



Final Report of
Brownfield Cleanup Grant Implementation
Former McClung Warehouses, Knoxville, TN
S&ME Project No. 4143-17-017
EPA Brownfields Cooperative Agreement
No. BF-00D47816-0

PREPARED FOR:

City of Knoxville Office of Redevelopment
400 Main Street, Suite 655
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PREPARED BY:

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September 16, 2019



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City of Knoxville Office of Redevelopment
400 Main Street, Suite 655
Knoxville, Tennessee 37902

Attention: Ms. Anne Wallace

Reference: **Final Report of Brownfield Cleanup Grant Implementation
Former McClung Warehouses Property**
Knoxville, Tennessee
EPA Brownfields Cooperative Agreement No. BF-00D47816-0
S&ME Project No. 4143-17-017

Dear Anne:

S&ME, Inc. (S&ME) has completed the implementation of the US Environmental Protection Agency (EPA) Brownfield Cleanup Grant, with matching City funding, for the Former McClung Warehouses Property located in Knoxville, Tennessee. The brownfield cleanup services were performed to further assess the nature and extent of surface and subsurface contamination associated with the past use of the subject site, provide an updated Analysis of Brownfield Cleanup Alternatives, perform limited site cleanup activities, and prepare a draft Brownfield Voluntary Agreement for the property. This report summarizes the activities performed during the grant implementation and provides considerations for the future redevelopment of the site.

S&ME appreciates this opportunity to be of service to you. Please call if you have questions concerning this report or our services.

Sincerely,

S&ME, Inc.

A handwritten signature in blue ink that reads "Elizabeth M. Porter".

Elizabeth Porter, PG, PMP
Project Manager

A handwritten signature in blue ink that reads "James R. Bruce".

James R. Bruce, PG, CHMM
Quality Assurance Officer

CC: Olga Perry, USEPA
Lee Barron, TDEC Knoxville
Paula Middlebrooks, TDEC



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Appendices

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Appendix II – Draft Brownfield Voluntary Agreement

Appendix III – ACM Disposal Documentation

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◆ Executive Summary

S&ME Inc. (S&ME) has completed implementation of the Environmental Protection Agency (EPA) Brownfield Cleanup Grant for the Former McClung Warehouses Property located in Knoxville, Tennessee. Services for the project were performed under the 2016 Brownfields Cleanup Grant provided by the Region 4 EPA, under EPA Brownfields Cooperative Agreement No. BF-00D47816-0 and matching City funding. This report summarizes the activities included in the implementation of the Cleanup Grant.

Site History

The former McClung Warehouses property consists of nine former parcels containing approximately five acres, owned by the City of Knoxville (City), and formerly addressed at 401, 420, 501, 505, 512, 517, 519, 523 and 525 W. Jackson Avenue in Knoxville, Tennessee. In addition, the property includes a 30-foot-wide public alley right-of-way (ROW) located behind the former parcels at 501, 505, 517, 519, and 523 W. Jackson (Figure 1, Appendix I). The City envisions the property will be revitalized with mixed-use commercial and residential redevelopment.

Businesses that formerly operated at the McClung Warehouses site included an automobile garage, woodworking shop, freight shipping businesses, and railroad freight storage, shipment, and administrative operations. In 2007, a fire destroyed the warehouses located at 501, 505, and 509 W. Jackson Avenue. In 2014, a second fire destroyed the warehouses located at 517, 519, 523, and 525 W. Jackson Avenue.

Prior Phase I Environmental Site Assessments (ESA) and Phase II ESAs performed by S&ME and Tetra-Tech in 2009 and 2015, respectively, identified recognized environmental conditions (RECs) related to previous industrial use of the site and identified impacted environmental media through sampling and laboratory analyses. The results of the previous soil sampling identified arsenic, lead, cobalt, manganese, and thallium at concentrations that exceeded the corresponding EPA Regional Screening Levels (RSLs). Passive soil vapor samples identified petroleum-related compounds such as total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylene, undecane, tridecane, and pentadecane, and naphthalene and 2-methylnaphthalene. Benzene concentrations exceeded the calculated Vapor Intrusion Screening Level (VISL) for carcinogenic risk under a residential scenario. Groundwater samples contained metals, but none of the concentrations exceeded EPA Maximum Contaminant Levels (MCLs). In addition, asbestos-containing material (ACM) was identified in the building remnants remaining onsite after the fire.

Additional Assessment

Using the 2016 Brownfields Cleanup Grant, S&ME performed additional assessment to supplement data from the previous site assessment activities, addressing data gaps and evaluating the need for vapor intrusion mitigation during site redevelopment. The assessment findings were used to update the *Analysis of Brownfield Cleanup Alternatives* (ABCA). Additional assessment included a subcontracted ground-penetrating radar (GPR) survey, followed by the collection and laboratory analysis of passive and active soil gas samples, soil samples, groundwater samples, as well as asbestos and lead-based paint (LBP) samples from the site. The following analytes were identified at one or more sample location.

- Soil gas samples detected total petroleum hydrocarbons (TPH), benzene, toluene, and polynuclear aromatic hydrocarbons (PAHs). Some of the analytes were detected in concentrations above their

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corresponding EPA May 2018 Industrial and/or Residential Regional Screening Levels (RSL_{ind} and RSL_{res}, respectively).

- Soil samples reported arsenic, aluminum, cobalt, iron, manganese, vanadium, the pesticide dieldrin, extractable petroleum hydrocarbons (EPH), volatile organic compounds (VOCs) and PAHs, specifically benzo(a)pyrene. Some concentrations exceeded the EPA May 2018 RSL_{ind} and RSL_{res}. Soil samples on the eastern portion of the site reported EPH concentrations which exceeded the Tennessee Department of Environment and Conservation (TDEC) Division of Solid Waste Management (DSWM) threshold for disposal as a special waste (100 milligrams/kilogram (mg/kg)).

The EPA VISL calculator was used to evaluate vapor intrusion (VI) carcinogenic risk using the Target Carcinogenic Risk (TCR) of 1×10^{-6} . The results of VISL screening under a residential scenario identified a VI carcinogenic risk in excess of the TCR for benzene, 1,3-butadine, benzyl chloride, carbon tetrachloride, chloroform, 1,2 dichloroethane and naphthalene. A VI hazard was identified in excess of the Target Hazard Quotient (THQ) of 0.1 for 1,3-butadine, benzyl chloride and naphthalene. The results of VISL screening under a commercial scenario identified a VI carcinogenic risk in excess of the TCR for benzene, 1,3-butadine and naphthalene. A VI Hazard was not identified in the commercial scenario.

Both ACM and LBP were detected in the demolition debris, which was sampled to further characterize this material for future disposal purposes.

ABCA and Draft BVA

Based upon the findings compiled from both the S&ME and Tetra Tech assessment activities, an updated ABCA was prepared for review by the City, TDEC and EPA. The updated ABCA recommended cleanup alternatives for addressing surface and subsurface soil, asbestos-containing materials (ACM), and vapor intrusion concerns at the site, as well as a Brownfield Voluntary Agreement (BVA) for the property to address environmental concerns during future redevelopment.

A copy of the draft BVA is included in Appendix II. The draft BVA addresses considerations for construction worker contact with impacted media during redevelopment, steps to limit site occupant contact with impacted soil after redevelopment, and it also addresses the vapor intrusion potential, with a recommendation for design and installation of a vapor mitigation system, if warranted based on redevelopment plans.

Site Cleanup

A total of 131 tons of petroleum hydrocarbon-impacted soil was excavated from the eastern portion of the site and transported to Domermuth Environmental Services for disposal. The excavation was then backfilled with rock, and the area was repaved by the City.

In addition, under this Brownfield Cleanup Grant, 258 cubic yards of ACM and LBP impacted demolition debris was transported to Chestnut Ridge Landfill for disposal. Approximately 500 cubic yards of demolition debris containing ACM and LBP remain on the site with an additional 200 cubic yards ramped along Jackson Avenue. Removal of the material ramped along Jackson Avenue is not recommended until site redevelopment is planned.



1.0 Site Background Information

1.1 Site Characteristics

The former McClung Warehouses property consists of nine parcels containing approximately five acres, owned by the City of Knoxville (City), and formerly located at 401, 420, 501, 505, 512, 517, 519, 523 and 525 W. Jackson Avenue in Knoxville, Tennessee (Figure 1, Appendix I). In addition, the property includes a 30-foot-wide public alley right-of-way (ROW) located behind the former parcels at 501, 505, 517, 519, and 523 W. Jackson. The property center is approximately located at 35.9677° N latitude and -83.9229° W longitude. The properties are identified on the Knox County Tax Assessor's Tax Map as Tax Map 94E, Group J, Parcels 1, 1.01, 2, 4, 5.02, 5.03 and 11.01, as well as the public alley ROW.

1.2 Property History

Businesses that formerly operated at the McClung Warehouses site included an automobile garage, woodworking shop, freight shipping businesses, and railroad freight storage, shipment, and administrative operations. Based on the results of a review of historical documents, the portion of the site located at 401 W. Jackson Avenue was previously occupied by railroad freight sheds and an administrative office building from approximately 1884 to 1997. In 1903, the C.M. McClung and Company operated on this portion of the site but vacated the property by 1917. A blacksmith shed also operated on this portion of the site for approximately 70 years. Freight businesses, including Universal Southern Cartage Company and Cargo Manufactured Products, Inc., also operated on this portion of the site from the 1970s through the 1980s. By 2006, the property was a paved, self-service pay-to-park parking lot. The portion of the site located at 501 and 505 W. Jackson Avenue was previously occupied by drug and oil warehouses from approximately 1884 to 1890. By 1903, this portion of the site was vacant. In 1893, the McClung Warehouses were constructed on the portion of the site located at 505 and 509 W. Jackson Avenue, which sold items such as lanterns, glassware, clocks, automobiles tires, lawn mowers, and bicycles. By 1917, the McClung Warehouses had expanded to the portion of the site located at 501, 517, and 523 W. Jackson Avenue. By 1950, the portion of the site located at 525 W. Jackson Avenue was occupied by Crane Co. In addition, an automobile garage occupied the portion of the site located at 512 W. Jackson Avenue. By 1973, the 512 W. Jackson Avenue property was a paved, free parking lot.

Businesses operated in the McClung Warehouses until 2007 (including a woodworking shop located at 509 W. Jackson Avenue). In 2007, a fire destroyed the warehouses located at 501, 505, and 509 W. Jackson Avenue. In 2014, a second fire destroyed the warehouses located at 517, 519, 523, and 525 W. Jackson Avenue.

1.3 Surrounding Area Description

Descriptions of adjoining and surrounding properties are provided below:

- **North** – Norfolk Southern Railroad, beyond which are commercial properties.
- **South** – Jackson Avenue, beyond which are restaurants and commercial properties.
- **West** – Apartment building and Broadway Avenue.
- **East** – North Gay Street and commercial properties.



1.4 Project Purpose

The City envisions the redevelopment of the site into a mixed-use complex consisting of commercial and residential properties. Prior Phase I Environmental Site Assessments (ESA) and Phase II ESAs performed by S&ME Inc. (S&ME) and Tetra-Tech in 2009 and 2015, respectively, identified recognized environmental conditions (RECs) related to previous use of the site and identified impacted environmental media through sampling and laboratory analyses.

The Brownfield Cleanup Grant implementation performed by S&ME included a range of services intended to address data gaps from the previous site assessment activities, plan and implement the selected site cleanup activities as discussed in the Analysis of Brownfield Cleanup Alternatives (ABCA) and prepare a draft Brownfield Voluntary Agreement (BVA) to address site environmental concerns during and after redevelopment.

1.5 Previous Assessment Findings

In 2009, S&ME conducted a Phase I ESA and identified several potential RECs. Based on these findings, S&ME conducted soil sampling and a passive soil vapor survey in 2009 on the portion of the site located at 401 W. Jackson Avenue. Arsenic (31 milligrams per kilogram (mg/kg)) and lead (880 mg/kg) were detected in the soil at concentrations that exceeded the corresponding 2008 Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) of 1.6 mg/kg and 800 mg/kg for industrial soil, respectively. Six of the seven passive soil vapor samples contained detectable concentrations of petroleum-related compounds such as total petroleum hydrocarbons (TPH); benzene, toluene, ethylbenzene and xylene (BTEX); undecane, tridecane, and pentadecane (diesel-range hydrocarbons); and naphthalene and 2-methylnaphthalene. However, the passive soil vapor survey did not quantify the volume of contaminated media or identify the source of the contamination. Based on the results of the samples collected (soil and soil gas), S&ME recommended confirmation sampling and analysis before construction.

In 2015, Tetra Tech, on behalf of the EPA, conducted a Targeted Brownfield Assessment (TBA) at the property, consisting of Phase I and II ESAs. In January 2015, Tetra Tech personnel conducted an initial site visit at the property and identified RECs, visually inspected the remnants of on-site structures for possible asbestos-containing materials (ACMs), and identified other environmental hazards on the property. The *Phase I Environmental Site Assessment Report: McClung Warehouses*, prepared for EPA by Tetra Tech in August 2015, identified the following RECs:

- The portion of the site located at 401 W. Jackson Avenue was used by the railroad from approximately 1884 to 1997. Additionally, a blacksmith shed operated on this portion of the site for approximately 70 years.
- The McClung Warehouses, Crane Co., and oil and drug warehouses operated on the portion of the site located at 401, 501, 505, 509, 517, 519, 523, and 525 W. Jackson Avenue.
- An automobile garage operated on the portion of the site located at 512 W. Jackson Avenue for approximately 19 years.
- Suspected ACM was observed in the remnants of the warehouses at the site.

Based on the results of the initial site visit, EPA concluded that a Phase II ESA was appropriate to assess the RECs identified during the Phase I ESA and to identify the presence and nature of contamination, if any, on the site. During the week of March 23, 2015, Tetra Tech conducted a Phase II ESA which included soil, groundwater, soil

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gas, and suspected ACM sampling. Tetra Tech collected 18 surface and subsurface soil samples, three composite soil samples (including one duplicate), six soil gas samples (including one split), three groundwater samples (including one duplicate), and 53 suspected ACM samples. The analytical results for these samples are summarized below. For full details of the sampling event, see the *Final Phase II Environmental Site Assessment Report: McClung Warehouses*, prepared for EPA by Tetra Tech in August 2015, and currently available on the City's website: (http://www.knoxvilletn.gov/government/city_departments_offices/redevelopment/epa_cleanup_grant_applications/).

All Tetra Tech surface and subsurface soil samples contained one or more target analyte list (TAL) metals, such as arsenic, cobalt, manganese, and thallium at levels that exceed EPA RSLs for residential or industrial soil.

- No volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCs) were detected in the surface and subsurface soil samples above EPA RSLs for residential or industrial soils.
- Two soil gas samples contained benzene at concentrations that exceeded the calculated Vapor Intrusion Screening Level (VISL) for carcinogenic risk under a residential scenario.
- Groundwater samples collected by Tetra Tech contained metals, but none of the concentrations exceeded EPA Maximum Contaminant Levels (MCLs).
- Six suspected ACM samples contained asbestos at greater than 1 percent.

2.0 Supplemental Assessment Using Cleanup Grant Funds

To evaluate the need for vapor intrusion mitigation during site redevelopment, additional information was needed, and thus the assessment activities documented below were implemented. In 2018, S&ME updated the soil gas evaluation to provide current supplemental data for design purposes. S&ME also addressed data gaps identified in planning for the site cleanup, including the potential for impacts associated with the garage operated at 512 W. Jackson Avenue. These 2018 S&ME supplemental Phase II ESA activities, conducted on behalf of the City, were performed using a portion of the Brownfield Cleanup Grant funds.

The S&ME Phase II ESA consisted of a ground-penetrating radar (GPR) survey, followed by the collection and laboratory analysis of passive and active soil gas samples, soil samples, groundwater samples, as well as asbestos and lead-based paint (LBP) samples from the site.

2.1 Supplemental Assessment Activities

2.1.1 Ground Penetrating Radar

Initially, S&ME used a subcontractor specializing in GPR to survey the parcels located at 420 and 512 W. Jackson Avenue to further evaluate the property for potential buried structures and areas of previous subsurface disturbance based on the past use as an automotive garage. Evidence of underground storage tanks was not observed during the GPR survey. Passive soil vapor sampling was then performed using Amplified Geochemical Imaging, LLC (AGI) modules manufactured and analyzed by AGI (Figure 2, Appendix I). Four of the seven collected passive soil gas samples detected low levels of TPH, and two of the samples detected very low levels of petroleum hydrocarbon constituents such as benzene and toluene. One of the samples also detected very low levels of polynuclear aromatic hydrocarbons (PAHs). Based on the findings of the GPR survey and the passive soil gas survey, soil borings were installed and active soil gas samples were collected to fill in data gaps from the previous site assessment activities.



2.1.2 *Soil Sampling*

Eight soil samples (Figure 3, Appendix I) were analyzed for target analyte list (TAL) metals, TPH-gasoline-range organics (TPH-GRO), PAHs, extractable petroleum hydrocarbons (EPH), and VOCs. Each of these samples reported arsenic concentrations which exceeded the EPA May 2018 Industrial and Residential RSL (RSL_{ind} and RSL_{res}, respectively), which is not uncommon as a naturally-occurring metal in East Tennessee, and the detected concentrations may generally fall within the statistical range of background concentrations. The highest arsenic concentrations occurred at depths of four feet or more below ground surface (bgs), which has been considered during the evaluation of the analytical results and remedial alternatives.

The reported concentrations for aluminum, cobalt, and iron exceeded the corresponding RSL_{res} at all eight sample locations. Manganese exceeded the RSL_{res} at seven locations and vanadium exceeded the RSL_{res} in four locations. The RSL_{ind} was exceeded in two locations by cobalt and in one location by manganese, at depths of 2.5 feet or greater bgs. Multiple VOCs and PAHs were detected in at least one submitted soil sample, but the concentrations were below the RSL_{res} and RSL_{ind} for each analyte, except for benzo(a)pyrene, which exceeds the RSL_{res} in one sample.

Four of the initial soil samples submitted for EPH analysis reported concentrations above laboratory detection levels. Only one location (SB-7) reported an EPH concentration which exceeded the Tennessee Department of Environment and Conservation (TDEC) Division of Solid Waste Management (DSWM) threshold for disposal as a special waste (100 milligrams/kilogram (mg/kg)). The EPH concentration in sample SB-7 was 855 mg/kg. To further delineate the extent of petroleum hydrocarbon impacts in the vicinity of soil sample SB-7, a second round of soil assessment was performed in immediately-adjacent areas surrounding this location, with five additional samples submitted for EPH analysis. The area of petroleum hydrocarbon impacts was further defined and addressed as part of the cleanup activities, as discussed in Section 3. The maximum EPH concentration detected in the second round of sampling was 334 mg/kg (GP-1).

As a follow-up to previous assessment activities performed by others, five surficial soil samples were submitted for laboratory analysis for pesticides (Figure 3, Appendix I). Dieldrin was observed in sample HA-4 at a concentration of 2.06 mg/kg, which exceeds both the corresponding RSL_{res} (0.034) and the RSL_{ind} (0.14). There were no reported detections of pesticides above the RSL_{res} or RSL_{ind} for any of the other submitted samples.

2.1.3 *Soil Gas Assessment*

Two supplemental rounds of active soil gas sampling were performed (Figure 4, Appendix I) to further characterize the spatial distribution of constituents of concern initially identified during the Targeted Brownfield Assessment by Tetra Tech in 2015. Based on the benzene concentrations in ten original active soil gas samples collected by S&ME at a depth of three feet on May 3, 2018, S&ME recommended additional soil gas and groundwater sampling to gain a better understanding of the current source and risk associated with the detected benzene concentrations in soil gas. In the second round of sampling, conducted on July 13, 2018, three locations were selected for vertical profiling of the benzene concentrations, and soil gas samples at these three additional locations were collected at depths of 1.5 feet, three feet and five feet bgs. In addition, temporary groundwater monitoring wells were installed at three locations near the areas where elevated benzene was detected in the soil gas, to determine if benzene in groundwater was a possible source. The findings of the additional assessment activities did not detect benzene in groundwater (nor were any other VOCs detected in groundwater), but elevated benzene in soil gas was confirmed in the second round of soil gas sampling performed by S&ME.



Each of the soil gas samples (including the initial round SG-1 through SG-10, and the vertical profiles SG-1 ABC, SG-3 ABC, and SG-5 ABC) was analyzed for VOCs by Method TO-15. Multiple compounds analyzed under EPA Method TO-15 were detected above the corresponding laboratory detection limit. Several of the detected compounds exceed the RSL_{res} , and 14 compounds exceed both the RSL_{res} and RSL_{ind} in at least one of the samples. Benzene exceeded the RSL_{ind} (1.6 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)) in each of the ten initial samples, with a maximum concentration of $64.6 \mu\text{g}/\text{m}^3$. This prompted the second round of active air sampling, consisting of vertical profiles, where benzene concentrations exceeded the RSL_{ind} in each of the nine additional samples, with a maximum concentration of $41.7 \mu\text{g}/\text{m}^3$. The highest benzene concentrations were detected in the shallowest samples (i.e., 1.5 feet below ground surface) collected from each of the three borings. Naphthalene exceeded the RSL_{ind} in four samples in the first round, and six samples in the second round. The highest naphthalene concentrations were detected in the shallowest samples (i.e., 1.5 feet below ground surface) collected from two of the three borings.

2.1.4 Vapor Intrusion

The EPA VISL calculator was used to evaluate vapor intrusion (VI) carcinogenic risk using the Target Carcinogenic Risk (TCR) of 1×10^{-6} . The results of VISL screening under a residential scenario using the highest detected concentration of each analyte identified a VI carcinogenic risk in excess of the TCR for benzene, 1,3-butadiene, benzyl chloride, carbon tetrachloride, chloroform, 1,2 dichloroethane and naphthalene. A VI hazard was identified in excess of the Target Hazard Quotient (THQ) of 0.1 for 1,3-butadiene, benzyl chloride and naphthalene. The results of VISL screening under a commercial scenario using the highest detected concentration for each analyte identified a VI carcinogenic risk in excess of the TCR for benzene, 1,3-butadiene and naphthalene. A VI Hazard was not identified in the commercial scenario.

Of the contaminants with a VI carcinogenic risk, benzene was detected at elevated concentrations most frequently (all 19 locations exceeded the benzene RSL_{ind}), followed by naphthalene (10 locations exceeded the naphthalene RSL_{ind}). To further evaluate the benzene risk, S&ME used the VISL calculator to evaluate benzene results with concentrations below the maximum detected ($64.6 \mu\text{g}/\text{m}^3$ in SG-5). The VISL calculator identified a VI carcinogenic risk in the residential scenario when benzene concentrations exceeded $12 \mu\text{g}/\text{m}^3$. The VISL calculator under a residential use scenario identified a VI issue in multiple locations across the site, from the northeast corner to the southwest corner, and on the City parcels both north and south of Jackson Avenue. The VISL VI carcinogenic risk levels range from no risk to $1.1\text{E}-05$ for the residential scenario, and from no risk to $2.5\text{E}-06$ for the commercial scenario. Within this range, current TDEC protocol indicates that mitigation is recommended for new construction sites.

2.1.5 ACM and LBP

S&ME also collected two samples of suspect ACM and two paint chips for LBP analysis from the surficial layer of the demolition debris to assist in characterizing this material for future disposal purposes. Both ACM and LBP were detected in the demolition debris (Figure 5, Appendix I).

2.2 Analysis of Brownfield Cleanup Alternatives

To support the City's redevelopment efforts and desired goal that site redevelopment is performed in accordance with applicable regulations, a Brownfield Voluntary Agreement (BVA) was recommended in the ABCA. Using the EPA Cleanup Grant funds, a draft BVA has been prepared (Appendix II). The BVA addresses considerations for

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construction worker contact with impacted soils during redevelopment, steps to limit site occupant contact with impacted soil after redevelopment, and vapor intrusion potential, with a recommendation for design and installation of a vapor mitigation system, if warranted based on redevelopment plans. The goal of a vapor mitigation system would be to break the exposure pathway for vapor migration, if such a pathway is confirmed for the proposed use.

In addition to the recommended BVA, the September 14, 2018 ABCA prepared by S&ME presented additional recommendations for addressing environmental concerns identified at the site, as summarized below. A full copy of the ABCA is currently available on the City's website:

http://www.knoxvilletn.gov/UserFiles/Servers/Server_109478/File/Redevelopment/CleanupGrants/2018%20McClung%20ABCA.pdf

2.2.1 *Surface and Subsurface Soil*

Option 1: No Action: No action is a zero-cost option; however, it does not prevent residents or commercial workers from coming into contact with contamination at the site.

Option 2: Source Removal: Surface and subsurface soil contained TAL metals such as arsenic, aluminum, iron, cobalt, lead, manganese, vanadium, and thallium at concentrations above their respective EPA RSL_{res} and RSL_{ind}. Dieldrin was observed in sample HA-4 at a concentration of 2.06 mg/kg, which exceeds both the corresponding RSL_{res} and the RSL_{ind}. In addition, an area of petroleum hydrocarbon impacts was documented in the vicinity of soil boring SB-7, to a depth of approximately five feet.

Tetra Tech previously identified that chemical constituents in surface and subsurface soils were below their respective EPA Removal Management Levels (RMLs) for residential and industrial soils, except for arsenic and lead in two samples, including MC-SB05-09, collected at nine feet bgs at 501 W. Jackson Avenue, and MC-COM-01-DUP collected at four inches bgs in the unpaved area of the Option Tract behind the former warehouses at 501, 505, and 509 W. Jackson Avenue. Arsenic was detected at 150 mg/kg in subsurface soil sample MC-SB05-09, which exceeds the EPA May 2018 RML of 68 mg/kg for residential soil. Lead was detected at 420 mg/kg in surface soil sample MC-COM-01-DUP, and exceeds the EPA 2018 RML of 400 mg/kg for residential soil. In the 2018 S&ME sampling event, the only additional metal or pesticide that exceeded the 2018 RML was arsenic in sample SB-2, detected at a concentration of 118 mg/kg at a depth of nine to 10.5 feet.

RMLs are used by EPA to support a decision by On Scene Coordinators to help identify areas, contaminants, and conditions where a removal action may be appropriate at superfund sites. Sites where contaminant concentrations fall below RMLs are not health protective for chronic exposure. In some cases, further action or study may be warranted to address remaining long term, site-specific health threat determined. Also, sites with contaminant concentrations above the RMLs may not necessarily warrant a removal action; factors including location and depths of construction, the use of site-specific exposure scenarios or other program considerations may need to be evaluated.

Based on the findings, a limited, localized soil removal was recommended. Specifically, the area with petroleum hydrocarbon impacts in the vicinity of SB-7 was proposed for excavation, with the impacted material transported to Domermuth Environmental Services for treatment and disposal. Removal of the petroleum hydrocarbon-impacted material helps reduce the potential for future VI risk associated with these contaminants. Although



some areas of elevated metals were also detected in the soil, they appeared to be generally isolated and ranged from surficial soils to deeper (greater than eight feet bgs) soil horizons. The future use and layout of the site has not yet been determined but would likely include a large building/parking area footprint. This type of redevelopment would limit residential exposure to subsurface soils. Rather than spending cleanup funds to remove metals that may not pose a risk to human health or environment in the final redevelopment scenario, S&ME recommended addressing this issue through applicable land-use restrictions and the BVA. The BVA includes a provision for placement of buildings, parking areas, at least two feet of clean soil, or another type of TDEC-approved contact barrier over the existing ground surface as warranted to limit exposure to metals, if the redevelopment includes residential use.

2.2.2 *Asbestos-containing Materials*

Option 1: No Action: No action is a zero-cost option; however, it is not a viable option because the remnants of the former buildings are in disrepair and the buildings have been partially demolished. Therefore, the remaining asbestos identified in the buildings needs to be removed prior to future demolition of these structure. LBP has also been identified in the demolition debris and will require appropriate management before redevelopment can be performed.

Option 2: Landfill Disposal: As documented previously in the Tetra Tech ABCA, the black wall adhesive and roof flashing identified as ACM in the remaining structures are non-friable and therefore, are not regulated asbestos-containing material (RACM) provided they are not subjected to grinding, cutting, sanding, or abrading. These homogenous areas may be disposed of within a landfill permitted to receive the waste along with the demolition debris as long as they remain in good condition. Tetra Tech stated that doing so can greatly increase disposal costs, and further stated that often the most economical means of addressing waste classified as non-friable RACM is to remove and dispose of it separately, prior to demolition, thus preventing all demolition debris from being contaminated. Tetra Tech proposed that removal and disposal of RACM typically costs around \$1.50 to \$2.00 per square foot, translating to about \$4,500 to \$6,000 to dispose of the RACM they identified in the remnant structures on site.

The previous ABCA did not address the piles of demolition debris on the property, resulting from the demolition of the structures after the fires. Due to the nature of the building demolition following the fires, asbestos abatement of the warehouses was not feasible at that time. Consequently, ACM was confirmed in the debris piles during the S&ME 2018 assessment activities. Some of the debris is currently ramped along Jackson Avenue (approximately 200 cubic yards) presumably for structural support of the road, and removal of this material is not recommended until site redevelopment is planned. Three debris piles are located beyond the Jackson Avenue area, and they collectively contain approximately 750 cubic yards of debris (Figure 6, Appendix I). Because the ACM cannot feasibly be segregated from these piles, they would be considered asbestos waste, and should be handled accordingly. S&ME obtained quotes from two area contractors for proper transport and disposal at Chestnut Ridge Class I Landfill, and the estimates for these services ranged from \$120,000 and \$145,000, excluding oversight, air monitoring and final clearance. A portion of the cleanup funds were used to fund partial removal of the ACM, as discussed in Section 3.

2.2.3 *Vapor Intrusion*

Option 1: No Action: No action is a zero-cost option; however, it is not effective in controlling or preventing residents from potential exposure to due to vapor intrusion at the site.



Option 2: Vapor Mitigation: As documented in the S&ME Phase II ESA and summarized above, the VISL screening under a residential scenario identified a VI carcinogenic risk in excess of the TCR for benzene, 1,3-butadiene, benzyl chloride, carbon tetrachloride, chloroform, 1,2 dichloroethane and naphthalene. A VI hazard was identified in excess of the THQ of 0.1 for 1,3-butadiene, benzyl chloride and naphthalene. The results of VISL screening under a commercial scenario identified a VI carcinogenic risk in excess of the TCR for benzene, 1,3-butadiene and naphthalene. A VI Hazard was not identified in the commercial scenario.

Of the contaminants with a VI carcinogenic risk, benzene was detected at elevated concentrations most frequently, followed by naphthalene. To further evaluate the benzene risk, S&ME used the VISL calculator to evaluate benzene results with concentrations below the maximum detected. The VISL calculator identified a VI carcinogenic risk in the residential scenario when benzene concentrations exceeded 12 $\mu\text{g}/\text{m}^3$. The VISL calculator, under a residential use scenario, identified a VI issue in multiple locations across the site, from the northeast corner to the southwest corner, and on the City parcels both north and south of Jackson Avenue.

The VISL VI carcinogenic risk levels range from no risk to 1.1E-05 for the residential scenario, and from no risk to 2.5E-06 for the commercial scenario. Within this range, current TDEC protocol indicates that mitigation is recommended for new construction sites. If residential structures are planned, vapor intrusion mitigation may be warranted. However, in the absence of a site development plan, or information on building vs. parking areas, it is not feasible to address the vapor mitigation at this time, beyond some general recommendations for the type of mitigation that may be appropriate.

Depending on the extent, design and location of residential development on the site, a mitigation vapor barrier may be considered. TDEC would require a minimum 20-mil VOC-resistant vapor barrier, installed and sealed per manufacturer's specifications. As an alternative, an unvented VOC-resistant asphaltic-based vapor barrier with certified design and installation could be considered. Passive or active sub-slab venting may also be considered. It is not possible to provide a cost for this cleanup alternative in the absence of site-specific design considerations.

3.0 Environmental Cleanup Activities

3.1 ACM and LBP Impacted Demolition Debris

Under this Brownfield Cleanup Grant, 258 cubic yards of ACM and LBP-impacted demolition debris was transported to Chestnut Ridge Landfill for disposal. As mentioned previously, approximately 200 cubic yards of the debris is currently ramped along Jackson Avenue. Following the cleanup activity, approximately 500 cubic yards of demolition debris containing ACM and LBP remain in the debris piles located beyond the material ramped along Jackson Avenue.

An asbestos demolition/renovation ten-day notice form was prepared for the Knox County Department of Air Quality Management on May 31, 2019. On June 17, 2019 Neo Corporation removed the 307 tons or 258 cubic yards of demolition debris from the subject property, with support from Brady Excavating. First Place Finish transported the demolition debris under non-hazardous waste manifest to the Chestnut Ridge Landfill for disposal. NEO Corporation lined each truck with plastic prior to being loaded and wrapped each load prior to being hauled. One supervisor and two workers were present for NEO Corporation. Photographs, a field report and Non-Hazardous Waste manifest documentation are included in Appendix III.

**Final Report of Brownfield Cleanup Grant Implementation
Former McClung Warehouses Property**

Knoxville, Tennessee

EPA Cooperative Agreement No. BF-00D47816-0

S&ME Project No. 4143-17-017



Ms. Emmy Buckingham of S&ME, an EPA-accredited and TDEC Toxic Substances Program-licensed Asbestos Project Monitor conducted area air monitoring services during the ACM removal. Four air samples were collected during the removal. One sample was collected at the entrance gate, one in the parking lot, and two on Jackson Avenue, one east and one west of the asbestos-containing rubble pile being removed. The air samples were collected on 25 mm Mixed Cellulose Ester membrane filters and analyzed by Phase Contrast Microscopy in accordance with the NIOSH 7400 Method, Revision 3 by Ms. Buckingham, an American Industrial Hygiene Association Asbestos Analysts Registry analyst. Same day analysis was performed on samples collected. The air samples collected were compared to and passed the EPA Clearance Criterion of 0.01 fibers per cubic centimeter.

3.2 Petroleum Hydrocarbon-Impacted Soil

In preparation for soil cleanup activities, S&ME prepared a TDEC-DSWM special waste application on January 16, 2019 for transportation and disposal of the soil at the Chestnut Ridge Landfill in Heiskell, Tennessee. TDEC DSWM provided a letter of Disposal of Special Waste Approval on January 28, 2019 (Appendix IV). However, on the day the excavation was initiated, Mr. Rick Gatlin, the excavation contractor, had concerns about the transportation turnaround time and the impact on the project schedule due to his limited number of trucks available to transport the soil. Mr. Gatlin elected to use his longstanding contract with Domermuth Environmental Services for the soil disposal.

A total of 131 tons of petroleum hydrocarbon-impacted soil on the eastern portion of the site was excavated and transported to Domermuth Environmental Services for interim bioremediation prior to disposing in a Class I Subtitle D landfill. Photographs documenting the removal of the impacted soil are included in Appendix IV.

On February 18, 2019, safety barriers were installed around the area of proposed excavation in the Jackson Avenue parking lot. Gatlin Excavating removed asphalt from an area measuring approximately 23 feet by 28 feet. The excavated material was loaded directly onto a dump truck. A total of 130.95 tons of contaminated soil and 9.19 tons of asphalt were excavated. Walker's Truck Contractors transported the material under non-hazardous waste manifest from the excavation in the Jackson Avenue parking lot to Domermuth Environmental Services for interim bioremediation prior to disposing in a Class I Subtitle D landfill. Claiborne Hauling, LLC transported 144.68 tons of clean crushed stone to the site for backfill on February 19, 2019. Backfilling was performed by Gatlin Excavating with crusher-run fill and compacted in 12-inch lifts. The final grade was four to six inches below the parking lot level to allow for placement of asphalt paving. The City of Knoxville subsequently repaved the parking lot and the safety barriers were removed from the site. Non-hazardous waste manifest documentation is included in Appendix IV.

S&ME collected four confirmation soil samples from the terminus of the excavation at depths ranging from 5.0 to 8.0 feet bgs following removal of the impacted soils. The samples were analyzed for EPH at Pace Analytical Laboratory in Mt. Juliet, Tennessee. Laboratory analytical results confirmed that EPH concentrations were below detection limits at each sampled location. The laboratory report is included in Appendix IV.

4.0 Conclusions

S&ME understands the City envisions mixed-used redevelopment of the subject property. The information documented herein and summarized below should be provided to developers interested in the site.



4.1 Surface and Subsurface Soil

A total of 131 tons of petroleum hydrocarbon-impacted soil on the eastern portion of the site was excavated and transported to Domermuth Environmental Services for interim bioremediation prior to disposing in a Class I Subtitle D landfill. The remaining surface and subsurface soil contain limited detections of dieldrin and metals such as arsenic, aluminum, iron, cobalt, lead, manganese, vanadium, and thallium at concentrations above their respective EPA RSL_{res} and RSL_{ind}. A draft BVA has been prepared to address these issues through applicable land-use restrictions and to provide liability protection for the future site owners.

As discussed previously, although some areas of elevated metals were also detected in the soil, they appeared to be generally isolated and ranged from surficial soils to deeper (greater than eight feet bgs) soil horizons. The future use and layout of the site has not yet been determined but would likely have a large building/parking area footprint. This type of redevelopment would limit residential exposure to subsurface soils simply based on the limited landscaped areas envisioned in this urban setting. Rather than spending cleanup funds to remove metals that may not pose a risk to human health or environment in the final redevelopment scenario, S&ME recommended addressing this issue through applicable land-use restrictions and the BVA. The BVA addresses considerations for construction worker contact with impacted soils during redevelopment, and steps to limit site occupant contact with impacted soil after redevelopment. The BVA also includes a provision for placement of buildings, parking areas, at least two feet of clean soil, or another type of TDEC-approved contact barrier over the existing ground surface as warranted to limit exposure to metals, if the redevelopment includes residential use.

4.2 Asbestos-containing Materials

Under this Brownfield Cleanup Grant 258 cubic yards of ACM and LBP-impacted demolition debris was transported to Chestnut Ridge Landfill for disposal. Approximately 500 cubic yards of demolition debris remain in piles on the subject property, with an additional 200 cubic yards ramped along Jackson Avenue presumably for structural support of the road. The debris is from the demolition of the former warehouse structures after fires in 2007 and 2014. Since the ACM cannot feasibly be segregated from these debris piles, they would be considered asbestos waste, and should be handled accordingly. Removal of the debris currently ramped along Jackson Avenue is not recommended until site redevelopment is planned.

4.3 Vapor Intrusion

As documented herein and in the S&ME Phase II ESA, the VISL screening under a residential scenario identified a VI carcinogenic risk in excess of the TCR for benzene, 1,3-butadiene, benzyl chloride, carbon tetrachloride, chloroform, 1,2 dichloroethane and naphthalene. A VI hazard was identified in excess of the THQ of 0.1 for 1,3-butadiene, benzyl chloride and naphthalene. The results of VISL screening under a commercial scenario identified a VI carcinogenic risk in excess of the TCR for benzene, 1,3-butadiene and naphthalene. A VI Hazard was not identified in the commercial scenario.

As site redevelopment plans are considered, vapor intrusion mitigation may be warranted. There is insufficient information regarding future use to design and install a vapor mitigation system at this time, nor is it possible to provide a cost for vapor intrusion mitigation in the absence of site-specific design considerations.

The draft BVA addresses the vapor intrusion potential, with a recommendation for design and installation of a vapor mitigation system, if warranted based on redevelopment plans.

**Final Report of Brownfield Cleanup Grant Implementation
Former McClung Warehouses Property**

Knoxville, Tennessee

EPA Cooperative Agreement No. BF-00D47816-0

S&ME Project No. 4143-17-017



5.0 References

1. S&ME, *Phase I Environmental Site Assessment, Proposed Jackson Avenue Greenway Property (1434-09-049)*, February 23, 2009
2. S&ME, *Report of Environmental Services, Proposed Jackson Avenue Greenway Property (1434-09-049)*, March 12, 2009
3. S&ME, *Report of Environmental Services, Proposed Jackson Avenue Greenway Property (1434-09-049A)*, April 10, 2009
4. S&ME, *Quality Assurance Project Plan for Sanitary Laundry and McClung Warehouses Cleanup Grants*, Knoxville, Tennessee, August 28, 2017.
5. S&ME, *Site Specific Quality Assurance Project Plan Former McClung Warehouses Property*, Knoxville, Tennessee, February 6, 2018.
6. S&ME, *Phase II Environmental Site Assessment, Former McClung Warehouses Property, (4143-17-017, EPA Brownfields Cooperative Agreement No. BF-00D47816-0)*, September 14, 2018.
7. S&ME, *Analysis of Brownfield Cleanup Alternatives, Former McClung Warehouses Property, (4143-17-017, EPA Brownfields Cooperative Agreement No. BF-00D47816-0)*, September 14, 2018.
8. TDEC, *Division of Geology Hazardous Trace Elements in Tennessee Soils and Other Regolith, Report of Investigations No. 49, 2001.*
9. Tetra Tech, *Final Phase I Environmental Site Assessment Report, McClung Warehouses (TT-06-006)*, August 3, 2015.
10. Tetra Tech, *Final Phase II Environmental Site Assessment Report, McClung Warehouses (TT-06-006)*, August 3, 2015.
11. Tetra Tech, *Final Analysis of Brownfields Cleanup Alternatives, McClung Warehouses (TT-06-006)*, September 1, 2015.
12. Tetra Tech, *Revised Final Analysis of Brownfields Cleanup Alternatives, McClung Warehouses (TT-06-006)*, September 23, 2015.
13. Tetra Tech, *Revised Final Analysis of Brownfields Cleanup Alternatives, McClung Warehouses (TT-06-006)*, November 16, 2015.
14. USEPA, *Regional Screening Level (RSL) Summary Table (TR=1.0E-06, HQ=0.1)*, May 2018.

Appendices

Appendix I – Figures

Figure 1: USGS Topographic Site Vicinity Map

Figure 2: Passive Soil Vapor Collector Location Map

Figure 3: Soil Boring Location Map

Figure 4: Soil Gas Benzene Results and Groundwater Sample Location Map

Figure 5: Debris Volume Calculations

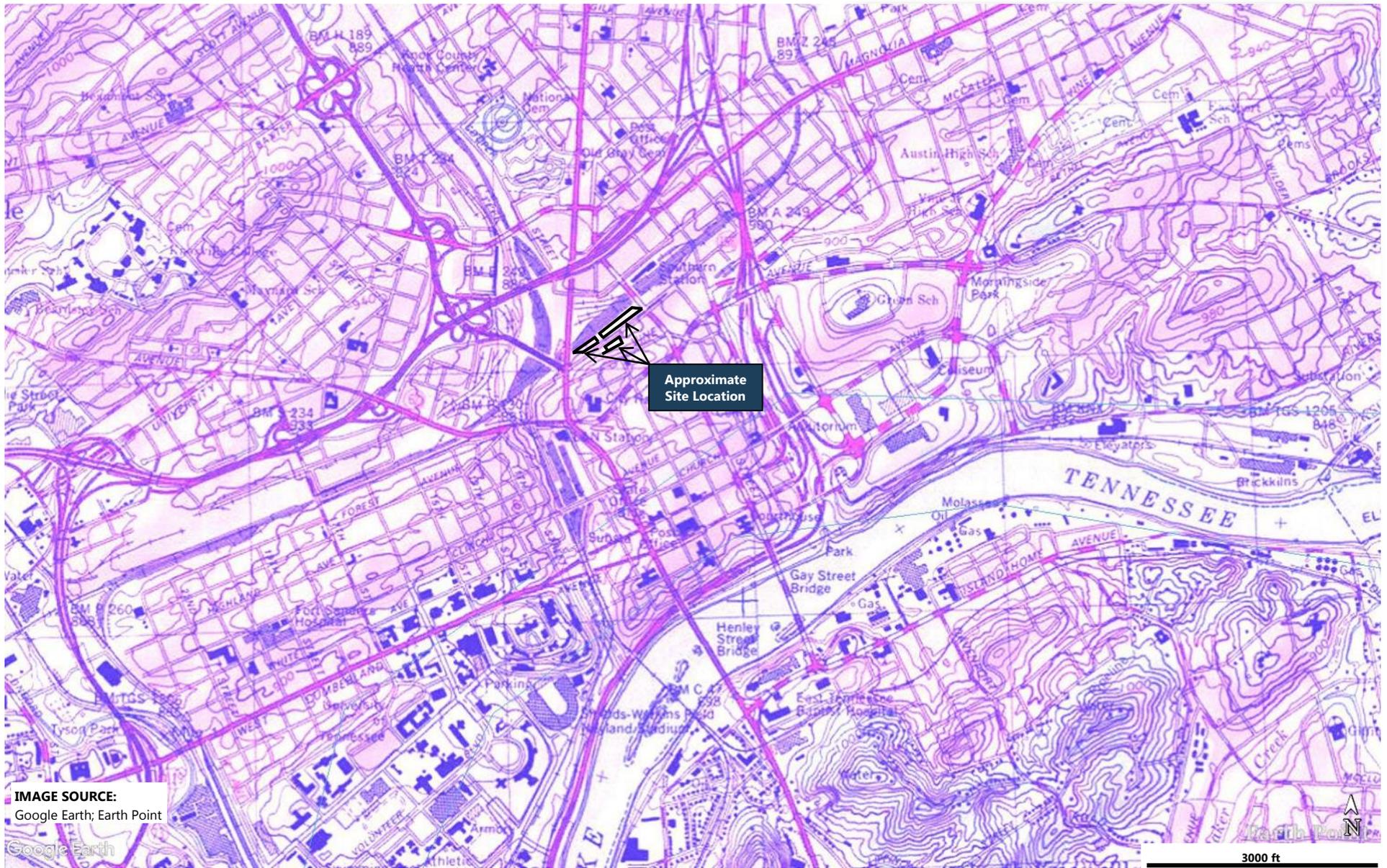


IMAGE SOURCE:
Google Earth; Earth Point



**USGS TOPOGRAPHIC SITE VICINITY MAP
KNOXVILLE, TN QUAD**

MCCLEUNG WAREHOUSES – EPA BROWNFIELD CLEANUP GRANT
JACKSON AVENUE
KNOXVILLE, KNOX COUNTY, TENNESSEE

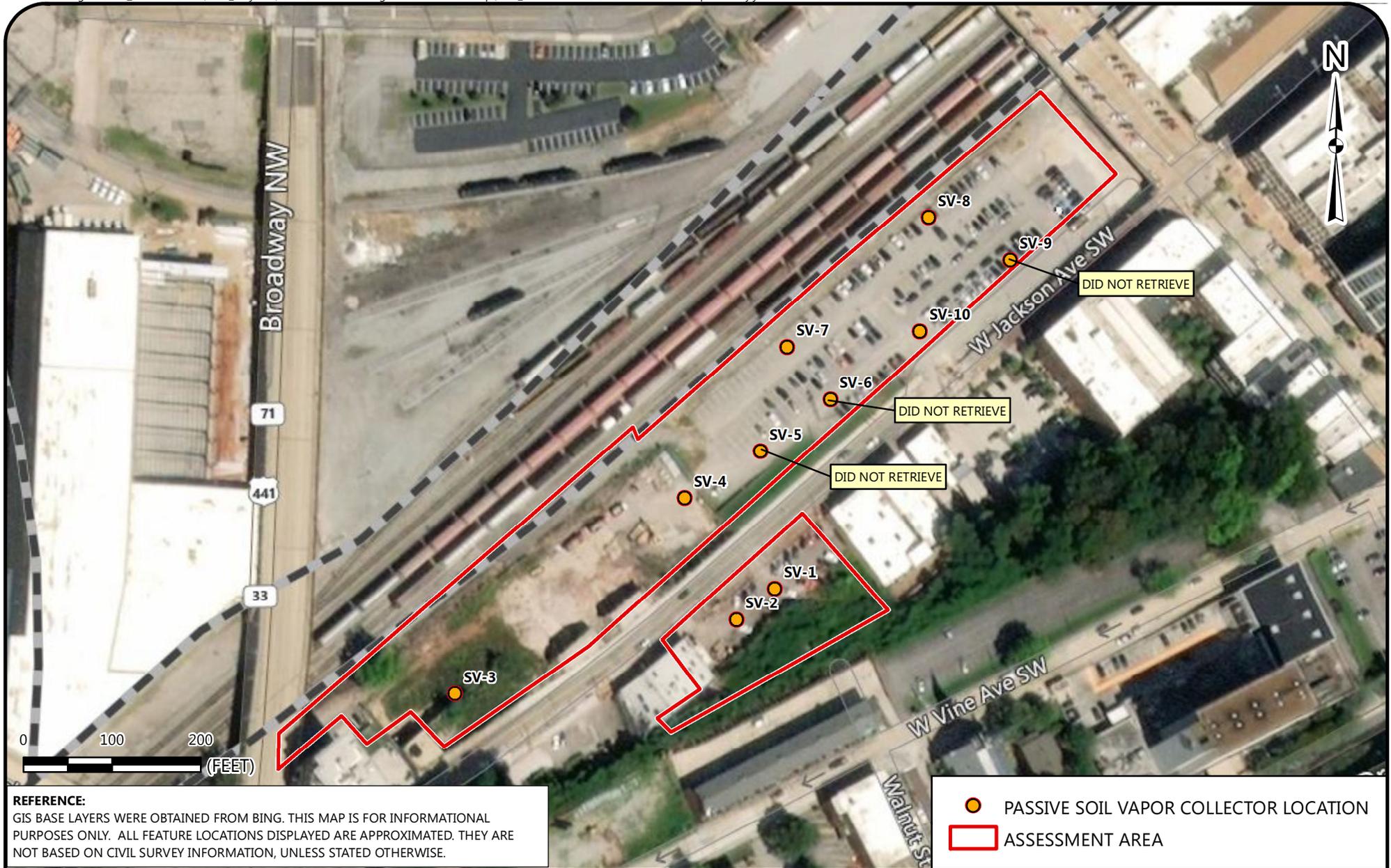
SCALE:
AS SHOWN

DATE:
9-27-17

PROJECT NUMBER
4143-17-017

FIGURE NO.

1



REFERENCE:
 GIS BASE LAYERS WERE OBTAINED FROM BING. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

- PASSIVE SOIL VAPOR COLLECTOR LOCATION
- ASSESSMENT AREA



PASSIVE SOIL VAPOR COLLECTOR MAP

FORMER MCCLUNG WAREHOUSES
 KNOXVILLE, TENNESSEE

SCALE:
 1" = 150'
 DATE:
 8-28-18
 PROJECT NUMBER:
 4143-17-017

FIGURE NO.

2



SOIL BORING LOCATION MAP

FORMER MCCLUNG WAREHOUSES
 KNOXVILLE, TENNESSEE

SCALE:
 1" = 150'

DATE:
 8-24-18

PROJECT NUMBER:
 4143-17-017

FIGURE NO.

3





REFERENCE:
GIS BASE LAYERS WERE OBTAINED FROM BING. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.



SOIL GAS BENZENE RESULTS AND GROUNDWATER SAMPLE LOCATION MAP

FORMER MCCLUNG WAREHOUSES SITE
KNOXVILLE, TENNESSEE

SCALE:
1" = 150'
DATE:
8-21-18
PROJECT NUMBER:
4143-17-017

FIGURE NO.
4



Debris Pile Designations

- 1
- 1R
- 2
- 2R
- 3
- 3R



REFERENCE:
 ALL DEBRIS VOLUMES GIVEN IN CUBIC YARDS.
 GIS BASE LAYERS WERE OBTAINED FROM GOOGLE. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.



DEBRIS VOLUME CALCULATIONS

MCCLUNG WAREHOUSES DEBRIS PILES
 JACKSON AVENUE
 KNOXVILLE, TENNESSEE

SCALE:
 NTS
 DATE:
 4-12-18
 PROJECT NUMBER:
 4143-17-017

FIGURE NO.
5

Appendix II – Draft Brownfield Voluntary Agreement

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF REMEDIATION
BROWNFIELD VOLUNTARY AGREEMENT

This Brownfield Voluntary Agreement addresses the Site located at 401, 420, 501, 505, 512, 517, 519, 523 and 525 W. Jackson Avenue, Knoxville, Tennessee. The Site has been assigned site number _____ and is known as the Former McClung Warehouses Site.

I. INTRODUCTION

This Brownfield Voluntary Agreement (hereinafter referred to as the “Agreement”) is made and entered into as of the last date of execution shown herein below by and between [among] the Tennessee Department of Environment and Conservation (hereinafter referred to as “TDEC” or the “Department”) and _____, a _____ **[e.g., organized under and existing pursuant to the laws of the State of Tennessee]** (hereinafter [collectively] “Voluntary Party”) for the purpose of addressing **an approximately five acre site** referenced above (hereinafter “Site”), which has the real or perceived threat of the presence on the Site of hazardous substances, solid waste, or any other pollutant. The administrative record for the Site addressed in this Agreement is maintained by the Department’s Division of Remediation. The Site has been assigned site number _____ and is known as the Former McClung Warehouses Site.

David W. Salyers, P.E., is the duly appointed Commissioner of the Department. Chris Thompson, Director of the Department’s Division of Remediation, has been delegated the authority to enter into this Agreement.

Pursuant to Tennessee Code Annotated § 68-212-224, the Commissioner is authorized to enter into an Agreement with a party who is willing and able to conduct an investigation and/or

remediation of a hazardous substance site or Brownfield Project and who did not generate, transport or release the contamination that is to be addressed at the Site.

The Department and the Voluntary Party agree to undertake all actions required by this Agreement. The purpose of this Agreement is to set forth a scope and schedule of activities at the above-referenced Site and respond to the actual, threatened, or perceived release of hazardous substances at the Site. In addition, this Agreement is intended to settle and resolve the potential liability of the Voluntary Party for the real or perceived threat of the presence of hazardous substances, solid waste, or any other pollutant at the Site which might otherwise result if and when Voluntary Party becomes the owner and/or operator of the Property.

II. REQUIREMENTS

A. **SITE LOCATION**

The Site is located on nine parcels containing approximately five acres, and formerly located at 401, 420, 501, 505, 512, 517, 519, 523 and 525 W. Jackson Avenue in Knoxville, Tennessee. In addition, the property includes a 30-foot-wide public alley right-of-way (ROW) located behind the former parcels at 501, 505, 517, 519, and 523 W. Jackson Avenue. The property center is approximately located at 35.9677° N latitude and -83.9229° W longitude. The properties are identified on the Knox County Tax Assessor's Tax Map as Tax Map 94E, Group J, Parcels 1, 1.01, 2, 4, 5.02, 5.03 and 11.01, as well as the public alley ROW. A legal description of the Site and a survey map showing the Site is attached as Exhibit A, which is incorporated herein by reference.

B. **ELIGIBILITY**

As required by Tennessee Code Annotated § 68-212-224(a)(4), as of the effective date of this Agreement, the Department has determined that the Site is not listed or been proposed for listing on the federal National Priorities List by the United States Environmental Protection Agency (“EPA”).

The Voluntary Party was accepted into the Brownfield Projects Voluntary Cleanup Oversight and Assistance Program on _____. By entering into this Agreement, the Voluntary Party certifies to the best of the Voluntary Party's knowledge that pursuant to Tennessee Code Annotated § 68-212-224(a)(1) the Voluntary Party did not generate, transport, or release the contamination that is to be addressed at the Site. As required by Tennessee Code Annotated § 68-212-224(a)(2), a summary description of all known existing environmental investigations, studies, reports, or documents concerning the Site's environmental condition has been submitted to the Department by the Voluntary Party. A copy of the Summary is attached hereto as Exhibit B.

C. FINANCIAL REQUIREMENTS

Tennessee Code Annotated § 68-212-224 requires consideration of a fee to enroll in the Voluntary Cleanup Oversight and Assistance Program. The Commissioner has set the following schedule of fees that may apply to all sites working in cooperation with the Department to recover the expense of oversight. These fees are in place of hourly time charges and normal travel costs during the first 150 hours of oversight for the project.

Program Entry	\$ 750
Site Characterization	\$ 2,000
Remediation	\$ 2,500
Risk Assessment	\$ 2,000
Vapor Intrusion Evaluation	\$ 2,000
Voluntary Agreement/Consent Order	\$ 3,000
Land Use Restrictions	\$ 500
Annual O&M Review	\$ 500

In addition to the fees identified previously, an annual longevity fee of \$3,000 will be charged to the Voluntary Party on the anniversary of the date the site was accepted into the Voluntary Program until a letter requiring no further action has been issued or this Agreement has been terminated.

Upon reaching 150 hours of oversight, the Site will be charged the current hourly rate (e.g. seventy-five dollars (\$75.00) per hour for FY 2018-2019) per hour of oversight in addition to the fee

schedule listed above. This amount includes the current hourly rate and pro rata portion benefits for the Department's employees actively employed in oversight of work under this Agreement, including preparation for and attendance at meetings, mileage, any costs billed by State contractor(s) who are actively performing oversight, and the current State overhead rate. Additionally, any out-of-pocket expense, mileage, lab expense or other unusual costs to the Department shall be billed to and paid by the Voluntary Party. The applicable Voluntary Party shall pay each bill referenced in this Section C within sixty (60) days of receipt by such Voluntary Party.

Applicable fees and financial requirements must be timely paid by the applicable Voluntary Party to remain in the Voluntary Cleanup Oversight and Assistance Program and to receive a letter of no further action under Section G of this Agreement. For the purpose of this Agreement, timely payment means the Department receiving payment from the Voluntary Party within 60 days of the first billing of a financial requirement or according to a payment plan agreed in writing between Voluntary Party and the Department.

Notwithstanding the foregoing, any and all cost recovery assessments arising from actions to comply with a recorded Notice of Land Use Restrictions imposed pursuant to and recorded on the Site under the terms of this Agreement, shall be due from and payable only from the particular Voluntary Party or Successor Party submitting the report to be reviewed and/or requesting the related oversight action by TDEC that gives rise to the associated fees.

D. IDENTIFICATION AND DOCUMENTATION OF MATTERS ADDRESSED

Real or perceived hazardous substances, solid wastes or other pollutants are determined to be present on this Site to an extent that may or may not have yet been fully characterized. Pursuant to Tennessee Code Annotated § 68-212-224(a)(2) the Voluntary Party has submitted to the Commissioner a summary description of all known existing environmental investigations, studies, reports or documents concerning the site's environmental condition. Based on the information submitted to the Department by or on behalf of the Voluntary Party, and the Department's own review of this information, the Parties hereto agree that the environmental conditions identified in the reports referred to below and any reports generated pursuant to this Agreement, or in the

Summary, including the environmental conditions described below are to be addressed under this Agreement (collectively referred to as the "*Matters Addressed in this Agreement*"):

SEE EXHIBIT B

The Voluntary Party is proposing to redevelop this Site as a mixed-use complex consisting of commercial and residential properties. Pursuant to this Agreement, Voluntary Party is not being required to fully remediate the pre-existing environmental conditions noted above, but each is required to take certain actions specified in this Agreement to ensure that the identified environmental impacts and conditions do not pose a threat to human health or the environment during and after completion of the redevelopment.

The Voluntary Party agrees that criteria required in Tennessee Code Annotated § 68-212-206(d) shall be used in determining containment and cleanup actions, including monitoring and maintenance options to be followed under this Agreement.

E. AGREED LIABILITY RELIEF

As the current owner or operator, or upon becoming an owner or operator of the Site, the Voluntary Party may occupy the status of a “liable party” pursuant to the definition of that term contained in Tennessee Code Annotated § 68-212-202(4). The Commissioner is authorized by Tennessee Code Annotated § 68-212-224 to determine an apportionment of pursuant to factors in Tennessee Code Annotated § 68-212-207 as well as other equitable factors in an Agreement. Further, Tennessee Code Annotated § 68-212-224(a)(5) provides that the Commissioner is authorized to limit the liability of a participant in a voluntary agreement or consent order entered into pursuant to Tennessee Code Annotated § 68-212-224. Such voluntary agreement or consent order may limit the liability of such participant to the obligations set forth therein and exempt the participant from any further liability under any statute administered by the Department for investigation, remediation, monitoring, and/or maintenance of contamination identified and addressed in the voluntary agreement or consent order. The Commissioner may extend this liability protection to successors in interest or in title to the participant, contractors conducting response actions at the Site, developers, future owners, tenants, and lenders, fiduciaries, or insurers (collectively

"Successor Parties"). The Commissioner agrees that the Voluntary Party's implementation of the actions agreed upon in Section G will constitute satisfaction of the apportioned liability of the Voluntary Party under all environmental statutes administered by the Department for the *"Matters Addressed in this Agreement"*.

The Voluntary Party and any of the Successor Parties, however, remain potentially responsible for any release of hazardous substances or other pollutants that occurs at the Site after the effective date of this Agreement while it owns or operates the Site or for environmental conditions other than *Matters Addressed in this Agreement*. [Prospective Buyer/Voluntary Party has no current interest in the Site. However, it is anticipated that it may acquire title to the Site pursuant to an agreement or option to purchase the Site. While Prospective Buyer/Voluntary Party is a party to this Agreement, any obligation, responsibility, duty or benefit accruing to Prospective Buyer/Voluntary Party as a party to this Agreement is contingent upon its acquisition of title to all or any part of the Site or its status as a Successor Party.]

In accordance with the above referenced authority, the Department agrees that other than with respect to the obligations set forth in this Agreement, including without limitation the implementation of the actions agreed upon in Section G and H to the extent applicable to each Voluntary Party and Successor Parties shall bear no liability to the State of Tennessee under any statute administered by the Department for investigation, remediation, monitoring, treatment, and/or maintenance of environmental conditions identified in and addressed in Section D of this Agreement; provided, however, that to the extent that the Voluntary Party or Successor Parties has or maintains an interest in the Site, or possesses and/or controls all or a portion of the Site, its liability protections herein are contingent upon its continued adherence and enforcement of any land use restrictions imposed pursuant to or as a result of this Agreement. Nothing in this Agreement shall be construed as limiting the liability or potential liability of the Voluntary Party for environmental conditions occurring after the effective date of this Agreement or for environmental conditions not identified and addressed in this Agreement. This liability protection and all other benefits conferred by this Agreement are extended to all future "Successor Parties" conditioned upon performance of the obligations contained in this Agreement and compliance with the Land Use Restrictions (hereinafter defined); provided, that such liability protection to other persons does not apply to the extent that such liability arose prior to the effective date of this

Agreement. For the avoidance of doubt, a breach of this Agreement by a successor-in-interest or a successor-in-title will not alter the liability protection provided to a predecessor-in-interest or in-title.

F. ADMINISTRATIVE SETTLEMENT; THIRD PARTY LIABILITY

Tennessee Code Annotated § 68-212-224(a)(6), subject to the notice requirements provided therein, provides that this Agreement also constitutes an administrative settlement for purposes of Section 113(f) of CERCLA, 42 U.S.C. § 9613(f), for inactive hazardous substance sites. Voluntary Party and Successor Parties (as hereinafter defined) have, as of the effective date of this Agreement, resolved their liability to the State of Tennessee for *Matters Addressed in this Agreement*.

The Voluntary Party shall not be liable to third parties for contribution regarding *Matters Addressed in this Agreement*; provided that, the Voluntary Party gave the third party actual or constructive notice of this Agreement, and the third party was given an actual or constructive opportunity to comment upon this Agreement. The Voluntary Party has demonstrated to the Department that constructive notice was accomplished by publishing a summary of this Agreement in the Knoxville News Sentinel at least thirty (30) days prior to the Effective Date of this Agreement.

Nothing in this Agreement shall impair the rights of third parties with respect to tort liability claims for damage to person or property arising from the contamination addressed by this Agreement.

G. AGREED ACTIONS TO BE TAKEN

The Voluntary Party agrees to conduct the following activities in order to address remedial actions recommended, including any monitoring and/or maintenance, pursuant to this Agreement. The Voluntary Party shall conduct all activities required by this Agreement in accordance with all applicable work plans, as approved by TDEC, all applicable laws and regulations, and any appropriate guidance documents. The Department has determined that the actions in this Agreement constitute “reasonable steps” with respect to *Matters Addressed in This Agreement*.

The Voluntary Party agrees as specified below to conduct the following activities:

1. Voluntary Party shall record a Notice of Land Use Restrictions)“NLUR”(attached hereto as Exhibit C [NOTE: TO BE PREPARED WHEN PLANNED USE OF THE SITE IS DETERMINED] within thirty (30) days of taking title to the Site, or the effective date of this Agreement, whichever occurs later. Upon recording, a copy of the NLUR shall be mailed to all local governments having jurisdiction over any part of the subject property. Additionally, a copy of the recorded NLUR shall be provided to the Department. Any party receiving liability protection under this Agreement that seeks approval for restricted uses or seeks to cancel or make a restriction less stringent shall be responsible for any costs incurred by the Department in the review and oversight of work associated with the restriction modification.
2. Voluntary Party agrees to send notification of this Agreement by certified mail to all local governments having jurisdiction over any part of the subject property and to all owners of adjoining properties. Voluntary Party shall provide adequate documentation to the Department to demonstrate that public notice has been accomplished.
3. Voluntary Party agrees to develop and implement a Department-approved Site Management Plan (SMP) for impacted media to be used during redevelopment activities and whenever onsite lead-based paint or asbestos abatement activities or subsurface activities are proposed. The SMP shall include, but not be limited to, construction worker safety when handling potentially impacted materials, characterization of excavated materials, handling procedures to ensure that any off-site disposal of impacted media meets State and Federal requirements, and if needed, installation of a barrier, cover system or engineered cap to limit site occupant contact with impacted soil after redevelopment. Areas with elevated metals concentrations as detected during assessment activities can be addressed through placement of buildings, parking areas, at least two feet of clean soil, or another type of TDEC-approved contact

- barrier over the existing ground surface as warranted to limit exposure to metals, if the redevelopment includes residential use.
4. New structures proposed on the site will be evaluated using existing data (or updated data, if warranted) to determine if an engineered vapor mitigation system is warranted to prevent subsurface vapor phase contamination from migrating into the structure at concentrations greater than applicable screening levels. If a vapor mitigation system is warranted, the plans will be developed by a TDEC-approved remediation contractor and the plans will be provided to the Department for review prior to construction. After installation, the TDEC-approved contractor shall submit a written report to the Department documenting how the system was installed and documenting any deviations from the Department-approved plans, as built drawings, and an Operation and Maintenance Plan identifying continued care and operation and maintenance activities to be conducted to ensure the venting system is effective in preventing subsurface vapor phase contamination from migrating into the structure at concentrations greater than applicable screening levels.
 5. Voluntary Party agrees to implement recommendations set forth in the SMP, and the Voluntary Party shall submit a written report documenting implementation to the Department within 90 days of completion of such work. The report shall include, but not be limited to as-built drawings, details of any capping, and waste manifests for offsite disposal. The report shall also identify any areas where soil remains at the site that must be managed in the future to protect human health, safety, or the environment and requirements for future soil or vapor management, and maintenance of any covers or caps.
 6. Voluntary Party shall be responsible for continued care, operation, and maintenance of the remedy. Voluntary Party shall notify TDEC Division of Remediation in writing if the integrity of the remedy is compromised and take any steps necessary to eliminate the threat or potential threat to public health, safety, or the environment posed by the hazardous substance(s).

Upon completion of all tasks set forth in this Agreement [by each Voluntary Party that is responsible for such tasks], the Department shall issue to [each such] Voluntary Party a letter stating the requirements of this Agreement have been fulfilled and no further action is required of the Voluntary Party concerning contamination identified and addressed in this Agreement. Upon the request of a Voluntary Party from time to time, the Department shall issue an interim status letter identifying what specific obligations remain to achieve completion of the work under this Agreement. Issuance of a no further action letter shall not relieve the Voluntary Party receiving such letter of any responsibilities for operation and maintenance activities or continued adherence to and enforcement of land use restrictions, if any, pursuant to Tennessee Code Annotated § 68-212-225. The Department reserves the right to require a Voluntary Party to take additional action for contamination caused by such Voluntary Party occurring after the date of this Agreement or for environmental conditions other than *Matters Addressed in this Agreement*.

H. ADDITIONAL REQUIREMENTS

1. The Voluntary Party may request a time extension for any deadline included in this Agreement prior to the deadline. The time extension may be granted through mutual consent for good cause shown.
2. The Voluntary Party and Successor Parties agree not to disturb, move, or remove any areas of hazardous substances, solid waste, or other pollutant(s) that are subject to liability protection under this Agreement without written approval by the Department unless the activities are being conducted under the terms and conditions of this Agreement or necessitated by the normal day-to-day activities of any on-going business.
7. Pursuant to Tennessee Code Annotated § 68-212-222, whether or not permits are required for onsite cleanup activities related to *Matters Addressed in this Agreement*, such activities shall meet the standards that would apply if such permits were required.
8. The Department acknowledges that the Voluntary Party itself may conduct redevelopment activities at the Site in addition to preparing the Site for potential

development for Successor Parties, and the Voluntary Party enters into this Agreement in order to facilitate Voluntary Party's potential development of the Site or Successor Parties' potential development of the Site as herein agreed by Voluntary Party. The Department further acknowledges that Voluntary Party and more than one Successor Party may develop different portions of the Site. Accordingly, Voluntary Party and one or more Successor Parties may assume the obligations and liability protections provided under this Agreement upon such Successor Parties' acquisition of property interests in the Site. The Voluntary Party or any Successor Party that transfers its interest at the Site shall be relieved of any further obligations under this Agreement.

I. SITE ACCESS

During the effective period of this Agreement, and until the Department's issuance of a No Further Action Letter upon the Voluntary Party's completion of all activities under this Agreement, the Voluntary Party, and any Successor Party shall, to the extent it is in control of the Site, provide the Department and its representatives or designees access during normal business hours to the Site to the extent that the Voluntary Party has the power and authority to grant such access. Nothing herein shall limit or otherwise affect the Department's right of entry, pursuant to any applicable statute, regulation, or permit. The Department and its representative shall comply with all reasonable health and safety plans published by the Voluntary Party, Successor Party or their contractors and used by Site personnel for the purpose of protecting life and property.

J. SUBMISSION OF INFORMATION, REPORTS, OR STUDIES

The Department may deny submission or approval of any reports or studies performed by or on behalf of the Voluntary Party and submitted under the terms of this Agreement that do not contain the following statement:

"I certify under penalty of law, including but not limited to penalties for perjury, that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information contained in this document and on any attachment is true, accurate and complete to the best of my knowledge, information, and belief. I am aware that there are significant penalties for submitting false information, including the

possibility of fine and imprisonment for intentional violation. As specified in Tennessee Code Annotated § 39-16-702(a)(4), this declaration is made under penalty of perjury.”

K. RESERVATION OF RIGHTS

1. This Agreement shall not be construed as waiving any right or authority available to the Commissioner to assess responsible parties other than the Voluntary Party or Successor Parties for liability for civil penalties or damages incurred by the State, including any natural resource damage claims which the Department or the State of Tennessee may have under Section 107 of the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”) (or any other statute, rule, regulation, or common law.

2. Nothing in this Agreement shall be construed as limiting or waiving any right or authority available to the Commissioner to require a liable party to address contamination occurring after the effective date of this Agreement or for environmental conditions other than *Matters Addressed in this Agreement*.

3. Nothing in this Agreement shall be interpreted as limiting the Voluntary Party’s right to preserve the confidentiality of attorney work product or client-attorney communication. Tennessee Code Annotated § 68-212-202 et seq. contains no provisions for confidentiality or proprietary information. Therefore, records, reports, test results, or other information submitted to the Department under this Agreement shall be subject to public review. Any and all records, reports, test results or other information relating to a hazardous substance site or the possible hazardous substance at the Site submitted under this Agreement may be used by the Department for all purposes set forth in Tennessee Code Annotated § 68-212-201 et seq.

4. Any Voluntary Party or any of their Successor Parties may terminate this Agreement as it pertains to such terminating party at any time upon written notice to the Department during the time period that such party owns the Site and/or conducts operations at the Site. Upon such termination, the terminating party shall have no further obligations hereunder other than payment of outstanding oversight costs, if any, accrued to the date of notice of termination and adherence to any notice of land use controls filed under Tennessee Code

Annotated § 68-212-225; provided, that all parties to this Agreement shall have and retain all authority, rights, and defenses as if this Agreement had never existed.

5. The Department may terminate this Agreement by written notice to the Voluntary Party in the event that the Department receives timely comments from third-party contribution claim holders pursuant to the notice sent under Section F of this Agreement, if any, and such comments disclose facts or considerations that indicate that the allocation of liability of the Voluntary Party under this Agreement is inappropriate, improper, or inadequate; provided, however, absent fraud or intentional misconduct, that in such event the Voluntary Party may elect to waive the protections set forth in Section F hereunder and in such event this Agreement shall not be terminated, but rather the remainder of the terms and conditions of this Agreement shall continue to be in full force and effect and without termination. The Department's notice of termination must be made within thirty (30) days of the end of the 30-day notice period required by Section F. The Voluntary Party's waiver notice must be made within fifteen (15) days after receipt of the Department's termination notice.

6. In the event a Voluntary Party or Successor Party does not fulfill all the requirements established in this Agreement, the Commissioner may seek to enforce the Agreement through any legal remedy.

7. If any provision of this Agreement is held to be invalid or unenforceable by a court of competent jurisdiction, then the remaining provisions of this Agreement will remain in full force and effect.

8. Nothing in this Agreement shall be interpreted as limiting the liability for the improper management and/or disposal of contaminated material removed from the Site.

The individuals signing below on behalf of each Voluntary Party represents that they are duly authorized agents, capable of entering into a binding Agreement on behalf of the Voluntary Party. By entering into this Agreement, [these individuals certify][this individual certifies] that the Voluntary Party did not generate or did not cause to generate, transport, or release contamination that is to be addressed at this Site.

The Effective Date of this Agreement is the last date of execution shown below.

VOLUNTARY PARTY

STATE OF TENNESSEE
DEPARTMENT OF
ENVIRONMENT AND
CONSERVATION

By: _____
(Authorized Signatory)

By: _____
Chris Thompson
Director, Division of Remediation

(Print Signatory's Name & Title)

(Print Director's Name)

Date: _____

Date: _____

(Address)

Approved as to form and legality:
TDEC Office of General Counsel Attorney

(City, State, Zip Code)

(Print Attorney's Name)

EXHIBIT A
TO BROWNFIELD AGREEMENT
SITE DESCRIPTION

DRAFT

EXHIBIT B

TO BROWNFIELD AGREEMENT

SUMMARY OF TECHNICAL REPORTS FOR THE SITE

The following summary is a listing of technical reports for environmental investigations and assessments for the Site that are in the possession of the Voluntary Party. This summary is intended to fulfill the statutory disclosure requirements associated with the Brownfield agreement application process. All reports listed below are on file at TDEC.

Phase I Environmental Site Assessment, Proposed Jackson Avenue Greenway Property, Knoxville, Tennessee, S&ME Project No. 1434-09-049, dated February 23, 2009.

Report of Environmental Services, Proposed Jackson Avenue Greenway, Knoxville, Tennessee, S&ME Project No. 1434-09-049, dated March 12, 2009.

Report of Environmental Services, Proposed Jackson Avenue Greenway, Knoxville, Tennessee, S&ME Project No. 1434-09-049A, dated April 10, 2009.

Final Phase I Environmental Site Assessment Report, McClung Warehouses, Knoxville, Knox County, Tennessee, EPA Contract No. EP-S4-14-03, Tetra Tech Technical Direction Document No. TT-06-006 dated August 3, 2015.

Final Phase II Environmental Site Assessment Report, McClung Warehouses, Knoxville, Knox County, Tennessee, EPA Contract No. EP-S4-14-03, Tetra Tech Technical Direction Document No. TT-06-006 dated August 3, 2015.

Final Analysis of Brownfields Cleanup Alternatives, McClung Warehouses, Knoxville, Knox County, Tennessee, EPA Contract No. EP-S4-14-03, Tetra Tech Technical Direction Document No. TT-06-006 dated September 1, 2015.

Revised Final Analysis of Brownfields Cleanup Alternatives, McClung Warehouses, Knoxville, Knox County, Tennessee, EPA Contract No. EP-S4-14-03, Tetra Tech Technical Direction Document No. TT-06-006 dated September 23, 2015.

Revised Final Analysis of Brownfields Cleanup Alternatives, McClung Warehouses, Knoxville, Knox County, Tennessee, EPA Contract No. EP-S4-14-03, Tetra Tech Technical Direction Document No. TT-06-006 dated November 16, 2015.

Report of Phase II Environmental Site Assessment, Former McClung Warehouses Property, Knoxville, Tennessee, S&ME Project No. 4143-17-017, EPA Brownfields Cooperative Agreement No. BF-00D47816-0 dated September 14, 2018.

Analysis of Brownfield Cleanup Alternatives, Former McClung Warehouses Property, Knoxville, Tennessee, S&ME Project No. 4143-17-017, EPA Brownfields Cooperative Agreement No. BF-00D47816-0 dated September 14, 2018.

Final Report of Brownfield Cleanup Grant Implementation, Former McClung Warehouses Property, Knoxville, Tennessee, S&ME Project No. 4143-17-017, EPA Brownfields Cooperative Agreement No. BF-00D47816-0 dated September 16, 2019.

Information contained in these reports is included by reference in this BVA. For convenience, the reports are summarized as follows:

The former McClung Warehouses property consists of nine former parcels containing approximately five acres, owned by the City of Knoxville (City), and formerly addressed at 401, 420, 501, 505, 512, 517, 519, 523 and 525 W. Jackson Avenue in Knoxville, Tennessee. In addition, the property includes a 30-foot-wide public alley right-of-way (ROW) located behind the former parcels at 501, 505, 517, 519, and 523 W. Jackson. The City envisions the property will be revitalized with mixed-use commercial and residential redevelopment.

Businesses that formerly operated at the McClung Warehouses site included an automobile garage, woodworking shop, freight shipping businesses, and railroad freight storage, shipment, and administrative operations. In 2007, a fire destroyed the warehouses located at 501, 505, and 509 W. Jackson Avenue. In 2014, a second fire destroyed the warehouses located at 517, 519, 523, and 525 W. Jackson Avenue.

Phase I Environmental Site Assessments (ESA) and Phase II ESAs performed by S&ME and Tetra-Tech in 2009 and 2015, respectively, identified recognized environmental conditions (RECs) related to previous industrial use of the site and identified impacted environmental media through sampling and laboratory analysis. The results of the previous soil sampling identified arsenic, lead, cobalt, manganese, and thallium at concentrations that exceeded the corresponding Environmental Protection Agency (EPA) Regional Screening Levels (RSLs). Passive soil vapor samples identified petroleum-related compounds such as total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylene, undecane, tridecane, and pentadecane, and naphthalene and 2-methylnaphthalene. Benzene concentrations exceeded the calculated Vapor Intrusion Screening Level (VISL) for carcinogenic risk under a residential scenario. Groundwater samples contained metals, but none of the concentrations exceeded EPA Maximum Contaminant Levels (MCLs). In addition, asbestos-containing material (ACM) was identified in the building remnants remaining onsite after the fire.

Using the 2016 Brownfields Cleanup Grant, S&ME performed additional assessment to supplement data from the previous site assessment activities, addressing data gaps and evaluating the need for vapor intrusion mitigation during site redevelopment. The assessment findings were used to update the Analysis of Brownfield Cleanup Alternatives (ABCA). Additional assessment included a subcontracted a ground-penetrating radar (GPR) survey, followed by the collection and laboratory analysis of passive and active soil gas samples, soil samples, groundwater samples, as well as asbestos and lead-based paint (LBP) samples from the site. The following analytes were identified at one or more sample location.

- 1.) Soil gas samples detected TPH, benzene, toluene, and polynuclear aromatic hydrocarbons (PAHs). Some of the analytes were detected in concentrations above their corresponding EPA May 2018 Industrial and/or Residential Regional Screening Levels (RSL_{ind} and RSL_{res} , respectively).

- 2.) Soil samples reported arsenic, aluminum, cobalt, iron, manganese, vanadium, the pesticide dieldrin, extractable petroleum hydrocarbons (EPH), volatile organic compounds (VOCs) and PAHs, specifically benzo(a)pyrene. Some concentrations exceeded the EPA May 2018 RSLind and RSLres. Soil samples on the eastern portion of the site reported EPH concentrations which exceeded the Tennessee Department of Environment and Conservation (TDEC) Division of Solid Waste Management (DSWM) threshold for disposal as a special waste (100 milligrams/kilogram (mg/kg)).

The EPA Vapor Intrusion Screening Level (VISL) calculator was used to evaluate vapor intrusion (VI) carcinogenic risk using the Target Carcinogenic Risk (TCR) of 1×10^{-6} . The results of VISL screening under a residential scenario identified a VI carcinogenic risk in excess of the TCR for benzene, 1,3-butadiene, benzyl chloride, carbon tetrachloride, chloroform, 1,2-dichloroethane and naphthalene. A VI hazard was identified in excess of the Target Hazard Quotient (THQ) of 0.1 for 1,3-butadiene, benzyl chloride and naphthalene. The results of VISL screening under a commercial scenario identified a VI carcinogenic risk in excess of the TCR for benzene, 1,3-butadiene and naphthalene. A VI Hazard was not identified in the commercial scenario. At the time this document was prepared, there is insufficient information regarding future use to design and install a vapor mitigation system in the absence of site-specific design considerations. As site redevelopment plans are considered, vapor intrusion mitigation may be warranted and should be evaluated.

Based upon the findings compiled from both the S&ME and Tetra Tech assessment activities an updated ABCA was prepared for review by the City, TDEC and EPA. The updated ABCA recommended cleanup alternatives for addressing surface and subsurface soil, asbestos-containing materials, and vapor intrusion concerns at the site, as well as preparing this Brownfield Voluntary Agreement (BVA) for the property to address environmental concerns during future redevelopment.

A total of 131 tons of petroleum hydrocarbon-impacted soil was excavated from the eastern portion of the site and transported to Domermuth Environmental Services for disposal. The excavation was then backfilled with rock, and the area was repaved by the City.

Demolition debris from the former warehouse structures is located on the site, resulting from the fires in 2007 and 2014. Both ACM and LBP were detected in the demolition debris, which was sampled to further characterize this material for future disposal purposes. Under the Brownfield Cleanup Grant 258 cubic yards of ACM and LBP impacted demolition debris was transported to Chestnut Ridge Landfill for disposal. Approximately 500 cubic yards of demolition debris containing ACM and LBP remain on the site, with an additional 200 cubic yards ramped along Jackson Avenue. Removal of the material ramped along Jackson Avenue is not recommended until site redevelopment is planned. Since the ACM cannot feasibly be segregated from these debris piles, they would be considered asbestos waste, and should be handled accordingly.

Although some areas of elevated metals were also detected in the soil, they were generally isolated and ranged from surficial to deeper (greater than eight feet bgs) occurrences. The future use and layout of the site is unknown but would likely have a large building/parking area footprint. This type of redevelopment would limit residential exposure to subsurface soils simply based on the limited landscaped areas envisioned in this urban setting. The remnant metals concentrations should be part of the site redevelopment considerations.

EXHIBIT C
TO BROWNFIELD AGREEMENT
NOTICE OF LAND USE RESTRICTIONS

DRAFT

Appendix III – ACM Disposal Documentation

ASBESTOS DEMOLITION/RENOVATION TEN DAY NOTICE FORM

This form is to be completed and filed with the Knox County Department of Air Quality Management a minimum of ten (10) days before the start of the asbestos abatement contract. Approval by this Department must be received before the work begins.

NOTE: INCOMPLETE NOTICES WILL NOT BE PROCESSED AND WILL BE REPORTED TO EPA AS DEFICIENT. PERMITTING FEE OF \$100 MUST BE INCLUDED WITH NOTICE.

DATE RECEIVED _____ DATE POSTMARKED _____ CHECK NUMBER _____

- I. TYPE OF NOTIFICATION (O=Original R=Revised C=Cancelled): O
- II. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)
 - OWNER NAME: City of Knoxville
 - Address: 400 Main Street
 - City: Knoxville State: TN Zip: 37902
 - Contact: Liz Porter Telephone: 865-970-0003 E-mail: _____
 - REMOVAL CONTRACTOR: NEO Corporation
 - Address: 289 Silkwood Drive
 - City: Canton State: NC Zip: 28716
 - Contact: Steve Steele Telephone: _____ E-mail: _____
 - OTHER OPERATOR: _____
 - Address: _____
 - City: _____ State: _____ Zip: _____
 - Contact: _____ Telephone: _____ E-mail: _____
- III. TYPE OF OPERATION (D=Demo O=Ordered Demo R=Renovation E=Emer. Renovation): R
- IV. IS ASBESTOS PRESENT? (Yes/No) Yes
- V. FACILITY DESCRIPTION (Include building name, number and floor or room number)
 - Building Name: Former McClung Warehouse
 - Address: 505 Jackson Avenue
 - City: Knoxville State: TN County: Knox
 - Site Location: Rubble Pile
 - Building Size: Removed # of Floors: _____ Age in Years: _____
 - Present Use: Rubble Pile Prior Use: _____
- VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL: PLEASE INCLUDE ANALYTICAL REPORT.
S&ME detected positive ACM mastic left on remaining rubble.
- VII. APPROXIMATE AMOUNT OF RACM TO BE REMOVED AND NONFRIABLE ASBESTOS MATERIAL THAT WILL NOT BE REMOVED. SPECIFY AMOUNT BELOW.

	RACM To Be Removed	Nonfriable Material To Be Removed CATEGORY I	Nonfriable Material To Be Removed CATEGORY II	Nonfriable Material Not To Be Removed CATEGORY I	Nonfriable Material Not To Be Removed CATEGORY II
Pipes-Linear Feet					
Pipes-Linear Meters					
Surface Area-Square Feet					
Surface Area-Square Meters					
Volume off Facility Component-Cu. Ft.		216 cubic yards			
Volume off Facility Component-Cu. M.					

- VIII. SCHEDULED DATES ASBESTOS REMOVAL (mm/dd/yy) Start: 06/17/19 Complete: 06/21/19
IX. SCHEDULED DATES DEMO/RENOVATION (mm/dd/yy) Start: _____ Complete: _____
X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:

NEO Corporation will remove the rubble in a non-friable manner.

- XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE: _____
NEO will utilize wet methods during all removal periods.

XI.

XII. WASTE TRANSPORTER

Name: First Place Finish

Address: 275 Midway Lane

City: Oak Ridge State: TN Zip: 37830

Contact: Laurel Patrick Telephone: 865-705-1300

WASTE DISPOSAL SITE

Name: Chestnut Ridge Landfill

Location: 140 Fleenor Mill Road

City: Heiskell State: TN Zip: 37754

Contact: _____ Telephone: 866-909-4458

- XIV. IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:

XV. FOR EMERGENCY RENOVATIONS

Date and Hour of Emergency (mm/dd/yy): _____

Description of the Sudden, Unexpected Event: _____

Explanation of how the event caused unsafe conditions or would cause equipment damage or an unreasonable financial burden: _____

- XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IF FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIALS BECOMES CRUMPLED, PULVERIZED, OR REDUCED TO POWDER

NEO will stop work and immediately notify Knox Co. Air Quality.

- XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUBPART M) WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required November 20, 1991)

Lauren Ameri
(Signature of Owner/Operator)

05/31/19

Date

- XVIII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT.

Lauren Ameri
(Signature of Owner/Operator)

05/31/19

Date

Revised 09/15



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS ASBESTOS MANIFEST	1. Generator's US EPA ID No. (if Applicable): N/A	2. Page 1 of	FPP Trucks 1647033		
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902 4. Generator's Phone 865.705.1300	Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902	A. Manifest Number Load # 1 <<number>>	B. State Generator's ID (if applicable):		
5. Transporter 1 Company Name and Address NEO Corp - First Place Finish Rockbridge Rd Oak Ridge TN 37824	6. US EPA ID # (if applicable)	C and E Only Applicable if Required by State: C. State Transporter's ID D. Transporter's Phone			
7. Transporter 2 Company Name and Address	8. US EPA ID # (if applicable)	E. State Transporter's ID F. Transporter's Phone			
9. Designated Disposal Facility Name and Site Address Chestnut Ridge Landfill 140 Fleenor Mill Road Heiskel, TN 37754	10. US EPA ID # (if applicable)	G. Disposal Facility ID H. Disposal Facility Phone 865.457.7810			
G E N E R A T O R	11. Description of Waste Materials a. RQ, NA2212, Asbestos, 9, PG III ERG 171 WM Profile # 106533TN	12. Containers No. Type	13. Total Quantity	14. Unit Wt./Vol. Yds	I. Misc. Comments
	b. WM Profile #				
	c. WM Profile #				
	d. WM Profile #				
	J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos	K. Disposal Location Cell _____ Level _____ Grid _____			
	15. Special Handling Instructions and Additional Information N36 06 51 W 84 02 12 E1 1284	Purchase Order # _____ EMERGENCY CONTACT / PHONE NO.: Laurel Patrick / 865.705.1300			
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.					
Printed Name Steve Steele	Signature "On behalf of" <i>Steve Steele</i>	Month 6	Day 17	Year 19	
T R A N S P O R T E R	17. Transporter 1 Acknowledgement of Receipt of Materials Printed Name Scott Trentham	Signature <i>Scott Trentham</i>	Month 6	Day 17	Year 19
18. Transporter 2 Acknowledgement of Receipt of Materials Printed Name _____	Signature _____	Month _____	Day _____	Year _____	
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.					
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.					
F A C I L I T Y	Printed Name TERESA STEVENSON	Signature <i>Teresa Stevenson</i>	Month 6	Day 17	Year 19



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647033

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE 9 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest 1
 Destination Grid N 656 W 223 EL 1273
 PO NEO DEMO KNOXVILLE JACKSON AVE *N 36 06 ST W 84 02 12 E/1284*
 Profile 106533TN (ASBESTOS-NON-FRIABLE)
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

	Time	Scale	Operator	Inbound	Gross	
In	06/17/2019 10:40:51	Inbound	TERESA			85420 1b
Out	06/17/2019 10:58:42	Outbound	TERESA		Tare	28920 1b
					Net	56500 1b
					Tons	28.25

Comments

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Asb Non Fri-Cubic	100	21.00	Yards				KNO

Keith Brady

Total Tax
 Total Ticket

403WM

Operator's Signature





NON-HAZARDOUS MANIFEST

1501

NON-HAZARDOUS ASBESTOS MANIFEST		1. Generator's US EPA ID No. (If Applicable): N/A		2. Page 1 of		PPF Trucks 1647035			
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902 4. Generator's Phone 865.705.1300		Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902		A. Manifest Number Load # 2 <<number>>		B. State Generator's ID (if applicable):			
5. Transporter 1 Company Name and Address NEO Corp - First Place Finish Rockbridge Rd Oak Ridge TN 37834		6. US EPA ID # (if applicable)		C and E Only Applicable if Required by State:					
7. Transporter 2 Company Name and Address		8. US EPA ID # (if applicable)		C. State Transporter's ID					
9. Designated Disposal Facility Name and Site Address Chestnut Ridge Landfill 140 Fleenor Mill Road Heiskel, TN 37754		10. US EPA ID # (if applicable)		D. Transporter's Phone					
				E. State Transporter's ID					
				F. Transporter's Phone					
				G. Disposal Facility ID					
				H. Disposal Facility Phone 865.457.7810					
GENERATOR	11. Description of Waste Materials		12. Containers		13. Total	14. Unit	i. Misc. Comments		
			No.	Type	Quantity	Wt./Vol.			
	a. RQ, NA2212, Asbestos, 9, PG III ERG 171 WM Profile # 106533TN					Yds			
	b.								
	WM Profile #								
	c.								
WM Profile #									
d.									
WM Profile #									
J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos		K. Disposal Location							
		Cell		Level					
		Grid							
15. Special Handling Instructions and Additional Information N36 06 51 W 84 02 12 E11284									
Purchase Order #		EMERGENCY CONTACT / PHONE NO.: Laurel Patrick / 865.705.1300							
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.									
Printed Name Steve Steele		Signature "On behalf of" Steve Steele				Month 6	Day 17	Year 19	
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials		Signature Scott Trentham				Month 6	Day 17	Year 19
	Printed Name Scott Trentham								
PORTER	18. Transporter 2 Acknowledgement of Receipt of Materials		Signature				Month	Day	Year
	Printed Name								
FACILITY	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.								
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.								
Printed Name TERESA STEVENSON		Signature Teresa Stevenson				Month 6	Day 17	Year 19	



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647035

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE7 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest 2
 Destination Grid N 656 W 223 EL 1273
 PO NEO DEMO KNOXVILLE JACKSON AVE
 Profile 106533TN (ASBESTOS-NON-FRIABLE) **N 360651 W 84 02 12 ELV 1284**
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

	Time	Scale	Operator	Inbound	Gross	
In	06/17/2019 10:46:55	Inbound	TERESA			87880 lb
Out	06/17/2019 11:05:35	Outbound	TERESA		Tare	28440 lb
					Net	59440 lb
					Tons	29.72

Comments

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 <i>ZF</i> Asb Non Fri-Cubic	100	23.00	Yards				KNO

Total Tax
 Total Ticket

403WM
 Driver's Signature





NON-HAZARDOUS MANIFEST

BE 4

NON-HAZARDOUS ASBESTOS MANIFEST		1. Generator's US EPA ID No. (if Applicable): N/A		2. Page 1 of		PPF Trucks 1647034								
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902			Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902		A. Manifest Number Load # 3 <<number>>		B. State Generator's ID (if applicable):							
4. Generator's Phone 865.705.1300			5. Transporter 1 Company Name and Address NEO Corp. First Floor Finish Rockbridge Rd Oak Ridge TN 37851		6. US EPA ID # (if applicable)		C and E Only Applicable if Required by State							
7. Transporter 2 Company Name and Address			8. US EPA ID # (if applicable)		C. State Transporter's ID		D. Transporter's Phone							
9. Designated Disposal Facility Name and Site Address Chestnut Ridge Landfill 140 Fleenor Mill Road Heiskel, TN 37754			10. US EPA ID # (if applicable)		E. State Transporter's ID		F. Transporter's Phone							
					G. Disposal Facility ID		H. Disposal Facility Phone 865.457.7810							
GENERATOR	11. Description of Waste Materials				12. Containers		13. Total Quantity		14. Unit Wt./Vol.		15. Misc. Comments			
	a RQ, NA2212, Asbestos, 9, PG III ERG 171				No		Type		Yds					
	WM Profile # 106533TN													
	b.													
	WM Profile #													
	c.													
WM Profile #														
d.														
WM Profile #														
J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos				K. Disposal Location										
				Cell				Level						
				Grid										
15. Special Handling instructions and Additional Information N 36 06 51 W 84 02 12 ELV 1284														
Purchase Order #				EMERGENCY CONTACT / PHONE NO:				Laurel Patrick / 865 705 1300						
16. GENERATOR'S CERTIFICATE: I hereby certify that the above described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.														
Printed Name Steve Steele				Signature "On behalf of" <i>Steve Steele</i>				Month 6		Day 17		Year 19		
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials				Signature <i>Scott Trantham</i>				Month 6		Day 17		Year 19	
	Printed Name Scott Trantham				Signature									
TRANSPORTER	18. Transporter 2 Acknowledgement of Receipt of Materials				Signature				Month		Day		Year	
	Printed Name													
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.														
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.														
Printed Name TERESA STEVENSON				Signature <i>Teresa Stevenson</i>				Month 6		Day 17		Year 19		



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647034

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE 4 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest 3
 Destination Grid N 656 W 223 EL 1273
 PO NEO DEMO KNOXVILLE JACKSON AVE N 360651 W 840212 ELY 1284
 Profile 106533TN (ASBESTOS-NON-FRIABLE)
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

	Time	Scale	Operator	Inbound	Gross	
In	06/17/2019 10:43:48	Inbound	TERESA		86250	1b
Out	06/17/2019 11:02:08	Outbound	TERESA		27920	1b
					Net	58340 1b
					Tons	29.17

Comments

Product	LDX	Qty	UOM	Rate	Tax	Amount	Origin
1	Asb Non Fri-Cubic	100	21.00	Yards			KNO

Total Tax
 Total Ticket

403WM

Driver's Signature





NON-HAZARDOUS MANIFEST

BE 3

NON-HAZARDOUS ASBESTOS MANIFEST		1. Generator's US EPA ID No. (if Applicable) N/A		2. Page 1 of		PPF Trucks 1647034	
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902 865.705.1300			Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902			A. Manifest Number Lend # 4 <<number>>	
4. Generator's Phone 865.705.1300			6. US EPA ID # (if applicable)			B. State Generator's ID (if applicable):	
5. Transporter 1 Company Name and Address NEO Corp - First Place Finish Rockbridge Rd Oak Ridge TN 37821			8. US EPA ID # (if applicable)			C and E Only Applicable if Required by State C. State Transporter's ID D. Transporter's Phone	
7. Transporter 2 Company Name and Address			10. US EPA ID # (if applicable)			E. State Transporter's ID F. Transporter's Phone	
9. Designated Disposal Facility Name and Site Address Chestnut Ridge Landfill 140 Fleenor Mill Road Heiskel, TN 37754						G. Disposal Facility ID H. Disposal Facility Phone 865.457.7810	
GENERATOR	11. Description of Waste Materials		12. Containers		13. Total Quantity	14. Unit Wt./Vol.	1. Misc. Comments
	a. RQ, NA2212, Asbestos, 9, PG III ERG 171 WM Profile # 106533TN		No	Type		Yds	
	b.						
	WM Profile #						
	c.						
WM Profile #							
d.							
WM Profile #							
J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos				K. Disposal Location			
				Cell		Level	
				Grid			
15. Special Handling Instructions and Additional Information N 36 06 51 W 84 02 12 EL 1284							
Purchase Order #				EMERGENCY CONTACT / PHONE NO.: Laurel Patrick / 865.705.1300			
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.							
Printed Name Steve Steele		Signature "On behalf of" <i>Steve Steele</i>		Month 6	Day 17	Year 19	
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Month 6	Day 17	Year 19
	Printed Name Scott Trantham		<i>Scott Trantham</i>				
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month	Day	Year	
Printed Name							
FACILITY	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.						
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.						
Printed Name TERESA STEVENSON		Signature <i>Teresa Stevenson</i>		Month 4	Day 17	Year 19	



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647036

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE 3 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest 4
 Destination Grid N 656 W 223 EL 1273
 PO NEO DEMO KNOXVILLE JACKSON AVE N 360651 W 840212 EL 1284
 Profile 106533TN (ASBESTOS-NON-FRIABLE)
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

	Time	Scale	Operator	Inbound	Gross	79000 lb
In	06/17/2019 10:48:29	Inbound	TERESA		Tare	25100 lb
Out	06/17/2019 11:15:33	Outbound	TERESA		Net	53900 lb
					Tons	26.95

Comments

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Asb Non Fri-Cubic	100	21.00	Yards				KNO

Total Tax
 Total Ticket

403WM

Driver's Signature





NON-HAZARDOUS MANIFEST

NON-HAZARDOUS ASBESTOS MANIFEST	1. Generator's US EPA ID No. (if Applicable): N/A	2. Page 1 of	PPF Trucks 11647107		
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902 4. Generator's Phone 865.705.1300	Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902	A. Manifest Number		Load #5 <<number>>	
		B. State Generator's ID (if applicable):			
5. Transporter 1 Company Name and Address NEO Corp - First Place Finish Rockbi:le Rd Oak Ridge TN 37804	6. US EPA ID # (if applicable)	C and E Only Applicable if Required by State:			
7. Transporter 2 Company Name and Address	8. US EPA ID # (if applicable)	C. State Transporter's ID			
		D. Transporter's Phone			
9. Designated Disposal Facility Name and Site Address Chestnut Ridge Landfill 140 Fleenor Mill Road Heiskel, TN 37754	10. US EPA ID # (if applicable)	E. State Transporter's ID			
		F. Transporter's Phone			
11. Description of Waste Materials	12. Containers		13. Total Quantity	14. Unit Wt./Vol.	I. Misc. Comments
	No.	Type			
a. RQ, NA2212, Asbestos, 9, PG III ERG 171 WM Profile # 106533TN				Yds	
b. WM Profile #					
c. WM Profile #					
d. WM Profile #					
J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos	K. Disposal Location				
	Cell		Level		
15. Special Handling Instructions and Additional Information N 36 06 51 W 84 02212 EL 1284					
Purchase Order #		EMERGENCY CONTACT / PHONE NO.: Laurel Patrick / 865.705.1300			
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.					
Printed Name	Signature "On behalf of"	Month	Day	Year	
Steve Steele	<i>Steve Steele</i>	6	17	19	
17. Transporter 1 Acknowledgement of Receipt of Materials	Printed Name	Signature	Month	Day	Year
	Scott Trantham	<i>Scott Trantham</i>	6	17	19
18. Transporter 2 Acknowledgement of Receipt of Materials	Printed Name	Signature	Month	Day	Year
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.					
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.					
Printed Name	Signature	Month	Day	Year	
TERESA STEVENSON	<i>Teresa Stevenson</i>	6	17	19	

GENERATOR

TRANSPORTER

FACILITY



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647107

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE 9 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest 5
 Destination Grid N 656 W 223 EL 1273
 PO NEO DEMO KNOXVILLE JACKSON AVE
 Profile 106533TN (ASBESTOS-NON-FRIABLE)
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

N 36 06 51 W 84 02 212 EL 1284

Time	Scale	Operator	Inbound	Gross	80360 lb
In 06/17/2019 13:02:42	Inbound	TERESA		Tare	28920 lb
Out 06/17/2019 13:02:42		TERESA		Net	51440 lb
				Tons	25.72

Comments

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Asb Non Fri-Cubic	100	21.00	Yards				KNO

Keith Brady

Total Tax
 Total Ticket





NON-HAZARDOUS MANIFEST

NON-HAZARDOUS ASBESTOS MANIFEST	1. Generator's US EPA ID No. (if Applicable): N/A	2. Page 1 of	PPF Trucks 1647098
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902 4. Generator's Phone 865.705.1300	Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902	A. Manifest Number Load #6 <<number>>	
		B. State Generator's ID (if applicable):	
5. Transporter 1 Company Name and Address NEO Corp - First Place Finish Rockbi. 1st Rd Oak Ridge TN 37854	6. US EPA ID # (if applicable)	C and E Only Applicable if Required by State	
		C. State Transporter's ID	
7. Transporter 2 Company Name and Address	8. US EPA ID # (if applicable)	D. Transporter's Phone	
		E. State Transporter's ID	
9. Designated Disposal Facility Name and Site Address Chestnut Ridge Landfill 140 Fleenor Mill Road Heiskel, TN 37754	10. US EPA ID # (if applicable)	F. Transporter's Phone	
		G. Disposal Facility ID	
11. Description of Waste Materials	12. Containers No. Type	13. Total Quantity	14. Unit Wt./Vol.
			1. Misc. Comments
a. RQ, NA2212, Asbestos, 9, PG III ERG 171 WM Profile # 106533TN			Yds
b. WM Profile #			
c. WM Profile #			
d. WM Profile #			
J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos	K. Disposal Location		
	Cell		Level
15. Special Handling Instructions and Additional Information N 36 06 51 W 84 02 12 ELV 1284			
Purchase Order #		EMERGENCY CONTACT / PHONE NO.: Laurel Patrick / 865.705.1300	
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.			
Printed Name Steve Steele	Signature "On behalf of" <i>Steve Steele</i>	Month 6	Day 17
		Year 19	
17. Transporter 1 Acknowledgement of Receipt of Materials			
Printed Name Scott Trentham	Signature <i>Scott Trentham</i>	Month 6	Day 17
		Year 19	
18. Transporter 2 Acknowledgement of Receipt of Materials			
Printed Name	Signature	Month	Day
		Year	
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.			
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.			
Printed Name TERESA STEVENSON	Signature <i>Teresa Stevenson</i>	Month 6	Day 17
		Year 19	

GENERATOR

TRANSPORTER

FACILITY



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647098

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE 4 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest G

Destination Grid N 656 W 223 EL 1273
 FO NEO DEMO KNOXVILLE JACKSON AVE
 Profile 106533TN (ASBESTOS-NON-FRIABLE) **N 36 06 51 W 84 02 12 ELV 1284**
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

Time	Scale	Operator	Inbound	Gross	79960 lb
In 06/17/2019 12:45:10	Inbound	TERESA		Tare	27920 lb
Out 06/17/2019 12:45:10		TERESA		Net	52040 lb
				Tons	26.02

Comments

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Asb Non Fri-Cubic	100	21.00	Yards				KNO

Total Tax
 Total Ticket

403WM
 Driver's Signature





NON-HAZARDOUS MANIFEST

NON-HAZARDOUS ASBESTOS MANIFEST	1. Generator's US EPA ID No. (If Applicable): N/A	2. Page 1 of	PPF Trucks 1647099		
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902 4. Generator's Phone 865.705.1300	Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902	A. Manifest Number # 7 <<number>>	B. State Generator's ID (if applicable):		
5. Transporter 1 Company Name and Address NEO Corp - First Place Finish Rockbi: 16 Rd Oak Ridge TN 37804	6. US EPA ID # (if applicable)	C and E Only Applicable if Required by State C. State Transporter's ID D. Transporter's Phone			
7. Transporter 2 Company Name and Address	8. US EPA ID # (if applicable)	E. State Transporter's ID F. Transporter's Phone			
9. Designated Disposal Facility Name and Site Address Chestnut Ridge Landfill 140 Fleenor Mill Road Heiskel, TN 37754	10. US EPA ID # (if applicable)	G. Disposal Facility ID H. Disposal Facility Phone 865.457.7810			
GENERATOR	11. Description of Waste Materials a. RQ, NA2212, Asbestos, 9, PG III ERG 171 WM Profile # 106533TN	12. Containers No Type	13. Total Quantity	14. Unit Wt./Vol. Yds	I. Misc. Comments
	b. WM Profile #				
	c. WM Profile #				
	d. WM Profile #				
	J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos	K. Disposal Location Cell Level Grid			
15. Special Handling Instructions and Additional Information N 36 06 51 W 84 02 12 ELY 1284					
Purchase Order #		EMERGENCY CONTACT / PHONE NO : Laurel Patrick / 865.705.1300			
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.					
Printed Name Steve Steele	Signature "On behalf of" <i>Steve Steele</i>	Month 6	Day 17	Year 19	
TRANSPORTER 17. Transporter 1 Acknowledgement of Receipt of Materials Printed Name Scott Trentham	Signature <i>Scott Trentham</i>	Month 6	Day 17	Year 19	
18. Transporter 2 Acknowledgement of Receipt of Materials Printed Name	Signature	Month	Day	Year	
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.					
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.					
Printed Name TERESA STEVENSON	Signature <i>Teresa Stevens</i>	Month 6	Day 17	Year 19	



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647099

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE7 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest 7
 Destination Grid N 656 W 223 EL 1273
 PO NEO DEMO KNOXVILLE JACKSON AVE N 3606 51 W 84 02 12 ELV 1284
 Profile 106533TN (ASBESTOS-NON-FRIABLE)
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

	Time	Scale	Operator	Inbound	Gross	
In	06/17/2019 12:48:33	Inbound	TERESA			81380 1b
Out	06/17/2019 12:48:33		TERESA			28440 1b
					Net	52940 1b
					Tons	26.47

Comments

Product	LD%	Qty	UDM	Rate	Tax	Amount	Origin
1 Asb Non Fri-Cubic	100	23.00	Yards				KNO

Total Tax
 Total Ticket

403WM

Driver's Signature





NON-HAZARDOUS MANIFEST

NON-HAZARDOUS ASBESTOS MANIFEST	1. Generator's US EPA ID No. (if Applicable): N/A	2. Page 1 of	PPF Trucks 1647100					
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902 4. Generator's Phone 865.705.1300	Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902	A. Manifest Number # 8 <<number>>						
		B. State Generator's ID (if applicable):						
5. Transporter 1 Company Name and Address NEO Corp - First Place Finish Rockbridge Rd Oak Ridge TN 37821	6. US EPA ID # (if applicable)	C and E Only Applicable if Required by State						
		C. State Transporter's ID						
7. Transporter 2 Company Name and Address	8. US EPA ID # (if applicable)	D. Transporter's Phone						
		E. State Transporter's ID						
9. Designated Disposal Facility Name and Site Address Chestnut Ridge Landfill 140 Fleenor Mill Road Heiskel, TN 37754	10. US EPA ID # (if applicable)	F. Transporter's Phone						
		G. Disposal Facility ID						
		H. Disposal Facility Phone 865.457.7810						
GENERATOR	11. Description of Waste Materials		12. Containers		13. Total Quantity	14. Unit Wt./Vol.	1. Misc. Comments	
	a. RQ, NA2212, Asbestos, 9, PG III ERG 171		No.	Type		Yds		
	WM Profile # 106533TN							
	b.							
	WM Profile #							
c.								
WM Profile #								
d.								
WM Profile #								
J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos		K. Disposal Location						
		Cell		Level				
		Grid						
15. Special Handling Instructions and Additional Information N 36 06 51 W 8402 12 EL 1284								
Purchase Order #		EMERGENCY CONTACT / PHONE NO.: Laurel Patrick / 865.705.1300						
16. GENERATOR'S CERTIFICATE: I hereby certify that the above described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.								
Printed Name Steve Steele		Signature "On behalf of" Steve Steele			Month 6	Day 17	Year 19	
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials		Signature Scott Trentham			Month 6	Day 17	Year 19
	Printed Name Scott Trentham							
OPERATOR	18. Transporter 2 Acknowledgement of Receipt of Materials		Signature			Month	Day	Year
	Printed Name							
FACILITY	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.							
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.							
Printed Name TERESA STEVENSON		Signature Teresa Stevenson			Month 6	Day 17	Year 19	



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647106

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE 3 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest 8
 Destination Grid N 656 W 223 EL 1273
 PO NEO DEMO KNOXVILLE JACKSON AVE
 Profile 106533TN (ASBESTOS-NON-FRIABLE) **N 36 06 51 W 84 02 12 EL 1284**
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

Time	Scale	Operator	Inbound	Gross	75840 lb
In 06/17/2019 12:59:31	Inbound	TERESA		Tare	25100 lb
Out 06/17/2019 12:59:31		TERESA		Net	50740 lb
				Tons	25.37

Comments

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Asb Non Fri-Cubic	100	21.00	Yards				KNO

403WM

Driver's Signature

Total Tax
 Total Ticket





NON-HAZARDOUS MANIFEST

NON-HAZARDOUS ASBESTOS MANIFEST		1. Generator's US EPA ID No. (if Applicable): N/A		2. Page 1 of PPF Trucks 1647190			
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902 4. Generator's Phone 865.705.1300		Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902		A. Manifest Number Load # 99 <<number>>			
5. Transporter 1 Company Name and Address NEO Corp - First Place Finish Rockbridge Rd Oak Ridge TN 37824		6. US EPA ID # (if applicable)		C and E Only Applicable if Required by State			
7. Transporter 2 Company Name and Address		8. US EPA ID # (if applicable)		C. State Transporter's ID			
9. Designated Disposal Facility Name and Site Address Chestnut Ridge Landfill 140 Flenor Mill Road Heiskel, TN 37754		10. US EPA ID # (if applicable)		D. Transporter's Phone			
				E. State Transporter's ID			
				F. Transporter's Phone			
				G. Disposal Facility ID			
				H. Disposal Facility Phone 865.457.7810			
GENERATOR	11. Description of Waste Materials		12. Containers		13. Total Quantity	14. Unit Wt./Vol.	1. Misc. Comments
	a. RQ, NA2212, Asbestos, 9, PG III ERG 171 WM Profile # 106533TN		No	Type		Yds	
	b. WM Profile #						
	c. WM Profile #						
	d. WM Profile #						
	J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos		K. Disposal Location		Cell	Level	
	15. Special Handling Instructions and Additional Information N360651 WBA 02 212 EL 1284		EMERGENCY CONTACT / PHONE NO.:		Laurel Patrick / 865.705.1300		
	Purchase Order #						
	16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.		Signature "On behalf of"		Month	Day	Year
	Printed Name Steve Steele		<i>[Signature]</i>		6	17	19
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Month	Day	Year
	Printed Name Scott Trentham		<i>[Signature]</i>		6	17	19
DISPOSER	18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month	Day	Year
	Printed Name						
FACILITY	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.						
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.		Signature		Month	Day	Year
Printed Name ANN E WILLIAMS		<i>[Signature]</i>		6	17	19	



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647190

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE 4 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest 09
 Destination Grid N 656 W 223 EL 1273
 PG NEO DEMO KNOXVILLE JACKSON AVE N 36 06 51 W 840 2212 EL 1284
 Profile 106533TN (ASBESTOS-NON-FRIABLE)
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

Time	Scale	Operator	Inbound	Gross	76180 lb
In 06/17/2019 15:10:42	Inbound	awilli40		Tare	27920 lb
Out 06/17/2019 15:10:42		awilli40		Net	48260 lb
				Tons	24.13

Comments

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Asb Non Fri-Cubic	100	21.00	Yards				KNO

Total Tax
 Total Ticket

403WM
 [Signature]
 Operator's Signature





NON-HAZARDOUS MANIFEST

NON-HAZARDOUS ASBESTOS MANIFEST		1. Generator's US EPA ID No. (if Applicable): N/A		2. Page 1 of		PPF Trucks 1647195			
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902 4. Generator's Phone 865.705.1300		Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902		A. Manifest Number # 3 <<number>> 10		B. State Generator's ID (if applicable):			
5. Transporter 1 Company Name and Address: NEO Corp - First Floor Finish Rockbi. Dr Rd Oak Ridge TN 37804		6. US EPA ID # (if applicable)		C and E Only Applicable if Required by State					
7. Transporter 2 Company Name and Address		8. US EPA ID # (if applicable)		C. State Transporter's ID					
9. Designated Disposal Facility Name and Site Address: Chestnut Ridge Landfill 140 Fleenor Mill Road Heiskel, TN 37754		10. US EPA ID # (if applicable)		D. Transporter's Phone					
				E. State Transporter's ID					
				F. Transporter's Phone					
				G. Disposal Facility ID					
				H. Disposal Facility Phone 865 457.7810					
GENERATOR	11. Description of Waste Materials		12. Containers		13. Total	14. Unit	I. Misc. Comments		
	a. RQ, NA2212, Asbestos, 9, PG III ERG 171		No.	Type	Quantity	Wt./Vol.			
	WM Profile # 106533TN					Yr/s			
	b.								
	WM Profile #								
c.									
WM Profile #									
d.									
WM Profile #									
J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos		K. Disposal Location							
		Cell		Level					
		Grid							
15. Special Handling Instructions and Additional Information N 36 06 51 W 84 02 212 EL 1284									
Purchase Order #		EMERGENCY CONTACT / PHONE NO: Laurel Patrick / 865.705.1300							
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.									
Printed Name Steve Steele		Signature "On behalf of" <i>Steve Steele</i>				Month 6	Day 17	Year 19	
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials		Signature <i>Scott Trantham</i>				Month 6	Day 17	Year 19
	Printed Name Scott Trantham								
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature				Month	Day	Year	
Printed Name									
FACILITY	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.								
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.								
Printed Name ANN E WILLIAMS		Signature <i>Ann E Williams</i>				Month 6	Day 17	Year 19	



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647195

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE7 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest 010
 Destination Grid N 656 W 223 EL 1273
 PO NEG DEMO KNOXVILLE JACKSON AVE
 Profile 106533TN (ASBESTOS-NON-FRIABLE) **N 36 06 51 W 84 02 212 EL 1284**
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

Time	Scale	Operator	Inbound	Gross	69920 lb
In 06/17/2019 15:20:34	Inbound	awilli40		Tare	28440 lb
Out 06/17/2019 15:20:34		awilli40		Net	41480 lb
				Tons	20.74

Comments

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Asb Non Fri-Cubic	100	23.00	Yards				KNO

JP

Total Tax
 Total Ticket

403WM

Driver's Signature





NON-HAZARDOUS MANIFEST

NON-HAZARDOUS ASBESTOS MANIFEST		1. Generator's US EPA ID No. (if Applicable): N/A		2. Page 1 of PPF Trucks 1647196	
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902		Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902		A. Manifest Number Load # 11 <<number>> 11	
4. Generator's Phone 865.705.1300				B. State Generator's ID (if applicable):	
5. Transporter 1 Company Name and Address NEO Corp - First Place Finish Rockbridge Rd Oak Ridge TN 37824		6. US EPA ID # (if applicable)		C and E Only Applicable if Required by State	
7. Transporter 2 Company Name and Address		8. US EPA ID # (if applicable)		C. State Transporter's ID	
9. Designated Disposal Facility Name and Site Address Chestnut Ridge Landfill 140 Fleenor Mill Road Heiskel, TN 37754		10. US EPA ID # (if applicable)		D. Transporter's Phone	
				E. State Transporter's ID	
				F. Transporter's Phone	
				G. Disposal Facility ID	
				H. Disposal Facility Phone 865.457.7810	
GENERATOR	11. Description of Waste Materials		12. Containers		13. Total
	a. RQ, NA2212, Asbestos, 9, PG III ERG 171		No.	Type	Quantity
	WM Profile # 106533TN				
	b.				
	WM Profile #				
c.					
WM Profile #					
d.					
WM Profile #					
J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos		K. Disposal Location		14. Unit Wt./Vol.	
		Cell		Yds	
		Grid		I. Misc. Comments BE9	
15. Special Handling Instructions and Additional Information N 3606 51 W 84 02 212 EL 1284					
Purchase Order #		EMERGENCY CONTACT / PHONE NO.: Laurel Patrick / 865.705.1300			
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.					
Printed Name Steve Steele		Signature "On behalf of" <i>Steve Steele</i>		Month 6	Day 17
Year 19					
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials		Signature <i>Scott Trentham</i>		Month 6
	Printed Name Scott Trentham				Day 17
Year 19					
OPERATOR	18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month
	Printed Name				Day
				Year	
FACILITY	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.				
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.				
Printed Name ANNE WILLIAMS		Signature <i>Anne Williams</i>		Month 6	Day 17
				Year 19	



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647196

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE 9 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest // Grid N 656 W 223 EL 1273
 Destination
 PO NEO DEMO KNOXVILLE JACKSON AVE N360651 W 8402212 EL 1284
 Profile 106533TN (ASBESTOS-NON-FRIABLE)
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

Time	Scale	Operator	Inbound	Gross	80420 lb
In 06/17/2019 15:24:53	Inbound	awilli40		Tare	28920 lb
Out 06/17/2019 15:24:53		awilli40		Net	51500 lb
				Tons	25.75

Comments

Product	LDX	Qty	UGM	Rate	Tax	Amount	Origin
1 Asb Non Fri-Cubic	100	21.00	Yards				KNO

Keith Brady

Total Tax
 Total Ticket

403WM

Driver's Signature





NON-HAZARDOUS MANIFEST

NON-HAZARDOUS ASBESTOS MANIFEST	1. Generator's US EPA ID No. (if Applicable): N/A	2. Page 1 of	PPF Trucks 164 7199	
3. Generator's Mailing Address: CITY OF KNOXVILLE 400 MAIN STREET KNOXVILLE, TN 37902 4. Generator's Phone 865.705.1300	Generator's Site Address (if different than mailing): City of Knoxville 505 Jackson Ave Knox TN 37902	A. Manifest Number #38 <<number>> 12		
		B. State Generator's ID (if applicable):		
5. Transporter 1 Company Name and Address NEO Corp - First Place Finish Rockbi. Lge Rd. Oak Ridge TN 37804	6. US EPA ID # (if applicable)	C and E Only Applicable if Required by State		
7. Transporter 2 Company Name and Address	8. US EPA ID # (if applicable)	C. State Transporter's ID		
		D. Transporter's Phone		
9. Designated Disposal Facility Name and Site Address Chestnut Ridge Landfill 140 Fleenor Mill Road Heiskel, TN 37754	10. US EPA ID # (if applicable)	E. State Transporter's ID		
		F. Transporter's Phone		
		G. Disposal Facility ID		
		H. Disposal Facility Phone 865.457.7810		
GENERATOR	11. Description of Waste Materials		12. Containers	
			No. Type	
	a. RQ, NA2212, Asbestos, 9, PG III ERG 171 WM Profile # 106533TN			13. Total Quantity
				14. Unit wt./Vol.
				I. Misc. Comments
b. WM Profile #			Yds	
c. WM Profile #				
d. WM Profile #				
J. Additional Descriptions for Materials Listed Above Friable (Regulated)/Nonfriable (Regulated)/Nonfriable (Nonregulated) Non-Friable Asbestos		K. Disposal Location		
		Cell	Level	
		Grid		
15. Special Handling Instructions and Additional Information N 36 06 51 WBA 02 212 EL 1284				
Purchase Order #		EMERGENCY CONTACT / PHONE NO.: Laurel Patrick / 865.705.1300		
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.				
Printed Name Steve Steele		Signature "On behalf of" <i>Steve Steele</i>	Month Day Year 6 17 19	
17. Transporter 1 Acknowledgement of Receipt of Materials				
Printed Name Scott Trentham	Signature <i>Scott Trentham</i>	Month Day Year 6 17 19		
18. Transporter 2 Acknowledgement of Receipt of Materials				
Printed Name	Signature	Month Day Year		
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.				
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.				
Printed Name ANNE WILLIAMS		Signature <i>Anne Williams</i>	Month Day Year 6 17 19	



Chestnut Ridge Landfill
 140 FLEENOR MILL ROAD
 HEISKELL, TN, 37754
 Ph:

Original
 Ticket# 1647199

Customer Name FIRSTPLACEFINISH FIRST PLACE Carrier BRADY BLACK DUMP TRUCK
 Ticket Date 06/17/2019 Vehicle# BE 3 Volume
 Payment Type Credit Account Container
 Manual Ticket# Driver
 Hauling Ticket# Check#
 Route Billing # 0005537
 State Waste Code Gen EPA ID N/A
 Manifest @ 12
 Destination Grid N 656 W 223 EL 1273
 FO NEG DEMO KNOXVILLE JACKSON AVE
 Profile 106533TN (ASBESTOS-NON-FRIABLE) **N 36 06 51 W 84 02 12 EL 1284**
 Generator 181-CITYOFKNOXVILLE400MAINST CITY OF KNOXVILLE- 400 MAIN STREET

Time	Scale	Operator	Inbound	Gross	
In 06/17/2019 15:30:06	Inbound	awilli40		62740 lb	
Out 06/17/2019 15:30:06		awilli40		Tare 25100 lb	
				Net 37640 lb	
				Tons 18.82	

Comments

Product	LDX	Qty	UOM	Rate	Tax	Amount	Origin
1 Asb Non Fri-Cubic	100	21.00	Yards				KNO

403WM

Driver's Signature

Total Tax
 Total Ticket





S&ME, Inc.
1413 Topside Road
Louisville, TN 37777
865-970-0003

Client:

City of Knoxville
400 Main Street
Knoxville, TN 37902

Project:

4143-17-017
McClung Warehouses
Knoxville, TN

**ENVIRONMENTAL - Asbestos Containing Rubble Removal
06-17-2019 - E. Buckingham**

Task 1 – Area Air Monitoring Services

Ms. Emmy Buckingham of S&ME, an Environmental Protection Agency (EPA) accredited and Tennessee Department of Environment and Conservation Toxic Substances Program licensed Asbestos Project Monitor arrived onsite to conduct area air monitoring services during the removal of non-friable asbestos containing rubble materials. Four air samples were collected during the removal. One sample was collected at the entrance gate, one in the parking lot, and two on Jackson Avenue, one east and one west of the asbestos containing rubble pile being removed.

The air samples were collected on 25 mm Mixed Cellulose Ester membrane filters and analyzed by Phase Contrast Microscopy in accordance with the NIOSH 7400 Method, Revision 3 by Ms. Buckingham, an American Industrial Hygiene Association Asbestos Analysts Registry analyst. Same day analysis was performed on samples collected. The air samples collected were compared to and passed the EPA Clearance Criterion of 0.01 fibers per cubic centimeter.

Task 2 – Site Observation and Visual Clearance

The rubble was hauled offsite to Chestnut Ridge Landfill under waste manifest using four dump trucks by Brady Excavating with First Place Finish. NEO Corporation was onsite to line each truck prior to being loaded and wrap each load prior to being hauled. One supervisor and two workers were present for NEO Corporation. A total of 12 dump truck loads (appx. 307 tons or 258 cubic yards) were hauled off site. Waste manifests were provided to NEO Corporation following the removal. The remaining pile of rubble was smoothed and banked towards the treeline to tie in with other material providing support to Jackson Avenue.

S&ME, Brady Excavating, and NEO Corporation walked the area of removal to conduct a visual confirmation that the asbestos containing rubble had been removed as specified from the area following abatement.

Field Personnel: Emily M. Buckingham SIGNED 

The presence of S&ME at the project site shall not be construed as an acceptance or approval of activities at the site. S&ME is at the site to perform specific services and has certain responsibilities which are limited to those specifically authorized in our agreement with our client. The results of tests or observations performed are only applicable to the time and location of the tests or observations. If our work is scheduled by others, we are not responsible for the testing frequency. In no event shall S&ME be responsible for the safety or means and methods of other parties at the project site.

Former McClung Warehouses Property

Knoxville, TN

S&ME Project No. 4143-17-017

Page 1 of 2



1	Location / Orientation	Western portion of site
	Remarks	Removal of demolition debris

Date: 6/17/2019

Photographer: E. Buckingham

2	Location / Orientation	Western portion of site
	Remarks	Loading debris into plastic-lined trucks

Date: 6/17/2019

Photographer: E. Buckingham

Former McClung Warehouses Property

Knoxville, TN

S&ME Project No. 4143-17-017

Page 2 of 2



3	Location / Orientation	Western portion of site
	Remarks	Wrapping loads with plastic before transporting offsite



Date: 6/17/2019

Photographer: E. Buckingham

4	Location / Orientation	Western portion of site
	Remarks	Truck ready for transport to Chestnut Ridge



Date: 6/17/2019

Photographer: E. Buckingham

Appendix IV – Impacted Soil Disposal Documentation



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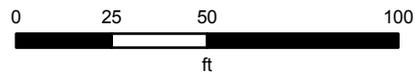
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401 W Jackson Ave
Impacted Soil Excavation Area

Knoxville - Knox County - KUB Geographic Information System



Printed: 1/22/2019 at 8:52:14 AM



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1	Location / Orientation	Area of excavation facing southwest.
	Remarks	View of area prior to excavation.



Date: 2/18/2019

Photographer: N. Peterson

2	Location / Orientation	Excavation area facing Southwest.
	Remarks	Crushed stone fill beneath asphalt surface.



Date: 2/18/2019

Photographer: N. Peterson



3	Location / Orientation	Northeast side of excavation facing Southwest.
	Remarks	Impacted soil and debris on east end of excavation.



Date: 2/18/2019

 Photographer: N. Peterson

4	Location / Orientation	Northeast side of excavation facing South.
	Remarks	View of impacted soil and debris on East end of excavation.



Date: 2/18/2019

 Photographer: N. Peterson



5	Location / Orientation	Southeast end of excavation facing Northwest
	Remarks	View of residual clay beneath debris in excavation.

Date: 2/18/2019

Photographer: N. Peterson

6	Location / Orientation	Northwest end of excavation facing Southeast.
	Remarks	View of excavation with impacted soil and debris removed.

Date: 2/18/2019

Photographer: N. Peterson



7	Location / Orientation	Northeast side of excavation facing Southwest.
	Remarks	View of excavation with impacted soil and debris removed.



Date: 2/18/2019

Photographer: N. Peterson

8	Location / Orientation	Northwest side of excavation facing Southeast
	Remarks	View of excavation backfilled with compacted material.



Date: 2/18/2019

Photographer: N. Peterson



9	Location / Orientation	Northwest side of excavation facing Southeast.
	Remarks	View of excavation backfilled with compacted material.

Date: 2/18/2019

Photographer: N. Peterson

10	Location / Orientation	Northeast side of excavation facing southwest.
	Remarks	View of excavation area repaved for use as parking lot.

Date: 2/18/2019

Photographer: N. Peterson

**SHIPPING DOCUMENT
FOR NONHAZARDOUS MATERIAL**

03517

• TO BE COMPLETED BY GENERATOR •

Generator Name: City of Knoxville Date: 2-18-19
Address: Jackson Ave (Parking lot) Phone # (865) 215-2121
Knoxville TN

DESCRIPTION OF WASTE / MUST CHECK ONE

UST/Gasoline X UST/Diesel Fuel X UST/Gasoline, Diesel and Waste Oil Mix _____
UST/Waste Oil _____ Spill/Gasoline _____ Spill/Diesel Fuel _____ Spill Waste Oil _____
Water/Gas _____ Water/Fuel Oil _____

Other/Define _____

This shipment needs to be sampled at Domermuth's Facility _____ Yes ✓ No

Quantity (# of tons, drums or gallons) _____ Containers Dump Trucks Drums or Vac Truck) _____

I hereby certify the above named material is a non-hazardous waste as defined by 40 CFR part 261 or any applicable law, has been properly described, classified & packaged, and is in proper condition for transportation according to applicable regulations.

Generator's Signature [Signature] Date 2-18-19 Time _____
(or authorized agent)

• TO BE COMPLETED BY TRANSPORTER •

Transporter Name: Nicely Vehicle Lic. # H10 2958
Address New Market Truck # 161
State of Registration TN

I hereby certify the above named material was picked up at the generator site listed above. I hereby certify the above named material was delivered without incident to destination listed below.

Driver's Name (Please Print) Craig Cretan Date 2-18-19
Signature [Signature] Time 3:37

• TO BE COMPLETED BY FACILITY •

Please check one.

Domermuth Environmental Svcs.
7826 Old Rutledge Pike
Knoxville, TN 37924
Phone # (865) 689-1332

Domermuth Environmental Svcs.
3041 S. Hwy. #1651
Stearns, Kentucky 42647
Phone # (865) 689-1332

I hereby certify the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Signature [Signature] Date 2/18/19 Time 4:10 PM

SHIPPING DOCUMENT FOR NONHAZARDOUS MATERIAL

• TO BE COMPLETED BY GENERATOR •

Generator Name: City of Knoxville Date: 2-18-19
Address: Jackson Ave (Parking Lot) Phone # (865) 215-2121
Knoxville TN

DESCRIPTION OF WASTE / MUST CHECK ONE

UST/Gasoline UST/Diesel Fuel UST/Gasoline, Diesel and Waste Oil Mix _____
UST/Waste Oil _____ Spill/Gasoline _____ Spill/Diesel Fuel _____ Spill Waste Oil _____
Water/Gas _____ Water/FuelOil _____

Other/Define _____

This shipment needs to be sampled at Domermuth's Facility _____ Yes No

Quantity (# of tons, drums or gallons) _____ Containers Dump Trucks Drums or Vac Truck) _____

I hereby certify the above named material is a non-hazardous waste as defined by 40 CFR part 261 or any applicable law, has been properly described, classified & packaged, and is in proper condition for transportation according to applicable regulations.

Generator's Signature [Signature] Date 2/18/2019 Time _____
(or authorized agent)

• TO BE COMPLETED BY TRANSPORTER •

Transporter Name: Walker Vehicle Lic. # # 08894
Address New Market Truck # # 1722
State of Registration TN

I hereby certify the above named material was picked up at the generator site listed above. I hereby certify the above named material was delivered without incident to destination listed below.

Driver's Name (Please Print) [Signature] Date 2-18-19

Signature [Signature] Time 15:00

• TO BE COMPLETED BY FACILITY •

Please check one.

Domermuth Environmental Svcs.
7826 Old Rutledge Pike
Knoxville, TN 37924
Phone # (865) 689-1332

Domermuth Environmental Svcs.
3041 S. Hwy. #1651
Stearns, Kentucky 42647
Phone # (865) 689-1332

I hereby certify the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Signature [Signature] Date 2/18/19 Time 3:45

SHIPPING DOCUMENT FOR NONHAZARDOUS MATERIAL

• TO BE COMPLETED BY GENERATOR •

Generator Name: City of Knoxville Date: 2-18-19
Address: JACKSON AVE (PARKING LOT) Phone # (865) 215 - 2121

DESCRIPTION OF WASTE / MUST CHECK ONE

UST/Gasoline UST/Diesel Fuel UST/Gasoline, Diesel and Waste Oil Mix _____
UST/Waste Oil _____ Spill/Gasoline _____ Spill/Diesel Fuel _____ Spill Waste Oil _____
Water/Gas _____ Water/Fuel Oil _____

Other/Define _____

This shipment needs to be sampled at Domermuth's Facility _____ Yes No

Quantity (# of tons, drums or gallons) _____ Containers (Dump Trucks) Drums or Vac Truck) _____

I hereby certify the above named material is a non-hazardous waste as defined by 40 CFR part 261 or any applicable law, has been properly described, classified & packaged, and is in proper condition for transportation according to applicable regulations.

Generator's Signature [Signature] Date 2/18/2019 Time _____
(or authorized agent)

• TO BE COMPLETED BY TRANSPORTER •

Transporter Name: NICELY Vehicle Lic. # 410 2958
Address NEW MARKET, TN Truck # 0161
State of Registration _____

I hereby certify the above named material was picked up at the generator site listed above. I hereby certify the above named material was delivered without incident to destination listed below.

Driver's Name (Please Print) Craig Curran Date 2-18-19
Signature [Signature] Time 2:27

• TO BE COMPLETED BY FACILITY •

Please check one.

Domermuth Environmental Svcs.
7826 Old Rutledge Pike
Knoxville, TN 37924
Phone # (865) 689-1332

Domermuth Environmental Svcs.
3041 S. Hwy. #1651
Stearns, Kentucky 42647
Phone # (865) 689-1332

I hereby certify the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Signature [Signature] Date 2/18/19 Time _____

SHIPPING DOCUMENT FOR NONHAZARDOUS MATERIAL

03513

• TO BE COMPLETED BY GENERATOR •

Generator Name: City of Knoxville Date: 2-18-19
Address: Jackson AVE (Parking lot) Phone # (865) 215-2121
Knoxville TN

DESCRIPTION OF WASTE / MUST CHECK ONE

UST/Gasoline UST/Diesel Fuel UST/Gasoline, Diesel and Waste Oil Mix _____
UST/Waste Oil _____ Spill/Gasoline _____ Spill/Diesel Fuel _____ Spill Waste Oil _____
Water/Gas _____ Water/Fuel Oil _____

Other/Define _____

This shipment needs to be sampled at Domermuth's Facility Yes No

Quantity (# of tons, drums or gallons) _____ Containers Dump Trucks Drums or Vac Truck _____

I hereby certify the above named material is a non-hazardous waste as defined by 40 CFR part 261 or any applicable law, has been properly described, classified & packaged, and is in proper condition for transportation according to applicable regulations.

Generator's Signature [Signature] Date 2-18-19 Time _____
(or authorized agent)

• TO BE COMPLETED BY TRANSPORTER •

Transporter Name: Walker's Vehicle Lic. # H 10889
Address NEW MARKET Truck # 722
State of Registration _____

I hereby certify the above named material was picked up at the generator site listed above. I hereby certify the above named material was delivered without incident to destination listed below.

Driver's Name (Please Print) R. L. [Signature] Date 2/18/19
Signature [Signature] Time 1400

• TO BE COMPLETED BY FACILITY •

Please check one.

Domermuth Environmental Svcs.
7826 Old Rutledge Pike
Knoxville, TN 37924
Phone # (865) 689-1332

Domermuth Environmental Svcs.
3041 S. Hwy. #1651
Stearns, Kentucky 42647
Phone # (865) 689-1332

I hereby certify the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Signature [Signature] Date 2/18/19 Time 2:45

**SHIPPING DOCUMENT
FOR NONHAZARDOUS MATERIAL**

03515

• TO BE COMPLETED BY GENERATOR •

Generator Name: City of Knoxville Date: 2-18-19
Address: Jackson AVE (Parking lot) Phone # (865) 215 - 2121
Knoxville TN

DESCRIPTION OF WASTE / MUST CHECK ONE

UST/Gasoline UST/Diesel Fuel UST/Gasoline, Diesel and Waste Oil Mix _____
UST/Waste Oil _____ Spill/Gasoline _____ Spill/Diesel Fuel _____ Spill Waste Oil _____
Water/Gas _____ Water/Fuel Oil _____

Other/Define _____

This shipment needs to be sampled at Domermuth's Facility _____ Yes No

Quantity (# of tons, drums or gallons) _____ Containers Dump Trucks Drums or Vac Truck) _____

I hereby certify the above named material is a non-hazardous waste as defined by 40 CFR part 261 or any applicable law, has been properly described, classified & packaged, and is in proper condition for transportation according to applicable regulations.

Generator's Signature [Signature] Date 2-18-19 Time _____
(or authorized agent)

• TO BE COMPLETED BY TRANSPORTER •

Transporter Name: Nicely Vehicle Lic. # H10 2958
Address New Market Truck # 161
State of Registration TN

I hereby certify the above named material was picked up at the generator site listed above. I hereby certify the above named material was delivered without incident to destination listed below.

Driver's Name (Please Print) Craig Bretan Date 2-18-19
Signature [Signature] Time 1:13 PM

• TO BE COMPLETED BY FACILITY •

Please check one.

- | | |
|---|--|
| <input checked="" type="checkbox"/> Domermuth Environmental Svcs.
7826 Old Rutledge Pike
Knoxville, TN 37924
Phone # (865) 689-1332 | <input type="checkbox"/> Domermuth Environmental Svcs.
3041 S. Hwy. #1651
Stearns, Kentucky 42647
Phone # (865) 689-1332 |
|---|--|

I hereby certify the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Signature [Signature] Date 2/18/19 Time 2:00 PM

SHIPPING DOCUMENT FOR NONHAZARDOUS MATERIAL

• TO BE COMPLETED BY GENERATOR •

Generator Name: City of Knoxville Date: 2/18/2019
Address: Jackson Ave Parking Lot Phone # (865) 215 - 2121
Knoxville TN

DESCRIPTION OF WASTE / MUST CHECK ONE

UST/Gasoline X UST/Diesel Fuel X UST/Gasoline, Diesel and Waste Oil Mix _____
UST/Waste Oil _____ Spill/Gasoline _____ Spill/Diesel Fuel _____ Spill Waste Oil _____
Water/Gas _____ Water/FuelOil _____

Other/Define _____

This shipment needs to be sampled at Domermuth's Facility _____ Yes ✓ No

Quantity (# of tons, drums or gallons) _____ Containers (Dump Trucks) Drums or Vac Truck) _____

I hereby certify the above named material is a non-hazardous waste as defined by 40 CFR part 261 or any applicable law, has been properly described, classified & packaged, and is in proper condition for transportation according to applicable regulations.

Generator's Signature [Signature] Date 2/18/2019 Time _____
(or authorized agent)

• TO BE COMPLETED BY TRANSPORTER •

Transporter Name: Walker (Combs) Vehicle Lic. # H 10 0389
Address New Market TN Truck # 722
State of Registration TN

I hereby certify the above named material was picked up at the generator site listed above. I hereby certify the above named material was delivered without incident to destination listed below.

Driver's Name (Please Print) R. Combs Date 2-18-19

Signature [Signature] Time 1219

• TO BE COMPLETED BY FACILITY •

Please check one.

- | | |
|--|---|
| <input checked="" type="checkbox"/> Domermuth Environmental Svcs.
7826 Old Rutledge Pike
Knoxville, TN 37924
Phone # (865) 689-1332 | <input type="checkbox"/> Domermuth Environmental Svcs.
3041 S. Hwy. #1651
Stearns, Kentucky 42647
Phone # (865) 689-1332 |
|--|---|

I hereby certify the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Signature [Signature] Date 2/18/19 Time 1:35 pm

WALKER'S TRUCK CONTRACTORS

2002 W. Hwy. 11-E • New Market, TN 37820

Phone: 865-933-0225

35827

Date: 2-18-19

Time: _____

Pounds Tons Metric

Location: 410 JACKSON AVE KNOX

Gross 42520

Customer: GATLIN EXCAVATING

Tare 24140

Net 18380 9.19

Order: _____

Predetermined Tare _____

P.O.: WEIGH TICKET

Ordered _____

Product: ASPHALT

Received _____

Carrier: CRAIG

Remaining _____

Vehicle: 161

Today _____

Received: _____

Weighmaster JDN



Per Nate (4/9/19) - this load is just asphalt, so it does not require a corresponding Shipping Document for Nonhazardous Material for Domermuth. (It was still transported to Domermuth - just didn't require shipping document.)

WALKER'S TRUCK CONTRACTORS

2002 W. Hwy. 11-E • New Market, TN 37820

Phone: 865-933-0225

35832

Date: 2-18-19

Time: _____

Pounds Tons Metric

Location: 410 JACKSON AVE KNOX

Gross 59720

Customer: RICK GATEIN

Tare 24120

Net 35600 17.8

Order: _____

Predetermined Tare _____

P.O.: WEIGH TICKET

Ordered _____

Product: CONTAMINATED DIET

Received _____

Carrier: COULS

Remaining _____

Vehicle: 722

Today _____

Received: _____

Weighmaster JDN



WALKER'S TRUCK CONTRACTORS

202 W. Hwy. 11-E • New Market, TN 37820

Phone: 865-933-0225

35828

Date: 2-18-19

Time: _____

Location: 410 JACKSON AVE KNOX

Customer: RICK GATLIN

Order: _____

P.O.: WEIGH TICKET

Product: CONTAMINATED DIRT

Carrier: Combs

Vehicle: 722

Received: _____

Pounds

Tons

Metric

Gross 75200

Tare 24120

Net 51080 25.84

Predetermined Tare _____

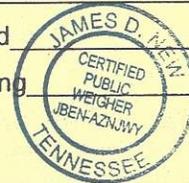
Ordered _____

Received _____

Remaining _____

Today _____

Weighmaster JDN



WALKER'S TRUCK CONTRACTORS

202 W. Hwy. 11-E • New Market, TN 37820

Phone: 865-933-0225

35830

Date: 2-18-19

Time: _____

Location: 410 JACKSON AVE KNOX

Customer: RICK GATLIN

Order: _____

P.O.: WEIGH TICKET

Product: CONTAMINATED DIRT

Carrier: Combs

Vehicle: 722

Received: _____

Pounds

Tons

Metric

Gross 72900

Tare 24120

Net 48780 24.39

Predetermined Tare _____

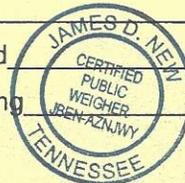
Ordered _____

Received _____

Remaining _____

Today _____

Weighmaster JDN



WALKER'S TRUCK CONTRACTORS

2002 W. Hwy. 11-E • New Market, TN 37820

Phone: 865-933-0225

35829

Date: 2-18-19

Time: _____

Location: 410 JACKSON AVE KNOX

Customer: RICK GATLIN

Order: _____

P.O.: CONTAMINATED DIRT

Product: WEIGH TICKET

Carrier: CRAIG

Vehicle: 161

Received: AD

Pounds Tons Metric

Gross 74560 _____

Tare 24140 _____

Net 50420 25.21 _____

Predetermined Tare _____

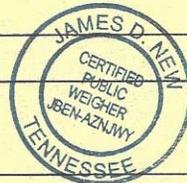
Ordered _____

Received _____

Remaining _____

Today _____

Weighmaster JDON



WALKER'S TRUCK CONTRACTORS

2002 W. Hwy. 11-E • New Market, TN 37820

Phone: 865-933-0225

35831

Date: 2-18-19

Time: _____

Location: 410 JACKSON AVE KNOX

Customer: RICK GATLIN

Order: _____

P.O.: WEIGH TICKET

Product: CONTAMINATED DIRT

Carrier: CRAIG

Vehicle: 161

Received: _____

Pounds Tons Metric

Gross 66200 _____

Tare 24140 _____

Net 42060 21.03 _____

Predetermined Tare _____

Ordered _____

Received _____

Remaining _____

Today _____

Weighmaster JDON



WALKER'S TRUCK CONTRACTORS

2002 W. Hwy. 11-E • New Market, TN 37820

Phone: 865-933-0225

35834

Date: 2-18-19

Time: _____

Location: 410 JACKSON AVE #100X

Customer: RICK GATLIN

Order: _____

P.O.: WEIGH TICKET

Product: CONTAMINATED DIRT

Carrier: CRAIG

Vehicle: 161

Received: [Signature]

Pounds Tons Metric

Gross 57500 _____

Tare 24140 _____

Net 33,360 16.68 _____

Predetermined Tare _____

Ordered _____

Received _____

Remaining _____

Today _____

Weighmaster [Signature]



130.95 tons contaminated soil

9.19 tons of asphalt



TICKET #: 240189

Claiborne Hauling, LLC
6210 Rutledge Pike
Knoxville TN, 37924
(865) 540-4409

Print Date: 2/19/2019 7:35 AM

Truck: C-259
Company: Claiborne Hauling, LLC
Customer: Gatlin Services
Address: P.O Box 6070

Product: 1000B Brown Crusher Run
Order: WJACKSONAVE
Job: 416 W Jackson Ave

Daily Totals

Loads: 2.00 Tons: 41.67

Notes:

3-4
Rick 755-7521

TIME IN: 12:00 AM TIME OUT: 7:35 AM

This Ticket:

Gross: 73,000 lbs

Tare: 31,980 lbs

Net: 41,020 lbs 20.51 Tn

Total Due This Ticket:

The undersigned understands Claiborne Hauling, LLC, will not be held liable for any damage to property caused by the equipment. It is further understood that, should a wrecker become necessary, I hereby agree to pay any wrecker charges inquired, or for any equipment to assist in removal of this vehicle.



TICKET #: 240188

Claiborne Hauling, LLC
6210 Rutledge Pike
Knoxville TN, 37924
(865) 540-4409

Print Date: 2/19/2019 7:26 AM

Truck: C-242
Company: Claiborne Hauling, LLC
Customer: Gatlin Services
Address: P O Box 6070

Product: 1000B Brown Crusher Run
Order: WJACKSONAVE
Job: 416 W Jackson Ave

Daily Totals

Loads: 1.00 Tons: 21.16

Notes:

3-4
Rick 755-7521

TIME IN: 12:00 AM TIME OUT: 7:26 AM

This Ticket:

Gross: 73,820 lbs

Tare: 31,500 lbs

Net: 42,320 lbs 21.16 Tn

Total Due This Ticket:

The undersigned understands Claiborne Hauling, LLC, will not be held liable for any damage to property caused by the equipment. It is further understood that, should a wrecker become necessary, I hereby agree to pay any wrecker charges inquired, or for any equipment to assist in removal of this vehicle.



TICKET #: 240192

Claiborne Hauling, LLC
6210 Rutledge Pike
Knoxville TN, 37924
(865) 540-4409

Print Date: 2/19/2019 8:43 AM

Truck: C-242
Company: Claiborne Hauling, LLC
Customer: Gatlin Services
Address: P O Box 6070

Product: 1000B Brown Crusher Run
Order: WJACKSONAVE
Job: 416 W Jackson Ave

Daily Totals

Loads: 3.00 Tons: 62.27

Notes:

3-4
Rick 755-7521

TIME IN: 12:00 AM TIME OUT: 8:43 AM

This Ticket:

Gross: 72,980 lbs

Tare: 31,500 lbs

Net: 41,480 lbs 20.74 Tn

Total Due This Ticket:

The undersigned understands Claiborne Hauling, LLC. will not be held liable for any damage to property caused by the equipment. It is further understood that, should a wrecker become necessary, I hereby agree to pay any wrecker charges inquired, or for any equipment to assist in removal of this vehicle.



TICKET #: 240190

Claiborne Hauling, LLC
6210 Rutledge Pike
Knoxville TN, 37924
(865) 540-4409

Print Date: 2/19/2019 7:36 AM

Truck: C-225
Company: Claiborne Hauling, LLC
Customer: Gatlin Services
Address: P O Box 6070

Product: 1000B Brown Crusher Run
Order: WJACKSONAVE
Job: 416 W Jackson Ave

Daily Totals

Loads: 3.00 Tons: 62.27

Notes:

3-4
Rick 755-7521

TIME IN: 12:00 AM TIME OUT: 7:36 AM

This Ticket:

Gross: 72,620 lbs

Tare: 31,420 lbs

Net: 41,200 lbs 20.60 Tn

Total Due This Ticket:

The undersigned understands Claiborne Hauling, LLC. will not be held liable for any damage to property caused by the equipment. It is further understood that, should a wrecker become necessary, I hereby agree to pay any wrecker charges inquired, or for any equipment to assist in removal of this vehicle.



TICKET #: 240196

Claiborne Hauling, LLC
6210 Rutledge Pike
Knoxville TN, 37924
(865) 540-4409

Print Date: 2/19/2019 8:52 AM

Truck: C-259
Company: Claiborne Hauling, LLC
Customer: Gatlin Services
Address: P O Box 6070

Product: 1000B Brown Crusher Run
Order: WJACKSONAVE
Job: 416 W Jackson Ave

Daily Totals

Loads: 5.00 Tons: 103.35

Notes:

3-4
Rick 755-7521

TIME IN: 12:00 AM TIME OUT: 8:52 AM

This Ticket:

Gross: 73,420 lbs

Tare: 31,980 lbs

Net: 41,440 lbs 20.72 Tn

Total Due This Ticket:

The undersigned understands Claiborne Hauling, LLC. will not be held liable for any damage to property caused by the equipment. It is further understood that, should a wrecker become necessary, I hereby agree to pay any wrecker charges inquired, or for any equipment to assist in removal of this vehicle.



TICKET #: 240195

Claiborne Hauling, LLC
6210 Rutledge Pike
Knoxville TN, 37924
(865) 540-4409

Print Date: 2/19/2019 8:51 AM

Truck: C-225
Company: Claiborne Hauling, LLC
Customer: Gatlin Services
Address: P O Box 6070

Product: 1000B Brown Crusher Run
Order: WJACKSONAVE
Job: 416 W Jackson Ave

Daily Totals

Loads: 4.00 Tons: 82.63

Notes:

3-4
Rick 755-7521

TIME IN: 12:00 AM TIME OUT: 8:51 AM

This Ticket:

Gross: 72,140 lbs

Tare: 31,420 lbs

Net: 40,720 lbs 20.36 Tn

Total Due This Ticket:

The undersigned understands Claiborne Hauling, LLC. will not be held liable for any damage to property caused by the equipment. It is further understood that, should a wrecker become necessary, I hereby agree to pay any wrecker charges inquired, or for any equipment to assist in removal of this vehicle.



TICKET #: 240191

Claiborne Hauling, LLC
6210 Rutledge Pike
Knoxville TN, 37924
(865) 540-4409

Print Date: 2/19/2019 10:28 AM

Truck: C-259

Company: Claiborne Hauling, LLC

Customer: Gatlin Services

Address: P O Box 6070

Product: 1000B Brown Crusher Run

Order: WJACKSONAVE

Job: 416 W Jackson Ave

Daily Totals

Loads: 6.00 Tons: 123.94

Notes:

3-4
Rick 755-7521

TIME IN: 12:00 AM TIME OUT: 10:28 AM

This Ticket:

Gross: 73,160 lbs

Tare: 31,980 lbs

Net: 41,180 lbs 20.59 Tn

Total Due This Ticket:

The undersigned understands Claiborne Hauling, LLC, will not be held liable for any damage to property caused by the equipment. It is further understood that, should a wrecker become necessary, I hereby agree to pay any wrecker charges inquired, or for any equipment to assist in removal of this vehicle.

144.68 tons of rock

February 21, 2019

S&ME Inc. - Knoxville

Sample Delivery Group: L1071756
Samples Received: 02/20/2019
Project Number: 4143-17-017
Description: McClung Towers

Report To: Nate Peterson, Liz Porter
1413 Topside Rd
Louisville, TN 37777

Entire Report Reviewed By:



Tom Mellette
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	²Tc
Ss: Sample Summary	3	³Ss
Cn: Case Narrative	4	⁴Cn
Sr: Sample Results	5	⁵Sr
NORTH L1071756-01	5	⁴Cn
SOUTH L1071756-02	6	⁵Sr
EAST L1071756-03	7	⁶Qc
WEST L1071756-04	8	⁷Gl
Qc: Quality Control Summary	9	⁶Qc
Semi-Volatile Organic Compounds (GC) by Method EPH	9	⁷Gl
Gl: Glossary of Terms	10	⁸Al
Al: Accreditations & Locations	11	⁸Al
Sc: Sample Chain of Custody	12	⁹Sc

SAMPLE SUMMARY



NORTH L1071756-01 Solid

Collected by
N. Peterson
Collected date/time
02/18/19 15:00
Received date/time
02/20/19 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method EPH	WG1240136	1	02/20/19 20:24	02/21/19 08:23	KME

1
Cp

2
Tc

3
Ss

SOUTH L1071756-02 Solid

Collected by
N. Peterson
Collected date/time
02/18/19 15:00
Received date/time
02/20/19 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method EPH	WG1240136	1	02/20/19 20:24	02/21/19 08:36	KME

4
Cn

5
Sr

EAST L1071756-03 Solid

Collected by
N. Peterson
Collected date/time
02/18/19 10:00
Received date/time
02/20/19 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method EPH	WG1240136	1	02/20/19 20:24	02/21/19 08:50	KME

6
Qc

7
Gl

WEST L1071756-04 Solid

Collected by
N. Peterson
Collected date/time
02/18/19 16:00
Received date/time
02/20/19 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method EPH	WG1240136	1	02/20/19 20:24	02/21/19 09:04	KME

8
Al

9
Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Tom Mellette
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Semi-Volatile Organic Compounds (GC) by Method EPH

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Extractable Petroleum Hydrocarbon	ND		4.00	1	02/21/2019 08:23	WG1240136
(S) o-Terphenyl	105		18.0-148		02/21/2019 08:23	WG1240136

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Semi-Volatile Organic Compounds (GC) by Method EPH

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Extractable Petroleum Hydrocarbon	ND		4.00	1	02/21/2019 08:36	WG1240136
(S) o-Terphenyl	117		18.0-148		02/21/2019 08:36	WG1240136

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Semi-Volatile Organic Compounds (GC) by Method EPH

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Extractable Petroleum Hydrocarbon	ND		4.00	1	02/21/2019 08:50	WG1240136
(S) o-Terphenyl	106		18.0-148		02/21/2019 08:50	WG1240136

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Semi-Volatile Organic Compounds (GC) by Method EPH

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Extractable Petroleum Hydrocarbon	ND		4.00	1	02/21/2019 09:04	WG1240136
(S) o-Terphenyl	121		18.0-148		02/21/2019 09:04	WG1240136

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3385680-1 02/21/19 04:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Extractable Petroleum Hydrocarbon	U		1.05	4.00
<i>(S) o-Terphenyl</i>	133			18.0-148

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3385680-2 02/21/19 07:55 • (LCSD) R3385680-3 02/21/19 08:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Extractable Petroleum Hydrocarbon	50.0	39.5	39.3	79.0	78.6	50.0-150			0.508	20
<i>(S) o-Terphenyl</i>				174	171	18.0-148	J1	J1		

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
----	--

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

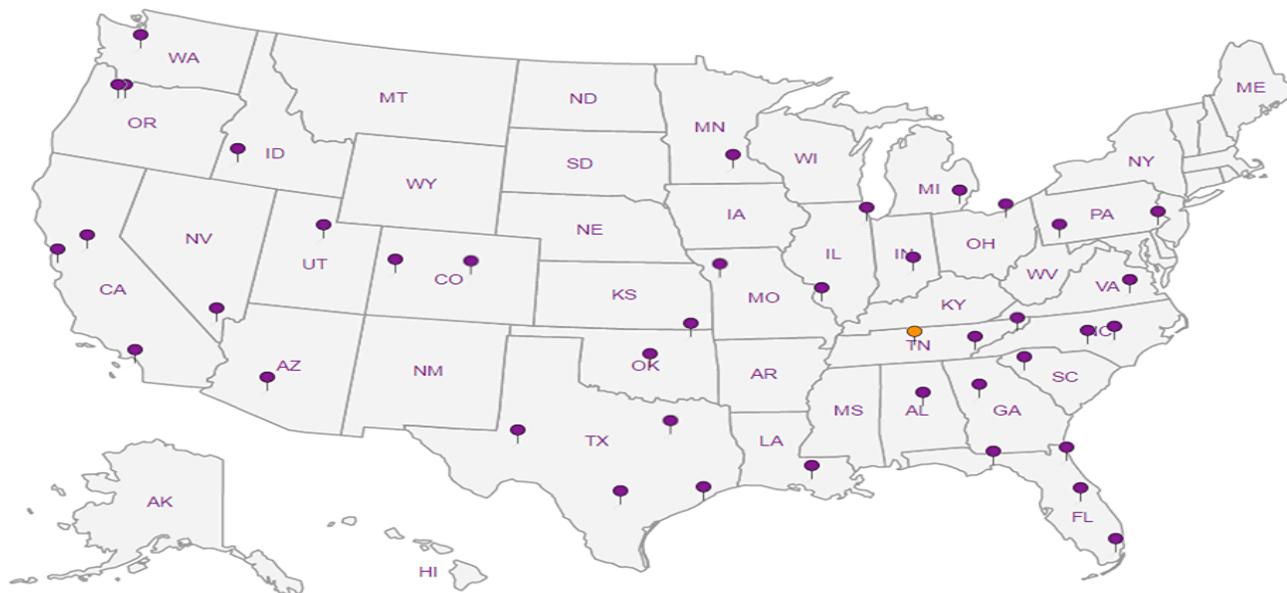
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

February 27, 2019

S&ME Inc. - Knoxville

Sample Delivery Group: L1071756
Samples Received: 02/20/2019
Project Number: 4143-17-017
Description: McClung Towers

Report To: Nate Peterson, Liz Porter
1413 Topside Rd
Louisville, TN 37777

Entire Report Reviewed By:



Tom Mellette
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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NORTH L1071756-01 Solid

Collected by N. Peterson
 Collected date/time 02/18/19 15:00
 Received date/time 02/20/19 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method EPH	WG1240136	1	02/20/19 20:24	02/21/19 08:23	KME	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

SOUTH L1071756-02 Solid

Collected by N. Peterson
 Collected date/time 02/18/19 15:00
 Received date/time 02/20/19 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method EPH	WG1240136	1	02/20/19 20:24	02/21/19 08:36	KME	Mt. Juliet, TN

⁴ Cn

⁵ Su

EAST L1071756-03 Solid

Collected by N. Peterson
 Collected date/time 02/18/19 10:00
 Received date/time 02/20/19 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method EPH	WG1240136	1	02/20/19 20:24	02/21/19 08:50	KME	Mt. Juliet, TN

⁶ Gl

⁷ Al

WEST L1071756-04 Solid

Collected by N. Peterson
 Collected date/time 02/18/19 16:00
 Received date/time 02/20/19 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method EPH	WG1240136	1	02/20/19 20:24	02/21/19 09:04	KME	Mt. Juliet, TN

⁸ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Tom Mellette
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Su
- ⁶ Gl
- ⁷ Al
- ⁸ Sc



EPH Semi-Volatile Organic Compounds (GC)



Analytical Method: EPH
Matrix: Solid

SDG: L1071756

Sample ID	Lab Sample ID	Instrument	File ID	DMC-1 % Rec.	TOT Out
NORTH	L1071756-01	SVGC2	0220_57	105	0
SOUTH	L1071756-02	SVGC2	0220_58	117	0
EAST	L1071756-03	SVGC2	0220_59	106	0
WEST	L1071756-04	SVGC2	0220_60	121	0
BLANK	R3385680-1	SVGC2	0220_54	133	0
LCS	R3385680-2	SVGC2	0220_55	174*	1
LCSD	R3385680-3	SVGC2	0220_56	171*	1

Parm Abbreviation	Parameter	QC LIMITS
DMC-1	o-Terphenyl	18.0 - 148

*: Value outside the established quality control limits.

D: Surrogate recovery cannot be used for control limit evaluation due to dilution.

LABORATORY CONTROL SAMPLE
 LABORATORY CONTROL SAMPLE DUPLICATE
 RECOVERY
 L1071756-01,02,03,04

SAMPLE NO.:

R3385680-2

R3385680-3

LCS Sample / File ID: R3385680-2 / 0220_55
LCSD Sample / File ID: R3385680-3 / 0220_56
Instrument ID: SVGC2
Analytical Method: EPH

SDG: L1071756
Analytical Batch: WG1240136
Dilution Factor: 1
Matrix: Solid

Analyte	Spike Amount <i>mg/kg</i>	LCS Result <i>mg/kg</i>	LCSD Result <i>mg/kg</i>	LCS Rec. %	LCSD Rec. %	Rec. Limits %	RPD %	RPD Limit %
Extractable Petroleum Hydrocarbon	50.0	39.5	39.3	79.0	78.6	50.0 - 150	0.508	20

*: Value outside the established quality control limits.

D: Surrogate recovery cannot be used for control limit evaluation due to dilution.

Lab Sample ID: R3385680-1
Lab File ID: 0220_54
Instrument ID: SVGC2
Analytical Batch: WG1240136
Analytical Method: EPH

SDG: L1071756
Preparation Date/Time: 02/20/19 20:22
Analysis Date/Time: 02/21/19 04:19
Dilution Factor: 1
Matrix: Solid

Sample ID	Lab Sample ID	Instrument	File ID	Analysis date/time
LCS	R3385680-2	SVGC2	0220_55	02/21/19 07:55
LCSD	R3385680-3	SVGC2	0220_56	02/21/19 08:09
NORTH	L1071756-01	SVGC2	0220_57	02/21/19 08:23
SOUTH	L1071756-02	SVGC2	0220_58	02/21/19 08:36
EAST	L1071756-03	SVGC2	0220_59	02/21/19 08:50
WEST	L1071756-04	SVGC2	0220_60	02/21/19 09:04

SAMPLE RESULT SUMMARY
ORGANIC ANALYSIS DATA SHEET

Lab Sample ID: L1071756-01
 Client Sample ID: NORTH
 Lab File ID: 0220_57
 Instrument ID: SVGC2
 Analytical Batch: WG1240136
 Dilution Factor: 1
 Analytical Method: EPH
 Matrix: Solid
 Total Solids (%): _____

SDG: L1071756
 Collected Date/Time: 02/18/19 15:00
 Received Date/Time: 02/20/19 09:45
 Preparation Date/Time: 02/20/19 20:24
 Analysis Date/Time: 02/21/19 08:23
 Prep Method: 3546
 Sample Vol Used: _____
 Initial Wt/Vol: 15.61 g
 Final Wt/Vol: 0.5 mL

Analyte	CAS	RT	Result <i>mg/kg</i>	Qualifier	MDL <i>mg/kg</i>	RDL <i>mg/kg</i>
Extractable Petroleum Hydrocarbon		2.13	ND		1.05	4.00

Data Path : C:\msdchem\1\data\022019\
 Data File : 0220_57.d
 Signal(s) : FID1A.CH
 Acq On : 21 Feb 2019 8:23 am
 Operator : 931
 Sample : L1071756-01 1X WG1240136
 Misc : M.I.s on ranges are corrections
 ALS Vial : 49 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Feb 21 09:03:11 2019
 Quant Method : C:\msdchem\1\methods\EP02B03AS.M
 Quant Title :
 QLast Update : Sun Feb 03 14:10:50 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.54f	18856289	21.1029294	ppm
Spiked Amount	20.0000	Range	50 - 150	Recovery = 105.51%
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	0.00	0	N.D.	ppm
4) h,m Residual Range Organics	0.00	0	N.D.	ppm
5) h,m Diesel (C12-C24)	0.00	0	N.D.	ppm
6) h,m Motor Oil (C24-C30)	0.00	0	N.D.	ppm
7) h,m Diesel	0.00	0	N.D.	ppm
8) h,m Motor Oil	0.00	0	N.D.	ppm
9) t,h,m TPH C8-C34	0.00	0	N.D.	ppm
10) h,m EPH Screen	0.00	0	N.D.	ppm
11) H,M C10-C20 Hydrocarbons	0.00	0	N.D.	ppm
12) H,M C20-C34 Hydrocarbons	0.00	0	N.D.	ppm
13) t,m,h Extractable Petroleum...	2.13	76278283	44.9083741	ppm
14) H,M C10-C22 Hydrocarbons	0.00	0	N.D.	ppm
15) H,M C12-C22 Hydrocarbons	0.00	0	N.D.	ppm
16) h,m C22-C32 Hydrocarbons	0.00	0	N.D.	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	0.00	0	N.D.	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	0.00	0	N.D.	ppm
22) H,m C20-C36 Hydrocarbons	0.00	0	N.D.	ppm
23) h,m TEM (C9-C40)	0.00	0	N.D.	ppm
24) h,m TEH (C9-C40)	0.00	0	N.D.	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

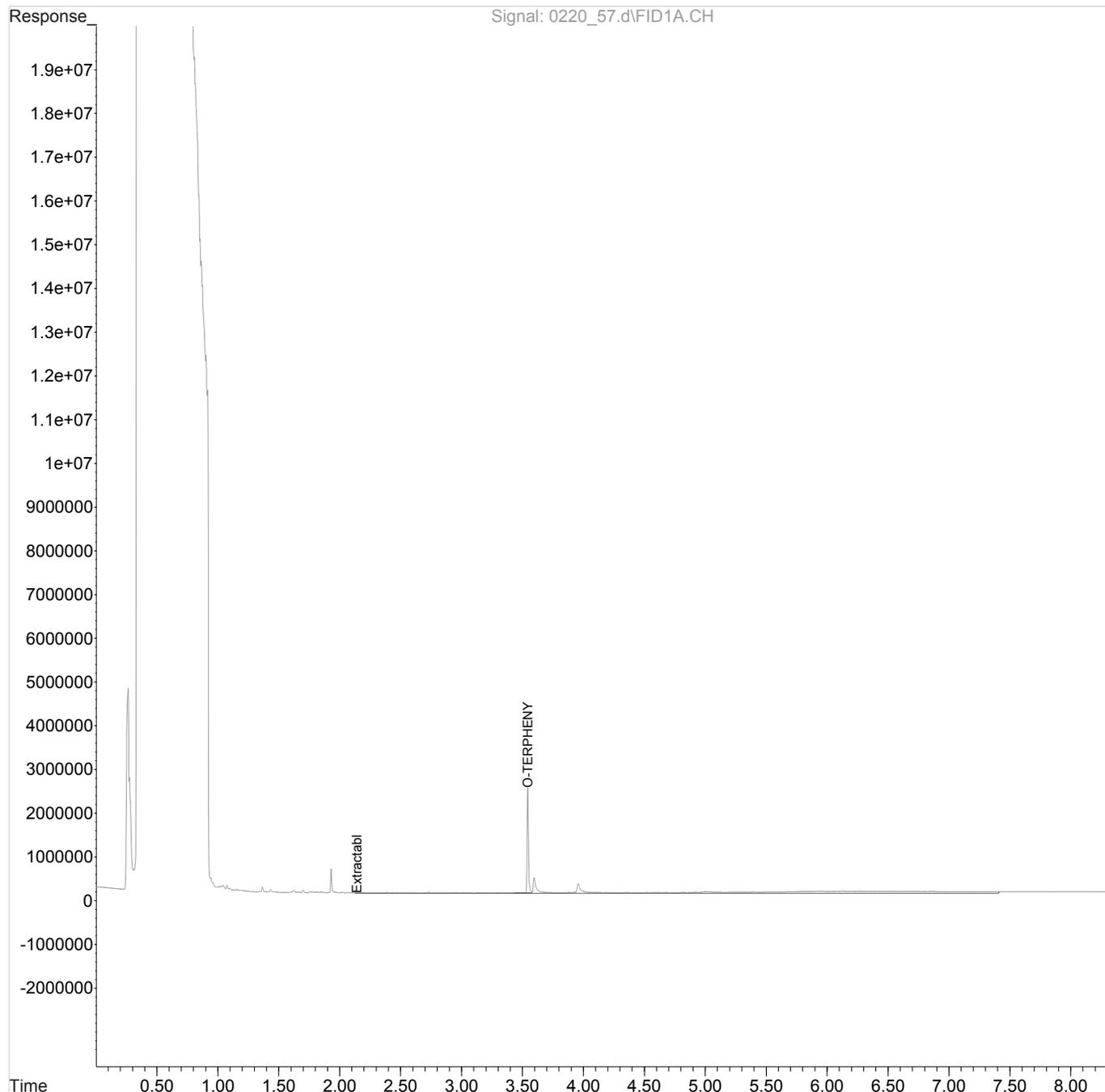
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(m)=manual int.

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_57.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 8:23 am
Operator : 931
Sample : L1071756-01 1X WG1240136
Misc : M.I.s on ranges are corrections
ALS Vial : 49 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:03:11 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



SAMPLE RESULT SUMMARY
ORGANIC ANALYSIS DATA SHEET

Lab Sample ID: L1071756-02
 Client Sample ID: SOUTH
 Lab File ID: 0220_58
 Instrument ID: SVGC2
 Analytical Batch: WG1240136
 Dilution Factor: 1
 Analytical Method: EPH
 Matrix: Solid
 Total Solids (%): _____

SDG: L1071756
 Collected Date/Time: 02/18/19 15:00
 Received Date/Time: 02/20/19 09:45
 Preparation Date/Time: 02/20/19 20:24
 Analysis Date/Time: 02/21/19 08:36
 Prep Method: 3546
 Sample Vol Used: _____
 Initial Wt/Vol: 15.88 g
 Final Wt/Vol: 0.5 mL

Analyte	CAS	RT	Result <i>mg/kg</i>	Qualifier	MDL <i>mg/kg</i>	RDL <i>mg/kg</i>
Extractable Petroleum Hydrocarbon		2.13	ND		1.05	4.00

Data Path : C:\msdchem\1\data\022019\
 Data File : 0220_58.d
 Signal(s) : FID1A.CH
 Acq On : 21 Feb 2019 8:36 am
 Operator : 931
 Sample : L1071756-02 1X WG1240136
 Misc : M.I.s on ranges are corrections
 ALS Vial : 50 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Feb 21 09:03:30 2019
 Quant Method : C:\msdchem\1\methods\EP02B03AS.M
 Quant Title :
 QLast Update : Sun Feb 03 14:10:50 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.54f	20939002	23.4337890	ppm
Spiked Amount	20.0000	Range	50 - 150	Recovery = 117.17%
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	0.00	0	N.D.	ppm
4) h,m Residual Range Organics	0.00	0	N.D.	ppm
5) h,m Diesel (C12-C24)	0.00	0	N.D.	ppm
6) h,m Motor Oil (C24-C30)	0.00	0	N.D.	ppm
7) h,m Diesel	0.00	0	N.D.	ppm
8) h,m Motor Oil	0.00	0	N.D.	ppm
9) t,h,m TPH C8-C34	0.00	0	N.D.	ppm
10) h,m EPH Screen	0.00	0	N.D.	ppm
11) H,M C10-C20 Hydrocarbons	0.00	0	N.D.	ppm
12) H,M C20-C34 Hydrocarbons	0.00	0	N.D.	ppm
13) t,m,h Extractable Petroleum...	2.13	80472229	48.7515133	ppm
14) H,M C10-C22 Hydrocarbons	0.00	0	N.D.	ppm
15) H,M C12-C22 Hydrocarbons	0.00	0	N.D.	ppm
16) h,m C22-C32 Hydrocarbons	0.00	0	N.D.	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	0.00	0	N.D.	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	0.00	0	N.D.	ppm
22) H,m C20-C36 Hydrocarbons	0.00	0	N.D.	ppm
23) h,m TEM (C9-C40)	0.00	0	N.D.	ppm
24) h,m TEH (C9-C40)	0.00	0	N.D.	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

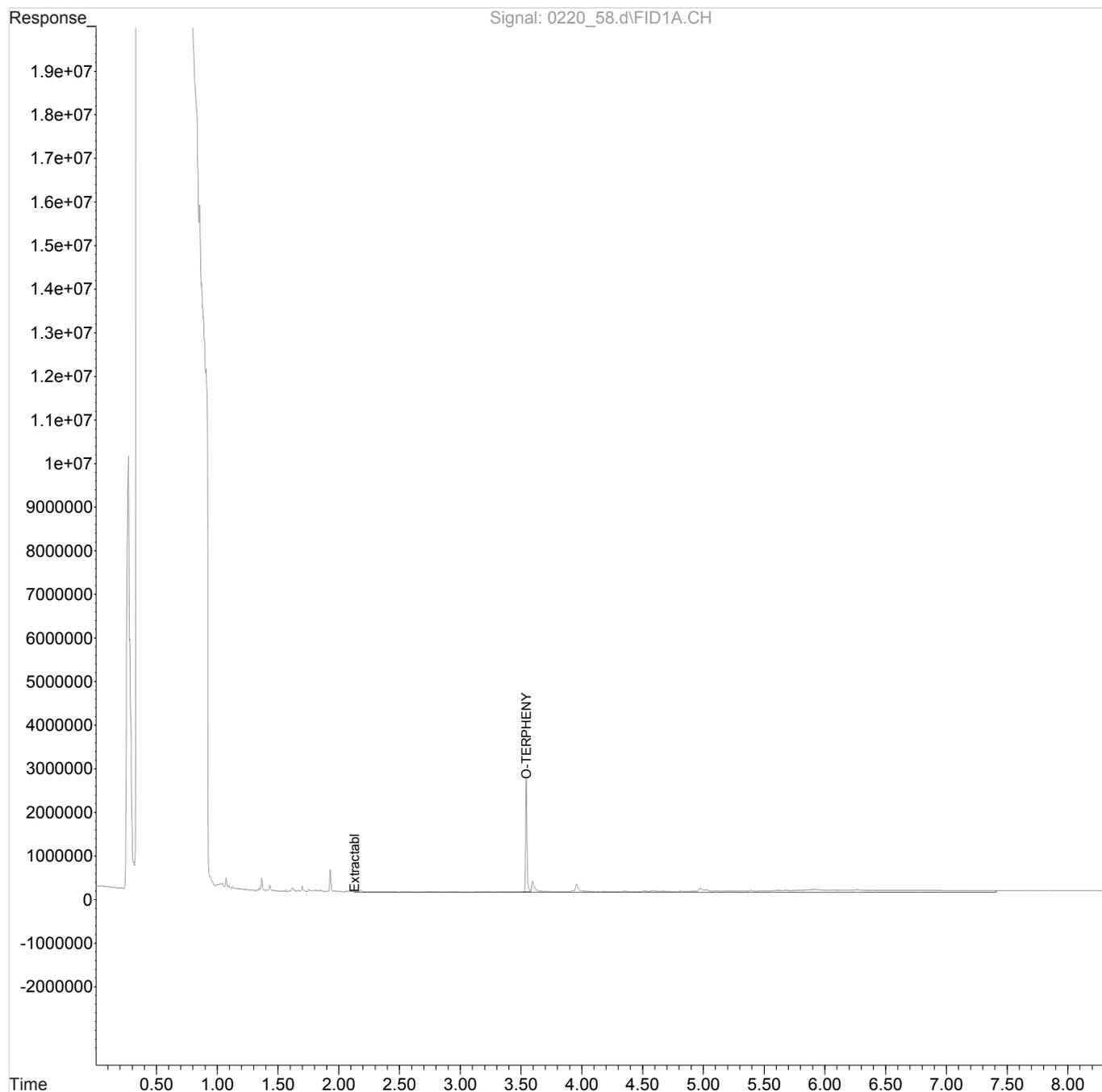
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_58.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 8:36 am
Operator : 931
Sample : L1071756-02 1X WG1240136
Misc : M.I.s on ranges are corrections
ALS Vial : 50 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:03:30 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



SAMPLE RESULT SUMMARY
ORGANIC ANALYSIS DATA SHEET

Lab Sample ID: L1071756-03
 Client Sample ID: EAST
 Lab File ID: 0220_59
 Instrument ID: SVGC2
 Analytical Batch: WG1240136
 Dilution Factor: 1
 Analytical Method: EPH
 Matrix: Solid
 Total Solids (%): _____

SDG: L1071756
 Collected Date/Time: 02/18/19 10:00
 Received Date/Time: 02/20/19 09:45
 Preparation Date/Time: 02/20/19 20:24
 Analysis Date/Time: 02/21/19 08:50
 Prep Method: 3546
 Sample Vol Used: _____
 Initial Wt/Vol: 15.20 g
 Final Wt/Vol: 0.5 mL

Analyte	CAS	RT	Result <i>mg/kg</i>	Qualifier	MDL <i>mg/kg</i>	RDL <i>mg/kg</i>
Extractable Petroleum Hydrocarbon		2.13	ND		1.05	4.00

Data Path : C:\msdchem\1\data\022019\
 Data File : 0220_59.d
 Signal(s) : FID1A.CH
 Acq On : 21 Feb 2019 8:50 am
 Operator : 931
 Sample : L1071756-03 1X WG1240136
 Misc : M.I.s on ranges are corrections
 ALS Vial : 51 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Feb 21 09:03:49 2019
 Quant Method : C:\msdchem\1\methods\EP02B03AS.M
 Quant Title :
 QLast Update : Sun Feb 03 14:10:50 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.54f	18970466	21.2307110	ppm
Spiked Amount	20.0000	Range	50 - 150	Recovery = 106.15%
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	0.00	0	N.D.	ppm
4) h,m Residual Range Organics	0.00	0	N.D.	ppm
5) h,m Diesel (C12-C24)	0.00	0	N.D.	ppm
6) h,m Motor Oil (C24-C30)	0.00	0	N.D.	ppm
7) h,m Diesel	0.00	0	N.D.	ppm
8) h,m Motor Oil	0.00	0	N.D.	ppm
9) t,h,m TPH C8-C34	0.00	0	N.D.	ppm
10) h,m EPH Screen	0.00	0	N.D.	ppm
11) H,M C10-C20 Hydrocarbons	0.00	0	N.D.	ppm
12) H,M C20-C34 Hydrocarbons	0.00	0	N.D.	ppm
13) t,m,h Extractable Petroleum...	2.13	64239845	33.8769047	ppm
14) H,M C10-C22 Hydrocarbons	0.00	0	N.D.	ppm
15) H,M C12-C22 Hydrocarbons	0.00	0	N.D.	ppm
16) h,m C22-C32 Hydrocarbons	0.00	0	N.D.	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	0.00	0	N.D.	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	0.00	0	N.D.	ppm
22) H,m C20-C36 Hydrocarbons	0.00	0	N.D.	ppm
23) h,m TEM (C9-C40)	0.00	0	N.D.	ppm
24) h,m TEH (C9-C40)	0.00	0	N.D.	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

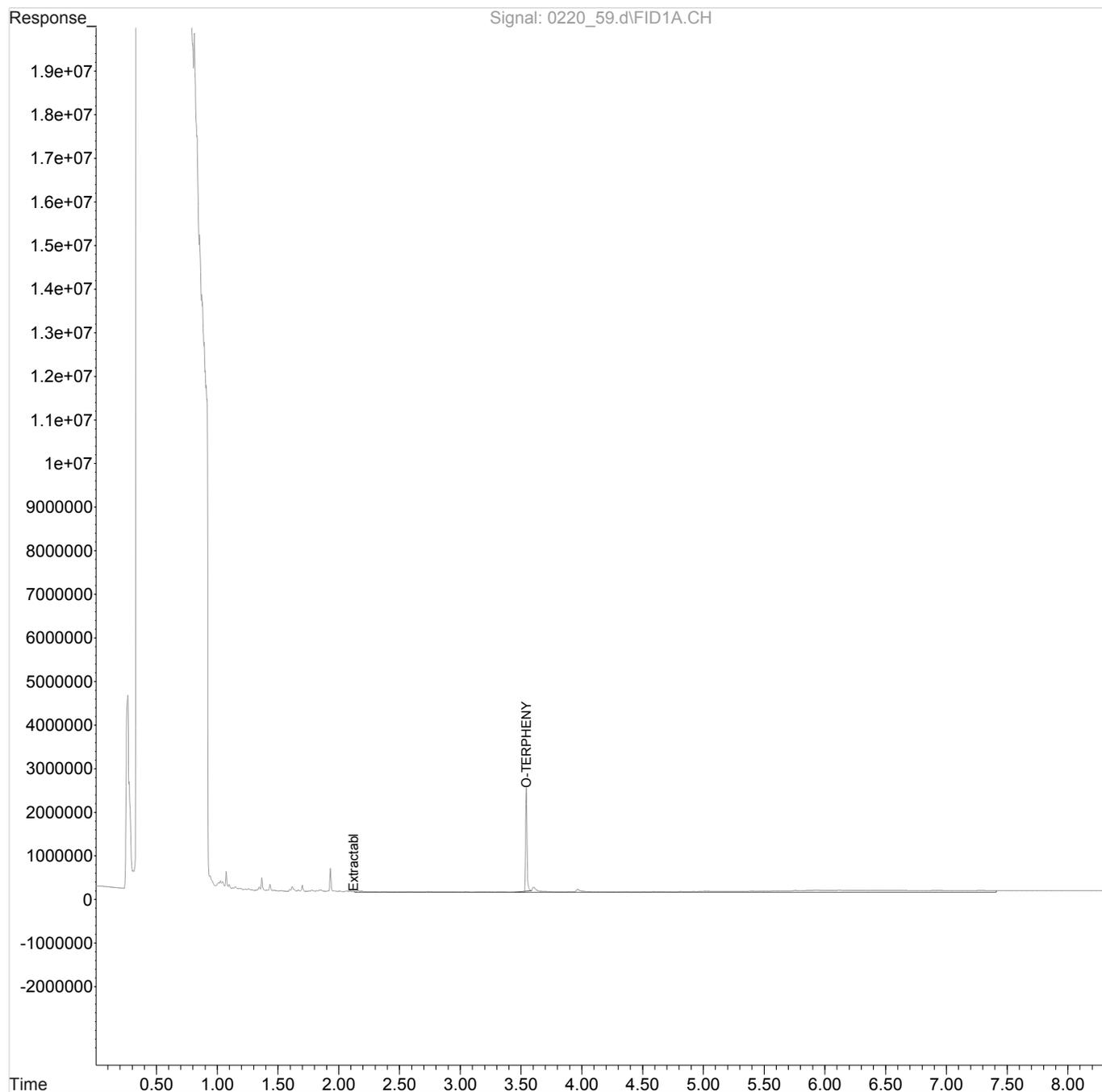
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_59.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 8:50 am
Operator : 931
Sample : L1071756-03 1X WG1240136
Misc : M.I.s on ranges are corrections
ALS Vial : 51 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:03:49 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



SAMPLE RESULT SUMMARY
ORGANIC ANALYSIS DATA SHEET

Lab Sample ID:	L1071756-04	SDG:	L1071756
Client Sample ID:	WEST	Collected Date/Time:	02/18/19 16:00
Lab File ID:	0220_60	Received Date/Time:	02/20/19 09:45
Instrument ID:	SVGC2	Preparation Date/Time:	02/20/19 20:24
Analytical Batch:	WG1240136	Analysis Date/Time:	02/21/19 09:04
Dilution Factor:	1	Prep Method:	3546
Analytical Method:	EPH	Sample Vol Used:	_____
Matrix:	Solid	Initial Wt/Vol:	15.57 g
Total Solids (%):	_____	Final Wt/Vol:	0.5 mL

Analyte	CAS	RT	Result <i>mg/kg</i>	Qualifier	MDL <i>mg/kg</i>	RDL <i>mg/kg</i>
Extractable Petroleum Hydrocarbon		2.13	ND		1.05	4.00

Data Path : C:\msdchem\1\data\022019\
 Data File : 0220_60.d
 Signal(s) : FID1A.CH
 Acq On : 21 Feb 2019 9:04 am
 Operator : 931
 Sample : L1071756-04 1X WG1240136
 Misc : M.I.s on ranges are corrections
 ALS Vial : 52 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Feb 21 09:29:12 2019
 Quant Method : C:\msdchem\1\methods\EP02B03AS.M
 Quant Title :
 QLast Update : Sun Feb 03 14:10:50 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.54f	21604534	24.1786153	ppm
Spiked Amount	20.0000	Range	50 - 150	Recovery = 120.89%
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	0.00	0	N.D.	ppm
4) h,m Residual Range Organics	0.00	0	N.D.	ppm
5) h,m Diesel (C12-C24)	0.00	0	N.D.	ppm
6) h,m Motor Oil (C24-C30)	0.00	0	N.D.	ppm
7) h,m Diesel	0.00	0	N.D.	ppm
8) h,m Motor Oil	0.00	0	N.D.	ppm
9) t,h,m TPH C8-C34	0.00	0	N.D.	ppm
10) h,m EPH Screen	0.00	0	N.D.	ppm
11) H,M C10-C20 Hydrocarbons	0.00	0	N.D.	ppm
12) H,M C20-C34 Hydrocarbons	0.00	0	N.D.	ppm
13) t,m,h Extractable Petroleum...	2.13	80227475	48.5272322	ppm
14) H,M C10-C22 Hydrocarbons	0.00	0	N.D.	ppm
15) H,M C12-C22 Hydrocarbons	0.00	0	N.D.	ppm
16) h,m C22-C32 Hydrocarbons	0.00	0	N.D.	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	0.00	0	N.D.	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	0.00	0	N.D.	ppm
22) H,m C20-C36 Hydrocarbons	0.00	0	N.D.	ppm
23) h,m TEM (C9-C40)	0.00	0	N.D.	ppm
24) h,m TEH (C9-C40)	0.00	0	N.D.	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

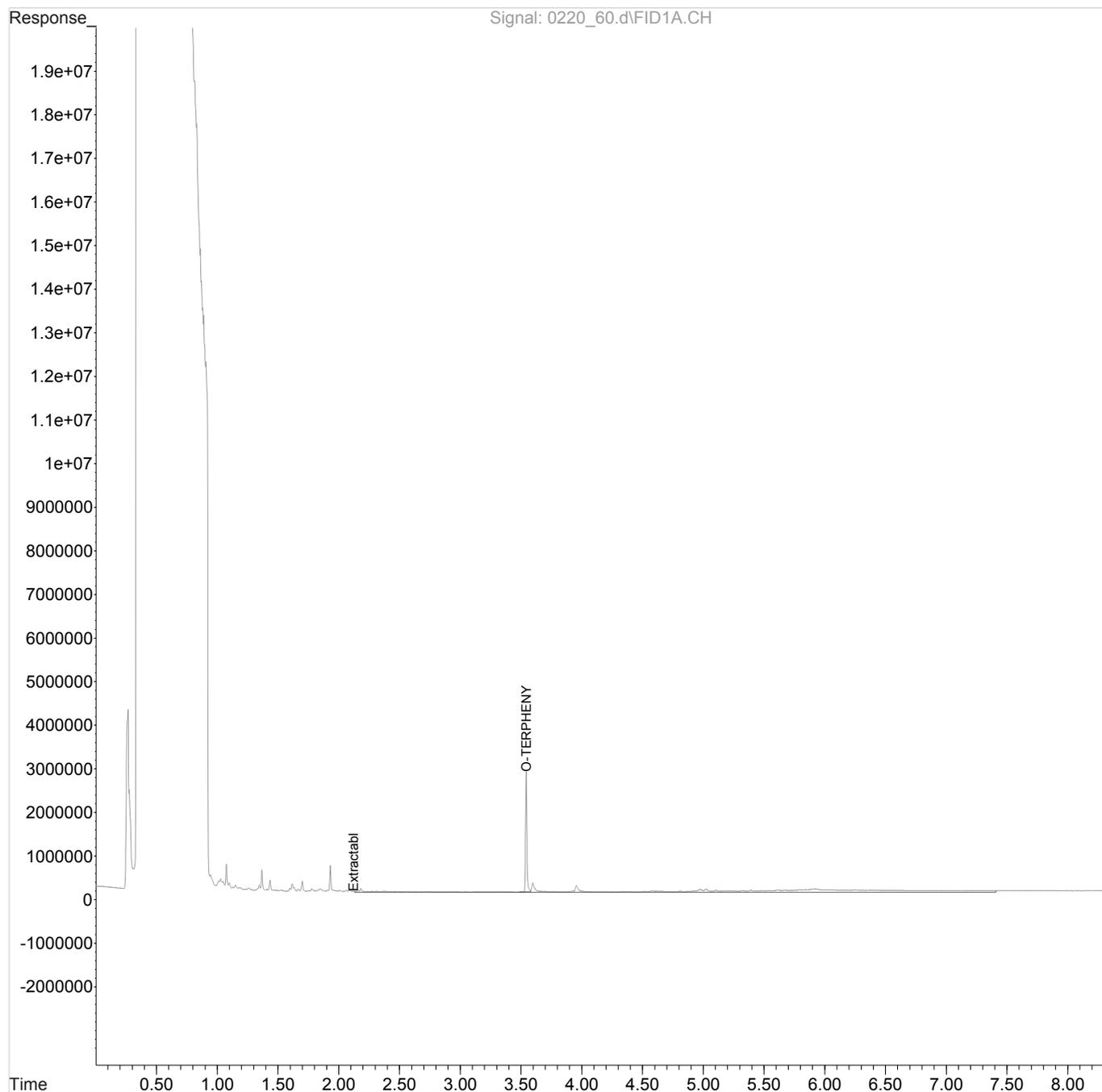
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_60.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 9:04 am
Operator : 931
Sample : L1071756-04 1X WG1240136
Misc : M.I.s on ranges are corrections
ALS Vial : 52 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:29:12 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :





RETENTION TIME
INITIAL CALIBRATION OF
SINGLE COMPONENT ANALYTES

SDG:	L1071756	Calibration (begin) date/time:	01/22/19 16:52
Instrument ID:	SVGC2 - 1	Calibration (end) date/time:	01/22/19 19:50
Analytical Method:	EPH		

Analyte	CS: 100	CS: 200	CS: 400	CS: 1000	CS: 2000	CS: 4000	CS: 5000	CS: 7500	CS: 10000
EXTRACTABLE PETROLEUM HYDROCARBON	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13
O-TERPHENYL				3.57	3.57	3.57	3.57	3.57	3.57
File ID:	0122_03	0122_04	0122_05	0122_06	0122_07	0122_08	0122_09	0122_10	0122_11



CALIBRATION FACTOR
INITIAL CALIBRATION OF
SINGLE COMPONENT ANALYTES

SDG:	L1071756	Calibration (begin) date/time:	01/22/19 16:52
Instrument ID:	SVGC2 - 1	Calibration (end) date/time:	01/22/19 19:50
Analytical Method:	EPH		

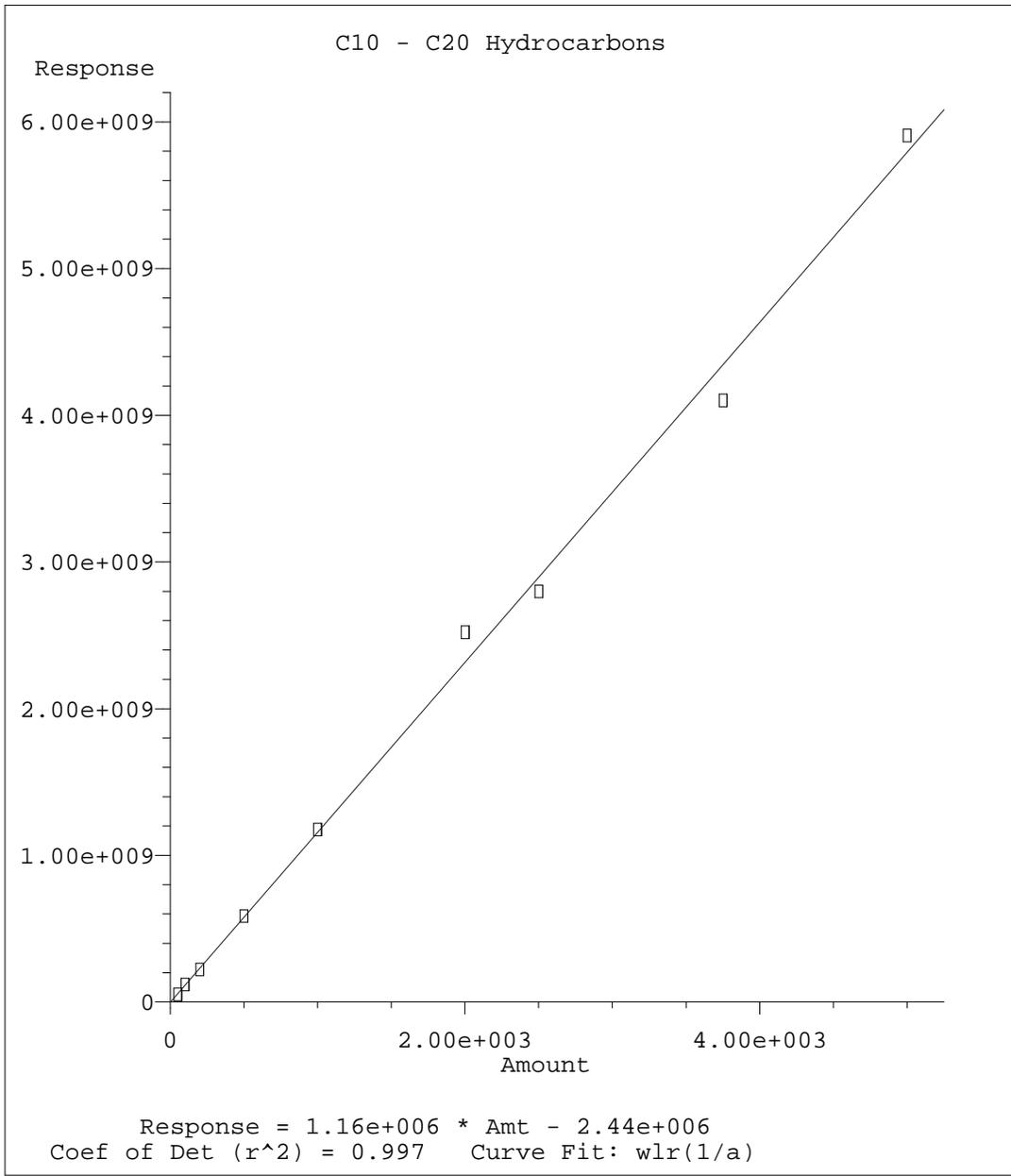
Analyte	RRF: 100	RRF: 200	RRF: 400	RRF: 1000	RRF: 2000	RRF: 4000	RRF: 5000	RRF: 7500
EXTRACTABLE PETROLEUM HYDROCARBON	1401000	1261000	1099000	1101000	1094000	1175000	1052000	1055000
O-TERPHENYL				1184000	931000	892000	762000	819000
File ID:	0122_03	0122_04	0122_05	0122_06	0122_07	0122_08	0122_09	0122_10

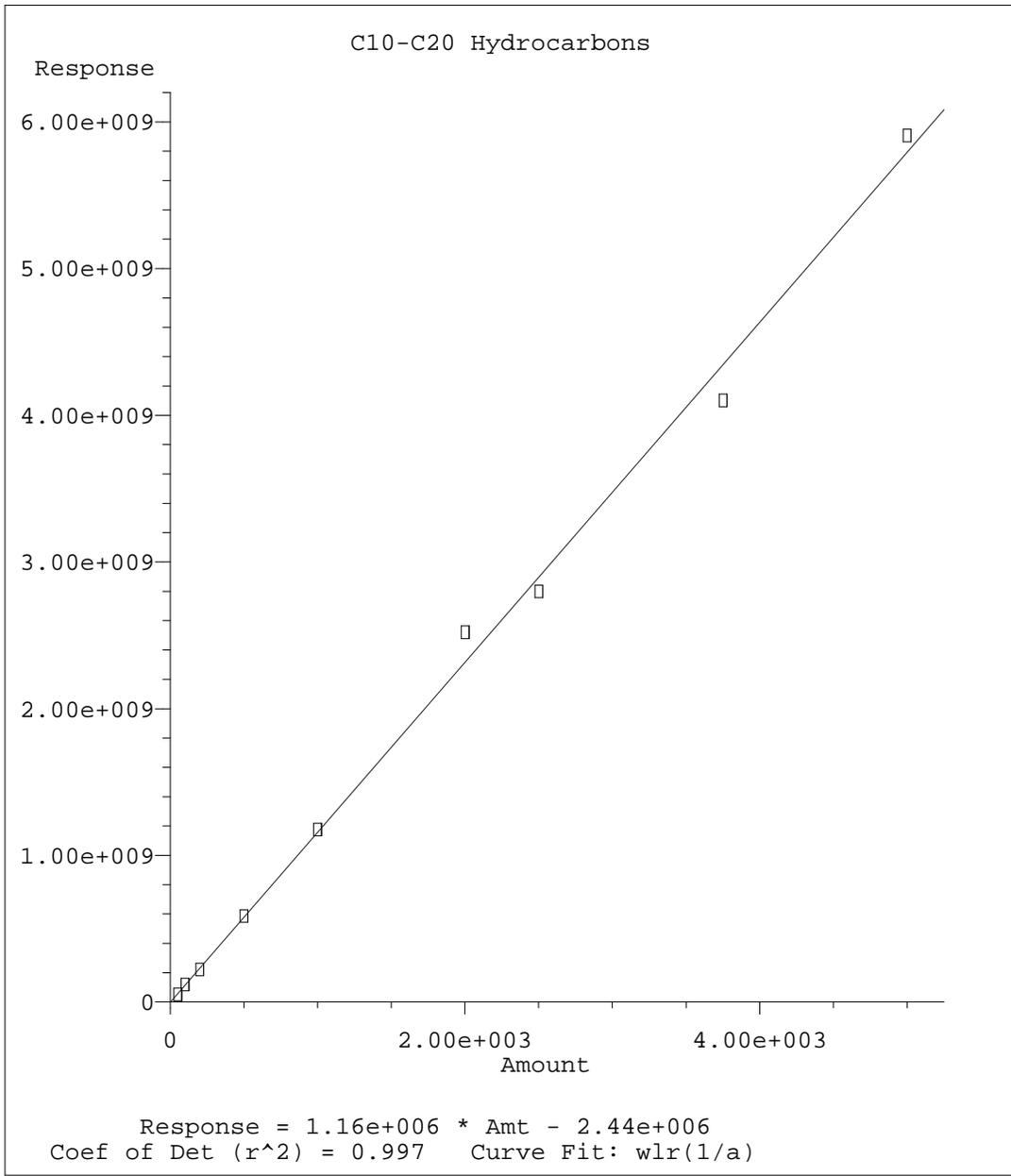


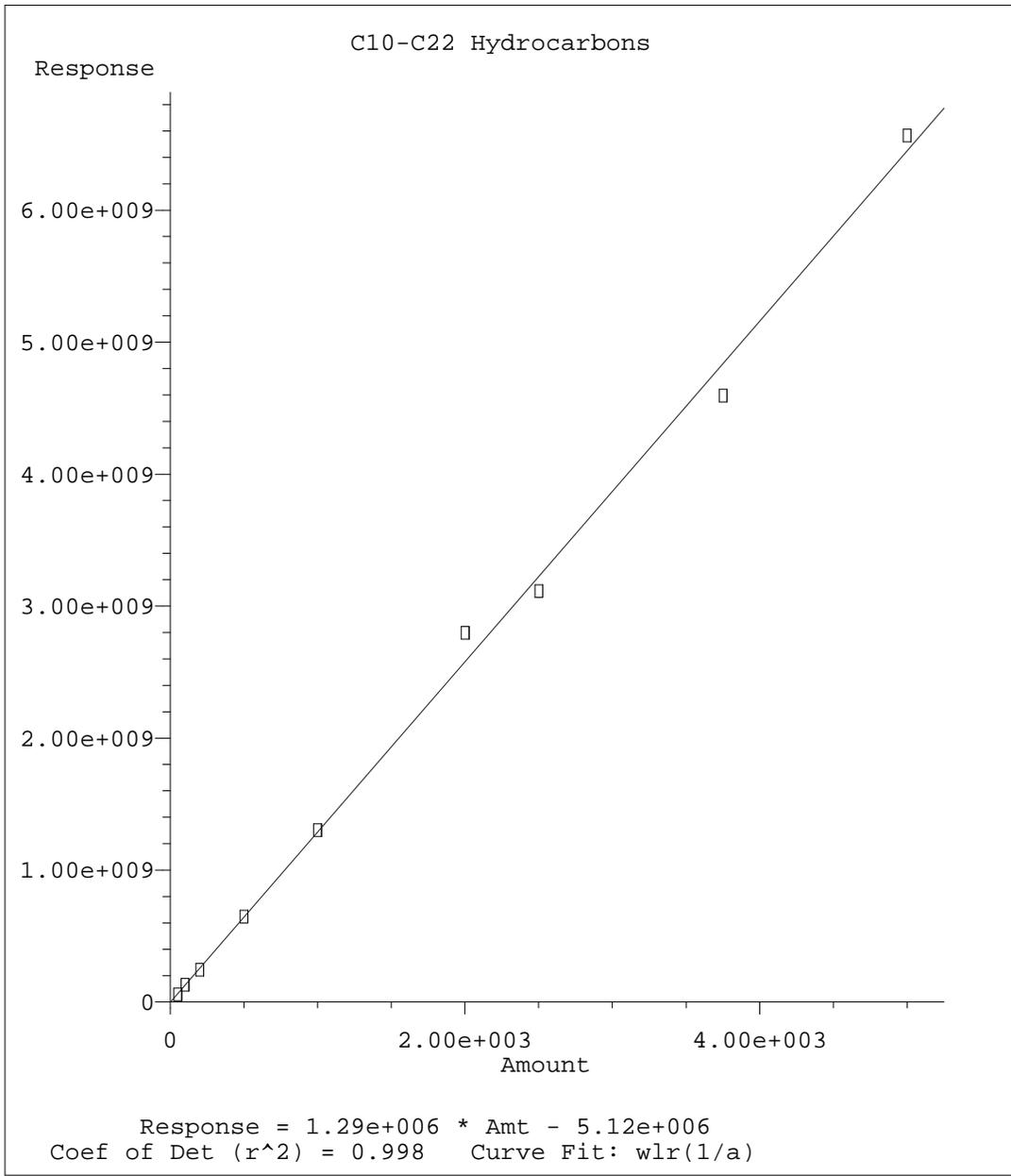
CALIBRATION FACTOR
INITIAL CALIBRATION OF
SINGLE COMPONENT ANALYTES

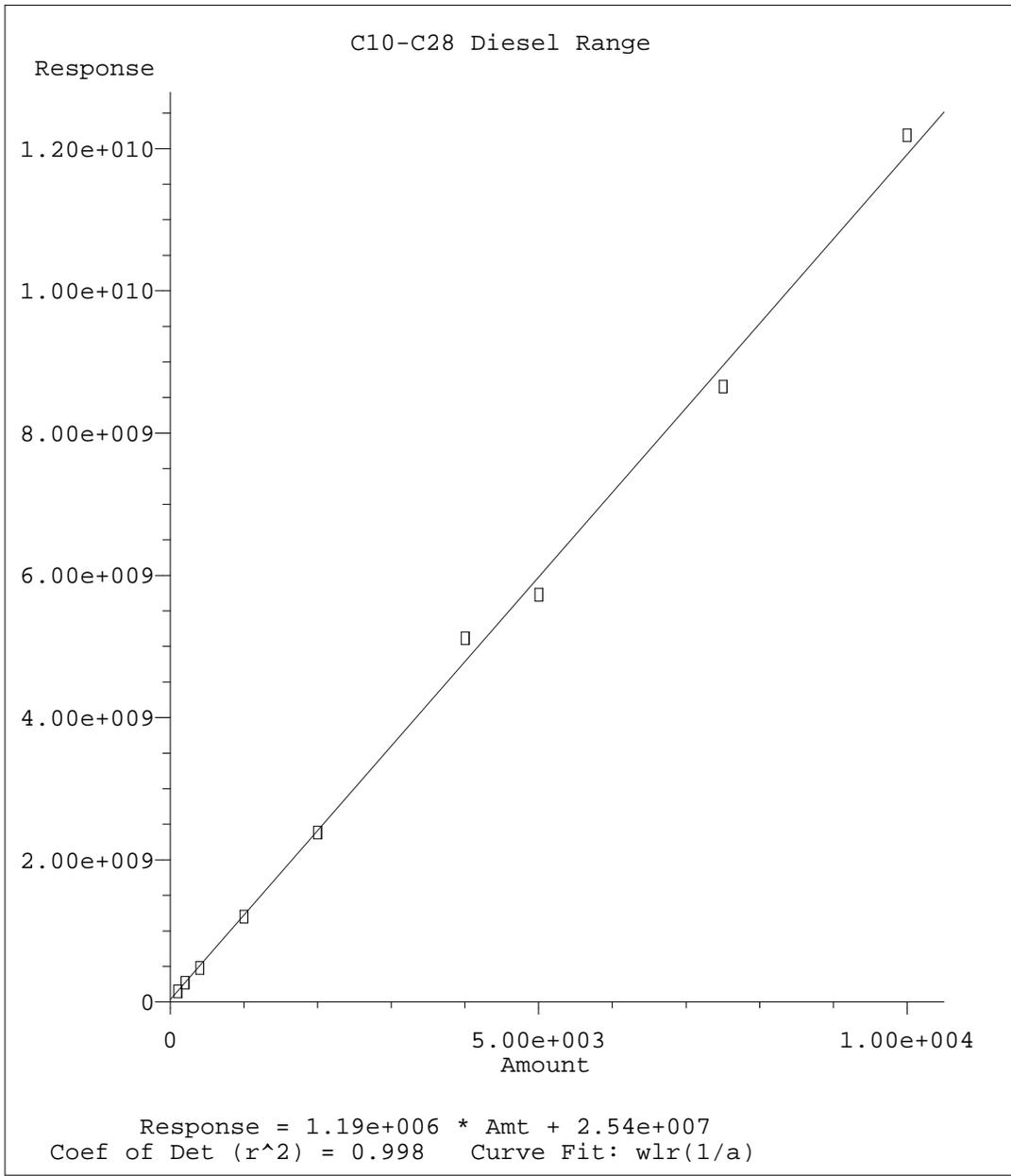
SDG:	L1071756	Calibration (begin) date/time:	01/22/19 16:52
Instrument ID:	SVGC2 - 1	Calibration (end) date/time:	01/22/19 19:50
Analytical Method:	EPH		

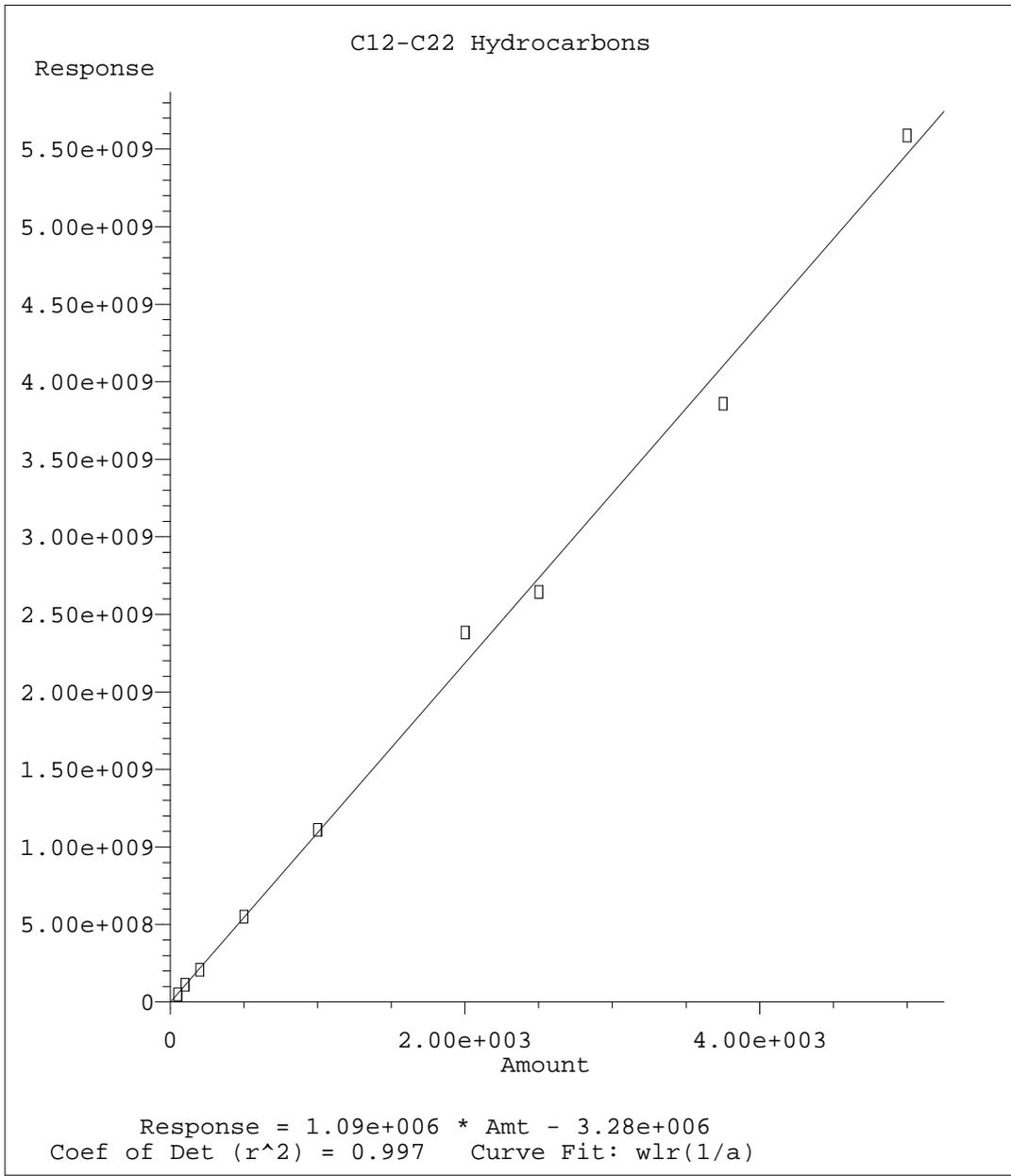
Analyte	RRF: 10000	RRF. Avg	%RSD	COD
EXTRACTABLE PETROLEUM HYDROCARBON	1121000	1150923	9.88	0.998
O-TERPHENYL	773000	893539	17.56	
File ID:	0122_11			

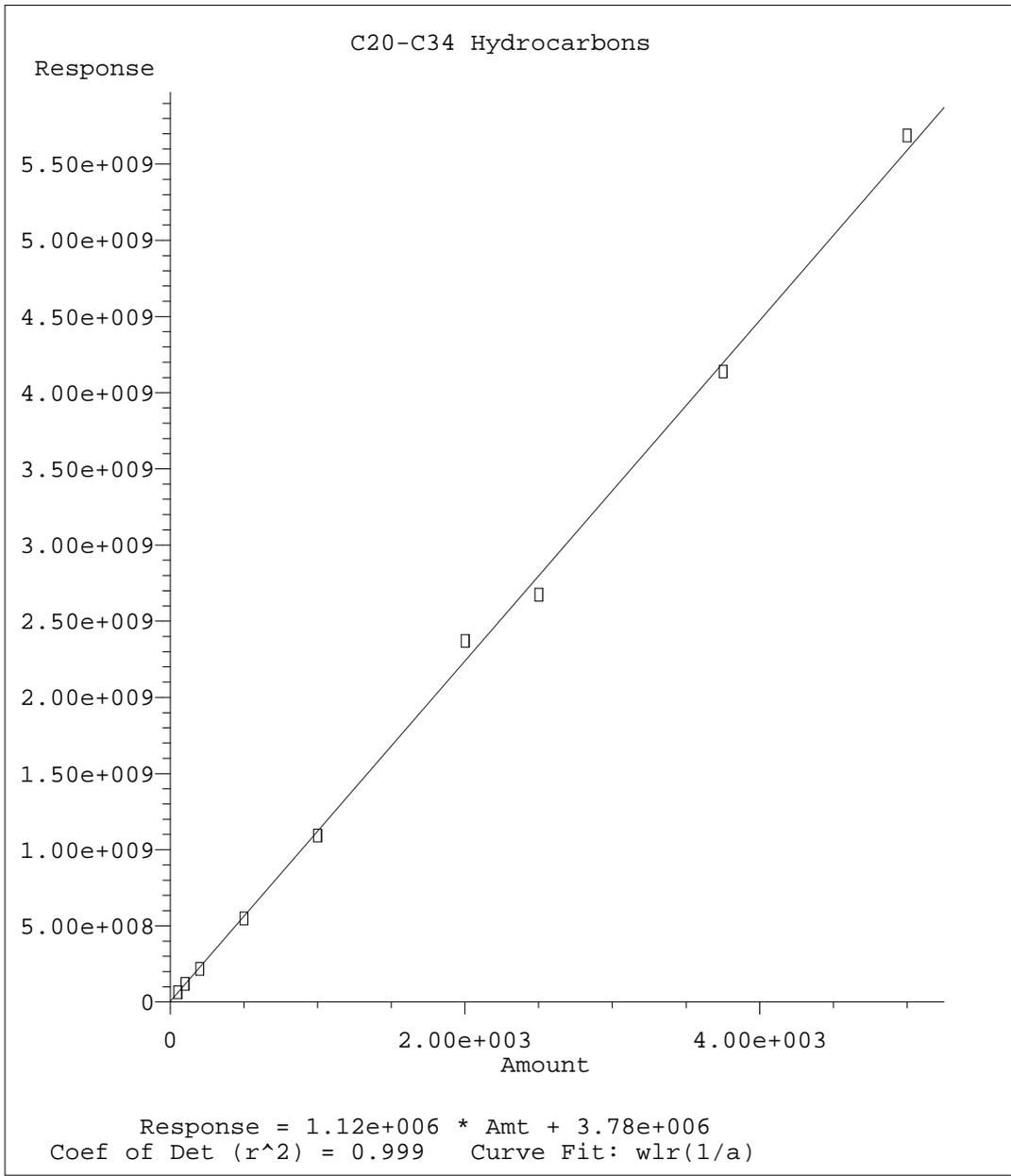


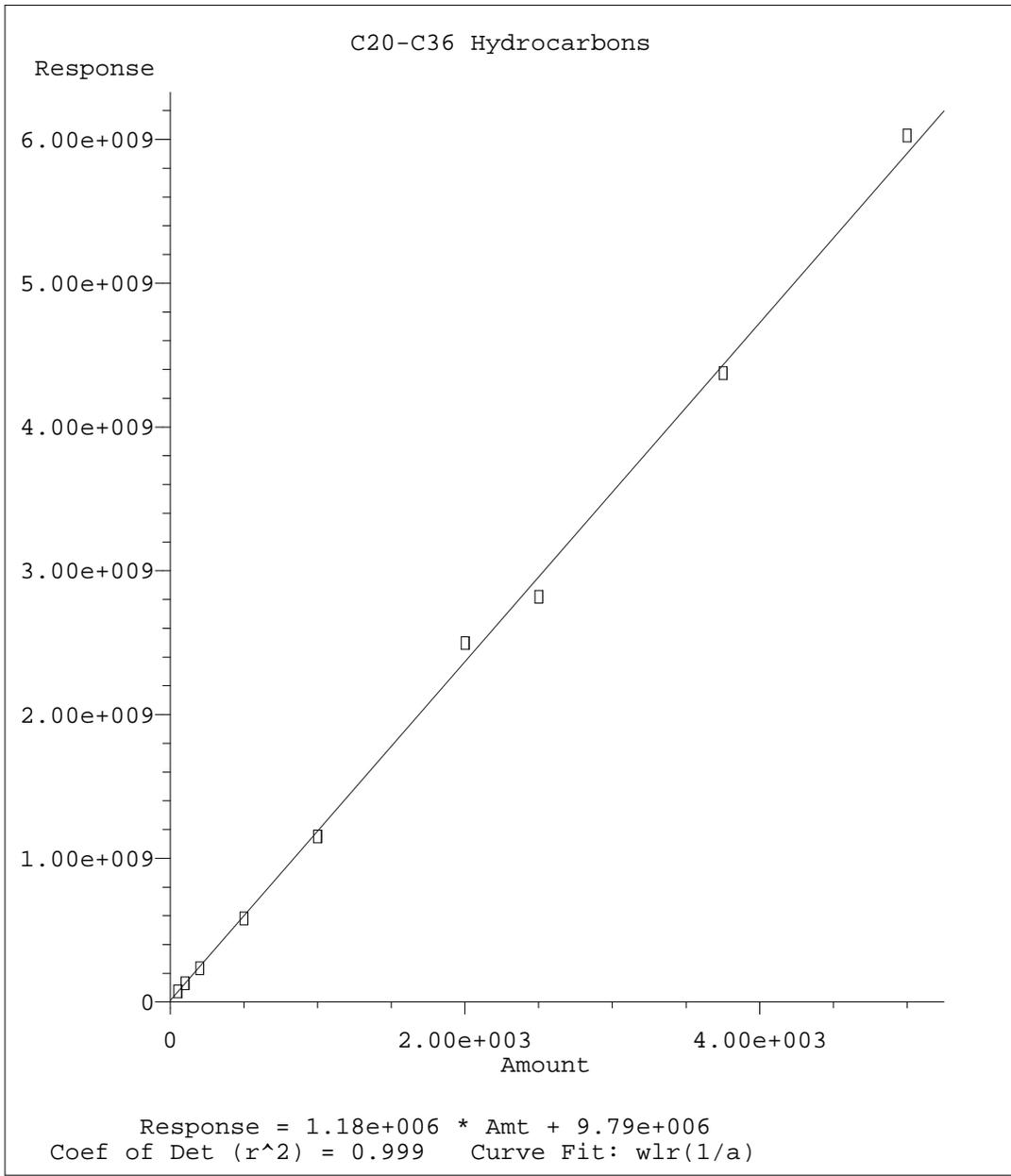


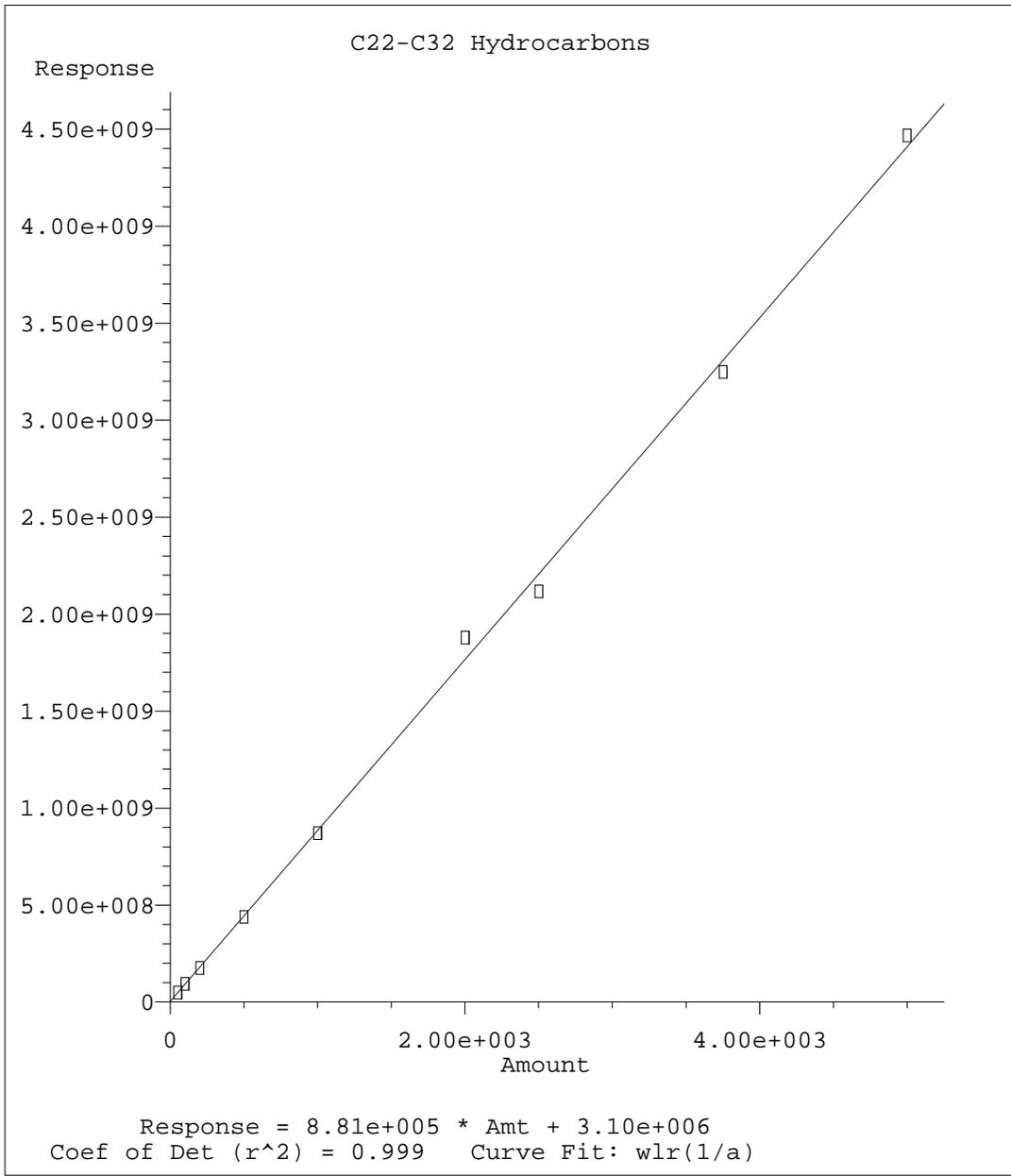


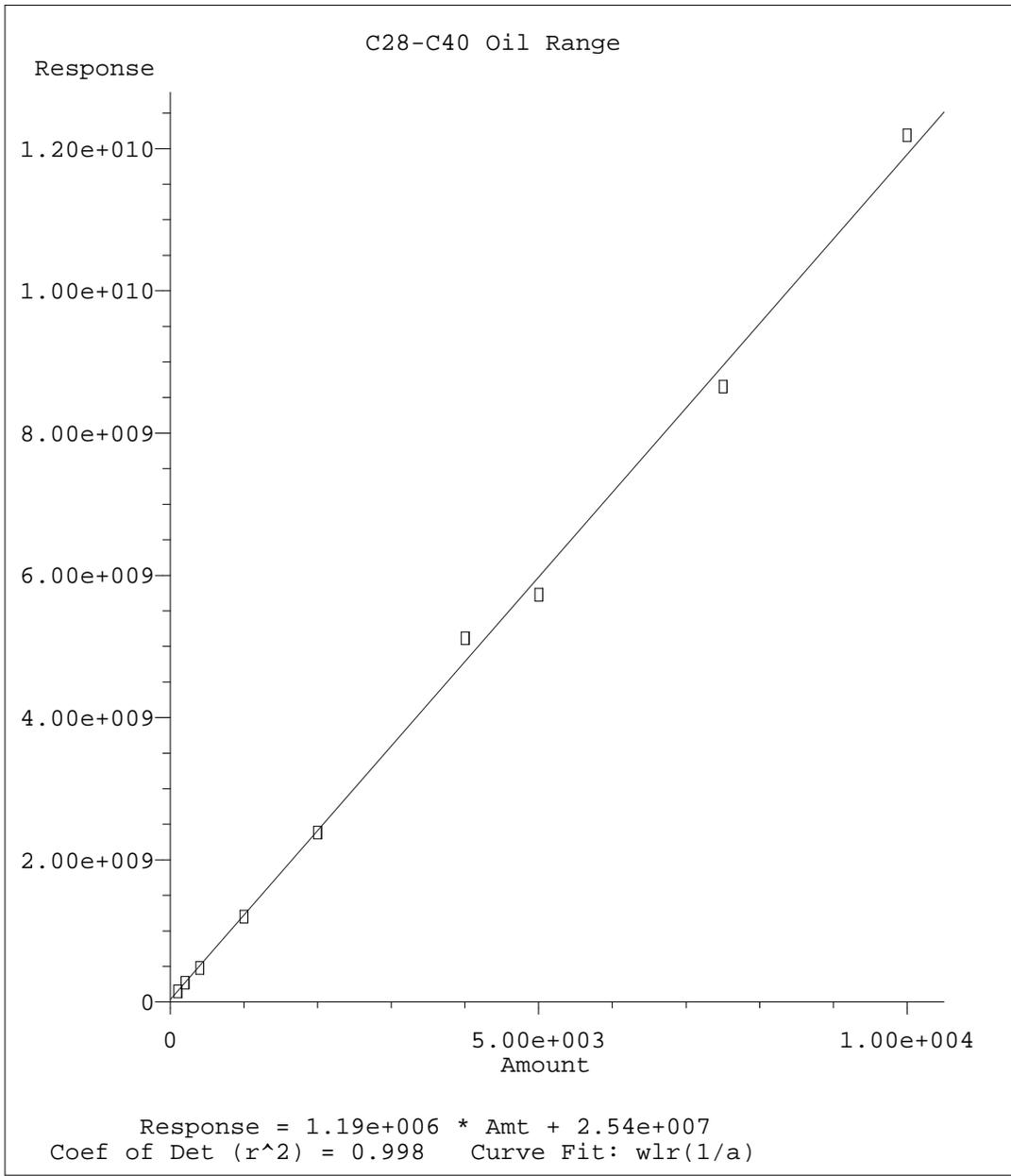


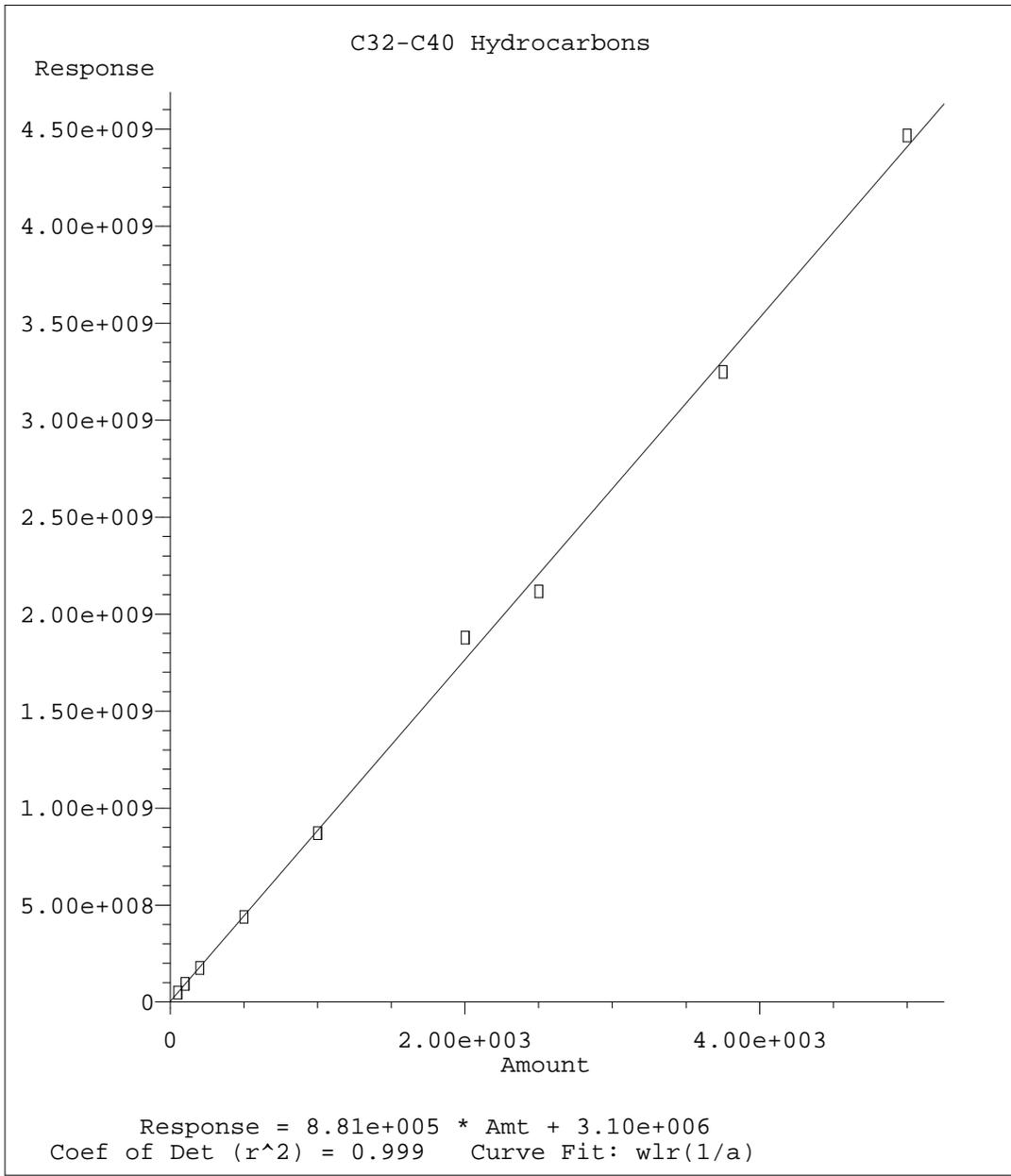


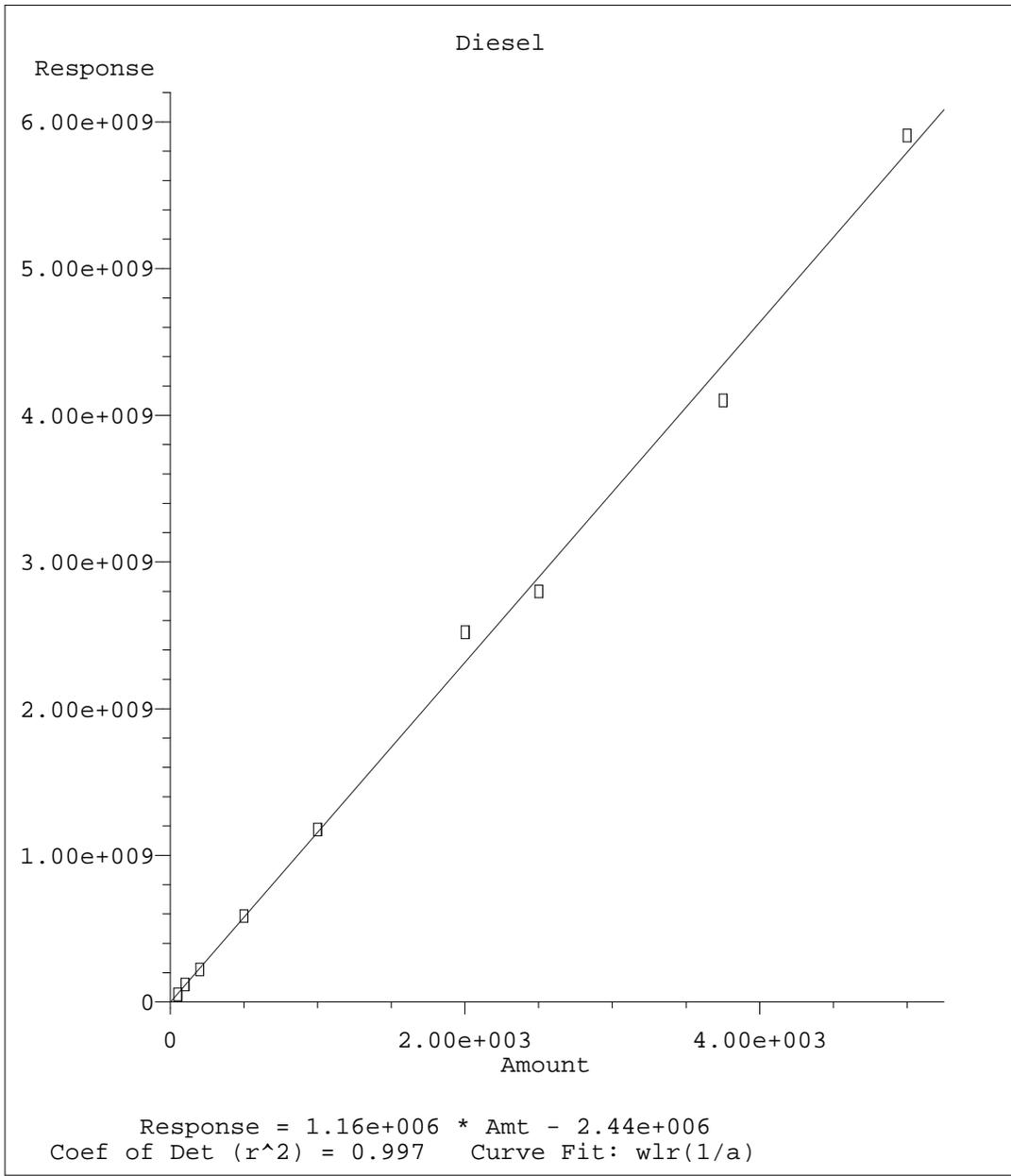


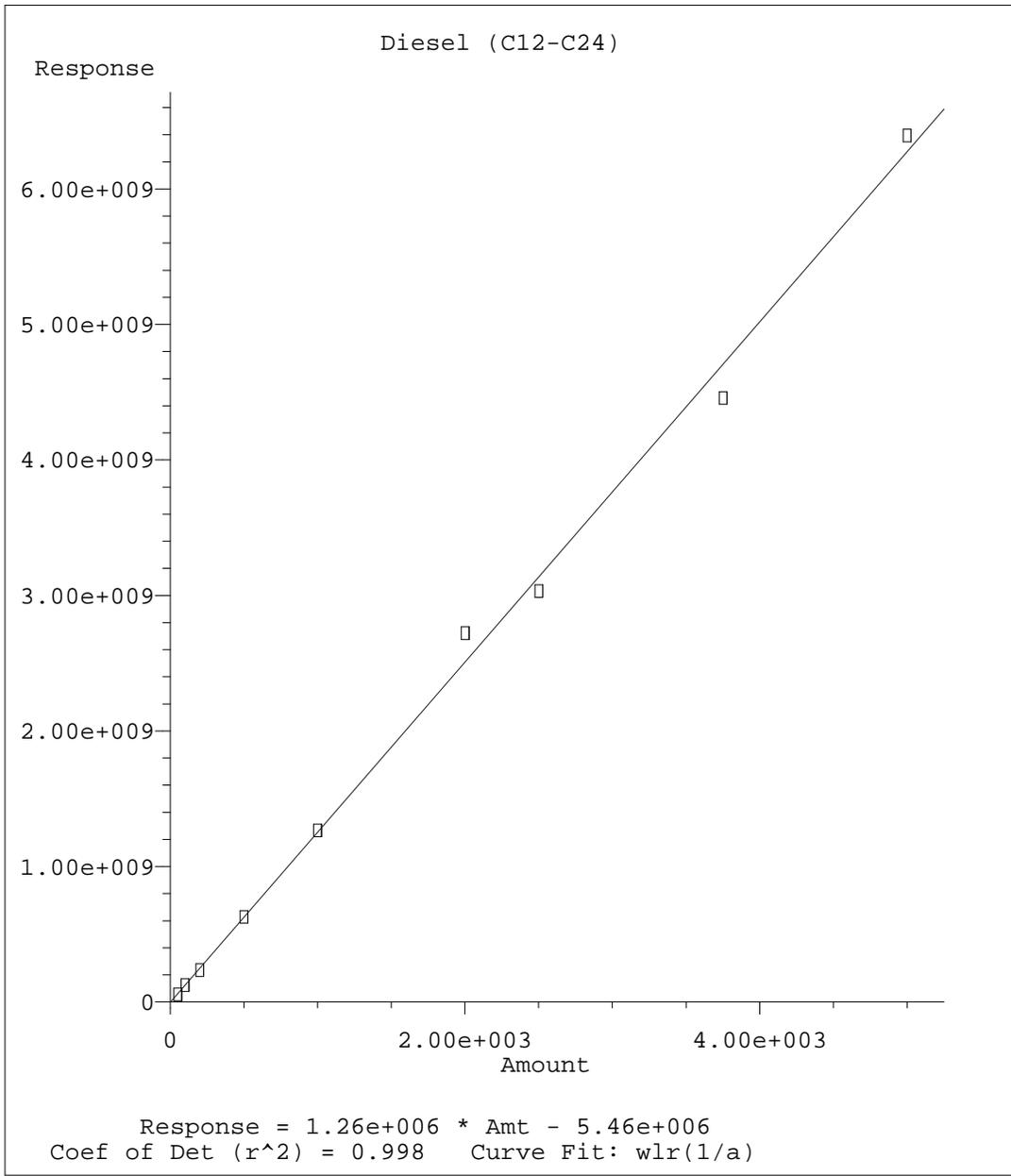


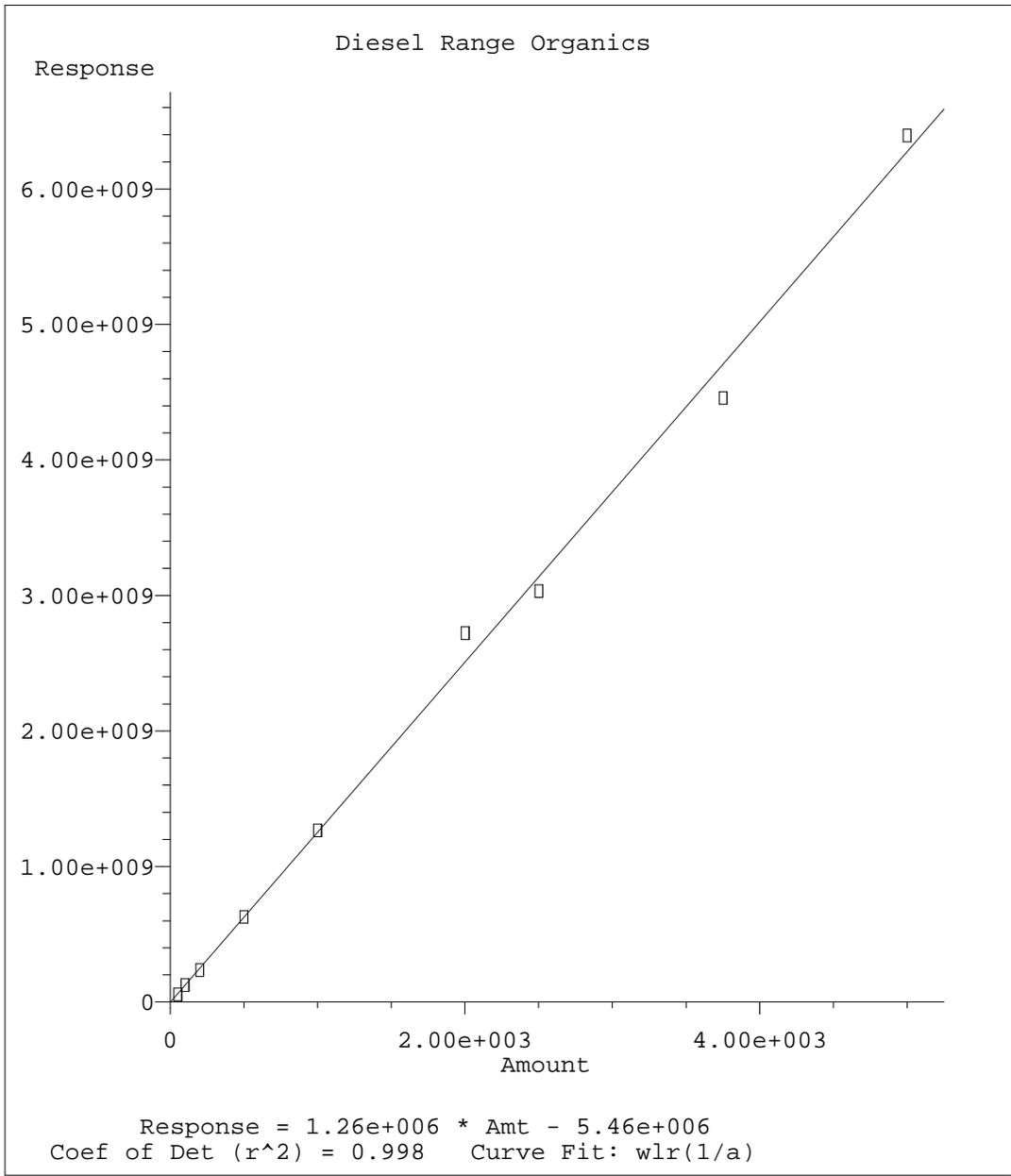




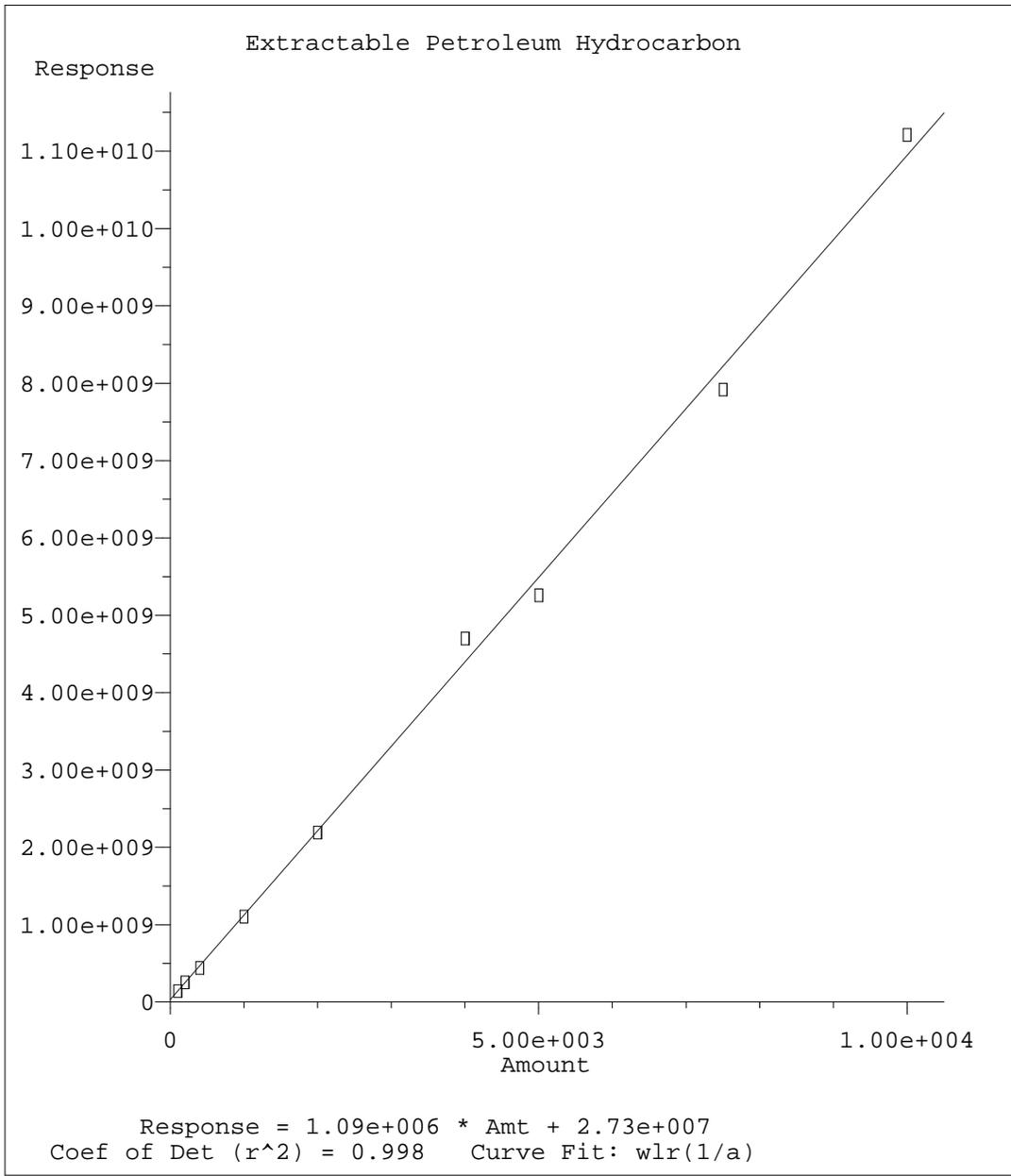


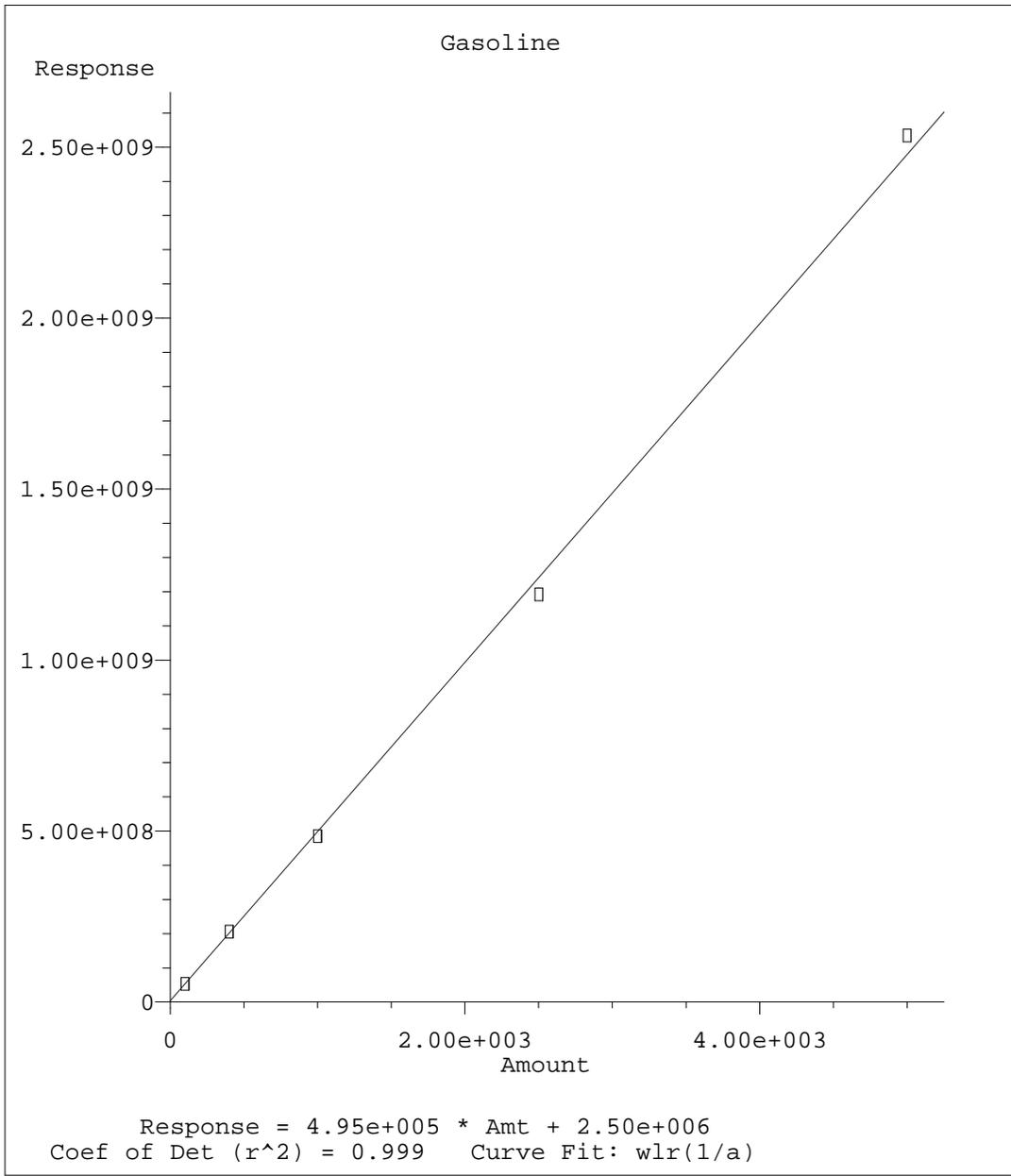


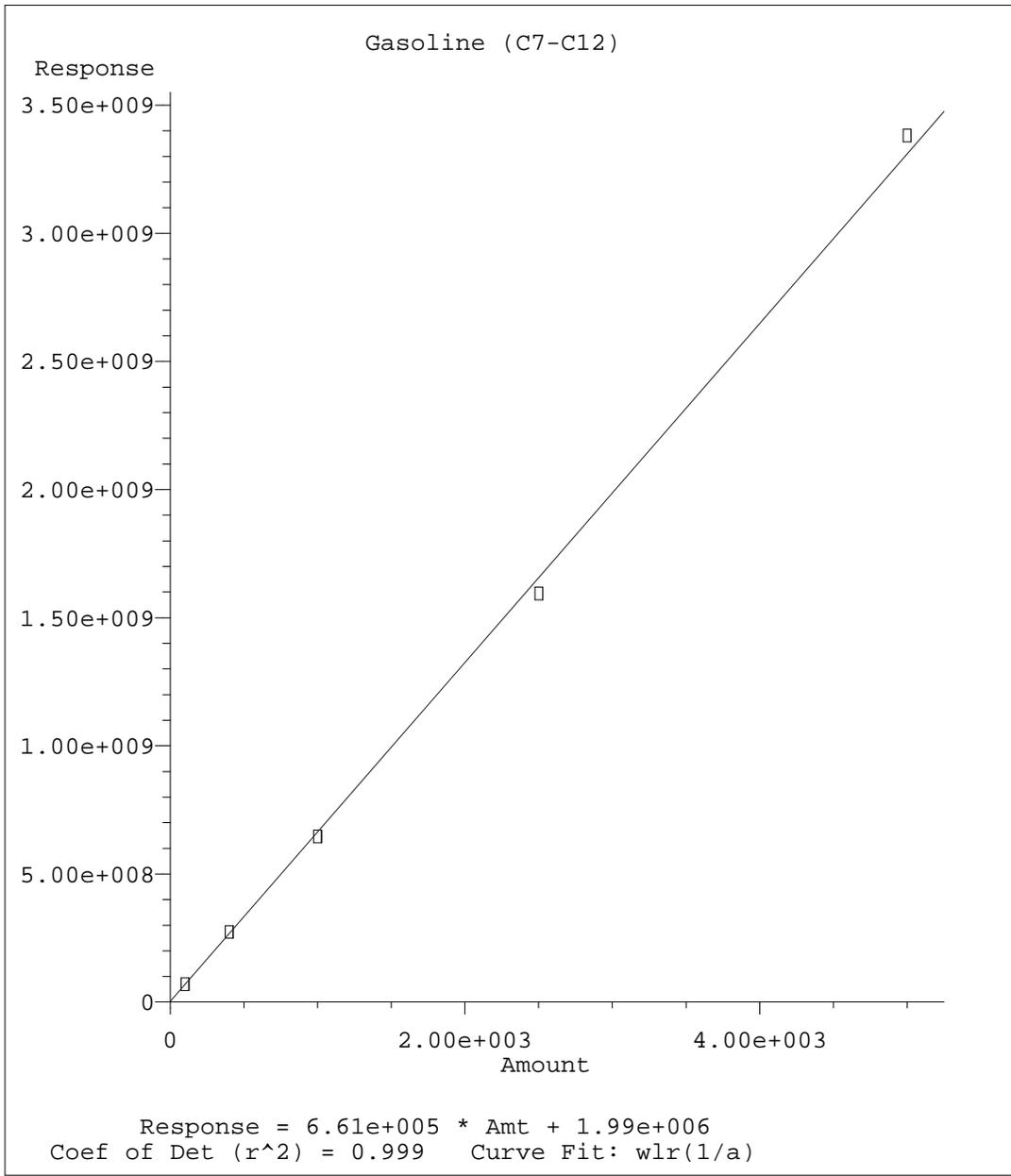


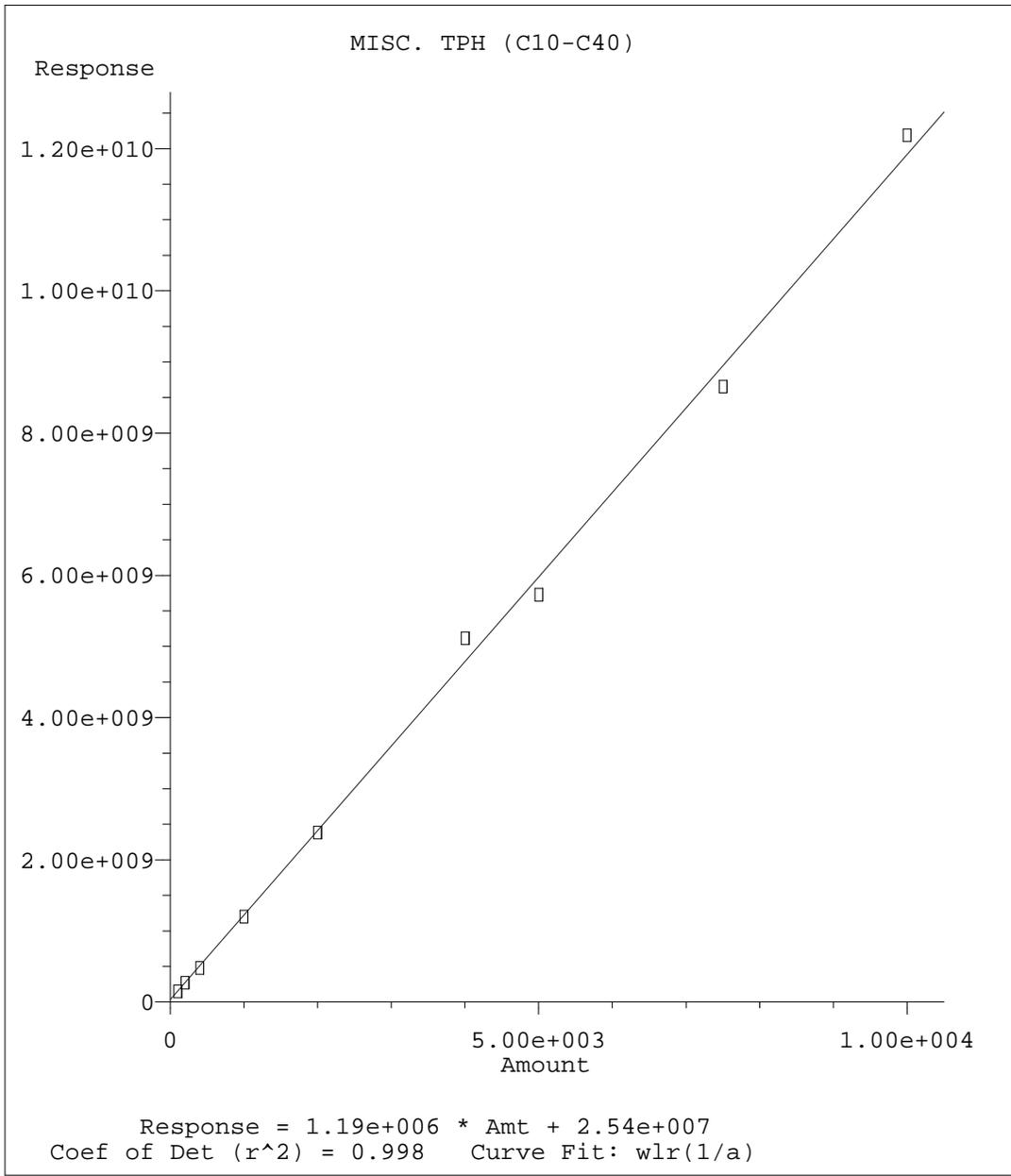


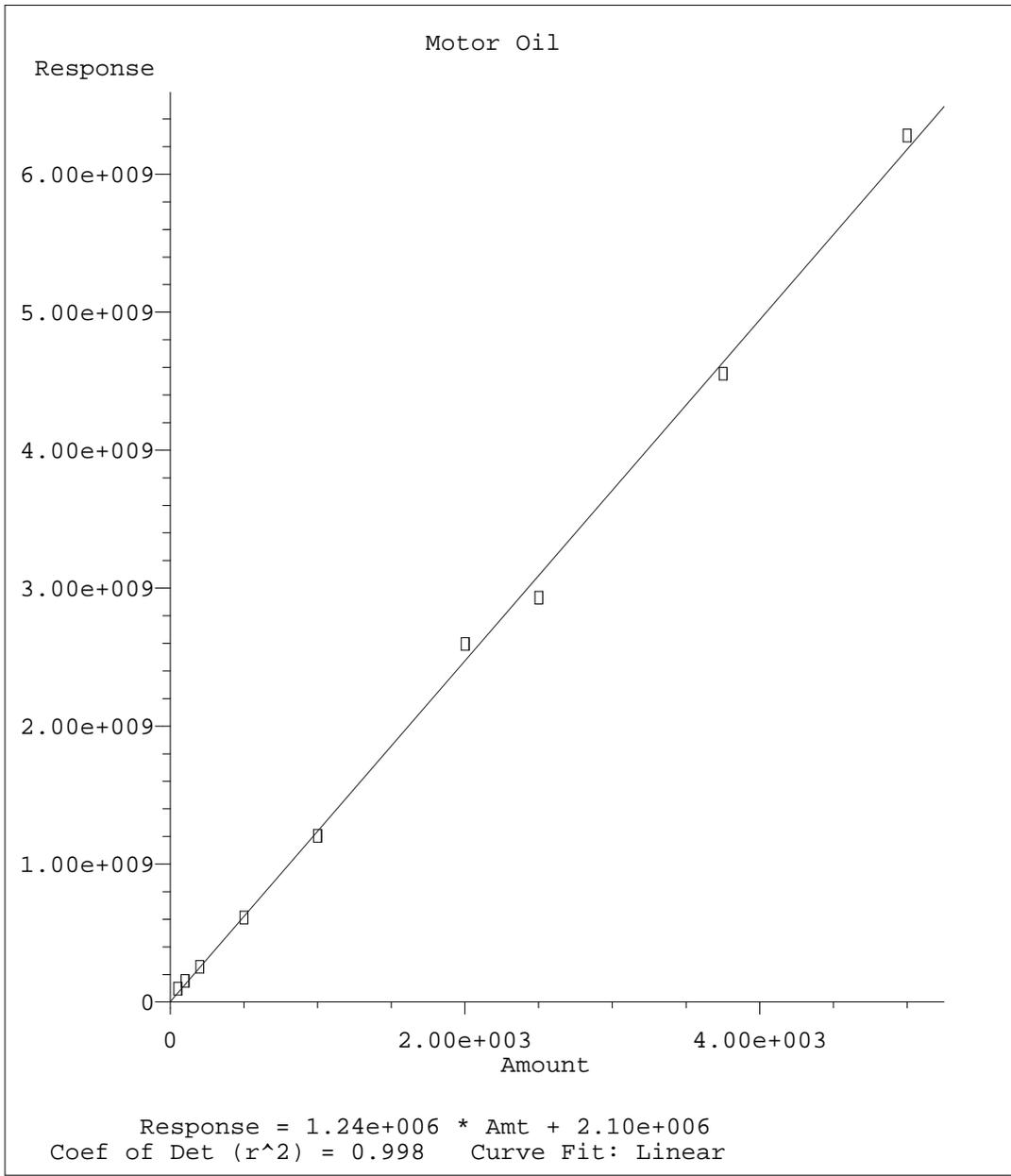
Method Name: C:\msdchem\1\methods\EP02B03AS.M

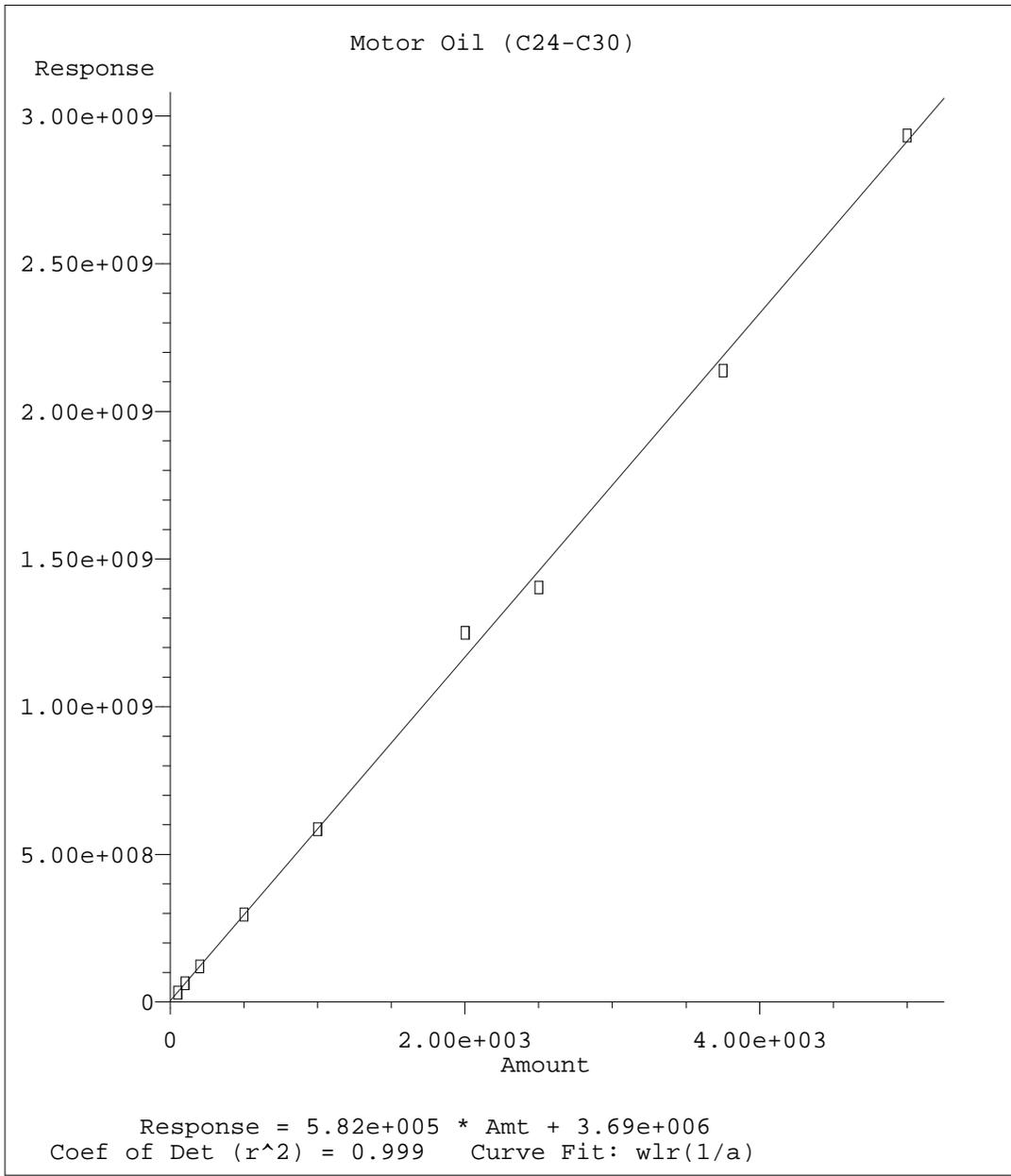


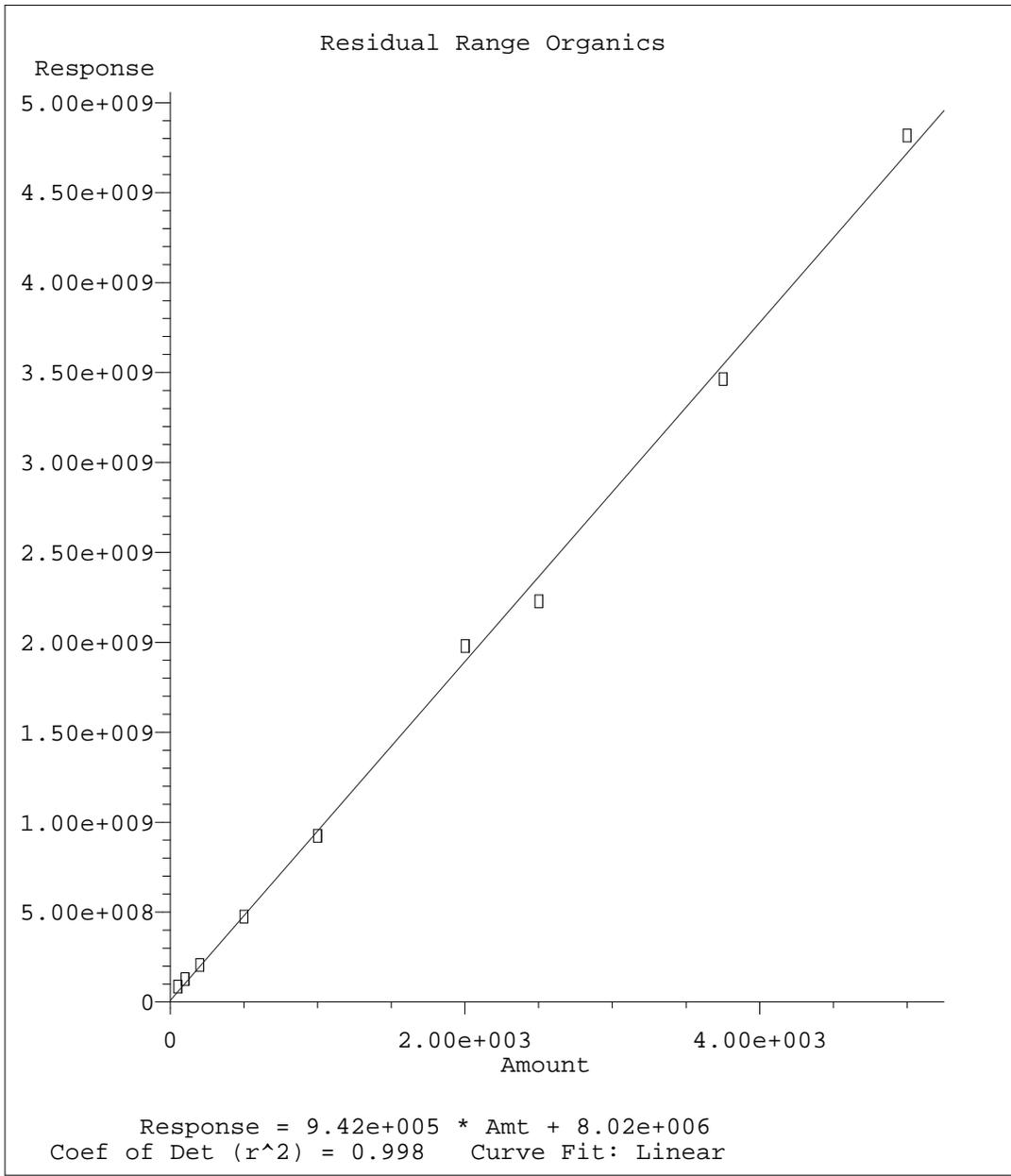


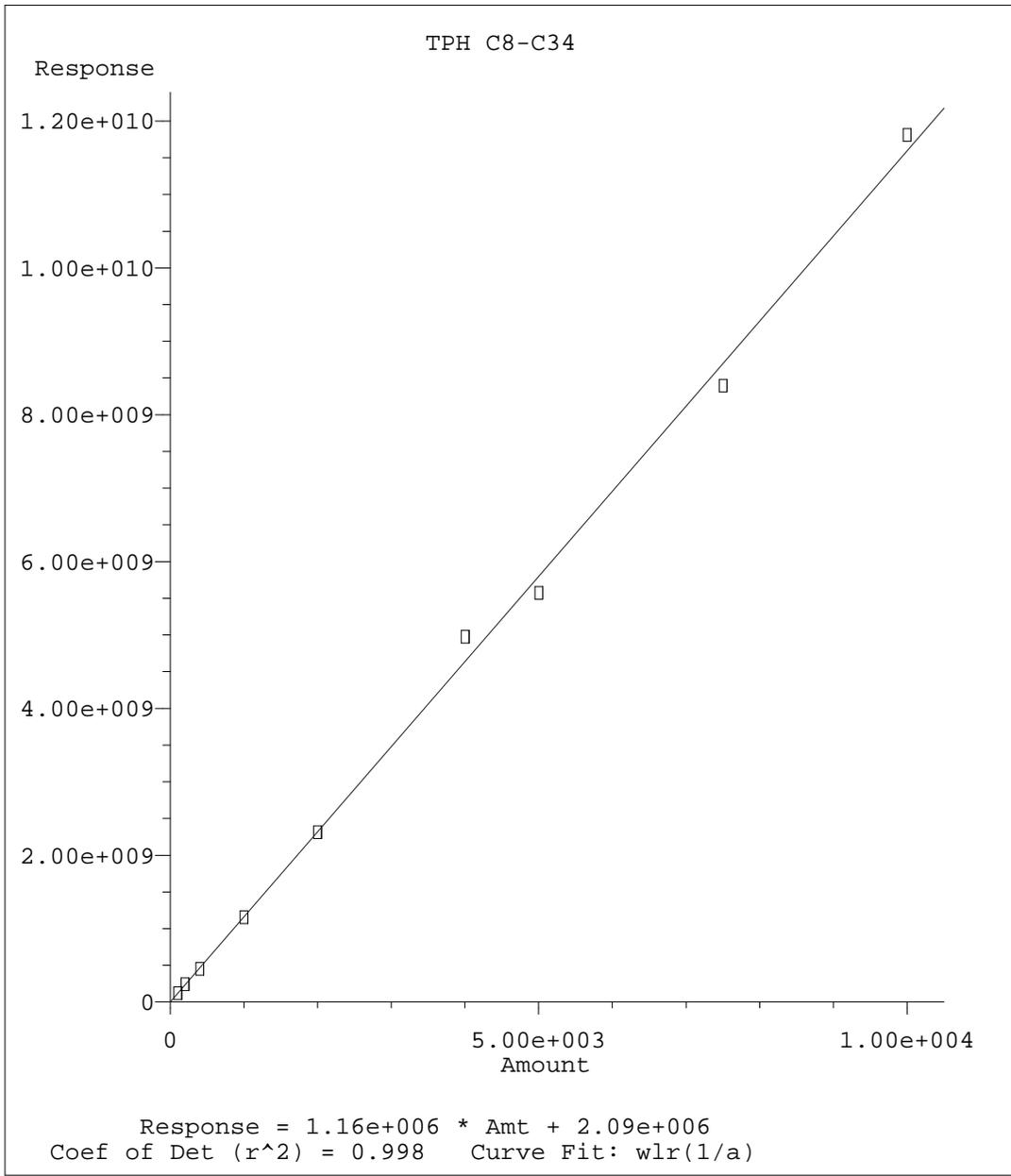












Response Factor Report SVGC2

Method Path : C:\msdchem\1\methods\
 Method File : EP02B03AS.M
 Title :
 Last Update : Sun Feb 03 14:10:50 2019
 Response Via : Initial Calibration

Calibration Files

100 =0122_03.d 200 =0122_04.d 400 =0122_05.d
 1000 =0122_06.d 2000 =0122_07.d 4000 =0122_08.d

Compound	100	200	400	1000	2000	4000	Avg	%RSD
1) h Gasoline							5.022 E5	4.26
2) h Gasoline (C7-...							6.671 E5	3.65
3) h,m Diesel Range ...	1.104	1.249	1.173	1.252	1.265	1.361	1.232 E6	5.93
4) h,m Residual Rang...	1.698	1.272	1.024	0.949	0.923	0.990	1.070 E6	24.40
5) h,m Diesel (C12-C24)	1.104	1.249	1.173	1.252	1.265	1.361	1.232 E6	5.93
6) h,m Motor Oil (C2...	6.368	6.284	5.979	5.912	5.847	6.249	5.980 E5	4.43
7) h,m Diesel	1.041	1.184	1.110	1.170	1.176	1.260	1.148 E6	5.58
8) h,m Motor Oil	1.915	1.523	1.272	1.224	1.204	1.297	1.342 E6	17.76
9) t,h,mTPH C8-C34	1.180	1.204	1.121	1.154	1.155	1.244	1.164 E6	3.71
10) h,m EPH Screen	1.491	1.366	1.203	1.211	1.204	1.293	1.259 E6	8.61
11) H,M C10-C20 Hydro...	1.041	1.184	1.110	1.170	1.176	1.260	1.148 E6	5.58
12) H,M C20-C34 Hydro...	1.257	1.177	1.089	1.095	1.092	1.184	1.134 E6	5.39
13) t,m,hExtractable P...	1.401	1.261	1.099	1.101	1.094	1.175	1.151 E6	9.88
14) H,M C10-C22 Hydro...	1.132	1.292	1.217	1.292	1.301	1.398	1.268 E6	5.89
15) H,M C12-C22 Hydro...	0.977	1.107	1.032	1.099	1.110	1.191	1.080 E6	5.81
16) h,m C22-C32 Hydro...	9.607	9.267	8.738	8.749	8.704	9.390	8.946 E5	4.32
17) h,m C32-C40 Hydro...	9.607	9.267	8.738	8.749	8.704	9.390	8.946 E5	4.32
18) h,m MISC. TPH (C1...	1.478	1.353	1.191	1.197	1.190	1.278	1.245 E6	8.73
19) h,m C10-C28 Diese...	1.478	1.353	1.191	1.197	1.190	1.278	1.245 E6	8.73
20) h,m C28-C40 Oil R...	1.478	1.353	1.191	1.197	1.190	1.278	1.245 E6	8.73
21) H,M C10 - C20 Hyd...	1.041	1.184	1.110	1.170	1.176	1.260	1.148 E6	5.58
22) H,m C20-C36 Hydro...	1.466	1.300	1.167	1.159	1.152	1.248	1.221 E6	8.71
23) h,m TEM (C9-C40)	1.492	1.367	1.204	1.212	1.204	1.294	1.259 E6	8.60
24) h,m TEH (C9-C40)	1.492	1.367	1.204	1.212	1.204	1.294	1.259 E6	8.60
25) S 2-Fluorobiphenyl							0.000	-1.00
26) S 2-Bromonaphth...							0.000	-1.00
27) S 1-Chloro-octa...							0.000	-1.00
28) h Mineral Spirits							0.000	-1.00
29) h Kerosene							0.000	-1.00
30) h #6 Fuel Oil							0.000	-1.00
31) h Hydraulic Fluid							0.000	-1.00
32) C9							0.000	-1.00
33) C20							0.000	-1.00
34) C30							0.000	-1.00
35) S O-TERPHENYL				1.184	0.931	0.892	0.894 E6	17.56

(#) = Out of Range ### Number of calibration levels exceeded format ###

Data Path : C:\msdchem\1\data\012219B\
 Data File : 0122_03.d
 Signal(s) : FID1A.CH
 Acq On : 22 Jan 2019 16:52 pm
 Operator : 473
 Sample : STD EPH 100 PPM 18K27792
 Misc : M.I.s on ranges are corrections
 ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Jan 22 18:54:06 2019
 Quant Method : C:\msdchem\1\methods\EP02A22BS.M
 Quant Title :
 QLast Update : Tue Jan 22 18:50:03 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.57	1324314	1.1433274	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 5.72%#
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	2.13	55213407	55.7058796	ppm
4) h,m Residual Range Organics	4.44	84914710	153.7368248	ppm
5) h,m Diesel (C12-C24)	2.13	55213407	55.7058796	ppm
6) h,m Motor Oil (C24-C30)	4.44	31840910	69.7837217	ppm
7) h,m Diesel	1.66	52069251	52.9715052	ppm
8) h,m Motor Oil	3.75	95755366	141.4003026	ppm
9) t,h,m TPH C8-C34	1.12	118001745	120.0397766	ppm
10) h,m EPH Screen	1.44	149080910	123.8239519	ppm
11) H,M C10-C20 Hydrocarbons	1.66	52069251	52.9715052	ppm
12) H,M C20-C34 Hydrocarbons	3.75	62854751	71.5435872	ppm
13) t,m,h Extractable Petroleum...	2.13	140099117	127.3515558	ppm
14) H,M C10-C22 Hydrocarbons	1.66	56585065	53.9412233	ppm
15) H,M C12-C22 Hydrocarbons	2.13	48870526	54.1702579	ppm
16) h,m C22-C32 Hydrocarbons	4.10	48035828	71.1291394	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	1.66	147813656	125.5359666	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	1.66	52069251	52.9715052	ppm
22) H,m C20-C36 Hydrocarbons	3.75	73306296	72.2848939	ppm
23) h,m TEM (C9-C40)	1.42	149161596	123.8909685	ppm
24) h,m TEH (C9-C40)	1.42	149161596	123.8909685	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

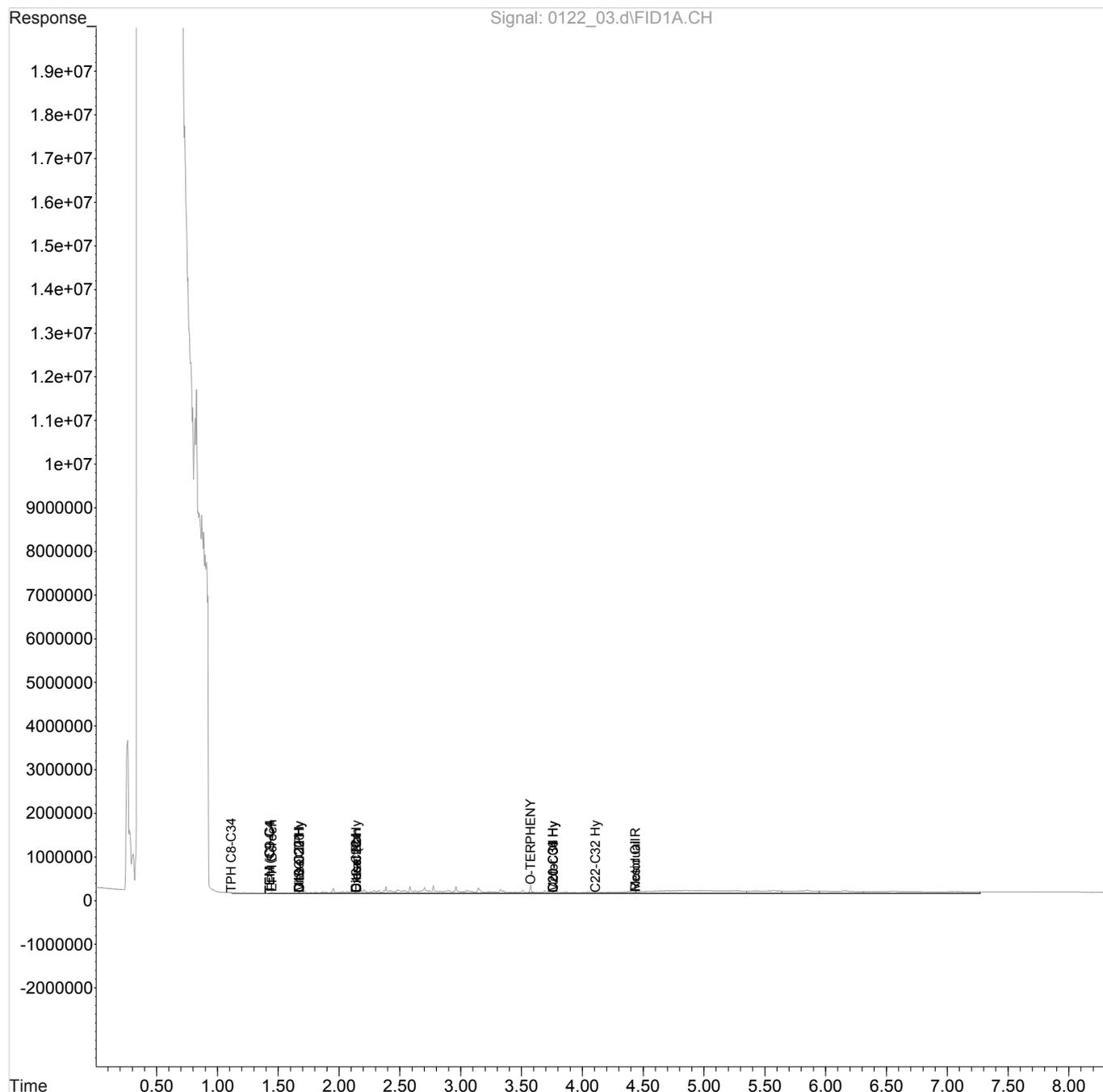
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_03.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 16:52 pm
Operator : 473
Sample : STD EPH 100 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:54:06 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:50:03 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

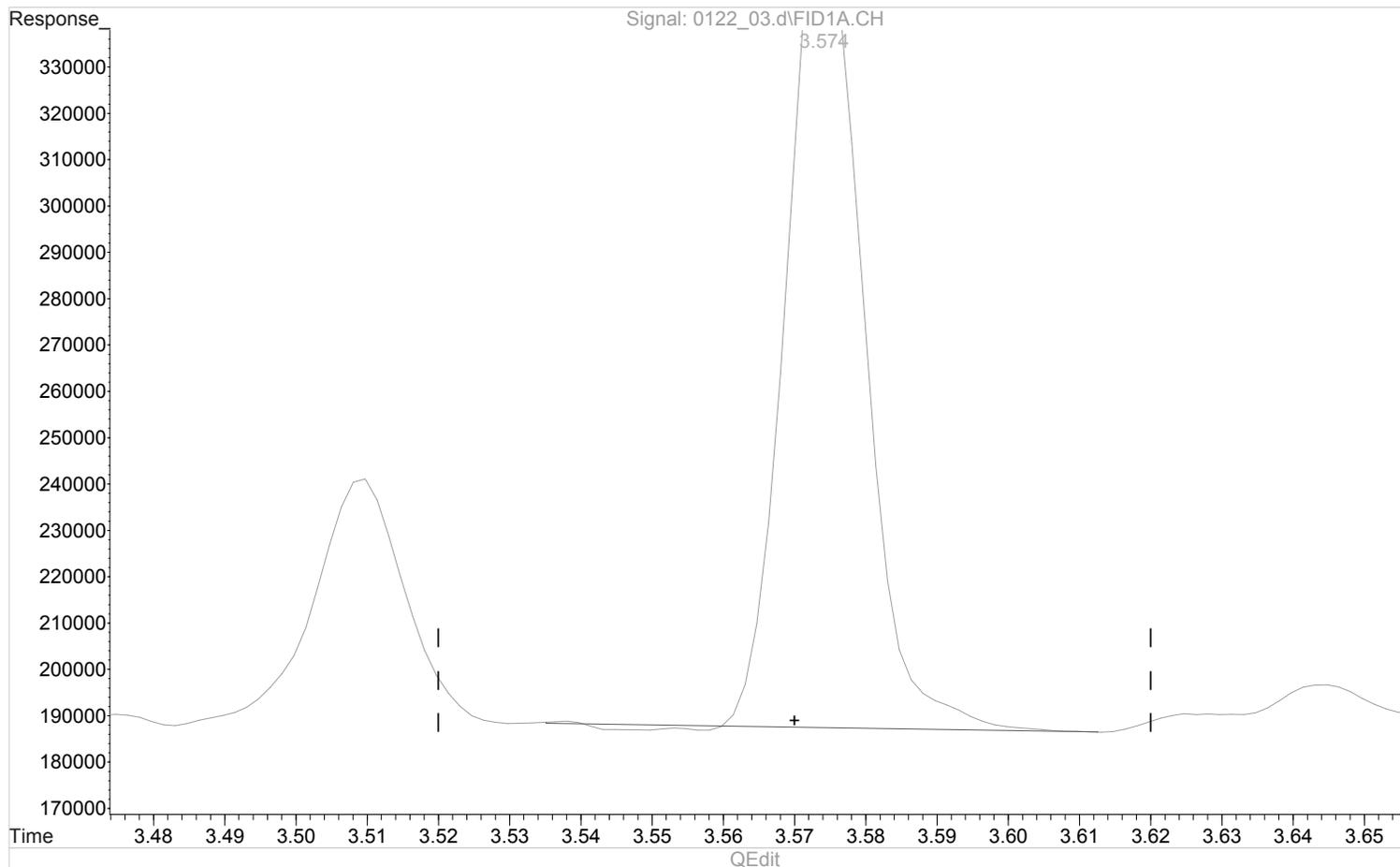


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_03.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 16:52 pm
Operator : 473
Sample : STD EPH 100 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:53:22 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:50:03 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.575min 1.1164268 ppm
response 1293156

(+) = Expected Retention Time

EP02A22BS.M Tue Jan 22 18:54:03 2019

ACCOUNT:

S&ME Inc. - Knoxville

PROJECT:

4143-17-017

SDG:

L1071756

DATE/TIME:

02/27/19 12:30

Page: 1

PAGE:

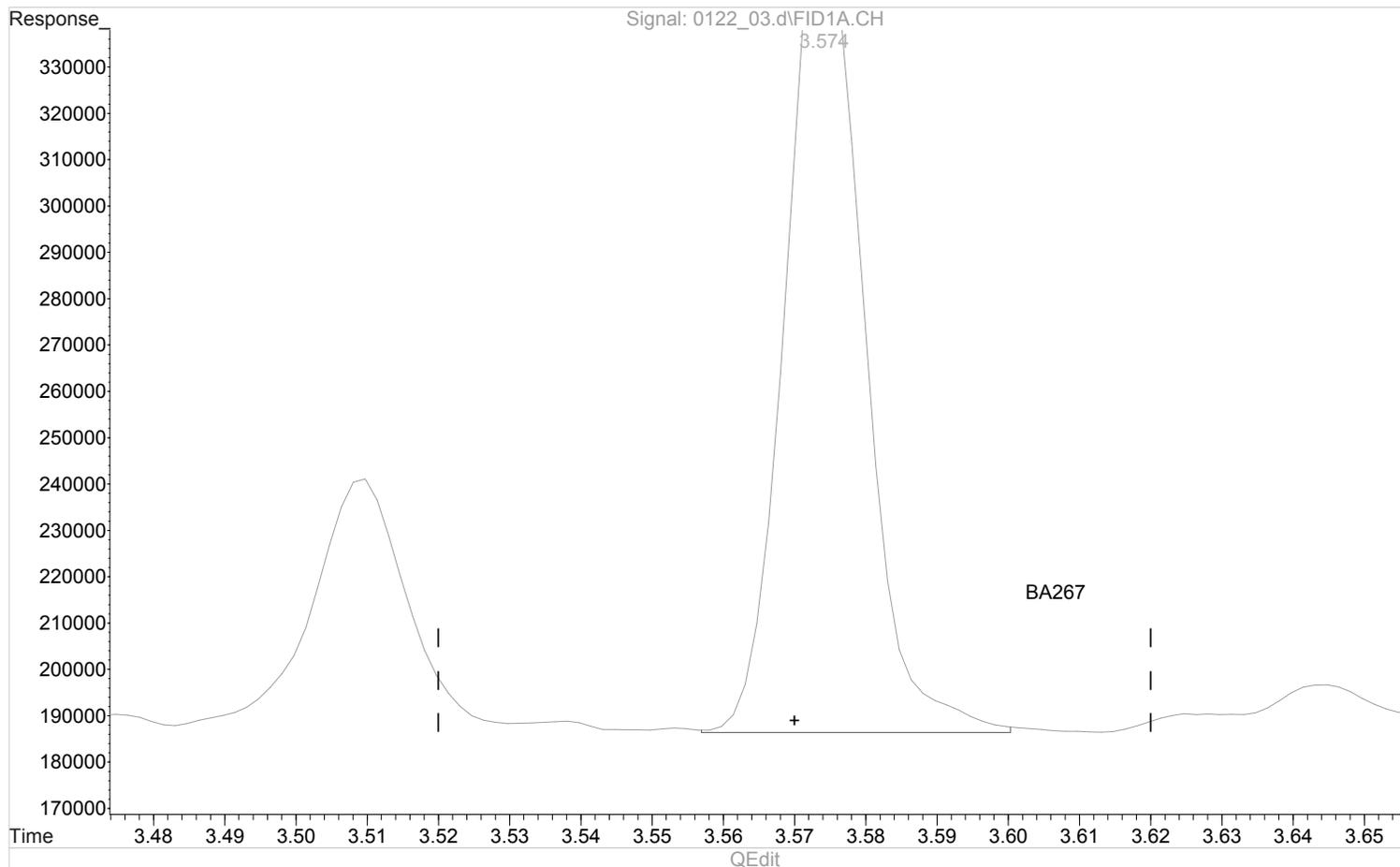
50 of 115

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_03.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 16:52 pm
Operator : 473
Sample : STD EPH 100 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:53:22 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:50:03 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.574min 1.1433274 ppm m
response 1324314

(+) = Expected Retention Time

Data Path : C:\msdchem\1\data\012219B\
 Data File : 0122_04.d
 Signal(s) : FID1A.CH
 Acq On : 22 Jan 2019 17:06 pm
 Operator : 473
 Sample : STD EPH 200 PPM 18K27792
 Misc : M.I.s on ranges are corrections
 ALS Vial : 4 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Jan 22 18:54:47 2019
 Quant Method : C:\msdchem\1\methods\EP02A22BS.M
 Quant Title :
 QLast Update : Tue Jan 22 18:54:22 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.57	2811475	2.4485679	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 12.24%#
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	2.13	124921937	110.3251629	ppm
4) h,m Residual Range Organics	4.44	127229796	197.7970888	ppm
5) h,m Diesel (C12-C24)	2.13	124921937	110.3251629	ppm
6) h,m Motor Oil (C24-C30)	4.44	62837831	121.4288620	ppm
7) h,m Diesel	1.66	118380253	108.4649360	ppm
8) h,m Motor Oil	3.75	152295907	187.3341414	ppm
9) t,h,m TPH C8-C34	1.12	240763472	226.4342819	ppm
10) h,m EPH Screen	1.44	273292034	227.4923849	ppm
11) H,M C10-C20 Hydrocarbons	1.66	118380253	108.4649360	ppm
12) H,M C20-C34 Hydrocarbons	3.75	117659515	120.5360721	ppm
13) t,m,h Extractable Petroleum...	2.13	252159090	229.5937001	ppm
14) H,M C10-C22 Hydrocarbons	1.66	129231549	108.9756589	ppm
15) H,M C12-C22 Hydrocarbons	2.13	110710360	108.8778634	ppm
16) h,m C22-C32 Hydrocarbons	4.10	92667383	121.3195333	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	1.66	270680279	228.7305924	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	1.66	118380253	108.4649360	ppm
22) H,m C20-C36 Hydrocarbons	3.75	130005018	120.5391766	ppm
23) h,m TEM (C9-C40)	1.42	273418034	227.5802851	ppm
24) h,m TEH (C9-C40)	1.42	273418034	227.5802851	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

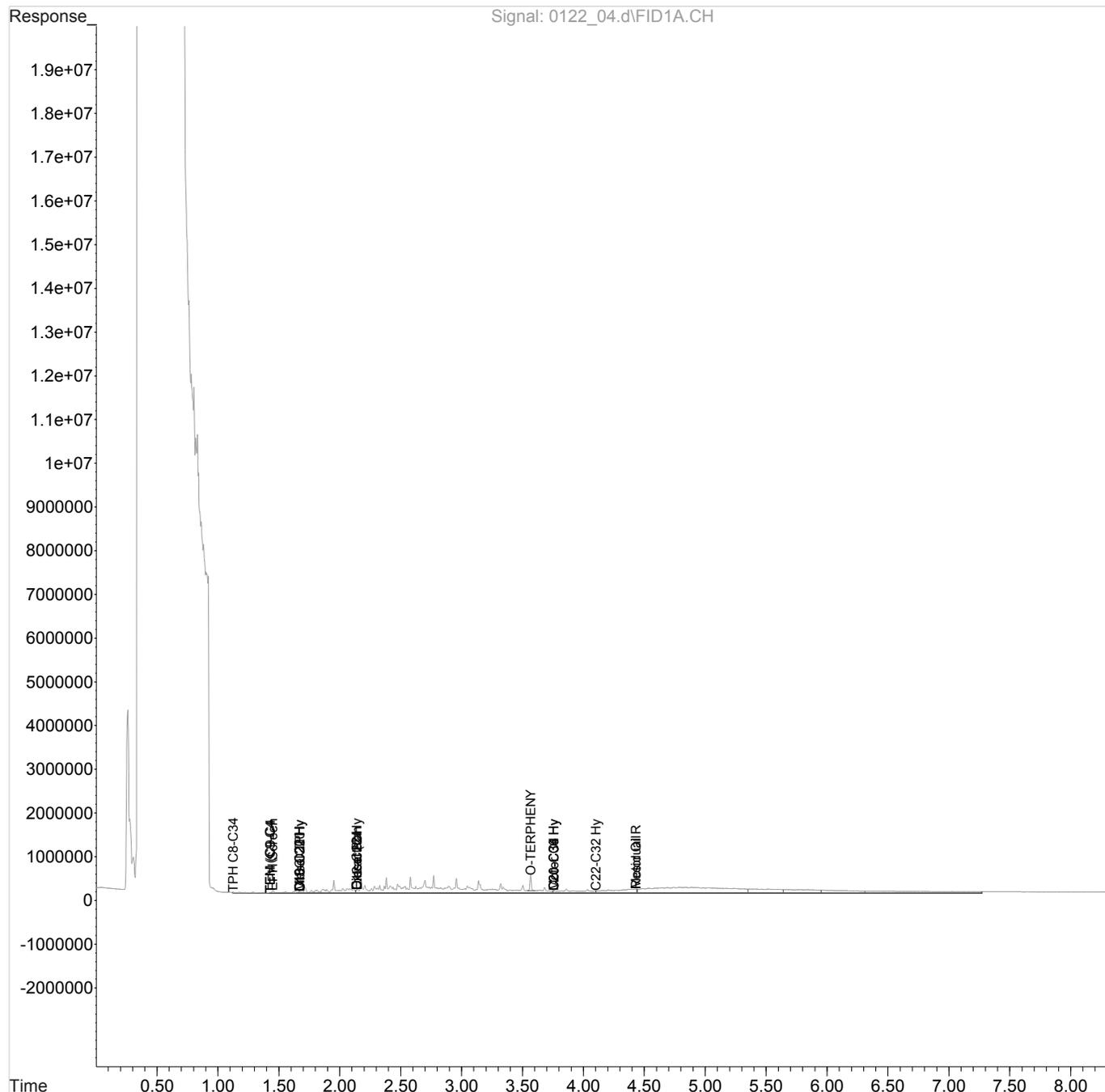
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_04.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:06 pm
Operator : 473
Sample : STD EPH 200 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 4 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:54:47 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:54:22 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

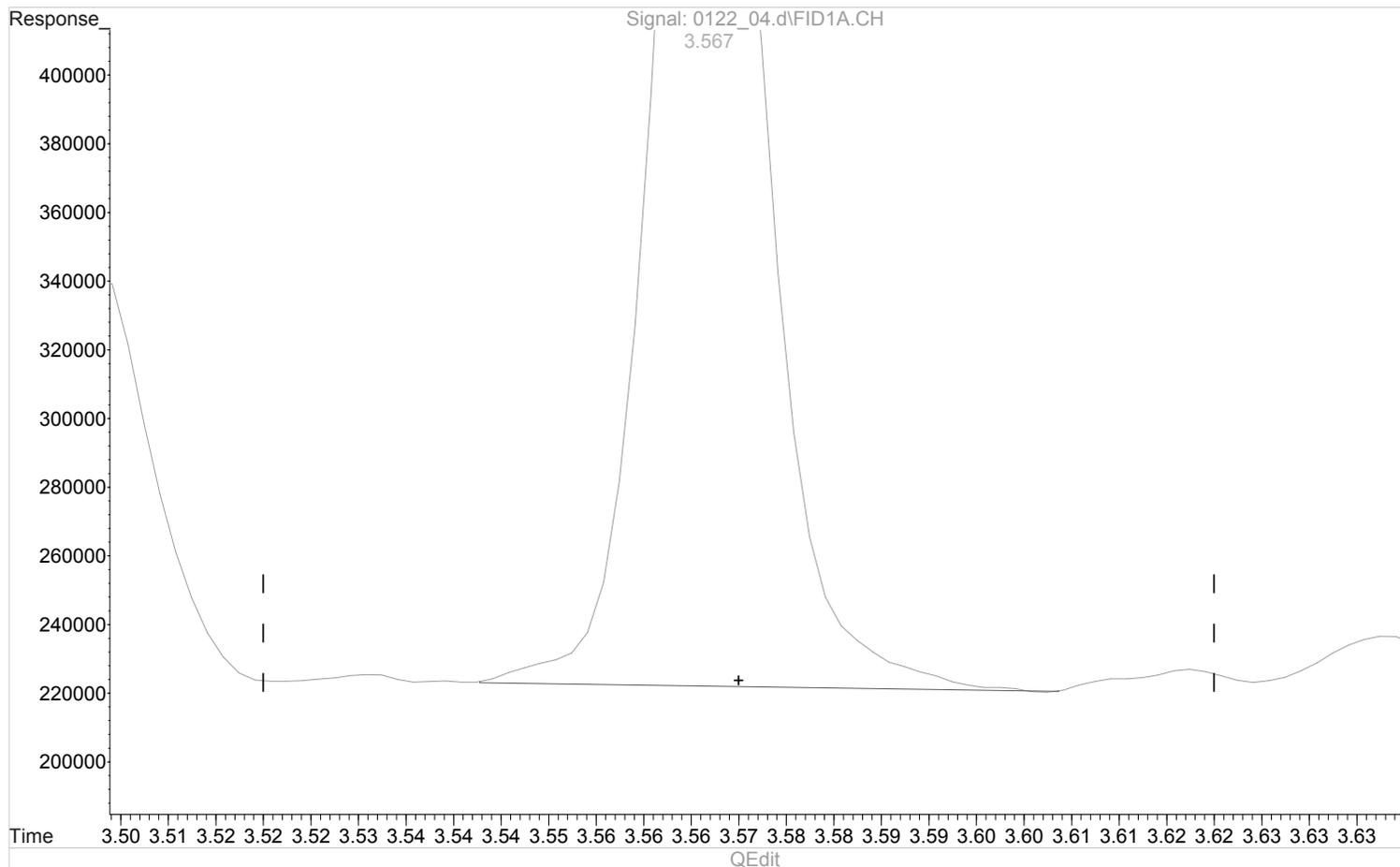


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_04.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:06 pm
Operator : 473
Sample : STD EPH 200 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 4 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:54:25 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:54:22 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.567min 2.4342419 ppm
response 2795026

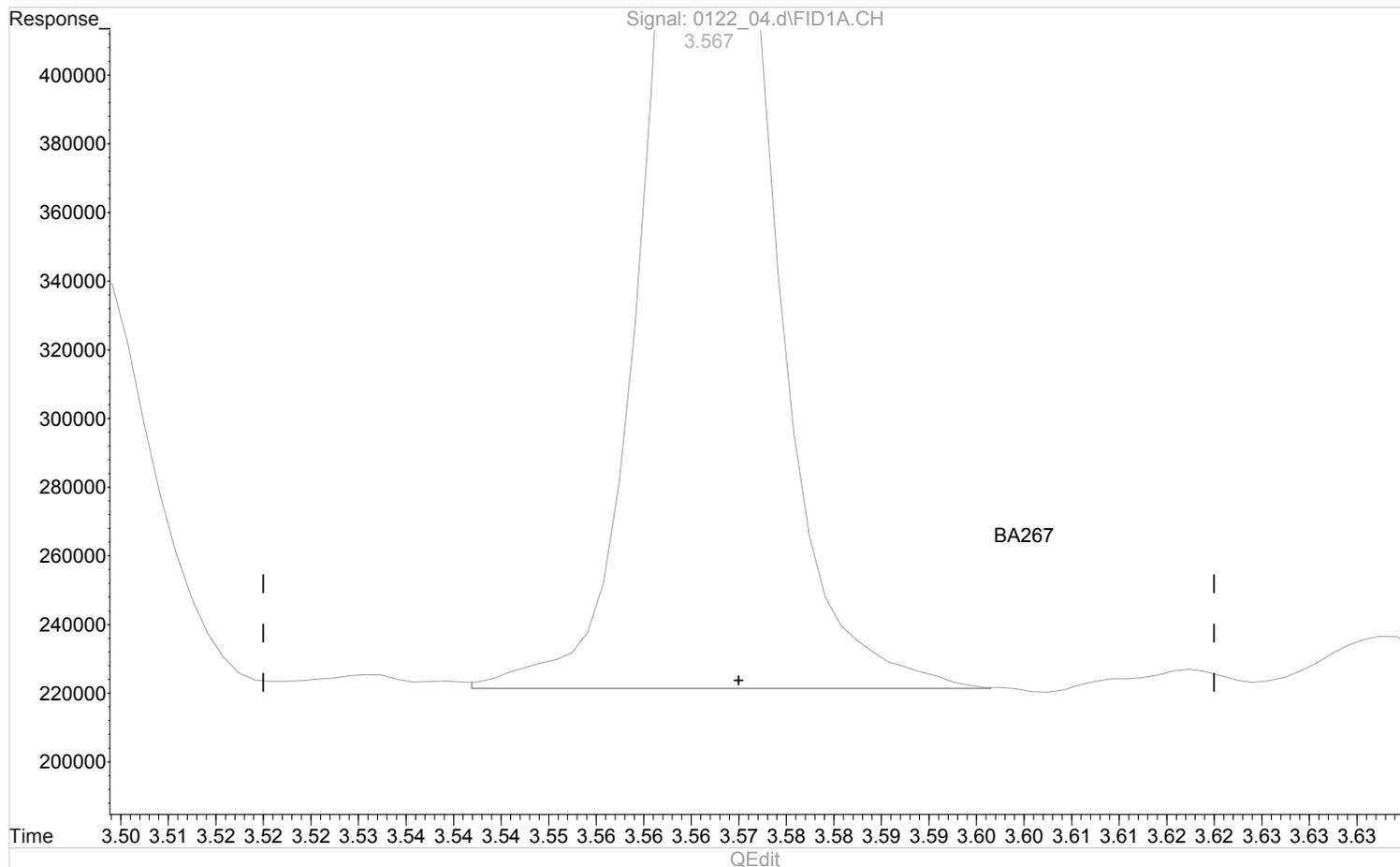
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_04.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:06 pm
Operator : 473
Sample : STD EPH 200 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 4 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:54:25 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:54:22 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.567min 2.4485679 ppm m
response 2811475

(+) = Expected Retention Time

Data Path : C:\msdchem\1\data\012219B\
 Data File : 0122_05.d
 Signal(s) : FID1A.CH
 Acq On : 22 Jan 2019 17:20 pm
 Operator : 473
 Sample : STD EPH 400 PPM 18K727792
 Misc : M.I.s on ranges are corrections
 ALS Vial : 5 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Jan 22 19:00:54 2019
 Quant Method : C:\msdchem\1\methods\EP02A22BS.M
 Quant Title :
 QLast Update : Tue Jan 22 18:54:56 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.57	5240536	4.5873211	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 22.94%#
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	2.13	234610165	194.4661810	ppm
4) h,m Residual Range Organics	4.44	204842071	275.4925359	ppm
5) h,m Diesel (C12-C24)	2.13	234610165	194.4661810	ppm
6) h,m Motor Oil (C24-C30)	4.44	119572263	215.3014052	ppm
7) h,m Diesel	1.66	221918787	192.8122599	ppm
8) h,m Motor Oil	3.75	254376135	267.3574571	ppm
9) t,h,m TPH C8-C34	1.12	448514944	400.6566095	ppm
10) h,m EPH Screen	1.44	481358880	395.7486619	ppm
11) H,M C10-C20 Hydrocarbons	1.66	221918787	192.8122599	ppm
12) H,M C20-C34 Hydrocarbons	3.75	217729400	209.8070201	ppm
13) t,m,h Extractable Petroleum...	2.13	439506069	395.0661939	ppm
14) H,M C10-C22 Hydrocarbons	1.66	243312305	193.1690862	ppm
15) H,M C12-C22 Hydrocarbons	2.13	206493775	191.7168078	ppm
16) h,m C22-C32 Hydrocarbons	4.10	174764323	213.4419216	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	1.66	476324599	395.7316000	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	1.66	221918787	192.8122599	ppm
22) H,m C20-C36 Hydrocarbons	3.75	233428345	207.9623281	ppm
23) h,m TEM (C9-C40)	1.42	481612842	395.9054911	ppm
24) h,m TEH (C9-C40)	1.42	481612842	395.9054911	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

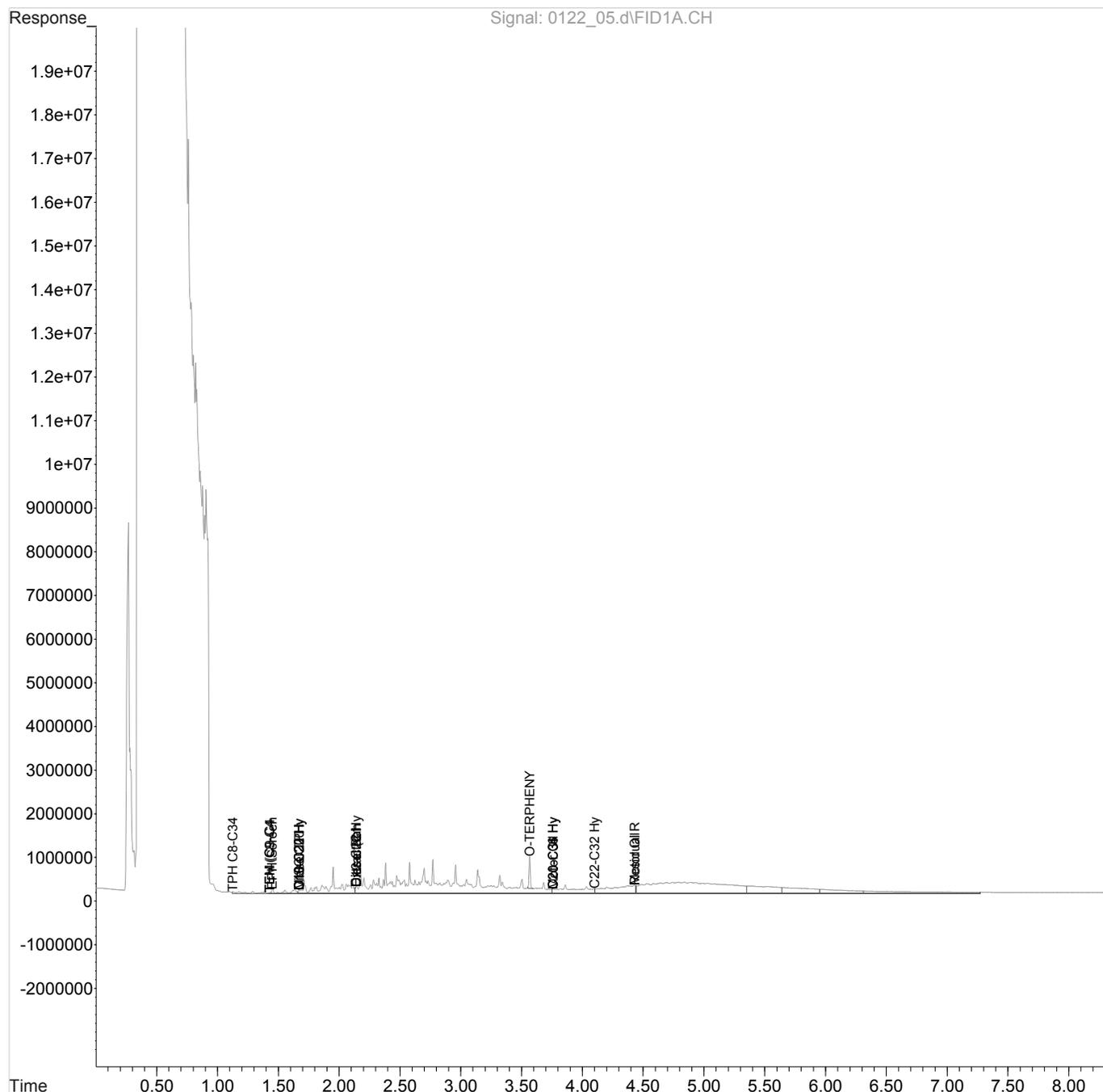
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_05.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:20 pm
Operator : 473
Sample : STD EPH 400 PPM 18K727792
Misc : M.I.s on ranges are corrections
ALS Vial : 5 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 19:00:54 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:54:56 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

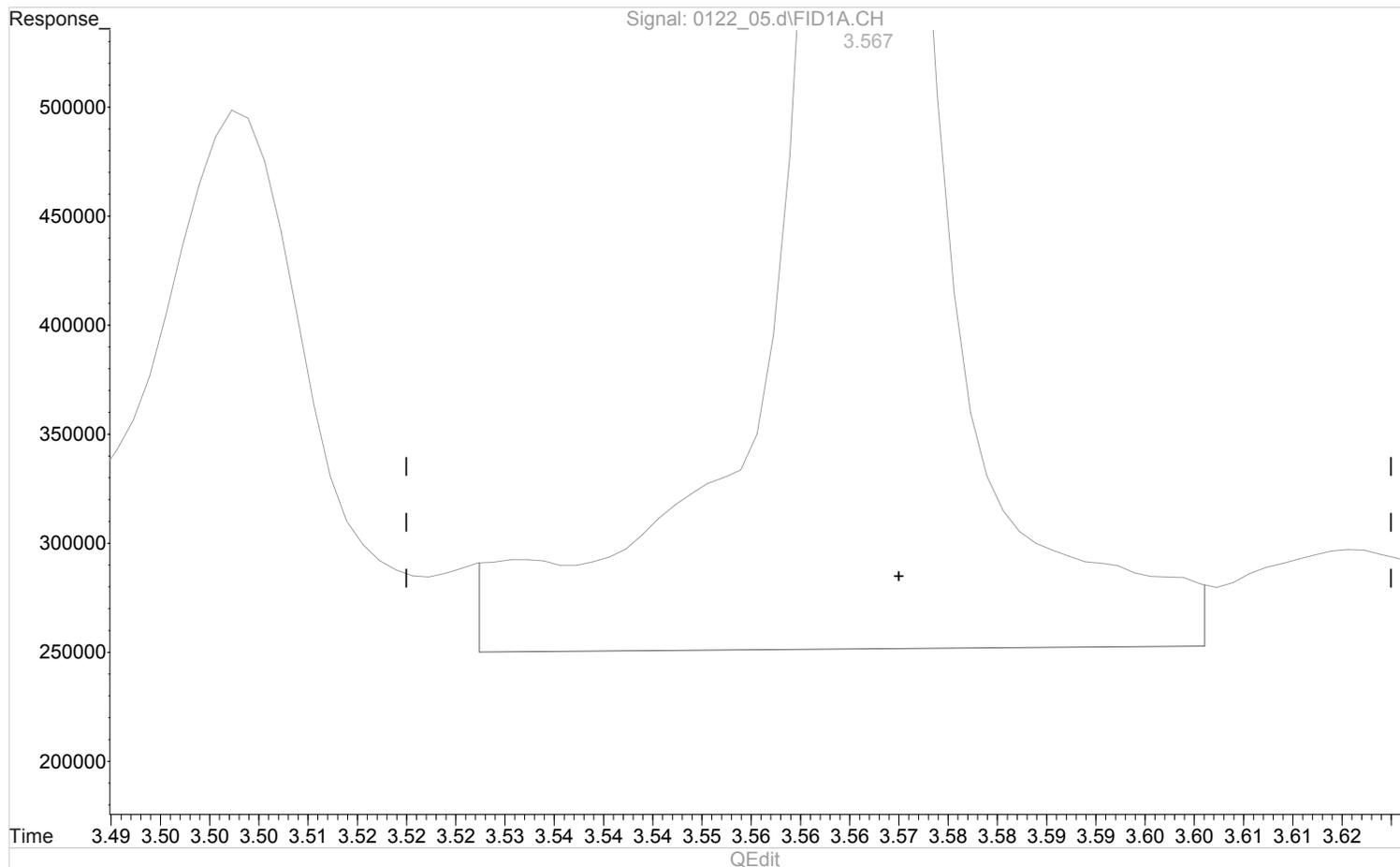


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_05.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:20 pm
Operator : 473
Sample : STD EPH 400 PPM 18K727792
Misc : M.I.s on ranges are corrections
ALS Vial : 5 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:55:00 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:54:56 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.567min 6.2282124 ppm
response 7115083

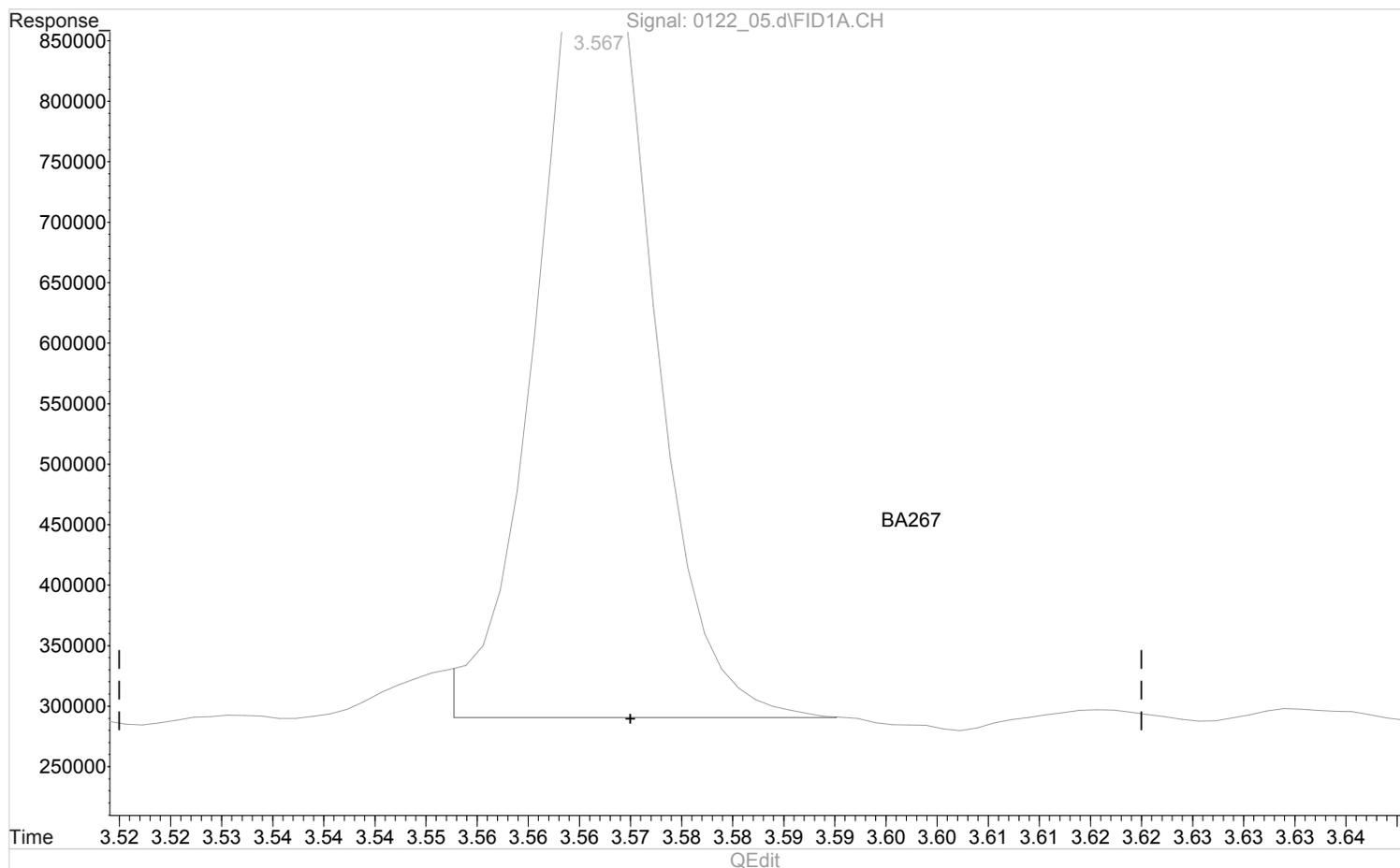
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_05.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:20 pm
Operator : 473
Sample : STD EPH 400 PPM 18K727792
Misc : M.I.s on ranges are corrections
ALS Vial : 5 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:55:25 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:54:56 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.567min 4.5873211 ppm m
response 5240536

(+) = Expected Retention Time

Data Path : C:\msdchem\1\data\012219B\
 Data File : 0122_06.d
 Signal(s) : FID1A.CH
 Acq On : 22 Jan 2019 17:33 pm
 Operator : 473
 Sample : STD EPH 1000 PPM 18K27792
 Misc : M.I.s on ranges are corrections
 ALS Vial : 6 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Jan 22 18:56:05 2019
 Quant Method : C:\msdchem\1\methods\EP02A22BS.M
 Quant Title :
 QLast Update : Tue Jan 22 18:55:33 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.57	11839789	10.3027159	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 51.51%
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	2.13	626063121	502.0428731	ppm
4) h,m Residual Range Organics	4.44	474396266	548.3873565	ppm
5) h,m Diesel (C12-C24)	2.13	626063121	502.0428731	ppm
6) h,m Motor Oil (C24-C30)	4.44	295597443	515.9544378	ppm
7) h,m Diesel	1.66	585083314	494.3976120	ppm
8) h,m Motor Oil	3.75	611928164	551.3529851	ppm
9) t,h,m TPH C8-C34	1.12	1154304570	1006.3644138	ppm
10) h,m EPH Screen	1.44	1210843357	981.2643295	ppm
11) H,M C10-C20 Hydrocarbons	1.66	585083314	494.3976120	ppm
12) H,M C20-C34 Hydrocarbons	3.75	547740802	514.9314419	ppm
13) t,m,h Extractable Petroleum...	2.13	1100724791	995.6566536	ppm
14) H,M C10-C22 Hydrocarbons	1.66	645852258	496.3010883	ppm
15) H,M C12-C22 Hydrocarbons	2.13	549408489	494.6471141	ppm
16) h,m C22-C32 Hydrocarbons	4.10	437457142	518.5434488	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	1.66	1197168560	996.9805803	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	1.66	585083314	494.3976120	ppm
22) H,m C20-C36 Hydrocarbons	3.75	579703374	511.5235571	ppm
23) h,m TEM (C9-C40)	1.42	1211550502	981.6542702	ppm
24) h,m TEH (C9-C40)	1.42	1211550502	981.6542702	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

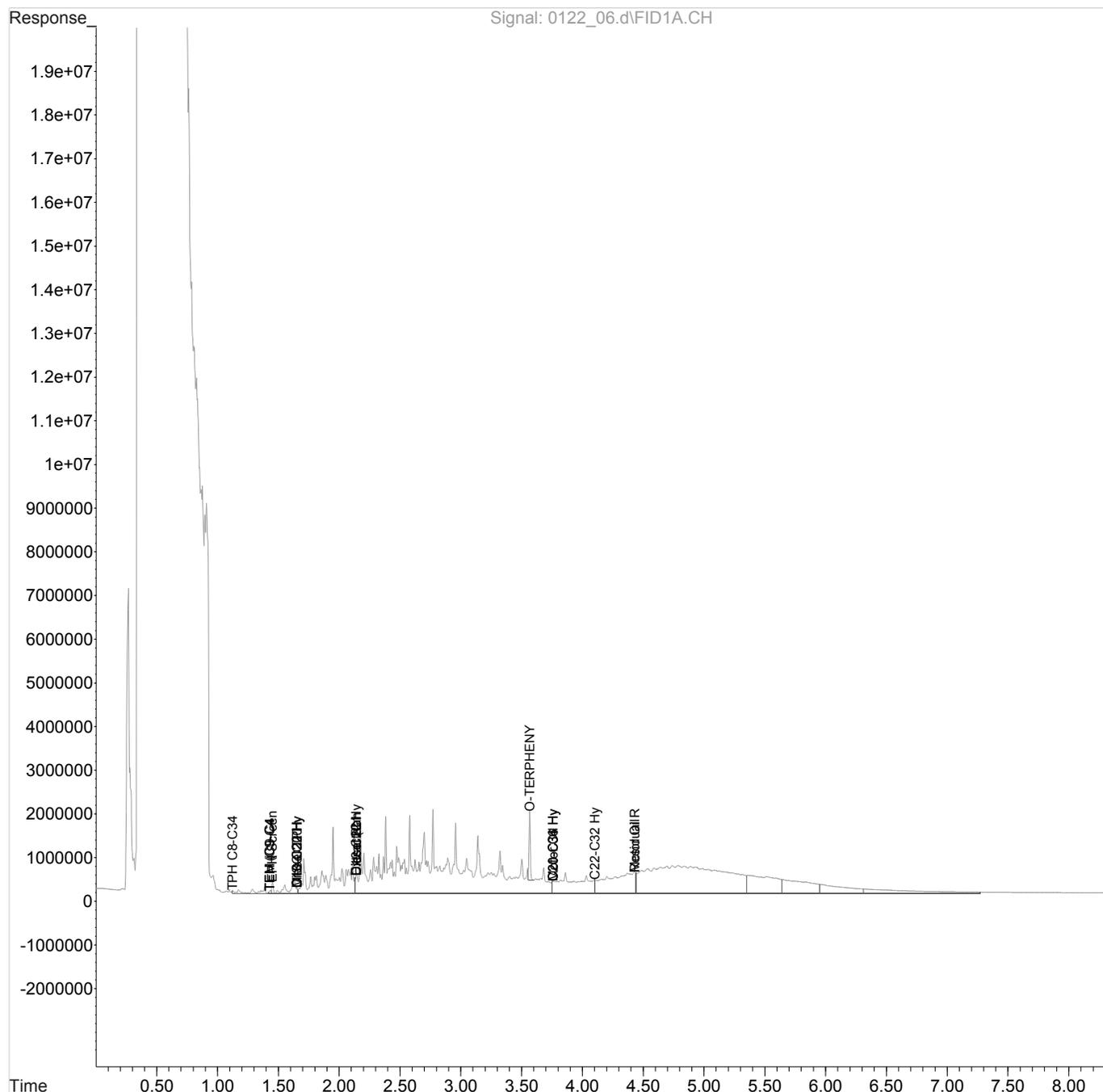
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_06.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:33 pm
Operator : 473
Sample : STD EPH 1000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 6 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:56:05 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:55:33 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

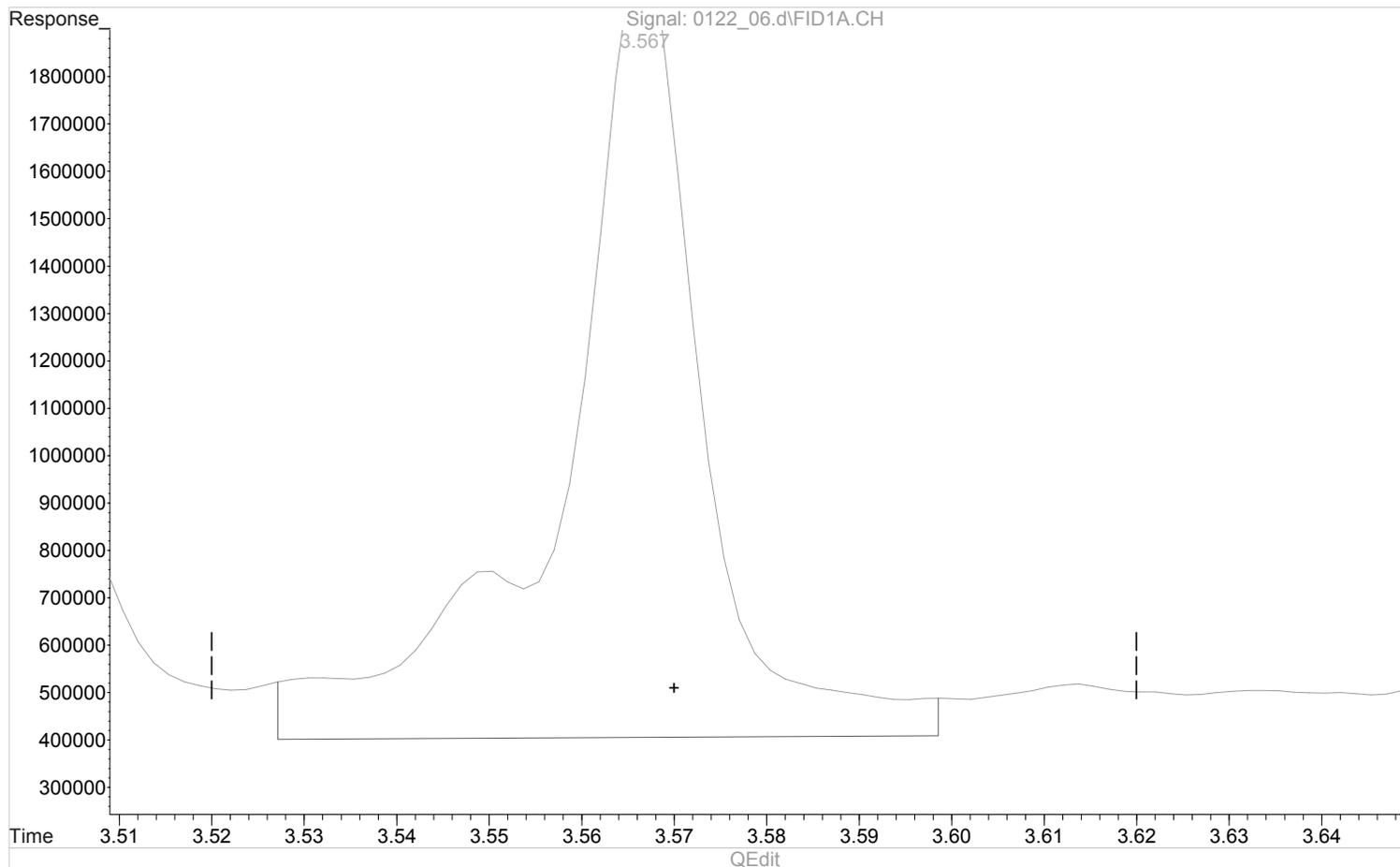


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_06.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:33 pm
Operator : 473
Sample : STD EPH 1000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 6 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:55:37 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:55:33 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.567min 15.0337965 ppm
response 17276705

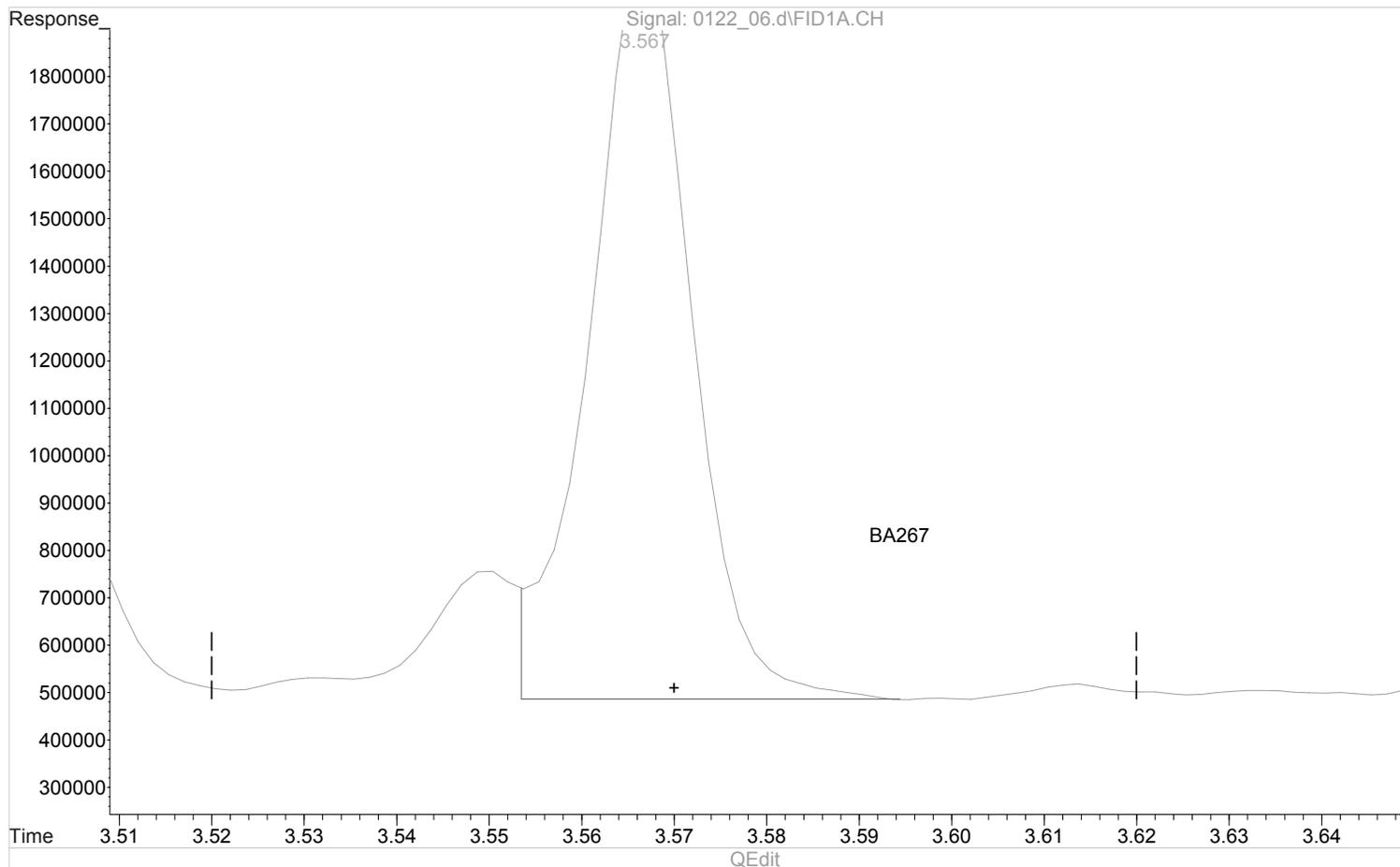
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_06.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:33 pm
Operator : 473
Sample : STD EPH 1000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 6 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:55:37 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:55:33 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.567min 10.3027159 ppm m
response 11839789

(+) = Expected Retention Time

Data Path : C:\msdchem\1\data\012219B\
 Data File : 0122_07.d
 Signal(s) : FID1A.CH
 Acq On : 22 Jan 2019 17:47 pm
 Operator : 473
 Sample : STD EPH 2000 PPM 18K27792
 Misc : M.I.s on ranges are corrections
 ALS Vial : 7 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Jan 22 18:56:49 2019
 Quant Method : C:\msdchem\1\methods\EP02A22BS.M
 Quant Title :
 QLast Update : Tue Jan 22 18:56:16 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.57	18621838	16.2416880	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 81.21%
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	2.13	1265488856	1003.5987893	ppm
4) h,m Residual Range Organics	4.44	922917008	1004.6379857	ppm
5) h,m Diesel (C12-C24)	2.13	1265488856	1003.5987893	ppm
6) h,m Motor Oil (C24-C30)	4.44	584736101	1010.8741743	ppm
7) h,m Diesel	1.66	1176031322	984.0425467	ppm
8) h,m Motor Oil	3.75	1203612069	1022.7134622	ppm
9) t,h,m TPH C8-C34	1.12	2310036517	1997.6542355	ppm
10) h,m EPH Screen	1.44	2407286759	1924.5879570	ppm
11) H,M C10-C20 Hydrocarbons	1.66	1176031322	984.0425467	ppm
12) H,M C20-C34 Hydrocarbons	3.75	1092170901	1019.4333198	ppm
13) t,m,h Extractable Petroleum...	2.13	2188828255	1985.1256361	ppm
14) H,M C10-C22 Hydrocarbons	1.66	1300819587	988.5235386	ppm
15) H,M C12-C22 Hydrocarbons	2.13	1109751331	988.7177039	ppm
16) h,m C22-C32 Hydrocarbons	4.10	870377885	1022.3887018	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	1.66	2379896511	1984.2774621	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	1.66	1176031322	984.0425467	ppm
22) H,m C20-C36 Hydrocarbons	3.75	1151689682	1014.3260048	ppm
23) h,m TEM (C9-C40)	1.42	2408760032	1925.2905476	ppm
24) h,m TEH (C9-C40)	1.42	2408760032	1925.2905476	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

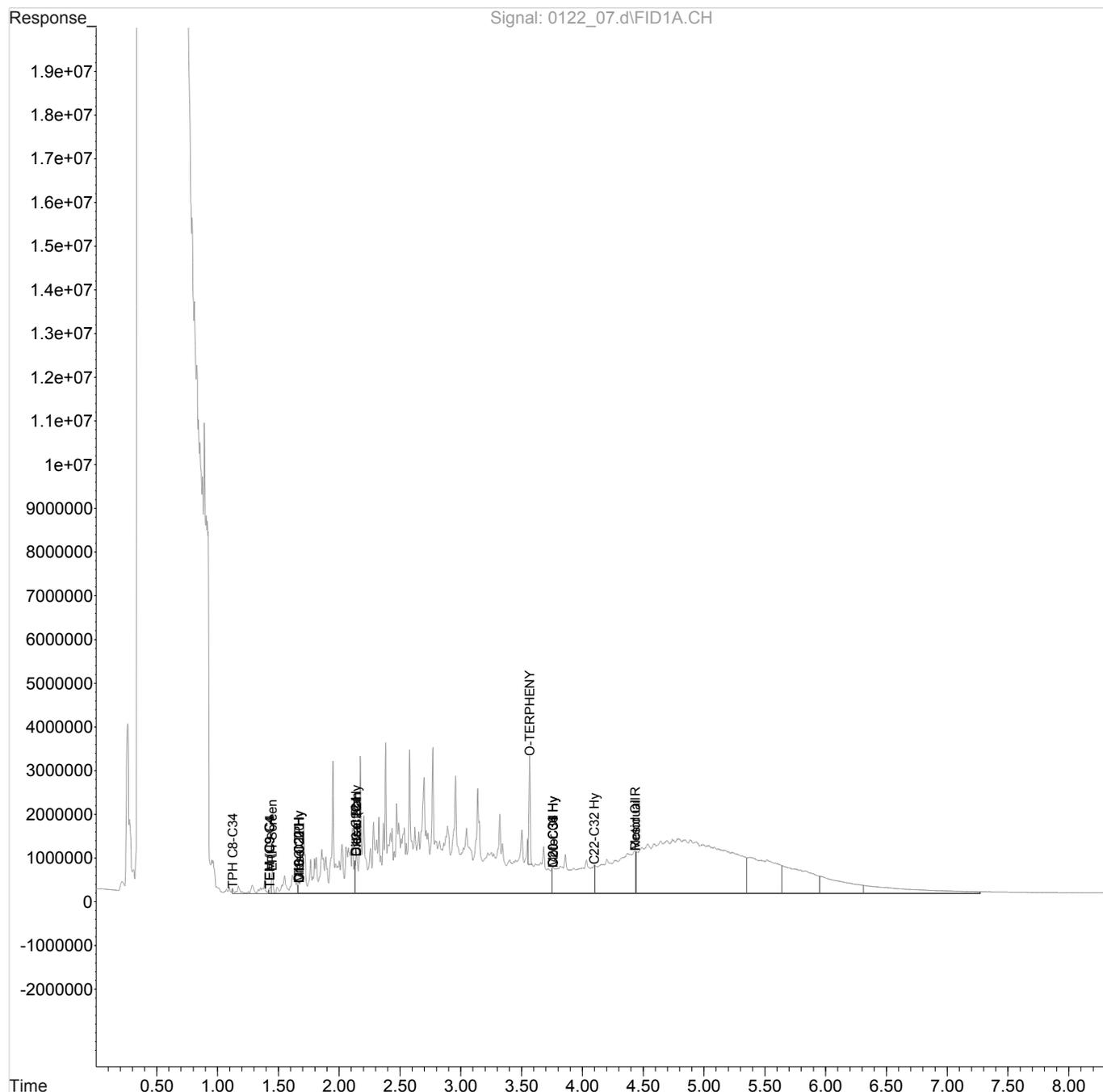
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_07.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:47 pm
Operator : 473
Sample : STD EPH 2000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 7 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:56:49 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:56:16 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

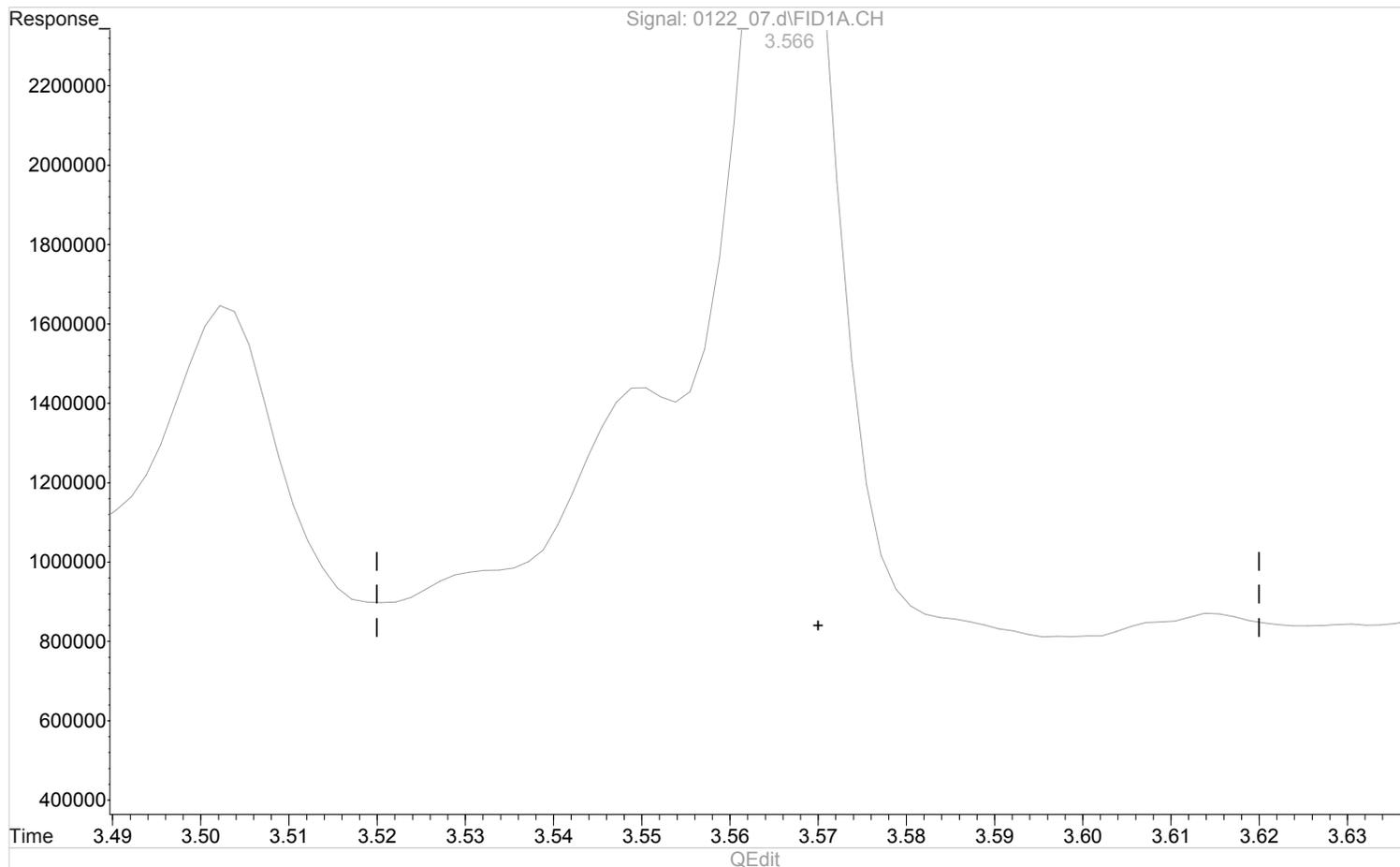


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_07.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:47 pm
Operator : 473
Sample : STD EPH 2000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 7 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:56:19 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:56:16 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.566min 49.7318558 ppm
response 57019848

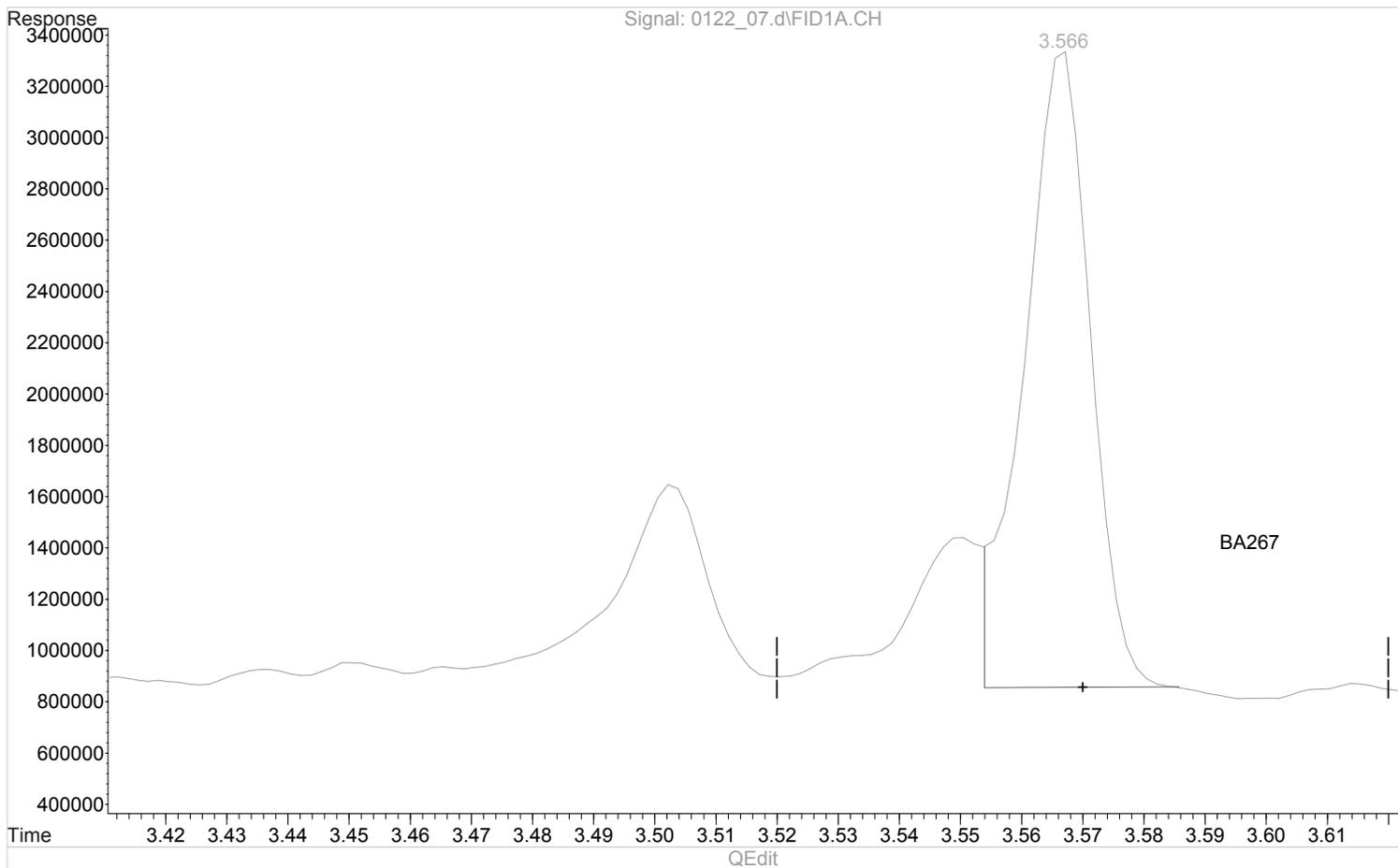
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_07.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 17:47 pm
Operator : 473
Sample : STD EPH 2000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 7 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:56:19 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:56:16 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.566min 16.2416880 ppm m
response 18621838

(+) = Expected Retention Time

Data Path : C:\msdchem\1\data\012219B\
 Data File : 0122_08.d
 Signal(s) : FID1A.CH
 Acq On : 22 Jan 2019 18:01 pm
 Operator : 473
 Sample : STD EPH 4000 PPM 18K27792
 Misc : M.I.s on ranges are corrections
 ALS Vial : 8 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Jan 22 18:57:20 2019
 Quant Method : C:\msdchem\1\methods\EP02A22BS.M
 Quant Title :
 QLast Update : Tue Jan 22 18:56:55 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.57	35684971	31.1342892	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 155.67%#
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	2.13	2721856619	2147.9720249	ppm
4) h,m Residual Range Organics	4.44	1979164879	2102.3681811	ppm
5) h,m Diesel (C12-C24)	2.13	2721856619	2147.9720249	ppm
6) h,m Motor Oil (C24-C30)	4.44	1249889726	2143.4209921	ppm
7) h,m Diesel	1.66	2520039862	2101.8139153	ppm
8) h,m Motor Oil	3.75	2594381774	2154.5337958	ppm
9) t,h,m TPH C8-C34	1.12	4974806748	4282.9839263	ppm
10) h,m EPH Screen	1.44	5172083576	4105.8720681	ppm
11) H,M C10-C20 Hydrocarbons	1.66	2520039862	2101.8139153	ppm
12) H,M C20-C34 Hydrocarbons	3.75	2368761192	2196.3487417	ppm
13) t,m,h Extractable Petroleum...	2.13	4699146455	4266.1696585	ppm
14) H,M C10-C22 Hydrocarbons	1.66	2795267191	2115.3744917	ppm
15) H,M C12-C22 Hydrocarbons	2.13	2381130674	2113.2188118	ppm
16) h,m C22-C32 Hydrocarbons	4.10	1878019555	2188.4090393	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	1.66	5113282972	4265.3113447	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	1.66	2520039862	2101.8139153	ppm
22) H,m C20-C36 Hydrocarbons	3.75	2496727424	2190.7734932	ppm
23) h,m TEM (C9-C40)	1.42	5175562473	4107.3601417	ppm
24) h,m TEH (C9-C40)	1.42	5175562473	4107.3601417	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

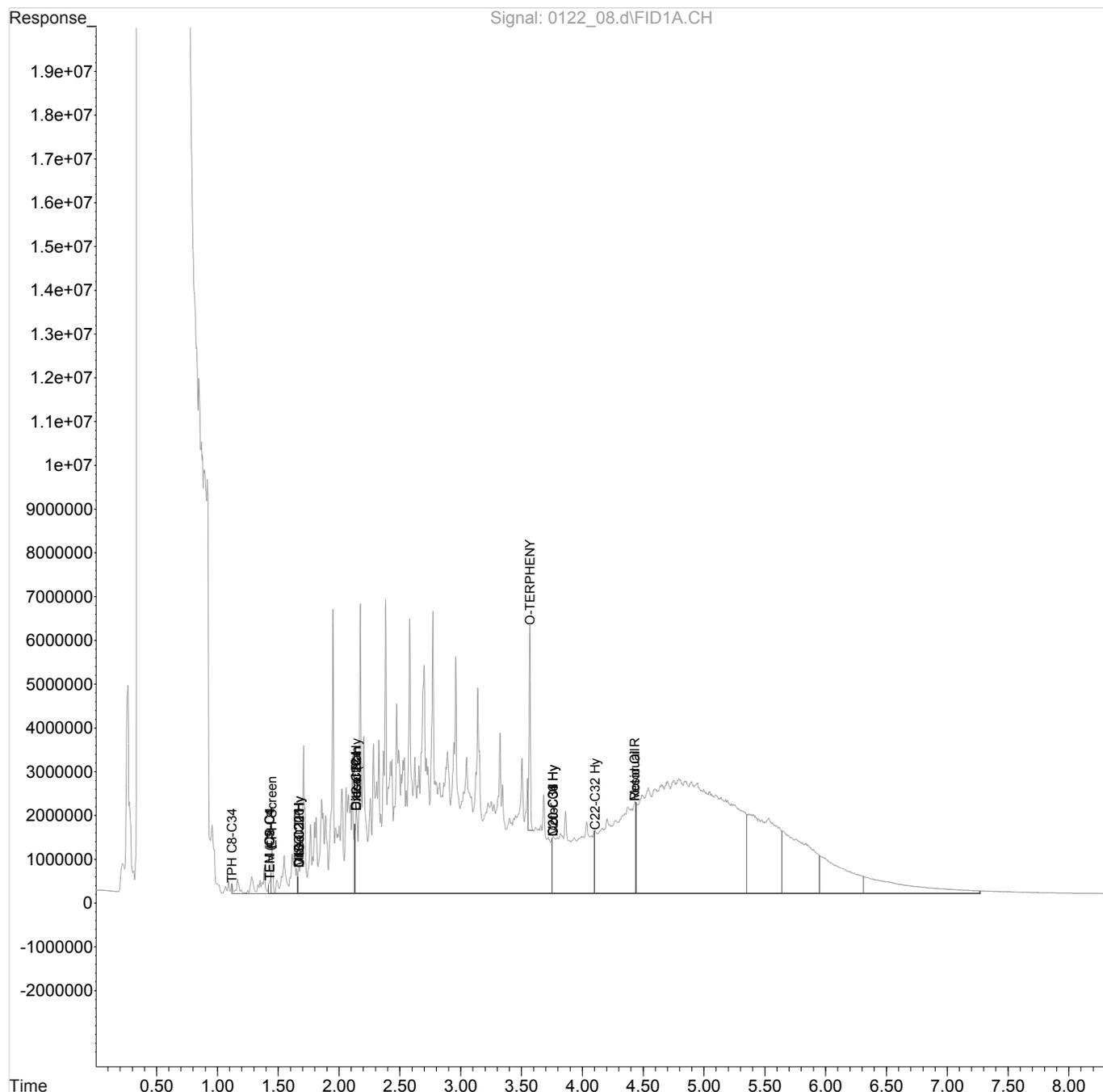
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_08.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:01 pm
Operator : 473
Sample : STD EPH 4000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 8 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:57:20 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:56:55 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

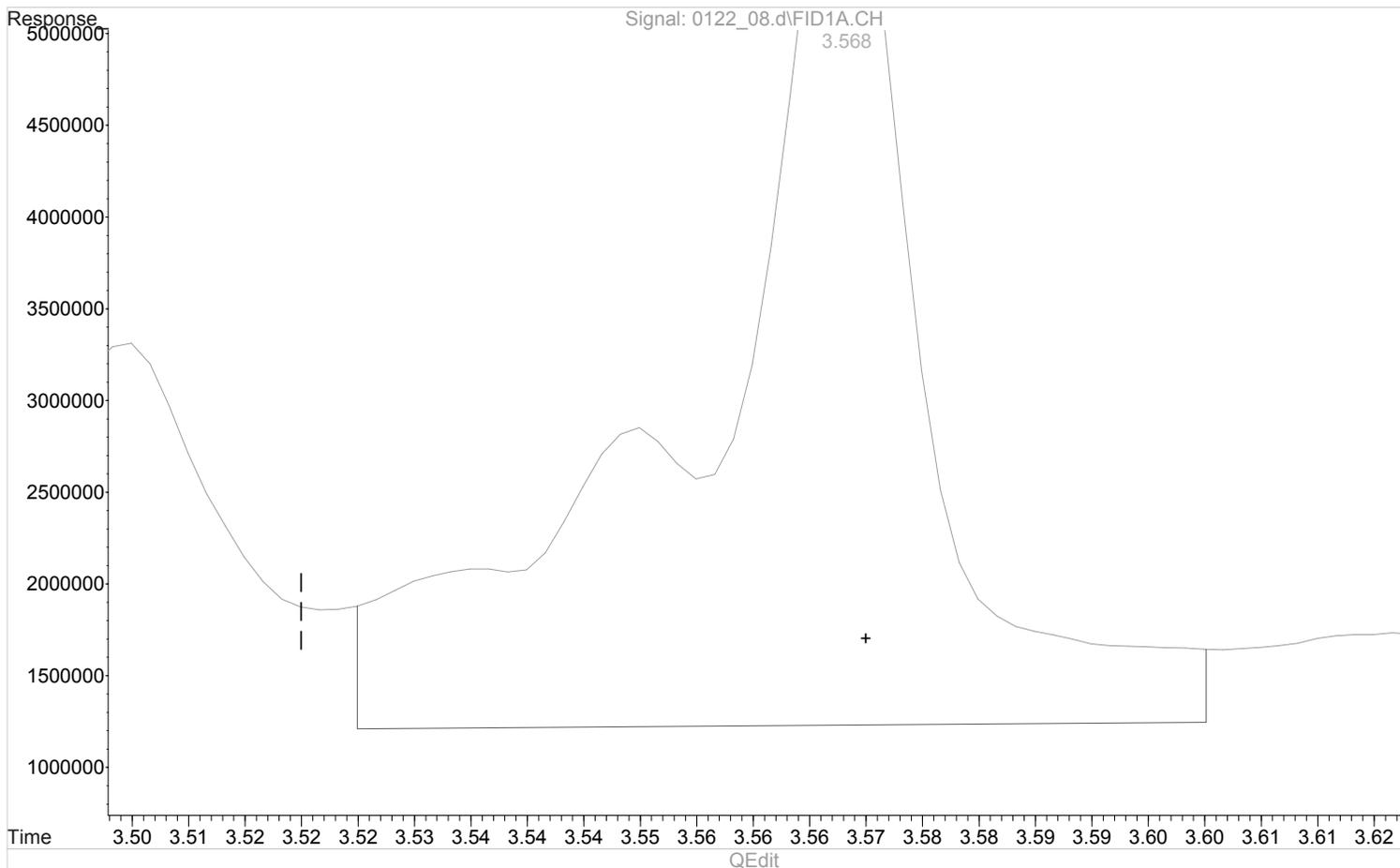


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_08.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:01 pm
Operator : 473
Sample : STD EPH 4000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 8 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:56:59 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:56:55 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.568min 58.4483932 ppm
response 66991387

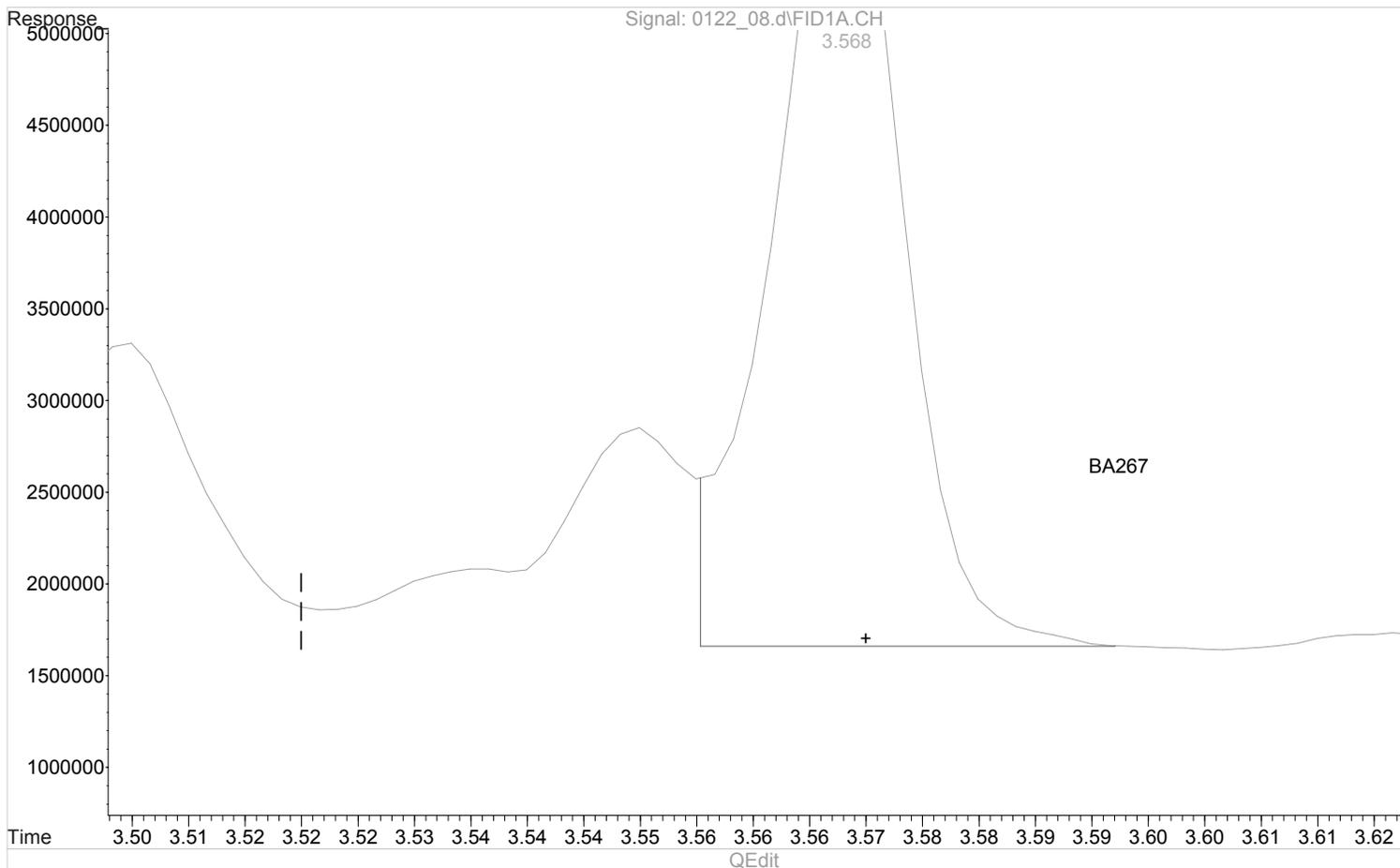
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_08.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:01 pm
Operator : 473
Sample : STD EPH 4000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 8 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:56:59 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:56:55 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.568min 31.1342892 ppm m
response 35684971

(+) = Expected Retention Time

Data Path : C:\msdchem\1\data\012219B\
 Data File : 0122_09.d
 Signal(s) : FID1A.CH
 Acq On : 22 Jan 2019 18:15 pm
 Operator : 473
 Sample : STD EPH 5000 PPM 18K27792
 Misc : M.I.s on ranges are corrections
 ALS Vial : 9 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Jan 22 18:57:52 2019
 Quant Method : C:\msdchem\1\methods\EP02A22BS.M
 Quant Title :
 QLast Update : Tue Jan 22 18:57:27 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.57	38097935	33.8913790	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 169.46%#
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	2.13	3031795367	2396.3357290	ppm
4) h,m Residual Range Organics	4.44	2226418346	2349.6489273	ppm
5) h,m Diesel (C12-C24)	2.13	3031795367	2396.3357290	ppm
6) h,m Motor Oil (C24-C30)	4.44	1403661648	2384.8581544	ppm
7) h,m Diesel	1.66	2798054456	2347.6025213	ppm
8) h,m Motor Oil	3.75	2928816054	2412.7855900	ppm
9) t,h,m TPH C8-C34	1.12	5571641132	4787.0480426	ppm
10) h,m EPH Screen	1.44	5793688758	4593.3129386	ppm
11) H,M C10-C20 Hydrocarbons	1.66	2798054456	2347.6025213	ppm
12) H,M C20-C34 Hydrocarbons	3.75	2673915657	2450.3873882	ppm
13) t,m,h Extractable Petroleum...	2.13	5258214318	4766.0247967	ppm
14) H,M C10-C22 Hydrocarbons	1.66	3112247868	2365.5897538	ppm
15) H,M C12-C22 Hydrocarbons	2.13	2643588896	2358.0212690	ppm
16) h,m C22-C32 Hydrocarbons	4.10	2115574078	2436.0943666	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	1.66	5726873290	4770.2962177	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	1.66	2798054456	2347.6025213	ppm
22) H,m C20-C36 Hydrocarbons	3.75	2818314716	2445.4174972	ppm
23) h,m TEM (C9-C40)	1.42	5798075034	4595.0153817	ppm
24) h,m TEH (C9-C40)	1.42	5798075034	4595.0153817	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

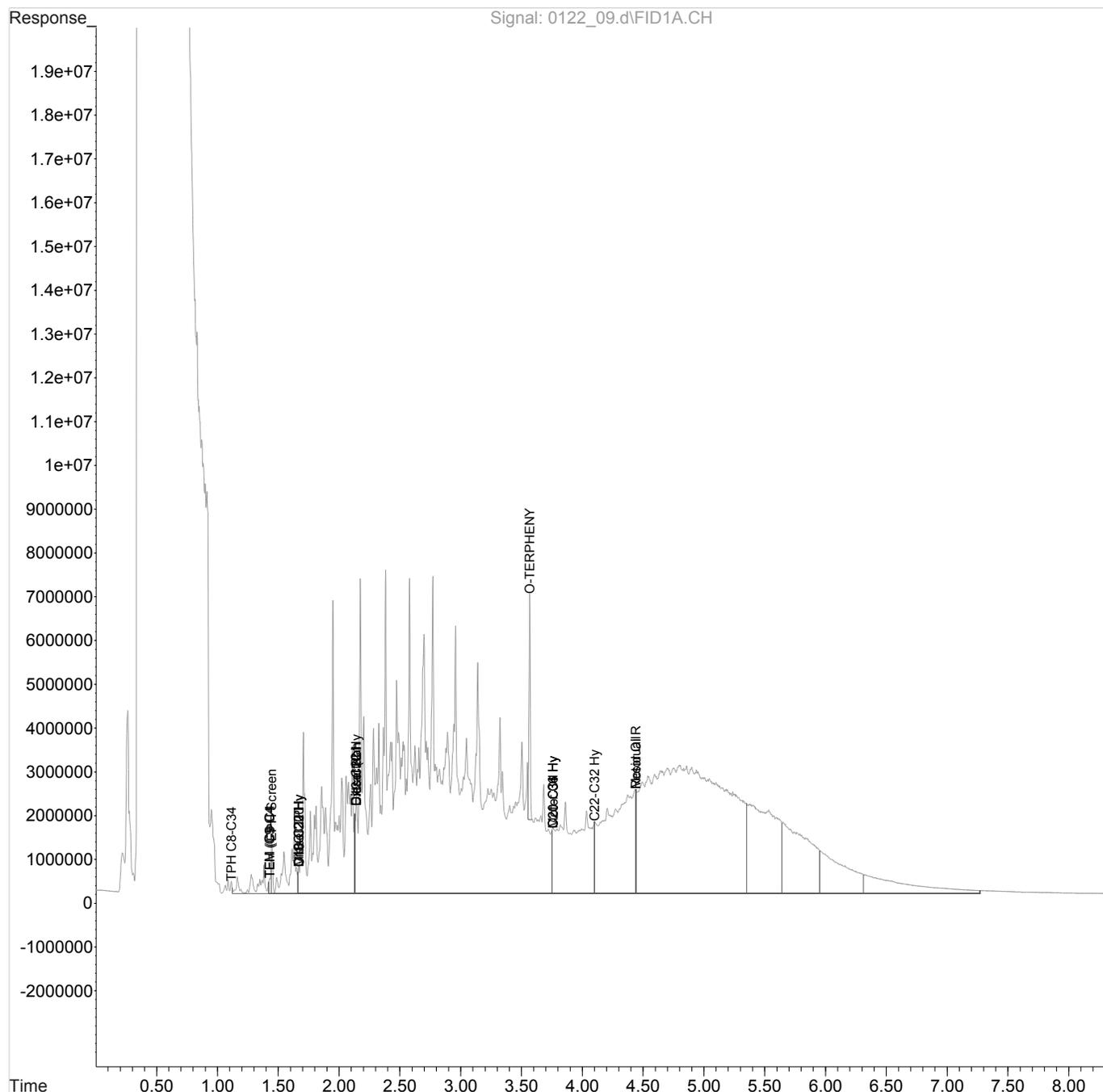
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_09.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:15 pm
Operator : 473
Sample : STD EPH 5000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 9 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:57:52 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:57:27 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

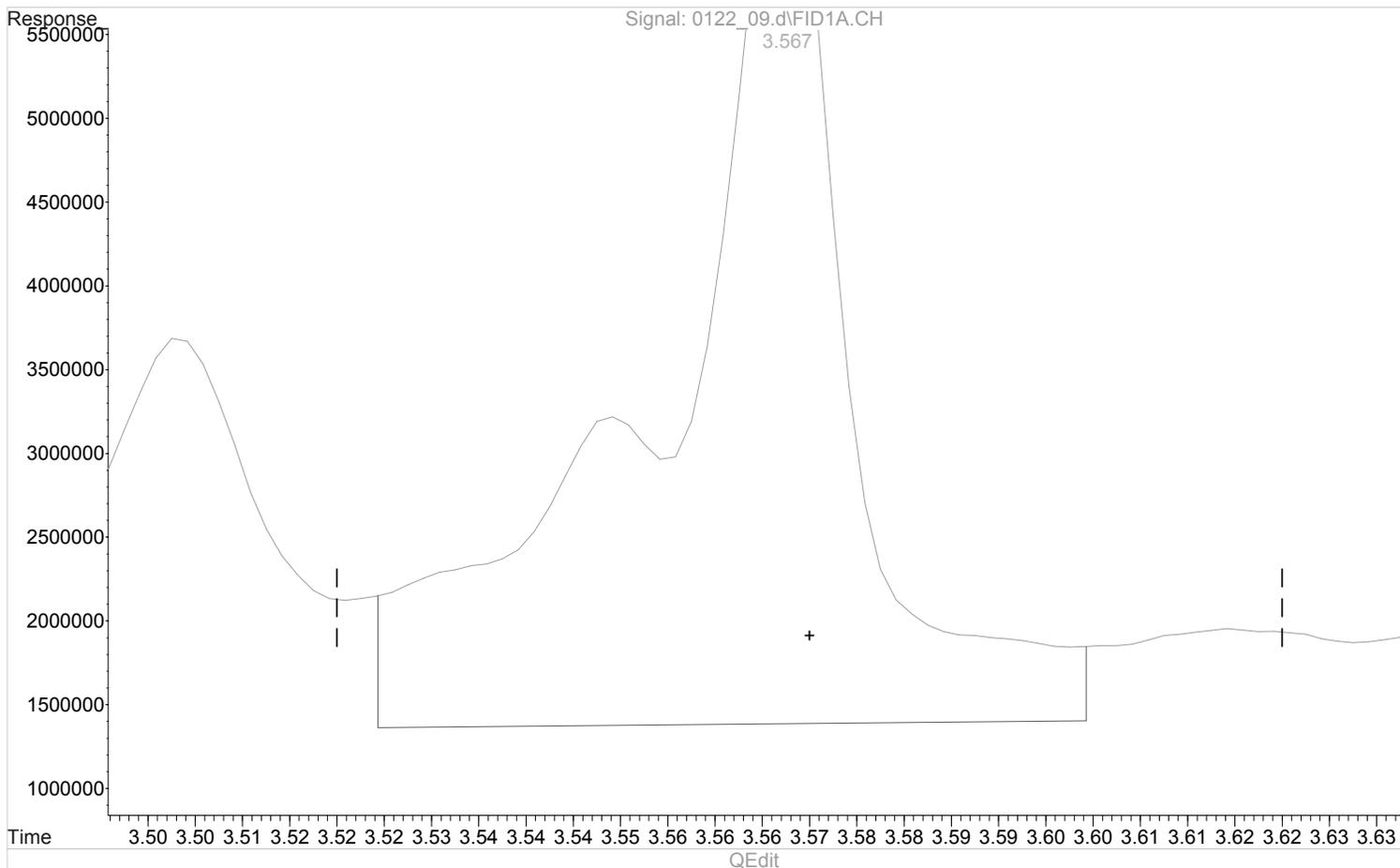


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_09.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:15 pm
Operator : 473
Sample : STD EPH 5000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 9 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:57:31 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:57:27 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.567min 66.3088879 ppm
response 74539066

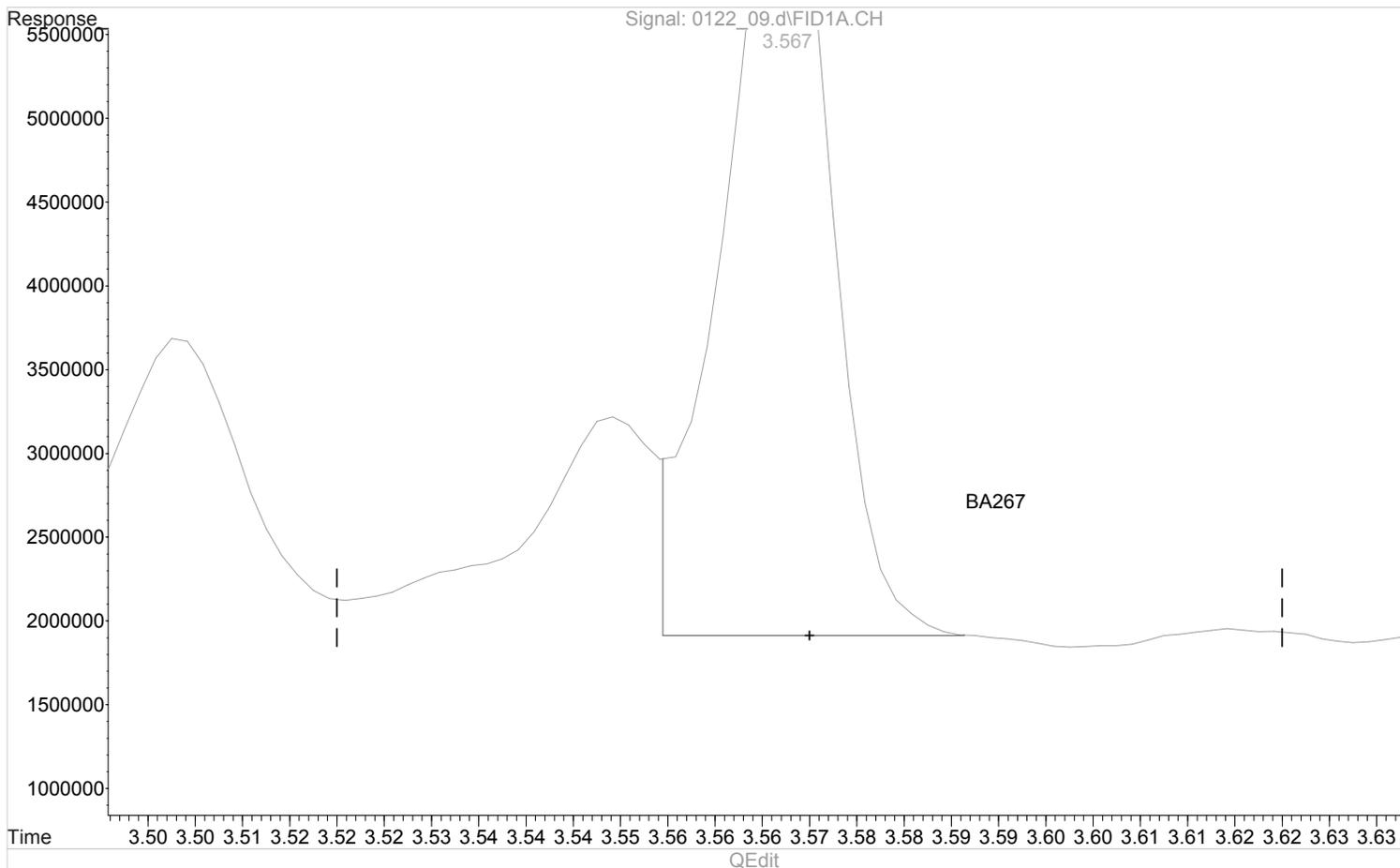
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_09.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:15 pm
Operator : 473
Sample : STD EPH 5000 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 9 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:57:31 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:57:27 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.567min 33.8913790 ppm m
response 38097935

(+) = Expected Retention Time

Data Path : C:\msdchem\1\data\012219B\
 Data File : 0122_10.d
 Signal(s) : FID1A.CH
 Acq On : 22 Jan 2019 18:28 pm
 Operator : 473
 Sample : STD EPH 7500 PPM 18K27792
 Misc : M.I.s on ranges are corrections
 ALS Vial : 10 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Jan 22 18:58:23 2019
 Quant Method : C:\msdchem\1\methods\EP02A22BS.M
 Quant Title :
 QLast Update : Tue Jan 22 18:57:58 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.57	61400393	55.8353430	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 279.18%#
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	2.13	4456159894	3526.6086183	ppm
4) h,m Residual Range Organics	4.44	3462464721	3641.0272638	ppm
5) h,m Diesel (C12-C24)	2.13	4456159894	3526.6086183	ppm
6) h,m Motor Oil (C24-C30)	4.44	2137864328	3610.9399762	ppm
7) h,m Diesel	1.66	4101148747	3464.0403516	ppm
8) h,m Motor Oil	3.75	4552828835	3731.1483198	ppm
9) t,h,m TPH C8-C34	1.12	8395310027	7208.8995481	ppm
10) h,m EPH Screen	1.44	8757441800	6942.9195803	ppm
11) H,M C10-C20 Hydrocarbons	1.66	4101148747	3464.0403516	ppm
12) H,M C20-C34 Hydrocarbons	3.75	4137392983	3755.7235608	ppm
13) t,m,h Extractable Petroleum...	2.13	7915308197	7180.2771002	ppm
14) H,M C10-C22 Hydrocarbons	1.66	4594471104	3508.9527857	ppm
15) H,M C12-C22 Hydrocarbons	2.13	3857865619	3458.7523920	ppm
16) h,m C22-C32 Hydrocarbons	4.10	3247905205	3705.1277804	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	1.66	8651913683	7213.9768174	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	1.66	4101148747	3464.0403516	ppm
22) H,m C20-C36 Hydrocarbons	3.75	4374094243	3763.7740149	ppm
23) h,m TEM (C9-C40)	1.42	8765038854	6945.7227037	ppm
24) h,m TEH (C9-C40)	1.42	8765038854	6945.7227037	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

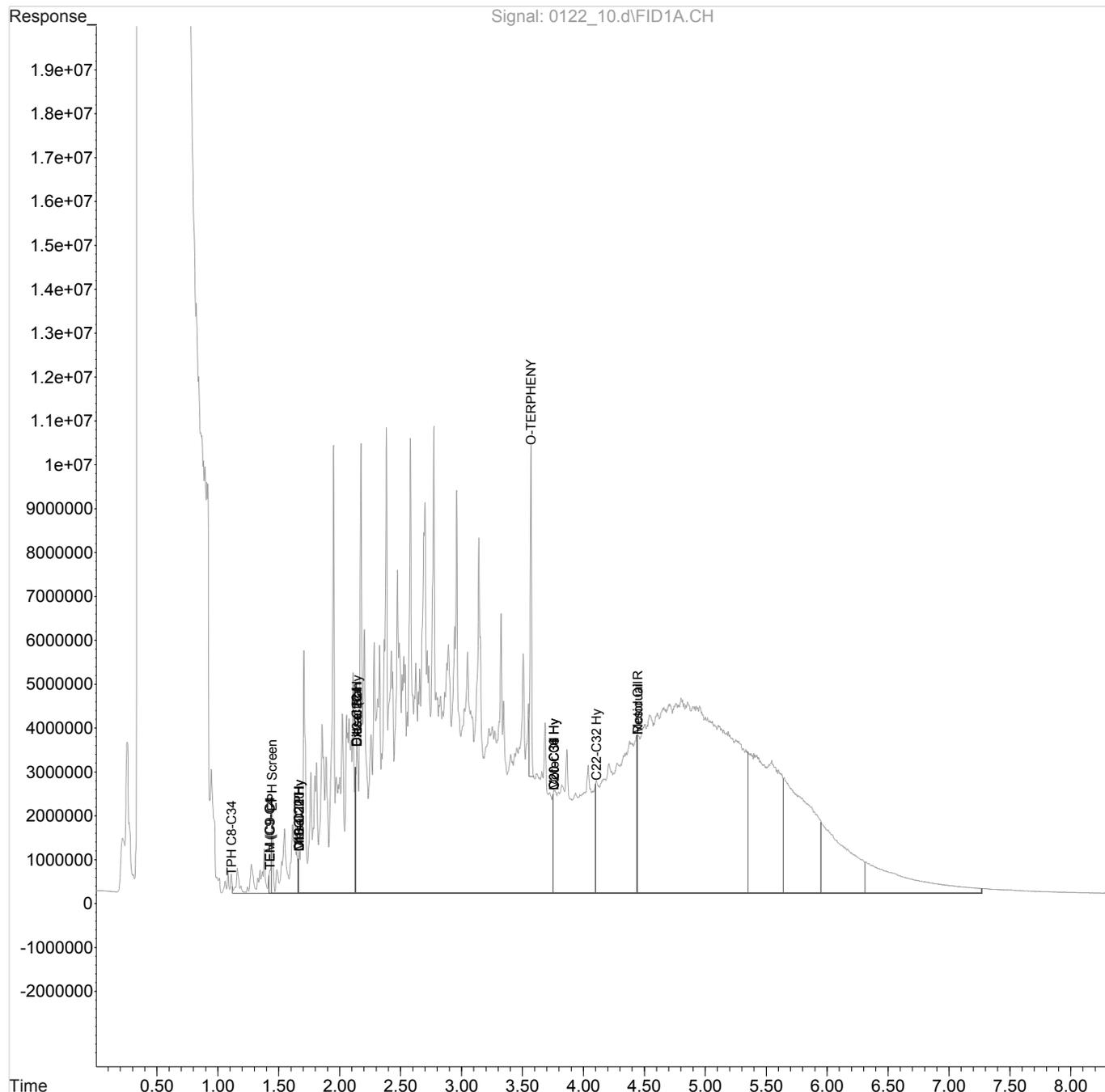
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_10.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:28 pm
Operator : 473
Sample : STD EPH 7500 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 10 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:58:23 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:57:58 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

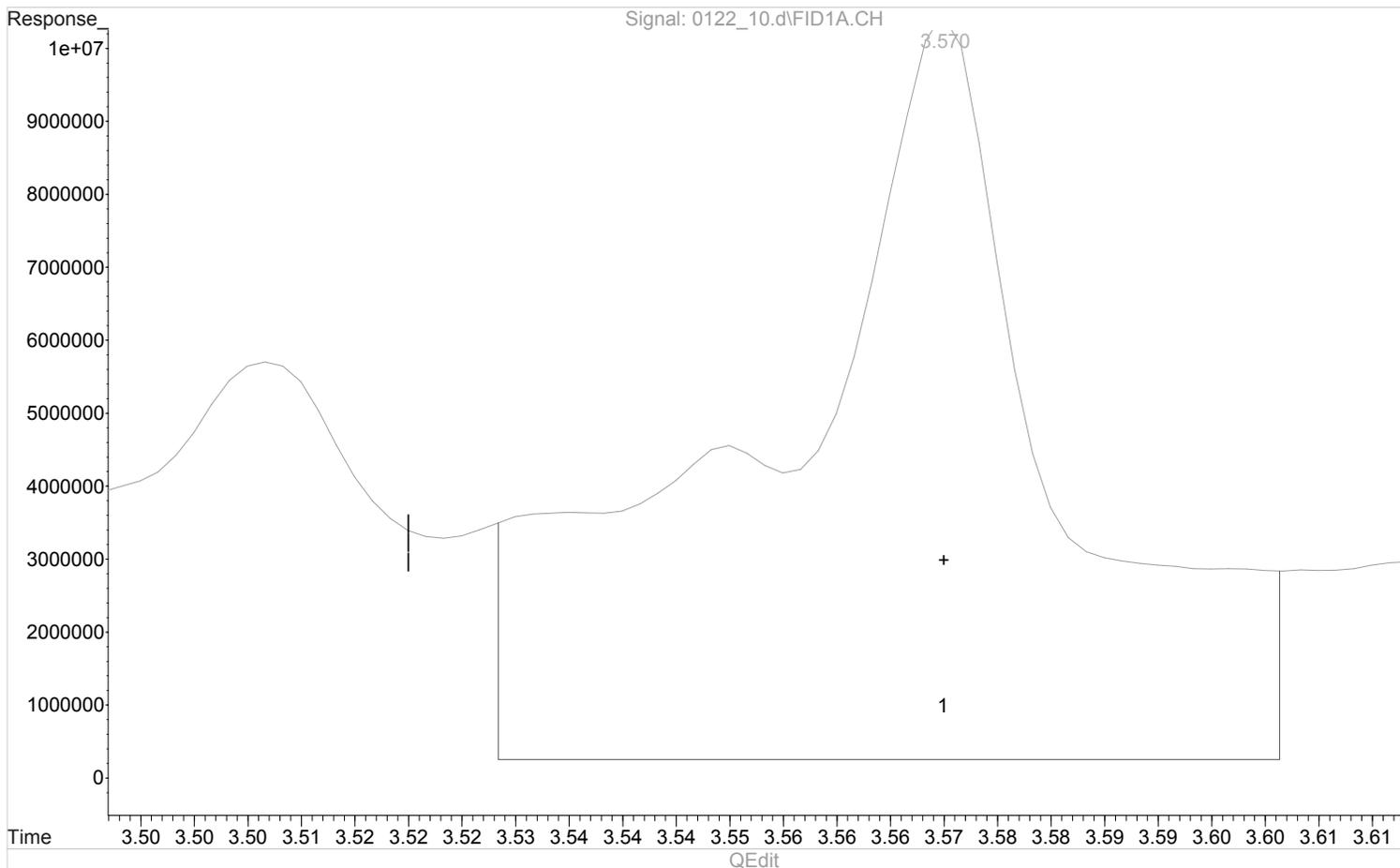


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_10.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:28 pm
Operator : 473
Sample : STD EPH 7500 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 10 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:58:02 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:57:58 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.570min 176.3194855 ppm
response 193893064

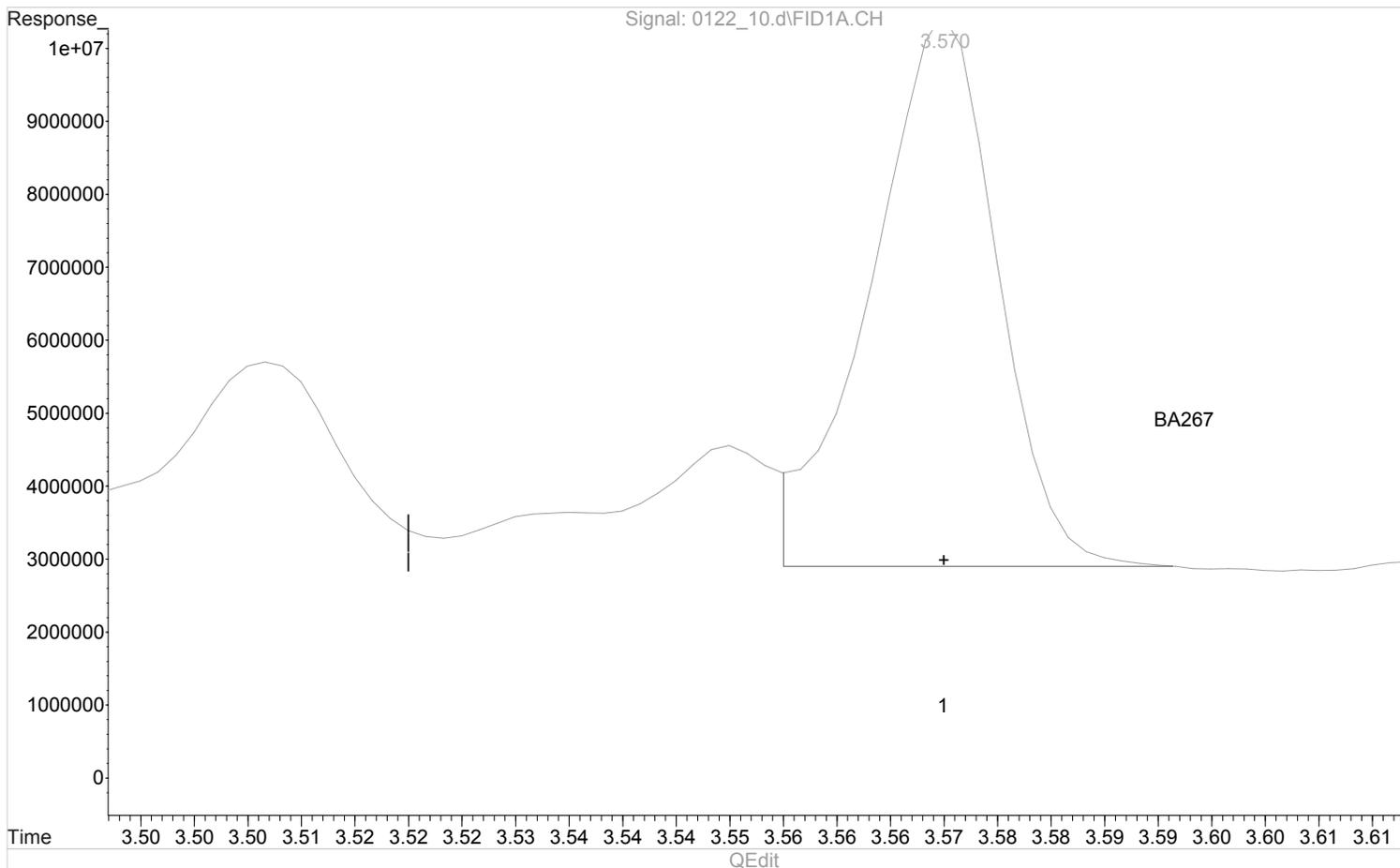
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_10.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:28 pm
Operator : 473
Sample : STD EPH 7500 PPM 18K27792
Misc : M.I.s on ranges are corrections
ALS Vial : 10 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:58:02 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:57:58 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.570min 55.8353430 ppm m
response 61400393

(+) = Expected Retention Time

Data Path : C:\msdchem\1\data\012219B\
 Data File : 0122_11.d
 Signal(s) : FID1A.CH
 Acq On : 22 Jan 2019 18:42 pm
 Operator : 473
 Sample : STD EPH 10000 PPM 18527792
 Misc : M.I.s on ranges are corrections
 ALS Vial : 11 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Jan 22 18:58:56 2019
 Quant Method : C:\msdchem\1\methods\EP02A22BS.M
 Quant Title :
 QLast Update : Tue Jan 22 18:58:30 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.57	77340773	70.9125405	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 354.56%#
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	2.13	6392715174	5094.9712127	ppm
4) h,m Residual Range Organics	4.44	4816196737	5064.7229475	ppm
5) h,m Diesel (C12-C24)	2.13	6392715174	5094.9712127	ppm
6) h,m Motor Oil (C24-C30)	4.44	2933863954	4975.7455566	ppm
7) h,m Diesel	1.66	5906398472	5059.3007531	ppm
8) h,m Motor Oil	3.75	6279327191	5107.7889188	ppm
9) t,h,m TPH C8-C34	1.12	11809275853	10173.2822990	ppm
10) h,m EPH Screen	1.44	12326372957	9787.0667191	ppm
11) H,M C10-C20 Hydrocarbons	1.66	5906398472	5059.3007531	ppm
12) H,M C20-C34 Hydrocarbons	3.75	5687029754	5116.6648521	ppm
13) t,m,h Extractable Petroleum...	2.13	11208149057	10221.7264100	ppm
14) H,M C10-C22 Hydrocarbons	1.66	6564165165	5064.1218967	ppm
15) H,M C12-C22 Hydrocarbons	2.13	5587052312	5076.5920283	ppm
16) h,m C22-C32 Hydrocarbons	4.10	4466050069	5070.5573662	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	1.66	12185261910	10202.5163575	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	1.66	5906398472	5059.3007531	ppm
22) H,m C20-C36 Hydrocarbons	3.75	6025721513	5138.7271565	ppm
23) h,m TEM (C9-C40)	1.42	12337672628	9790.6181972	ppm
24) h,m TEH (C9-C40)	1.42	12337672628	9790.6181972	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

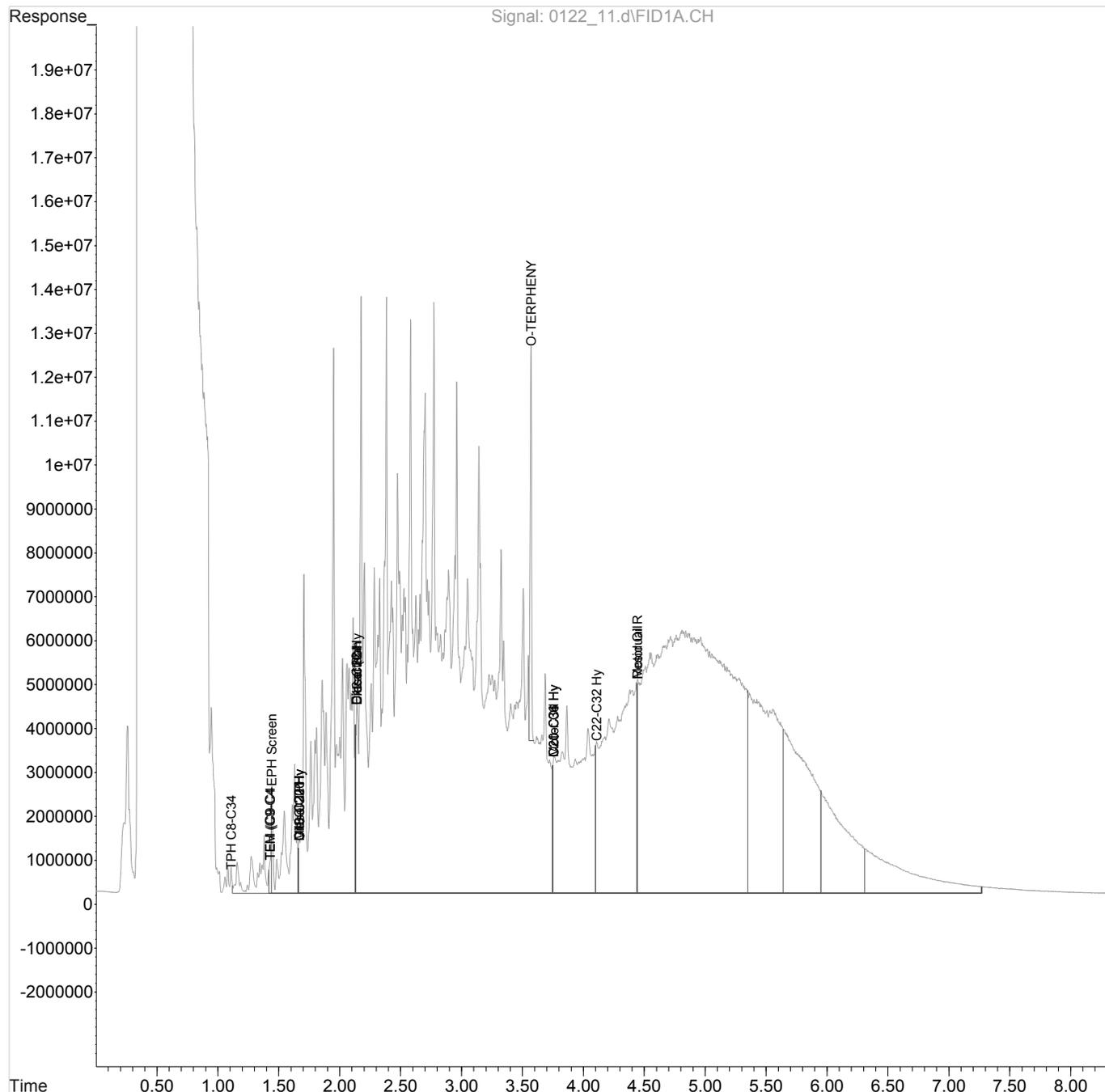
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_11.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:42 pm
Operator : 473
Sample : STD EPH 10000 PPM 18527792
Misc : M.I.s on ranges are corrections
ALS Vial : 11 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:58:56 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:58:30 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

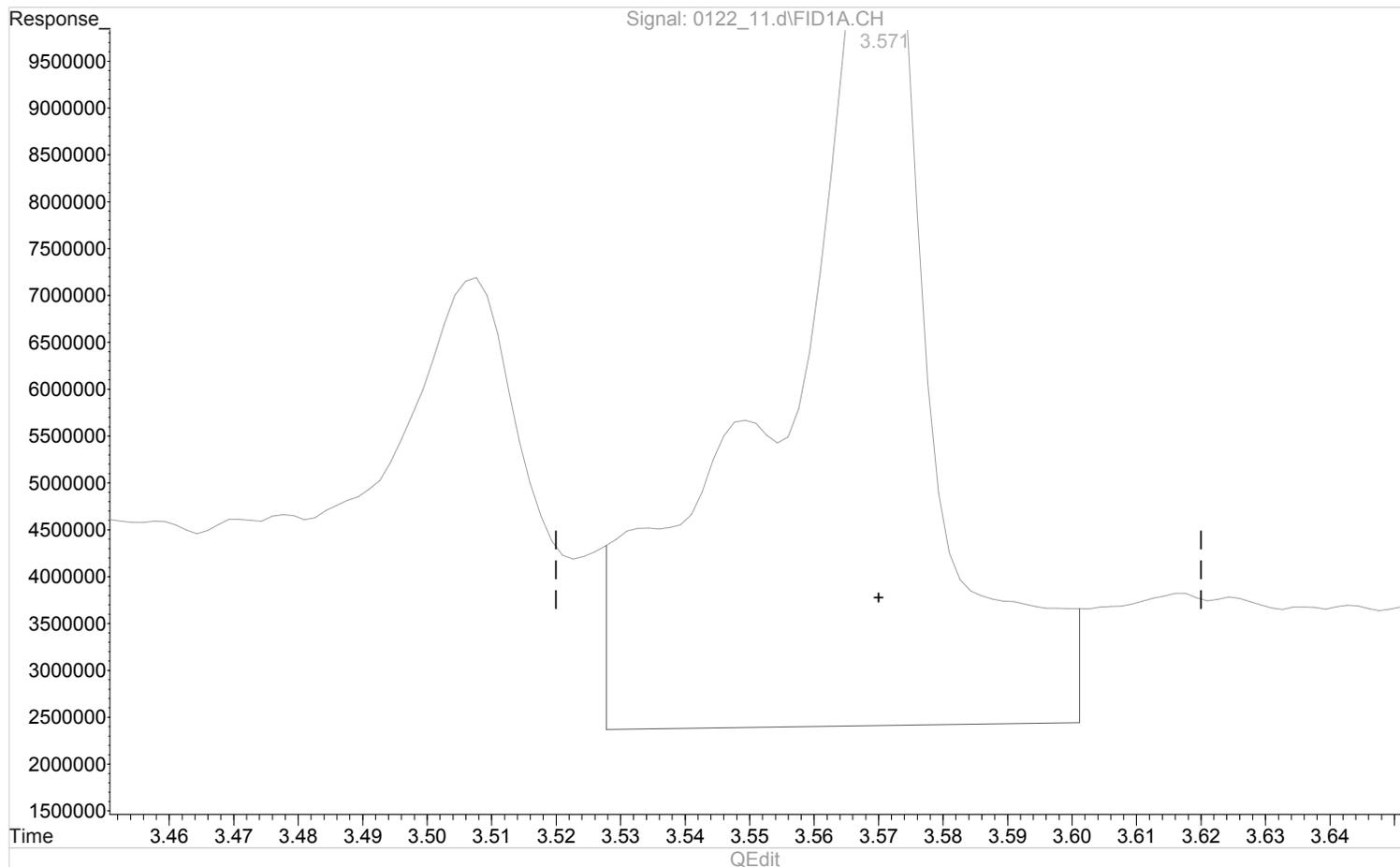


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_11.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:42 pm
Operator : 473
Sample : STD EPH 10000 PPM 18527792
Misc : M.I.s on ranges are corrections
ALS Vial : 11 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:58:35 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:58:30 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.570min 141.5983150 ppm
response 154434223

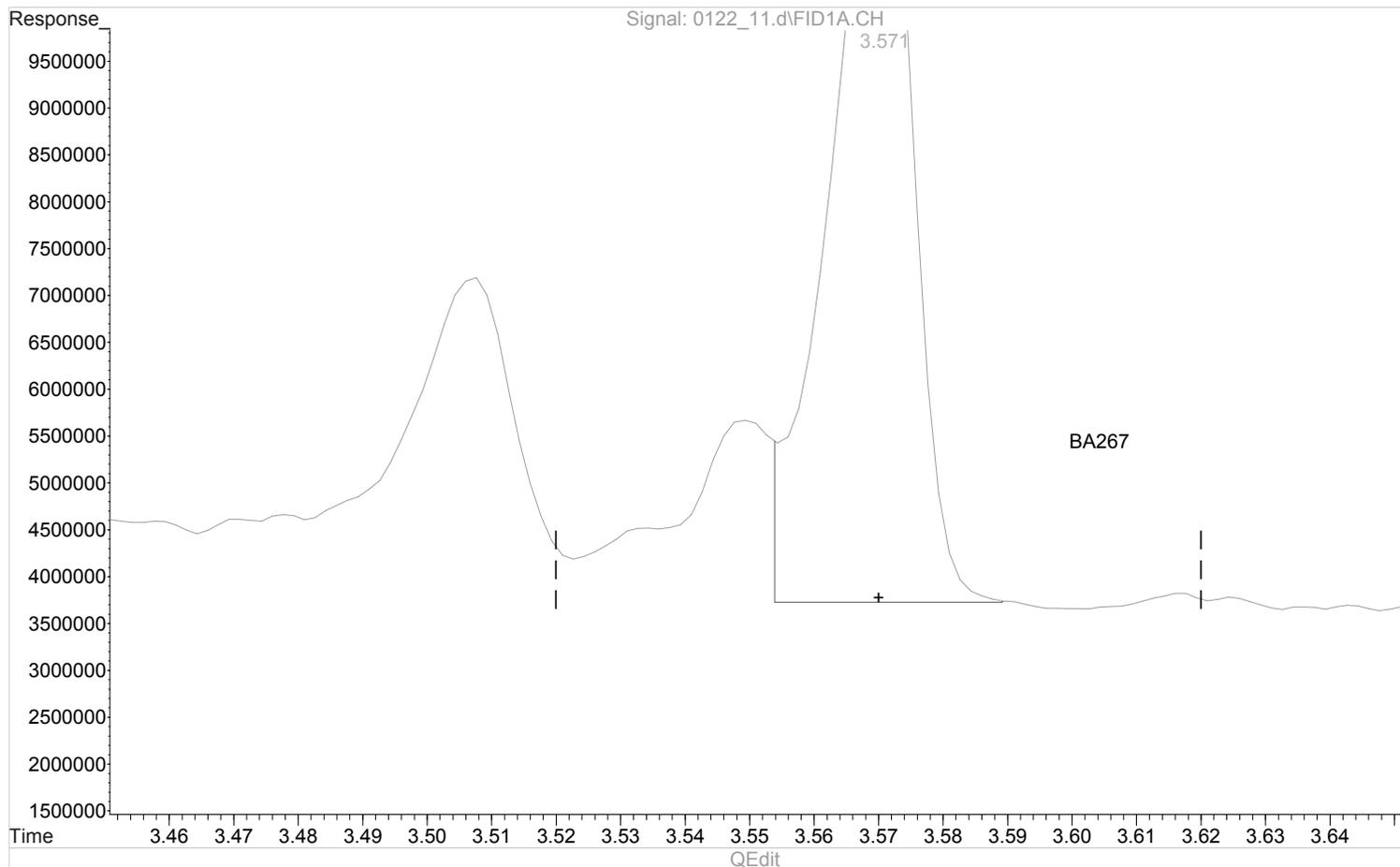
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_11.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 18:42 pm
Operator : 473
Sample : STD EPH 10000 PPM 18527792
Misc : M.I.s on ranges are corrections
ALS Vial : 11 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 18:58:35 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 18:58:30 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.571min 70.9125405 ppm m
response 77340773

(+) = Expected Retention Time

CONTINUING CALIBRATION VERIFICATION
SINGLE COMPONENT ANALYTES



SDG:	L1071756	Calibration (begin) date/time:	01/22/19 16:52
Instrument ID:	SVGC2	Calibration (end) date/time:	01/22/19 19:50
Lab File ID:	0122_17-8	Analysis date/time:	01/22/19 20:04
Analytical Method:	EPH	Sample ID:	SSCV

Analyte	True Value <i>mg/l</i>	Result <i>mg/l</i>	Result <i>% Rec.</i>	Limits <i>%</i>
EXTRACTABLE PETROLEUM HYDROCARBON	1500	1490	99.30	80 - 120

Data Path : C:\msdchem\1\data\012219B\
 Data File : 0122_17.d
 Signal(s) : FID1A.CH
 Acq On : 22 Jan 2019 20:04 pm
 Operator : 473
 Sample : SSCV EPH 1500 PPM 18K27822
 Misc : M.I.s on ranges are corrections
 ALS Vial : 17 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Jan 22 20:29:50 2019
 Quant Method : C:\msdchem\1\methods\EP02A22BS.M
 Quant Title :
 QLast Update : Tue Jan 22 20:02:20 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	0.00	0	N.D.	ppm
Spiked Amount	20.0000	Range	50 - 150	Recovery = 0.00%#
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	2.13	942433469	754.9943395	ppm
4) h,m Residual Range Organics	4.44	710624443	745.7498066	ppm
5) h,m Diesel (C12-C24)	2.13	942433469	754.9943395	ppm
6) h,m Motor Oil (C24-C30)	4.44	396060572	674.2970634	ppm
7) h,m Diesel	1.66	844179972	730.4656023	ppm
8) h,m Motor Oil	3.75	960254018	775.5849960	ppm
9) t,h,m TPH C8-C34	1.12	1745203331	1503.8917475	ppm
10) h,m EPH Screen	1.44	1837444340	1459.9360215	ppm
11) H,M C10-C20 Hydrocarbons	1.66	844179972	730.4656023	ppm
12) H,M C20-C34 Hydrocarbons	3.75	849103220	756.5745435	ppm
13) t,m,h Extractable Petroleum...	2.13	1653766396	1490.4457363	ppm
14) H,M C10-C22 Hydrocarbons	1.66	953175004	742.5221528	ppm
15) H,M C12-C22 Hydrocarbons	2.13	802097101	735.9560102	ppm
16) h,m C22-C32 Hydrocarbons	4.10	647622141	731.5862144	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	1.66	1804844299	1496.0413252	ppm
19) h,m C10-C28 Diesel Range	1.66	1367362490	1128.2289166	ppm
20) h,m C28-C40 Oil Range	5.05	436795376	345.8555142	ppm
21) H,M C10 - C20 Hydrocarbons	1.66	844179972	730.4656023	ppm
22) H,m C20-C36 Hydrocarbons	3.75	910465485	764.2752553	ppm
23) h,m TEM (C9-C40)	1.42	1839422736	1460.5530786	ppm
24) h,m TEH (C9-C40)	1.42	1839422736	1460.5530786	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

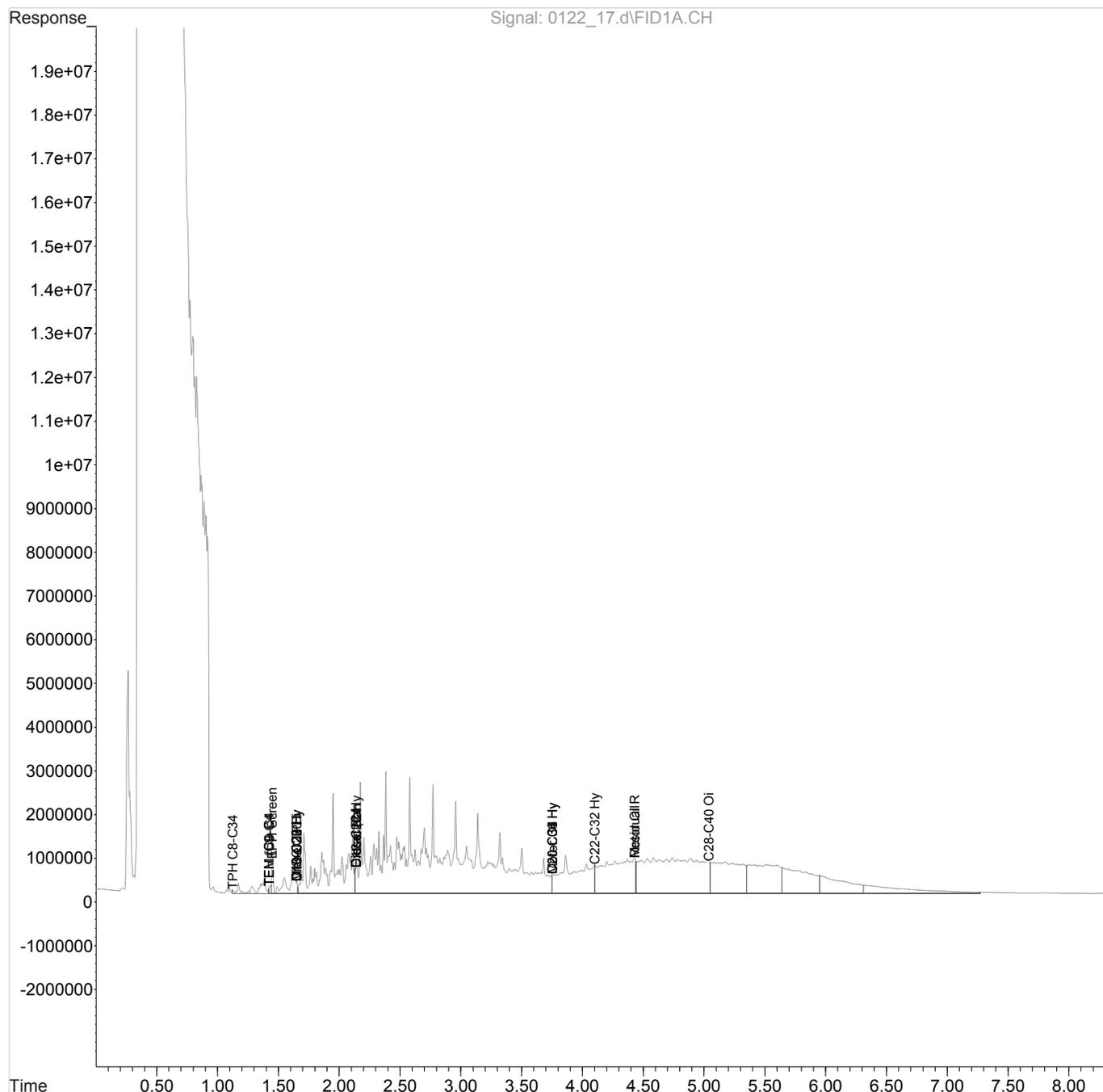
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\012219B\
Data File : 0122_17.d
Signal(s) : FID1A.CH
Acq On : 22 Jan 2019 20:04 pm
Operator : 473
Sample : SSCV EPH 1500 PPM 18K27822
Misc : M.I.s on ranges are corrections
ALS Vial : 17 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Jan 22 20:29:50 2019
Quant Method : C:\msdchem\1\methods\EP02A22BS.M
Quant Title :
QLast Update : Tue Jan 22 20:02:20 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



CONTINUING CALIBRATION VERIFICATION
SINGLE COMPONENT ANALYTES



SDG:	L1071756	Calibration (begin) date/time:	01/22/19 16:52
Instrument ID:	SVGC2	Calibration (end) date/time:	01/22/19 19:50
Lab File ID:	0220_49-4	Analysis date/time:	02/21/19 03:11
Analytical Method:	EPH	Sample ID:	CCV

Analyte	True Value <i>mg/l</i>	Result <i>mg/l</i>	Result <i>% Rec.</i>	Limits <i>%</i>
EXTRACTABLE PETROLEUM HYDROCARBON	4000	4045	101	75 - 125
O-TERPHENYL	20	23.72	119	50 - 150

Data Path : C:\msdchem\1\data\022019\
 Data File : 0220_49.d
 Signal(s) : FID1A.CH
 Acq On : 21 Feb 2019 3:11 am
 Operator : 931
 Sample : CCV EPH 4000 ppm 19B14173 07/29/19
 Misc : M.I.s on ranges are corrections
 ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Feb 21 08:57:57 2019
 Quant Method : C:\msdchem\1\methods\EP02B03AS.M
 Quant Title :
 QLast Update : Sun Feb 03 14:10:50 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.54f	21191460	23.7163254	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 118.58%
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	0.00	0	N.D.	ppm
4) h,m Residual Range Organics	0.00	0	N.D.	ppm
5) h,m Diesel (C12-C24)	0.00	0	N.D.	ppm
6) h,m Motor Oil (C24-C30)	0.00	0	N.D.	ppm
7) h,m Diesel	1.66	2491069725	2151.4099658	ppm
8) h,m Motor Oil	3.75	2353204156	1903.1242442	ppm
9) t,h,m TPH C8-C34	0.00	0	N.D.	ppm
10) h,m EPH Screen	0.00	0	N.D.	ppm
11) H,M C10-C20 Hydrocarbons	1.66	2491069725	2151.4099658	ppm
12) H,M C20-C34 Hydrocarbons	3.75	2164776987	1934.1242046	ppm
13) t,m,h Extractable Petroleum...	2.13	4441158268	4044.6831094	ppm
14) H,M C10-C22 Hydrocarbons	0.00	0	N.D.	ppm
15) H,M C12-C22 Hydrocarbons	0.00	0	N.D.	ppm
16) h,m C22-C32 Hydrocarbons	0.00	0	N.D.	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	0.00	0	N.D.	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	0.00	0	N.D.	ppm
22) H,m C20-C36 Hydrocarbons	0.00	0	N.D.	ppm
23) h,m TEM (C9-C40)	0.00	0	N.D.	ppm
24) h,m TEH (C9-C40)	0.00	0	N.D.	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

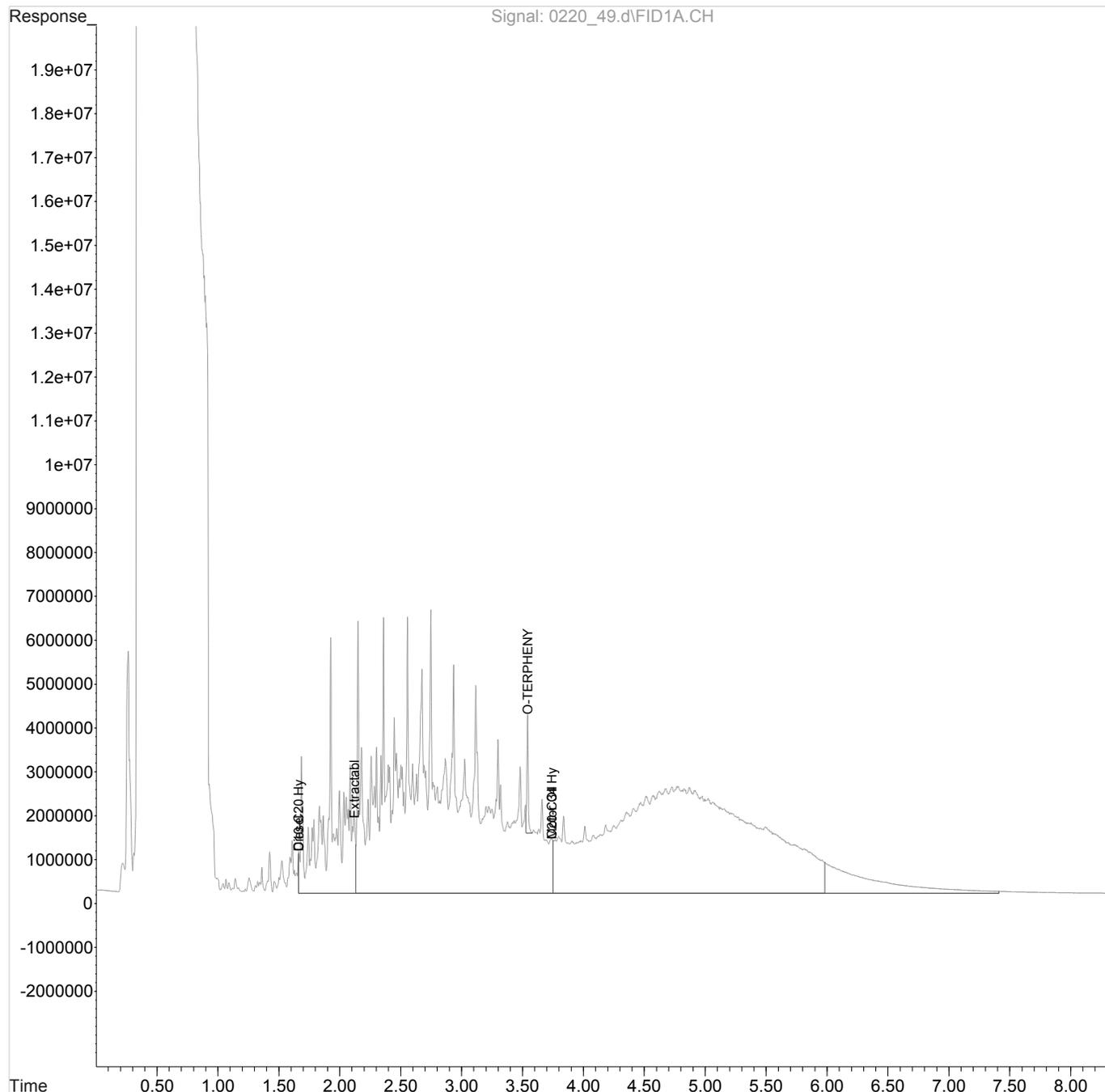
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_49.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 3:11 am
Operator : 931
Sample : CCV EPH 4000 ppm 19B14173 07/29/19
Misc : M.I.s on ranges are corrections
ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 08:57:57 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

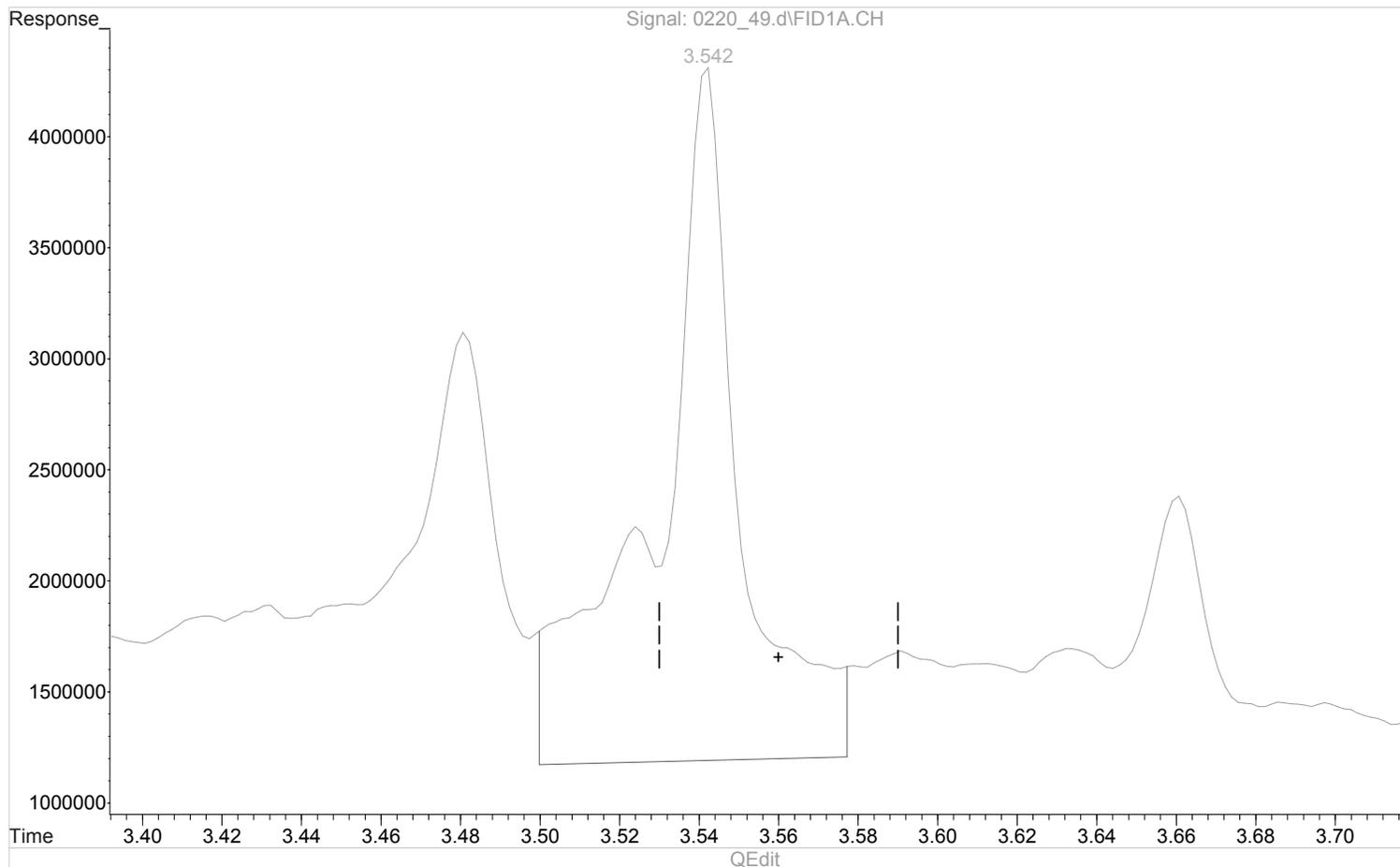


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_49.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 3:11 am
Operator : 931
Sample : CCV EPH 4000 ppm 19B14173 07/29/19
Misc : M.I.s on ranges are corrections
ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 08:57:24 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.542min 52.5480359 ppm
response 46953715

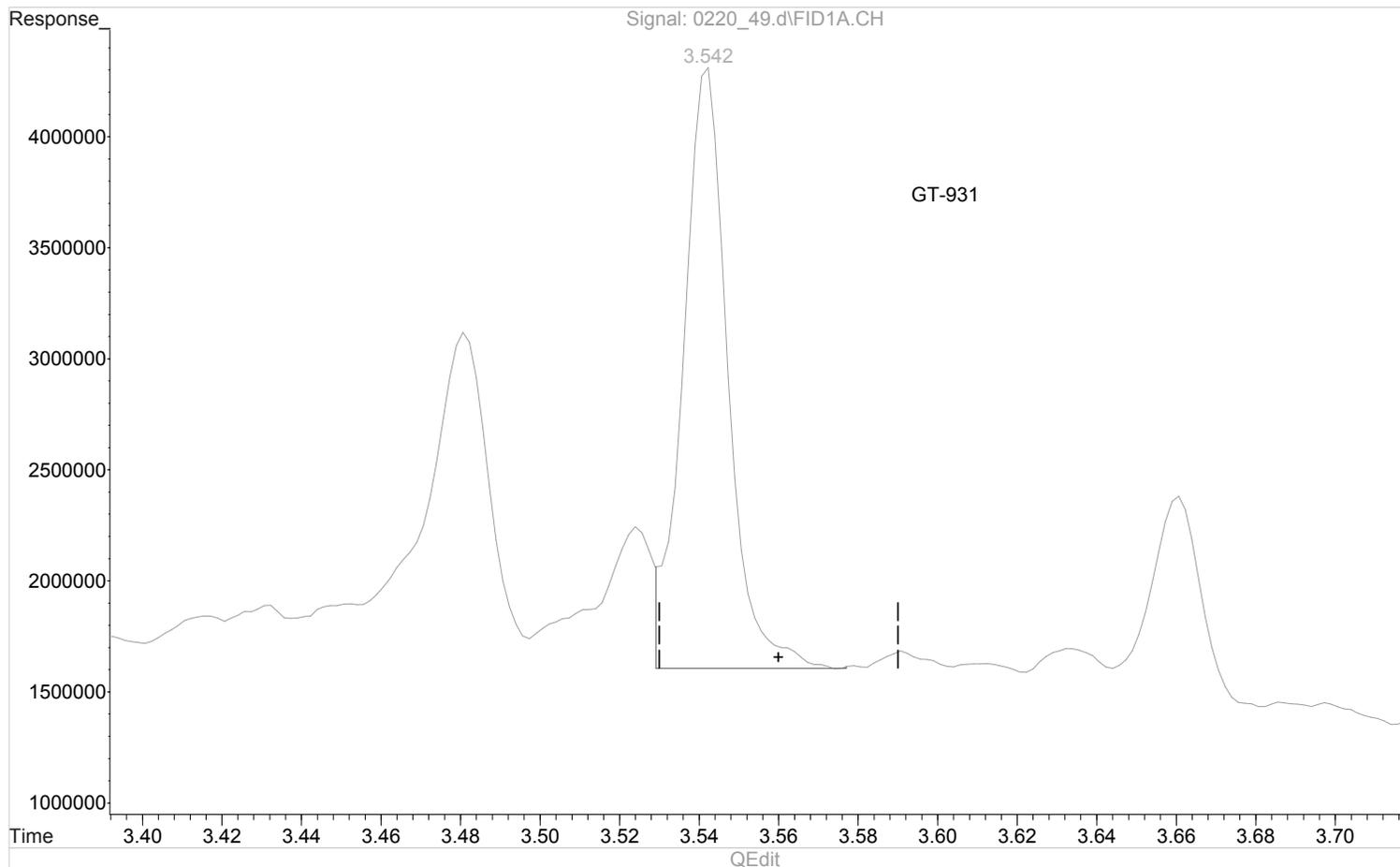
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_49.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 3:11 am
Operator : 931
Sample : CCV EPH 4000 ppm 19B14173 07/29/19
Misc : M.I.s on ranges are corrections
ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 08:57:24 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.542min 23.7163254 ppm m
response 21191460

(+) = Expected Retention Time

CONTINUING CALIBRATION VERIFICATION
SINGLE COMPONENT ANALYTES



SDG:	L1071756	Calibration (begin) date/time:	01/22/19 16:52
Instrument ID:	SVGC2	Calibration (end) date/time:	01/22/19 19:50
Lab File ID:	0220_62-1	Analysis date/time:	02/21/19 09:36
Analytical Method:	EPH	Sample ID:	CCV

Analyte	True Value <i>mg/l</i>	Result <i>mg/l</i>	Result <i>% Rec.</i>	Limits <i>%</i>
EXTRACTABLE PETROLEUM HYDROCARBON	4000	4229	106	75 - 125
O-TERPHENYL	20	25.46	127	50 - 150

Data Path : C:\msdchem\1\data\022019\
 Data File : 0220_62.d
 Signal(s) : FID1A.CH
 Acq On : 21 Feb 2019 9:36 am
 Operator : 931
 Sample : CCV EPH 4000 ppm 19B14173 07/29/19
 Misc : M.I.s on ranges are corrections
 ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Feb 21 09:50:31 2019
 Quant Method : C:\msdchem\1\methods\EP02B03AS.M
 Quant Title :
 QLast Update : Sun Feb 03 14:10:50 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.54f	22745220	25.4552091	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 127.28%
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	0.00	0	N.D.	ppm
4) h,m Residual Range Organics	0.00	0	N.D.	ppm
5) h,m Diesel (C12-C24)	0.00	0	N.D.	ppm
6) h,m Motor Oil (C24-C30)	0.00	0	N.D.	ppm
7) h,m Diesel	0.00	0	N.D.	ppm
8) h,m Motor Oil	0.00	0	N.D.	ppm
9) t,h,m TPH C8-C34	0.00	0	N.D.	ppm
10) h,m EPH Screen	0.00	0	N.D.	ppm
11) H,M C10-C20 Hydrocarbons	0.00	0	N.D.	ppm
12) H,M C20-C34 Hydrocarbons	0.00	0	N.D.	ppm
13) t,m,h Extractable Petroleum...	2.13	4642050237	4228.7712450	ppm
14) H,M C10-C22 Hydrocarbons	0.00	0	N.D.	ppm
15) H,M C12-C22 Hydrocarbons	0.00	0	N.D.	ppm
16) h,m C22-C32 Hydrocarbons	0.00	0	N.D.	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	0.00	0	N.D.	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	0.00	0	N.D.	ppm
22) H,m C20-C36 Hydrocarbons	0.00	0	N.D.	ppm
23) h,m TEM (C9-C40)	0.00	0	N.D.	ppm
24) h,m TEH (C9-C40)	0.00	0	N.D.	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

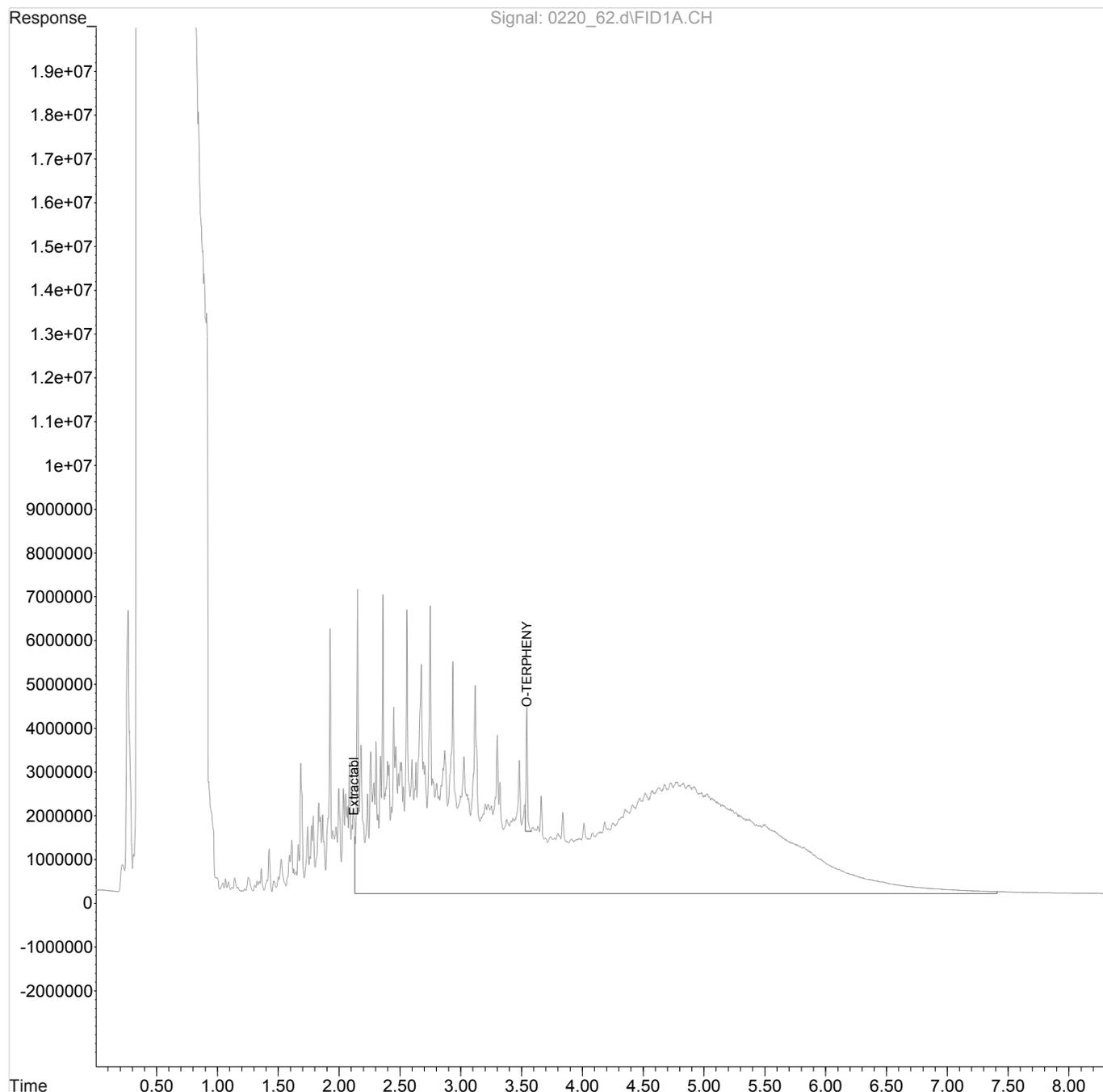
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_62.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 9:36 am
Operator : 931
Sample : CCV EPH 4000 ppm 19B14173 07/29/19
Misc : M.I.s on ranges are corrections
ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:50:31 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

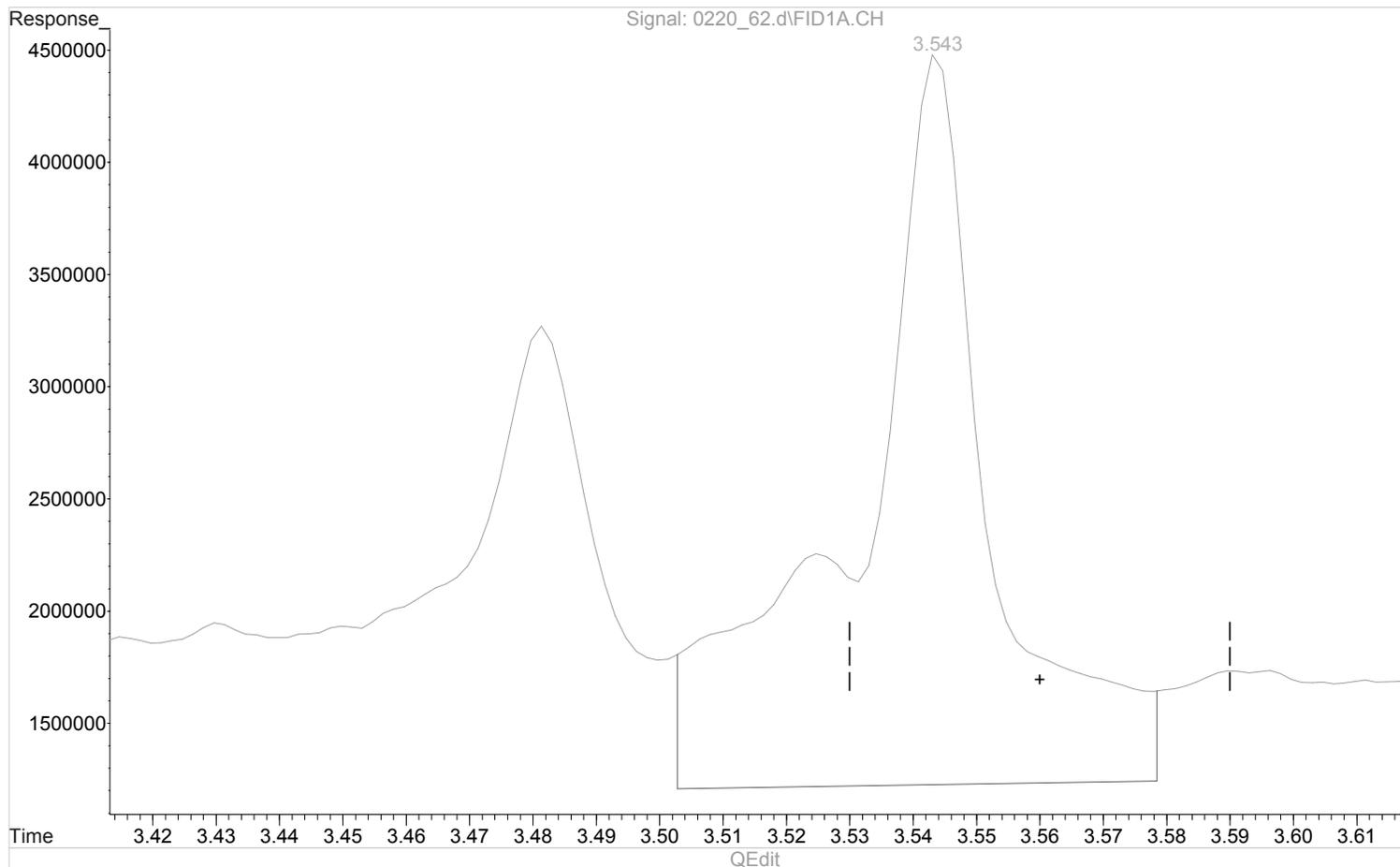


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_62.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 9:36 am
Operator : 931
Sample : CCV EPH 4000 ppm 19B14173 07/29/19
Misc : M.I.s on ranges are corrections
ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:48:39 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.544min 54.3930617 ppm
response 48602317

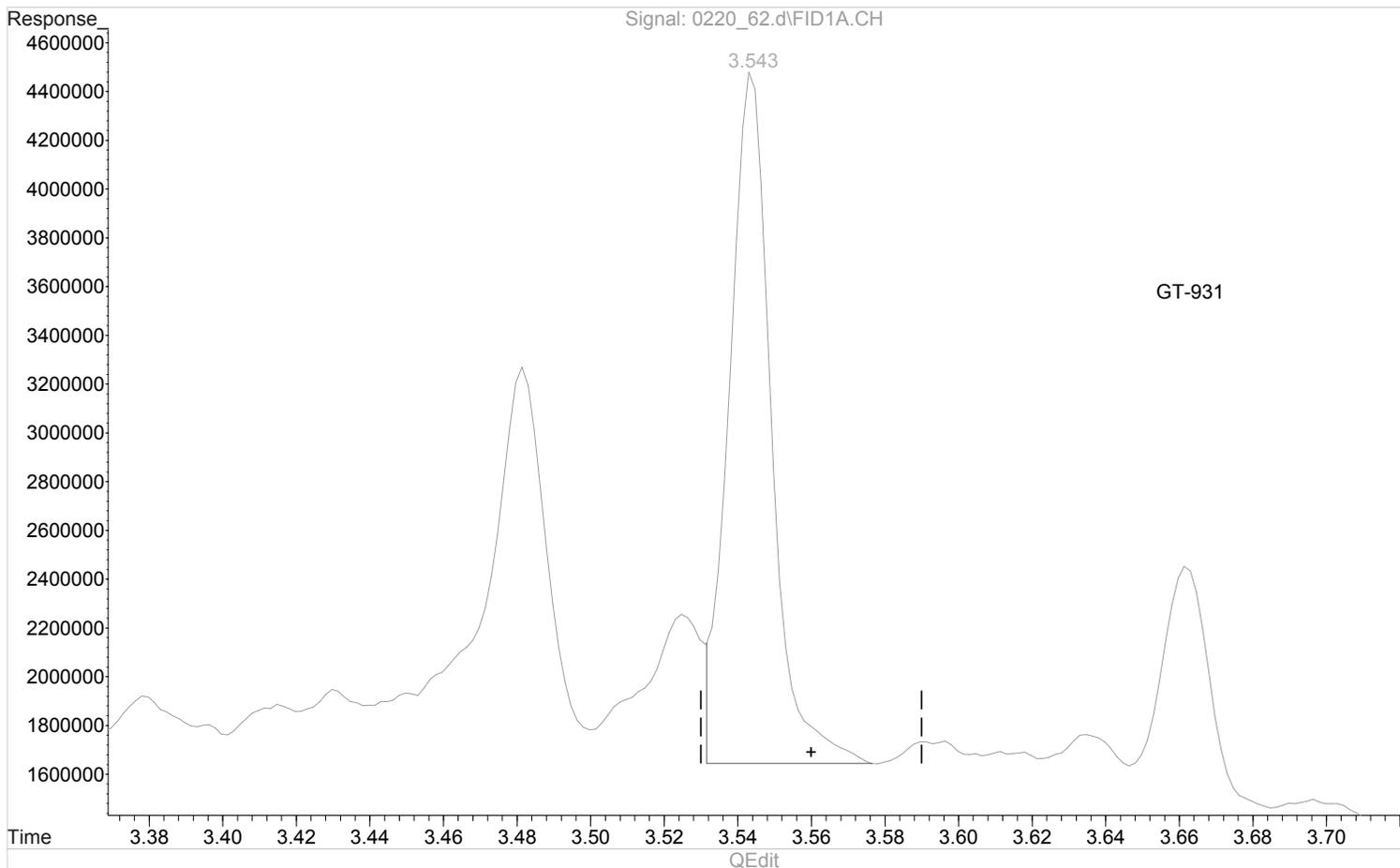
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_62.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 9:36 am
Operator : 931
Sample : CCV EPH 4000 ppm 19B14173 07/29/19
Misc : M.I.s on ranges are corrections
ALS Vial : 3 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:49:10 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.543min 25.4552091 ppm m
response 22745220

(+) = Expected Retention Time

8B-OR

ANALYTICAL SEQUENCE

SDG:	L1071756	Analytical Method:	EPH
Instrument ID:	SVGC2	Calibration Start Date:	01/22/19 16:52
		Calibration End Date:	01/22/19 19:50

Client Sample ID	Lab Sample ID	File ID	Analysis Date Time	Dilution	Batch
CAL	100	0122_03	01/22/19 16:52	1	
CAL	200	0122_04	01/22/19 17:06	1	
CAL	400	0122_05	01/22/19 17:20	1	
CAL	1000	0122_06	01/22/19 17:33	1	
CAL	2000	0122_07	01/22/19 17:47	1	
CAL	4000	0122_08	01/22/19 18:01	1	
CAL	5000	0122_09	01/22/19 18:15	1	
CAL	7500	0122_10	01/22/19 18:28	1	
CAL	10000	0122_11	01/22/19 18:42	1	
CAL	100A	0122_12	01/22/19 18:56	1	
CAL	400A	0122_13	01/22/19 19:09	1	
CAL	1KA	0122_14	01/22/19 19:23	1	
CAL	2500	0122_15	01/22/19 19:37	1	
CAL	5KA	0122_16	01/22/19 19:50	1	
SSCV	SVGC2012219B0122_17-8464871	0122_17-8	01/22/19 20:04	1	
CCV	SVGC20220190220_49-4464871	0220_49-4	02/21/19 03:11	1	
BLANK	R3385680-1	0220_54	02/21/19 04:19	1	WG1240136
LCS	R3385680-2	0220_55	02/21/19 07:55	1	WG1240136
LCSD	R3385680-3	0220_56	02/21/19 08:09	1	WG1240136
NORTH	L1071756-01	0220_57	02/21/19 08:23	1	WG1240136
SOUTH	L1071756-02	0220_58	02/21/19 08:36	1	WG1240136
EAST	L1071756-03	0220_59	02/21/19 08:50	1	WG1240136
WEST	L1071756-04	0220_60	02/21/19 09:04	1	WG1240136
CCV	SVGC20220190220_62-1464871	0220_62-1	02/21/19 09:36	1	

SAMPLE RESULT SUMMARY
ORGANIC ANALYSIS DATA SHEET

Lab Sample ID: R3385680-1
 Client Sample ID: BLANK
 Lab File ID: 0220_54
 Instrument ID: SVGC2
 Analytical Batch: WG1240136
 Dilution Factor: 1
 Analytical Method: EPH
 Matrix: Solid
 Total Solids (%): _____

SDG: L1071756
 Collected Date/Time: _____
 Received Date/Time: _____
 Preparation Date/Time: 02/20/19 20:22
 Analysis Date/Time: 02/21/19 04:19
 Prep Method: 3546
 Sample Vol Used: _____
 Initial Wt/Vol: 15 g
 Final Wt/Vol: 0.5 mL

Analyte	CAS	RT	Result <i>mg/kg</i>	Qualifier	MDL <i>mg/kg</i>	RDL <i>mg/kg</i>
Extractable Petroleum Hydrocarbon		2.13	U		1.05	4.00

Data Path : C:\msdchem\1\data\022019\
 Data File : 0220_54.d
 Signal(s) : FID1A.CH
 Acq On : 21 Feb 2019 4:19 am
 Operator : 931
 Sample : Blank 1X WG1240136
 Misc : M.I.s on ranges are corrections
 ALS Vial : 46 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Feb 21 09:01:27 2019
 Quant Method : C:\msdchem\1\methods\EP02B03AS.M
 Quant Title :
 QLast Update : Sun Feb 03 14:10:50 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.54f	23867390	26.7110808	ppm
Spiked Amount	20.0000	Range	50 - 150	Recovery = 133.56%
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	0.00	0	N.D.	ppm
4) h,m Residual Range Organics	0.00	0	N.D.	ppm
5) h,m Diesel (C12-C24)	0.00	0	N.D.	ppm
6) h,m Motor Oil (C24-C30)	0.00	0	N.D.	ppm
7) h,m Diesel	0.00	0	N.D.	ppm
8) h,m Motor Oil	0.00	0	N.D.	ppm
9) t,h,m TPH C8-C34	0.00	0	N.D.	ppm
10) h,m EPH Screen	0.00	0	N.D.	ppm
11) H,M C10-C20 Hydrocarbons	0.00	0	N.D.	ppm
12) H,M C20-C34 Hydrocarbons	0.00	0	N.D.	ppm
13) t,m,h Extractable Petroleum...	2.13	69898393	39.0621372	ppm
14) H,M C10-C22 Hydrocarbons	0.00	0	N.D.	ppm
15) H,M C12-C22 Hydrocarbons	0.00	0	N.D.	ppm
16) h,m C22-C32 Hydrocarbons	0.00	0	N.D.	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	0.00	0	N.D.	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	0.00	0	N.D.	ppm
22) H,m C20-C36 Hydrocarbons	0.00	0	N.D.	ppm
23) h,m TEM (C9-C40)	0.00	0	N.D.	ppm
24) h,m TEH (C9-C40)	0.00	0	N.D.	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

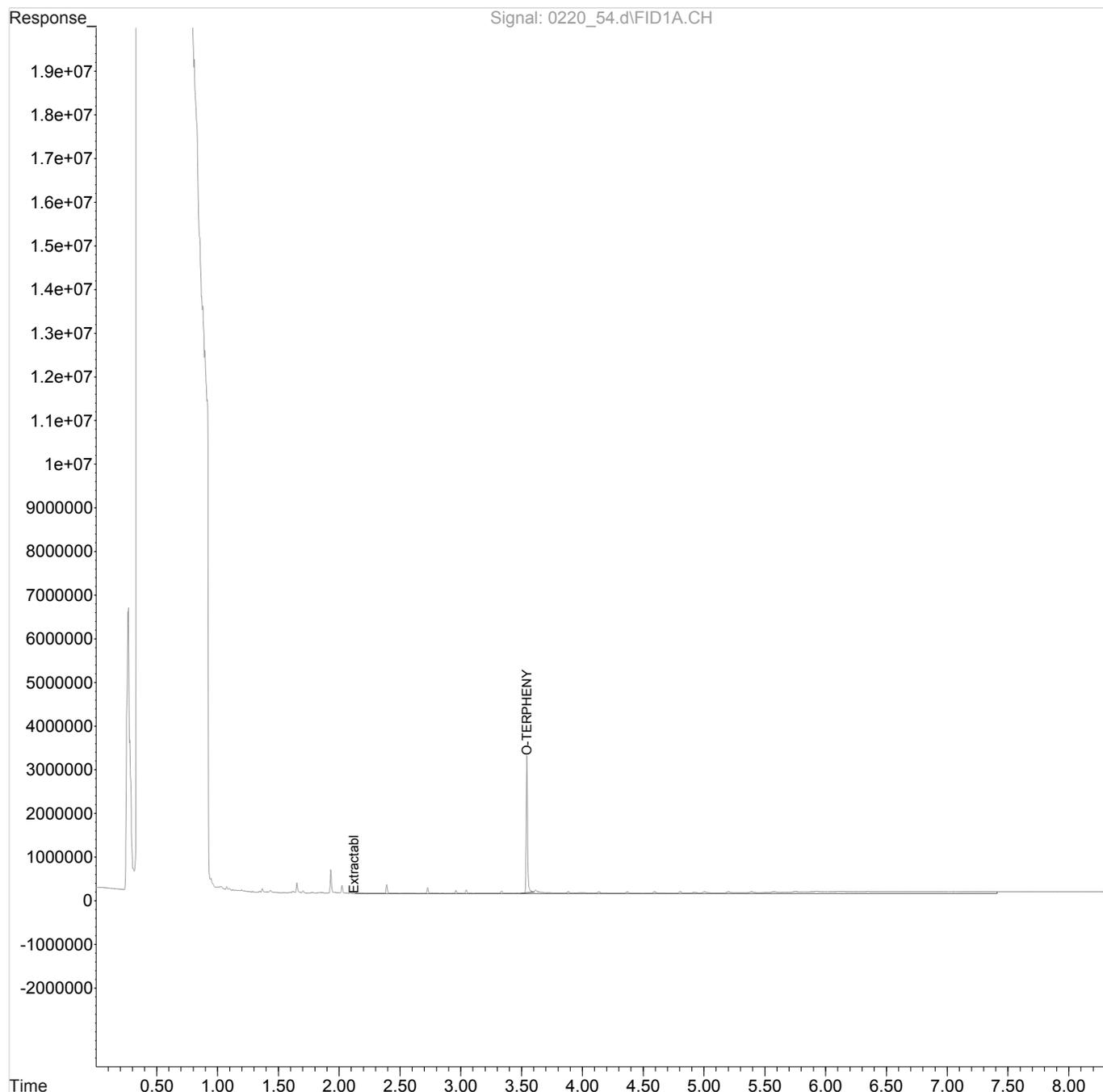
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_54.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 4:19 am
Operator : 931
Sample : Blank 1X WG1240136
Misc : M.I.s on ranges are corrections
ALS Vial : 46 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:01:27 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



SAMPLE RESULT SUMMARY
ORGANIC ANALYSIS DATA SHEET

Lab Sample ID: R3385680-2
 Client Sample ID: LCS
 Lab File ID: 0220_55
 Instrument ID: SVGC2
 Analytical Batch: WG1240136
 Dilution Factor: 1
 Analytical Method: EPH
 Matrix: Solid
 Total Solids (%): _____

SDG: L1071756
 Collected Date/Time: _____
 Received Date/Time: _____
 Preparation Date/Time: 02/20/19 20:22
 Analysis Date/Time: 02/21/19 07:55
 Prep Method: 3546
 Sample Vol Used: _____
 Initial Wt/Vol: 15 g
 Final Wt/Vol: 0.5 mL

Analyte	CAS	RT	Result <i>mg/kg</i>	Qualifier	MDL <i>mg/kg</i>	RDL <i>mg/kg</i>
Extractable Petroleum Hydrocarbon		2.13	39.5		1.33	4.00

Data Path : C:\msdchem\1\data\022019\
 Data File : 0220_55.d
 Signal(s) : FID1A.CH
 Acq On : 21 Feb 2019 7:55 am
 Operator : 931
 Sample : Lcs 1X WG1240136
 Misc : M.I.s on ranges are corrections
 ALS Vial : 47 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Feb 21 09:02:05 2019
 Quant Method : C:\msdchem\1\methods\EP02B03AS.M
 Quant Title :
 QLast Update : Sun Feb 03 14:10:50 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.55	31169006	34.8826508	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 174.41%#
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	0.00	0	N.D.	ppm
4) h,m Residual Range Organics	0.00	0	N.D.	ppm
5) h,m Diesel (C12-C24)	0.00	0	N.D.	ppm
6) h,m Motor Oil (C24-C30)	0.00	0	N.D.	ppm
7) h,m Diesel	0.00	0	N.D.	ppm
8) h,m Motor Oil	0.00	0	N.D.	ppm
9) t,h,m TPH C8-C34	0.00	0	N.D.	ppm
10) h,m EPH Screen	0.00	0	N.D.	ppm
11) H,M C10-C20 Hydrocarbons	0.00	0	N.D.	ppm
12) H,M C20-C34 Hydrocarbons	0.00	0	N.D.	ppm
13) t,m,h Extractable Petroleum...	2.13	1357079452	1218.5755023	ppm
14) H,M C10-C22 Hydrocarbons	0.00	0	N.D.	ppm
15) H,M C12-C22 Hydrocarbons	0.00	0	N.D.	ppm
16) h,m C22-C32 Hydrocarbons	0.00	0	N.D.	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	0.00	0	N.D.	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	0.00	0	N.D.	ppm
22) H,m C20-C36 Hydrocarbons	0.00	0	N.D.	ppm
23) h,m TEM (C9-C40)	0.00	0	N.D.	ppm
24) h,m TEH (C9-C40)	0.00	0	N.D.	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

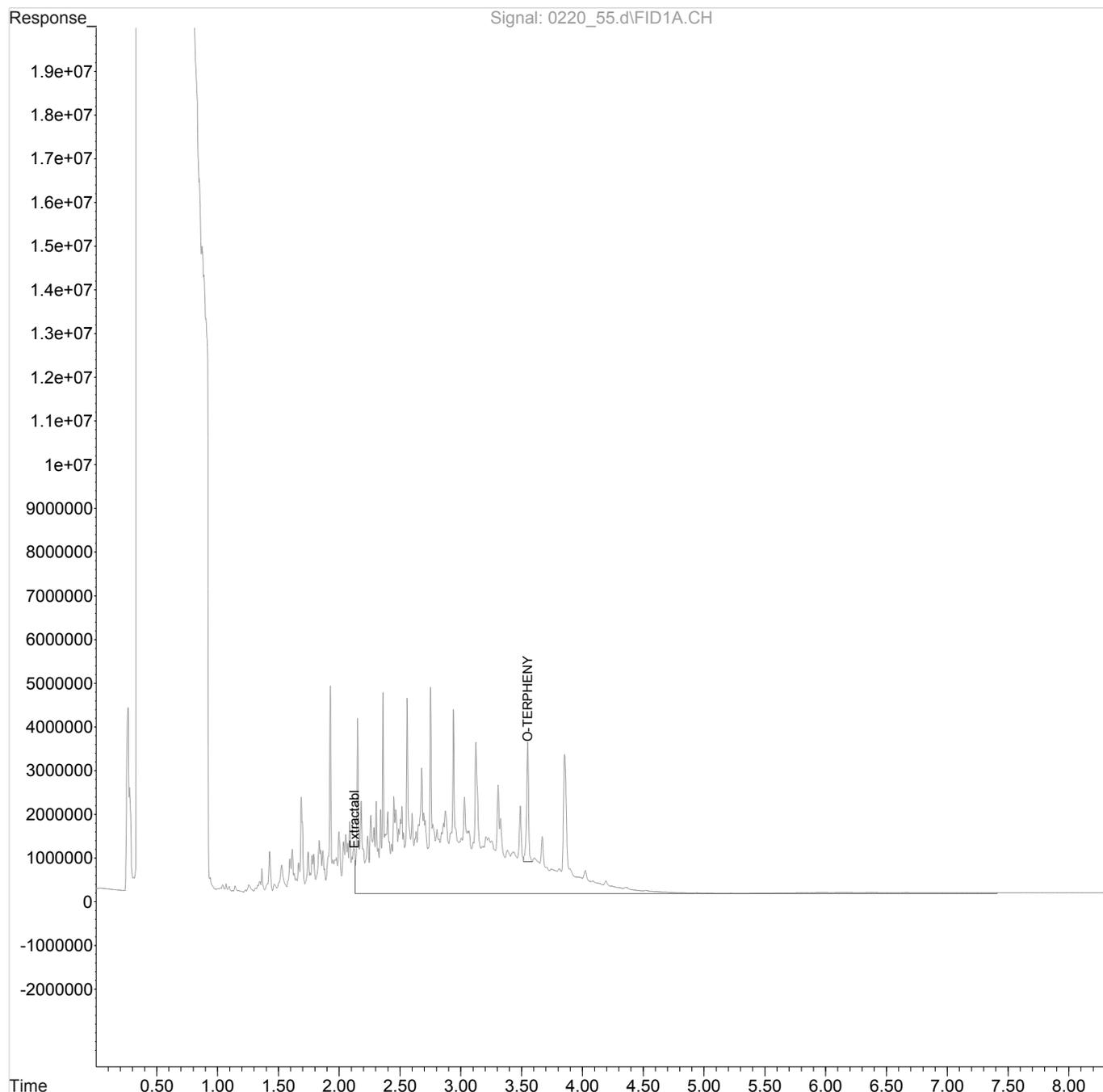
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_55.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 7:55 am
Operator : 931
Sample : Lcs 1X WG1240136
Misc : M.I.s on ranges are corrections
ALS Vial : 47 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:02:05 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

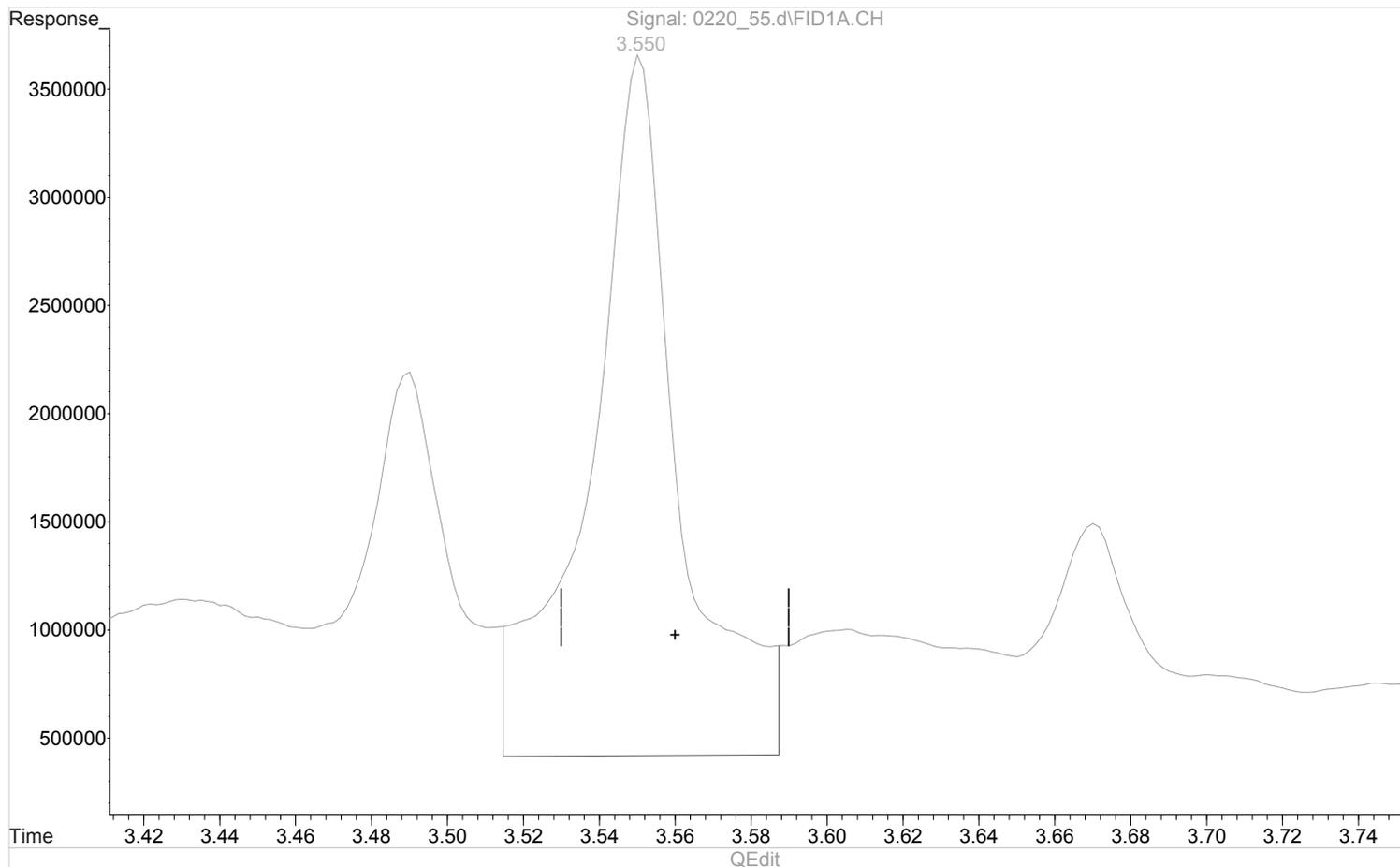


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_55.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 7:55 am
Operator : 931
Sample : Lcs 1X WG1240136
Misc : M.I.s on ranges are corrections
ALS Vial : 47 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:01:34 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.550min 59.2275438 ppm
response 52922115

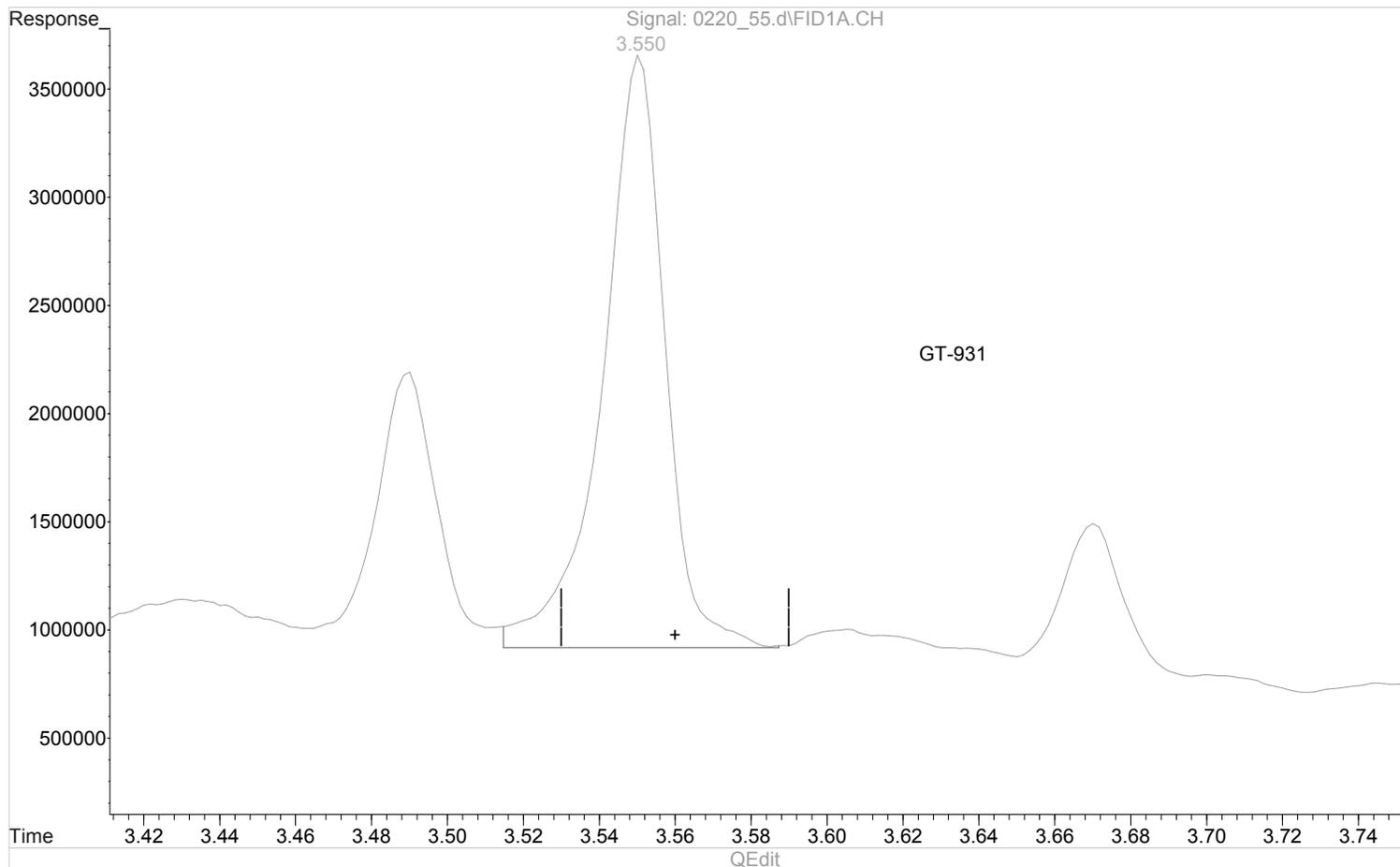
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_55.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 7:55 am
Operator : 931
Sample : Lcs 1X WG1240136
Misc : M.I.s on ranges are corrections
ALS Vial : 47 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:01:34 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.550min 34.8826508 ppm m
response 31169006

(+) = Expected Retention Time

SAMPLE RESULT SUMMARY
ORGANIC ANALYSIS DATA SHEET

Lab Sample ID: R3385680-3
 Client Sample ID: LCSD
 Lab File ID: 0220_56
 Instrument ID: SVGC2
 Analytical Batch: WG1240136
 Dilution Factor: 1
 Analytical Method: EPH
 Matrix: Solid
 Total Solids (%): _____

SDG: L1071756
 Collected Date/Time: _____
 Received Date/Time: _____
 Preparation Date/Time: 02/20/19 20:22
 Analysis Date/Time: 02/21/19 08:09
 Prep Method: 3546
 Sample Vol Used: _____
 Initial Wt/Vol: 15 g
 Final Wt/Vol: 0.5 mL

Analyte	CAS	RT	Result <i>mg/kg</i>	Qualifier	MDL <i>mg/kg</i>	RDL <i>mg/kg</i>
Extractable Petroleum Hydrocarbon		2.13	39.3		1.33	4.00

Data Path : C:\msdchem\1\data\022019\
 Data File : 0220_56.d
 Signal(s) : FID1A.CH
 Acq On : 21 Feb 2019 8:09 am
 Operator : 931
 Sample : Lcsd 1X WG1240136
 Misc : M.I.s on ranges are corrections
 ALS Vial : 48 Sample Multiplier: 1

Integration File: EVENTS.E
 Quant Time: Feb 21 09:02:44 2019
 Quant Method : C:\msdchem\1\methods\EP02B03AS.M
 Quant Title :
 QLast Update : Sun Feb 03 14:10:50 2019
 Response via : Initial Calibration
 Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
25) S 2-Fluorobiphenyl	0.00	0	N.D.	ppm d
26) S 2-Bromonaphthalene	0.00	0	N.D.	ppm d
27) S 1-Chloro-octadecane	0.00	0	N.D.	h d
35) S O-TERPHENYL	3.54f	30681895	34.3375026	ppm m
Spiked Amount	20.0000	Range	50 - 150	Recovery = 171.69%#
Target Compounds				
1) h Gasoline	0.00	0	N.D.	ppm
2) h Gasoline (C7-C12)	0.00	0	N.D.	ppm
3) h,m Diesel Range Organics	0.00	0	N.D.	ppm
4) h,m Residual Range Organics	0.00	0	N.D.	ppm
5) h,m Diesel (C12-C24)	0.00	0	N.D.	ppm
6) h,m Motor Oil (C24-C30)	0.00	0	N.D.	ppm
7) h,m Diesel	0.00	0	N.D.	ppm
8) h,m Motor Oil	0.00	0	N.D.	ppm
9) t,h,m TPH C8-C34	0.00	0	N.D.	ppm
10) h,m EPH Screen	0.00	0	N.D.	ppm
11) H,M C10-C20 Hydrocarbons	0.00	0	N.D.	ppm
12) H,M C20-C34 Hydrocarbons	0.00	0	N.D.	ppm
13) t,m,h Extractable Petroleum...	2.13	1349749119	1211.8583232	ppm
14) H,M C10-C22 Hydrocarbons	0.00	0	N.D.	ppm
15) H,M C12-C22 Hydrocarbons	0.00	0	N.D.	ppm
16) h,m C22-C32 Hydrocarbons	0.00	0	N.D.	ppm
17) h,m C32-C40 Hydrocarbons	0.00	0	N.D.	ppm
18) h,m MISC. TPH (C10-C40)	0.00	0	N.D.	ppm
19) h,m C10-C28 Diesel Range	0.00	0	N.D.	ppm
20) h,m C28-C40 Oil Range	0.00	0	N.D.	ppm
21) H,M C10 - C20 Hydrocarbons	0.00	0	N.D.	ppm
22) H,m C20-C36 Hydrocarbons	0.00	0	N.D.	ppm
23) h,m TEM (C9-C40)	0.00	0	N.D.	ppm
24) h,m TEH (C9-C40)	0.00	0	N.D.	ppm
28) h Mineral Spirits	0.00	0	N.D.	ppm
29) h Kerosene	0.00	0	N.D.	ppm
30) h #6 Fuel Oil	0.00	0	N.D.	ppm
31) h Hydraulic Fluid	0.00	0	N.D.	ppm
32) C9	0.00	0	N.D.	ppm d
33) C20	0.00	0	N.D.	ppm d
34) C30	0.00	0	N.D.	ppm d

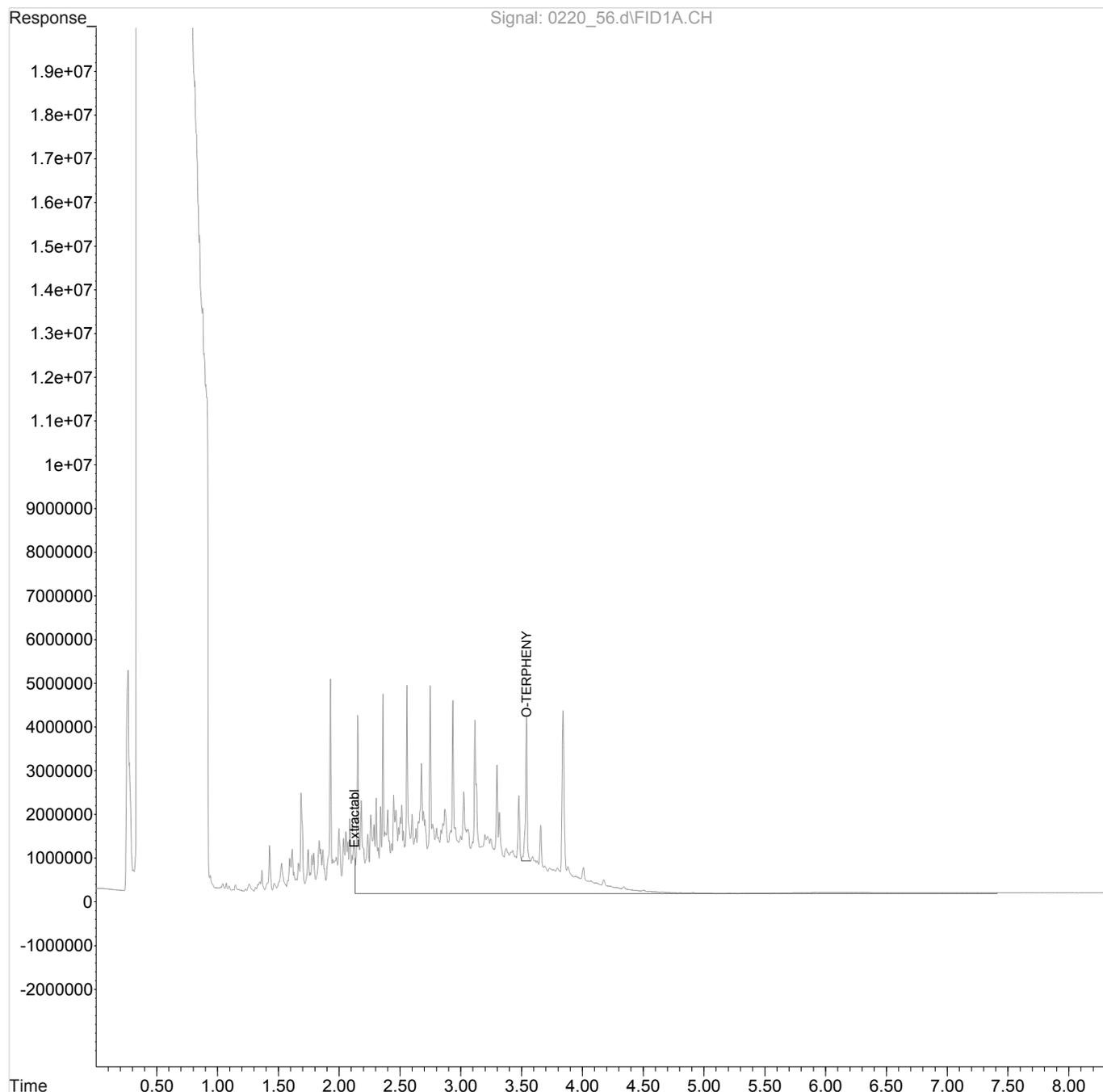
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_56.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 8:09 am
Operator : 931
Sample : Lcsd 1X WG1240136
Misc : M.I.s on ranges are corrections
ALS Vial : 48 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:02:44 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

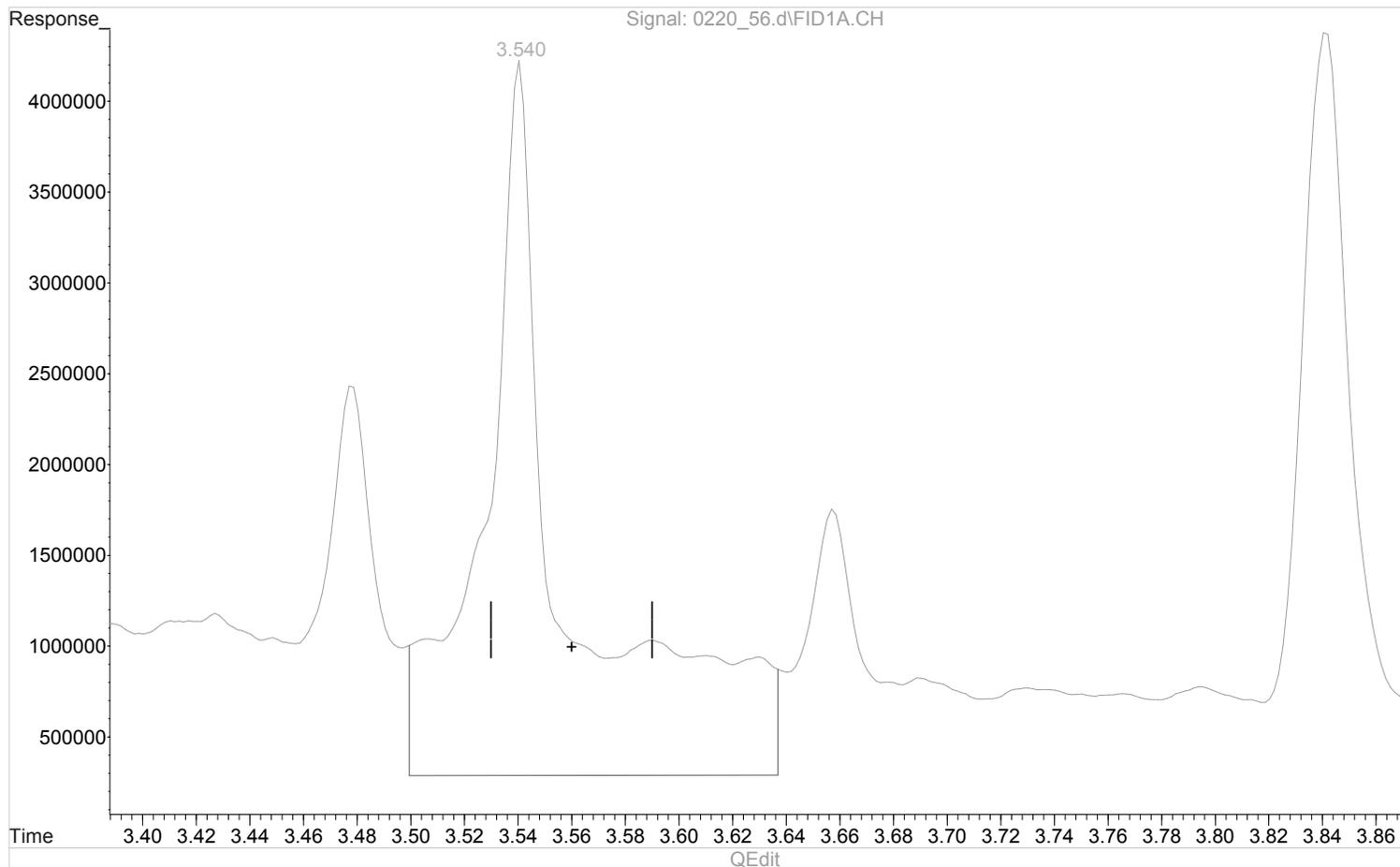


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_56.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 8:09 am
Operator : 931
Sample : Lcsd 1X WG1240136
Misc : M.I.s on ranges are corrections
ALS Vial : 48 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:02:16 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.540min 94.7562527 ppm
response 84668399

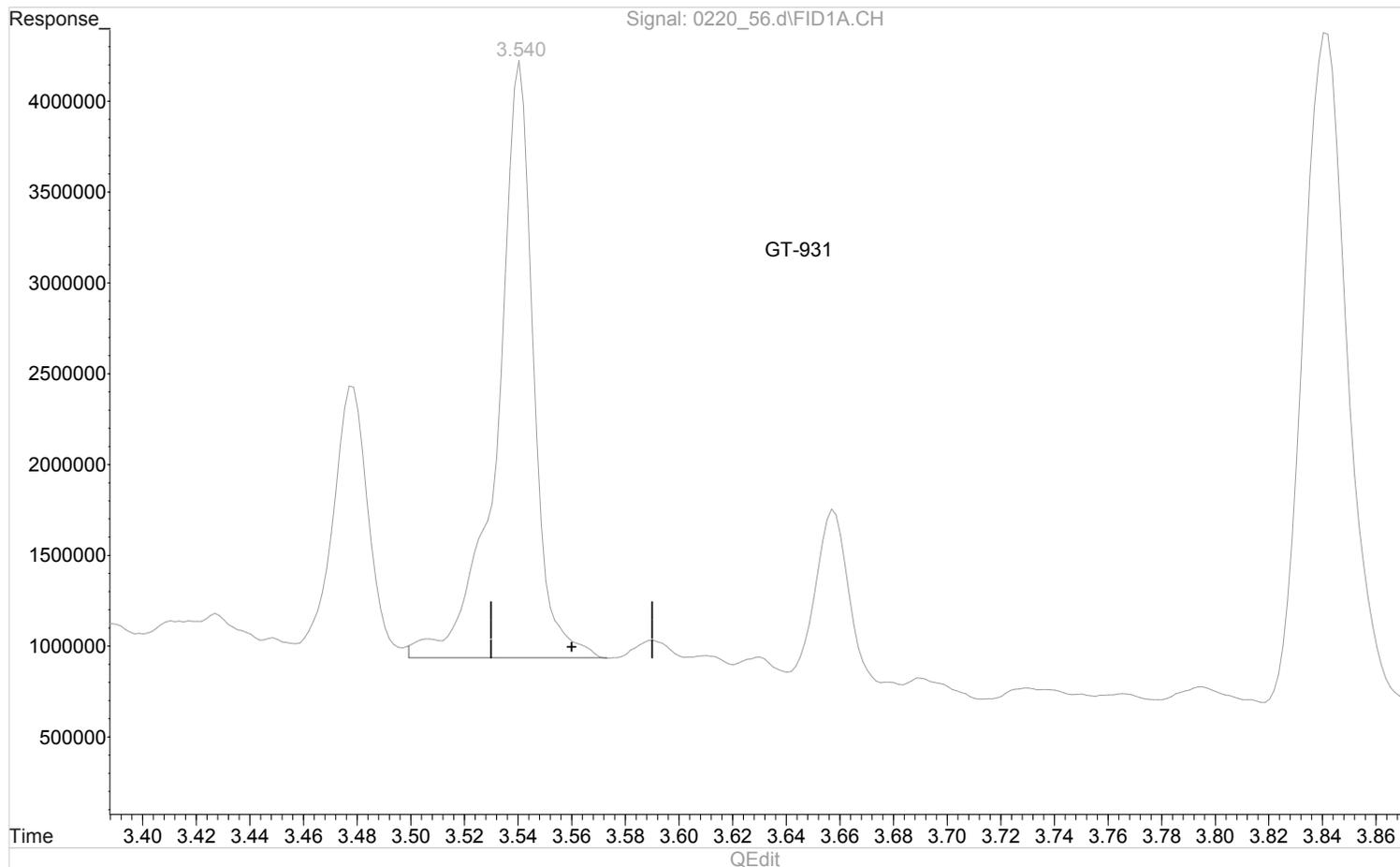
(+) = Expected Retention Time

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\022019\
Data File : 0220_56.d
Signal(s) : FID1A.CH
Acq On : 21 Feb 2019 8:09 am
Operator : 931
Sample : Lcsd 1X WG1240136
Misc : M.I.s on ranges are corrections
ALS Vial : 48 Sample Multiplier: 1

Integration File: EVENTS.E
Quant Time: Feb 21 09:02:16 2019
Quant Method : C:\msdchem\1\methods\EP02B03AS.M
Quant Title :
QLast Update : Sun Feb 03 14:10:50 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



(35) O-TERPHENYL (S)
3.540min 34.3375026 ppm m
response 30681895

(+) = Expected Retention Time

PETROLEUM SS Extractions Benchsheet

Batch: WG1240136/WG1239460

Analyst: KBK908 **Prep Start Date/Time:** 02/20/19 20:22-20:24 **Prep End Date/Time:** 02/21/19 00:18 **Method:** 3546 **SOP:** 330707 **Balance ID:** EXTBAL5
Filter Lot#: 16891855

Na2SO4: 18K05690 Amt. Used: 15 Exp. Date:05/05/19 **MeCl2:** 19B18438 Amt. Used: 25 Exp. Date:02/18/20 **Surrogate:** 19B15368 Amt. Used: 0.50 mL Exp. Date:04/01/19
LCS/MS Spike: 19B19734 Amt. Used: 0.50 mL Exp. Date:08/13/19 **Spike Syringe ID:** 19A22850 Amt. Used: 1 Exp. Date:07/22/19
Surrogate Syringe ID: 19B06400 Amt. Used: 1 Exp. Date:08/06/19

Sample Number	Initial Sample Wt (g)	Solvent Volume (mL)	Final Volume (mL)	Extract Color	Box ID	Prep Factor	Prep Ratio	DL Adjustment Factor	Spike Factor	Surrogate Factor	Review Analyst	Review Date	Sample Comments
BLANK	15	25	0.5	Colorless		0.0333	0.999	1	1	1	MTJ647	02/21/19 00:39:17	
LCS	15	25	0.5	Colorless		0.0333	0.999	1	1	1	MTJ647	02/21/19 00:39:17	
LCSD	15	25	0.5	Colorless		0.0333	0.999	1	1	1	MTJ647	02/21/19 00:39:17	
1. L1071756-01	15.61	25	0.5	Colorless	WED 2	0.032	0.96	1	1	1	MTJ647	02/21/19 00:39:17	
2. L1071756-02	15.88	25	0.5	Colorless	WED 2	0.0315	0.945	1	1	1	MTJ647	02/21/19 00:39:17	
3. L1071756-03	15.20	25	0.5	Colorless	WED 2	0.0329	0.987	1	1	1	MTJ647	02/21/19 00:39:17	
4. L1071756-04	15.57	25	0.5	Colorless	WED 2	0.0321	0.963	1	1	1	MTJ647	02/21/19 00:39:17	

Comments:

Reviewed By: MTJ647 on 02/21/19 00:39:17

3546 Extractions Benchsheet

Batch: WG1239460

SDG	PrePrep Batch	PrePrep Analyst	PrePrep Balance	PrePrep Start Time
L1071515	WG1239314	DGR834	PREPREPBAL3	02/19/19 19:03:22
L1071522	WG1239388	ERC948	PREPREPBAL2	02/19/19 17:33:20
L1071756	WG1239764	CN827	PREPREPBAL3	02/20/19 12:02:54

Analyst: KBK908 **Prep Start Date/Time:** 02/20/19 20:22-20:24 **Prep End Date/Time:** 02/21/19 00:18 **Method:** 3546 **SOP:** 330707 **Balance ID:** EXTBAL5
Filter Lot#: 16891855

Na2SO4: 18K05690 Amt. Used: 15 Exp. Date:05/05/19 **MeCl2:** 19B18438 Amt. Used: 25 Exp. Date:02/18/20 **Surrogate:** 19B15368 Amt. Used: 0.50 mL Exp. Date:04/01/19
LCS/MS Spike: 19B19734 Amt. Used: 0.50 mL Exp. Date:08/13/19 **Spike Syringe ID:** 19A22850 Amt. Used: 1 Exp. Date:07/22/19
Surrogate Syringe ID: 19B06400 Amt. Used: 1 Exp. Date:08/06/19

Sample Number	Initial Sample Wt (g)	Solvent Volume (mL)	Final Volume (mL)	Extract Color	Box ID	Prep Factor	Prep Ratio	DL Adjustment Factor	Spike Factor	Surrogate Factor	Review Analyst	Review Date	Sample Comments
BLANK	15	25	0.5	Colorless		0.0333	0.999	1	1	1	MTJ647	02/21/19 00:39:17	
LCS	15	25	0.5	Colorless		0.0333	0.999	1	1	1	MTJ647	02/21/19 00:39:17	
LCSD	15	25	0.5	Colorless		0.0333	0.999	1	1	1	MTJ647	02/21/19 00:39:17	
MS(L1071515-08)	15.33	25	0.5	Colorless	TUE 4	0.0326	0.978	1	1	1	MTJ647	02/21/19 00:39:17	
MSD(L1071515-08)	15.47	25	0.5	Colorless	TUE 4	0.0323	0.969	1	1	1	MTJ647	02/21/19 00:39:17	
1. L1071388-03	1.01	25	0.5	Colorless		0.495	14.9	14.9	1	1	MTJ647	02/21/19 00:39:17	changed to SS per Lab JWW 2/20. No TS due to Matrix
2. L1071388-05	1.00	25	0.5	Colorless		0.5	15	15	1	1	MTJ647	02/21/19 00:39:17	changed to SS per Lab JWW 2/20. No TS due to Matrix.
3. L1071515-02	15.70	25	0.5	Colorless	TUE 4	0.0318	0.954	1	1	1	MTJ647	02/21/19 00:39:17	
4. L1071515-03	15.35	25	0.5	Colorless	TUE 4	0.0326	0.978	1	1	1	MTJ647	02/21/19 00:39:17	
5. L1071515-05	15.59	25	0.5	Colorless	TUE 4	0.0321	0.963	1	1	1	MTJ647	02/21/19 00:39:17	
6. L1071515-06	15.44	25	0.5	Colorless	TUE 4	0.0324	0.972	1	1	1	MTJ647	02/21/19 00:39:17	
7. L1071515-08	15.41	25	0.5	Colorless	TUE 4	0.0324	0.972	1	1	1	MTJ647	02/21/19 00:39:17	MS/D PP
8. L1071515-09	15.35	25	0.5	Colorless	TUE 4	0.0326	0.978	1	1	1	MTJ647	02/21/19 00:39:17	
9. L1071522-01	15.79	25	5	Colorless	TUES 4	0.317	9.51	10	1	1	MTJ647	02/21/19 00:39:17	Relogged from L1068109-01/02. AV 2/19
10. L1071522-02	15.46	25	5	Colorless	TUES 4	0.323	9.69	10	1	1	MTJ647	02/21/19 00:39:17	Relogged from L1068109-03/04. AV 2/19
11. L1071522-03	15.22	25	5	Colorless	TUES 4	0.329	9.87	10	1	1	MTJ647	02/21/19 00:39:17	Relogged from L1068109-05/06. AV 2/19
12. L1071522-04	15.38	25	5	Colorless	TUES 4	0.325	9.75	10	1	1	MTJ647	02/21/19 00:39:17	Relogged from L1068749-01/02. AV 2/19 MS/MSD-PP
13. L1071522-05	15.09	25	5	Colorless	TUES 4	0.331	9.93	10	1	1	MTJ647	02/21/19 00:39:17	Relogged from L1068749-03/04. AV 2/19
14. L1071522-06	15.61	25	0.5	Colorless	TUES 4	0.032	0.96	1	1	1	MTJ647	02/21/19 00:39:17	Relogged from L1069444-01/02. AV 2/19
15. L1071522-07	15.61	25	5	Colorless	TUES 4	0.32	9.6	10	1	1	MTJ647	02/21/19 00:39:17	Relogged from L1070906-03/04. AV 2/19
16. L1071756-01	15.61	25	0.5	Colorless	WED 2	0.032	0.96	1	1	1	MTJ647	02/21/19 00:39:17	
17. L1071756-02	15.88	25	0.5	Colorless	WED 2	0.0315	0.945	1	1	1	MTJ647	02/21/19 00:39:17	
18. L1071756-03	15.20	25	0.5	Colorless	WED 2	0.0329	0.987	1	1	1	MTJ647	02/21/19 00:39:17	

Sample Number	Initial Sample Wt (g)	Solvent Volume (mL)	Final Volume (mL)	Extract Color	Box ID	Prep Factor	Prep Ratio	DL Adjustment Factor	Spike Factor	Surrogate Factor	Review Analyst	Review Date	Sample Comments
19. L1071756-04	15.57	25	0.5	Colorless	WED 2	0.0321	0.963	1	1	1	MTJ647	02/21/19 00:39:17	

Comments:

Reviewed By: MTJ647 on 02/21/19 00:39:17



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

COD	Coefficient of Determination.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
RT	Retention Time.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Su
- 6 Gl
- 7 A
- 8 Sc

Qualifier Description

J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
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Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

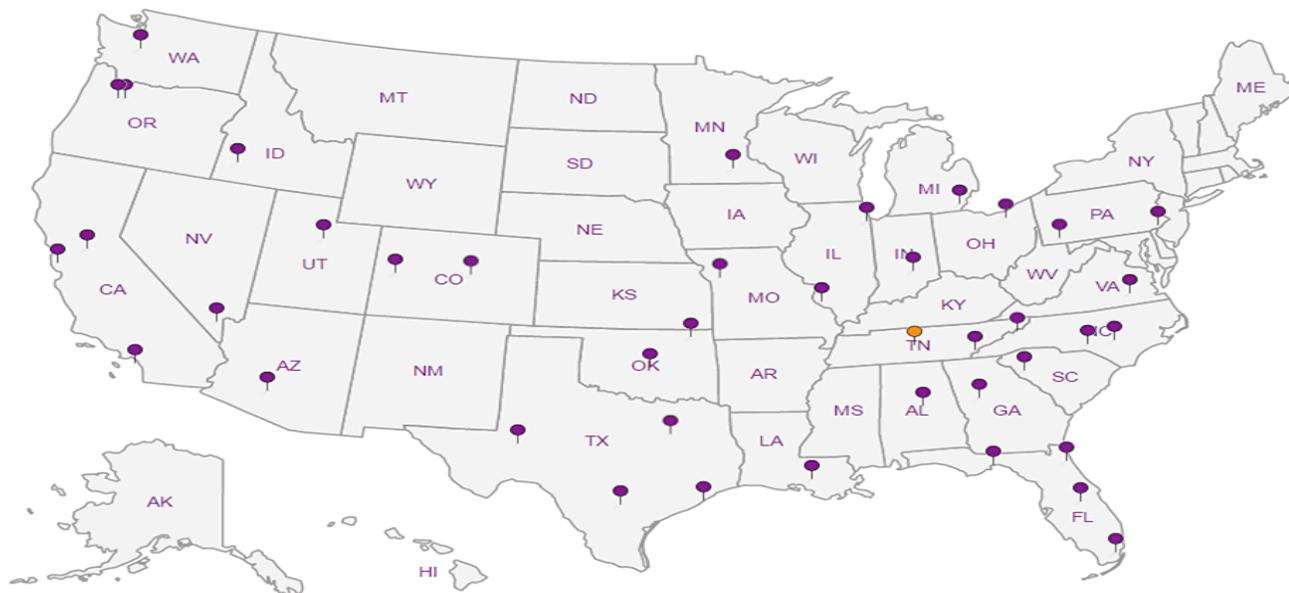
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Su

6 Gl

7 Al

8 Sc

S&ME Inc. - Knoxville

1413 Topside Rd
Louisville, TN 37777

Billing Information:
Accounts Payable
1413 Topside Rd
Louisville, TN 37777

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___



YOUR LAB OF CHOICE

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
N. Peterson, L. Porter

Email To: *lporter@smeinc.com*
npeterson@smeinc.com

Project
Description: *McClung Towers*

City/State
Collected: *Knoxville, TN*

Phone: 865-970-0003
Fax: 865-970-2312

Client Project #
4143-17-017

Lab Project #

Collected by (print):
N. Peterson

Site/Facility ID #

P.O. #

Collected by (signature):
[Signature]

Rush? (Lab MUST Be Notified)
 Same Day200%
 Next Day100%
 Two Day50%
 Three Day25%

Quote #
Date Results Needed

Immediately
Packed on Ice N ___ Y

No.
of
Cnts

EPH

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs													
<i>North</i>	<i>G</i>	<i>SS</i>	<i>5.0</i>	<i>2/18/19</i>	<i>15:00</i>	<i>1</i>	<i>X</i>												<i>01</i>
<i>South</i>	<i>G</i>	<i>SS</i>	<i>5.5</i>	<i>2/18/19</i>	<i>15:00</i>	<i>1</i>	<i>X</i>												<i>02</i>
<i>East</i>	<i>G</i>	<i>SS</i>	<i>8.0</i>	<i>2/18/19</i>	<i>10:00</i>	<i>1</i>	<i>X</i>												<i>03</i>
<i>West</i>	<i>G</i>	<i>SS</i>	<i>5.5</i>	<i>2/18/19</i>	<i>16:00</i>	<i>1</i>	<i>X</i>												<i>04</i>

* Matrix:
SS - Soil AIR - Air
GW - Groundwater
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

EPH

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N

Samples returned via: UPS FedEx Courier

Tracking # *4757 5988 1660*

Relinquished by: (Signature)

Date: *2/19/19* Time: *1102*

Received by: (Signature)

Trip Blank Received: Yes (No) HCL/MeOH TBR

Relinquished by: (Signature)

Date: *2-19-18* Time: *1700*

Received by: (Signature)

Temp: _____ °C Bottles Received: *0.2200-445 44oz.*

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: _____ Time: _____

Received for lab by: (Signature)

Date: *2/20/19* Time: *0945*

Hold: _____ Condition: *NCF 160*