35 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

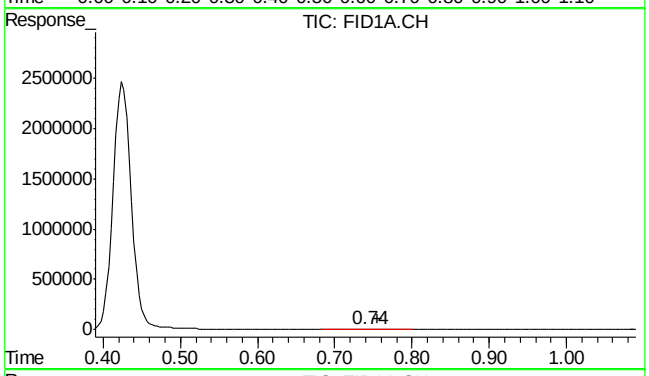
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





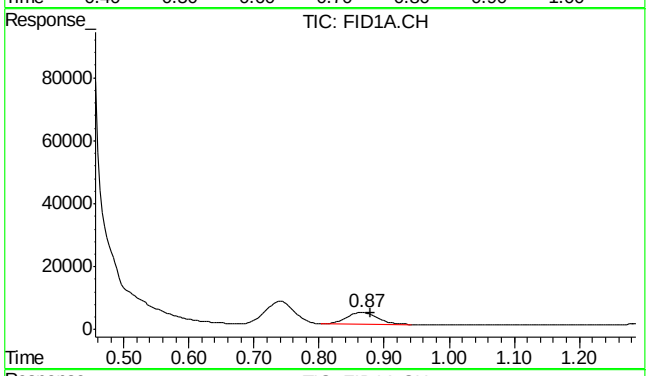
#1 Methane

R.T.: 0.425 min
Delta R.T.: -0.016 min
Response: 41136696
Conc: 7897.00 rawvppm



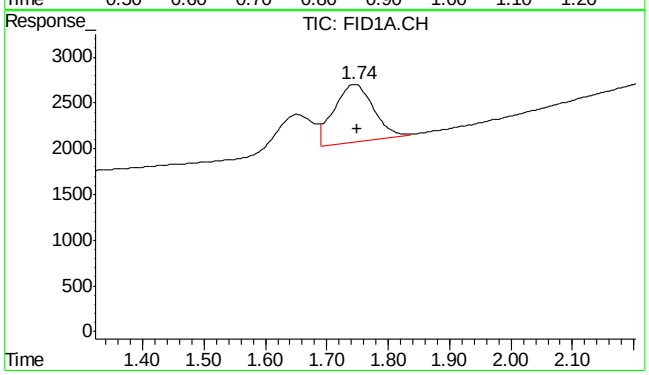
#2 Ethene

R.T.: 0.740 min
Delta R.T.: -0.015 min
Response: 212623
Conc: 19.95 rawvppm m



#3 Ethane

R.T.: 0.865 min
Delta R.T.: -0.013 min
Response: 117106
Conc: 10.84 rawvppm m



#4 Propane

R.T.: 1.743 min
Delta R.T.: -0.006 min
Response: 28159
Conc: 1.81 rawvppm m

Dissolved Gases Raw Data Summary

Sample Number:	D83120-4	**Sample Volume:**	39.0 ml
Lab FileID:	FB16841.D	**Headspace:**	4.0 ml
Injection Time:	06/02/16 13:47	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	20.6 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	7897	38340	0.585	mg/l
Ethane	74-84-0	30	10.84	27080	0.0017	mg/l
Ethene	74-85-1	28	19.95	10440	0.0047	mg/l
Propane	74-98-6	44	1.81	32552	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations
APPROVED
(compounds with "m" flag)
Janis Kardatzke
06/07/16 18:46

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16843.D    Vial: 17
Acq On    :  2 Jun 2016   1:58 pm                    Operator: KATIEM1
Sample    : D83120-5                                 Inst    : FID 4
Misc      : GC6191,GFB799,39,20.6,500,4,1            Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: Jun 02 13:52:16 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Thu Jun 02 11:48:35 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.43	45533	5.967	rawvpm
2)	Ethene	0.75	2000	0.188	rawvpm
3)	Ethane	0.87	14596	1.351	rawvpm
4)	Propane	0.00	0	N.D.	rawvp

9.1.5

9

(f)=RT Delta > 1/2 Window (m)=manual int.

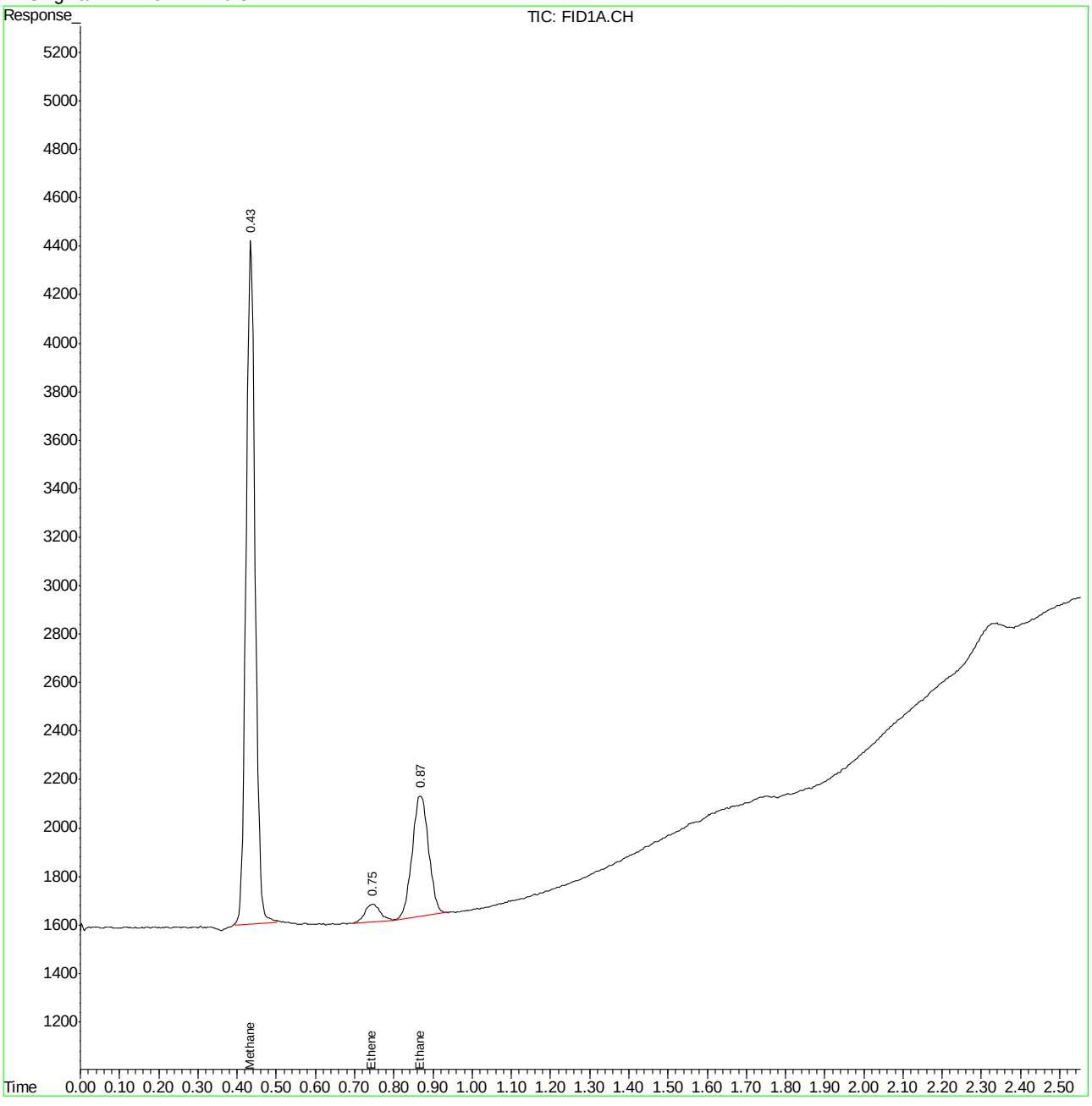
SGS ACCUTEST D83120

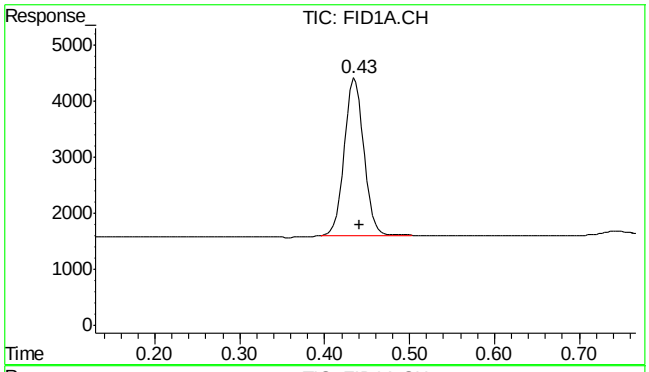
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16843.D Vial: 17
Acq On : 2 Jun 2016 1:58 pm Operator: KATIEM1
Sample : D83120-5 Inst : FID 4
Misc : GC6191,GFB799,39,20.6,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 2 13:52 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Thu Jun 02 11:48:35 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

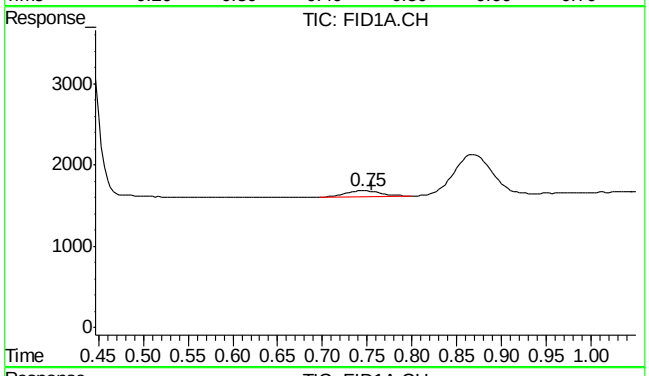
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





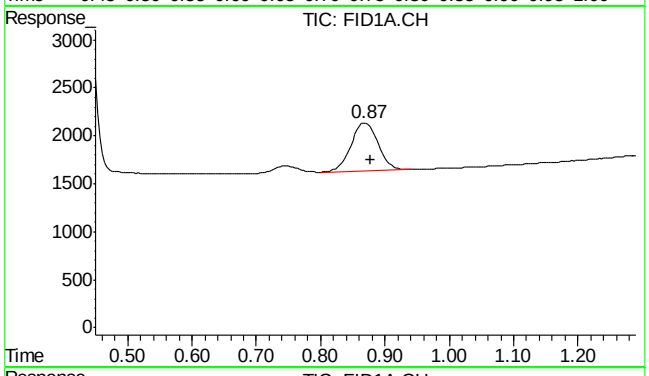
#1 Methane

R.T.: 0.434 min
Delta R.T.: -0.007 min
Response: 45533
Conc: 5.97 rawvppm m



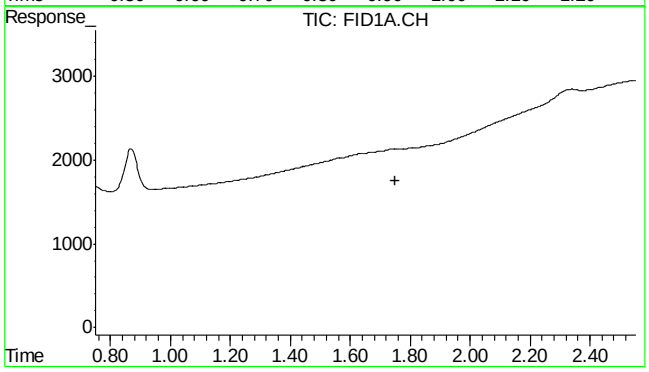
#2 Ethene

R.T.: 0.745 min
Delta R.T.: -0.010 min
Response: 2000
Conc: 0.19 rawvppm m



#3 Ethane

R.T.: 0.868 min
Delta R.T.: -0.011 min
Response: 14596
Conc: 1.35 rawvppm m



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.750 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	D83120-5	**Sample Volume:**	39.0 ml
Lab FileID:	FB16843.D	**Headspace:**	4.0 ml
Injection Time:	06/02/16 13:58	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	20.6 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	5.97	38340	0.00044	mg/l
Ethane	74-84-0	30	1.35	27080	0.0	mg/l
Ethene	74-85-1	28	0.19	10440	0.0	mg/l
Propane	74-98-6	44	0	32552	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations
APPROVED
(compounds with "m" flag)
Janis Kardatzke
06/07/16 18:46

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16844.D    Vial: 18
Acq On    :  2 Jun 2016   2:03 pm                    Operator: KATIEM1
Sample    : D83120-6                                 Inst    : FID 4
Misc      : GC6191,GFB799,39,20.6,500,4,1            Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: Jun 02 13:56:45 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Thu Jun 02 11:48:35 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.44	236174	42.577	rawvpm
2)	Ethene	0.75	1118358	104.912	rawvpm
3)	Ethane	0.88	412282	38.147	rawvpm
4)	Propane	1.76	12611	0.809	rawvpm

9.1.6

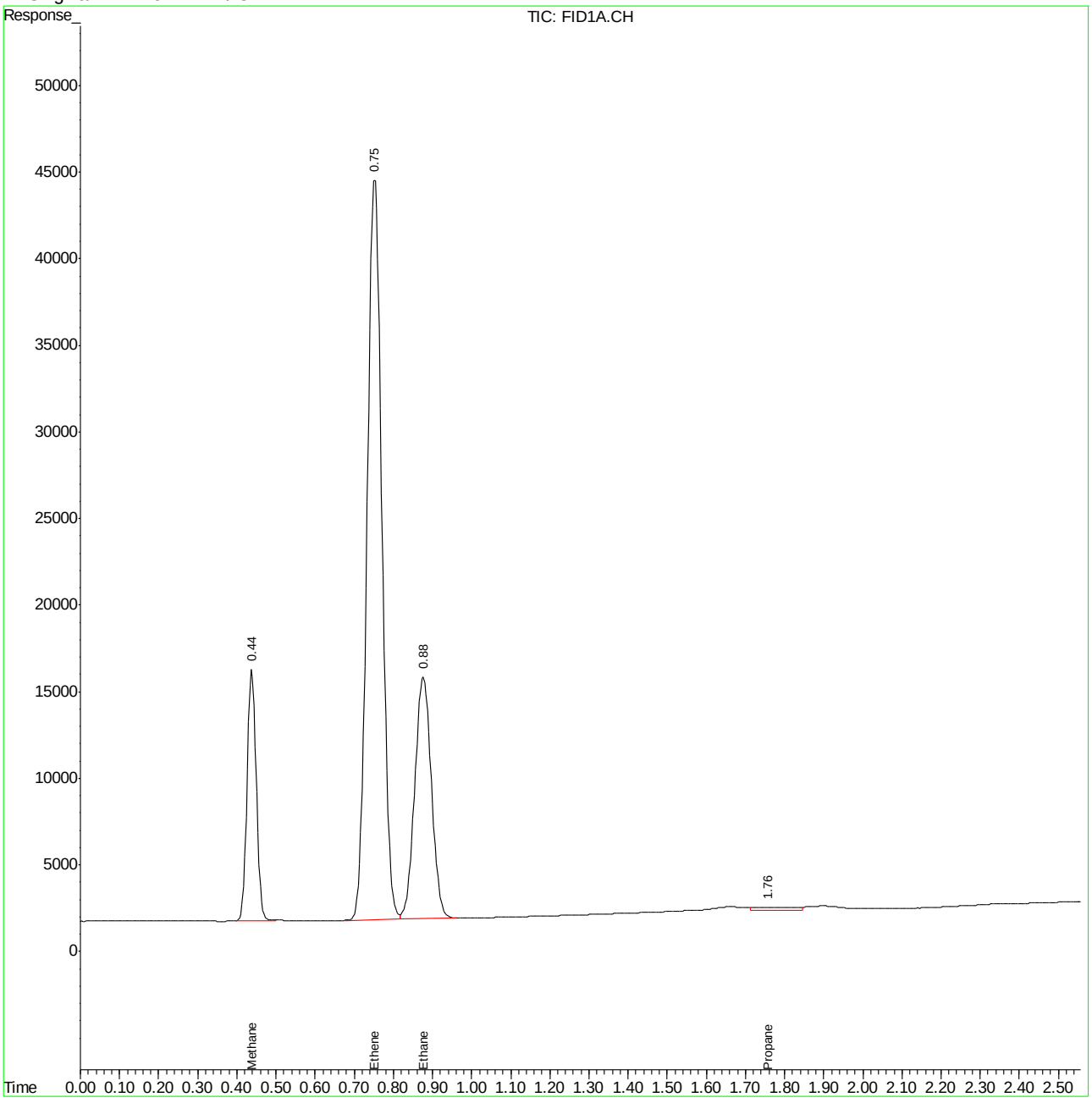
9

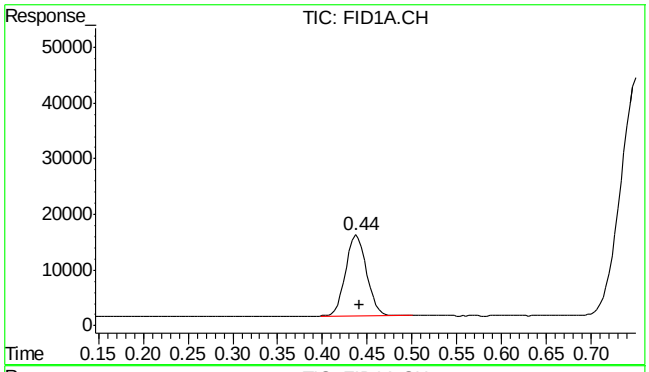
(f)=RT Delta > 1/2 Window (m)=manual int.

SGS ACCUTEST D83120

Quantitation Report (QT Reviewed)

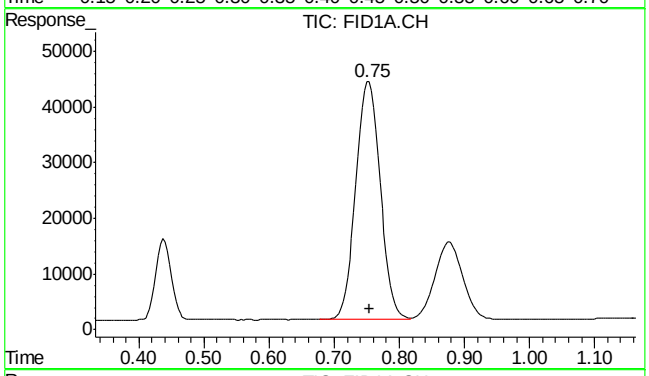
```
Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16844.D    Vial: 18
Acq On    :  2 Jun 2016   2:03 pm                    Operator: KATIEM1
Sample    : D83120-6                                 Inst    : FID 4
Misc      : GC6191,GFB799,39,20.6,500,4,1            Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: Jun  2 13:58 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Thu Jun 02 11:48:35 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```





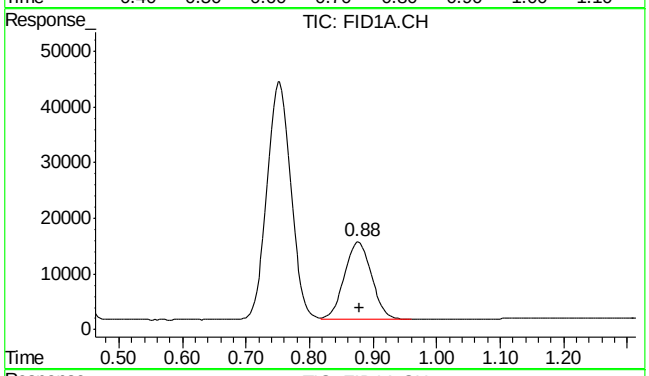
#1 Methane

R.T.: 0.437 min
Delta R.T.: -0.004 min
Response: 236174
Conc: 42.58 rawvppm m



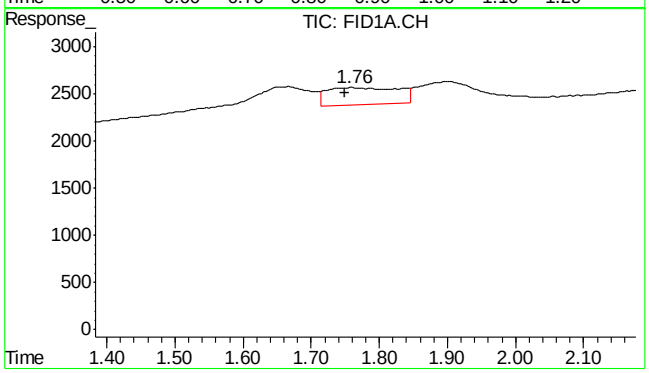
#2 Ethene

R.T.: 0.752 min
Delta R.T.: -0.003 min
Response: 1118358
Conc: 104.91 rawvppm m



#3 Ethane

R.T.: 0.876 min
Delta R.T.: -0.003 min
Response: 412282
Conc: 38.15 rawvppm m



#4 Propane

R.T.: 1.757 min
Delta R.T.: 0.007 min
Response: 12611
Conc: 0.81 rawvppm m

Dissolved Gases Raw Data Summary

Sample Number:	D83120-6	**Sample Volume:**	39.0 ml
Lab FileID:	FB16844.D	**Headspace:**	4.0 ml
Injection Time:	06/02/16 14:03	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	20.6 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	42.58	38340	0.0032	mg/l
Ethane	74-84-0	30	38.15	27080	0.0060	mg/l
Ethene	74-85-1	28	104.91	10440	0.0250	mg/l
Propane	74-98-6	44	0.81	32552	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations
APPROVED
(compounds with "m" flag)
Janis Kardatzke
06/07/16 18:46

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16845.D    Vial: 19
Acq On    :  2 Jun 2016   2:09 pm                    Operator: KATIEM1
Sample    : D83120-7                                 Inst    : FID 4
Misc      : GC6191,GFB799,39,20.6,500,4,1            Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: Jun 02 14:02:48 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Thu Jun 02 11:48:35 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.43	3223110	616.180	rawvp
2)	Ethene	0.74	16598665	1557.106	rawvp
3)	Ethane	0.87	6733322	623.016	rawvp
4)	Propane	1.74	24014	1.540	rawvpm

9.1.7

9

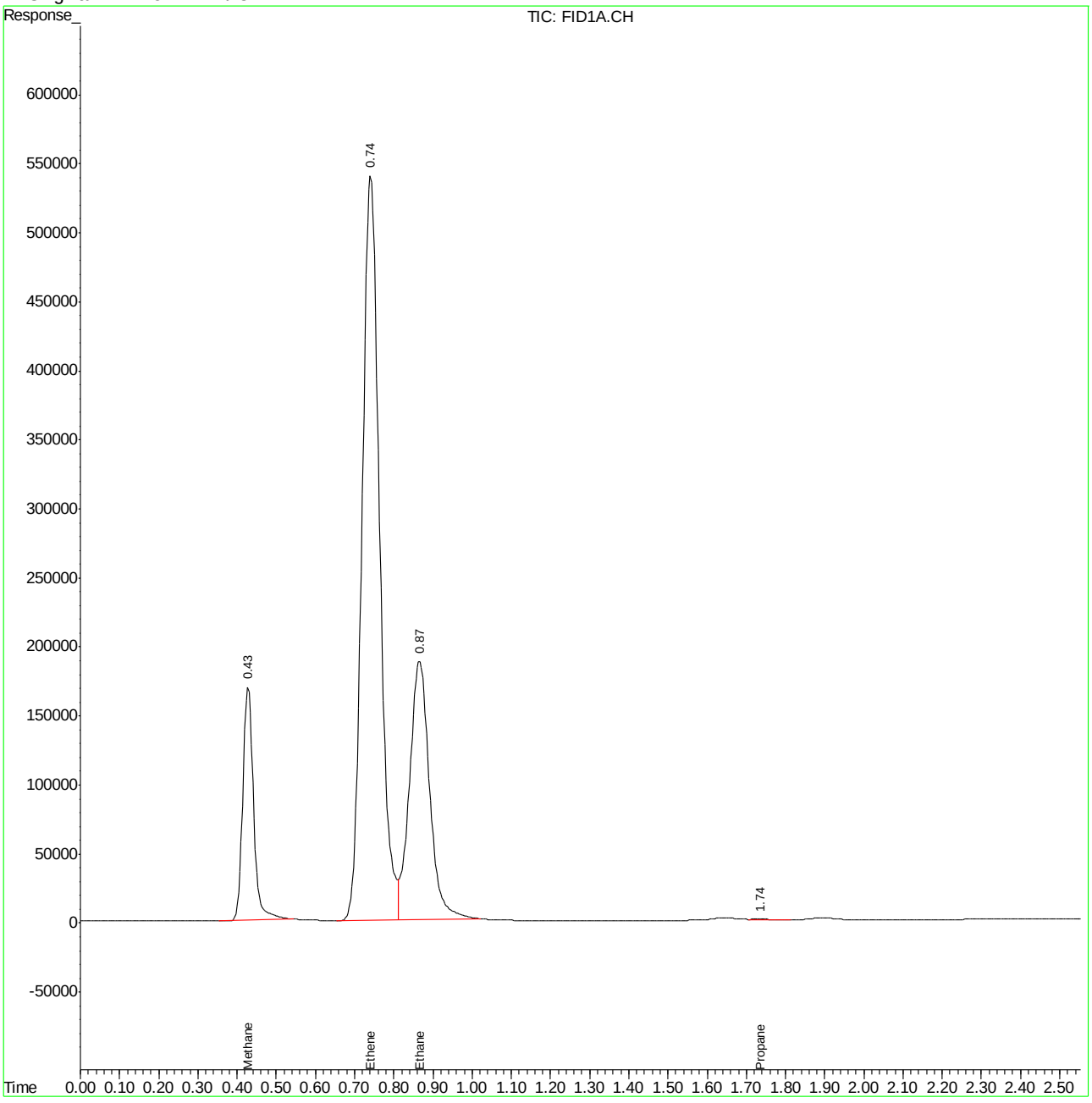
(f)=RT Delta > 1/2 Window (m)=manual int.

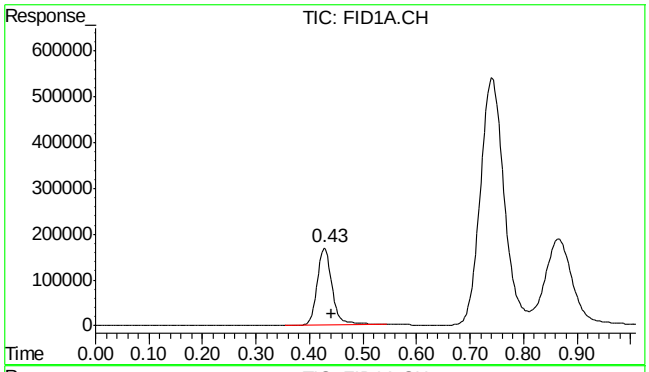
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16845.D Vial: 19
Acq On : 2 Jun 2016 2:09 pm Operator: KATIEM1
Sample : D83120-7 Inst : FID 4
Misc : GC6191,GFB799,39,20.6,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 2 14:05 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Thu Jun 02 11:48:35 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

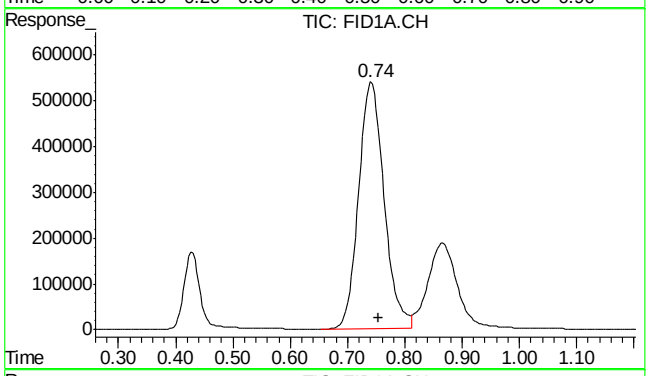
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





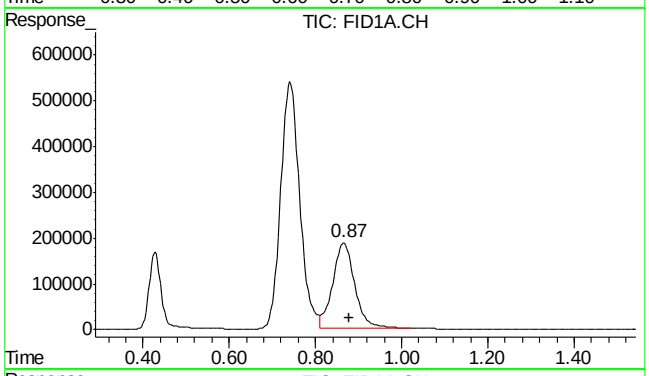
#1 Methane

R.T.: 0.429 min
Delta R.T.: -0.012 min
Response: 3223110
Conc: 616.18 rawvppm



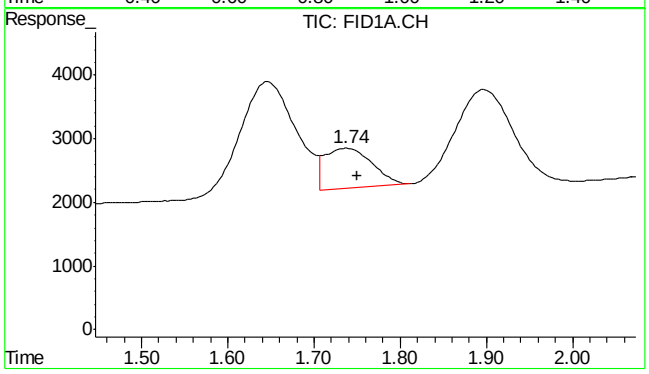
#2 Ethene

R.T.: 0.742 min
Delta R.T.: -0.013 min
Response: 16598665
Conc: 1557.11 rawvppm



#3 Ethane

R.T.: 0.866 min
Delta R.T.: -0.012 min
Response: 6733322
Conc: 623.02 rawvppm



#4 Propane

R.T.: 1.737 min
Delta R.T.: -0.013 min
Response: 24014
Conc: 1.54 rawvppm m

Dissolved Gases Raw Data Summary

Sample Number:	D83120-7	**Sample Volume:**	39.0 ml
Lab FileID:	FB16845.D	**Headspace:**	4.0 ml
Injection Time:	06/02/16 14:09	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	20.6 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	616.18	38340	0.0456	mg/l
Ethane	74-84-0	30	623.02	27080	0.0977	mg/l
Ethene	74-85-1	28	1557.11	10440	0.370	mg/l
Propane	74-98-6	44	1.54	32552	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Quantitation Report (QT Reviewed)

```
Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16846.D    Vial: 20
Acq On    :  2 Jun 2016   2:16 pm                    Operator: KATIEM1
Sample    : D83120-8                                 Inst    : FID 4
Misc      : GC6191,GFB799,39,20.6,500,4,1            Multiplr: 1.00
IntFile   : autoint1.e
Quant Time: Jun 02 14:09:46 2016  Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title        : RSK 175   Methane, Ethene, Ethane, and Propane
Last Update  : Thu Jun 02 11:48:35 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj.  : 100ul
Signal Phase : Porapak Q 80/100
Signal Info  : 1/8 in
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.43	2834	N.D.	rawvpm
2)	Ethene	0.00	0	N.D.	rawvp
3)	Ethane	0.00	0	N.D.	rawvp
4)	Propane	0.00	0	N.D.	rawvp

9.1.8

9

(f)=RT Delta > 1/2 Window (m)=manual int.

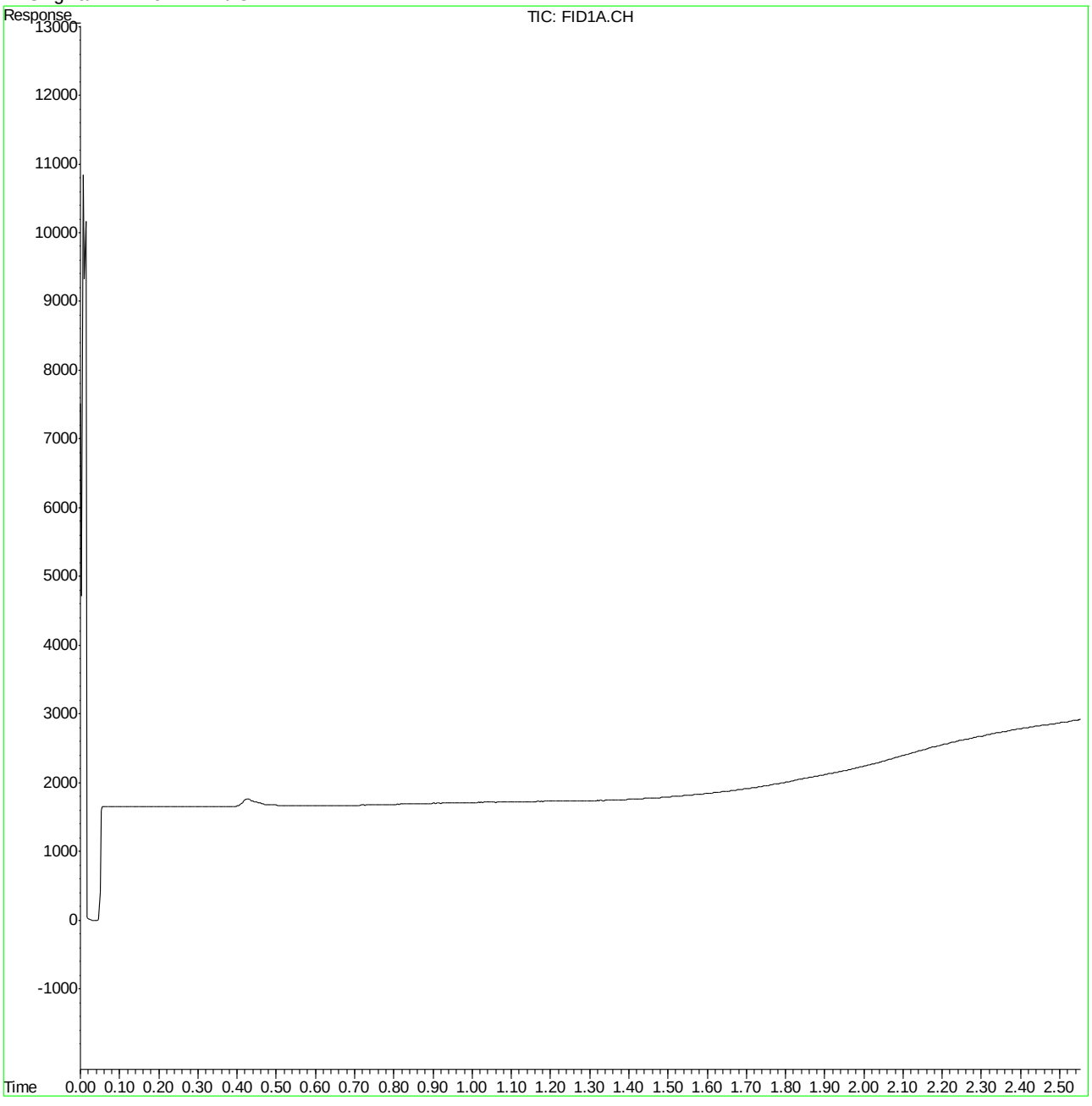
SGS ACCUTEST D83120

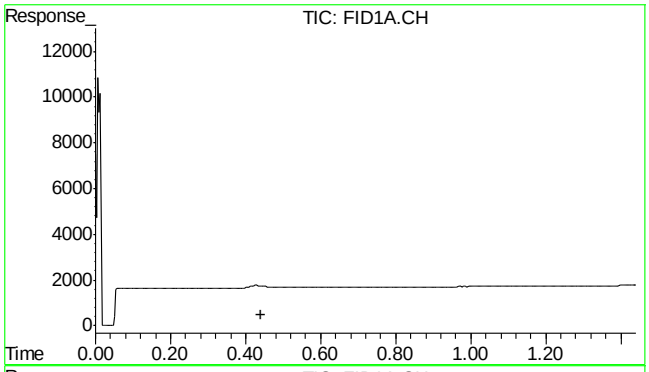
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16846.D Vial: 20
Acq On : 2 Jun 2016 2:16 pm Operator: KATIEM1
Sample : D83120-8 Inst : FID 4
Misc : GC6191,GFB799,39,20.6,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 2 14:09 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Thu Jun 02 11:48:35 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

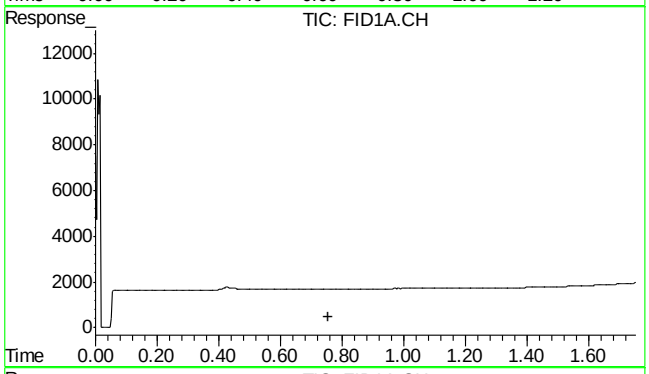
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





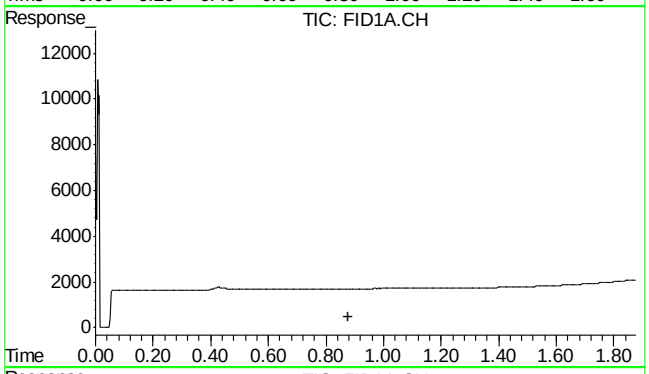
#1 Methane

R.T.: 0.426 min
Delta R.T.: -0.015 min
Response: 2834
Conc: N.D.



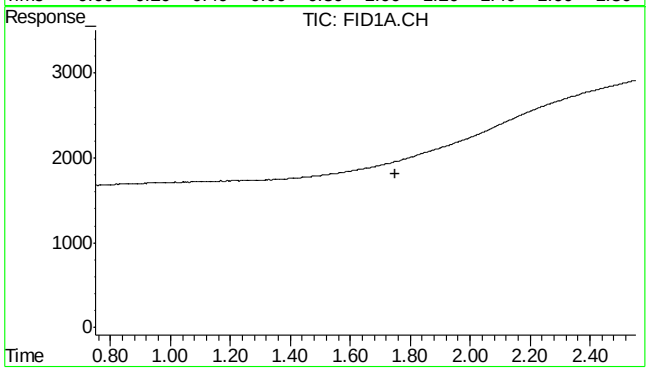
#2 Ethene

R.T.: 0.000 min
Exp R.T. : 0.755 min
Response: 0
Conc: N.D.



#3 Ethane

R.T.: 0.000 min
Exp R.T. : 0.879 min
Response: 0
Conc: N.D.



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.750 min
Response: 0
Conc: N.D.

Dissolved Gases Raw Data Summary

Sample Number:	D83120-8	**Sample Volume:**	39.0 ml
Lab FileID:	FB16846.D	**Headspace:**	4.0 ml
Injection Time:	06/02/16 14:16	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	20.6 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	0	38340	0.0	mg/l
Ethane	74-84-0	30	0	27080	0.0	mg/l
Ethene	74-85-1	28	0	10440	0.0	mg/l
Propane	74-98-6	44	0	32552	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

Manual Integrations APPROVED (compounds with "m" flag)
Janis Kardatzke
06/07/16 18:46

Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16829.D Vial: 3
Acq On : 2 Jun 2016 12:35 pm Operator: KATIEM1
Sample : MB Inst : FID 4
Misc : GC6191,GFB799,39,20.6,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 02 12:28:31 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Thu Jun 02 11:48:35 2016
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1)	Methane	0.43	5596	N.D.	rawvpm
2)	Ethene	0.75	315	0.030	rawvpm
3)	Ethane	0.88	395	0.037	rawvpm
4)	Propane	0.00	0	N.D.	rawvp

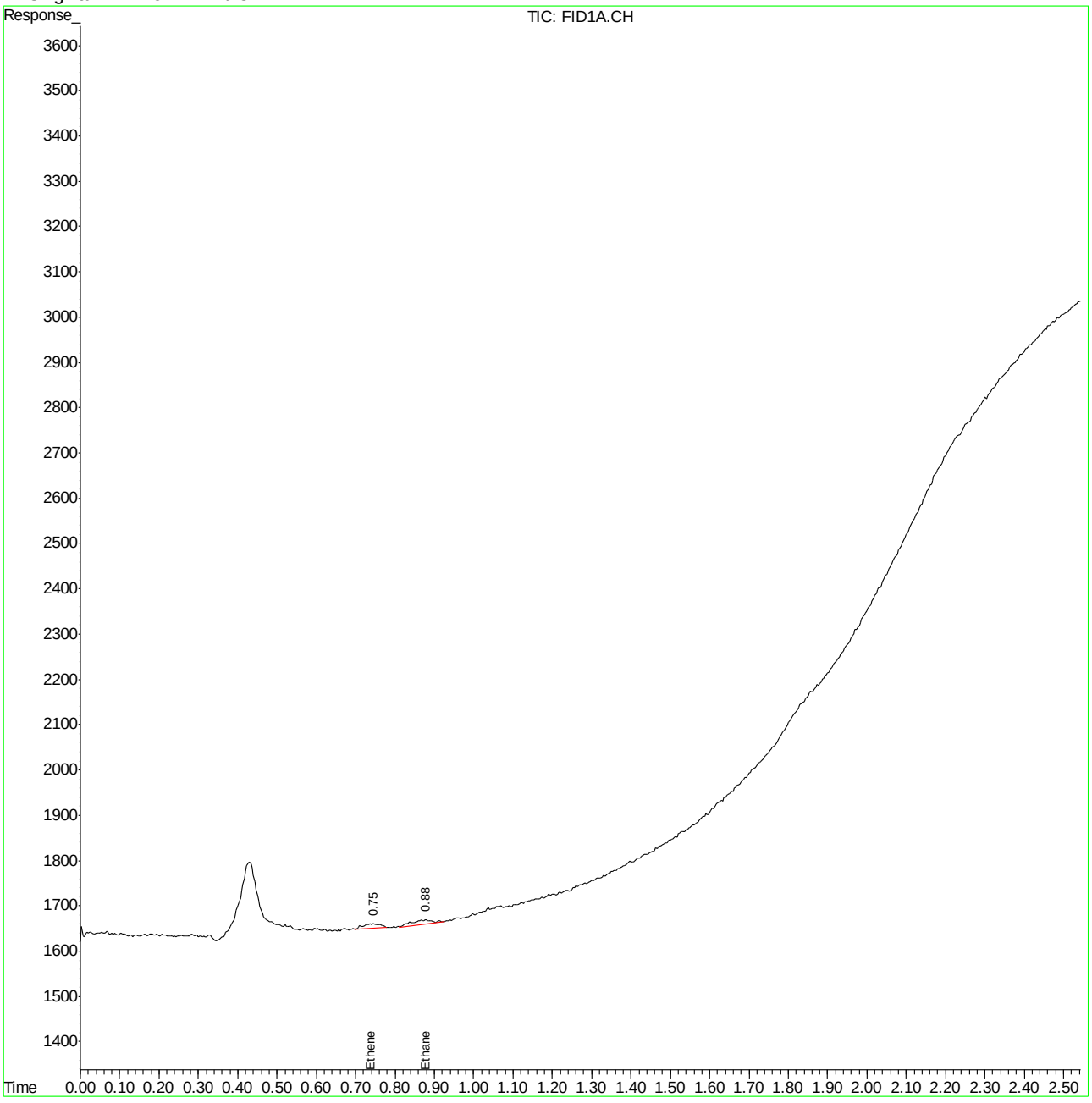
(f)=RT Delta > 1/2 Window (m)=manual int.
FB16829.D MEEP-GFB764.M Thu Jun 02 15:38:34 2016 GCFA Page 1

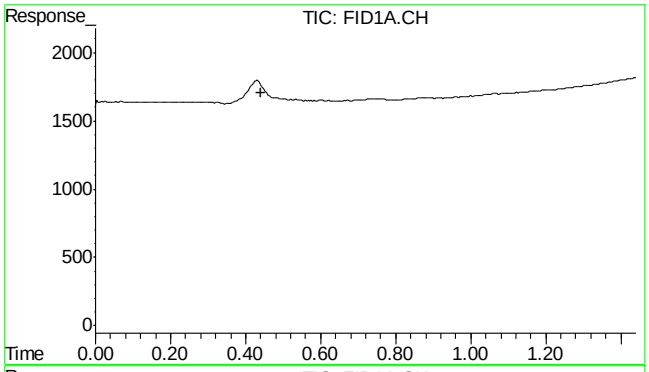
Quantitation Report (QT Reviewed)

Data File : C:\SHARED\FB\2016\JUNE\FB060216\FB16829.D Vial: 3
Acq On : 2 Jun 2016 12:35 pm Operator: KATIEM1
Sample : MB Inst : FID 4
Misc : GC6191,GFB799,39,20.6,500,4,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 2 12:29 2016 Quant Results File: MEEP-GFB764.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB764.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Thu Jun 02 11:48:35 2016
Response via : Single Level Calibration
DataAcq Meth : GAS.M

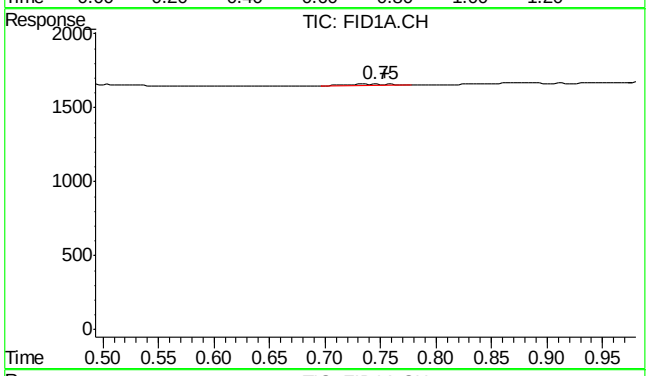
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





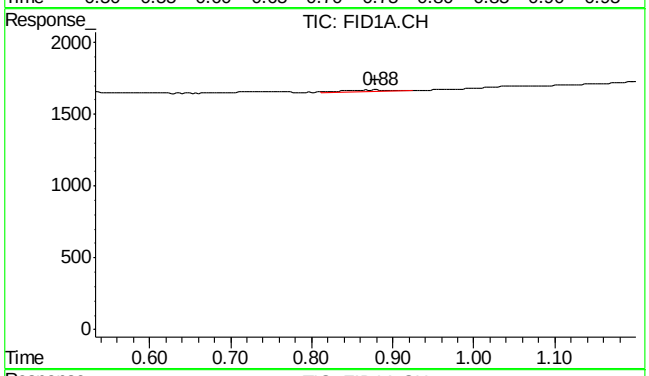
#1 Methane

R.T.: 0.429 min
Delta R.T.: -0.012 min
Response: 5596
Conc: N.D.



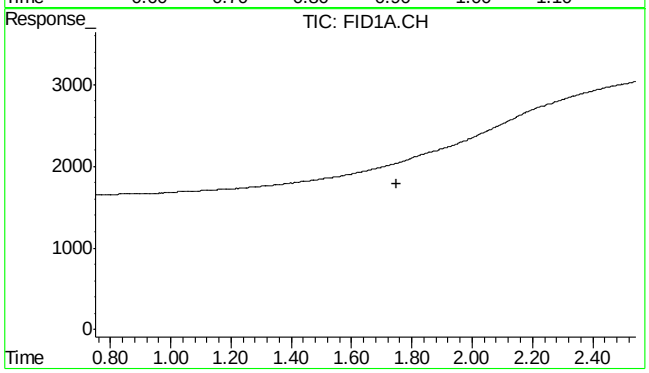
#2 Ethene

R.T.: 0.745 min
Delta R.T.: -0.010 min
Response: 315
Conc: 0.03 rawvppm m



#3 Ethane

R.T.: 0.878 min
Delta R.T.: 0.000 min
Response: 395
Conc: 0.04 rawvppm m



#4 Propane

R.T.: 0.000 min
Exp R.T. : 1.750 min
Response: 0
Conc: N.D.

9.2.1

9

SGS ACCUTEST D83120

Dissolved Gases Raw Data Summary

Sample Number:	GFB799-MB	**Sample Volume:**	39.0 ml
Lab FileID:	FB16829.D	**Headspace:**	4.0 ml
Injection Time:	06/02/16 12:35	**Volume Injected:**	500 ul
Method:	RSK175 MOD	**Temperature:**	20.6 Deg. C

Parameter	CAS	MW	Result (ppmv)	Henry's Constant	Total	Units
Methane	74-82-8	16	0	38340	0.0	mg/l
Ethane	74-84-0	30	0.04	27080	0.0	mg/l
Ethene	74-85-1	28	0.03	10440	0.0	mg/l
Propane	74-98-6	44	0	32552	0.0	mg/l

Henry's Constants	17	18	19	20	21	22	23	24	25	26	27
Methane	35290	36060	36830	37600	38340	39080	39820	40560	41300	42020	42740
Ethane	24020	24780	25540	26300	27080	27860	28640	29420	30200	31000	31800
Ethene	9480	9720	9960	10200	10440	10680	10920	11160	11400	11660	11920
Propane	28308	29352	30408	31474	32552	33643	34744	35857	36978	38107	39244

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D83120
Account: LTENCODE - LT Environmental
Project: Gates-Boone, IA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN34738	5.0	0.0	mg/l	100	99.8	99.8	90-110%
Chloride	GP18038/GN34707	0.50	0.0	mg/l	5	4.63	92.6	90-110%
Nitrogen, Nitrate	GP18038/GN34707	0.010	0.0	mg/l	0.1	0.0924	92.4	90-110%
Sulfate	GP18038/GN34707	0.50	0.0	mg/l	5	4.53	90.6	90-110%

Associated Samples:
Batch GN34738: D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8
Batch GP18038: D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D83120
Account: LTENCODE - LT Environmental
Project: Gates-Boone, IA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN34738	D83120-1	mg/l	117	115	1.9	0-20%

Associated Samples:
Batch GN34738: D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D83120
Account: LTENCODE - LT Environmental
Project: Gates-Boone, IA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN34738	D83120-1	mg/l	117	100	213	96.0	80-120%
Chloride	GP18038/GN34707	D83114-2	mg/l	39.0	250	275	94.4	80-120%
Nitrogen, Nitrate	GP18038/GN34707	D83114-2	mg/l	7.3	5	11.9	92.0	80-120%
Sulfate	GP18038/GN34707	D83114-2	mg/l	16.3	250	237	88.3	80-120%

Associated Samples:
Batch GN34738: D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8
Batch GP18038: D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D83120
Account: LTENCODE - LT Environmental
Project: Gates-Boone, IA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN34738	D83120-1	mg/l	117	100	214	0.4	20%
Chloride	GP18038/GN34707	D83114-2	mg/l	39.0	250	278	1.1	20%
Nitrogen, Nitrate	GP18038/GN34707	D83114-2	mg/l	7.3	5	12.0	0.8	20%
Sulfate	GP18038/GN34707	D83114-2	mg/l	16.3	250	238	0.4	20%

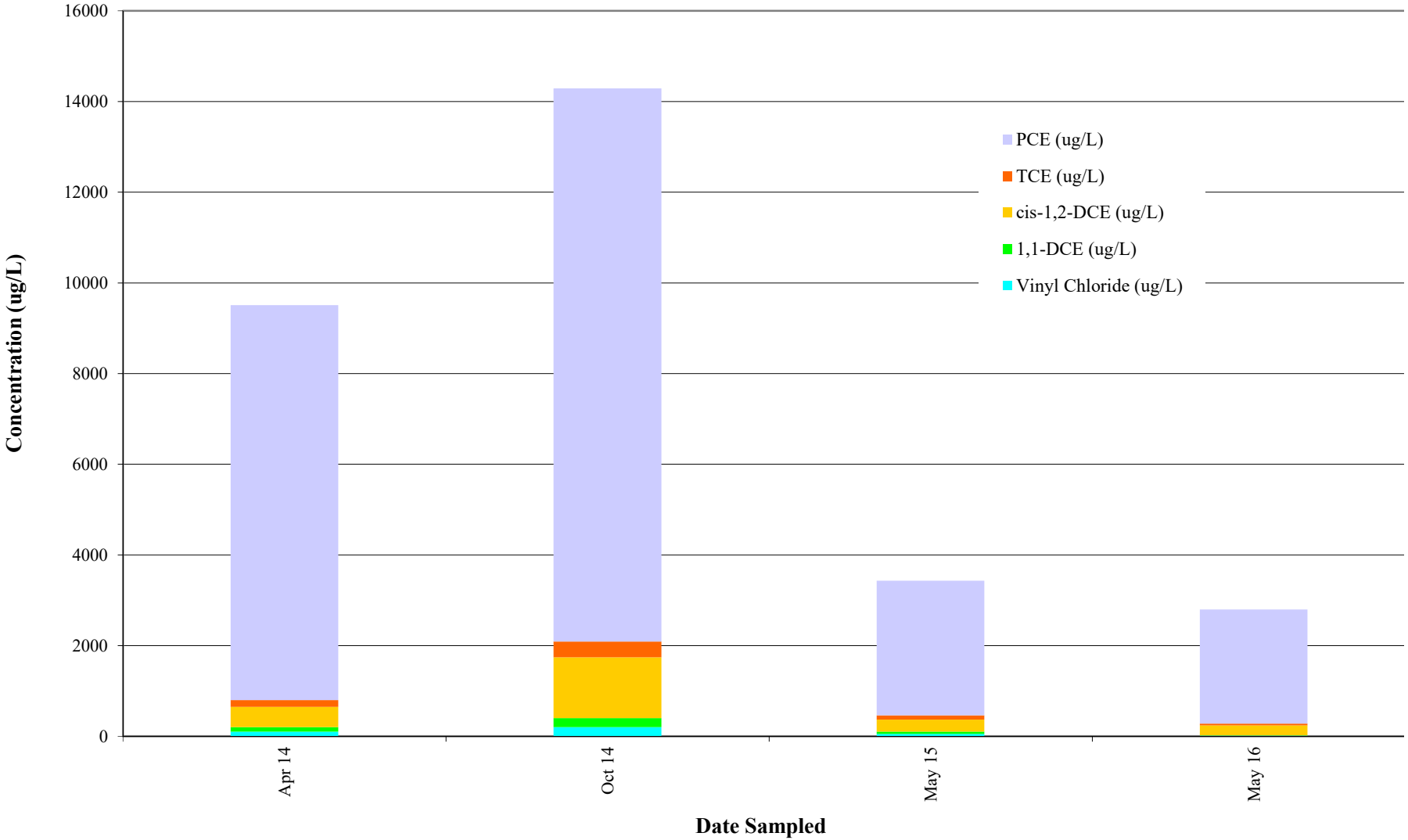
Associated Samples:
Batch GN34738: D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8
Batch GP18038: D83120-1, D83120-2, D83120-3, D83120-4, D83120-5, D83120-6, D83120-7, D83120-8
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

APPENDIX C

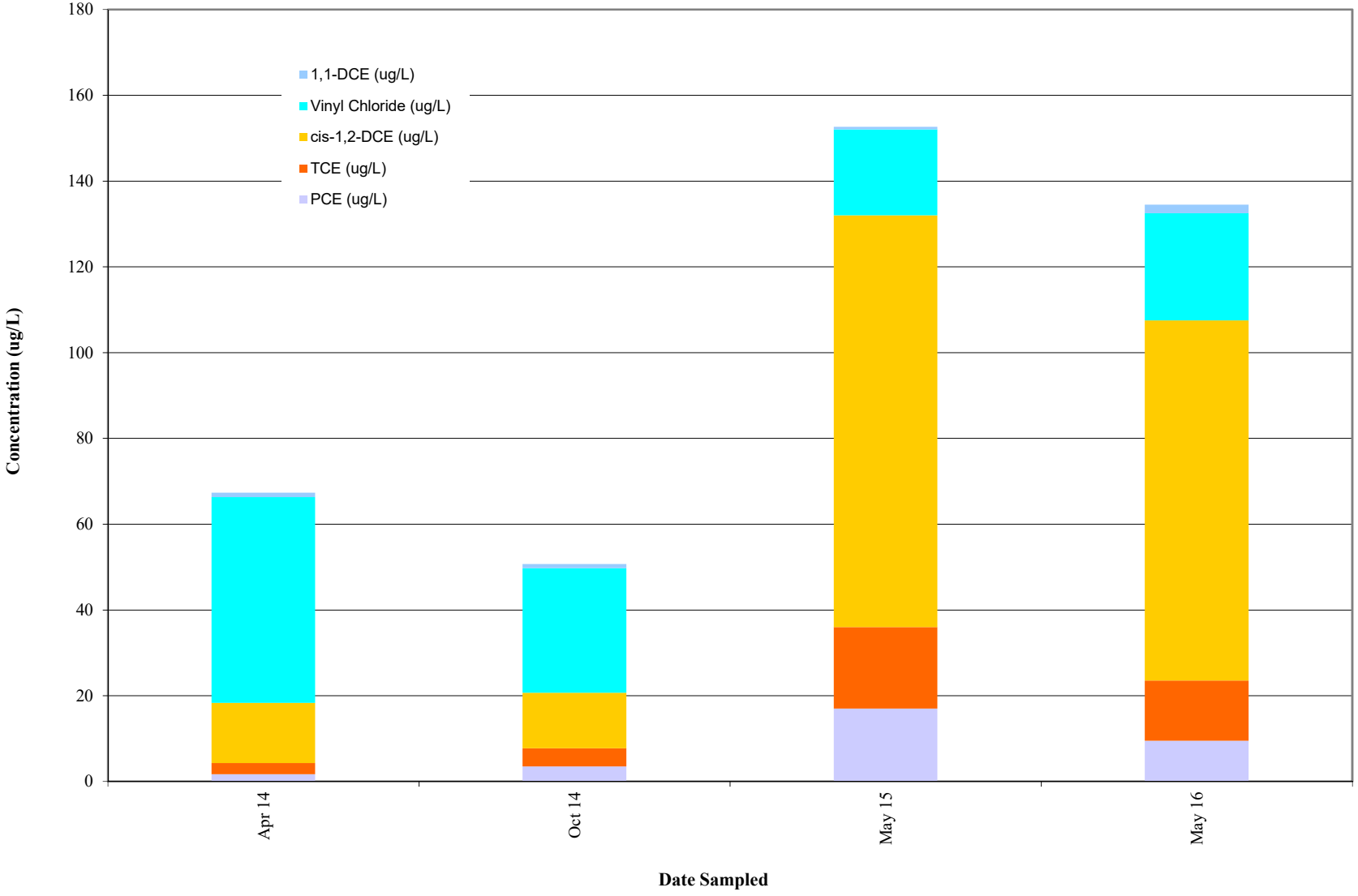
HISTOGRAM PLOTS

TW-8

Gates Corporation - Boone, Iowa

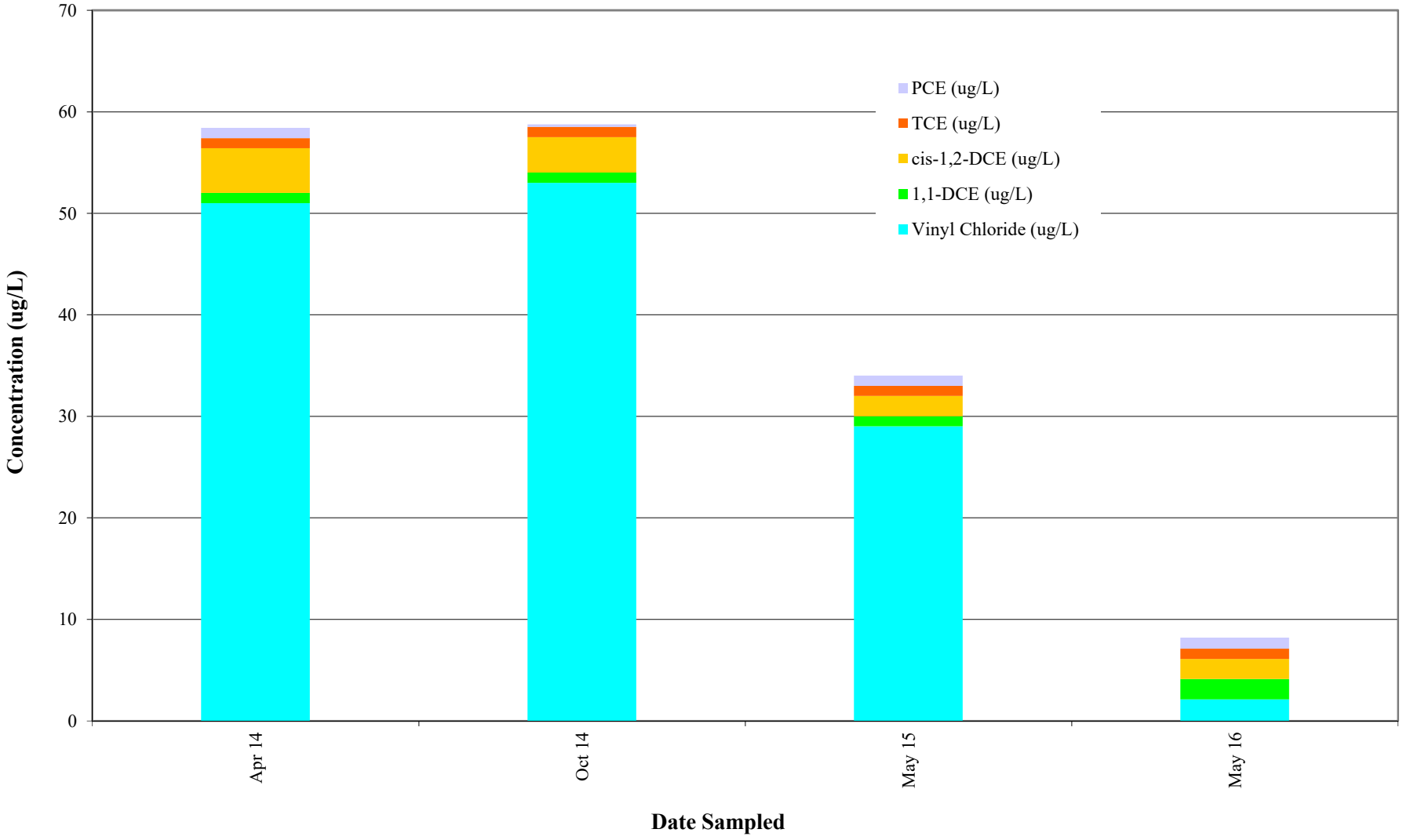


TW-18
Gates Corporation - Boone, Iowa



TW-19

Gates Corporation - Boone, Iowa



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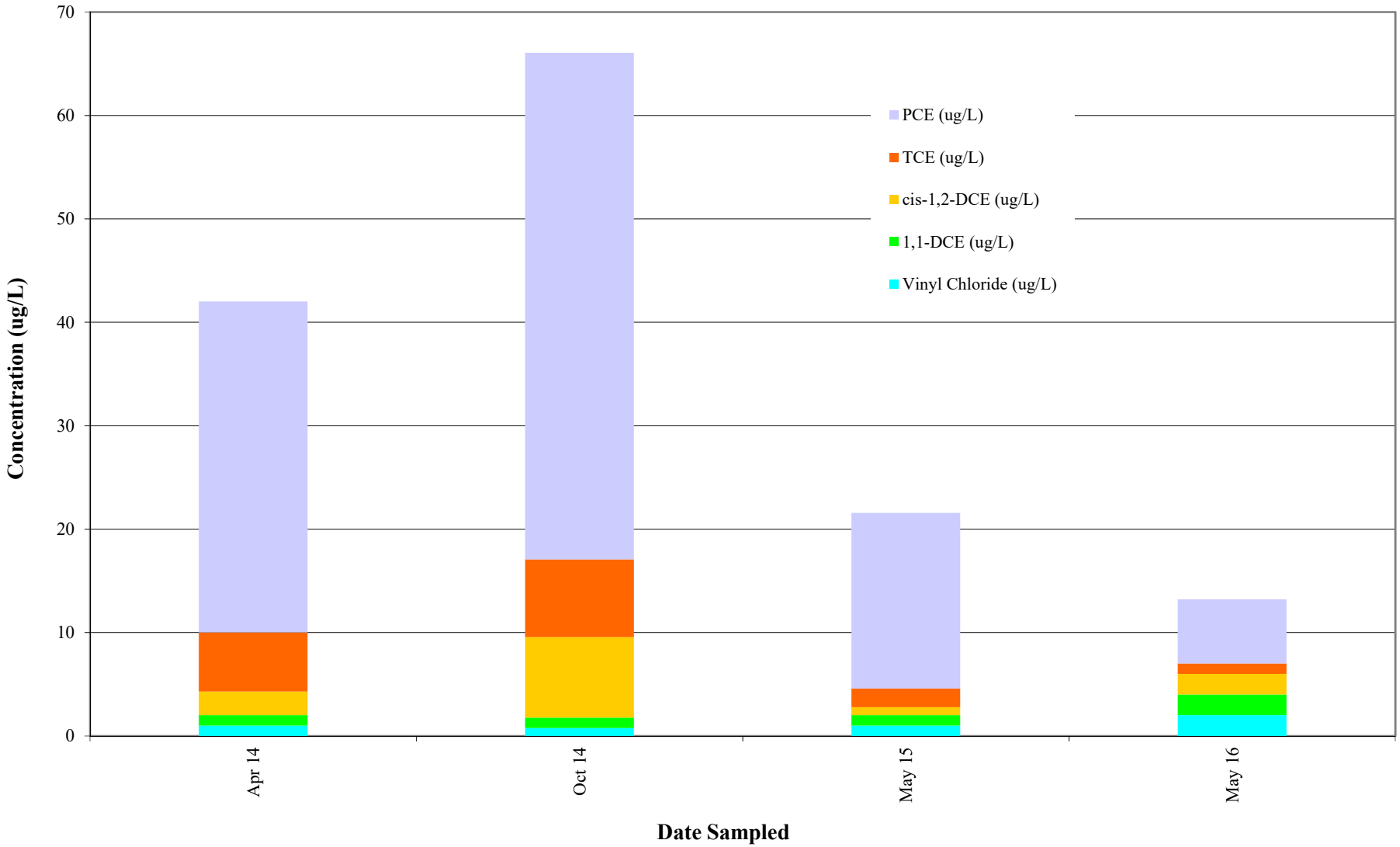
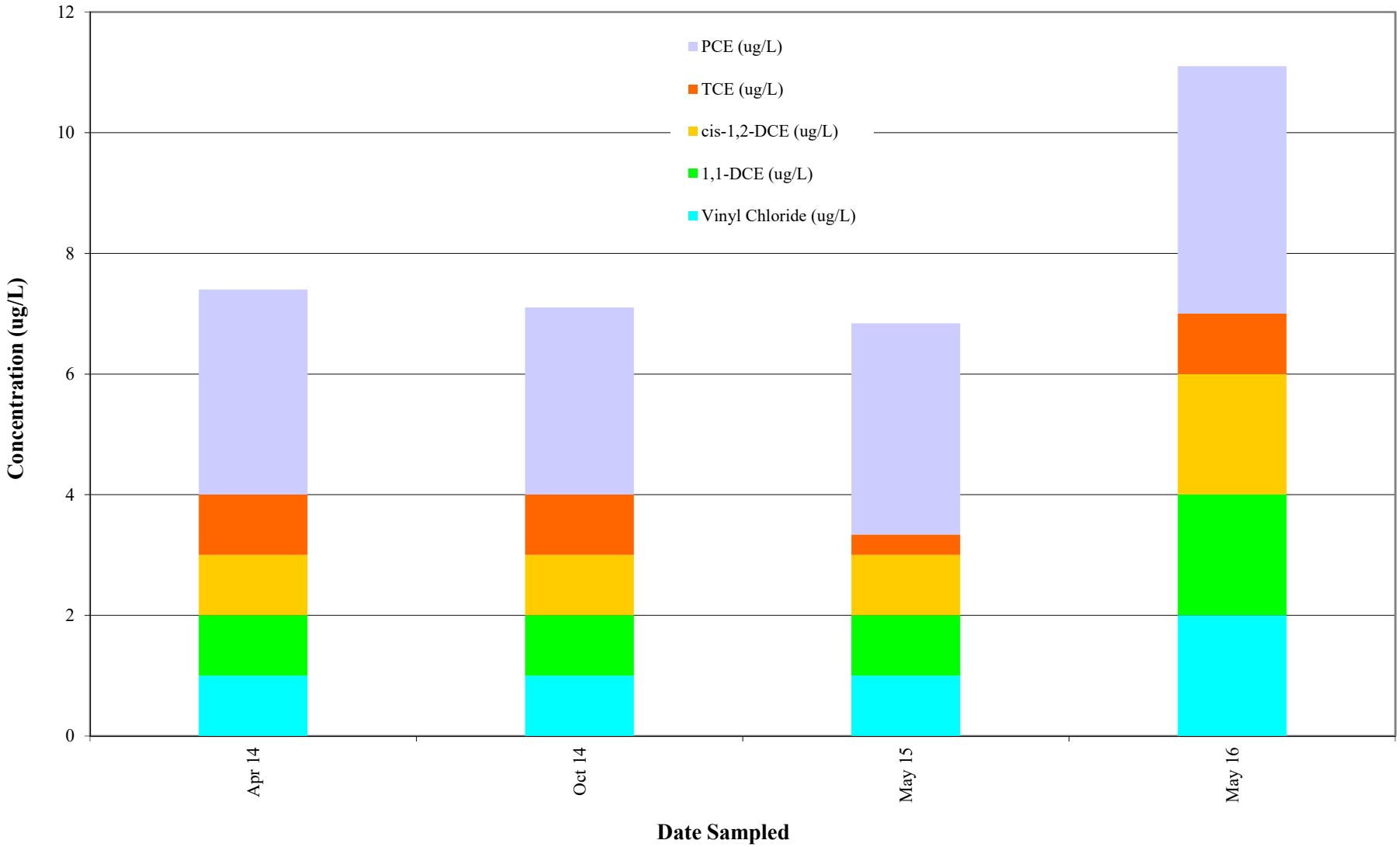
Gates Corporation - Boone, Iowa



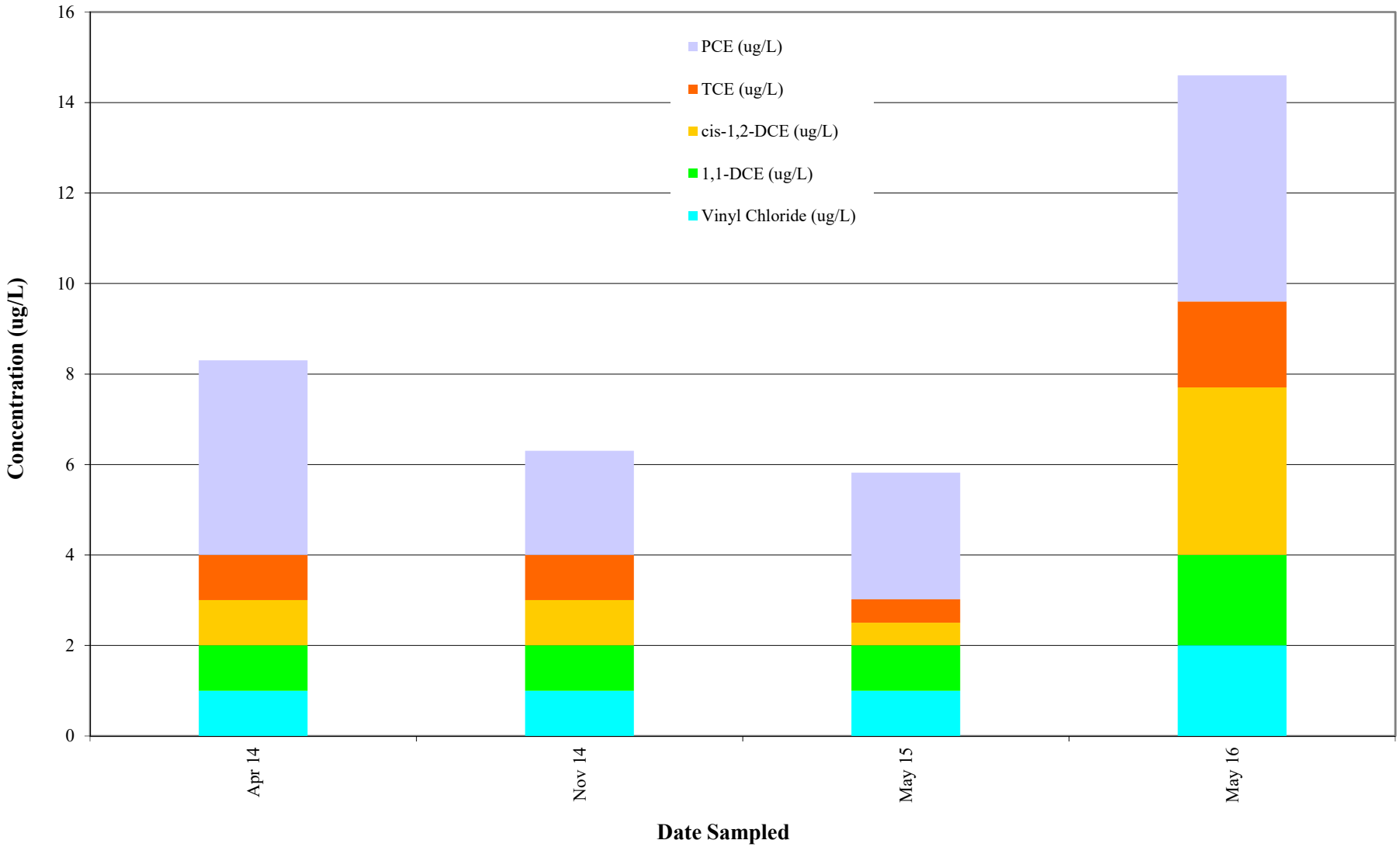
TW-25

Gates Corporation - Boone, Iowa



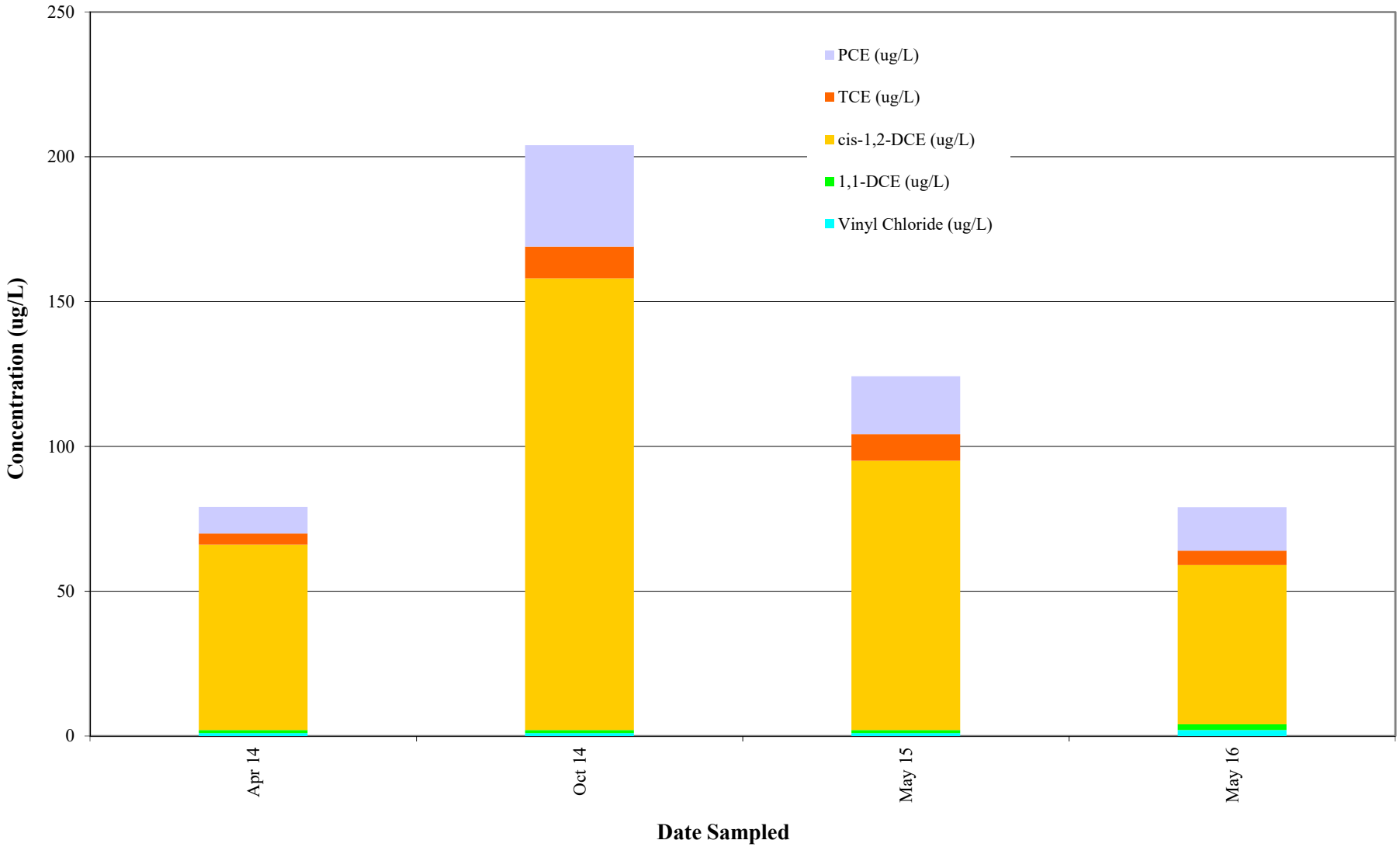
TW-26

Gates Corporation - Boone, Iowa



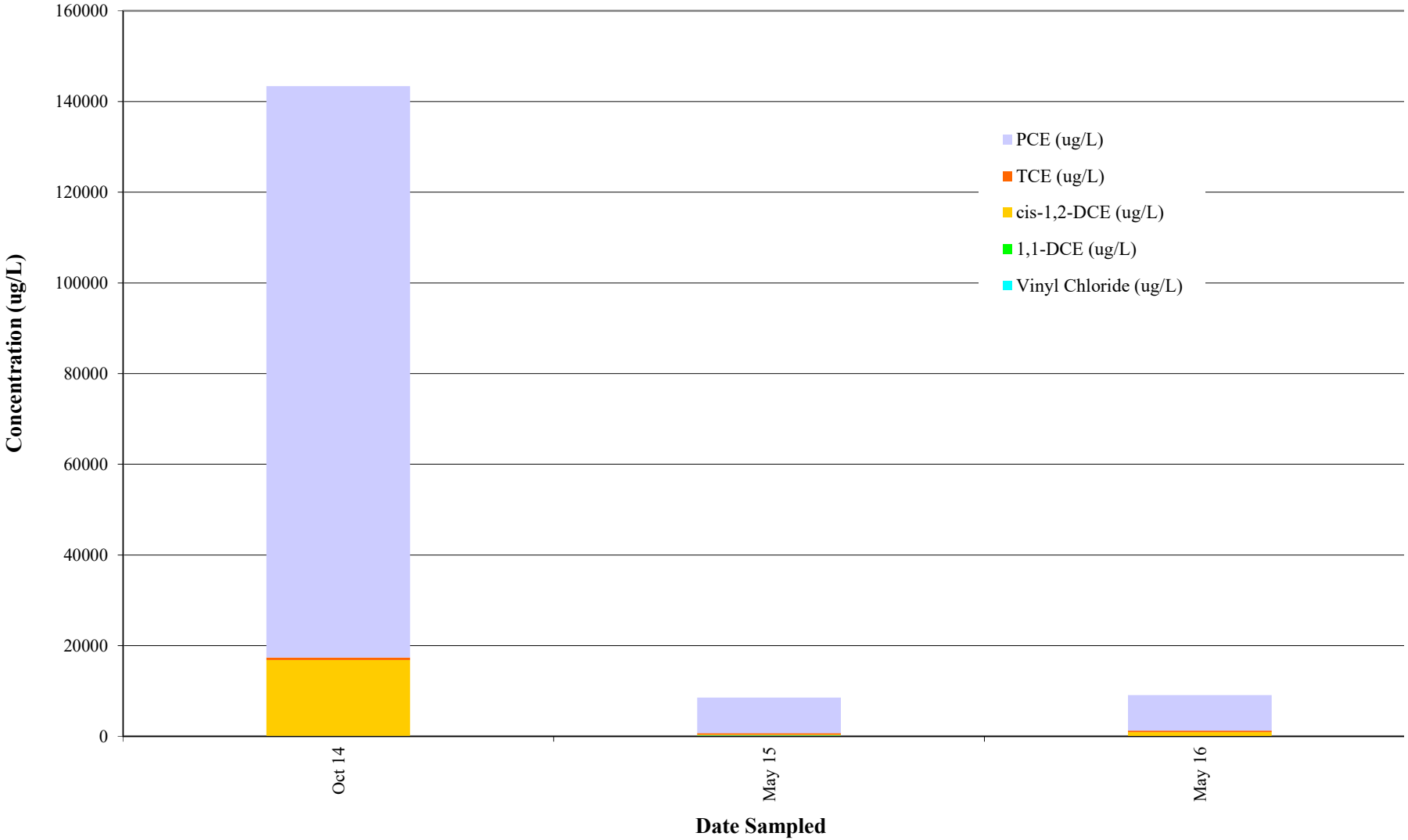
TW-27

Gates Corporation - Boone, Iowa

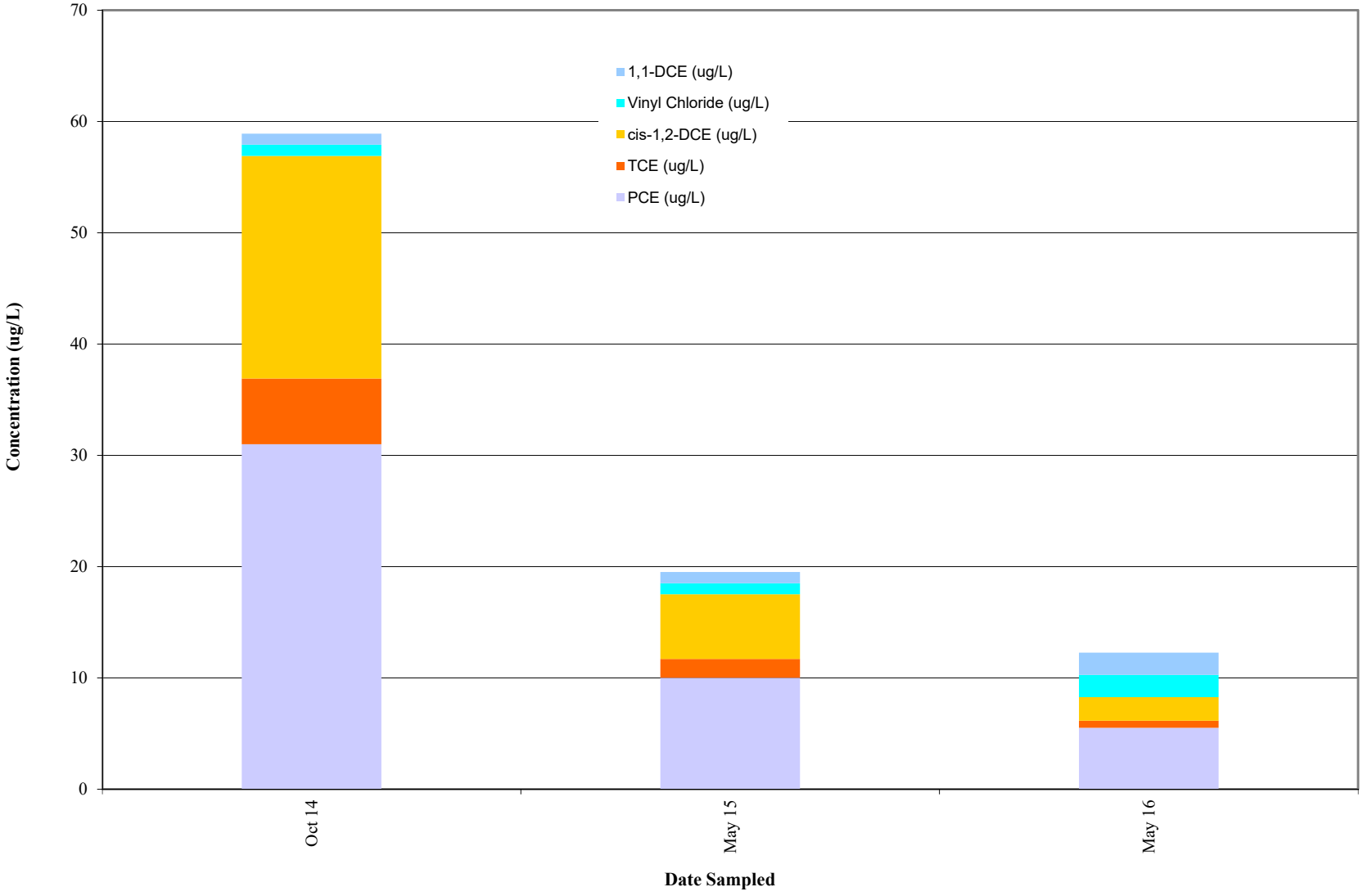


MPW-15

Gates Corporation - Boone, Iowa



PBW-1
Gates Corporation - Boone, Iowa



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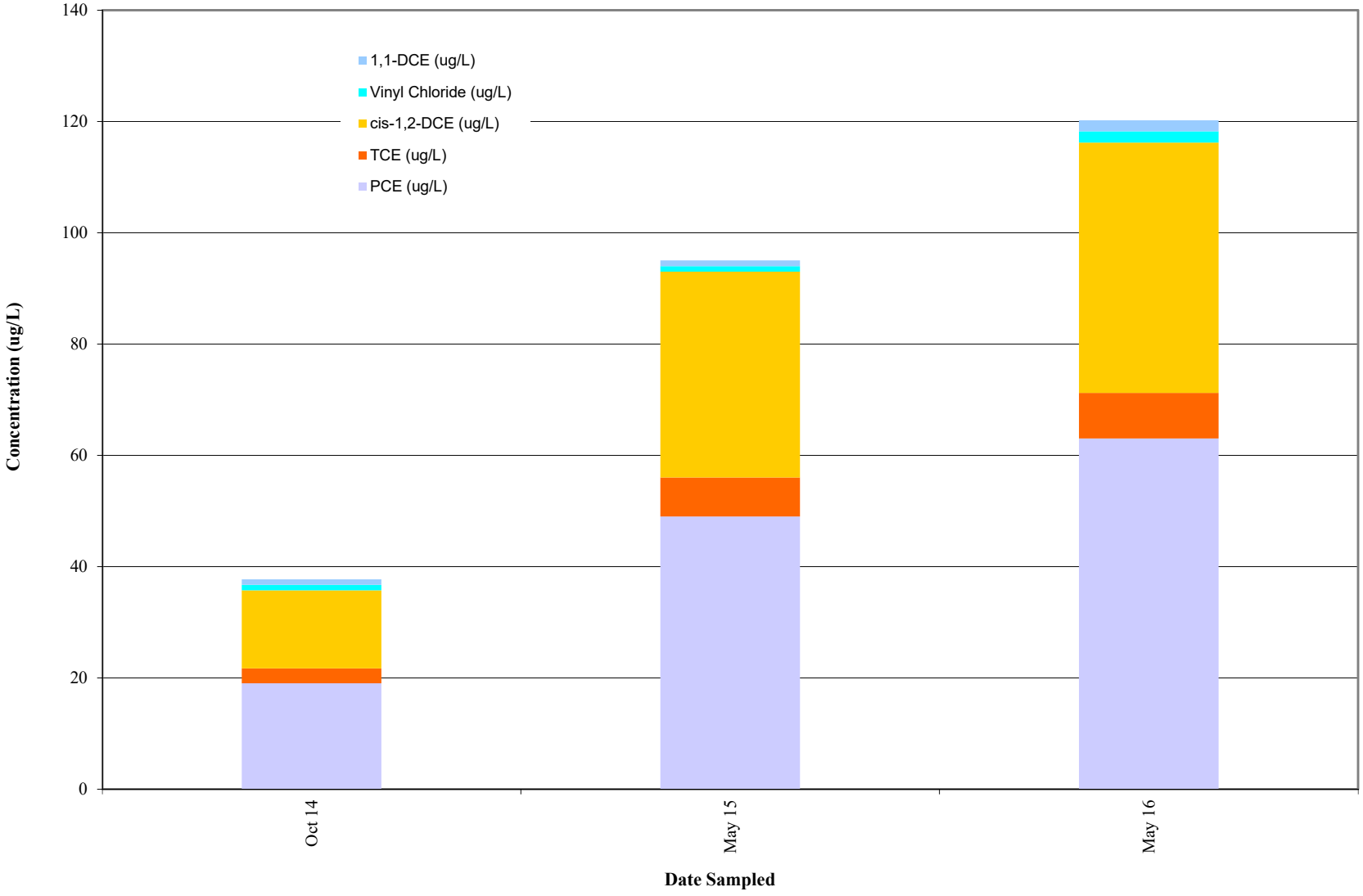
Gates Corporation - Boone, Iowa



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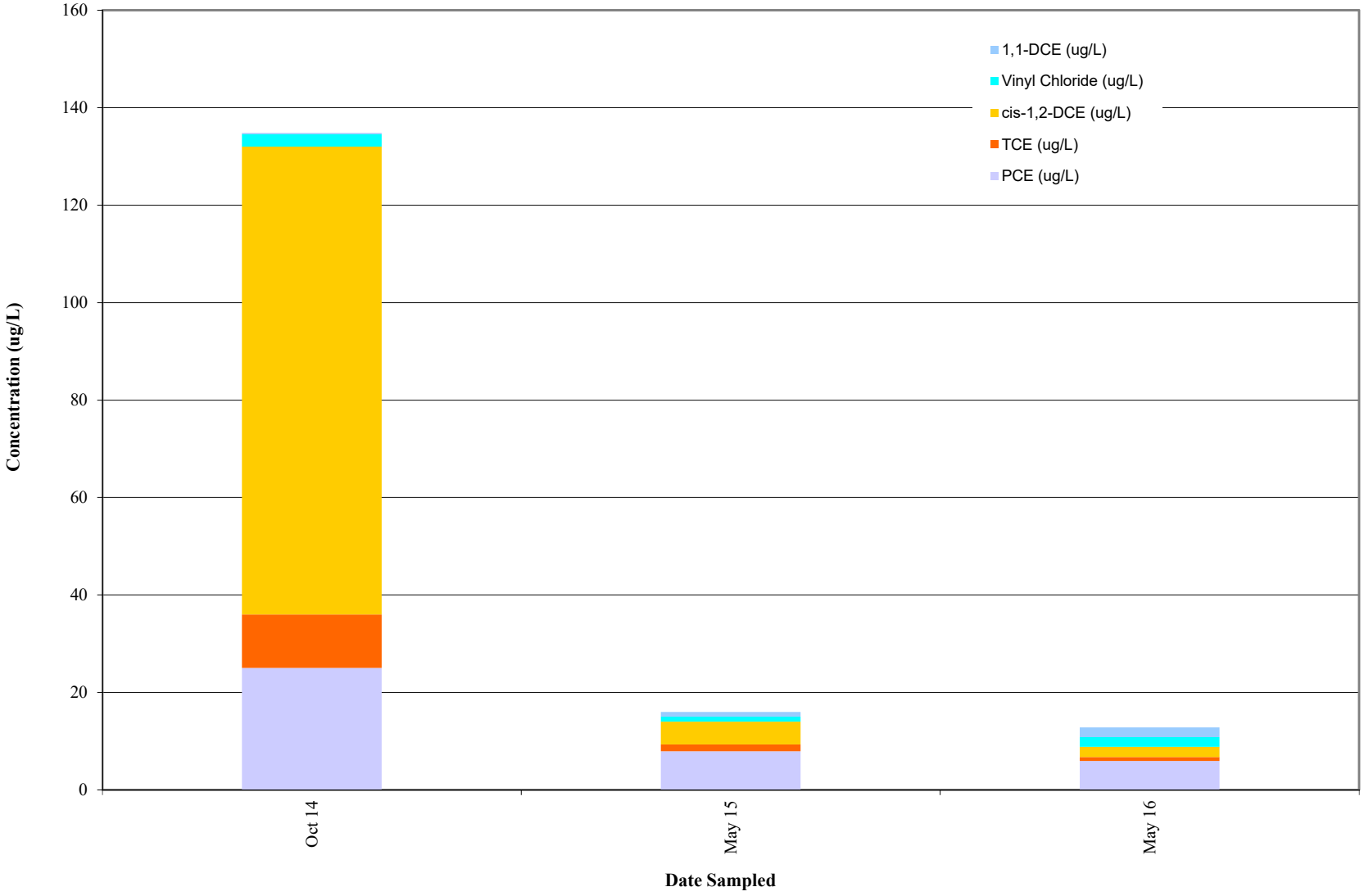
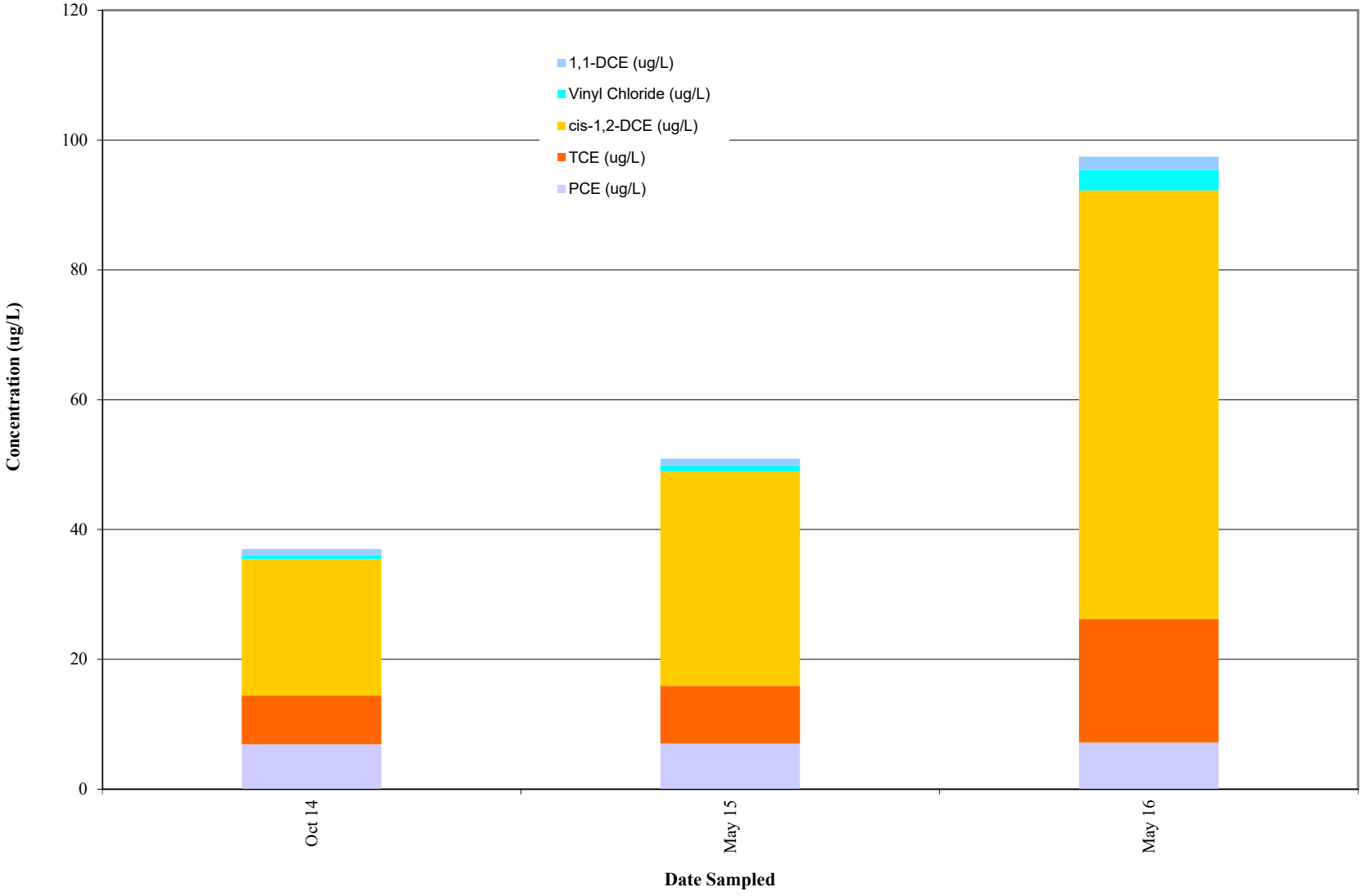
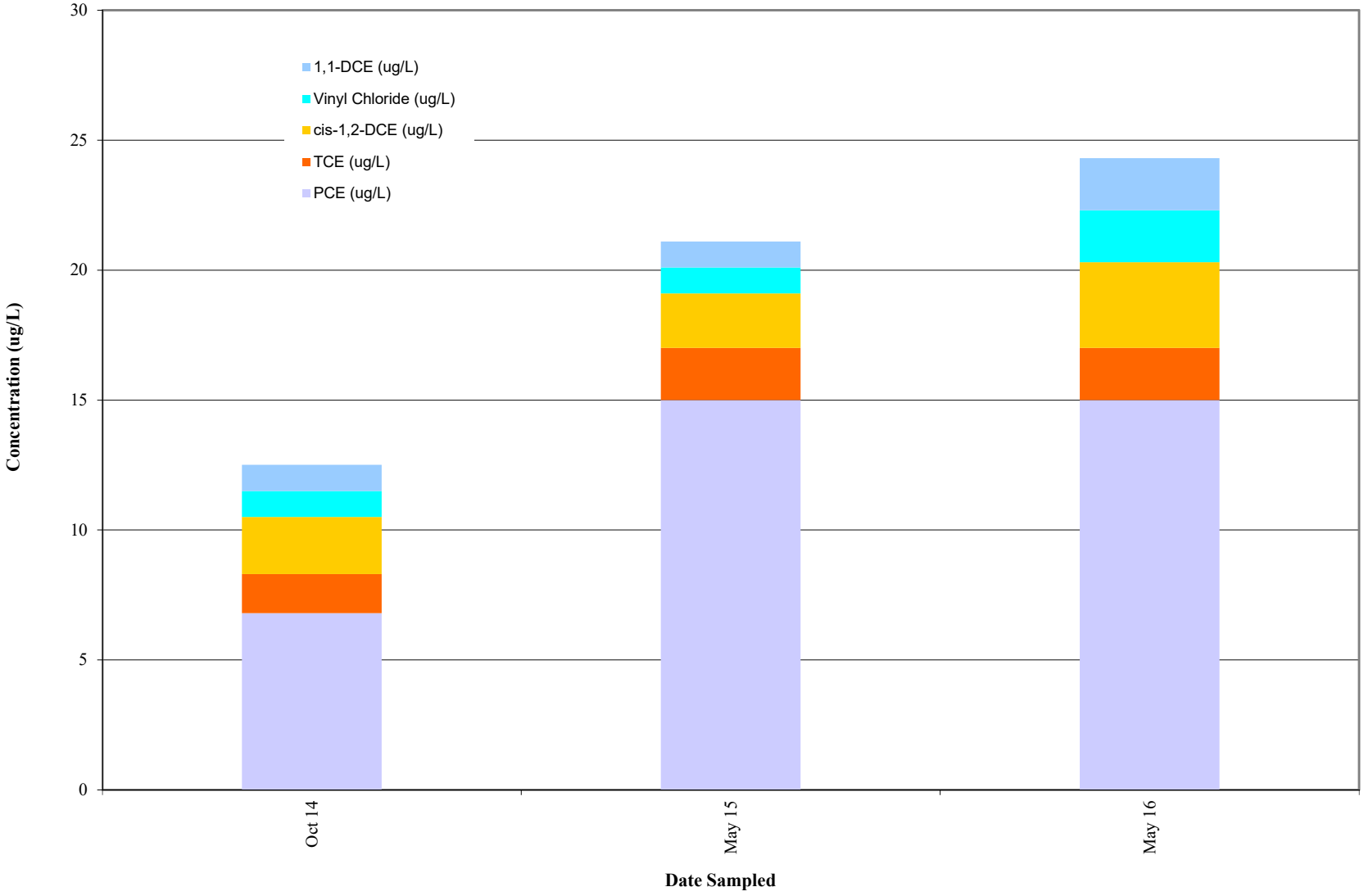


PBW-5

Gates Corporation - Boone, Iowa



PBW-6
Gates Corporation - Boone, Iowa



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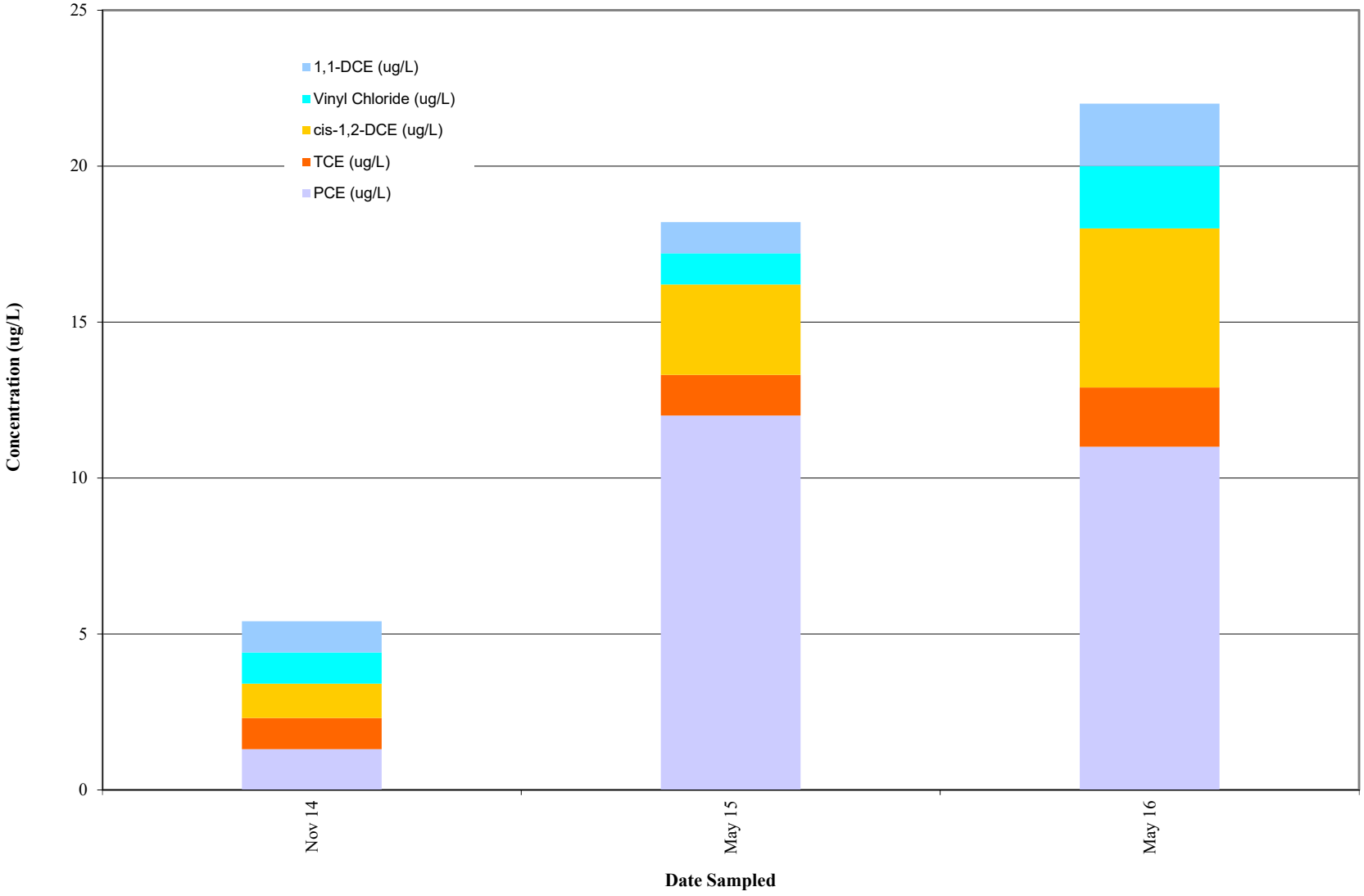
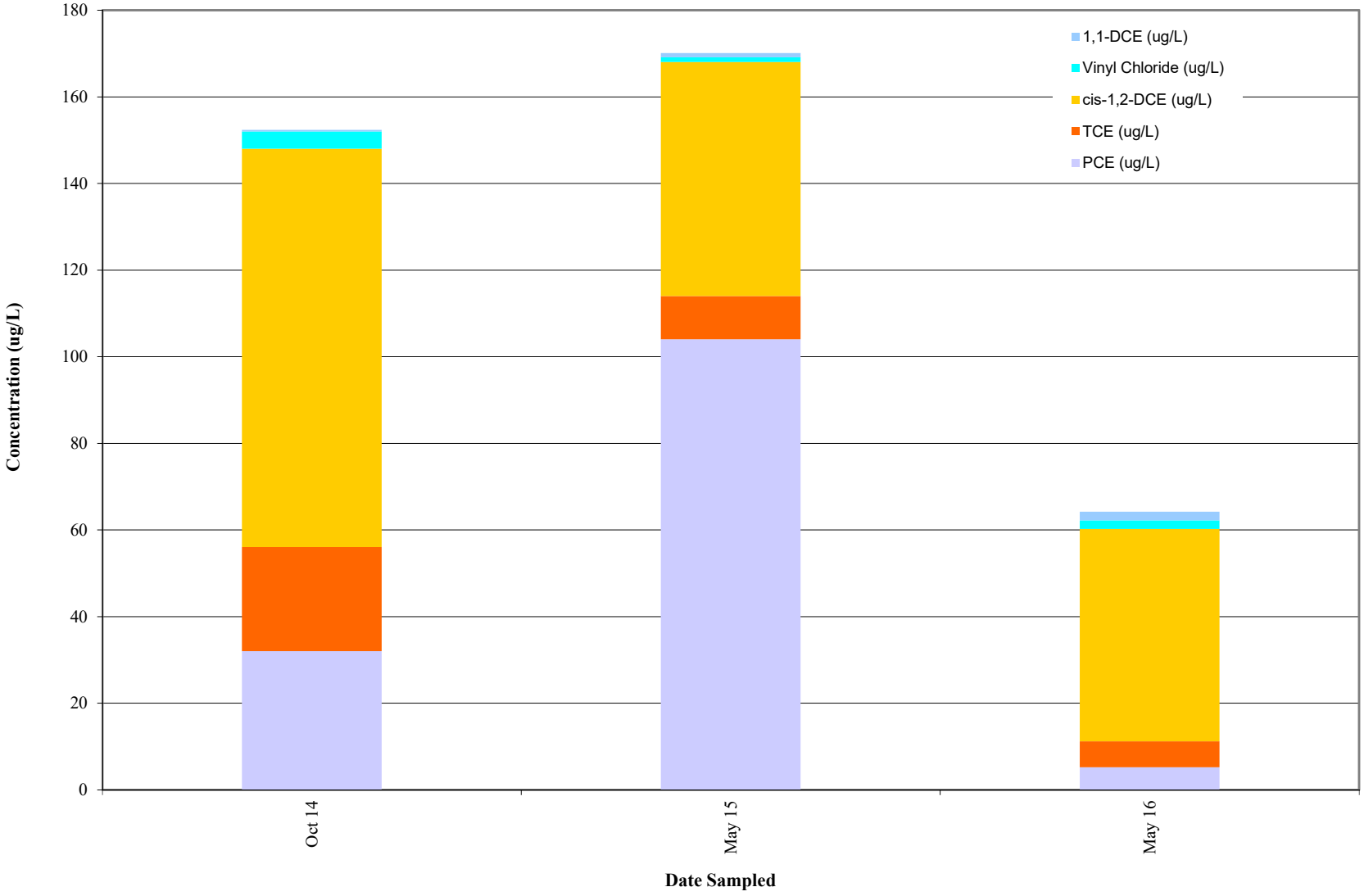
Gates Corporation - Boone, Iowa

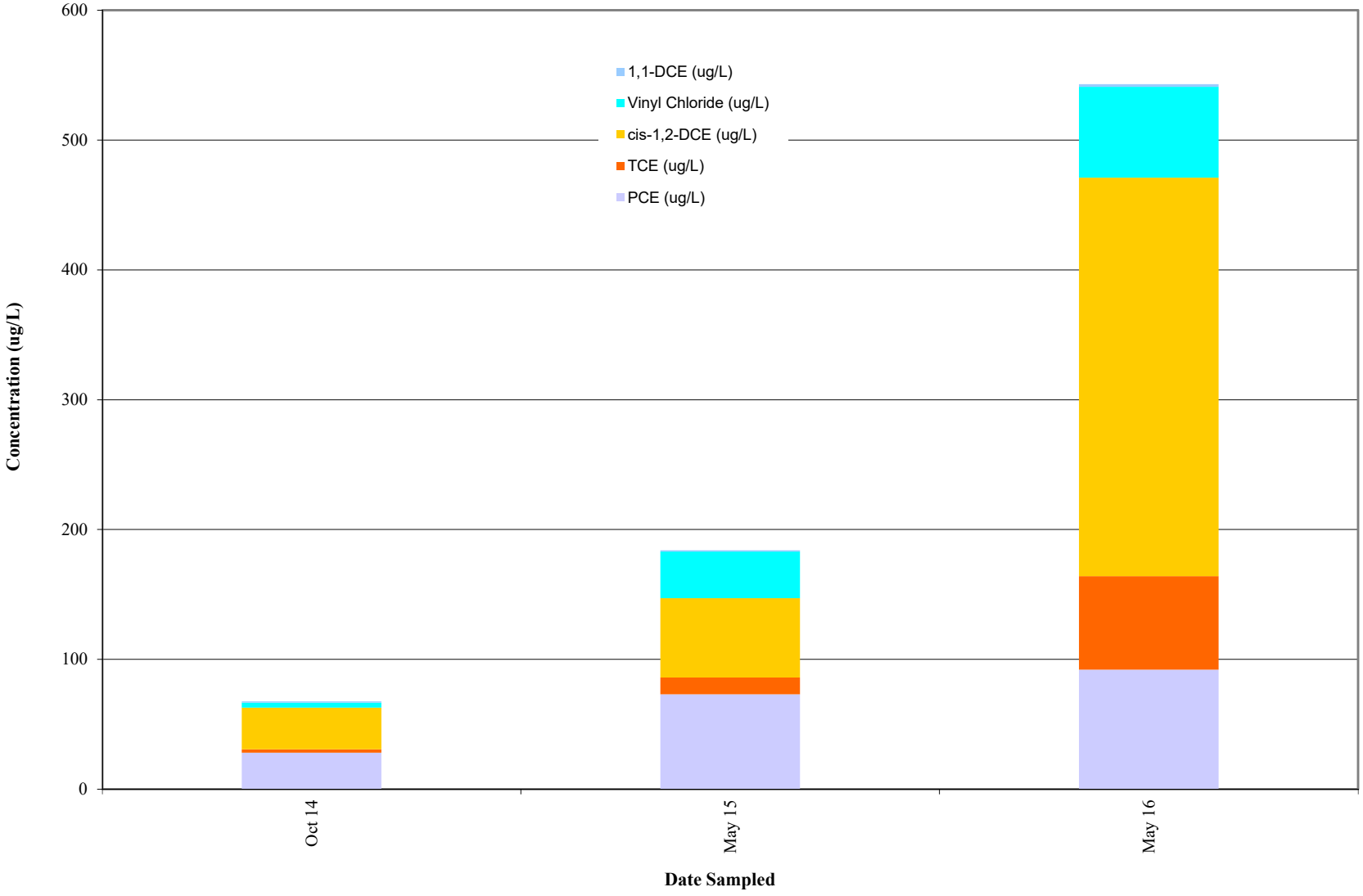


EZ-26

Gates Corporation - Boone, Iowa



EZ-27
Gates Corporation - Boone, Iowa



APPENDIX D

PHYTOREMEDIATION TREATMENT BARRIER PHOTOS

Photograph 1: Phytoremediation treatment area showing fences/signage, June 2014. View north.

Photograph 2: Close-up of sign at transition between parking lot and phytoremediation area. View east.

Photograph 3: Phytoremediation treatment area, May 2015. View north.

Photograph 4: Close-up of poplar foliage, May 2015.

Photograph 5: View of cottonwood trees along drainage ditch, dead tree in foreground, May 2015. View northwest.

Photograph 6: View of fence and transition between parking lot and phytoremediation barrier, May 2015. View north.

Photograph 7: North side of PTB installation, June 2016. View east.

Photograph 8: East side of PTB installation, west of ditch, June 2016. View south.

Photograph 9: Stem diameter of 2014 planting (approximately 2”) as of June 2016.

Photograph 10: Cutting replant, cottonwood tree, June 2016.

Photograph 11: Far eastern side of PTB installation, June 2016. View north.

Photograph 12: Southeast corner of PTB instalaltion, June 2016. View north.
Note minor yellowing of lower leaves due to dry conditions in June 2016.

APPENDIX E

STACK SAMPLE LABORATORY REPORTS

ORIGINS LABORATORY, INC

June 01, 2016

LT Environmental, Inc.

John Brown

4600 West 60th Avenue

Arvada CO 80003

Project Name - Gates - Boone, Iowa **Project Number - GATE0901**

Attached are your analytical results for Gates - Boone, Iowa received by Origins Laboratory, Inc. May 25, 2016. This project is associated with Origins project number X605323-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com

THE NELAC INSTITUTE

ACCREDITED
TESTING CERT # 3494.01

ORIGINS LABORATORY, INC

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AS-01	X605323-01	Air	May 24, 2016 10:40	05/25/2016 10:00

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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

ORIGINS LABORATORY, INC

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

ORIGINS LABORATORY, INC

X605323

www.originslaboratory.com

page 1 of 1

Client: LTE
Address: 4600 W. 60th Ave
Arvada, co 80003
Telephone Number: (303) 433-9788
Email Address: jbrown@ltenv.com

Project Manager: John Brown
Project Name: GATE0901 - GATES-Boone
Project Number:
Samples Collected By: b.finn

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative: Unpreserved	Preservative: HCl	Preservative: HNO_3	Preservative: Other	Matrix: Groundwater	Matrix: Soil	Matrix: Air Summa Canister #	Matrix: Other	Analysis: TO-15 Full list VOCs	Analysis	Analysis	Analysis	Sample Instructions
AS-01	05/24/2016	1040	1			X				951		X				TO-15 Full List VOC's 1
																Bottle is labeled AS-01 2
																other is empty 3
																4
																5
																6
																7
																8
																9
																10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	05/24/2016	1534	FedEx	5/24/16	1534
FedEx	5/25/16	1000	[signature]	5/25/16	1000

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☑

Temp Received- 19.4

Date Results Needed

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

Jeffe Pellegrini

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

Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: X605323

Client: LTE
Client Project ID: Gates - Boone

Checklist Completed by: Jeff Smith
Date/time completed: 5/26/10

Shipped Via: FedEx
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
Airbill #: N/A

Matrix(s) Received: (Check all that apply): ____ Soil/Solid ____ Water X Other: Air (Describe)

Cooler Number/Temperature: 1 / 19.4 °C ____ / ____ °C ____ / ____ °C ____ / ____ °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C[1]?			X	
Is there ice present (document if blue ice is used)			X	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact[1]?	X			
Was adequate sample volume provided[1]?	X			
Are short holding time analytes or samples with HTs due within 48 hours present[1]?		X		
Is a chain-of-custody (COC) present and filled out completely[1]?	X			
Does the COC agree with the number and type of sample bottles received[1]?	X			
Do the sample IDs on the bottle labels match the COC[1]?	X			
Is the COC properly relinquished by the client with date and time recorded[1]?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? **If yes, contact client and note in narrative.**			X	
Are samples preserved that require preservation and was it checked[1]? *(note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)*			X	

Additional Comments (if any): Added correct sample date to COC from information on sample label.
5/26/10

[1]If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) ____ Date/Time Reviewed 5/27/10

Origins Laboratory, Inc.

Jeff Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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

ORIGINS LABORATORY, INC

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

AS-01
5/24/2016 10:40:00AM

Origins Laboratory, Inc.
X605323-01 (Air)

VOCs by TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
1,1,1-Trichloroethane	ND	2.18	ug/m³ Air	1	B6E3002	05/30/2016	05/31/2016	U
1,1,2,2-Tetrachloroethane	ND	2.75	"	"	"	"	"	U
1,1,2-Trichloroethane	ND	2.18	"	"	"	"	"	U
1,1-Dichloroethane	ND	1.61	"	"	"	"	"	U
1,1-Dichloroethene	ND	1.59	"	"	"	"	"	U
1,2,4-Trichlorobenzene	ND	8.00	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	4.00	"	"	"	"	"	U
1,2-Dichlorobenzene	ND	4.00	"	"	"	"	"	U
1,2-Dichloroethane	**2.95**	1.62	"	"	"	"	"	
1,2-Dichloropropane	ND	1.85	"	"	"	"	"	U
1,2-Dibromoethane	ND	1.97	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	4.00	"	"	"	"	"	U
1,3 Butadiene	ND	0.880	"	"	"	"	"	U
1,3-Dichlorobenzene	**4.39**	4.00	"	"	"	"	"	
1,4-Dichlorobenzene	**5.41**	4.00	"	"	"	"	"	
4-Ethyltoluene	ND	3.00	"	"	"	"	"	U
Benzene	**656**	12.8	"	10	"	"	05/31/2016	
Benzyl chloride	ND	2.07	"	1	"	"	05/31/2016	U
Bromodichloromethane	ND	2.68	"	"	"	"	"	U
Bromoform	ND	4.13	"	"	"	"	"	U

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ORIGINS LABORATORY, INC

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

AS-01
5/24/2016 10:40:00AM

Origins Laboratory, Inc.
X605323-01 (Air)

VOCs by TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Bromomethane	ND	1.55	ug/m³ Air	1	B6E3002	05/30/2016	05/31/2016	U
Carbon disulfide	ND	1.25	"	"	"	"	"	U
Carbon Tetrachloride	ND	5.00	"	"	"	"	"	U
Chlorobenzene	ND	1.84	"	"	"	"	"	U
Chloroethane	ND	1.06	"	"	"	"	"	U
Chloroform	ND	1.95	"	"	"	"	"	U
Chloromethane	ND	8.00	"	"	"	"	05/31/2016	U
cis-1,2-Dichloroethene	**3.73**	3.00	"	"	"	"	05/31/2016	
cis-1,3-Dichloropropene	ND	1.82	"	"	"	"	"	U
Dibromochloromethane	ND	3.41	"	"	"	"	"	U
Ethylbenzene	**2.65**	1.74	"	"	"	"	"	
Freon 113	ND	6.80	"	"	"	"	"	U
Freon 11	ND	10.0	"	"	"	"	"	U
Freon 12	ND	10.0	"	"	"	"	"	U
Freon 114	ND	6.00	"	"	"	"	"	U
Heptane	ND	1.64	"	"	"	"	"	U
Hexane	ND	1.41	"	"	"	"	"	U
Hexachlorobutadiene	ND	10.0	"	"	"	"	"	U
m,p-Xylene	ND	10.0	"	"	"	"	"	U
Methyl tert-Butyl Ether	ND	1.44	"	"	"	"	"	U

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ORIGINS LABORATORY, INC

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

AS-01
5/24/2016 10:40:00AM

Origins Laboratory, Inc.
X605323-01 (Air)

VOCs by TO-15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Methylene Chloride	ND	10.0	ug/m³ Air	1	B6E3002	05/30/2016	05/31/2016	U
Naphthalene	**40.9**	17.0	"	"	"	"	"	
o-Xylene	**1.87**	1.74	"	"	"	"	"	
Styrene	ND	1.70	"	"	"	"	"	U
Tetrachloroethene	**11.8**	2.71	"	"	"	"	"	
Tetrahydrofuran	ND	1.18	"	"	"	"	"	U
Toluene	ND	4.50	"	"	"	"	"	U
trans-1,2-Dichloroethene	ND	1.59	"	"	"	"	"	U
trans-1,3-Dichloropropene	**2.22**	1.82	"	"	"	"	"	
Trichloroethene	ND	2.15	"	"	"	"	"	U
Vinyl acetate	ND	1.41	"	"	"	"	"	U
Vinyl chloride	ND	1.02	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	*149 %*	*70-130*			"	"	"	
Surrogate: Toluene-d8	*102 %*	*70-130*			"	"	"	
Surrogate: 4-Bromofluorobenzene	*90.5 %*	*70-130*			"	"	"	

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ORIGINS LABORATORY, INC

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B6E3002 - Default Prep - Air										
Blank (B6E3002-BLK1)					Prepared: 05/30/2016 Analyzed: 05/30/2016					
1,1,1-Trichloroethane	ND	2.18	ug/m³ Air							U
1,1,2,2-Tetrachloroethane	ND	2.75	"							U
1,1,2-Trichloroethane	ND	2.18	"							U
1,1-Dichloroethane	ND	1.61	"							U
1,1-Dichloroethene	ND	1.59	"							U
1,2,4-Trichlorobenzene	ND	8.00	"							U
1,2,4-Trimethylbenzene	ND	4.00	"							U
1,2-Dichlorobenzene	ND	4.00	"							U
1,2-Dichloroethane	ND	1.62	"							U
1,2-Dichloropropane	ND	1.85	"							U
1,2-Dibromoethane	ND	1.97	"							U
1,3,5-Trimethylbenzene	ND	4.00	"							U
1,3 Butadiene	ND	0.880	"							U
1,3-Dichlorobenzene	ND	4.00	"							U
1,4-Dichlorobenzene	ND	4.00	"							U
4-Ethyltoluene	ND	3.00	"							U
Benzene	ND	1.28	"							U
Benzyl chloride	ND	2.07	"							U
Bromodichloromethane	ND	2.68	"							U
Bromoform	ND	4.13	"							U
Bromomethane	ND	1.55	"							U
Carbon disulfide	ND	1.25	"							U
Carbon Tetrachloride	ND	5.00	"							U
Chlorobenzene	ND	1.84	"							U
Chloroethane	ND	1.06	"							U
Chloroform	ND	1.95	"							U

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B6E3002 - Default Prep - Air										
Blank (B6E3002-BLK1)					Prepared: 05/30/2016 Analyzed: 05/30/2016					
Chloromethane	ND	8.00	ug/m³ Air							U
cis-1,2-Dichloroethene	ND	3.00	"							U
cis-1,3-Dichloropropene	ND	1.82	"							U
Dibromochloromethane	ND	3.41	"							U
Ethylbenzene	ND	1.74	"							U
Freon 113	ND	6.80	"							U
Freon 11	ND	10.0	"							U
Freon 12	ND	10.0	"							U
Freon 114	ND	6.00	"							U
Heptane	ND	1.64	"							U
Hexane	4.12	1.41	"							
Hexachlorobutadiene	ND	10.0	"							U
m,p-Xylene	ND	10.0	"							U
Methyl tert-Butyl Ether	ND	1.44	"							U
Methylene Chloride	ND	10.0	"							U
Naphthalene	ND	17.0	"							U
o-Xylene	ND	1.74	"							U
Styrene	ND	1.70	"							U
Tetrachloroethene	ND	2.71	"							U
Tetrahydrofuran	ND	1.18	"							U
Toluene	ND	4.50	"							U
trans-1,2-Dichloroethene	ND	1.59	"							U
trans-1,3-Dichloropropene	ND	1.82	"							U
Trichloroethene	ND	2.15	"							U
Vinyl acetate	ND	1.41	"							U
Vinyl chloride	ND	1.02	"							U

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B6E3002 - Default Prep - Air										
Blank (B6E3002-BLK1)					Prepared: 05/30/2016 Analyzed: 05/30/2016					
Surrogate: 1,2-Dichloroethane-d4	*17.4*		*ppbv*	*20.0*		*86.8*	*70-130*			
Surrogate: Toluene-d8	*22.1*		*"*	*20.0*		*111*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*20.5*		*"*	*20.0*		*102*	*70-130*			
LCS (B6E3002-BS1)					Prepared: 05/30/2016 Analyzed: 05/30/2016					
1,1,1-Trichloroethane	62.2	2.18	ug/m³ Air	54.6		114	70-130			
1,1,2,2-Tetrachloroethane	76.6	2.75	"	73.5		104	70-130			
1,1,2-Trichloroethane	60.6	2.18	"	57.3		106	70-130			
1,1-Dichloroethane	41.1	1.61	"	40.5		102	70-130			
1,1-Dichloroethene	43.5	1.59	"	39.3		111	70-130			
1,2,4-Trichlorobenzene	103	8.00	"	81.6		126	70-130			
1,2,4-Trimethylbenzene	58.7	4.00	"	52.6		112	70-125			
1,2-Dichlorobenzene	71.4	4.00	"	63.1		113	70-130			
1,2-Dichloroethane	43.1	1.62	"	41.7		103	70-130			
1,2-Dichloropropane	48.5	1.85	"	48.5		99.9	70-130			
1,2-Dibromoethane	85.7	1.97	"	79.1		108	70-130			
1,3,5-Trimethylbenzene	56.7	4.00	"	52.1		109	71-130			
1,3 Butadiene	23.6	0.880	"				70-130			
1,3-Dichlorobenzene	78.8	4.00	"	65.5		120	70-130			
1,4-Dichlorobenzene	73.0	4.00	"	63.7		115	70-130			
4-Ethyltoluene	56.3	3.00	"	50.6		111	70-130			
Benzene	34.3	1.28	"	32.6		105	70-130			
Benzyl chloride	58.7	2.07	"	56.4		104	70-130			
Bromodichloromethane	73.8	2.68	"	68.3		108	70-130			
Bromoform	130	4.13	"	106		122	70-130			
Bromomethane	44.8	1.55	"	38.8		115	70-130			
Carbon disulfide	38.3	1.25	"	30.8		124	70-130			

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ORIGINS LABORATORY, INC

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B6E3002 - Default Prep - Air										
LCS (B6E3002-BS1)					Prepared: 05/30/2016 Analyzed: 05/30/2016					
Carbon Tetrachloride	74.0	5.00	ug/m³ Air	63.5		116	70-130			
Chlorobenzene	51.8	1.84	"	48.8		106	70-130			
Chloroethane	26.9	1.06	"	25.9		104	70-130			
Chloroform	54.8	1.95	"	50.8		108	70-130			
Chloromethane	25.2	8.00	"	20.2		124	72-130			
cis-1,2-Dichloroethene	44.8	3.00	"	40.8		110	70-130			
cis-1,3-Dichloropropene	49.2	1.82	"	45.8		107	70-130			
Dibromochloromethane	93.9	3.41	"	86.9		108	70-130			
Ethylbenzene	46.7	1.74	"	45.6		102	70-130			
Freon 113	79.7	6.80	"				70-130			
Freon 11	67.1	10.0	"				70-130			
Freon 12	54.5	10.0	"				70-130			
Freon 114	81.5	6.00	"				70-130			
Heptane	44.1	1.64	"	42.6		103	70-130			
Hexane	39.6	1.41	"	36.7		108	70-130			
Hexachlorobutadiene	128	10.0	"				70-130			
m,p-Xylene	146	10.0	"	179		81.8	70-130			
Methyl tert-Butyl Ether	42.5	1.44	"	37.5		113	70-130			
Methylene Chloride	36.0	10.0	"	34.4		105	70-130			
Naphthalene	115	17.0	"	54.5		211	70-130			
o-Xylene	49.8	1.74	"	46.5		107	70-130			
Styrene	49.0	1.70	"	45.6		107	70-130			
Tetrachloroethene	76.6	2.71	"	69.9		110	70-130			
Tetrahydrofuran	31.9	1.18	"	31.0		103	70-130			
Toluene	41.5	4.50	"	39.6		105	70-130			
trans-1,2-Dichloroethene	43.9	1.59	"	39.3		112	70-130			

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ORIGINS LABORATORY, INC

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B6E3002 - Default Prep - Air										
LCS (B6E3002-BS1)					Prepared: 05/30/2016 Analyzed: 05/30/2016					
trans-1,3-Dichloropropene	56.3	1.82	ug/m³ Air	49.5		114	70-130			
Trichloroethene	58.3	2.15	"	54.8		106	70-130			
Vinyl acetate	36.7	1.41	"	38.4		95.7	70-130			
Vinyl chloride	26.3	1.02	"	25.1		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	*29.9*		*ppbv*	*20.0*		*150*	*70-130*			
Surrogate: Toluene-d8	*19.6*		*"*	*20.0*		*98.0*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*16.3*		*"*	*20.0*		*81.6*	*70-130*			
LCS Dup (B6E3002-BSD1)					Prepared: 05/30/2016 Analyzed: 05/30/2016					
1,1,1-Trichloroethane	63.2	2.18	ug/m³ Air	54.6		116	70-130	1.65	20	
1,1,2,2-Tetrachloroethane	76.7	2.75	"	73.5		104	70-130	0.0896	20	
1,1,2-Trichloroethane	61.3	2.18	"	57.3		107	70-130	1.16	20	
1,1-Dichloroethane	41.5	1.61	"	40.5		102	70-130	0.980	20	
1,1-Dichloroethene	42.7	1.59	"	39.3		109	70-130	2.02	20	
1,2,4-Trichlorobenzene	113	8.00	"	81.6		139	70-130	9.90	20	
1,2,4-Trimethylbenzene	59.9	4.00	"	52.6		114	70-125	1.99	20	
1,2-Dichlorobenzene	74.6	4.00	"	63.1		118	70-130	4.37	20	
1,2-Dichloroethane	43.7	1.62	"	41.7		105	70-130	1.40	20	
1,2-Dichloropropane	48.8	1.85	"	48.5		100	70-130	0.570	20	
1,2-Dibromoethane	87.9	1.97	"	79.1		111	70-130	2.48	20	
1,3,5-Trimethylbenzene	56.7	4.00	"	52.1		109	71-130	0.00	20	
1,3 Butadiene	23.3	0.880	"				70-130	1.41	20	
1,3-Dichlorobenzene	78.0	4.00	"	65.5		119	70-130	0.920	20	
1,4-Dichlorobenzene	75.0	4.00	"	63.7		118	70-130	2.68	20	
4-Ethyltoluene	57.0	3.00	"	50.6		113	70-130	1.30	20	
Benzene	34.7	1.28	"	32.6		107	70-130	1.20	20	
Benzyl chloride	62.5	2.07	"	56.4		111	70-130	6.24	20	

Origins Laboratory, Inc.

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Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B6E3002 - Default Prep - Air										
LCS Dup (B6E3002-BSD1)					Prepared: 05/30/2016 Analyzed: 05/30/2016					
Bromodichloromethane	74.8	2.68	ug/m³ Air	68.3		110	70-130	1.44	20	
Bromoform	134	4.13	"	106		126	70-130	2.90	20	
Bromomethane	44.2	1.55	"	38.8		114	70-130	1.48	20	
Carbon disulfide	34.0	1.25	"	30.8		110	70-130	12.0	20	
Carbon Tetrachloride	75.2	5.00	"	63.5		118	70-130	1.60	20	
Chlorobenzene	53.0	1.84	"	48.8		109	70-130	2.37	20	
Chloroethane	27.0	1.06	"	25.9		105	70-130	0.391	20	
Chloroform	55.4	1.95	"	50.8		109	70-130	1.15	20	
Chloromethane	25.4	8.00	"	20.2		125	72-130	0.736	20	
cis-1,2-Dichloroethene	45.5	3.00	"	40.8		111	70-130	1.58	20	
cis-1,3-Dichloropropene	50.0	1.82	"	45.8		109	70-130	1.74	20	
Dibromochloromethane	95.7	3.41	"	86.9		110	70-130	1.89	20	
Ethylbenzene	47.9	1.74	"	45.6		105	70-130	2.57	20	
Freon 113	79.6	6.80	"				70-130	0.0962	20	
Freon 11	65.2	10.0	"				70-130	2.97	20	
Freon 12	55.0	10.0	"				70-130	0.903	20	
Freon 114	83.5	6.00	"				70-130	2.37	20	
Heptane	44.5	1.64	"	42.6		104	70-130	0.926	20	
Hexane	40.8	1.41	"	36.7		111	70-130	2.98	20	
Hexachlorobutadiene	136	10.0	"				70-130	6.05	20	
m,p-Xylene	149	10.0	"	179		83.3	70-130	1.71	20	
Methyl tert-Butyl Ether	43.1	1.44	"	37.5		115	70-130	1.52	20	
Methylene Chloride	34.8	10.0	"	34.4		101	70-130	3.24	20	
Naphthalene	124	17.0	"	54.5		228	70-130	7.45	20	
o-Xylene	50.8	1.74	"	46.5		109	70-130	1.81	20	
Styrene	49.6	1.70	"	45.6		109	70-130	1.21	20	

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ORIGINS LABORATORY, INC

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B6E3002 - Default Prep - Air										
LCS Dup (B6E3002-BSD1)					Prepared: 05/30/2016 Analyzed: 05/30/2016					
Tetrachloroethene	77.8	2.71	ug/m³ Air	69.9		111	70-130	1.58	20	
Tetrahydrofuran	32.2	1.18	"	31.0		104	70-130	1.20	20	
Toluene	42.1	4.50	"	39.6		106	70-130	1.35	20	
trans-1,2-Dichloroethene	44.9	1.59	"	39.3		114	70-130	2.41	20	
trans-1,3-Dichloropropene	57.1	1.82	"	49.5		115	70-130	1.36	20	
Trichloroethene	58.6	2.15	"	54.8		107	70-130	0.644	20	
Vinyl acetate	39.2	1.41	"	38.4		102	70-130	6.40	20	
Vinyl chloride	26.5	1.02	"	25.1		106	70-130	0.774	20	
Surrogate: 1,2-Dichloroethane-d4	*29.8*		*ppbv*	*20.0*		*149*	*70-130*			
Surrogate: Toluene-d8	*19.6*		*"*	*20.0*		*97.8*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*16.1*		*"*	*20.0*		*80.6*	*70-130*			

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Brown
Project Number: GATE0901
Project: Gates - Boone, Iowa

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.

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Jen Pellegrini For Noelle Doyle Mathis, President