



**A & M Engineering and
Environmental Services, Inc.**
Consulting - Design - Construction - Remediation

Limited Phase II Environmental Site Assessment (ESA) Robson East Site

**Sections 3 and 4, Township 19 North, Range 15 East
Tulsa, Wagoner County, Oklahoma 74015**

A & M Project Number 2320-003

October 12, 2020

Prepared For:



City of Tulsa

Office of the Mayor
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Environmental Services, Inc.**
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October 12, 2020

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REF: Limited Phase II Environmental Site Assessment (ESA) at the Robson East Site located in Sections 3 and 4, Township 19 North, Range 15 East, Tulsa, Wagoner County, Oklahoma 74015.

Dear Ms. Barnett:

A & M Engineering and Environmental Services, Inc. (A & M) has completed the enclosed Limited Phase II ESA for the above referenced site.

Thank you for choosing A & M. Please contact us at (918) 665-6575 or via email with any questions.

Respectfully,
A & M Engineering and Environmental Services, Inc.

A handwritten signature in blue ink, appearing to read 'JE Elbert', written over a white rectangular background.

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Enclosures

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1.0 PROJECT LOCATION, BACKGROUND, AND OBJECTIVES

Project Location

The Robson East Site, henceforth referred to as the “Site”, is located in Sections 3 and 4, Township 19 North, Range 15 East, Tulsa, Wagoner County, Oklahoma.

Appendix A (Project Figures) contains a Site Vicinity Map (Figure 1) and Topographic Location Map (Figure 2) for reference.

Background

A & M performed a Phase I Environmental Site Assessment (ESA) onsite for the City of Tulsa during May and June of 2020. The Phase I ESA (dated June 4, 2020) identified the following Recognized Environmental Conditions (RECs) onsite:

- A concrete pit inside the Scale House was observed to contain liquid. The nature of the liquid could not be determined.
- A truck scale was identified to the east of the scale house. It was unknown whether this scale utilized hydraulic fluid.
- An Underground Storage Tank (UST) was noted south of the Scale House. According to Mr. Robson (Site Owner), this UST was used to store oil that was sprayed on loads of coal prior to removal from the Site. No lid was present on this UST and oil was observed within. The capacity could not be determined but is estimated at approximately 800 gallons. Review of records available from the Oklahoma Corporation Commission (OCC) did not identify any information related to this UST.
- Seven (7) drums full of unknown contents were observed along the exterior west wall of the Coal Storage Area Building. An unidentified substance was observed to have spilled out of four (4) of these drums.
- Coal mining began onsite in the 1930s and continued through the 1940s before halting. During this period coal was loaded onto rail cars via a rail spur that entered the Site from the northwest. Mining resumed in the 1970s, at which time coal was loaded onto transport trucks for removal from the Site.

Based upon the presence of these RECs onsite; A & M recommended a Limited Phase II ESA be conducted for further evaluation of potential associated environmental impacts.

Objectives

The objectives of this Limited Phase II ESA are to further evaluate the RECs identified in the Phase I ESA dated June 4, 2020.

2.0 QUALITY ASSURANCE, QUALITY CONTROL, AND PROJECT PLANS

All project activities performed in association with this Limited Phase II ESA have been conducted in accordance with the approved Quality Assurance Project Plan (QAPP/dated June 26, 2020) prepared by A & M in order to ensure proper and effective Quality Assurance and Quality Control (QA/QC). The referenced QAPP was approved by the City of Tulsa on July 21, 2020. The referenced QAPP includes a Project Health and Safety Plan (PHASP) and Project Field Sampling Plan (PFSP) in the appendices.

3.0 SURFACE TESTHOLES AND SOIL SAMPLING

A total of twelve (12) surface soil samples were collected in the former coal loading and associated rail spur area on August 3, 2020. Samples were collected from testholes at zero (0) to one (1) foot below intervals ground surface (BGS). Surface Sampling activities were performed by Justin Scott (Environmental Specialist) and Nathan Hammer (Environmental Specialist), both of A & M. Surface soils at the Site were generally underlain by limestone gravel at a depth of three (3) to four (4) inches, with brown silt loam above and yellow clay below. Table 1 (Surface Testholes Information) lists the locations of these samples below.

Table 1
Surface Testholes Information

IDs	Latitudes	Longitudes	Notes
S-1	36°09'22.4367"	-95°43'28.8346"	NA
S-2	36°09'22.4655"	-95°43'27.7137"	Strong hydrocarbon odor
S-3	36°09'21.5331"	-95°43'27.8738"	Refusal at 8 inches
S-4	36°09'21.2202"	-95°43'27.5248"	NA
S-5	36°09'19.4038"	-95°43'27.7242"	NA
S-6	36°09'21.2911"	-95°43'28.6490"	NA
S-7	36°09'21.4841"	-95°43'28.8971"	NA
S-8	36°09'18.3555"	-95°43'27.5789"	NA
S-9	36°09'19.5629"	-95°43'28.5360"	Refusal at 4 inches
S-10	36°09'19.2767"	-95°43'28.3268"	Black soil
S-11	36°09'19.2433"	-95°43'28.1232"	NA
S-12	36°09'17.3029"	-95°43'28.3298"	NA
SC-1	36°9'19.07280"	-95°43'28.8156"	Soil composite near abandoned drums

Appendix A (Project Figures) contains a Sample Locations Map (Figure 3) depicting the approximate locations for which these samples were collected. Appendix B (Project Photos) provides photos of the project activities.

Total Arsenic concentrations in surface soil samples S-5 and S-8 were above the USEPA RSL for Industrial Soil (November 2019) at >3.00 mg/kg but below the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at <3.96 mg/kg. **Total Arsenic concentrations in surface soil sample location S-1, S-2, S-3, S-6, S-7, S-9, S-10, S-11, S-12, and SC-1 also exceed the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at >3.96 mg/kg.**

Total Chromium concentrations in surface soil samples S-1, S-2, S-3, S-5, S-6, S-7, S-9, S-10, and S-11 exceed the USEPA RSL for Industrial Soil (November 2019) at >6.30 mg/kg but below the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at <20.00 mg/kg. **Samples S-4 and S-12 exceeded the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at >20.00 mg/kg.**

TPH-DRO concentrations in surface sample location S-2 (18,800 mg/kg) exceed the ODEQ Tier 2 Industrial Generic Cleanup Level at >2,610 mg/kg.

4.0 DEEP BORINGS AND SAMPLING

A total of five (5) deep borings were completed onsite using a direct-push probe to refusal, first uppermost groundwater, or twenty-five (25) feet, whichever was encountered first. The borings were completed and subsoil samples collected on August 5, 2020. Boring completion services were provided by Mohawk Drilling, Inc. (Mohawk). Subsoil sampling activities were performed by Justin Scott (Environmental Specialist) of A & M. The encountered soil characteristics and associated field sampling activities are discussed in the following sections.

4.1 Onsite Soil Characteristics

Surfaces in the former coal loading and rail spur area consist of wooded areas, grassed areas, and graveled surfaces. Subsurface soils consist generally of orange and brown sandy clay to a depth of approximately five (5) feet and orange sandy clay and sandstone from approximately five (5) feet to eleven (11) feet. Refusal was encountered at four (4) feet in D-1 and D-2; at five (5) feet in D-3; at eleven (11) feet in D-4; and at three (3) feet in D-5. Increased moisture was detected in D-4 only at depths ranging from ten (10) feet to eleven (11) feet.

4.2 Field Sampling Activities

Subsurface soil sampling activities were performed by Justin Scott (Environmental Specialist) of A & M on August 5, 2020. Groundwater was encountered only in D-4. Despite purging and allowing time for recharge, groundwater was very muddy and filtering was not possible. Groundwater was sampled on August 11, 2020. Due to the condition of the groundwater and the inability to submit a filtered sample, groundwater analyses results are not considered representative for the site. Further evaluation of the uppermost groundwater onsite should be conducted in a manner that accommodates the collection and laboratory analyses of filtered groundwater samples. Due to the difficulties in obtaining suitable uppermost groundwater samples directly from the borings completed onsite it is recommended that temporary monitor wells be installed and developed for this purpose. Table 2 (Deep Borings Information) provides information relative to the subsurface soil samples completed onsite below.

Table 2
Deep Borings Information

IDs	Latitudes	Longitudes	Total Depth (feet)	Depth to Water (feet)
D-1	36°09'22.64"	-95°43'28.65"	4	NM
D-2	36°09'21.22"	-95°43'27.66"	4	NM
D-3	36°09'19.23"	-95°43'27.65"	5	NM
D-4	36°09'16.09"	-95°43'27.86"	11	NM
D-5	36°09'21.63"	-95°43'28.38"	3	2.2

Notes: NM = Not Measured

Soil samples were collected from the probe tubes. While soil probing, a handheld Photoionization Detector (PID) was used to screen probe tubes for detectable Volatile Organic Compounds (VOCs) and a handheld Geiger Counter was used to screen subsurface soils for detectable radiation above background levels (onsite). **No detectable VOC concentrations were identified within the soils screened. No radiation levels were identified above background within the soils screened.**

Total Arsenic concentrations identified in subsurface soil sample location D-1 exceed both the USEPA RSL for Industrial Soil (November 2019) at >3.00 mg/kg and the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at >3.96 mg/kg.

Total Chromium concentrations in all subsurface soil sample locations (D-1 through D-5) were in excess of the USEPA RSL for Industrial Soil (November 2019) at >6.30 mg/kg. However, Total Chromium concentrations in all subsurface soil samples are below the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at <20.0 mg/kg.

Appendix A (Project Figures) contains a Sample Locations Map (Figure 3) depicting the approximate locations for which these samples were collected. Appendix B (Project Photos) provides photos of the project activities.

5.0 DRUM AND UST CONTENTS CHARACTERIZATION

Justin Scott (Environmental Specialist) of A & M collected one (1) composite sample of the soil near the seven (7) drums located on the west side of the former coal loading building on August 3, 2020 (SC-1). Mr. Scott collected one (1) grab sample from the UST located south of the Scale House on August 5, 2020; this sample was submitted to the laboratory as "AST-1". Mr. Scott also collected one (1) composite sample of the sludge contained within the seven (7) drums described above on August 5, 2020 (SL-1).

The sludge contained within the drums was determined to meet the criteria for non-hazardous waste disposal under the Resource Conservation and Recovery Act (RCRA).

6.0 LABORATORY ANALYSES RESULTS AND QA/QC

Laboratory analysis services were provided by Green Country Testing, with certain analyses (Texas 1005; 8082) being performed by Pace Analytical. All samples were collected, documented, and handled in accordance with the approved QAPP. **See Sections 3.0, 4.2, and 5.0 of the Limited Phase II ESA for specific and detailed Laboratory Analyses Results Summaries.**

The duplicate surface soil sample consisted of soil collected from the same location as the S-10 surface soil sample. The duplicate subsurface soil sample was collected from the same location as the D-4 soil boring (5' to 7' bgs). The duplicate groundwater sample was collected from the same location as the GW-1 groundwater sample. The equipment rinsate samples consisted of distilled water trickled over the shovel used for soil sampling on August 3, 2020 (sample number R-1), and the groundwater interface probe on August 11, 2020 (sample number R-2). All sampling equipment used on August 5, 2020 was single-use and disposable; as a result, no equipment rinsate sample was collected. Trip Blanks accompanied the sample containers throughout their journey inside the sampling ice chest during the sampling event.

QA/QC sample results were consistent for the duplicates except for equipment rinsate sample R-2, which returned a result for Silver of 0.00256 milligrams per kilogram (mg/kg). This result is considered statistically insignificant and is potentially the result of laboratory contamination. No other indication of residual sampling equipment contamination or cross contamination was evident in the equipment rinsate samples. No indication of the introduction of contaminants during sample container/sample transport was evident in the Trip Blanks.

Appendix C (Laboratory Analyses Results Summaries) contains Table 3 (Surface Soils Laboratory Analyses Summary), Table 4 (Subsurface Soils Laboratory Analyses Summary), and Table 5 (Groundwater, UST (AST-1), and Drum Sludge Laboratory Analyses Summary), which summarize the laboratory analysis results in comparison to screening, background, and/or regulatory limits, as appropriate. Table 6 (Quality Assurance/Quality Control Laboratory Analyses Summary) also included in Appendix C provides a summary of the QAQC results. Appendix D (Laboratory Analysis Reports) contains a copy of the laboratory analysis reports for reference.

7.0 WORKER EXPOSURE MONITORING

While soil boring, a handheld PID was used to screen probe tubes for detectable VOCs and a handheld Geiger Counter was used to screen probe tubes for detectable radiation above background levels (onsite). **No detectable VOC concentrations were identified within the soils screened. No radiation levels were identified above background within the soils screened.**

Additionally, a handheld Four-Gas Meter was used to monitor the work area atmosphere during testhole completion activities. Parameters monitored included Oxygen, Carbon Monoxide, Hydrogen Sulfide, and Lower Explosive Limit (LEL). **Oxygen and Carbon Monoxide concentrations were within normal ranges during the performance of work. Hydrogen Sulfide levels were below detectable limits. No explosive gases above the LEL were detected.**

8.0 BORING PLUGGING AND SUBSURFACE SOIL DISPOSAL

Subsurface soils from boring completion were stockpiled on the ground next to the borings. Upon completion of sampling activities, the boreholes were plugged with these soils and bentonite chips as necessary.

9.0 FINDINGS AND CONCLUSIONS

Based upon the referenced field sampling activities and associated laboratory analyses results; the following [findings and conclusions](#) have been discovered:

- Visible evidence of historical coal loading activities including residual coal and coal dust was encountered in a majority of the surface soil sample locations at depths between zero (0) and one (1) foot bgs.
- Visible evidence of crude oil used to stabilize coal shipments including a strong hydrocarbon odor was observed in S-2 between four (4) and eight (8) inches bgs.
- The UST was found to contain petroleum (crude oil) and water. TPH-DRO was present in a concentration of 342,000 mg/L. Detection limits for TPH-GRO and TPH-ORO were 11,600 mg/L due to the high concentration of TPH-DRO.
- The sludge contained within the drums was evaluated and determined to meet the criteria for non-hazardous waste disposal under the Resource Conservation and Recovery Act (RCRA).
- Total Arsenic concentrations in surface soil samples S-5 and S-8 were above the USEPA RSL for Industrial Soil (November 2019) at >3.00 mg/kg but below the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at <3.96 mg/kg. Total Arsenic concentrations in surface soil sample location S-1, S-2, S-3, S-6, S-7, S-9, S-10, S-11, S-12, and SC-1 also exceed the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at >3.96 mg/kg.
- Total Arsenic concentrations identified in subsurface soil sample location D-1 exceed both the USEPA RSL for Industrial Soil (November 2019) at >3.00 mg/kg and the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at >3.96 mg/kg.
- Total Chromium concentrations in surface soil samples S-1, S-2, S-3, S-5, S-6, S-7, S-9, S-10, and S-11 exceed the USEPA RSL for Industrial Soil (November 2019) at >6.30 mg/kg but below the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at <20.00 mg/kg. Samples S-4 and S-12 exceeded the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at >20.00 mg/kg.
- Total Chromium concentrations in all subsurface soil sample locations (D-1 through D-5) were in excess of the USEPA RSL for Industrial Soil (November 2019) at >6.30 mg/kg. However, Total Chromium concentrations in all subsurface soil samples are below the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at <20.0 mg/kg.
- TPH-DRO concentrations in surface sample location S-2 (18,800 mg/kg) exceed the ODEQ Tier 2 Industrial Generic Cleanup Level at >2,610 mg/kg.

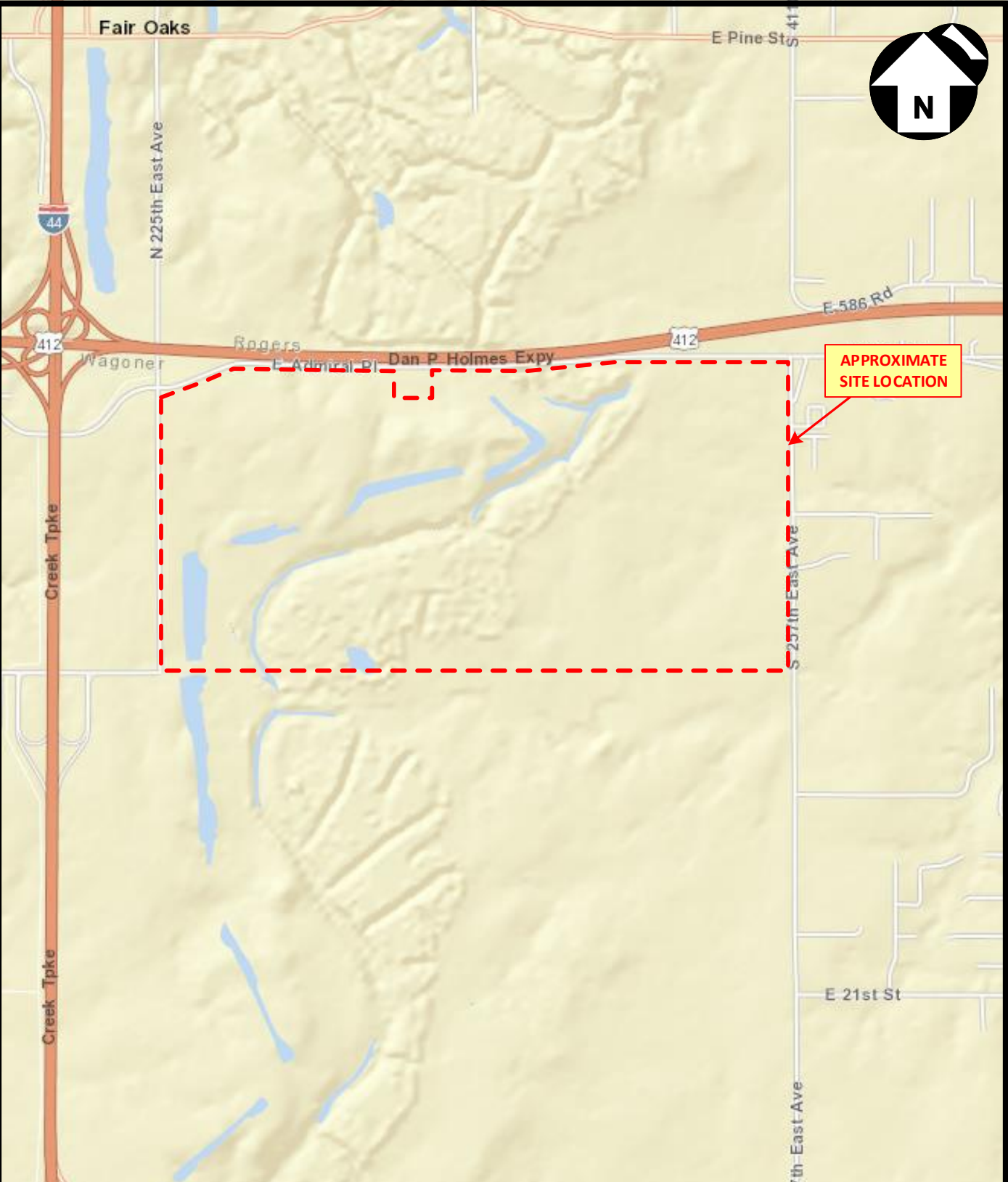
- TPH-ORO and TPH GRO concentrations in all surface and subsurface sample locations were below the applicable ODEQ Tier 2 Industrial Generic Cleanup Levels. Use of any level beyond Tier 1 Residential is considered a risk-based remediation. For DEQ approval of a risk-based remediation, groundwater investigation and monitoring and a deed notice may be required.
- Shallow groundwater was encountered in soil boring D-4 only, at a depth ranging from 10.0 feet to 11.0 feet. No shallow groundwater was encountered in any of the other soil borings. Despite purging and allowing time for recharge, groundwater was very muddy and filtering was not possible. Groundwater was sampled on August 11, 2020. Due to the condition of the groundwater and the inability to submit a filtered sample, groundwater analyses results are not considered representative for the site. Unfiltered groundwater collected from D-4 (analyzed as sample GW-1) contained concentrations of total arsenic, total barium, total cadmium, total chromium, total lead, and total mercury in excess of EPA Region 6 Maximum Contaminant Levels (MCLs) for Drinking Water. Further evaluation of the uppermost groundwater onsite should be conducted in a manner that accommodates the collection and laboratory analyses of filtered groundwater samples. Due to the difficulties in obtaining suitable uppermost groundwater samples directly from the borings completed onsite it is recommended that temporary monitor wells be installed and developed for this purpose.
- Volatile Organic Compound (VOC) concentrations were either non-detect or below the USEPA RSLs for Residential Soil (November 2019) in all surface and subsurface soil samples.
- Semi-Volatile Organic Compound (SVOC) concentrations were either non-detect or below the USEPA RSLs for Residential Soil (November 2019) in all surface and subsurface soil samples.
- Polychlorinated Biphenyl (PCB) concentrations were below detection limits in all samples.
- Worker exposure monitoring conducted during completion of the borings indicated no detectable VOCs and no radiation above background levels within the immediate work area. Additionally, Oxygen and Carbon Monoxide concentrations were within normal ranges; Hydrogen Sulfide levels were below detectable limits; and no explosive gases above the LEL were detected.

10.0 RECOMMENDATIONS

Based upon the findings and conclusions we [recommend](#) the following:

- Due to the presence of high concentrations of TPH-DRO in surface soils at S-2, we recommend that additional sampling be performed to determine the lateral and vertical extent of this TPH.
- Due to the presence of heavy metals (Total Arsenic and Total Chromium) and TPH-DRO in excess of regulatory limits/screening levels; we recommend all excavated materials within the historical coal loading/railroad spur area be properly handled, transported, and disposed offsite. In the event during excavation characteristics are observed that are not consistent with those observed in the testholes and borings completed, the waste soils be re-evaluated.
- Although no worker exposure concerns were identified during the completion of the testholes and borings, it is recommended the same worker exposure monitoring (at a minimum) be performed during any further exposure of the soils within the area investigated, as an added precaution.
- It is recommended that the non-hazardous liquid and non-hazardous sludge present in the UST and drums (respectively) be properly handled, transported, and disposed offsite as non-hazardous Municipal Solid Waste (MSW). Following disposal of the liquid inside the UST, it is recommended that the UST be either removed for offsite disposal or abandoned in place in accordance with Oklahoma Corporation Commission (OCC) regulations.
- Since there are currently no known plans for a water well onsite or associated domestic uses there are currently no further actions recommended in association with the elevated heavy metals concentrations exhibited by D-4 onsite.

Appendix A
(Project Figures)



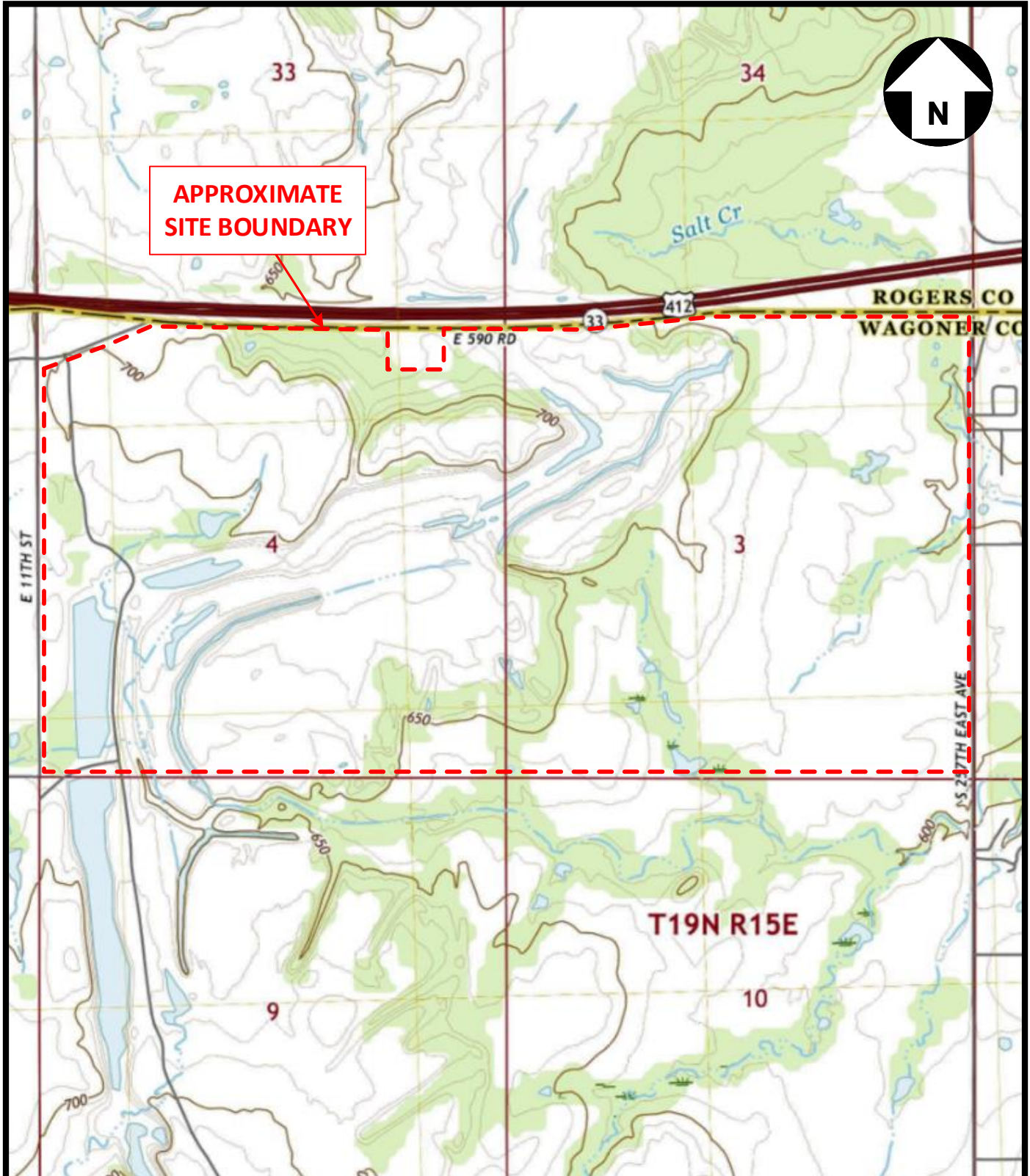
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Site Vicinity Map

Robson East Site

Sections 3 and 4, T29N, R15E, Tulsa, Oklahoma
 Tulsa, Wagoner County, Oklahoma

SCALE: Not To Scale	DATE: September 1, 2020	FIGURE NO. Figure 1
APPROVED BY: JRE	DRAWN BY: JWS	PROJECT NO. 2320-003



**APPROXIMATE
SITE BOUNDARY**



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Site Vicinity Map
Robson East Site
Sections 3 and 4, T29N, R15E, Tulsa, Oklahoma
Tulsa, Wagoner County, Oklahoma

SCALE: Notto scale	DATE: September 1, 2020	FIGURE NO. Figure 2
APPROVED BY: JRE	DRAWN BY: JWS	PROJECT NO. 2320-003

Notes

Total Arsenic concentrations in surface soil sample location S-1 at 4.01 mg/kg; S-2 at 6.10 mg/kg; S-3 at 4.74 mg/kg; S-6 at 5.02 mg/kg; S-7 at 4.47 mg/kg; S-9a at 6.63 mg/kg; S-10 at 7.86 mg/kg; S-11 at 4.44 mg/kg; S-12 at 4.54 mg/kg; and SC-1 at 4.42 mg/kg exceed the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office at 3.96 mg/kg. All other samples exhibited Total Arsenic concentrations above the USEPA RSL for Residential Soil at 0.68 mg/kg but below the USEPA RSL for Composite Workers at 3.60 mg/kg and the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office (PSS-2276) at 3.96 mg/kg.

Concentrations of arsenic were identified in subsurface soil sample locations D-2, D-3, D-4, and D-5 in excess of USEPA RSL for Residential Soil at 0.68 mg/kg but below the USEPA RSL for Composite Workers at 3.60 mg/kg. Arsenic was present in subsurface soil sample D-1 (2'-4' bgs) in a concentration (4.68 mg/kg) in excess of both the USEPA RSL for Composite Workers (November 2019) at 3.60 mg/kg and the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office at 3.96 mg/kg.

Total Chromium concentrations in all surface samples exceed the USEPA RSL for Residential Soil at >0.30 mg/kg. Additionally, nine (9) of the samples also exceeded the USEPA RSL for Composite Workers (November 2019) at >6.50 mg/kg, and two of the samples (S-4 and S-12) exceeded the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office at >20.00 mg/kg.

Concentration of chromium were identified in all subsurface soil sample locations (D-1 through D-5) in excess of both the USEPA RSL for Residential Soil at 0.30 mg/kg and the USEPA RSL for Composite Workers at 6.50 mg/kg. However, all subsurface soil chromium concentrations are below the Median Background Metal Concentration in Oklahoma Soils reported by the Oklahoma Cooperative Extension Office at 20.0 mg/kg.

TPH-DRO concentrations in S-2 at 18,800 mg/kg and S-8 at 91.6 mg/kg exceed the ODEQ Tier 1 Residential Risk-Based level (50 mg/kg). TPH-DRO concentrations in surface sample locations S-4, S-10, S-11, S-12 and SC-1 were below detection limits; however, the detection limits were in exceedance of the ODEQ Tier 1 Residential Risk-Based level (50 mg/kg), ranging from 135 to 312 mg/kg. According to laboratory staff, elevated detection limits were due to the dilution factor necessary for the Texas 1005 method.



TPH-DRO concentrations in subsurface soil sample locations D-2 (125 mg/kg) and D-4 (272 mg/kg) were in excess of the ODEQ Tier 1 Residential Risk-Based level (50 mg/kg).

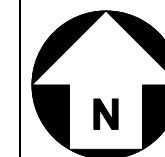
TPH-ORO concentrations in surface sample locations S-2 (17,000 mg/kg), S-3 (67.8 mg/kg), S-4 (459 mg/kg) and S-8 (96.1 mg/kg) exceed the ODEQ Tier 1 Residential Risk-Based level (50 mg/kg). TPH-ORO concentrations in surface sample locations S-10, S-11, S-12 and SC-1 were below detection limits; however, the detection limits were in exceedance of the ODEQ Tier 1 Residential Risk-Based level (50 mg/kg), ranging from 135 to 312 mg/kg. According to laboratory staff, elevated detection limits were due to the dilution factor necessary for the Texas 1005 method.

TPH-DRO concentrations in subsurface soil sample locations D-2 (73.2 mg/kg at 2'-4' bgs) and D-4 (168 mg/kg at 5'-7' bgs) were in excess of the ODEQ Tier 1 Residential Risk-Based level (50 mg/kg). All other subsurface soil samples were below detection limits.



General Legend

-  Approximate deep soil boring/testhole location
-  Approximate surface soil sample location



Print In Color

Sample Locations Map

Robson East Site

Sections 3 and 4, T19N, R15E
Tulsa, Wagoner County, Oklahoma

Not To Scale

September 4, 2019

Figure 3



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Appendix B
(Project Photos)



A typical surface soil sample location.



A typical view of the coal loading area.



The direct push-probe rig.



Typical subsoil sampling activities.



A typical soil cutting.



UST samples.



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Project Photos
Robson East Site
Sections 3 and 4, Township 19N, Range 15E
Tulsa, Wagoner County, Oklahoma

PROJECT NO. 2320-003

Appendix C
(Laboratory Analyses Results Summaries)

Table 3
Surface Soils Laboratory Analyses Summary

Samples		S-1 (0'-1')	S-2 (0'-1')	S-3 (0''-8'')	S-4 (0'-1')	S-5 (0'-1')	S-6 (0'-1')	S-7 (0'-1')	S-8 (0'-1')	S-9 (0''-4'')	S-10 [†] (0'-1')	S-11 [†] (0'-1')	S-12 [†] (0'-1')	SC-1 [†] (0'-1')
Parameters	Limits													
Total arsenic	Industrial-3.00 Background-3.96*	4.01	6.10	4.74	1.74	3.10	5.02	4.47	3.05	6.33	7.86	4.44	4.54	4.42
Total barium	220,000	94.6	78.0	91.1	109	57.8	85.7	256	94.8	127	139	56.1	107	144
Total cadmium	980.00	<0.233	<0.245	<0.236	0.208	0.367	0.807	0.552	0.419	1.02	1.02	0.469	0.624	0.609
Total chromium (Chromium VI)	Industrial-6.30 Background-20.0*	10.7	7.62	12.2	22.6	6.60	9.23	9.32	4.75	18.6	13.9	8.47	22.1	5.91
Total lead	1,200.00	15.6	17.3	13.7	6.71	16.8	75.4	26.4	4.07	41.0	66.5	40.8	68.0	8.43
Total mercury	46.00	0.0250	<0.0250	0.0430	0.0530	<0.0250	<0.0250	<0.0250	<0.0250	0.0280	0.0310	<0.0250	<0.0250	<0.0250
Total selenium	5,800.00	<0.465	<0.490	<0.471	0.643	<0.4530	<0.449	0.865	0.464	1.01	0.413	<0.408	<0.444	0.500
Total silver	5,800.00	<0.0465	<0.0490	0.0553	<0.0394	<0.0453	<0.0449	0.283	0.0712	0.118	0.124	<0.0408	0.0497	0.0933
Benzene	5.10	<0.0900	<0.116	<0.0860	<0.0580	<0.108	<0.0720	<0.118	<0.106	<0.100	<0.120	<0.152	<0.100	0.00503
Toluene	25.00	<0.225	<0.290	<0.215	<0.145	<0.270	<0.180	<0.295	<0.265	<0.250	<0.300	0.393	<0.250	0.0118
Ethylbenzene	47,000	<0.225	0.315	<0.215	<0.145	<0.270	<0.180	<0.295	<0.265	<0.250	<0.300	<0.380	<0.250	< 0.00449
Xylenes	2,500.00	<0.675	<0.870	<0.645	<0.435	<0.810	<0.540	<0.885	<0.795	<0.750	<0.900	<1.14	<0.750	< 0.00449
TPH-GRO	2,500	<28.7	<770	<27.5	<312	<27.0	<28.4	<29.1	<25.9	<26.8	<152	<135	<144	<138
TPH-DRO	2,610	<28.7	18,800	<27.5	<312	<27.0	<28.4	<29.1	91.6	<26.8	<152	<135	<144	<138
TPH-ORO	23,000	<28.7	17,000	67.8	459	<27.0	<28.4	<29.1	71.4	<26.8	<152	<135	<144	<138
Fluoride	47,000	<0.200	0.302	0.708	<0.200	0.272	0.381	0.215	<0.200	0.391	<0.200	0.358	0.407	NA
pH	NLA	7.85	6.95	7.54	7.87	7.86	7.81	7.69	7.39	7.90	8.07	8.00	7.28	NA
Parameters	Limits													
Acetone	670,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0815



Samples		S-1 (0'-1')	S-2 (0'-1')	S-3 (0''-8'')	S-4 (0'-1')	S-5 (0'-1')	S-6 (0'-1')	S-7 (0'-1')	S-8 (0'-1')	S-9 (0''-4'')	S-10 [†] (0'-1')	S-11 [†] (0'-1')	S-12 [†] (0'-1')	SC-1 [†] (0'-1')
Methylene Chloride	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00610
VOCs (other than Acetone and Methylene Chloride)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All below detection limits
SVOCs		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All below detection limits

Notes: NA = Not Analyzed; ND = None Detected; NLA = No Limit Available; PCBs = Polychlorinated Biphenyls; TPH = Total Petroleum Hydrocarbons; GRO = Gasoline Range Organics; DRO = Diesel Range Organics; ORO = Oil Range Organics; TCLP = Toxic Characteristic Leaching Procedure/ 40 CFR, Part 261.24 - Table 1 D List; Total heavy metals and PCB concentrations compared to USEPA Regional Screening Levels (RSLs) for Residential Soil (November 2019); TPH concentrations compared to the ODEQ Tier 2 Industrial Generic Cleanup Levels; TCLP concentrations compared to Toxic Characteristic Leaching Procedure 40 CFR, Part 261.24 - Table 1 D List Regulatory Levels for hazardous classification; Reactivity compared to 40 CFR, Part 261.23 Properties for hazardous classification; Corrosivity compared to 40 CFR, Part 261.22 (less than or equal to 2 standard units or greater than or equal to 12.5 standard units) for hazardous classification; Ignitability compared to 40 CFR, Part 261.21 (flashpoint less than 140° Fahrenheit) for hazardous classification; Laboratory analyses results depicted with gray highlighted table cells represent concentrations detected above laboratory detection limits but at concentrations below the regulatory/screening limits; Laboratory analyses results depicted with green highlighted table cells represent concentrations detected in excess of the regulatory/screening levels; † = None detected by laboratory equipment but due to viscosity or matrix impact during extract additional dilution required resulting in higher detection limits



Table 4
Subsurface Soil Laboratory Analyses Summary

Samples		D-1 (2'-4')	D-2 (2'-4')	D-3 (3'-5')	D-4 (5'-7')	D-5 (1'-3')
Parameters	Limits					
Total arsenic	Industrial-3.00 Background-3.96*	4.68	1.99	1.98	1.91	2.74
Total barium	220,000	83.6	72.3	85.7	178	140
Total cadmium	980.00	<0.228	<0.108	<0.239	<0.214	0.226
Total chromium (Chromium VI)	Industrial-6.30 Background-20.0*	19.6	6.50	12.4	16.3	11.7
Total lead	1,200.00	23.4	14.6	12.2	7.72	15.5
Total mercury	46.00	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
Total selenium	5,800.00	<0.456	<0.430	<0.477	<0.428	<0.426
Total silver	5,800.00	<0.0456	<0.0430	<0.0477	<0.0428	<0.0426
TPH-GRO	2,500	<27.2	<36.7	<26.8	<27.7	<26.5
TPH-DRO	2,610	<27.2	125	<26.8	272	<26.5
TPH-ORO	23,000	<27.2	73.2	<26.8	168	<26.5
Fluoride	47,000	NA	NA	1.53	0.579	0.561
pH	NLA	7.60	7.56	7.76	7.41	7.68
Acetone	670,000	0.111	< 0.00564	NA	NA	NA
Benzene	5.10	NA	NA	<0.140	<0.108	<0.142
Ethylbenzene	25.00	NA	NA	<0.350	<0.270	<0.355
Toluene	47,000	NA	NA	<0.350	<0.270	<0.355
Xylenes	2,500.00	NA	NA	<1.05	<0.810	<1.06
Methylene Chloride	1,000.00	0.0186	< 0.00564	NA	NA	NA
n-Octadecane	N/A	<0.317	0.412	NA	NA	NA
Phenanthrene	N/A	<0.317	0.355	NA	NA	NA
PCBs (Aroclor 1016)	27.00	<.0200	<0.0468	NA	NA	NA
PCBs (Aroclor 1221)	0.83	<.0200	<0.0468	NA	NA	NA
PCBs (Aroclor 1232)	0.72	<.0200	<0.0468	NA	NA	NA
PCBs (Aroclor 1242)	0.95	<.0200	<0.0468	NA	NA	NA
PCBs (Aroclor 1248)	0.94	<.0200	<0.0468	NA	NA	NA
PCBs (Aroclor 1254)	0.97	<.0200	<0.0468	NA	NA	NA
PCBs (Aroclor 1260)	0.99	<.0200	<0.0468	NA	NA	NA

Notes: NA = Not Analyzed; ND = None Detected; NLA = No Limit Available; PCBs = Polychlorinated Biphenyls; TPH = Total Petroleum Hydrocarbons; GRO = Gasoline Range Organics; DRO = Diesel Range Organics; ORO = Oil Range Organics; TCLP = Toxic Characteristic Leaching Procedure/ 40 CFR, Part 261.24 - Table 1 D List; Total heavy metals and PCB concentrations compared to USEPA Regional Screening Levels (RSLs) for Industrial Soil (November 2019); TPH concentrations compared to the ODEQ Tier 2 Industrial Generic Clean-up Levels; Laboratory analyses results depicted with gray highlighted table cells represent concentrations detected above laboratory detection limits but at concentrations below the regulatory/screening limits; Laboratory analyses results depicted with green highlighted table cells represent concentrations detected in excess of the regulatory/screening levels;



Table 5
Groundwater, UST (AST-1), and Drum Sludge Laboratory Analyses Summary

Parameters	Limits	GW-1	AST-1	SL-1
Total arsenic	0.01 mg/L	1.05	NA	NA
Total barium	2.0 mg/L	29.1	NA	NA
Total cadmium	0.005 mg/L	0.0410	NA	NA
Total chromium (Chromium VI)	0.10 mg/L	3.70	NA	NA
Total lead	0.015 mg/L	2.25	NA	NA
Total mercury	0.0002 mg/L	0.00359	NA	NA
Total selenium	0.05 mg/L	<0.0500	NA	NA
Total silver	0.094 mg/L	<0.0200	NA	NA
TPH-GRO	1.00 mg/L	< 0.910	>11,600	NA
TPH-DRO	1.00 mg/L	< 0.910	342,000	NA
TPH-ORO	1.00 mg/L	< 0.910	>11,600	NA
Benzene	0.005 mg/L	< 0.00500	NA	NA
Ethylbenzene	0.700 mg/L	< 0.00500	NA	NA
Toluene	1.00 mg/L	< 0.00500	NA	NA
Xylenes	10.0 mg/L	< 0.0150	NA	NA
Fluoride	4.0 mg/L	0.629	NA	NA
PCBs (Aroclor 1016)	No MCL	NA	< 0.480	< 0.190
PCBs (Aroclor 1221)	No MCL	NA	< 0.480	< 0.190
PCBs (Aroclor 1232)	No MCL	NA	< 0.480	< 0.190
PCBs (Aroclor 1242)	No MCL	NA	< 0.480	< 0.190



Parameters	Limits	GW-1	AST-1	SL-1
PCBs (Aroclor 1248)	No MCL	NA	< 0.480	< 0.190
PCBs (Aroclor 1254)	No MCL	NA	< 0.480	< 0.190
PCBs (Aroclor 1260)	No MCL	NA	< 0.480	< 0.190
Reactive Cyanide	See 40 CFR 261.22	NA	< 0.0200	<0.200
Reactive Sulfide	See 40 CFR 261.22	NA	< 0.0500	<0.0500
Corrosivity	See 40 CFR 261.22	NA	7.18	7.11
Ignitability	See 40 CFR 261.21	NA	>200°F	>200°F
TCLP arsenic	5.0	NA	NA	<0.200
TCLP barium	100.0	NA	NA	0.187
TCLP cadmium	0.5	NA	NA	<0.100
TCLP chromium (Chromium VI)	5.0	NA	NA	<0.100
TCLP lead	5.0	NA	NA	<0.0500
TCLP mercury	0.2	NA	NA	<0.000100
TCLP selenium	1.0	NA	NA	<0.200
TCLP silver	5.0	NA	NA	<0.0200
TCLP Benzene	0.5	NA	NA	<0.100

Notes: NA = Not Analyzed; TPH = Total Petroleum Hydrocarbons; GRO = Gasoline Range Organics; DRO = Diesel Range Organics; ORO = Oil Range Organics; Limits based on EPA Region 6 Maximum Contaminant Limits (MCLs) for Drinking Water



Table 6
Quality Assurance/Quality Control Laboratory Analyses Summary

Parameters	S-13 (S-10 Duplicate)	D-6 (D-4 Duplicate)	GW-2 (GW-1 Duplicate)	R-1 (Rinsate 8/3/2020)	R-2 (Rinsate 8/11/2020)	TB-1 (Trip Blank 8/3/2020)	TB-1 (Trip Blank 8/11/2020)
Total arsenic	5.89	0.552	0.925	<0.00500	<0.00500	NA	NA
Total barium	125	135	25.3	<0.0100	<0.0100	NA	NA
Total cadmium	0.720	<0.237	0.0366	<0.0010	<0.0010	NA	NA
Total chromium (Chromium VI)	8.64	14.5	3.32	<0.0100	<0.0100	NA	NA
Total lead	31.6	4.47	1.98	<0.0050	<0.0050	NA	NA
Total mercury	0.0280	<0.0250	<0.00050	<0.0000500	<0.0000500	NA	NA
Total selenium	0.521	<0.473	<0.0500	<0.00500	<0.00500	NA	NA
Total silver	0.154	<0.0473	<0.0200	<0.00200	0.00256	NA	NA
TPH-GRO	<147	<32.1	<0.910	< 0.910	< 0.900	<0.0500	NA
TPH-DRO	<147	88.6	<0.910	< 0.910	< 0.900	NA	NA
TPH-ORO	<147	64.1	<0.910	< 0.910	< 0.900	NA	NA
Benzene	<0.106	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Ethylbenzene	<0.265	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Toluene	<0.265	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Xylenes	<0.795	NA	<0.0150	<0.0150	<0.0150	<0.0150	<0.0150
Fluoride	<0.200	NA	0.664	<0.200	<0.200	NA	NA
pH	7.73	7.92	NA	NA	NA	NA	NA
SVOCs	NA	All below detection limits	NA	NA	NA	NA	NA
Acetone	NA	0.0270	NA	NA	NA	NA	NA
VOCs besides Acetone	NA	All below detection limits	NA	NA	NA	NA	NA



Parameters	S-13 (S-10 Duplicate)	D-6 (D-4 Duplicate)	GW-2 (GW-1 Duplicate)	R-1 (Rinsate 8/3/2020)	R-2 (Rinsate 8/11/2020)	TB-1 (Trip Blank 8/3/2020)	TB-1 (Trip Blank 8/11/2020)
PCBs (Aroclor 1016)	NA	<0.0237	NA	NA	NA	NA	NA
PCBs (Aroclor 1221)	NA	<0.0237	NA	NA	NA	NA	NA
PCBs (Aroclor 1232)	NA	<0.0237	NA	NA	NA	NA	NA
PCBs (Aroclor 1242)	NA	<0.0237	NA	NA	NA	NA	NA
PCBs (Aroclor 1248)	NA	<0.0237	NA	NA	NA	NA	NA
PCBs (Aroclor 1254)	NA	<0.0237	NA	NA	NA	NA	NA
PCBs (Aroclor 1260)	NA	<0.0237	NA	NA	NA	NA	NA

Notes: NA = Not Analyzed; VOCs = Volatile Organic Compounds; TPH = Total Petroleum Hydrocarbons; GRO = Gasoline Range Organics; DRO = Diesel Range Organics; ORO = Oil Range Organics; TCLP = Toxic Characteristic Leaching Procedure/ 40 CFR, Part 261.24 - Table 1 D List;

Appendix D
(Laboratory Analyses Reports)

Green Country Testing, Inc.
6825 E 38th Street
Tulsa, OK 74145
TEL: 918-828-9977 FAX: 918-828-7756
Website: www.greencountrytesting.com



August 21, 2020

Justin Scott
A & M Engineering
10010 E. 16th St.
Tulsa, OK 74128-4813
TEL: (918) 665-6575
FAX: (918) 665-6576

RE: 2320-003

Order No.: 2008024

Dear Justin Scott:

Green Country Testing, Inc. received 16 sample(s) on 8/3/2020 for the analyses presented in the following report.

In accordance with your instructions, Green Country Testing conducted the analysis shown on the following pages on samples submitted by your company. The results relate only to the items tested. Unless otherwise noted, all analysis were conducted using EPA approved methodologies. Test reports meet all the NELAC requirements. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by Green Country Testing.

Certifications/Accreditation: OK - 7604 - AR - ADEQ - KS - E-10232

A scope of Certified/Accredited parameters is available upon request. If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Duzan", with a stylized flourish at the end.

Brian Duzan
Laboratory Director

CC:
Accounts Payable
Jeff Elbert

Original

Green Country Testing, Inc.
6825 E 38th Street
Tulsa, OK 74145
TEL: 918-828-9977 FAX: 918-828-7756
Website: www.greencountrytesting.com



Case Narrative

WO#: 2008024
Date: 8/21/2020

CLIENT: A & M Engineering
Project: 2320-003

2008024
TX_1005_S has been Sub Contracted.

Green Country Testing, Inc.
 6825 E 38th Street
 Tulsa, OK 74145
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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-001

Collection Date: 8/3/2020 11:05:00 AM

Client Sample ID: S-1

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	0.0250	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	4.01	0.465		mg/Kg	1	8/5/2020 7:44:58 PM
Barium	94.6	2.33		mg/Kg	1	8/5/2020 7:44:58 PM
Cadmium	< 0.233	0.233		mg/Kg	1	8/5/2020 7:44:58 PM
Chromium	10.7	2.33		mg/Kg	1	8/5/2020 7:44:58 PM
Lead	15.6	1.16		mg/Kg	1	8/5/2020 7:44:58 PM
Selenium	< 0.465	0.465		mg/Kg	1	8/5/2020 7:44:58 PM
Silver	< 0.0465	0.0465		mg/Kg	1	8/5/2020 7:44:58 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.0900	0.0900		mg/Kg	0.045	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.225	0.225		mg/Kg	0.045	8/5/2020 3:00:00 PM
Toluene	< 0.225	0.225		mg/Kg	0.045	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.675	0.675		mg/Kg	0.045	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	117	39.1 - 160		%Rec	0.045	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	108	17.8 - 149		%Rec	0.045	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 28.7	28.7		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	< 28.7	28.7		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 28.7	28.7		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	< 28.7	28.7		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	85.0	70 - 130		%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	90.0	70 - 130		%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	< 0.200	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
W	Sample container temperature is out of limit as specified at testcode

M	Manual Integration used to determine area response
PL	Permit Limit
RL	Reporting Detection Limit

Original

Green Country Testing, Inc.
 6825 E 38th Street
 Tulsa, OK 74145
 TEL: 918-828-9977 FAX: 918-828-7756
 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH)	7.85	0.100	pH Units	1	8/6/2020 1:50:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Green Country Testing, Inc.
 6825 E 38th Street
 Tulsa, OK 74145
 TEL: 918-828-9977 FAX: 918-828-7756
 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-002

Collection Date: 8/3/2020 11:17:00 AM

Client Sample ID: S-2

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	6.10	4.90		mg/Kg	1	8/5/2020 7:56:32 PM
Barium	78.0	2.45		mg/Kg	1	8/5/2020 7:56:32 PM
Cadmium	< 0.245	0.245		mg/Kg	1	8/5/2020 7:56:32 PM
Chromium	7.62	2.45		mg/Kg	1	8/5/2020 7:56:32 PM
Lead	17.3	1.22		mg/Kg	1	8/5/2020 7:56:32 PM
Selenium	< 0.490	0.490		mg/Kg	1	8/5/2020 7:56:32 PM
Silver	< 0.0490	0.0490		mg/Kg	1	8/5/2020 7:56:32 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.116	0.116		mg/Kg	0.058	8/5/2020 3:00:00 PM
Ethylbenzene	0.315	0.290		mg/Kg	0.058	8/5/2020 3:00:00 PM
Toluene	< 0.290	0.290		mg/Kg	0.058	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.870	0.870		mg/Kg	0.058	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	133	39.1 - 160		%Rec	0.058	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	122	17.8 - 149		%Rec	0.058	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	18,800	770		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	17,000	770		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 770	770		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	35,900	770		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	0.302	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original

Green Country Testing, Inc.
6825 E 38th Street
Tulsa, OK 74145
TEL: 918-828-9977 FAX: 918-828-7756
Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008024

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: DW

Hydrogen Ion (pH) 6.95 0.100 pH Units 1 8/6/2020 1:50:00 PM

Qualifiers: H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

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 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-003

Collection Date: 8/3/2020 11:27:00 AM

Client Sample ID: S-3

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	0.0430	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	4.74	4.71		mg/Kg	1	8/5/2020 8:24:40 PM
Barium	91.1	2.36		mg/Kg	1	8/5/2020 8:24:40 PM
Cadmium	< 0.236	0.236		mg/Kg	1	8/5/2020 8:24:40 PM
Chromium	12.2	2.36		mg/Kg	1	8/5/2020 8:24:40 PM
Lead	13.7	1.18		mg/Kg	1	8/5/2020 8:24:40 PM
Selenium	< 0.471	0.471		mg/Kg	1	8/5/2020 8:24:40 PM
Silver	0.0553	0.0471		mg/Kg	1	8/5/2020 8:24:40 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.0860	0.0860		mg/Kg	0.043	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.215	0.215		mg/Kg	0.043	8/5/2020 3:00:00 PM
Toluene	< 0.215	0.215		mg/Kg	0.043	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.645	0.645		mg/Kg	0.043	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	105	39.1 - 160		%Rec	0.043	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	90.7	17.8 - 149		%Rec	0.043	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 27.5	27.5		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	67.8	27.5		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 27.5	27.5		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	93.9	27.5		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	71.0	70 - 130		%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	75.0	70 - 130		%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	0.708	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
W	Sample container temperature is out of limit as specified at testcode

M	Manual Integration used to determine area response
PL	Permit Limit
RL	Reporting Detection Limit

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008024

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: DW

Hydrogen Ion (pH) 7.54 0.100 pH Units 1 8/6/2020 1:50:00 PM

Qualifiers: H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-004

Collection Date: 8/3/2020 12:52:00 PM

Client Sample ID: S-4

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	0.0530	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	1.74	0.394		mg/Kg	1	8/5/2020 8:37:09 PM
Barium	109	1.97		mg/Kg	1	8/5/2020 8:37:09 PM
Cadmium	0.208	0.197		mg/Kg	1	8/5/2020 8:37:09 PM
Chromium	22.6	1.97		mg/Kg	1	8/5/2020 8:37:09 PM
Lead	6.71	0.984		mg/Kg	1	8/5/2020 8:37:09 PM
Selenium	0.643	0.394		mg/Kg	1	8/5/2020 8:37:09 PM
Silver	< 0.0394	0.0394		mg/Kg	1	8/5/2020 8:37:09 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.0580	0.0580		mg/Kg	0.029	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.145	0.145		mg/Kg	0.029	8/5/2020 3:00:00 PM
Toluene	< 0.145	0.145		mg/Kg	0.029	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.435	0.435		mg/Kg	0.029	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	109	39.1 - 160		%Rec	0.029	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	105	17.8 - 149		%Rec	0.029	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 312	312		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	459	312		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 312	312		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	713	312		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	< 0.200	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH) 7.87 0.100 pH Units 1 8/6/2020 1:50:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-005

Collection Date: 8/3/2020 1:12:00 PM

Client Sample ID: S-5

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	3.10	0.453		mg/Kg	1	8/5/2020 8:48:47 PM
Barium	57.8	0.227		mg/Kg	1	8/5/2020 8:48:47 PM
Cadmium	0.367	0.227		mg/Kg	1	8/5/2020 8:48:47 PM
Chromium	6.60	2.27		mg/Kg	1	8/5/2020 8:48:47 PM
Lead	16.8	1.13		mg/Kg	1	8/5/2020 8:48:47 PM
Selenium	< 0.453	0.453		mg/Kg	1	8/5/2020 8:48:47 PM
Silver	< 0.0453	0.0453		mg/Kg	1	8/5/2020 8:48:47 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.108	0.108		mg/Kg	0.054	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.270	0.270		mg/Kg	0.054	8/5/2020 3:00:00 PM
Toluene	< 0.270	0.270		mg/Kg	0.054	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.810	0.810		mg/Kg	0.054	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	114	39.1 - 160		%Rec	0.054	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	96.4	17.8 - 149		%Rec	0.054	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 27.0	27.0		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	< 27.0	27.0		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 27.0	27.0		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	< 27.0	27.0		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	76.0	70 - 130		%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	73.0	70 - 130		%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	0.272	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
W	Sample container temperature is out of limit as specified at testcode

M	Manual Integration used to determine area response
PL	Permit Limit
RL	Reporting Detection Limit

Original

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH) 7.86 0.100 pH Units 1 8/6/2020 1:50:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-006

Collection Date: 8/3/2020 1:27:00 PM

Client Sample ID: S-6

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	5.02	4.49		mg/Kg	1	8/5/2020 9:00:18 PM
Barium	85.7	2.25		mg/Kg	1	8/5/2020 9:00:18 PM
Cadmium	0.807	0.225		mg/Kg	1	8/5/2020 9:00:18 PM
Chromium	9.23	2.25		mg/Kg	1	8/5/2020 9:00:18 PM
Lead	75.4	1.12		mg/Kg	1	8/5/2020 9:00:18 PM
Selenium	< 0.449	0.449		mg/Kg	1	8/5/2020 9:00:18 PM
Silver	< 0.0449	0.0449		mg/Kg	1	8/5/2020 9:00:18 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.0720	0.0720		mg/Kg	0.036	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.180	0.180		mg/Kg	0.036	8/5/2020 3:00:00 PM
Toluene	< 0.180	0.180		mg/Kg	0.036	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.540	0.540		mg/Kg	0.036	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	105	39.1 - 160		%Rec	0.036	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	98.0	17.8 - 149		%Rec	0.036	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 28.4	28.4		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	< 28.4	28.4		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 28.4	28.4		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	< 28.4	28.4		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	50.0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	61.0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	0.381	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008024

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH)	7.81	0.100	pH Units	1	8/6/2020 1:50:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-007

Collection Date: 8/3/2020 1:32:00 PM

Client Sample ID: S-7

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	0.0250	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	4.47	4.34		mg/Kg	1	8/5/2020 9:12:11 PM
Barium	256	2.17		mg/Kg	1	8/5/2020 9:12:11 PM
Cadmium	0.552	0.217		mg/Kg	1	8/5/2020 9:12:11 PM
Chromium	9.32	2.17		mg/Kg	1	8/5/2020 9:12:11 PM
Lead	26.4	1.09		mg/Kg	1	8/5/2020 9:12:11 PM
Selenium	0.865	0.434		mg/Kg	1	8/5/2020 9:12:11 PM
Silver	0.283	0.0434		mg/Kg	1	8/5/2020 9:12:11 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.118	0.118		mg/Kg	0.059	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.295	0.295		mg/Kg	0.059	8/5/2020 3:00:00 PM
Toluene	< 0.295	0.295		mg/Kg	0.059	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.885	0.885		mg/Kg	0.059	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	114	39.1 - 160		%Rec	0.059	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	103	17.8 - 149		%Rec	0.059	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 29.1	29.1		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	< 29.1	29.1		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 29.1	29.1		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	< 29.1	29.1		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	49.0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	55.0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	0.215	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH)	7.69	0.100	pH Units	1	8/6/2020 1:50:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-008

Collection Date: 8/3/2020 1:46:00 PM

Client Sample ID: S-8

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	3.05	0.385		mg/Kg	1	8/5/2020 9:40:55 PM
Barium	94.8	1.92		mg/Kg	1	8/5/2020 9:40:55 PM
Cadmium	0.419	0.192		mg/Kg	1	8/5/2020 9:40:55 PM
Chromium	4.75	1.92		mg/Kg	1	8/5/2020 9:40:55 PM
Lead	4.07	0.962		mg/Kg	1	8/5/2020 9:40:55 PM
Selenium	0.464	0.385		mg/Kg	1	8/5/2020 9:40:55 PM
Silver	0.0712	0.0385		mg/Kg	1	8/5/2020 9:40:55 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.106	0.106		mg/Kg	0.053	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.265	0.265		mg/Kg	0.053	8/5/2020 3:00:00 PM
Toluene	< 0.265	0.265		mg/Kg	0.053	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.795	0.795		mg/Kg	0.053	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	122	39.1 - 160		%Rec	0.053	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	112	17.8 - 149		%Rec	0.053	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	91.6	25.9		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	71.4	25.9		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 25.9	25.9		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	172	25.9		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	89.0	70 - 130		%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	98.0	70 - 130		%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	< 0.200	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
W	Sample container temperature is out of limit as specified at testcode

M	Manual Integration used to determine area response
PL	Permit Limit
RL	Reporting Detection Limit

Original

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 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH)	7.39	0.100	pH Units	1	8/6/2020 1:50:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-009

Collection Date: 8/3/2020 1:55:00 PM

Client Sample ID: S-9

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	0.0280	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	6.33	0.413		mg/Kg	1	8/5/2020 9:52:48 PM
Barium	127	2.07		mg/Kg	1	8/5/2020 9:52:48 PM
Cadmium	1.02	0.207		mg/Kg	1	8/5/2020 9:52:48 PM
Chromium	18.6	2.07		mg/Kg	1	8/5/2020 9:52:48 PM
Lead	41.0	1.03		mg/Kg	1	8/5/2020 9:52:48 PM
Selenium	1.01	0.413		mg/Kg	1	8/5/2020 9:52:48 PM
Silver	0.118	0.0413		mg/Kg	1	8/5/2020 9:52:48 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.100	0.100		mg/Kg	0.05	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.250	0.250		mg/Kg	0.05	8/5/2020 3:00:00 PM
Toluene	< 0.250	0.250		mg/Kg	0.05	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.750	0.750		mg/Kg	0.05	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	114	39.1 - 160		%Rec	0.05	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	98.3	17.8 - 149		%Rec	0.05	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 26.8	26.8		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	< 26.8	26.8		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 26.8	26.8		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	< 26.8	26.8		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	75.0	70 - 130		%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	87.0	70 - 130		%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	0.391	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008024

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH) 7.90 0.100 pH Units 1 8/6/2020 1:50:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-010

Collection Date: 8/3/2020 2:11:00 PM

Client Sample ID: S-10

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	0.0310	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	7.86	3.61		mg/Kg	1	8/5/2020 10:09:47 PM
Barium	139	1.81		mg/Kg	1	8/5/2020 10:09:47 PM
Cadmium	1.02	0.181		mg/Kg	1	8/5/2020 10:09:47 PM
Chromium	13.9	1.81		mg/Kg	1	8/5/2020 10:09:47 PM
Lead	66.5	0.903		mg/Kg	1	8/5/2020 10:09:47 PM
Selenium	0.413	0.361		mg/Kg	1	8/5/2020 10:09:47 PM
Silver	0.124	0.0361		mg/Kg	1	8/5/2020 10:09:47 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.120	0.120		mg/Kg	0.06	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.300	0.300		mg/Kg	0.06	8/5/2020 3:00:00 PM
Toluene	< 0.300	0.300		mg/Kg	0.06	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.900	0.900		mg/Kg	0.06	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	104	39.1 - 160		%Rec	0.06	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	94.1	17.8 - 149		%Rec	0.06	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 152	152		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	< 152	152		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 152	152		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	< 152	152		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	< 0.200	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008024

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH)	8.07	0.100	pH Units	1	8/6/2020 1:50:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-011

Collection Date: 8/3/2020 2:24:00 PM

Client Sample ID: S-11

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	4.44	4.08		mg/Kg	1	8/5/2020 10:21:09 PM
Barium	56.1	2.04		mg/Kg	1	8/5/2020 10:21:09 PM
Cadmium	0.469	0.204		mg/Kg	1	8/5/2020 10:21:09 PM
Chromium	8.47	2.04		mg/Kg	1	8/5/2020 10:21:09 PM
Lead	40.8	1.02		mg/Kg	1	8/5/2020 10:21:09 PM
Selenium	< 0.408	0.408		mg/Kg	1	8/5/2020 10:21:09 PM
Silver	< 0.0408	0.0408		mg/Kg	1	8/5/2020 10:21:09 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.152	0.152		mg/Kg	0.076	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.380	0.380		mg/Kg	0.076	8/5/2020 3:00:00 PM
Toluene	0.393	0.380		mg/Kg	0.076	8/5/2020 3:00:00 PM
Xylenes, Total	< 1.14	1.14		mg/Kg	0.076	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	151	39.1 - 160		%Rec	0.076	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	108	17.8 - 149		%Rec	0.076	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 135	135		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	< 135	135		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 135	135		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	217	135		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	0.358	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008024

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH)	8.00	0.100	pH Units	1	8/6/2020 1:50:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-012

Collection Date: 8/3/2020 2:32:00 PM

Client Sample ID: S-12

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	4.54	4.44		mg/Kg	1	8/5/2020 10:49:15 PM
Barium	107	2.22		mg/Kg	1	8/5/2020 10:49:15 PM
Cadmium	0.624	0.222		mg/Kg	1	8/5/2020 10:49:15 PM
Chromium	22.1	2.22		mg/Kg	1	8/5/2020 10:49:15 PM
Lead	68.0	1.11		mg/Kg	1	8/5/2020 10:49:15 PM
Selenium	< 0.444	0.444		mg/Kg	1	8/5/2020 10:49:15 PM
Silver	0.0497	0.0444		mg/Kg	1	8/5/2020 10:49:15 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.100	0.100		mg/Kg	0.05	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.250	0.250		mg/Kg	0.05	8/5/2020 3:00:00 PM
Toluene	< 0.250	0.250		mg/Kg	0.05	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.750	0.750		mg/Kg	0.05	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	103	39.1 - 160		%Rec	0.05	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	90.6	17.8 - 149		%Rec	0.05	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 144	144		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	< 144	144		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 144	144		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	< 144	144		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	0.407	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008024

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH) 7.28 0.100 pH Units 1 8/6/2020 1:50:00 PM

Qualifiers: H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-013

Collection Date: 8/3/2020 2:44:00 PM

Client Sample ID: S-13

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	0.0280	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	5.89	0.355		mg/Kg	1	8/5/2020 11:01:20 PM
Barium	125	1.78		mg/Kg	1	8/5/2020 11:01:20 PM
Cadmium	0.720	0.178		mg/Kg	1	8/5/2020 11:01:20 PM
Chromium	8.64	1.78		mg/Kg	1	8/5/2020 11:01:20 PM
Lead	31.6	0.888		mg/Kg	1	8/5/2020 11:01:20 PM
Selenium	0.521	0.355		mg/Kg	1	8/5/2020 11:01:20 PM
Silver	0.154	0.0355		mg/Kg	1	8/5/2020 11:01:20 PM

BTEX IN SOIL

SW8021B

Analyst: **BWD**

Benzene	< 0.106	0.106		mg/Kg	0.053	8/5/2020 3:00:00 PM
Ethylbenzene	< 0.265	0.265		mg/Kg	0.053	8/5/2020 3:00:00 PM
Toluene	< 0.265	0.265		mg/Kg	0.053	8/5/2020 3:00:00 PM
Xylenes, Total	< 0.795	0.795		mg/Kg	0.053	8/5/2020 3:00:00 PM
Surr: 4-Bromofluorobenzene	98.1	39.1 - 160		%Rec	0.053	8/5/2020 3:00:00 PM
Surr: Trifluorotoluene	87.2	17.8 - 149		%Rec	0.053	8/5/2020 3:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 147	147		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	< 147	147		mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 147	147		mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	< 147	147		mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	< 0.200	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008024

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH) 7.73 0.100 pH Units 1 8/6/2020 1:50:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-014

Collection Date: 8/3/2020 2:57:00 PM

Client Sample ID: R-1

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN WATER
 MERCURY IN WATER, TOTAL**

E245.1, 1994

Analyst: **JF**

Mercury	< 0.0000500	0.0000500		mg/L	1	8/7/2020 1:54:00 PM
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**RCRA METALS IN WATER
 METALS IN WATER BY ICP, TOTAL**

E200.7, 1994

SW3010A

Analyst: **KR**

Arsenic	< 0.00500	0.00500		mg/L	1	8/11/2020 4:54:51 PM
Barium	< 0.0100	0.0100		mg/L	1	8/11/2020 4:54:51 PM
Cadmium	< 0.00100	0.00100		mg/L	1	8/11/2020 4:54:51 PM
Chromium	< 0.0100	0.0100		mg/L	1	8/11/2020 4:54:51 PM
Lead	< 0.00500	0.00500		mg/L	1	8/11/2020 4:54:51 PM
Selenium	< 0.00500	0.00500		mg/L	1	8/11/2020 4:54:51 PM
Silver	< 0.00200	0.00200		mg/L	1	8/11/2020 4:54:51 PM

**BTEX IN WATER
 BTEX IN WATER**

SW8021B

Analyst: **BWD**

Benzene	< 0.00500	0.00500		mg/L	1	8/4/2020 3:16:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	8/4/2020 3:16:00 PM
Toluene	< 0.00500	0.00500		mg/L	1	8/4/2020 3:16:00 PM
Xylenes, Total	< 0.0150	0.0150		mg/L	1	8/4/2020 3:16:00 PM
Surr: 4-Bromofluorobenzene	105	47.4 - 179		%Rec	1	8/4/2020 3:16:00 PM
Surr: Trifluorotoluene	99.1	31.8 - 175		%Rec	1	8/4/2020 3:16:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 0.910	0.910		mg/L	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	< 0.910	0.910		mg/L	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 0.910	0.910		mg/L	1	8/12/2020 1:21:00 PM
Total TPH	< 0.910	0.910		mg/L	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	69.0	70 - 130	S	%Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	71.0	70 - 130		%Rec	1	8/12/2020 1:21:00 PM

FLUORIDE

4500 F-C, 2011

Analyst: **CW**

Fluoride	< 0.200	0.200		mg/L	1	8/10/2020 8:12:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Green Country Testing, Inc.
 6825 E 38th Street
 Tulsa, OK 74145
 TEL: 918-828-9977 FAX: 918-828-7756
 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-015

Collection Date: 8/3/2020 3:00:00 PM

Client Sample ID: Trip Blk TB-1

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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BTEX/GRO IN WATER

SW8021B

Analyst: **BWD**

BTEX IN WATER

Benzene	< 0.00500	0.00500		mg/L	1	8/4/2020 3:16:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	8/4/2020 3:16:00 PM
Toluene	< 0.00500	0.00500		mg/L	1	8/4/2020 3:16:00 PM
Xylenes, Total	< 0.0150	0.0150		mg/L	1	8/4/2020 3:16:00 PM
Surr: 4-Bromofluorobenzene	110	47.4 - 179		%Rec	1	8/4/2020 3:16:00 PM
Surr: Trifluorotoluene	95.8	31.8 - 175		%Rec	1	8/4/2020 3:16:00 PM

BTEX/GRO IN WATER

OKGRO

Analyst: **BWD**

GASOLINE RANGE ORGANICS IN WATER

TPH (Gasoline)	< 0.0500	0.0500		mg/L	1	8/4/2020 3:16:00 PM
Surr: 4-Bromofluorobenzene	109	33.1 - 186		%Rec	1	8/4/2020 3:16:00 PM
Surr: Trifluorotoluene	101	29.7 - 172		%Rec	1	8/4/2020 3:16:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

Lab ID: 2008024-016

Collection Date: 8/3/2020 2:50:00 PM

Client Sample ID: SC-1

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/5/2020 3:19:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	4.42	3.70		mg/Kg	1	8/5/2020 11:18:34 PM
Barium	144	1.85		mg/Kg	1	8/5/2020 11:18:34 PM
Cadmium	0.609	0.185		mg/Kg	1	8/5/2020 11:18:34 PM
Chromium	5.91	1.85		mg/Kg	1	8/5/2020 11:18:34 PM
Lead	8.43	0.926		mg/Kg	1	8/5/2020 11:18:34 PM
Selenium	0.500	0.370		mg/Kg	1	8/5/2020 11:18:34 PM
Silver	0.0933	0.0370		mg/Kg	1	8/5/2020 11:18:34 PM

VOLATILE ORGANICS IN SOIL

SW8260C

SW5035A

Analyst: **BWD**

1,1,1,2-Tetrachloroethane	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,1-Trichloroethane	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,2,2-Tetrachloroethane	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,2-Trichloroethane	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloroethane	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloroethene	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloropropene	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,2,3-Trichloropropane	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,2,4-Trimethylbenzene	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dibromoethane	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichlorobenzene	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichloroethane	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichloropropane	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,3,5-Trimethylbenzene	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,3-Dichlorobenzene	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,3-Dichloropropane	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
1,4-Dichlorobenzene	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
2,2-Dichloropropane	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM
2-Butanone	< 0.0180	0.0180		mg/Kg	1	8/11/2020 9:00:00 AM
2-Chloroethyl vinyl ether	< 0.00449	0.00449		mg/Kg	1	8/11/2020 9:00:00 AM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

Original

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 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

VOLATILE ORGANICS IN SOIL

SW8260C

SW5035A

Analyst: BWD

2-Chlorotoluene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
2-Hexanone	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
4-Chlorotoluene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
4-Methyl-2-pentanone	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Acetone	0.0815	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Acetonitrile	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Acrolein	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Acrylonitrile	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Allyl chloride	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Benzene	0.00503	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Bromobenzene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Bromochloromethane	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Bromodichloromethane	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Bromoform	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Bromomethane	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Carbon disulfide	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Carbon tetrachloride	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Chlorobenzene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Chlorodibromomethane	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroethane	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroform	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Chloromethane	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroprene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,2-Dichloroethene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,3-Dichloropropene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,4-Dichloro-2-butene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Dibromomethane	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Dichlorodifluoromethane	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Ethyl methacrylate	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Ethylbenzene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Isopropylbenzene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
m,p-Xylene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Methacrylonitrile	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Methyl methacrylate	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Methyl tert-butyl ether	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Methylene chloride	0.00610	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
n-Butylbenzene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
n-Propylbenzene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
o-Xylene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

Original



Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

VOLATILE ORGANICS IN SOIL

SW8260C SW5035A Analyst: BWD

Compound	Result	Reference	Unit	Count	Date/Time
Propionitrile	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
sec-Butylbenzene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Styrene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
tert-Butylbenzene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Tetrachloroethene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Toluene	0.0118	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,2-Dichloroethene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,3-Dichloropropene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,4-Dichloro-2-butene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Trichloroethene	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Trichlorofluoromethane	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Vinyl acetate	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Vinyl chloride	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Xylenes, Total	< 0.00449	0.00449	mg/Kg	1	8/11/2020 9:00:00 AM
Surr: 4-Bromofluorobenzene	89.8	74.3 - 104	%Rec	1	8/11/2020 9:00:00 AM
Surr: Dibromofluoromethane	118	75.9 - 134	%Rec	1	8/11/2020 9:00:00 AM
Surr: Toluene-d8	97.0	71.9 - 115	%Rec	1	8/11/2020 9:00:00 AM

EPA 8270D IN SOILS

SW8270D SW3550C Analyst: KP

Compound	Result	Reference	Unit	Count	Date/Time
1,2,4,5-Tetrachlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
1,2,4-Trichlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
1,2-Dichlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
1,2-Diphenylhydrazine	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
1,3,5-Trinitrobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
1,3-Dichlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
1,3-Dinitrobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
1,4-Dichlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
1-Methylnaphthalene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
1-Naphthylamine	< 0.529	0.529	mg/Kg	1	8/16/2020 4:46:00 PM
1-Nitroso-piperidine	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2,2'-oxybis(1-Chloropropane)	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2,3,4,6-Tetrachlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2,3-Dichloroaniline	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2,4,5-Trichlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2,4,6-Trichlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2,4-Dichlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2,4-Dimethylphenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2,4-Dinitrophenol	< 0.579	0.579	mg/Kg	1	8/16/2020 4:46:00 PM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

Green Country Testing, Inc.
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 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

EPA 8270D IN SOILS

SW8270D

SW3550C

Analyst: **KP**

2,4-Dinitrotoluene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2,6-Dichlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2,6-Dinitrotoluene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2-Acetylaminofluorene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2-Chloronaphthalene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2-Chlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2-Methylnaphthalene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2-Methylphenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
2-Naphthylamine	< 0.519	0.519	mg/Kg	1	8/16/2020 4:46:00 PM
2-Nitroaniline	< 0.359	0.359	mg/Kg	1	8/16/2020 4:46:00 PM
2-Nitrophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
3,3'-Dichlorobenzidine	< 0.439	0.439	mg/Kg	1	8/16/2020 4:46:00 PM
3-Methylcholanthrene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
3-Nitroaniline	< 0.389	0.389	mg/Kg	1	8/16/2020 4:46:00 PM
4,6-Dinitro-2-methylphenol	< 0.339	0.339	mg/Kg	1	8/16/2020 4:46:00 PM
4-Aminobiphenyl	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
4-Bromophenyl phenyl ether	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
4-Chloro-3-methylphenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
4-Chloroaniline	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
4-Chlorophenyl phenyl ether	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
4-Methylphenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
4-Nitroaniline	< 0.449	0.449	mg/Kg	1	8/16/2020 4:46:00 PM
4-Nitrophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
5-Nitro-o-toluidine	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
7,12-Dimethylbenz(a)anthracene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Acenaphthene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Acenaphthylene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Acetophenone	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
alpha-Terpineol	< 0.399	0.399	mg/Kg	1	8/16/2020 4:46:00 PM
Aniline	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Anthracene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Benz(a)anthracene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Benzidine	< 0.379	0.379	mg/Kg	1	8/16/2020 4:46:00 PM
Benzo(a)pyrene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Benzo(b)fluoranthene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Benzo(g,h,i)perylene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Benzo(k)fluoranthene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Benzyl alcohol	< 0.489	0.489	mg/Kg	1	8/16/2020 4:46:00 PM
Biphenyl	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM

Qualifiers: H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

Green Country Testing, Inc.
 6825 E 38th Street
 Tulsa, OK 74145
 TEL: 918-828-9977 FAX: 918-828-7756
 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

EPA 8270D IN SOILS

SW8270D

SW3550C

Analyst: KP

Compound	SW8270D	SW3550C	Unit	Count	Date/Time
Bis(2-chloroethoxy)methane	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Bis(2-chloroethyl) ether	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Bis(2-ethylhexyl) phthalate	< 0.429	0.429	mg/Kg	1	8/16/2020 4:46:00 PM
Butyl benzyl phthalate	< 0.399	0.399	mg/Kg	1	8/16/2020 4:46:00 PM
Carbazole	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Chrysene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Dibenz(a,h)anthracene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Dibenzofuran	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Diethyl phthalate	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Dimethyl phthalate	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Di-n-butyl phthalate	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Di-n-octyl phthalate	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Diphenylamine	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Fluoranthene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Fluorene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Hexachlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Hexachlorobutadiene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Hexachlorocyclopentadiene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Hexachloroethane	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Hexachloropropene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Indeno(1,2,3-cd)pyrene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Isophorone	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Isosafrole	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Naphthalene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
n-Decane	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Nitrobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
N-Nitrosodiethylamine	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
N-Nitrosodimethylamine	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
N-Nitrosodi-n-butylamine	< 0.389	0.389	mg/Kg	1	8/16/2020 4:46:00 PM
N-Nitrosodi-n-propylamine	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
N-Nitrosodiphenylamine	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
n-Octadecane	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
o-Toluidine	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Pentachlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Pentachloroethane	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Pentachloronitrobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Pentachlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Phenacetin	< 0.449	0.449	mg/Kg	1	8/16/2020 4:46:00 PM
Phenanthrene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

Original

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Analytical Report

(continuous)

WO#: 2008024

Date Reported: 8/21/2020

CLIENT: A & M Engineering

Lab Order: 2008024

Project: 2320-003

EPA 8270D IN SOILS

SW8270D

SW3550C

Analyst: KP

Phenol	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Pyrene	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Pyridine	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Safrole	< 0.329	0.329	mg/Kg	1	8/16/2020 4:46:00 PM
Surr: 2,4,6-Tribromophenol	49.0	15.7 - 105	%Rec	1	8/16/2020 4:46:00 PM
Surr: 2-Fluorobiphenyl	39.9	7.83 - 102	m %Rec	1	8/16/2020 4:46:00 PM
Surr: 2-Fluorophenol	43.9	5 - 92.3	%Rec	1	8/16/2020 4:46:00 PM
Surr: Nitrobenzene-d5	47.8	5.31 - 91.7	%Rec	1	8/16/2020 4:46:00 PM
Surr: Phenol-d5	46.3	5.51 - 97.7	%Rec	1	8/16/2020 4:46:00 PM
Surr: Terphenyl-d14	39.3	28.8 - 128	%Rec	1	8/16/2020 4:46:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: 8727

Hydrocarbons C12 - C28	< 138	138	mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C28 - C35	< 138	138	mg/kg	1	8/12/2020 1:21:00 PM
Hydrocarbons C6 - C12	< 138	138	mg/kg	1	8/12/2020 1:21:00 PM
Total TPH	< 138	138	mg/kg	1	8/12/2020 1:21:00 PM
Surr: 1-Chlorooctane	0	70 - 130	S %Rec	1	8/12/2020 1:21:00 PM
Surr: p-Terphenyl	0	70 - 130	S %Rec	1	8/12/2020 1:21:00 PM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: 4500 F-C, 2011

Sample ID: MB-R44176	SampType: MBLK	TestCode: FLUOR_S	Units: mg/Kg	Prep Date:	RunNo: 44176						
Client ID: PBS	Batch ID: R44176	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478158						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	< 0.200	0.200									

Sample ID: LCS-R44176	SampType: LCS	TestCode: FLUOR_S	Units: mg/Kg	Prep Date:	RunNo: 44176						
Client ID: LCSS	Batch ID: R44176	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478159						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.95	0.200	2.000	0	97.5	80	120				

Sample ID: 2008024-001AMS	SampType: MS	TestCode: FLUOR_S	Units: mg/Kg	Prep Date:	RunNo: 44176						
Client ID: S-1	Batch ID: R44176	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478161						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	4.97	0.200	5.000	0	99.4	94.3	106				

Sample ID: 2008024-001AMSD	SampType: MSD	TestCode: FLUOR_S	Units: mg/Kg	Prep Date:	RunNo: 44176						
Client ID: S-1	Batch ID: R44176	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478162						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	5.40	0.200	5.000	0	108	94.3	106	4.970	8.29	5.08	RS

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: 4500 F-C, 2011

Sample ID: MB-R44173	SampType: MBLK	TestCode: FLUOR	Units: mg/L	Prep Date:	RunNo: 44173						
Client ID: PBW	Batch ID: R44173	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478082						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	< 0.200	0.200									

Sample ID: LCS-R44173	SampType: LCS	TestCode: FLUOR	Units: mg/L	Prep Date:	RunNo: 44173						
Client ID: LCSW	Batch ID: R44173	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478086						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.99	0.200	2.000	0	99.5	80	120				

Sample ID: 2008024-014DMS	SampType: MS	TestCode: FLUOR	Units: mg/L	Prep Date:	RunNo: 44173						
Client ID: R-1	Batch ID: R44173	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478093						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	5.55	0.200	5.000	0	111	81.1	126				

Sample ID: 2008024-014DMSD	SampType: MSD	TestCode: FLUOR	Units: mg/L	Prep Date:	RunNo: 44173						
Client ID: R-1	Batch ID: R44173	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478095						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	5.42	0.200	5.000	0	108	81.1	126	5.550	2.37	13	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: E200.7, 1994

Sample ID: MB-12320	SampType: MBLK	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/5/2020	RunNo: 44248						
Client ID: PBW	Batch ID: 12320	TestNo: E200.7, 1994	SW3010A	Analysis Date: 8/11/2020	SeqNo: 478729						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 0.00500	0.00500									
Barium	< 0.0100	0.0100									
Cadmium	< 0.00100	0.00100									
Chromium	< 0.0100	0.0100									
Lead	< 0.00500	0.00500									
Selenium	< 0.00500	0.00500									
Silver	< 0.00200	0.00200									

Sample ID: LCS-12320	SampType: LCS	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/5/2020	RunNo: 44248						
Client ID: LCSW	Batch ID: 12320	TestNo: E200.7, 1994	SW3010A	Analysis Date: 8/11/2020	SeqNo: 478730						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.94	0.00500	2.000	0	96.9	85	115				
Barium	2.03	0.0100	2.000	0	101	85	115				
Cadmium	1.99	0.00100	2.000	0	99.7	85	115				
Chromium	2.00	0.0100	2.000	0	100	85	115				
Lead	2.04	0.00500	2.000	0	102	85	115				
Selenium	1.90	0.00500	2.000	0	95.0	85	115				
Silver	0.979	0.00200	1.000	0	97.9	85	115				

Qualifiers: H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits
 M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: E200.7, 1994

Sample ID: 2008010-001AMS	SampType: MS	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/5/2020	RunNo: 44248						
Client ID: BatchQC	Batch ID: 12320	TestNo: E200.7, 1994	SW3010A	Analysis Date: 8/11/2020	SeqNo: 478732						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.95	0.00500	2.000	0	97.5	92.7	105				
Barium	2.04	0.0100	2.000	0.04839	99.7	93.6	109				
Cadmium	1.98	0.00100	2.000	0	98.8	94.5	105				
Chromium	1.98	0.0100	2.000	0	99.1	93.1	107				
Lead	3.35	0.00500	2.000	1.385	98.2	92.5	107				
Selenium	1.90	0.00500	2.000	0	95.2	86.5	109				
Silver	0.963	0.00200	1.000	0	96.3	91.3	106				

Sample ID: 2008010-001AMSD	SampType: MSD	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/5/2020	RunNo: 44248						
Client ID: BatchQC	Batch ID: 12320	TestNo: E200.7, 1994	SW3010A	Analysis Date: 8/11/2020	SeqNo: 478733						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.95	0.00500	2.000	0	97.4	92.7	105	1.950	0.103	1.87	
Barium	2.03	0.0100	2.000	0.04839	98.9	93.6	109	2.042	0.787	2.9	
Cadmium	1.97	0.00100	2.000	0	98.4	94.5	105	1.976	0.355	1.89	
Chromium	1.97	0.0100	2.000	0	98.3	93.1	107	1.981	0.760	3.89	
Lead	3.35	0.00500	2.000	1.385	98.1	92.5	107	3.348	0.0299	3.09	
Selenium	1.90	0.00500	2.000	0	94.9	86.5	109	1.903	0.263	2.19	
Silver	0.951	0.00200	1.000	0	95.1	91.3	106	0.9627	1.23	3.96	

Qualifiers:

- | | | | | | |
|----|--|---|---|----|-------------------------------------|
| H | Holding times for preparation or analysis exceeded | M | Manual Integration used to determine area response | ND | Not Detected at the Reporting Limit |
| PL | Permit Limit | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | W | Sample container temperature is out of limit as specified at testcode | | |



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: E245.1, 1994

Sample ID: MB-R44171	SampType: MBLK	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171
Client ID: PBW	Batch ID: R44171	TestNo: E245.1, 1994		Analysis Date: 8/7/2020	SeqNo: 477938
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	< 0.0000500	0.0000500			

Sample ID: LCS-R44171	SampType: LCS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171
Client ID: LCSW	Batch ID: R44171	TestNo: E245.1, 1994		Analysis Date: 8/7/2020	SeqNo: 477938
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00100	0.0000500	0.001000	0	100 85 115

Sample ID: 2008024-014CMS	SampType: MS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171
Client ID: R-1	Batch ID: R44171	TestNo: E245.1, 1994		Analysis Date: 8/7/2020	SeqNo: 477941
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00106	0.0000500	0.001000	0	106 77.8 119

Sample ID: 2008024-014CMSD	SampType: MSD	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171
Client ID: R-1	Batch ID: R44171	TestNo: E245.1, 1994		Analysis Date: 8/7/2020	SeqNo: 477942
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00105	0.0000500	0.001000	0	105 77.8 119 0.001056 0.380 1.89

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024
 21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: E245.1, 1994

Sample ID: 2008070-001BMS	SampType: MS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171						
Client ID: BatchQC	Batch ID: R44171	TestNo: E245.1, 1994	Analysis Date: 8/7/2020	SeqNo: 477949							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00105	0.0000500	0.001000	0	105	77.8	119				

Sample ID: 2008070-001BMSD	SampType: MSD	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171						
Client ID: BatchQC	Batch ID: R44171	TestNo: E245.1, 1994	Analysis Date: 8/7/2020	SeqNo: 477950							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00105	0.0000500	0.001000	0	105	77.8	119	0.001052	0.190	1.89	

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: OKGRO

Sample ID: MB-R44083	SampType: MBLK	TestCode: TPHGRO_W	Units: mg/L	Prep Date:	RunNo: 44083						
Client ID: PBW	Batch ID: R44083	TestNo: OKGRO		Analysis Date: 8/4/2020	SeqNo: 476899						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline)	< 0.0500	0.0500									
Surr: 4-Bromofluorobenzene	53.6		50.00		107	33.1	186				
Surr: Trifluorotoluene	54.2		50.00		108	29.7	172				

Sample ID: LCS-R44083	SampType: LCS	TestCode: TPHGRO_W	Units: mg/L	Prep Date:	RunNo: 44083						
Client ID: LCSW	Batch ID: R44083	TestNo: OKGRO		Analysis Date: 8/4/2020	SeqNo: 476900						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline)	0.898	0.0500	1.00	0	89.8	80	120				
Surr: 4-Bromofluorobenzene	104		100.0		104	33.1	186				
Surr: Trifluorotoluene	102		100.0		102	29.7	172				

Sample ID: 2007647-031AMS	SampType: MS	TestCode: TPHGRO_W	Units: mg/L	Prep Date:	RunNo: 44083						
Client ID: BatchQC	Batch ID: R44083	TestNo: OKGRO		Analysis Date: 8/4/2020	SeqNo: 476902						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline)	0.848	0.0500	1.00	0.0548	79.3	80	120				S
Surr: 4-Bromofluorobenzene	98.9		100.0		98.9	33.1	186				
Surr: Trifluorotoluene	99.4		100.0		99.4	29.7	172				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024
 21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: OKGRO

Sample ID: 2007647-031AMSD	SampType: MSD	TestCode: TPHGRO_W	Units: mg/L	Prep Date:	RunNo: 44083						
Client ID: BatchQC	Batch ID: R44083	TestNo: OKGRO	Analysis Date: 8/4/2020	SeqNo: 476903							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline)	0.904	0.0500	1.00	0.0548	85.0	80	120	0.848	6.40	11.9	
Surr: 4-Bromofluorobenzene	106		100.0		106	33.1	186		0	0	
Surr: Trifluorotoluene	105		100.0		105	29.7	172		0	0	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW6010B

Sample ID: MB-12309	SampType: MBLK	TestCode: MET_S_ICP	Units: mg/Kg	Prep Date: 8/4/2020	RunNo: 44117						
Client ID: PBS	Batch ID: 12309	TestNo: SW6010B	3050B	Analysis Date: 8/5/2020	SeqNo: 477322						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 0.499	0.499									
Barium	< 0.249	0.249									
Cadmium	< 0.249	0.249									
Chromium	< 0.249	0.249									
Lead	< 0.125	0.125									
Selenium	< 0.499	0.499									
Silver	< 0.0499	0.0499									

Sample ID: LCS-12309	SampType: LCS	TestCode: MET_S_ICP	Units: mg/Kg	Prep Date: 8/4/2020	RunNo: 44117						
Client ID: LCSS	Batch ID: 12309	TestNo: SW6010B	3050B	Analysis Date: 8/5/2020	SeqNo: 477324						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	49.2	0.499	49.85	0	98.7	80	120				
Barium	50.6	0.249	49.85	0	101	80	120				
Cadmium	50.8	0.249	49.85	0	102	80	120				
Chromium	51.0	0.249	49.85	0	102	80	120				
Lead	52.5	0.125	49.85	0	105	80	120				
Selenium	48.1	0.499	49.85	0	96.5	80	120				
Silver	25.2	0.0499	24.93	0	101	80	120				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW6010B

Sample ID: 2007645-001AMS	SampType: MS	TestCode: MET_S_ICP	Units: mg/Kg	Prep Date: 8/4/2020	RunNo: 44117						
Client ID: BatchQC	Batch ID: 12309	TestNo: SW6010B	3050B	Analysis Date: 8/5/2020	SeqNo: 477331						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	43.6	0.494	49.38	3.904	80.4	42.8	118				
Barium	129	0.247	49.38	55.23	149	3.77	178				
Cadmium	43.6	0.247	49.38	0	88.3	57.5	113				
Chromium	57.6	0.247	49.38	16.29	83.6	45.5	122				
Lead	56.4	0.123	49.38	14.57	84.8	13.4	135				
Selenium	38.5	0.494	49.38	0	78.0	44	114				
Silver	22.1	0.0494	24.69	0	89.6	62.7	112				

Sample ID: 2007645-001AMSD	SampType: MSD	TestCode: MET_S_ICP	Units: mg/Kg	Prep Date: 8/4/2020	RunNo: 44117						
Client ID: BatchQC	Batch ID: 12309	TestNo: SW6010B	3050B	Analysis Date: 8/5/2020	SeqNo: 477332						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	43.6	0.494	49.38	3.904	80.3	42.8	118	43.60	0.0566	7.54	
Barium	144	0.247	49.38	55.23	179	3.77	178	128.9	10.7	20.8	S
Cadmium	43.6	0.247	49.38	0	88.3	57.5	113	43.60	0.0566	6.24	
Chromium	60.4	0.247	49.38	16.29	89.3	45.5	122	57.56	4.81	7.06	
Lead	57.4	0.123	49.38	14.57	86.7	13.4	135	56.44	1.65	9.19	
Selenium	38.1	0.494	49.38	0	77.2	44	114	38.49	1.03	6.71	
Silver	22.0	0.0494	24.69	0	89.1	62.7	112	22.13	0.593	6.22	

Qualifiers: H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits
 M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW7471B

Sample ID: MB-R44119	SampType: MBLK	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44119						
Client ID: PBS	Batch ID: R44119	TestNo: SW7471B		Analysis Date: 8/5/2020	SeqNo: 477390						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	< 0.0250	0.0250									

Sample ID: LCS-R44119	SampType: LCS	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44119						
Client ID: LCSS	Batch ID: R44119	TestNo: SW7471B		Analysis Date: 8/5/2020	SeqNo: 477391						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.229	0.0250	0.2273	0	101	80	120				

Sample ID: 2007612-001AMS	SampType: MS	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44119						
Client ID: BatchQC	Batch ID: R44119	TestNo: SW7471B		Analysis Date: 8/5/2020	SeqNo: 477393						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.264	0.0250	0.2500	0	106	71.4	137				

Sample ID: 2007612-001AMSD	SampType: MSD	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44119						
Client ID: BatchQC	Batch ID: R44119	TestNo: SW7471B		Analysis Date: 8/5/2020	SeqNo: 477394						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.266	0.0250	0.2500	0	106	71.4	137	0.2645	0.490	6.2	

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024
 21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW7471B

Sample ID: 2008024-001BMS	SampType: MS	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44119						
Client ID: S-1	Batch ID: R44119	TestNo: SW7471B	Analysis Date: 8/5/2020	SeqNo: 477396							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.274	0.0250	0.2381	0.02500	105	71.4	137				

Sample ID: 2008024-001BMSD	SampType: MSD	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44119						
Client ID: S-1	Batch ID: R44119	TestNo: SW7471B	Analysis Date: 8/5/2020	SeqNo: 477397							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.276	0.0250	0.2381	0.02500	105	71.4	137	0.2745	0.545	6.2	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8021B

Sample ID: MB-R44083	SampType: MBLK	TestCode: BTEX_W	Units: mg/L	Prep Date:	RunNo: 44083						
Client ID: PBW	Batch ID: R44083	TestNo: SW8021B		Analysis Date: 8/4/2020	SeqNo: 476888						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 0.00500	0.00500									
Ethylbenzene	< 0.00500	0.00500									
Toluene	< 0.00500	0.00500									
Xylenes, Total	< 0.0150	0.0150									
Surr: 4-Bromofluorobenzene	54.6		50.00		109	47.4	179				
Surr: Trifluorotoluene	51.4		50.00		103	31.8	175				

Sample ID: LCS-R44083	SampType: LCS	TestCode: BTEX_W	Units: mg/L	Prep Date:	RunNo: 44083						
Client ID: LCSW	Batch ID: R44083	TestNo: SW8021B		Analysis Date: 8/4/2020	SeqNo: 476889						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0998	0.00500	0.100	0	99.8	80	120				
Ethylbenzene	0.102	0.00500	0.100	0	102	80	120				
Toluene	0.0981	0.00500	0.100	0	98.1	80	120				
Xylenes, Total	0.316	0.00500	0.300	0	105	80	120				
Surr: 4-Bromofluorobenzene	110		100.0		110	47.4	179				
Surr: Trifluorotoluene	102		100.0		102	31.8	175				

Sample ID: 2007647-031AMS	SampType: MS	TestCode: BTEX_W	Units: mg/L	Prep Date:	RunNo: 44083						
Client ID: BatchQC	Batch ID: R44083	TestNo: SW8021B		Analysis Date: 8/4/2020	SeqNo: 476891						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.108	0.00500	0.100	0.0125	95.1	62.5	134				

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8021B

Sample ID: 2007647-031AMS	SampType: MS	TestCode: BTEX_W	Units: mg/L	Prep Date:	RunNo: 44083						
Client ID: BatchQC	Batch ID: R44083	TestNo: SW8021B		Analysis Date: 8/4/2020	SeqNo: 476891						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	0.0987	0.00500	0.100	0	98.7	79.3	125				
Toluene	0.0928	0.00500	0.100	0	92.8	65.1	130				
Xylenes, Total	0.301	0.00500	0.300	0	100	66.6	140				
Surr: 4-Bromofluorobenzene	104		100.0		104	47.4	179				
Surr: Trifluorotoluene	98.1		100.0		98.1	31.8	175				

Sample ID: 2007647-031AMSD	SampType: MSD	TestCode: BTEX_W	Units: mg/L	Prep Date:	RunNo: 44083						
Client ID: BatchQC	Batch ID: R44083	TestNo: SW8021B		Analysis Date: 8/4/2020	SeqNo: 476892						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.114	0.00500	0.100	0.0125	102	62.5	134	0.108	5.78	14.9	
Ethylbenzene	0.104	0.00500	0.100	0	104	79.3	125	0.0987	5.24	14.4	
Toluene	0.0985	0.00500	0.100	0	98.5	65.1	130	0.0928	5.99	15.4	
Xylenes, Total	0.319	0.00500	0.300	0	106	66.6	140	0.301	5.84	12.7	
Surr: 4-Bromofluorobenzene	112		100.0		112	47.4	179		0	0	
Surr: Trifluorotoluene	104		100.0		104	31.8	175		0	0	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8021B

Sample ID: MB-R44114	SampType: MBLK	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 44114						
Client ID: PBS	Batch ID: R44114	TestNo: SW8021B		Analysis Date: 8/5/2020	SeqNo: 477288						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 2.00	2.00									
Ethylbenzene	< 5.00	5.00									
Toluene	< 5.00	5.00									
Xylenes, Total	< 15.0	15.0									
Surr: 4-Bromofluorobenzene	52.0		50.00		104	39.1	160				
Surr: Trifluorotoluene	47.4		50.00		94.7	17.8	149				

Sample ID: LCS-R44114	SampType: LCS	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 44114						
Client ID: LCSS	Batch ID: R44114	TestNo: SW8021B		Analysis Date: 8/5/2020	SeqNo: 477289						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	102	2.00	100.0	0	102	80	120				
Ethylbenzene	106	5.00	100.0	0	106	80	120				
Toluene	102	5.00	100.0	0	102	80	120				
Xylenes, Total	325	15.0	300.0	0	108	80	120				
Surr: 4-Bromofluorobenzene	112		100.0		112	39.1	160				
Surr: Trifluorotoluene	105		100.0		105	17.8	149				

Sample ID: 2008024-001CMS	SampType: MS	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 44114						
Client ID: S-1	Batch ID: R44114	TestNo: SW8021B		Analysis Date: 8/5/2020	SeqNo: 477291						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	4.05	0.0900	4.500	0	90.1	70.2	129				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8021B

Sample ID: 2008024-001CMS	SampType: MS	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 44114						
Client ID: S-1	Batch ID: R44114	TestNo: SW8021B		Analysis Date: 8/5/2020	SeqNo: 477291						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	4.17	0.225	4.500	0	92.7	43.8	152				
Toluene	3.96	0.225	4.500	0	88.0	52.7	139				
Xylenes, Total	12.7	0.675	13.50	0	94.1	28.5	170				
Surr: 4-Bromofluorobenzene	4.37		4.500		97.2	39.1	160				
Surr: Trifluorotoluene	4.37		4.500		97.2	17.8	149				

Sample ID: 2008024-001CMSD	SampType: MSD	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 44114						
Client ID: S-1	Batch ID: R44114	TestNo: SW8021B		Analysis Date: 8/5/2020	SeqNo: 477292						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	4.15	0.0900	4.500	0	92.2	70.2	129	4.054	2.36	20.1	
Ethylbenzene	4.28	0.225	4.500	0	95.0	43.8	152	4.172	2.49	14.6	
Toluene	4.08	0.225	4.500	0	90.7	52.7	139	3.960	2.99	18.3	
Xylenes, Total	13.0	0.675	13.50	0	96.4	28.5	170	12.70	2.49	12.8	
Surr: 4-Bromofluorobenzene	4.50		4.500		100	39.1	160		0	0	
Surr: Trifluorotoluene	4.45		4.500		99.0	17.8	149		0	0	

Qualifiers: H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: MB-12351	SampType: MBLK	TestCode: 8260_s	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: PBS	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478636						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	< 0.00491	0.00491									
1,1,1-Trichloroethane	< 0.00491	0.00491									
1,1,2,2-Tetrachloroethane	< 0.00491	0.00491									
1,1,2-Trichloroethane	< 0.00491	0.00491									
1,1-Dichloroethane	< 0.00491	0.00491									
1,1-Dichloroethene	< 0.00491	0.00491									
1,1-Dichloropropene	< 0.00491	0.00491									
1,2,3-Trichloropropane	< 0.00491	0.00491									
1,2,4-Trimethylbenzene	< 0.00491	0.00491									
1,2-Dibromoethane	< 0.00491	0.00491									
1,2-Dichlorobenzene	< 0.00491	0.00491									
1,2-Dichloroethane	< 0.00491	0.00491									
1,2-Dichloropropane	< 0.00491	0.00491									
1,3,5-Trimethylbenzene	< 0.00491	0.00491									
1,3-Dichlorobenzene	< 0.00491	0.00491									
1,3-Dichloropropane	< 0.00491	0.00491									
1,4-Dichlorobenzene	< 0.00491	0.00491									
2,2-Dichloropropane	< 0.00491	0.00491									
2-Butanone	< 0.0196	0.0196									
2-Chloroethyl vinyl ether	< 0.00491	0.00491									
2-Chlorotoluene	< 0.00491	0.00491									
2-Hexanone	< 0.00491	0.00491									
4-Chlorotoluene	< 0.00491	0.00491									
4-Methyl-2-pentanone	< 0.00491	0.00491									
Acetone	< 0.00491	0.00491									
Acetonitrile	< 0.00491	0.00491									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: MB-12351	SampType: MBLK	TestCode: 8260_s	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: PBS	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478636						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acrolein	< 0.00491	0.00491									
Acrylonitrile	< 0.00491	0.00491									
Allyl chloride	< 0.00491	0.00491									
Benzene	< 0.00491	0.00491									
Bromobenzene	< 0.00491	0.00491									
Bromochloromethane	< 0.00491	0.00491									
Bromodichloromethane	< 0.00491	0.00491									
Bromoform	< 0.00491	0.00491									
Bromomethane	< 0.00491	0.00491									
Carbon disulfide	< 0.00491	0.00491									
Carbon tetrachloride	< 0.00491	0.00491									
Chlorobenzene	< 0.00491	0.00491									
Chlorodibromomethane	< 0.00491	0.00491									
Chloroethane	< 0.00491	0.00491									
Chloroform	< 0.00491	0.00491									
Chloromethane	< 0.00491	0.00491									
Chloroprene	< 0.00491	0.00491									
cis-1,2-Dichloroethene	< 0.00491	0.00491									
cis-1,3-Dichloropropene	< 0.00491	0.00491									
cis-1,4-Dichloro-2-butene	< 0.00491	0.00491									
Dibromomethane	< 0.00491	0.00491									
Dichlorodifluoromethane	< 0.00491	0.00491									
Ethyl methacrylate	< 0.00491	0.00491									
Ethylbenzene	< 0.00491	0.00491									
Isopropylbenzene	< 0.00491	0.00491									
m,p-Xylene	< 0.00491	0.00491									

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: MB-12351	SampType: MBLK	TestCode: 8260_s	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: PBS	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478636						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methacrylonitrile	< 0.00491	0.00491									
Methyl methacrylate	< 0.00491	0.00491									
Methyl tert-butyl ether	< 0.00491	0.00491									
Methylene chloride	< 0.00491	0.00491									
n-Butylbenzene	< 0.00491	0.00491									
n-Propylbenzene	< 0.00491	0.00491									
o-Xylene	< 0.00491	0.00491									
Propionitrile	< 0.00491	0.00491									
sec-Butylbenzene	< 0.00491	0.00491									
Styrene	< 0.00491	0.00491									
tert-Butylbenzene	< 0.00491	0.00491									
Tetrachloroethene	< 0.00491	0.00491									
Toluene	< 0.00491	0.00491									
trans-1,2-Dichloroethene	< 0.00491	0.00491									
trans-1,3-Dichloropropene	< 0.00491	0.00491									
trans-1,4-Dichloro-2-butene	< 0.00491	0.00491									
Trichloroethene	< 0.00491	0.00491									
Trichlorofluoromethane	< 0.00491	0.00491									
Vinyl acetate	< 0.00491	0.00491									
Vinyl chloride	< 0.00491	0.00491									
Xylenes, Total	< 0.00491	0.00491									
Surr: 4-Bromofluorobenzene	46.6		49.12		94.8	74.3	104				
Surr: Dibromofluoromethane	46.6		49.12		94.9	75.9	134				
Surr: Toluene-d8	51.0		49.12		104	71.9	115				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: LCS-12351	SampType: LCS	TestCode: 8260_s	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: LCSS	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478637						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.106	0.00501	0.100	0	106	80	120				
Benzene	0.104	0.00501	0.100	0	104	80	120				
Chlorobenzene	0.0992	0.00501	0.100	0	99.0	80	120				
Toluene	0.104	0.00501	0.100	0	104	80	120				
Trichloroethene	0.0991	0.00501	0.100	0	98.9	80	120				
Surr: 4-Bromofluorobenzene	48.9		50.10		97.6	74.3	104				
Surr: Dibromofluoromethane	51.0		50.10		102	75.9	134				
Surr: Toluene-d8	49.5		50.10		98.9	71.9	115				

Sample ID: 2008024-016DMS	SampType: MS	TestCode: 8260_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: SC-1	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478639						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.101	0.00663	0.133	0	76.4	70.4	125				
Benzene	0.0975	0.00663	0.133	0.00503	69.7	54.7	131				
Chlorobenzene	0.0736	0.00663	0.133	0	55.5	62.5	129				S
Toluene	0.0875	0.00663	0.133	0.0118	57.1	61.2	131				S
Trichloroethene	0.0829	0.00663	0.133	0	62.5	43.6	99				
Surr: 4-Bromofluorobenzene	65.2		66.31		98.4	74.3	104				
Surr: Dibromofluoromethane	73.9		66.31		111	75.9	134				
Surr: Toluene-d8	67.0		66.31		101	71.9	115				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: 2008024-016DMSD	SampType: MSD	TestCode: 8260_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: SC-1	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478640						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.132	0.00658	0.132	0	100	70.4	125	0.101	26.4	50.1	
Benzene	0.124	0.00658	0.132	0.00503	90.2	54.7	131	0.0975	23.7	37.8	
Chlorobenzene	0.103	0.00658	0.132	0	78.3	62.5	129	0.0736	33.3	37	
Toluene	0.113	0.00658	0.132	0.0118	77.1	61.2	131	0.0875	25.5	51.5	
Trichloroethene	0.108	0.00658	0.132	0	82.4	43.6	99	0.0829	26.7	45.3	
Surr: 4-Bromofluorobenzene	62.8		65.79		95.5	74.3	104		0	0	
Surr: Dibromofluoromethane	64.3		65.79		97.7	75.9	134		0	0	
Surr: Toluene-d8	65.5		65.79		99.5	71.9	115		0	0	

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008024	SampType: MBLK	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: PBS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480381						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	< 0.313	0.313									
1,2,4-Trichlorobenzene	< 0.313	0.313									
1,2-Dichlorobenzene	< 0.313	0.313									
1,2-Diphenylhydrazine	< 0.313	0.313									
1,3,5-Trinitrobenzene	< 0.313	0.313									
1,3-Dichlorobenzene	< 0.313	0.313									
1,3-Dinitrobenzene	< 0.313	0.313									
1,4-Dichlorobenzene	< 0.313	0.313									
1-Methylnaphthalene	< 0.313	0.313									
1-Naphthylamine	< 0.503	0.503									
1-Nitroso-piperidine	< 0.313	0.313									
2,2'-oxybis(1-Chloropropane)	< 0.313	0.313									
2,3,4,6-Tetrachlorophenol	< 0.313	0.313									
2,3-Dichloroaniline	< 0.313	0.313									
2,4,5-Trichlorophenol	< 0.313	0.313									
2,4,6-Trichlorophenol	< 0.313	0.313									
2,4-Dichlorophenol	< 0.313	0.313									
2,4-Dimethylphenol	< 0.313	0.313									
2,4-Dinitrophenol	< 0.550	0.550									
2,4-Dinitrotoluene	< 0.313	0.313									
2,6-Dichlorophenol	< 0.313	0.313									
2,6-Dinitrotoluene	< 0.313	0.313									
2-Acetylaminofluorene	< 0.313	0.313									
2-Chloronaphthalene	< 0.313	0.313									
2-Chlorophenol	< 0.313	0.313									
2-Methylnaphthalene	< 0.313	0.313									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008024	SampType: MBLK	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: PBS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480381						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylphenol	< 0.313	0.313									
2-Naphthylamine	< 0.493	0.493									
2-Nitroaniline	< 0.341	0.341									
2-Nitrophenol	< 0.313	0.313									
3,3'-Dichlorobenzidine	< 0.417	0.417									
3-Methylcholanthrene	< 0.313	0.313									
3-Nitroaniline	< 0.370	0.370									
4,6-Dinitro-2-methylphenol	< 0.322	0.322									
4-Aminobiphenyl	< 0.313	0.313									
4-Bromophenyl phenyl ether	< 0.313	0.313									
4-Chloro-3-methylphenol	< 0.313	0.313									
4-Chloroaniline	< 0.313	0.313									
4-Chlorophenyl phenyl ether	< 0.313	0.313									
4-Methylphenol	< 0.313	0.313									
4-Nitroaniline	< 0.427	0.427									
4-Nitrophenol	< 0.313	0.313									
5-Nitro-o-toluidine	< 0.313	0.313									
7,12-Dimethylbenz(a)anthracene	< 0.313	0.313									
Acenaphthene	< 0.313	0.313									
Acenaphthylene	< 0.313	0.313									
Acetophenone	< 0.313	0.313									
alpha-Terpineol	< 0.379	0.379									
Aniline	< 0.313	0.313									
Anthracene	< 0.313	0.313									
Benz(a)anthracene	< 0.313	0.313									
Benzidine	< 0.360	0.360									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008024	SampType: MBLK	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: PBS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480381						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	< 0.313	0.313									
Benzo(b)fluoranthene	< 0.313	0.313									
Benzo(g,h,i)perylene	< 0.313	0.313									
Benzo(k)fluoranthene	< 0.313	0.313									
Benzyl alcohol	< 0.465	0.465									
Biphenyl	< 0.313	0.313									
Bis(2-chloroethoxy)methane	< 0.313	0.313									
Bis(2-chloroethyl) ether	< 0.313	0.313									
Bis(2-ethylhexyl) phthalate	< 0.408	0.408									
Butyl benzyl phthalate	< 0.379	0.379									
Carbazole	< 0.313	0.313									
Chrysene	< 0.313	0.313									
Dibenz(a,h)anthracene	< 0.313	0.313									
Dibenzofuran	< 0.313	0.313									
Diethyl phthalate	< 0.313	0.313									
Dimethyl phthalate	< 0.313	0.313									
Di-n-butyl phthalate	< 0.313	0.313									
Di-n-octyl phthalate	< 0.313	0.313									
Diphenylamine	< 0.313	0.313									
Fluoranthene	< 0.313	0.313									
Fluorene	< 0.313	0.313									
Hexachlorobenzene	< 0.313	0.313									
Hexachlorobutadiene	< 0.313	0.313									
Hexachlorocyclopentadiene	< 0.313	0.313									
Hexachloroethane	< 0.313	0.313									
Hexachloropropene	< 0.313	0.313									

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008024	SampType: MBLK	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: PBS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480381						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	< 0.313	0.313									
Isophorone	< 0.313	0.313									
Isosafrole	< 0.313	0.313									
Naphthalene	< 0.313	0.313									
n-Decane	< 0.313	0.313									
Nitrobenzene	< 0.313	0.313									
N-Nitrosodiethylamine	< 0.313	0.313									
N-Nitrosodimethylamine	< 0.313	0.313									
N-Nitrosodi-n-butylamine	< 0.370	0.370									
N-Nitrosodi-n-propylamine	< 0.313	0.313									
N-Nitrosodiphenylamine	< 0.313	0.313									
n-Octadecane	< 0.313	0.313									
o-Toluidine	< 0.313	0.313									
Pentachlorobenzene	< 0.313	0.313									
Pentachloroethane	< 0.313	0.313									
Pentachloronitrobenzene	< 0.313	0.313									
Pentachlorophenol	< 0.313	0.313									
Phenacetin	< 0.427	0.427									
Phenanthrene	< 0.313	0.313									
Phenol	< 0.313	0.313									
Pyrene	< 0.313	0.313									
Pyridine	< 0.313	0.313									
Safrole	< 0.313	0.313									
Surr: 2,4,6-Tribromophenol	1.88		3.129		60.2	15.7	105				
Surr: 2-Fluorobiphenyl	0.758		1.564		48.5	7.83	102				
Surr: 2-Fluorophenol	1.62		3.129		51.9	5	92.3				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008024	SampType: MBLK	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: PBS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480381						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: Nitrobenzene-d5	0.887		1.564		56.7	5.31	91.7				
Surr: Phenol-d5	1.64		3.129		52.5	5.51	97.7				
Surr: Terphenyl-d14	1.13		1.564		72.3	28.8	128				

Sample ID: LCS2008024	SampType: LCS	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: LCSS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480382						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4,5-Tetrachlorobenzene	1.01	0.440	1.583	0	64.1	5	150				
1,2,4-Trichlorobenzene	1.09	0.440	1.583	0	68.6	5	73				
1,2-Dichlorobenzene	0.881	0.440	1.583	0	55.6	5	150				
1,2-Diphenylhydrazine	1.19	0.440	1.583	0	75.1	5	150				
1,3,5-Trinitrobenzene	1.16	0.440	1.583	0	73.4	5	150				
1,3-Dichlorobenzene	0.813	0.440	1.583	0	51.4	5	150				
1,3-Dinitrobenzene	1.00	0.440	1.583	0	63.3	5	150				
1,4-Dichlorobenzene	0.830	0.440	1.583	0	52.5	5	66				
1-Methylnaphthalene	1.19	0.440	1.583	0	75.3	5	150				
1-Naphthylamine	0.728	0.707	1.583	0	46.0	5	150				
1-Nitroso-piperidine	1.23	0.440	1.583	0	77.5	5	150				
2,2'-oxybis(1-Chloropropane)	0.956	0.440	1.583	0	60.4	5	150				
2,3,4,6-Tetrachlorophenol	1.21	0.440	1.583	0	76.7	5	150				
2,3-Dichloroaniline	1.05	0.440	1.583	0	66.6	5	150				
2,4,5-Trichlorophenol	1.21	0.440	1.583	0	76.3	5	150				
2,4,6-Trichlorophenol	1.16	0.440	1.583	0	73.3	5	150				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008024	SampType: LCS	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: LCSS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480382						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-Dichlorophenol	1.19	0.440	1.583	0	75.4	5	150				
2,4-Dimethylphenol	0.944	0.440	1.583	0	59.6	5	150				
2,4-Dinitrophenol	1.46	0.774	1.583	0	92.3	5	150				
2,4-Dinitrotoluene	1.18	0.440	1.583	0	74.7	5	108				
2,6-Dichlorophenol	1.02	0.440	1.583	0	64.7	5	150				
2,6-Dinitrotoluene	1.13	0.440	1.583	0	71.7	5	150				
2-Acetylaminofluorene	1.59	0.440	1.583	0	100	5	150				
2-Chloronaphthalene	1.09	0.440	1.583	0	69.1	5	150				
2-Chlorophenol	0.989	0.440	1.583	0	62.5	5	73				
2-Methylnaphthalene	1.14	0.440	1.583	0	71.9	5	150				
2-Methylphenol	1.12	0.440	1.583	0	70.5	5	150				
2-Naphthylamine	0.758	0.693	1.583	0	47.9	5	150				
2-Nitroaniline	1.07	0.480	1.583	0	67.7	5	150				
2-Nitrophenol	1.10	0.440	1.583	0	69.7	5	150				
3,3'-Dichlorobenzidine	1.11	0.587	1.583	0	70.3	5	150				
3-Methylcholanthrene	0.952	0.440	1.583	0	60.1	5	150				
3-Nitroaniline	1.12	0.520	1.583	0	70.9	5	150				
4,6-Dinitro-2-methylphenol	1.24	0.453	1.583	0	78.1	5	150				
4-Aminobiphenyl	1.20	0.440	1.583	0	76.0	5	150				
4-Bromophenyl phenyl ether	1.31	0.440	1.583	0	82.9	5	150				
4-Chloro-3-methylphenol	1.19	0.440	1.583	0	75.2	5	91				
4-Chloroaniline	0.943	0.440	1.583	0	59.6	5	150				
4-Chlorophenyl phenyl ether	1.20	0.440	1.583	0	75.8	5	150				
4-Methylphenol	1.12	0.440	1.583	0	70.5	5	150				
4-Nitroaniline	1.04	0.600	1.583	0	65.7	5	150				
4-Nitrophenol	0.753	0.440	1.583	0	47.6	5	127				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008024	SampType: LCS	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: LCSS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480382						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
5-Nitro-o-toluidine	1.06	0.440	1.583	0	66.7	5	150				
7,12-Dimethylbenz(a)anthracene	1.15	0.440	1.583	0	72.7	5	150				
Acenaphthene	1.12	0.440	1.583	0	70.9	5	97				
Acenaphthylene	1.01	0.440	1.583	0	64.0	5	150				
Acetophenone	1.10	0.440	1.583	0	69.7	5	150				
alpha-Terpineol	1.21	0.533	1.583	0	76.2	5	150				
Aniline	0.654	0.440	1.583	0	41.3	5	150				
Anthracene	1.17	0.440	1.583	0	73.6	5	150				
Benz(a)anthracene	1.33	0.440	1.583	0	83.9	5	150				
Benzidine	0.592	0.507	1.583	0	37.4	5	150				
Benzo(a)pyrene	1.19	0.440	1.583	0	74.9	5	150				
Benzo(b)fluoranthene	1.21	0.440	1.583	0	76.2	5	150				
Benzo(g,h,i)perylene	1.11	0.440	1.583	0	70.2	5	150				
Benzo(k)fluoranthene	1.17	0.440	1.583	0	73.8	5	150				
Benzyl alcohol	0.966	0.653	1.583	0	61.0	5	150				
Biphenyl	1.02	0.440	1.583	0	64.5	5	150				
Bis(2-chloroethoxy)methane	1.15	0.440	1.583	0	72.3	5	150				
Bis(2-chloroethyl) ether	0.953	0.440	1.583	0	60.2	5	150				
Bis(2-ethylhexyl) phthalate	1.53	0.573	1.583	0	96.7	5	150				
Butyl benzyl phthalate	1.51	0.533	1.583	0	95.5	5	150				
Carbazole	1.27	0.440	1.583	0	80.4	5	150				
Chrysene	1.29	0.440	1.583	0	81.8	5	150				
Dibenz(a,h)anthracene	1.03	0.440	1.583	0	65.3	5	150				
Dibenzofuran	1.12	0.440	1.583	0	70.9	5	150				
Diethyl phthalate	1.20	0.440	1.583	0	75.8	5	150				
Dimethyl phthalate	1.19	0.440	1.583	0	74.9	5	150				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008024	SampType: LCS	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: LCSS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480382						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Di-n-butyl phthalate	1.42	0.440	1.583	0	89.8	5	150				
Di-n-octyl phthalate	1.52	0.440	1.583	0	96.1	5	150				
Diphenylamine	1.17	0.440	1.583	0	73.8	5	150				
Fluoranthene	1.26	0.440	1.583	0	79.4	5	150				
Fluorene	1.16	0.440	1.583	0	73.5	5	150				
Hexachlorobenzene	1.30	0.440	1.583	0	81.8	5	150				
Hexachlorobutadiene	1.09	0.440	1.583	0	68.8	5	150				
Hexachlorocyclopentadiene	< 0.440	0.440	1.583	0	0	5	150				S
Hexachloroethane	0.813	0.440	1.583	0	51.3	5	150				
Hexachloropropene	0.970	0.440	1.583	0	61.3	5	150				
Indeno(1,2,3-cd)pyrene	1.16	0.440	1.583	0	73.5	5	150				
Isophorone	1.09	0.440	1.583	0	68.8	5	150				
Isosafrole	0.985	0.440	1.583	0	62.2	5	150				
Naphthalene	1.11	0.440	1.583	0	69.9	5	150				
n-Decane	0.591	0.440	1.583	0	37.3	5	150				
Nitrobenzene	1.09	0.440	1.583	0	68.7	5	150				
N-Nitrosodiethylamine	0.910	0.440	1.583	0	57.5	5	150				
N-Nitrosodimethylamine	0.912	0.440	1.583	0	57.6	5	150				
N-Nitrosodi-n-butylamine	1.22	0.520	1.583	0	77.2	5	150				
N-Nitrosodi-n-propylamine	1.03	0.440	1.583	0	65.2	5	64				S
N-Nitrosodiphenylamine	1.21	0.440	1.583	0	76.3	5	150				
n-Octadecane	1.21	0.440	1.583	0	76.2	5	150				
o-Toluidine	0.939	0.440	1.583	0	59.3	5	150				
Pentachlorobenzene	1.13	0.440	1.583	0	71.2	5	150				
Pentachloroethane	0.793	0.440	1.583	0	50.1	5	150				
Pentachloronitrobenzene	1.17	0.440	1.583	0	74.2	5	150				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008024	SampType: LCS	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: LCSS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480382						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	1.46	0.440	1.583	0	92.3	5	111				
Phenacetin	1.28	0.600	1.583	0	80.6	5	150				
Phenanthrene	1.24	0.440	1.583	0	78.0	5	150				
Phenol	1.06	0.440	1.583	0	67.1	5	78				
Pyrene	1.29	0.440	1.583	0	81.6	5	130				
Pyridine	0.734	0.440	1.583	0	46.4	5	150				
Safrole	1.16	0.440	1.583	0	73.0	5	150				
Surr: 2,4,6-Tribromophenol	2.50		3.166		79.0	15.7	105				
Surr: 2-Fluorobiphenyl	1.05		1.583		66.5	7.83	102				
Surr: 2-Fluorophenol	1.93		3.166		60.9	5	92.3				
Surr: Nitrobenzene-d5	1.07		1.583		67.6	5.31	91.7				
Surr: Phenol-d5	2.03		3.166		64.0	5.51	97.7				
Surr: Terphenyl-d14	1.11		1.583		70.3	28.8	128				

Sample ID: 2008024-016EMS	SampType: MS	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: SC-1	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480387						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	0.457	0.329	1.643	0	27.8	5	150				
1,2,4-Trichlorobenzene	0.549	0.329	1.643	0	33.4	5	110				
1,2-Dichlorobenzene	0.492	0.329	1.643	0	30.0	5	150				
1,2-Diphenylhydrazine	0.964	0.329	1.643	0	58.7	5	150				
1,3,5-Trinitrobenzene	0.822	0.329	1.643	0	50.0	5	150				
1,3-Dichlorobenzene	0.424	0.329	1.643	0	25.8	5	150				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMS	SampType: MS	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: SC-1	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480387						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	0.751	0.329	1.643	0	45.7	5	150				
1,4-Dichlorobenzene	0.438	0.329	1.643	0	26.7	5	81.1				
1-Methylnaphthalene	0.744	0.329	1.643	0	45.3	5	150				m
1-Naphthylamine	< 0.528	0.528	1.643	0	0	5	150				S
1-Nitroso-piperidine	0.986	0.329	1.643	0	60.0	5	150				
2,2'-oxybis(1-Chloropropane)	0.654	0.329	1.643	0	39.8	5	150				
2,3,4,6-Tetrachlorophenol	0.726	0.329	1.643	0	44.2	5	150				
2,3-Dichloroaniline	0.855	0.329	1.643	0	52.0	5	150				
2,4,5-Trichlorophenol	0.946	0.329	1.643	0	57.6	5	150				
2,4,6-Trichlorophenol	0.919	0.329	1.643	0	55.9	5	150				
2,4-Dichlorophenol	1.01	0.329	1.643	0	61.2	5	150				m
2,4-Dimethylphenol	0.844	0.329	1.643	0	51.4	5	150				m
2,4-Dinitrophenol	0.808	0.578	1.643	0	49.2	5	150				
2,4-Dinitrotoluene	0.917	0.329	1.643	0	55.8	11.2	114				
2,6-Dichlorophenol	0.844	0.329	1.643	0	51.4	5	150				m
2,6-Dinitrotoluene	0.816	0.329	1.643	0	49.6	5	150				
2-Acetylaminofluorene	1.37	0.329	1.643	0	83.3	5	150				
2-Chloronaphthalene	0.766	0.329	1.643	0	46.6	5	150				
2-Chlorophenol	0.873	0.329	1.643	0	53.1	5	89.9				
2-Methylnaphthalene	0.683	0.329	1.643	0	41.5	5	150				
2-Methylphenol	1.02	0.329	1.643	0	61.9	5	150				
2-Naphthylamine	< 0.518	0.518	1.643	0	0	5	150				S
2-Nitroaniline	0.834	0.359	1.643	0	50.7	5	150				
2-Nitrophenol	0.859	0.329	1.643	0	52.3	5	150				
3,3'-Dichlorobenzidine	0.906	0.438	1.643	0	55.2	5	150				
3-Methylcholanthrene	< 0.329	0.329	1.643	0	0	5	150				S

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMS	SampType: MS	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: SC-1	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480387						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
3-Nitroaniline	0.856	0.388	1.643	0	52.1	5	150				
4,6-Dinitro-2-methylphenol	0.761	0.339	1.643	0	46.3	5	150				
4-Aminobiphenyl	0.984	0.329	1.643	0	59.9	5	150				
4-Bromophenyl phenyl ether	0.788	0.329	1.643	0	48.0	5	150				
4-Chloro-3-methylphenol	1.06	0.329	1.643	0	64.4	5	121				
4-Chloroaniline	0.677	0.329	1.643	0	41.2	5	150				m
4-Chlorophenyl phenyl ether	0.727	0.329	1.643	0	44.2	5	150				
4-Methylphenol	0.894	0.329	1.643	0	54.4	5	150				
4-Nitroaniline	0.752	0.448	1.643	0	45.7	5	150				
4-Nitrophenol	0.466	0.329	1.643	0	28.4	5	137				
5-Nitro-o-toluidine	0.794	0.329	1.643	0	48.3	5	150				
7,12-Dimethylbenz(a)anthracene	0.427	0.329	1.643	0	26.0	5	150				
Acenaphthene	0.695	0.329	1.643	0	42.3	5	153				
Acenaphthylene	0.609	0.329	1.643	0	37.1	5	150				
Acetophenone	0.889	0.329	1.643	0	54.1	5	150				
alpha-Terpineol	0.962	0.398	1.643	0	58.5	5	150				m
Aniline	0.389	0.329	1.643	0	23.7	5	150				
Anthracene	0.728	0.329	1.643	0	44.3	5	150				
Benz(a)anthracene	0.641	0.329	1.643	0	39.0	5	150				
Benzidine	< 0.378	0.378	1.643	0	0	5	150				S
Benzo(a)pyrene	0.492	0.329	1.643	0	29.9	5	150				
Benzo(b)fluoranthene	0.518	0.329	1.643	0	31.5	5	150				
Benzo(g,h,i)perylene	0.407	0.329	1.643	0	24.8	5	150				
Benzo(k)fluoranthene	0.556	0.329	1.643	0	33.8	5	150				m
Benzyl alcohol	0.753	0.488	1.643	0	45.8	5	150				
Biphenyl	0.664	0.329	1.643	0	40.4	5	150				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMS	SampType: MS	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: SC-1	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480387						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bis(2-chloroethoxy)methane	0.917	0.329	1.643	0	55.8	5	150				m
Bis(2-chloroethyl) ether	0.761	0.329	1.643	0	46.3	5	150				
Bis(2-ethylhexyl) phthalate	0.478	0.428	1.643	0	29.1	5	150				
Butyl benzyl phthalate	1.03	0.398	1.643	0	62.5	5	150				
Carbazole	0.939	0.329	1.643	0	57.1	5	150				
Chrysene	0.672	0.329	1.643	0	40.9	5	150				
Dibenz(a,h)anthracene	0.414	0.329	1.643	0	25.2	5	150				
Dibenzofuran	0.760	0.329	1.643	0	46.3	5	150				
Diethyl phthalate	0.913	0.329	1.643	0	55.5	5	150				
Dimethyl phthalate	0.869	0.329	1.643	0	52.9	5	150				
Di-n-butyl phthalate	0.960	0.329	1.643	0	58.4	5	150				
Di-n-octyl phthalate	0.581	0.329	1.643	0	35.3	5	150				
Diphenylamine	0.792	0.329	1.643	0	48.2	5	150				
Fluoranthene	0.676	0.329	1.643	0	41.1	5	150				
Fluorene	0.706	0.329	1.643	0	42.9	5	150				
Hexachlorobenzene	0.388	0.329	1.643	0	23.6	5	150				
Hexachlorobutadiene	0.477	0.329	1.643	0	29.1	5	150				
Hexachlorocyclopentadiene	< 0.329	0.329	1.643	0	0	5	150				S
Hexachloroethane	0.391	0.329	1.643	0	23.8	5	150				
Hexachloropropene	0.369	0.329	1.643	0	22.5	5	150				
Indeno(1,2,3-cd)pyrene	0.431	0.329	1.643	0	26.2	5	150				
Isophorone	0.873	0.329	1.643	0	53.1	5	150				m
Isosafrole	0.683	0.329	1.643	0	41.6	5	150				m
Naphthalene	0.695	0.329	1.643	0	42.3	5	150				
n-Decane	< 0.329	0.329	1.643	0	0	5	150				S
Nitrobenzene	0.813	0.329	1.643	0	49.5	5	150				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMS	SampType: MS	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: SC-1	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480387						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine	0.781	0.329	1.643	0	47.5	5	150				
N-Nitrosodimethylamine	0.752	0.329	1.643	0	45.7	5	150				
N-Nitrosodi-n-butylamine	0.933	0.388	1.643	0	56.7	5	150				m
N-Nitrosodi-n-propylamine	0.861	0.329	1.643	0	52.4	5	92.4				m
N-Nitrosodiphenylamine	0.948	0.329	1.643	0	57.7	5	150				
n-Octadecane	< 0.329	0.329	1.643	0	0	5	150				S
o-Toluidine	0.722	0.329	1.643	0	43.9	5	150				
Pentachlorobenzene	0.441	0.329	1.643	0	26.8	5	150				
Pentachloroethane	0.470	0.329	1.643	0	28.6	5	150				
Pentachloronitrobenzene	0.471	0.329	1.643	0	28.6	5	150				
Pentachlorophenol	0.831	0.329	1.643	0	50.6	5	176				
Phenacetin	1.06	0.448	1.643	0	64.3	5	150				
Phenanthrene	0.830	0.329	1.643	0	50.5	5	150				
Phenol	0.997	0.329	1.643	0	60.6	6.16	94.2				
Pyrene	0.740	0.329	1.643	0	45.1	5	340				
Pyridine	0.575	0.329	1.643	0	35.0	5	150				
Safrole	0.784	0.329	1.643	0	47.7	5	150				
Surr: 2,4,6-Tribromophenol	1.88		3.287		57.1	15.7	105				
Surr: 2-Fluorobiphenyl	0.702		1.643		42.7	7.83	102				m
Surr: 2-Fluorophenol	1.70		3.287		51.7	5	92.3				
Surr: Nitrobenzene-d5	0.831		1.643		50.6	5.31	91.7				
Surr: Phenol-d5	1.79		3.287		54.4	5.51	97.7				
Surr: Terphenyl-d14	0.582		1.643		35.4	28.8	128				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMSD	SampType: MSD	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: SC-1	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480388						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	0.450	0.321	1.607	0	28.0	5	150	0.4572	1.54	50	
1,2,4-Trichlorobenzene	0.557	0.321	1.607	0	34.6	5	110	0.5491	1.36	80.2	
1,2-Dichlorobenzene	0.516	0.321	1.607	0	32.1	5	150	0.4924	4.64	50	
1,2-Diphenylhydrazine	0.927	0.321	1.607	0	57.7	5	150	0.9641	3.90	50	
1,3,5-Trinitrobenzene	0.851	0.321	1.607	0	52.9	5	150	0.8217	3.47	50	
1,3-Dichlorobenzene	0.424	0.321	1.607	0	26.4	5	150	0.4240	0.0571	50	
1,3-Dinitrobenzene	0.813	0.321	1.607	0	50.6	5	150	0.7513	7.93	50	
1,4-Dichlorobenzene	0.435	0.321	1.607	0	27.1	5	81.1	0.4382	0.687	80.8	
1-Methylnaphthalene	0.743	0.321	1.607	0	46.2	5	150	0.7444	0.234	50	
1-Naphthylamine	< 0.516	0.516	1.607	0	0	5	150	0	0	50	S
1-Nitroso-piperidine	1.04	0.321	1.607	0	64.7	5	150	0.9861	5.29	50	
2,2'-oxybis(1-Chloropropane)	0.660	0.321	1.607	0	41.1	5	150	0.6537	0.983	50	
2,3,4,6-Tetrachlorophenol	0.752	0.321	1.607	0	46.8	5	150	0.7258	3.60	50	
2,3-Dichloroaniline	0.697	0.321	1.607	0	43.4	5	150	0.8546	20.3	50	
2,4,5-Trichlorophenol	0.935	0.321	1.607	0	58.2	5	150	0.9462	1.22	50	
2,4,6-Trichlorophenol	0.907	0.321	1.607	0	56.5	5	150	0.9187	1.26	50	
2,4-Dichlorophenol	1.06	0.321	1.607	0	65.7	5	150	1.006	4.81	50	m
2,4-Dimethylphenol	0.863	0.321	1.607	0	53.7	5	150	0.8443	2.20	50	m
2,4-Dinitrophenol	0.848	0.565	1.607	0	52.8	5	150	0.8078	4.87	50	
2,4-Dinitrotoluene	0.907	0.321	1.607	0	56.4	11.2	114	0.9173	1.19	36.6	
2,6-Dichlorophenol	0.915	0.321	1.607	0	57.0	5	150	0.8440	8.11	50	m
2,6-Dinitrotoluene	0.832	0.321	1.607	0	51.8	5	150	0.8157	1.92	50	
2-Acetylaminofluorene	1.43	0.321	1.607	0	88.9	5	150	1.370	4.26	50	
2-Chloronaphthalene	0.805	0.321	1.607	0	50.1	5	150	0.7659	4.97	50	m
2-Chlorophenol	0.887	0.321	1.607	0	55.2	5	89.9	0.8725	1.65	49.2	
2-Methylnaphthalene	0.726	0.321	1.607	0	45.2	5	150	0.6826	6.22	50	m

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMSD	SampType: MSD	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: SC-1	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480388						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylphenol	1.12	0.321	1.607	0	69.6	5	150	1.018	9.44	50	m
2-Naphthylamine	< 0.506	0.506	1.607	0	0	5	150	0	0	50	S
2-Nitroaniline	0.827	0.351	1.607	0	51.5	5	150	0.8340	0.842	50	
2-Nitrophenol	0.901	0.321	1.607	0	56.1	5	150	0.8592	4.71	50	
3,3'-Dichlorobenzidine	0.959	0.428	1.607	0	59.7	5	150	0.9064	5.65	50	
3-Methylcholanthrene	< 0.321	0.321	1.607	0	0	5	150	0	0	50	S
3-Nitroaniline	0.933	0.380	1.607	0	58.1	5	150	0.8556	8.64	50	
4,6-Dinitro-2-methylphenol	0.827	0.331	1.607	0	51.5	5	150	0.7606	8.36	50	
4-Aminobiphenyl	0.990	0.321	1.607	0	61.6	5	150	0.9841	0.628	50	
4-Bromophenyl phenyl ether	0.778	0.321	1.607	0	48.4	5	150	0.7882	1.30	50	
4-Chloro-3-methylphenol	1.12	0.321	1.607	0	69.5	5	121	1.058	5.37	52.2	
4-Chloroaniline	0.712	0.321	1.607	0	44.3	5	150	0.6770	5.11	50	m
4-Chlorophenyl phenyl ether	0.715	0.321	1.607	0	44.5	5	150	0.7268	1.67	50	
4-Methylphenol	0.988	0.321	1.607	0	61.5	5	150	0.8941	9.95	50	
4-Nitroaniline	0.926	0.438	1.607	0	57.7	5	150	0.7517	20.8	50	
4-Nitrophenol	0.525	0.321	1.607	0	32.6	5	137	0.4665	11.7	50.1	
5-Nitro-o-toluidine	0.995	0.321	1.607	0	61.9	5	150	0.7945	22.4	50	
7,12-Dimethylbenz(a)anthracene	0.393	0.321	1.607	0	24.4	5	150	0.4266	8.27	50	
Acenaphthene	0.686	0.321	1.607	0	42.7	5	153	0.6946	1.17	58.7	
Acenaphthylene	0.692	0.321	1.607	0	43.1	5	150	0.6089	12.7	50	
Acetophenone	0.908	0.321	1.607	0	56.5	5	150	0.8891	2.15	50	
alpha-Terpineol	1.04	0.389	1.607	0	64.5	5	150	0.9618	7.46	50	m
Aniline	0.399	0.321	1.607	0	24.8	5	150	0.3891	2.57	50	
Anthracene	0.699	0.321	1.607	0	43.5	5	150	0.7281	4.01	50	
Benz(a)anthracene	0.649	0.321	1.607	0	40.4	5	150	0.6411	1.25	50	
Benzidine	< 0.370	0.370	1.607	0	0	5	150	0	0	50	S

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMSD	SampType: MSD	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: SC-1	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480388						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.463	0.321	1.607	0	28.8	5	150	0.4917	6.05	50	
Benzo(b)fluoranthene	0.488	0.321	1.607	0	30.4	5	150	0.5176	5.92	50	
Benzo(g,h,i)perylene	0.356	0.321	1.607	0	22.2	5	150	0.4074	13.4	50	
Benzo(k)fluoranthene	0.522	0.321	1.607	0	32.5	5	150	0.5561	6.35	50	m
Benzyl alcohol	0.828	0.477	1.607	0	51.5	5	150	0.7527	9.53	50	
Biphenyl	0.658	0.321	1.607	0	40.9	5	150	0.6637	0.923	50	
Bis(2-chloroethoxy)methane	0.949	0.321	1.607	0	59.1	5	150	0.9173	3.36	50	m
Bis(2-chloroethyl) ether	0.766	0.321	1.607	0	47.7	5	150	0.7606	0.745	50	
Bis(2-ethylhexyl) phthalate	0.451	0.419	1.607	0	28.1	5	150	0.4784	5.94	50	
Butyl benzyl phthalate	1.10	0.389	1.607	0	68.7	5	150	1.028	7.13	50	
Carbazole	0.967	0.321	1.607	0	60.2	5	150	0.9389	2.94	50	
Chrysene	0.670	0.321	1.607	0	41.7	5	150	0.6723	0.357	50	
Dibenz(a,h)anthracene	0.385	0.321	1.607	0	23.9	5	150	0.4137	7.28	50	
Dibenzofuran	0.760	0.321	1.607	0	47.3	5	150	0.7603	0.0624	50	
Diethyl phthalate	0.947	0.321	1.607	0	58.9	5	150	0.9127	3.67	50	
Dimethyl phthalate	0.876	0.321	1.607	0	54.5	5	150	0.8692	0.819	50	
Di-n-butyl phthalate	0.959	0.321	1.607	0	59.7	5	150	0.9598	0.0415	50	
Di-n-octyl phthalate	0.561	0.321	1.607	0	34.9	5	150	0.5807	3.47	50	
Diphenylamine	0.857	0.321	1.607	0	53.4	5	150	0.7915	7.97	50	
Fluoranthene	0.679	0.321	1.607	0	42.2	5	150	0.6760	0.401	50	
Fluorene	0.748	0.321	1.607	0	46.5	5	150	0.7058	5.77	50	
Hexachlorobenzene	0.342	0.321	1.607	0	21.3	5	150	0.3881	12.7	50	
Hexachlorobutadiene	0.487	0.321	1.607	0	30.3	5	150	0.4774	1.89	50	
Hexachlorocyclopentadiene	< 0.321	0.321	1.607	0	0	5	150	0	0	50	S
Hexachloroethane	0.400	0.321	1.607	0	24.9	5	150	0.3908	2.30	50	
Hexachloropropene	0.336	0.321	1.607	0	20.9	5	150	0.3692	9.53	50	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMSD	SampType: MSD	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: SC-1	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480388						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	0.370	0.321	1.607	0	23.0	5	150	0.4309	15.3	50	
Isophorone	0.924	0.321	1.607	0	57.5	5	150	0.8732	5.70	50	
Isosafrole	0.678	0.321	1.607	0	42.2	5	150	0.6833	0.818	50	m
Naphthalene	0.711	0.321	1.607	0	44.3	5	150	0.6949	2.31	50	
n-Decane	< 0.321	0.321	1.607	0	0	5	150	0	0	50	S
Nitrobenzene	0.835	0.321	1.607	0	52.0	5	150	0.8134	2.67	50	
N-Nitrosodiethylamine	0.838	0.321	1.607	0	52.1	5	150	0.7809	7.02	50	
N-Nitrosodimethylamine	0.769	0.321	1.607	0	47.9	5	150	0.7517	2.27	50	
N-Nitrosodi-n-butylamine	0.952	0.380	1.607	0	59.3	5	150	0.9326	2.09	50	
N-Nitrosodi-n-propylamine	0.892	0.321	1.607	0	55.5	5	92.4	0.8609	3.54	69.4	
N-Nitrosodiphenylamine	0.930	0.321	1.607	0	57.9	5	150	0.9479	1.92	50	
n-Octadecane	< 0.321	0.321	1.607	0	0	5	150	0	0	50	S
o-Toluidine	0.755	0.321	1.607	0	47.0	5	150	0.7221	4.45	50	
Pentachlorobenzene	0.418	0.321	1.607	0	26.0	5	150	0.4406	5.32	50	
Pentachloroethane	0.478	0.321	1.607	0	29.7	5	150	0.4705	1.54	50	
Pentachloronitrobenzene	0.470	0.321	1.607	0	29.2	5	150	0.4708	0.240	50	
Pentachlorophenol	0.835	0.321	1.607	0	52.0	5	176	0.8313	0.453	60.1	
Phenacetin	1.13	0.438	1.607	0	70.6	5	150	1.057	7.05	50	
Phenanthrene	0.810	0.321	1.607	0	50.4	5	150	0.8297	2.38	50	
Phenol	0.929	0.321	1.607	0	57.8	6.16	94.2	0.9967	7.00	44.7	
Pyrene	0.787	0.321	1.607	0	49.0	5	340	0.7404	6.07	62.9	
Pyridine	0.551	0.321	1.607	0	34.3	5	150	0.5754	4.30	50	
Safrole	0.821	0.321	1.607	0	51.1	5	150	0.7839	4.69	50	
Surr: 2,4,6-Tribromophenol	1.92		3.213		59.8	15.7	105		0	0	
Surr: 2-Fluorobiphenyl	0.580		1.607		36.1	7.83	102		0	0	
Surr: 2-Fluorophenol	1.80		3.213		56.1	5	92.3		0	0	

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008024
 21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMSD	SampType: MSD	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: SC-1	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480388						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: Nitrobenzene-d5	0.888		1.607		55.3	5.31	91.7		0	0	
Surr: Phenol-d5	1.95		3.213		60.8	5.51	97.7		0	0	
Surr: Terphenyl-d14	0.589		1.607		36.7	28.8	128		0	0	

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008024

21-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW9045D

Sample ID: LCS-R44126	SampType: LCS	TestCode: PH_S	Units: pH Units	Prep Date:	RunNo: 44126						
Client ID: LCSS	Batch ID: R44126	TestNo: SW9045D		Analysis Date: 8/6/2020	SeqNo: 477468						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	9.01	0.100	9.000	0	100	80	120				

Sample ID: 2008024-010ADUP	SampType: DUP	TestCode: PH_S	Units: pH Units	Prep Date:	RunNo: 44126						
Client ID: S-10	Batch ID: R44126	TestNo: SW9045D		Analysis Date: 8/6/2020	SeqNo: 477479						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	8.08	0.100						8.070	0.124	1.4	

Sample ID: 2008110-009DDUP	SampType: DUP	TestCode: PH_S	Units: pH Units	Prep Date:	RunNo: 44126						
Client ID: BatchQC	Batch ID: R44126	TestNo: SW9045D		Analysis Date: 8/6/2020	SeqNo: 477490						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	7.91	0.100						7.920	0.126	1.4	

Qualifiers:	H Holding times for preparation or analysis exceeded	M Manual Integration used to determine area response	ND Not Detected at the Reporting Limit
	PL Permit Limit	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	W Sample container temperature is out of limit as specified at testcode	



Green Country TESTING

Chain of Custody Record

Laboratory Number: **22056004**

Page **1** of **2**

Client Information:		Billing Information:		PO Number:	Project Name/Number:	Turn Time							
Company Name: AJM Enterprises				Quote Number:	2320-003	Standard							
Contact Name: Tustin Scott				Required QC Level:		<input type="checkbox"/> 1 Day							
Address: 10010 E 16th St.				Bill Monthly:		<input type="checkbox"/> 2 Day							
City, State, Zip: Tulsa, OK 74128				<input type="checkbox"/> Yes		<input type="checkbox"/> Other							
Phone Number: 918-665-6575		Ext: 74128		Required QC Level:		(Rush turn times will incur a surcharge and must be pre-approved by lab.)							
Fax Number:				Bill Monthly:									
Email Address:				<input type="checkbox"/> No									
Which Regulations Apply:		Matrix Code:		Container:	Requested Tests:	Comments:							
<input type="checkbox"/> RCRA <input type="checkbox"/> Drinking Water <input type="checkbox"/> POTW <input type="checkbox"/> Distribution <input type="checkbox"/> NPDES <input type="checkbox"/> Special <input type="checkbox"/> USDA/FDA <input type="checkbox"/> State <input type="checkbox"/> RECAP/RSIC <input type="checkbox"/> Other		AO = Aqueous DW = Drinking WW = Waste MW = Monit. Well LQ = Liquid		SO = Soil O = Oil SL = Sludge F = Food SW = Swab SOL = Solid		P=Plastic G=Glass, V=Vial		HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₈		Quantity Type Pres. Requested Tests		Comments	

Sample ID/Description	Date	Time	Grab/Composite	Matrix	Quantity	Type	Pres.	Requested Tests	Comments
S-1	8/3/02	11:05	G	SO	5	G	M.S.D.	TPH-Texas 1005 BTEX ROHS METALS PH Fluorides	GREEN COUNTRY TESTING CHAIN OF CUSTODY ATTACHMENT OF 2 PAGES
S-2	11	11:17	G	"	5	G	"		
S-3	11	11:27	G	"	5	G	"		
S-4	11	12:52	G	"	5	G	"		
S-5	11	13:12	G	"	5	G	"		
S-6	11	13:27	G	"	5	G	"		
S-7	11	13:32	G	"	5	G	"		
S-8	11	13:46	G	"	5	G	"		
S-9	11	13:55	G	"	5	G	"		
S-10	11	14:11	G	"	5	G	"		
Relinquished by: [Signature] Date/Time: 8/3/02 16:32 Received by: [Signature] Date/Time: 8/3/02 16:32 Field Notes: Temp: 80									
1	Received on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No								
2	Temp: 80								
3									
4									

All samples submitted to Green Country Testing for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples.

Green Country Testing reserves the right to return unused sample portions.

Green Country Testing
6825 East 38th Street • Tulsa, OK 74145
918-828-9977 • Fax (918)828-7756

Part 1 - Laboratory Copy Part 2 - Report Copy Part 3 - Client's Temporary Copy



Chain of Custody Record

Laboratory Number: **20088041**

Page **2** of **2**

Client Information:

Company Name: **ATM Environmental Systems**
 Contact Name: **Susan Scott**
 Address: _____
 City, State, Zip: _____
 Phone Number: _____
 Fax Number: _____
 Email Address: _____

Billing Information:

PO Number: _____
 Quote Number: _____
 Required QC Level: _____

Project Name/Number:

Project Name/Number: **2320-003**
 Sampler's Signature: _____

Turn Time Standard
 1 Day
 2 Day
 Other

Ext: _____

Bill Monthly
 Yes
 No

Shipping Method:
 UPS / FedEx / Airborne
 DHL / GCT (Hand / Mail)

(Rush turn times will incur a surcharge and must be pre-approved by lab.)

Which Regulations Apply:

- RCRA Drinking Water
- POTW Distribution
- NPDES Special
- USDA/FDA State
- RECAP/RISC Other

Matrix Code:

- AQ = Aqueous
- DW = Drinking
- WW = Waste
- MW = Monit. Well
- LQ = Liquid
- O = Oil
- SL = Sludge
- F = Food
- SW = Swab
- SOL = Solid

Container:

- P=Plastic
- G=Glass, V=Vail

Pres:

- HCl, HNO₃, H₂SO₄, NaOH, Na₂S₂O₈

Requested Tests:

- TPH - TEXAS 1005
- BTEX - GPO
- RCRA 8 METALS
- PH
- FLUORIDES
- PCB
- VOLs
- SVDs - PAHs

Comments:

GREEN COUNTRY TESTING
CHAIN OF CUSTODY
ATTACHMENT
OF 2 PAGES

Sample ID/Description	Date	Time	Grab/Composite	Matrix	Quantity	Type	Pres.	Requested Tests	Comments
S-11	8/3/20	14:24	G	SO	5	G	As ₂ S ₃	TPH - TEXAS 1005 BTEX - GPO RCRA 8 METALS PH FLUORIDES PCB VOLs SVDs - PAHs	
S-12	"	14:32	G	"	5	G	"		
S-13	"	14:44	G	"	5	G	"		
R-1	"	14:57	G	AQ	5	G/P	HCL, HNO ₃		
TRIP BLANK TB-1	"	15:00	G	AQ	2	G	HCL		
SC-1	"	14:50	C	SO	7	G	As ₂ S ₃		
<p>Relinquished by: <i>[Signature]</i> Date/Time: 8/3/20 16:32</p> <p>Received by: <i>[Signature]</i> Date/Time: 8/3/20 16:32</p> <p>Field Notes: _____</p> <p>Received on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Temp: 8°</p>									

All samples submitted to Green Country Testing for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples.

Green Country Testing reserves the right to return unused sample portions.

Green Country Testing
 6825 East 38th Street • Tulsa, OK 74145
 918-828-9977 • Fax (918)828-7756



Chain of Custody Record

Laboratory Number: **20081011**

Client Information: **ATI M ELMWOOD** Billing Information: **ATI M ELMWOOD** PO Number: **2320-003** Project Name/Number: **2320-003** Page 1 of 1

Company Name: **ATI M ELMWOOD**
 Contact Name: **Justin Scott**
 Address: **10010 Elmwood St.**
 City, State, Zip: **Tulsa, OK 74128**
 Phone Number: **(918) 665-6575** Ext: **74128**
 Fax Number: **(918) 665-6575** Ext: **74128**
 Email Address: **ATI M ELMWOOD**

Quote Number: **Required QC Level**
 Bill Monthly: Yes No
 Shipping Method: **UPS / FedEx / Airborne**
 DHL / GCT / **Hand / Mail**

Turn Time Standard: 1 Day 2 Day Other
 (Rush turn times will incur a surcharge and must be pre-approved by lab.)

Which Regulations Apply:	Matrix Code:	SO = Soil	O = Oil	SL = Sludge	F = Food	SW = Swab	SOL = Solid
<input type="checkbox"/> RCRA	<input type="checkbox"/> Drinking Water	AQ = Aqueous					
<input type="checkbox"/> POTW	<input type="checkbox"/> Distribution	DW = Drinking					
<input type="checkbox"/> NPDES	<input type="checkbox"/> Special	WW = Waste					
<input type="checkbox"/> USDA/FDA	<input type="checkbox"/> State	MW = Mont. Well					
<input type="checkbox"/> RECAP/RISC	<input type="checkbox"/> Other	LQ = Liquid					

Sample ID/Description	Date	Time	Grab/Composite	Matrix	Quantity	Container	Type	Pres.	Requested Tests	Comments
D-1	8/5/20	08:50	G	SO	5	G	G	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₈	TCM TEXAS 1005	GREEN COUNTRY TESTING
D-2	"	09:15	G	SO	5	G	G	"	VOCs	SL-1, METALS
D-3	"	09:40	C	SO	5	G	G	"	SUDCS	
D-4	"	10:10	C	SO	5	G	G	"	PCRA & METALS	
D-5	"	10:40	C	SO	5	G	G	"	PCBs	
AST-1	"	13:35	G	SW	6	G	G	HCl	PCE	
SL-1	"	14:20	C	SL	4	G	G	-	PH	
TIGP ISLAWK	"	15:10	G	SW	2	V	V		BTEX	
D-6	"	10:45	C	SO	5	G	G	NaO ₂ S ₃	FLUORIDES	
									TCLP BENZENE	

Relinquished by	Date/Time	Received by	Date/Time	Field Notes
<i>[Signature]</i>	8/5/20 16:37	<i>[Signature]</i>	8/5/20 16:37	

Received office? Yes No
 Temp: **4**

All samples submitted to Green Country Testing for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples.

Green Country Testing
 6825 East 38th Street • Tulsa, OK 74145
 918-828-9977 • Fax (918)828-7756

Green Country Testing, Inc.
6825 E 38th Street
Tulsa, OK 74145
TEL: 918-828-9977 FAX: 918-828-7756
Website: www.greencountrytesting.com



August 24, 2020

Justin Scott
A & M Engineering
10010 E. 16th St.
Tulsa, OK 74128-4813
TEL: (918) 665-6575
FAX: (918) 665-6576

RE: 2320-003

Order No.: 2008110

Dear Justin Scott:

Green Country Testing, Inc. received 9 sample(s) on 8/5/2020 for the analyses presented in the following report.

In accordance with your instructions, Green Country Testing conducted the analysis shown on the following pages on samples submitted by your company. The results relate only to the items tested. Unless otherwise noted, all analysis were conducted using EPA approved methodologies. Test reports meet all the NELAC requirements. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by Green Country Testing.

Certifications/Accreditation: OK - 7604 - AR - ADEQ - KS - E-10232

A scope of Certified/Accredited parameters is available upon request. If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Duzan".

Brian Duzan
Laboratory Director

CC:
Accounts Payable
Jeff Elbert

Original

Green Country Testing, Inc.
6825 E 38th Street
Tulsa, OK 74145
TEL: 918-828-9977 FAX: 918-828-7756
Website: www.greencountrytesting.com



Case Narrative

WO#: 2008110
Date: 8/24/2020

CLIENT: A & M Engineering
Project: 2320-003

2008110
TX_1005_S has been Sub Contracted.
2008110
8082_S has been Sub Contracted.
2008110
TX_1005_S has been Sub Contracted.
2008110
8082_S has been Sub Contracted.
2008110
TX_1005_S has been Sub Contracted.
2008110
TX_1005_S has been Sub Contracted.
2008110
TX_1005_S has been Sub Contracted.
2008110
TX_1005_W has been Sub Contracted.
2008110
8082_W has been Sub Contracted.
2008110
8082_S has been Sub Contracted.
2008110
TX_1005_S has been Sub Contracted.
2008110
8082_S has been Sub Contracted.

Green Country Testing, Inc.
 6825 E 38th Street
 Tulsa, OK 74145
 TEL: 918-828-9977 FAX: 918-828-7756
 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

Lab ID: 2008110-001

Collection Date: 8/5/2020 8:50:00 AM

Client Sample ID: D-1

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/14/2020 1:34:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	4.68	0.456		mg/Kg	1	8/18/2020 11:09:35 PM
Barium	83.6	2.28		mg/Kg	1	8/18/2020 11:09:35 PM
Cadmium	< 0.228	0.228		mg/Kg	1	8/18/2020 11:09:35 PM
Chromium	19.6	2.28		mg/Kg	1	8/18/2020 11:09:35 PM
Lead	23.4	1.14		mg/Kg	1	8/18/2020 11:09:35 PM
Selenium	< 0.456	0.456		mg/Kg	1	8/18/2020 11:09:35 PM
Silver	< 0.0456	0.0456		mg/Kg	1	8/18/2020 11:09:35 PM

VOLATILE ORGANICS IN SOIL

SW8260C

SW5035A

Analyst: **BWD**

1,1,1,2-Tetrachloroethane	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,1-Trichloroethane	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,2,2-Tetrachloroethane	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,2-Trichloroethane	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloroethane	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloroethene	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloropropene	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,2,3-Trichloropropane	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,2,4-Trimethylbenzene	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dibromoethane	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichlorobenzene	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichloroethane	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichloropropane	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,3,5-Trimethylbenzene	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,3-Dichlorobenzene	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,3-Dichloropropane	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
1,4-Dichlorobenzene	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
2,2-Dichloropropane	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM
2-Butanone	< 0.0160	0.0160		mg/Kg	1	8/11/2020 9:00:00 AM
2-Chloroethyl vinyl ether	< 0.00399	0.00399		mg/Kg	1	8/11/2020 9:00:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

VOLATILE ORGANICS IN SOIL

SW8260C SW5035A Analyst: BWD

2-Chlorotoluene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
2-Hexanone	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
4-Chlorotoluene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
4-Methyl-2-pentanone	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Acetone	0.111	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Acetonitrile	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Acrolein	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Acrylonitrile	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Allyl chloride	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Benzene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Bromobenzene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Bromochloromethane	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Bromodichloromethane	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Bromoform	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Bromomethane	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Carbon disulfide	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Carbon tetrachloride	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Chlorobenzene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Chlorodibromomethane	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroethane	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroform	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Chloromethane	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroprene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,2-Dichloroethene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,3-Dichloropropene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,4-Dichloro-2-butene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Dibromomethane	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Dichlorodifluoromethane	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Ethyl methacrylate	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Ethylbenzene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Isopropylbenzene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
m,p-Xylene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Methacrylonitrile	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Methyl methacrylate	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Methyl tert-butyl ether	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Methylene chloride	0.0186	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
n-Butylbenzene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
n-Propylbenzene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
o-Xylene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

VOLATILE ORGANICS IN SOIL

SW8260C SW5035A Analyst: BWD

Propionitrile	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
sec-Butylbenzene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Styrene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
tert-Butylbenzene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Tetrachloroethene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Toluene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,2-Dichloroethene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,3-Dichloropropene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,4-Dichloro-2-butene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Trichloroethene	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Trichlorofluoromethane	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Vinyl acetate	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Vinyl chloride	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Xylenes, Total	< 0.00399	0.00399	mg/Kg	1	8/11/2020 9:00:00 AM
Surr: 4-Bromofluorobenzene	0	74.3 - 104	S %Rec	1	8/11/2020 9:00:00 AM
Surr: Dibromofluoromethane	0	75.9 - 134	S %Rec	1	8/11/2020 9:00:00 AM
Surr: Toluene-d8	0	71.9 - 115	S %Rec	1	8/11/2020 9:00:00 AM

EPA 8270D IN SOILS

SW8270D SW3550C Analyst: KP

1,2,4,5-Tetrachlorobenzene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
1,2,4-Trichlorobenzene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
1,2-Dichlorobenzene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
1,2-Diphenylhydrazine	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
1,3,5-Trinitrobenzene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
1,3-Dichlorobenzene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
1,3-Dinitrobenzene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
1,4-Dichlorobenzene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
1-Methylnaphthalene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
1-Naphthylamine	< 0.509	0.509	mg/Kg	1	8/16/2020 6:24:00 PM
1-Nitroso-piperidine	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2,2'-oxybis(1-Chloropropane)	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2,3,4,6-Tetrachlorophenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2,3-Dichloroaniline	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2,4,5-Trichlorophenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2,4,6-Trichlorophenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2,4-Dichlorophenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2,4-Dimethylphenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2,4-Dinitrophenol	< 0.558	0.558	mg/Kg	1	8/16/2020 6:24:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original

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 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN SOILS

SW8270D

SW3550C

Analyst: **KP**

2,4-Dinitrotoluene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2,6-Dichlorophenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2,6-Dinitrotoluene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2-Acetylaminofluorene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2-Chloronaphthalene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2-Chlorophenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2-Methylnaphthalene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2-Methylphenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
2-Naphthylamine	< 0.500	0.500	mg/Kg	1	8/16/2020 6:24:00 PM
2-Nitroaniline	< 0.346	0.346	mg/Kg	1	8/16/2020 6:24:00 PM
2-Nitrophenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
3,3'-Dichlorobenzidine	< 0.423	0.423	mg/Kg	1	8/16/2020 6:24:00 PM
3-Methylcholanthrene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
3-Nitroaniline	< 0.375	0.375	mg/Kg	1	8/16/2020 6:24:00 PM
4,6-Dinitro-2-methylphenol	< 0.327	0.327	mg/Kg	1	8/16/2020 6:24:00 PM
4-Aminobiphenyl	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
4-Bromophenyl phenyl ether	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
4-Chloro-3-methylphenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
4-Chloroaniline	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
4-Chlorophenyl phenyl ether	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
4-Methylphenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
4-Nitroaniline	< 0.433	0.433	mg/Kg	1	8/16/2020 6:24:00 PM
4-Nitrophenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
5-Nitro-o-toluidine	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
7,12-Dimethylbenz(a)anthracene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Acenaphthene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Acenaphthylene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Acetophenone	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
alpha-Terpineol	< 0.384	0.384	mg/Kg	1	8/16/2020 6:24:00 PM
Aniline	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Anthracene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Benz(a)anthracene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Benzidine	< 0.365	0.365	mg/Kg	1	8/16/2020 6:24:00 PM
Benzo(a)pyrene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Benzo(b)fluoranthene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Benzo(g,h,i)perylene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Benzo(k)fluoranthene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Benzyl alcohol	< 0.471	0.471	mg/Kg	1	8/16/2020 6:24:00 PM
Biphenyl	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

Original



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN SOILS

SW8270D

SW3550C

Analyst: **KP**

Bis(2-chloroethoxy)methane	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Bis(2-chloroethyl) ether	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Bis(2-ethylhexyl) phthalate	< 0.413	0.413	mg/Kg	1	8/16/2020 6:24:00 PM
Butyl benzyl phthalate	< 0.384	0.384	mg/Kg	1	8/16/2020 6:24:00 PM
Carbazole	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Chrysene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Dibenz(a,h)anthracene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Dibenzofuran	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Diethyl phthalate	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Dimethyl phthalate	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Di-n-butyl phthalate	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Di-n-octyl phthalate	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Diphenylamine	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Fluoranthene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Fluorene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Hexachlorobenzene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Hexachlorobutadiene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Hexachlorocyclopentadiene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Hexachloroethane	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Hexachloropropene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Indeno(1,2,3-cd)pyrene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Isophorone	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Isosafrole	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Naphthalene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
n-Decane	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Nitrobenzene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
N-Nitrosodiethylamine	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
N-Nitrosodimethylamine	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
N-Nitrosodi-n-butylamine	< 0.375	0.375	mg/Kg	1	8/16/2020 6:24:00 PM
N-Nitrosodi-n-propylamine	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
N-Nitrosodiphenylamine	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
n-Octadecane	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
o-Toluidine	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Pentachlorobenzene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Pentachloroethane	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Pentachloronitrobenzene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Pentachlorophenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Phenacetin	< 0.433	0.433	mg/Kg	1	8/16/2020 6:24:00 PM
Phenanthrene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

Original

Green Country Testing, Inc.
 6825 E 38th Street
 Tulsa, OK 74145
 TEL: 918-828-9977 FAX: 918-828-7756
 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN SOILS

SW8270D SW3550C Analyst: KP

Phenol	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Pyrene	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Pyridine	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Safrole	< 0.317	0.317	mg/Kg	1	8/16/2020 6:24:00 PM
Surr: 2,4,6-Tribromophenol	58.1	15.7 - 105	%Rec	1	8/16/2020 6:24:00 PM
Surr: 2-Fluorobiphenyl	38.2	7.83 - 102	%Rec	1	8/16/2020 6:24:00 PM
Surr: 2-Fluorophenol	52.5	5 - 92.3	%Rec	1	8/16/2020 6:24:00 PM
Surr: Nitrobenzene-d5	52.9	5.31 - 91.7	m %Rec	1	8/16/2020 6:24:00 PM
Surr: Phenol-d5	58.6	5.51 - 97.7	%Rec	1	8/16/2020 6:24:00 PM
Surr: Terphenyl-d14	64.8	28.8 - 128	%Rec	1	8/16/2020 6:24:00 PM

PCBS IN SOIL - N

SW8082A Analyst: 8727

Aroclor 1016	< 20.0	20.0	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1221	< 20.0	20.0	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1232	< 20.0	20.0	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1242	< 20.0	20.0	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1248	< 20.0	20.0	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1254	< 20.0	20.0	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1260	< 20.0	20.0	ug/kg	1	8/14/2020 3:09:00 PM
Surr: Decachlorobiphenyl	94.0	39 - 134	%Rec	1	8/14/2020 3:09:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005 Analyst: 8727

Hydrocarbons C12 - C28	< 27.2	27.2	mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C28 - C35	< 27.2	27.2	mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C6 - C12	< 27.2	27.2	mg/kg	1	8/14/2020 3:09:00 PM
Total TPH	< 27.2	27.2	mg/kg	1	8/14/2020 3:09:00 PM
Surr: 1-Chlorooctane	78.0	70 - 130	%Rec	1	8/14/2020 3:09:00 PM
Surr: p-Terphenyl	78.0	70 - 130	%Rec	1	8/14/2020 3:09:00 PM

PH IN SOIL OR SEDIMENT

SW9045D Analyst: DW

Hydrogen Ion (pH)	7.60	0.100	pH Units	1	8/6/2020 1:50:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

Lab ID: 2008110-002

Collection Date: 8/5/2020 9:15:00 AM

Client Sample ID: D-2

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/14/2020 1:34:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	1.99	0.430		mg/Kg	1	8/18/2020 11:21:03 PM
Barium	72.3	0.215		mg/Kg	1	8/18/2020 11:21:03 PM
Cadmium	< 1.08	1.08		mg/Kg	1	8/18/2020 11:21:03 PM
Chromium	6.50	1.08		mg/Kg	1	8/18/2020 11:21:03 PM
Lead	14.6	1.08		mg/Kg	1	8/18/2020 11:21:03 PM
Selenium	< 0.430	0.430		mg/Kg	1	8/18/2020 11:21:03 PM
Silver	< 0.0430	0.0430		mg/Kg	1	8/18/2020 11:21:03 PM

VOLATILE ORGANICS IN SOIL

SW8260C

SW5035A

Analyst: **BWD**

1,1,1,2-Tetrachloroethane	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,1-Trichloroethane	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,2,2-Tetrachloroethane	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,2-Trichloroethane	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloroethane	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloroethene	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloropropene	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,2,3-Trichloropropane	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,2,4-Trimethylbenzene	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dibromoethane	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichlorobenzene	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichloroethane	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichloropropane	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,3,5-Trimethylbenzene	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,3-Dichlorobenzene	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,3-Dichloropropane	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
1,4-Dichlorobenzene	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
2,2-Dichloropropane	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM
2-Butanone	< 0.0226	0.0226		mg/Kg	1	8/11/2020 9:00:00 AM
2-Chloroethyl vinyl ether	< 0.00564	0.00564		mg/Kg	1	8/11/2020 9:00:00 AM

Qualifiers: H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

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 PL Permit Limit
 RL Reporting Detection Limit

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

VOLATILE ORGANICS IN SOIL

SW8260C

SW5035A

Analyst: BWD

2-Chlorotoluene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
2-Hexanone	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
4-Chlorotoluene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
4-Methyl-2-pentanone	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Acetone	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Acetonitrile	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Acrolein	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Acrylonitrile	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Allyl chloride	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Benzene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Bromobenzene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Bromochloromethane	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Bromodichloromethane	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Bromoform	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Bromomethane	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Carbon disulfide	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Carbon tetrachloride	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Chlorobenzene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Chlorodibromomethane	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroethane	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroform	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Chloromethane	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroprene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,2-Dichloroethene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,3-Dichloropropene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,4-Dichloro-2-butene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Dibromomethane	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Dichlorodifluoromethane	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Ethyl methacrylate	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Ethylbenzene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Isopropylbenzene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
m,p-Xylene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Methacrylonitrile	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Methyl methacrylate	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Methyl tert-butyl ether	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Methylene chloride	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
n-Butylbenzene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
n-Propylbenzene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
o-Xylene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
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 PL Permit Limit
 RL Reporting Detection Limit

Original



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

VOLATILE ORGANICS IN SOIL

SW8260C SW5035A Analyst: BWD

Compound	SW8260C	SW5035A	Unit	Count	Date/Time
Propionitrile	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
sec-Butylbenzene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Styrene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
tert-Butylbenzene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Tetrachloroethene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Toluene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,2-Dichloroethene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,3-Dichloropropene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,4-Dichloro-2-butene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Trichloroethene	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Trichlorofluoromethane	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Vinyl acetate	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Vinyl chloride	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Xylenes, Total	< 0.00564	0.00564	mg/Kg	1	8/11/2020 9:00:00 AM
Surr: 4-Bromofluorobenzene	75.7	74.3 - 104	%Rec	1	8/11/2020 9:00:00 AM
Surr: Dibromofluoromethane	122	75.9 - 134	%Rec	1	8/11/2020 9:00:00 AM
Surr: Toluene-d8	98.5	71.9 - 115	%Rec	1	8/11/2020 9:00:00 AM

EPA 8270D IN SOILS

SW8270D SW3550C Analyst: KP

Compound	SW8270D	SW3550C	Unit	Count	Date/Time
1,2,4,5-Tetrachlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
1,2,4-Trichlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
1,2-Dichlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
1,2-Diphenylhydrazine	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
1,3,5-Trinitrobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
1,3-Dichlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
1,3-Dinitrobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
1,4-Dichlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
1-Methylnaphthalene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
1-Naphthylamine	< 0.528	0.528	mg/Kg	1	8/16/2020 6:57:00 PM
1-Nitroso-piperidine	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2,2'-oxybis(1-Chloropropane)	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2,3,4,6-Tetrachlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2,3-Dichloroaniline	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2,4,5-Trichlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2,4,6-Trichlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2,4-Dichlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2,4-Dimethylphenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2,4-Dinitrophenol	< 0.578	0.578	mg/Kg	1	8/16/2020 6:57:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN SOILS

SW8270D SW3550C Analyst: KP

2,4-Dinitrotoluene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2,6-Dichlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2,6-Dinitrotoluene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2-Acetylaminofluorene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2-Chloronaphthalene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2-Chlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2-Methylnaphthalene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2-Methylphenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
2-Naphthylamine	< 0.518	0.518	mg/Kg	1	8/16/2020 6:57:00 PM
2-Nitroaniline	< 0.359	0.359	mg/Kg	1	8/16/2020 6:57:00 PM
2-Nitrophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
3,3'-Dichlorobenzidine	< 0.439	0.439	mg/Kg	1	8/16/2020 6:57:00 PM
3-Methylcholanthrene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
3-Nitroaniline	< 0.389	0.389	mg/Kg	1	8/16/2020 6:57:00 PM
4,6-Dinitro-2-methylphenol	< 0.339	0.339	mg/Kg	1	8/16/2020 6:57:00 PM
4-Aminobiphenyl	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
4-Bromophenyl phenyl ether	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
4-Chloro-3-methylphenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
4-Chloroaniline	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
4-Chlorophenyl phenyl ether	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
4-Methylphenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
4-Nitroaniline	< 0.449	0.449	mg/Kg	1	8/16/2020 6:57:00 PM
4-Nitrophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
5-Nitro-o-toluidine	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
7,12-Dimethylbenz(a)anthracene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Acenaphthene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Acenaphthylene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Acetophenone	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
alpha-Terpineol	< 0.399	0.399	mg/Kg	1	8/16/2020 6:57:00 PM
Aniline	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Anthracene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Benz(a)anthracene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Benzidine	< 0.379	0.379	mg/Kg	1	8/16/2020 6:57:00 PM
Benzo(a)pyrene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Benzo(b)fluoranthene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Benzo(g,h,i)perylene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Benzo(k)fluoranthene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Benzyl alcohol	< 0.488	0.488	mg/Kg	1	8/16/2020 6:57:00 PM
Biphenyl	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
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	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN SOILS

SW8270D SW3550C Analyst: KP

Bis(2-chloroethoxy)methane	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Bis(2-chloroethyl) ether	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Bis(2-ethylhexyl) phthalate	< 0.429	0.429	mg/Kg	1	8/16/2020 6:57:00 PM
Butyl benzyl phthalate	< 0.399	0.399	mg/Kg	1	8/16/2020 6:57:00 PM
Carbazole	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Chrysene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Dibenz(a,h)anthracene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Dibenzofuran	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Diethyl phthalate	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Dimethyl phthalate	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Di-n-butyl phthalate	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Di-n-octyl phthalate	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Diphenylamine	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Fluoranthene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Fluorene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Hexachlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Hexachlorobutadiene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Hexachlorocyclopentadiene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Hexachloroethane	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Hexachloropropene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Indeno(1,2,3-cd)pyrene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Isophorone	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Isosafrole	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Naphthalene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
n-Decane	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Nitrobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
N-Nitrosodiethylamine	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
N-Nitrosodimethylamine	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
N-Nitrosodi-n-butylamine	< 0.389	0.389	mg/Kg	1	8/16/2020 6:57:00 PM
N-Nitrosodi-n-propylamine	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
N-Nitrosodiphenylamine	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
n-Octadecane	0.412	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
o-Toluidine	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Pentachlorobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Pentachloroethane	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Pentachloronitrobenzene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Pentachlorophenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Phenacetin	< 0.449	0.449	mg/Kg	1	8/16/2020 6:57:00 PM
Phenanthrene	0.355	0.329	mg/Kg	1	8/16/2020 6:57:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original

Green Country Testing, Inc.
 6825 E 38th Street
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 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN SOILS

SW8270D SW3550C Analyst: KP

Phenol	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Pyrene	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Pyridine	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Safrole	< 0.329	0.329	mg/Kg	1	8/16/2020 6:57:00 PM
Surr: 2,4,6-Tribromophenol	33.2	15.7 - 105	%Rec	1	8/16/2020 6:57:00 PM
Surr: 2-Fluorobiphenyl	31.4	7.83 - 102	%Rec	1	8/16/2020 6:57:00 PM
Surr: 2-Fluorophenol	48.3	5 - 92.3	%Rec	1	8/16/2020 6:57:00 PM
Surr: Nitrobenzene-d5	49.2	5.31 - 91.7	%Rec	1	8/16/2020 6:57:00 PM
Surr: Phenol-d5	49.7	5.51 - 97.7	%Rec	1	8/16/2020 6:57:00 PM
Surr: Terphenyl-d14	22.5	28.8 - 128	S %Rec	1	8/16/2020 6:57:00 PM

PCBS IN SOIL - N

SW8082A Analyst: 8727

Aroclor 1016	< 46.8	46.8	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1221	< 46.8	46.8	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1232	< 46.8	46.8	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1242	< 46.8	46.8	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1248	< 46.8	46.8	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1254	< 46.8	46.8	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1260	< 46.8	46.8	ug/kg	1	8/14/2020 3:09:00 PM
Surr: Decachlorobiphenyl	98.0	70 - 130	%Rec	1	8/14/2020 3:09:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005 Analyst: 8727

Hydrocarbons C12 - C28	125	36.7	mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C28 - C35	73.2	36.7	mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C6 - C12	< 36.7	36.7	mg/kg	1	8/14/2020 3:09:00 PM
Total TPH	204	36.7	mg/kg	1	8/14/2020 3:09:00 PM
Surr: 1-Chlorooctane	86.0	70 - 130	%Rec	1	8/14/2020 3:09:00 PM
Surr: p-Terphenyl	87.0	70 - 130	%Rec	1	8/14/2020 3:09:00 PM

PH IN SOIL OR SEDIMENT

SW9045D Analyst: DW

Hydrogen Ion (pH)	7.56	0.100	pH Units	1	8/6/2020 1:50:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

Lab ID: 2008110-003

Collection Date: 8/5/2020 9:40:00 AM

Client Sample ID: D-3

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/14/2020 1:34:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	1.98	0.477		mg/Kg	1	8/18/2020 11:32:41 PM
Barium	85.7	2.39		mg/Kg	1	8/18/2020 11:32:41 PM
Cadmium	< 0.239	0.239		mg/Kg	1	8/18/2020 11:32:41 PM
Chromium	12.4	2.39		mg/Kg	1	8/18/2020 11:32:41 PM
Lead	12.2	1.19		mg/Kg	1	8/18/2020 11:32:41 PM
Selenium	< 0.477	0.477		mg/Kg	1	8/18/2020 11:32:41 PM
Silver	< 0.0477	0.0477		mg/Kg	1	8/18/2020 11:32:41 PM

**BTEX IN SOIL
 BTEX IN SOIL**

SW8021B

Analyst: **BWD**

Benzene	< 0.140	0.140		mg/Kg	0.07	8/6/2020 4:00:00 PM
Ethylbenzene	< 0.350	0.350		mg/Kg	0.07	8/6/2020 4:00:00 PM
Toluene	< 0.350	0.350		mg/Kg	0.07	8/6/2020 4:00:00 PM
Xylenes, Total	< 1.05	1.05		mg/Kg	0.07	8/6/2020 4:00:00 PM
Surr: 4-Bromofluorobenzene	99.6	39.1 - 160		%Rec	0.07	8/6/2020 4:00:00 PM
Surr: Trifluorotoluene	83.4	17.8 - 149		%Rec	0.07	8/6/2020 4:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 26.8	26.8		mg/L	1	8/14/2020 3:09:00 PM
Hydrocarbons C28 - C35	< 26.8	26.8		mg/L	1	8/14/2020 3:09:00 PM
Hydrocarbons C6 - C12	< 26.8	26.8		mg/L	1	8/14/2020 3:09:00 PM
Total TPH	< 26.8	26.8		mg/L	1	8/14/2020 3:09:00 PM
Surr: 1-Chlorooctane	96.0	70 - 130		%Rec	1	8/14/2020 3:09:00 PM
Surr: p-Terphenyl	97.0	70 - 130		%Rec	1	8/14/2020 3:09:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	1.53	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008110

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH)	7.76	0.100	pH Units	1	8/6/2020 1:50:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

Lab ID: 2008110-004

Collection Date: 8/5/2020 10:10:00 AM

Client Sample ID: D-4

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/14/2020 1:34:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	1.91	0.428		mg/Kg	1	8/18/2020 11:44:30 PM
Barium	178	2.14		mg/Kg	1	8/18/2020 11:44:30 PM
Cadmium	< 0.214	0.214		mg/Kg	1	8/18/2020 11:44:30 PM
Chromium	16.3	2.14		mg/Kg	1	8/18/2020 11:44:30 PM
Lead	7.72	1.07		mg/Kg	1	8/18/2020 11:44:30 PM
Selenium	< 0.428	0.428		mg/Kg	1	8/18/2020 11:44:30 PM
Silver	< 0.0428	0.0428		mg/Kg	1	8/18/2020 11:44:30 PM

**BTEX IN SOIL
 BTEX IN SOIL**

SW8021B

Analyst: **BWD**

Benzene	< 0.108	0.108		mg/Kg	0.054	8/6/2020 4:00:00 PM
Ethylbenzene	< 0.270	0.270		mg/Kg	0.054	8/6/2020 4:00:00 PM
Toluene	< 0.270	0.270		mg/Kg	0.054	8/6/2020 4:00:00 PM
Xylenes, Total	< 0.810	0.810		mg/Kg	0.054	8/6/2020 4:00:00 PM
Surr: 4-Bromofluorobenzene	91.5	39.1 - 160		%Rec	0.054	8/6/2020 4:00:00 PM
Surr: Trifluorotoluene	82.9	17.8 - 149		%Rec	0.054	8/6/2020 4:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	272	27.7		mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C28 - C35	168	27.7		mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C6 - C12	< 27.7	27.7		mg/kg	1	8/14/2020 3:09:00 PM
Total TPH	444	27.7		mg/kg	1	8/14/2020 3:09:00 PM
Surr: 1-Chlorooctane	92.0	70 - 130		%Rec	1	8/14/2020 3:09:00 PM
Surr: p-Terphenyl	96.0	70 - 130		%Rec	1	8/14/2020 3:09:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	0.579	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
W	Sample container temperature is out of limit as specified at testcode

M	Manual Integration used to determine area response
PL	Permit Limit
RL	Reporting Detection Limit

Original

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008110

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH)	7.41	0.100	pH Units	1	8/6/2020 1:50:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

Lab ID: 2008110-005

Collection Date: 8/5/2020 10:40:00 AM

Client Sample ID: D-5

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/14/2020 1:34:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	2.74	0.426		mg/Kg	1	8/19/2020 12:12:49 AM
Barium	140	2.13		mg/Kg	1	8/19/2020 12:12:49 AM
Cadmium	0.226	0.213		mg/Kg	1	8/19/2020 12:12:49 AM
Chromium	11.7	2.13		mg/Kg	1	8/19/2020 12:12:49 AM
Lead	15.5	1.06		mg/Kg	1	8/19/2020 12:12:49 AM
Selenium	< 0.426	0.426		mg/Kg	1	8/19/2020 12:12:49 AM
Silver	< 0.0426	0.0426		mg/Kg	1	8/19/2020 12:12:49 AM

**BTEX IN SOIL
 BTEX IN SOIL**

SW8021B

Analyst: **BWD**

Benzene	< 0.142	0.142		mg/Kg	0.071	8/6/2020 4:00:00 PM
Ethylbenzene	< 0.355	0.355		mg/Kg	0.071	8/6/2020 4:00:00 PM
Toluene	< 0.355	0.355		mg/Kg	0.071	8/6/2020 4:00:00 PM
Xylenes, Total	< 1.06	1.06		mg/Kg	0.071	8/6/2020 4:00:00 PM
Surr: 4-Bromofluorobenzene	92.9	39.1 - 160		%Rec	0.071	8/6/2020 4:00:00 PM
Surr: Trifluorotoluene	82.2	17.8 - 149		%Rec	0.071	8/6/2020 4:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 26.5	26.5		mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C28 - C35	< 26.5	26.5		mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C6 - C12	< 26.5	26.5		mg/kg	1	8/14/2020 3:09:00 PM
Total TPH	< 26.5	26.5		mg/kg	1	8/14/2020 3:09:00 PM
Surr: 1-Chlorooctane	113	70 - 130		%Rec	1	8/14/2020 3:09:00 PM
Surr: p-Terphenyl	117	70 - 130		%Rec	1	8/14/2020 3:09:00 PM

FLUORIDE IN SOIL OR SEDIMENT

4500 F-C, 2011

Analyst: **CW**

Fluoride	0.561	0.200		mg/Kg	1	8/10/2020 8:46:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008110

PH IN SOIL OR SEDIMENT

SW9045D

Analyst: **DW**

Hydrogen Ion (pH) 7.68 0.100 pH Units 1 8/6/2020 1:50:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

Lab ID: 2008110-006

Collection Date: 8/5/2020 1:25:00 PM

Client Sample ID: AST-1

Matrix: OTHER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
RCI IN WATER						
REACTIVE CYANIDE					SW7.3.3.2	Analyst: BG
Cyanide, Reactive	< 0.0200	0.0200		ppm	1	8/12/2020 12:18:00 PM
RCI IN WATER						
REACTIVE SULFIDE					SW7.3.4.2	Analyst: BG
Sulfide, Reactive	< 0.0500	0.0500		ppm	1	8/10/2020 2:12:00 PM
VOLATILE ORGANICS IN WATER					SW8260C	Analyst: BWD
1,1,1,2-Tetrachloroethane	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,1,1-Trichloroethane	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,1,2,2-Tetrachloroethane	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,1,2-Trichloroethane	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,1-Dichloroethane	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,1-Dichloroethene	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,1-Dichloropropene	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,2,3-Trichloropropane	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,2,4-Trimethylbenzene	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,2-Dibromoethane	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,2-Dichlorobenzene	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,2-Dichloroethane	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,2-Dichloropropane	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,3,5-Trimethylbenzene	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,3-Dichlorobenzene	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,3-Dichloropropane	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
1,4-Dichlorobenzene	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
2,2-Dichloropropane	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
2-Butanone	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
2-Chloroethyl vinyl ether	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
2-Chlorotoluene	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
2-Hexanone	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
4-Chlorotoluene	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
4-Methyl-2-pentanone	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
Acetone	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM
Acetonitrile	< 25.0	25.0		mg/L	5000	8/12/2020 4:00:00 PM

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response
 ND Not Detected at the Reporting Limit PL Permit Limit
 R RPD outside accepted recovery limits RL Reporting Detection Limit
 W Sample container temperature is out of limit as specified at testcode

Green Country Testing, Inc.
 6825 E 38th Street
 Tulsa, OK 74145
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 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

VOLATILE ORGANICS IN WATER

SW8260C

Analyst: BWD

Acrolein	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Acrylonitrile	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Allyl chloride	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Benzene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Bromobenzene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Bromochloromethane	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Bromodichloromethane	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Bromoform	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Bromomethane	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Carbon disulfide	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Carbon tetrachloride	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Chlorobenzene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Chlorodibromomethane	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Chloroethane	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Chloroform	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Chloromethane	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Chloroprene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
cis-1,2-Dichloroethene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
cis-1,3-Dichloropropene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
cis-1,4-Dichloro-2-butene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Dibromomethane	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Dichlorodifluoromethane	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Ethyl methacrylate	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Ethylbenzene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Isopropylbenzene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
m,p-Xylene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Methacrylonitrile	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Methyl methacrylate	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Methyl tert-butyl ether	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Methylene chloride	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
n-Butylbenzene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
n-Propylbenzene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
o-Xylene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Propionitrile	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
sec-Butylbenzene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Styrene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
tert-Butylbenzene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Tetrachloroethene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Toluene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM

Qualifiers:
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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

VOLATILE ORGANICS IN WATER

SW8260C

Analyst: **BWD**

trans-1,2-Dichloroethene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
trans-1,3-Dichloropropene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
trans-1,4-Dichloro-2-butene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Trichloroethene	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Trichlorofluoromethane	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Vinyl acetate	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Vinyl chloride	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Xylenes, Total	< 25.0	25.0	mg/L	5000	8/12/2020 4:00:00 PM
Surr: 4-Bromofluorobenzene	97.7	78.2 - 119	%Rec	5000	8/12/2020 4:00:00 PM
Surr: Dibromofluoromethane	102	89.2 - 116	%Rec	5000	8/12/2020 4:00:00 PM
Surr: Toluene-d8	97.8	84.7 - 111	%Rec	5000	8/12/2020 4:00:00 PM

EPA 8270D IN WATER

SW8270D

SW3510C

Analyst: **KP**

1,2,4,5-Tetrachlorobenzene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
1,2,4-Trichlorobenzene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
1,2-Dichlorobenzene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
1,2-Diphenylhydrazine	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
1,3,5-Trinitrobenzene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
1,3-Dichlorobenzene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
1,3-Dinitrobenzene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
1,4-Dichlorobenzene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
1-Methylnaphthalene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
1-Naphthylamine	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
1-Nitroso-piperidine	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2,2'-oxybis(1-Chloropropane)	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2,3,4,6-Tetrachlorophenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2,3-Dichloroaniline	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2,4,5-Trichlorophenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2,4,6-Trichlorophenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2,4-Dichlorophenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2,4-Dimethylphenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2,4-Dinitrophenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2,4-Dinitrotoluene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2,6-Dichlorophenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2,6-Dinitrotoluene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2-Acetylaminofluorene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2-Chloronaphthalene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2-Chlorophenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM

Qualifiers: H Holding times for preparation or analysis exceeded
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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN WATER

SW8270D

SW3510C

Analyst: **KP**

2-Methylnaphthalene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2-Methylphenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2-Naphthylamine	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2-Nitroaniline	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
2-Nitrophenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
3,3'-Dichlorobenzidine	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
3-Methylcholanthrene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
3-Nitroaniline	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
4,6-Dinitro-2-methylphenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
4-Aminobiphenyl	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
4-Bromophenyl phenyl ether	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
4-Chloro-3-methylphenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
4-Chloroaniline	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
4-Chlorophenyl phenyl ether	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
4-Methylphenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
4-Nitroaniline	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
4-Nitrophenol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
5-Nitro-o-toluidine	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
7,12-Dimethylbenz(a)anthracene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Acenaphthene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Acenaphthylene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Acetophenone	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
alpha-Terpineol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Aniline	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Anthracene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Benz(a)anthracene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Benzidine	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Benzo(a)pyrene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Benzo(b)fluoranthene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Benzo(g,h,i)perylene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Benzo(k)fluoranthene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Benzyl alcohol	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Biphenyl	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Bis(2-chloroethoxy)methane	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Bis(2-chloroethyl) ether	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Bis(2-ethylhexyl) phthalate	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Butyl benzyl phthalate	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Carbazole	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM
Chrysene	< 10,000	10,000	mg/L	1000	8/16/2020 3:08:00 PM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

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 PL Permit Limit
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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN WATER

SW8270D

SW3510C

Analyst: KP

Compound	Result	Limit	Unit	SW8270D	SW3510C	Time
Dibenz(a,h)anthracene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Dibenzofuran	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Diethyl phthalate	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Dimethyl phthalate	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Di-n-butyl phthalate	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Di-n-octyl phthalate	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Diphenylamine	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Fluoranthene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Fluorene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Hexachlorobenzene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Hexachlorobutadiene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Hexachlorocyclopentadiene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Hexachloroethane	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Hexachloropropene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Indeno(1,2,3-cd)pyrene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Isophorone	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Isosafrole	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Naphthalene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
n-Decane	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Nitrobenzene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
N-Nitrosodiethylamine	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
N-Nitrosodimethylamine	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
N-Nitrosodi-n-butylamine	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
N-Nitrosodi-n-propylamine	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
N-Nitrosodiphenylamine	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
n-Octadecane	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
o-Toluidine	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Pentachlorobenzene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Pentachloroethane	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Pentachloronitrobenzene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Pentachlorophenol	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Phenacetin	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Phenanthrene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Phenol	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Pyrene	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Pyridine	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Safrole	< 10,000	10,000	mg/L	1000	1000	8/16/2020 3:08:00 PM
Surr: 2,4,6-Tribromophenol	0	10.4 - 112	S %Rec	1000	1000	8/16/2020 3:08:00 PM
Surr: 2-Fluorobiphenyl	0	16.7 - 103	S %Rec	1000	1000	8/16/2020 3:08:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN WATER

SW8270D SW3510C Analyst: KP

Surr: 2-Fluorophenol	0	5 - 84.6	S	%Rec	1000	8/16/2020 3:08:00 PM
Surr: Nitrobenzene-d5	0	15.4 - 110	S	%Rec	1000	8/16/2020 3:08:00 PM
Surr: Phenol-d5	0	5 - 89.1	S	%Rec	1000	8/16/2020 3:08:00 PM
Surr: Terphenyl-d14	0	9.18 - 137	S	%Rec	1000	8/16/2020 3:08:00 PM

PCBS IN WATER - N

SW8082A Analyst: 8727

Aroclor 1016	< 0.480	0.480		mg/kg	1	8/14/2020 3:09:00 PM
Aroclor 1221	< 0.480	0.480		mg/kg	1	8/14/2020 3:09:00 PM
Aroclor 1232	< 0.480	0.480		mg/kg	1	8/14/2020 3:09:00 PM
Aroclor 1242	< 0.480	0.480		mg/kg	1	8/14/2020 3:09:00 PM
Aroclor 1248	< 0.480	0.480		mg/kg	1	8/14/2020 3:09:00 PM
Aroclor 1254	< 0.480	0.480		mg/kg	1	8/14/2020 3:09:00 PM
Aroclor 1260	< 0.480	0.480		mg/kg	1	8/14/2020 3:09:00 PM
Surr: Decachlorobiphenyl	106	10 - 148		%Rec	1	8/14/2020 3:09:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005 Analyst: 8727

Hydrocarbons C12 - C28	342,000	11,600		mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C28 - C35	< 11,600	11,600		mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C6 - C12	< 11,600	11,600		mg/kg	1	8/14/2020 3:09:00 PM
Total TPH	349,000	11,600		mg/kg	1	8/14/2020 3:09:00 PM
Surr: 1-Chlorooctane	0	70 - 130	S	%Rec	1	8/14/2020 3:09:00 PM
Surr: p-Terphenyl	0	70 - 130	S	%Rec	1	8/14/2020 3:09:00 PM

**RCI IN WATER
CORROSIVITY BY PH**

SW9045D Analyst: DW

Hydrogen Ion (pH)	7.18	0.100		pH Units	1	8/6/2020 1:20:00 PM
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**RCI IN WATER
IGNITABILITY**

SW1010A Analyst: MH

Ignitability	>200	80.0		°F	1	8/20/2020 3:30:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

Lab ID: 2008110-007

Collection Date: 8/5/2020 2:20:00 PM

Client Sample ID: SL-1

Matrix: SLUDGE

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
RCI IN SOIL REACTIVE CYANIDE				SW7.3.3.2		Analyst: BG
Cyanide, Reactive	< 0.0200	0.0200		ppm	1	8/12/2020 12:18:00 PM
RCI IN SOIL REACTIVE SULFIDE				SW7.3.4.2		Analyst: BG
Sulfide, Reactive	< 0.0500	0.0500		ppm	1	8/10/2020 2:12:00 PM
TCLP METALS MERCURY IN TCLP EXTRACT				SW7470A		Analyst: JF
Mercury	< 0.000100	0.000100		mg/L	1	8/7/2020 1:54:00 PM
TCLP METALS METALS IN TCLP EXTRACT				SW6010B	SW3010A	Analyst: KR
Arsenic	< 0.200	0.200		mg/L	10	8/11/2020 8:49:36 PM
Barium	0.187	0.100		mg/L	10	8/11/2020 8:49:36 PM
Cadmium	< 0.100	0.100		mg/L	10	8/11/2020 8:49:36 PM
Chromium	< 0.100	0.100		mg/L	10	8/11/2020 8:49:36 PM
Lead	< 0.0500	0.0500		mg/L	10	8/11/2020 8:49:36 PM
Selenium	< 0.200	0.200		mg/L	10	8/11/2020 8:49:36 PM
Silver	< 0.0200	0.0200		mg/L	10	8/11/2020 8:49:36 PM
TCLP BENZENE VOLATILE ORGANICS IN WATER				SW8260C		Analyst: BWD
Benzene	< 0.100	0.100		mg/L	20	8/12/2020 4:00:00 PM
Surr: 4-Bromofluorobenzene	95.4	78.2 - 119		%Rec	20	8/12/2020 4:00:00 PM
Surr: Dibromofluoromethane	102	89.2 - 116		%Rec	20	8/12/2020 4:00:00 PM
Surr: Toluene-d8	98.5	84.7 - 111		%Rec	20	8/12/2020 4:00:00 PM
PCBS IN SOIL - N				SW8082A		Analyst: 8727
Aroclor 1016	< 0.190	0.190		mg/Kg	1	8/14/2020 3:09:00 PM
Aroclor 1221	< 0.190	0.190		mg/Kg	1	8/14/2020 3:09:00 PM
Aroclor 1232	< 0.190	0.190		mg/Kg	1	8/14/2020 3:09:00 PM
Aroclor 1242	< 0.190	0.190		mg/Kg	1	8/14/2020 3:09:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Green Country Testing, Inc.
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 Tulsa, OK 74145
 TEL: 918-828-9977 FAX: 918-828-7756
 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008110

PCBS IN SOIL - N

SW8082A

Analyst: **8727**

Aroclor 1248	< 0.190	0.190	mg/Kg	1	8/14/2020 3:09:00 PM
Aroclor 1254	< 0.190	0.190	mg/Kg	1	8/14/2020 3:09:00 PM
Aroclor 1260	< 0.190	0.190	mg/Kg	1	8/14/2020 3:09:00 PM
Surr: Decachlorobiphenyl	92.0	10 - 148	%Rec	1	8/14/2020 3:09:00 PM

**RCI IN SOIL
 CORROSIVITY BY PH**

SW9045D

Analyst: **DW**

Hydrogen Ion (pH)	7.11	0.100	pH Units	1	8/6/2020 1:50:00 PM
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**RCI IN SOIL
 IGNITABILITY IN SOIL OR SEDIMENT**

SW1010A

Analyst: **MH**

Ignitability	>200	80.0	°F	1	8/10/2020 2:10:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

Lab ID: 2008110-008

Collection Date: 8/5/2020 3:10:00 PM

Client Sample ID: Trip Blank

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANICS IN WATER

SW8260C

Analyst: **BWD**

1,1,1,2-Tetrachloroethane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,1,1-Trichloroethane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,1,2,2-Tetrachloroethane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,1,2-Trichloroethane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,1-Dichloroethane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,1-Dichloroethene	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,1-Dichloropropene	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,2,3-Trichloropropane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,2,4-Trimethylbenzene	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,2-Dibromoethane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,2-Dichlorobenzene	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,2-Dichloroethane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,2-Dichloropropane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,3,5-Trimethylbenzene	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,3-Dichlorobenzene	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,3-Dichloropropane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
1,4-Dichlorobenzene	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
2,2-Dichloropropane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
2-Butanone	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
2-Chloroethyl vinyl ether	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
2-Chlorotoluene	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
2-Hexanone	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
4-Chlorotoluene	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
4-Methyl-2-pentanone	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
Acetone	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
Acetonitrile	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
Acrolein	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
Acrylonitrile	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
Allyl chloride	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
Benzene	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
Bromobenzene	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
Bromochloromethane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
Bromodichloromethane	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM
Bromoform	< 0.00500	0.00500		mg/L	1	8/12/2020 4:00:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

VOLATILE ORGANICS IN WATER

SW8260C

Analyst: BWD

Bromomethane	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Carbon disulfide	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Carbon tetrachloride	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Chlorobenzene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Chlorodibromomethane	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Chloroethane	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Chloroform	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Chloromethane	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Chloroprene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
cis-1,2-Dichloroethene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
cis-1,3-Dichloropropene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
cis-1,4-Dichloro-2-butene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Dibromomethane	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Dichlorodifluoromethane	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Ethyl methacrylate	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Ethylbenzene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Isopropylbenzene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
m,p-Xylene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Methacrylonitrile	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Methyl methacrylate	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Methyl tert-butyl ether	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Methylene chloride	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
n-Butylbenzene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
n-Propylbenzene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
o-Xylene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Propionitrile	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
sec-Butylbenzene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Styrene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
tert-Butylbenzene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Tetrachloroethene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Toluene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
trans-1,2-Dichloroethene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
trans-1,3-Dichloropropene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
trans-1,4-Dichloro-2-butene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Trichloroethene	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Trichlorofluoromethane	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Vinyl acetate	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Vinyl chloride	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM
Xylenes, Total	< 0.00500	0.00500	mg/L	1	8/12/2020 4:00:00 PM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

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 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008110

VOLATILE ORGANICS IN WATER

SW8260C

Analyst: **BWD**

Surr: 4-Bromofluorobenzene	100	78.2 - 119	%Rec	1	8/12/2020 4:00:00 PM
Surr: Dibromofluoromethane	102	89.2 - 116	%Rec	1	8/12/2020 4:00:00 PM
Surr: Toluene-d8	95.5	84.7 - 111	%Rec	1	8/12/2020 4:00:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

Lab ID: 2008110-009

Collection Date: 8/5/2020 10:45:00 AM

Client Sample ID: D-6

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN SOIL OR SEDIMENT
 MERCURY IN SOIL**

SW7471B

Analyst: **JF**

Mercury	< 0.0250	0.0250		mg/Kg	1	8/14/2020 1:34:00 PM
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**RCRA METALS IN SOIL OR SEDIMENT
 METALS IN SOIL BY ICP**

SW6010B

3050B

Analyst: **KR**

Arsenic	0.552	0.473		mg/Kg	1	8/19/2020 12:24:29 AM
Barium	135	2.37		mg/Kg	1	8/19/2020 12:24:29 AM
Cadmium	< 0.237	0.237		mg/Kg	1	8/19/2020 12:24:29 AM
Chromium	14.5	2.37		mg/Kg	1	8/19/2020 12:24:29 AM
Lead	4.47	1.18		mg/Kg	1	8/19/2020 12:24:29 AM
Selenium	< 0.473	0.473		mg/Kg	1	8/19/2020 12:24:29 AM
Silver	< 0.0473	0.0473		mg/Kg	1	8/19/2020 12:24:29 AM

VOLATILE ORGANICS IN SOIL

SW8260C

SW5035A

Analyst: **BWD**

1,1,1,2-Tetrachloroethane	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,1-Trichloroethane	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,2,2-Tetrachloroethane	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,1,2-Trichloroethane	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloroethane	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloroethene	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,1-Dichloropropene	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,2,3-Trichloropropane	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,2,4-Trimethylbenzene	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dibromoethane	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichlorobenzene	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichloroethane	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,2-Dichloropropane	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,3,5-Trimethylbenzene	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,3-Dichlorobenzene	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,3-Dichloropropane	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
1,4-Dichlorobenzene	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
2,2-Dichloropropane	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM
2-Butanone	< 0.00861	0.00861		mg/Kg	1	8/11/2020 9:00:00 AM
2-Chloroethyl vinyl ether	< 0.00215	0.00215		mg/Kg	1	8/11/2020 9:00:00 AM

Qualifiers: H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

Original

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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

VOLATILE ORGANICS IN SOIL

SW8260C SW5035A Analyst: BWD

2-Chlorotoluene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
2-Hexanone	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
4-Chlorotoluene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
4-Methyl-2-pentanone	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Acetone	0.0270	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Acetonitrile	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Acrolein	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Acrylonitrile	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Allyl chloride	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Benzene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Bromobenzene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Bromochloromethane	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Bromodichloromethane	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Bromoform	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Bromomethane	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Carbon disulfide	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Carbon tetrachloride	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Chlorobenzene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Chlorodibromomethane	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroethane	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroform	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Chloromethane	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Chloroprene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,2-Dichloroethene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,3-Dichloropropene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
cis-1,4-Dichloro-2-butene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Dibromomethane	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Dichlorodifluoromethane	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Ethyl methacrylate	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Ethylbenzene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Isopropylbenzene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
m,p-Xylene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Methacrylonitrile	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Methyl methacrylate	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Methyl tert-butyl ether	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Methylene chloride	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
n-Butylbenzene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
n-Propylbenzene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
o-Xylene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

VOLATILE ORGANICS IN SOIL

SW8260C SW5035A Analyst: BWD

Compound	SW8260C	SW5035A	Unit	Count	Date/Time
Propionitrile	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
sec-Butylbenzene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Styrene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
tert-Butylbenzene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Tetrachloroethene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Toluene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,2-Dichloroethene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,3-Dichloropropene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
trans-1,4-Dichloro-2-butene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Trichloroethene	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Trichlorofluoromethane	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Vinyl acetate	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Vinyl chloride	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Xylenes, Total	< 0.00215	0.00215	mg/Kg	1	8/11/2020 9:00:00 AM
Surr: 4-Bromofluorobenzene	98.2	74.3 - 104	%Rec	1	8/11/2020 9:00:00 AM
Surr: Dibromofluoromethane	123	75.9 - 134	%Rec	1	8/11/2020 9:00:00 AM
Surr: Toluene-d8	103	71.9 - 115	%Rec	1	8/11/2020 9:00:00 AM

EPA 8270D IN SOILS

SW8270D SW3550C Analyst: KP

Compound	SW8270D	SW3550C	Unit	Count	Date/Time
1,2,4,5-Tetrachlorobenzene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
1,2,4-Trichlorobenzene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
1,2-Dichlorobenzene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
1,2-Diphenylhydrazine	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
1,3,5-Trinitrobenzene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
1,3-Dichlorobenzene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
1,3-Dinitrobenzene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
1,4-Dichlorobenzene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
1-Methylnaphthalene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
1-Naphthylamine	< 0.510	0.510	mg/Kg	1	8/16/2020 7:29:00 PM
1-Nitroso-piperidine	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2,2'-oxybis(1-Chloropropane)	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2,3,4,6-Tetrachlorophenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2,3-Dichloroaniline	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2,4,5-Trichlorophenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2,4,6-Trichlorophenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2,4-Dichlorophenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2,4-Dimethylphenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2,4-Dinitrophenol	< 0.558	0.558	mg/Kg	1	8/16/2020 7:29:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original

Green Country Testing, Inc.
 6825 E 38th Street
 Tulsa, OK 74145
 TEL: 918-828-9977 FAX: 918-828-7756
 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN SOILS

SW8270D

SW3550C

Analyst: **KP**

2,4-Dinitrotoluene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2,6-Dichlorophenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2,6-Dinitrotoluene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2-Acetylaminofluorene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2-Chloronaphthalene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2-Chlorophenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2-Methylnaphthalene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2-Methylphenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
2-Naphthylamine	< 0.501	0.501	mg/Kg	1	8/16/2020 7:29:00 PM
2-Nitroaniline	< 0.347	0.347	mg/Kg	1	8/16/2020 7:29:00 PM
2-Nitrophenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
3,3'-Dichlorobenzidine	< 0.424	0.424	mg/Kg	1	8/16/2020 7:29:00 PM
3-Methylcholanthrene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
3-Nitroaniline	< 0.375	0.375	mg/Kg	1	8/16/2020 7:29:00 PM
4,6-Dinitro-2-methylphenol	< 0.327	0.327	mg/Kg	1	8/16/2020 7:29:00 PM
4-Aminobiphenyl	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
4-Bromophenyl phenyl ether	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
4-Chloro-3-methylphenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
4-Chloroaniline	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
4-Chlorophenyl phenyl ether	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
4-Methylphenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
4-Nitroaniline	< 0.433	0.433	mg/Kg	1	8/16/2020 7:29:00 PM
4-Nitrophenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
5-Nitro-o-toluidine	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
7,12-Dimethylbenz(a)anthracene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Acenaphthene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Acenaphthylene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Acetophenone	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
alpha-Terpineol	< 0.385	0.385	mg/Kg	1	8/16/2020 7:29:00 PM
Aniline	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Anthracene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Benz(a)anthracene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Benzidine	< 0.366	0.366	mg/Kg	1	8/16/2020 7:29:00 PM
Benzo(a)pyrene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Benzo(b)fluoranthene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Benzo(g,h,i)perylene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Benzo(k)fluoranthene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Benzyl alcohol	< 0.472	0.472	mg/Kg	1	8/16/2020 7:29:00 PM
Biphenyl	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM

Qualifiers: H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

Original

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 6825 E 38th Street
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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN SOILS

SW8270D

SW3550C

Analyst: KP

Bis(2-chloroethoxy)methane	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Bis(2-chloroethyl) ether	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Bis(2-ethylhexyl) phthalate	< 0.414	0.414	mg/Kg	1	8/16/2020 7:29:00 PM
Butyl benzyl phthalate	< 0.385	0.385	mg/Kg	1	8/16/2020 7:29:00 PM
Carbazole	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Chrysene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Dibenz(a,h)anthracene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Dibenzofuran	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Diethyl phthalate	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Dimethyl phthalate	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Di-n-butyl phthalate	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Di-n-octyl phthalate	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Diphenylamine	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Fluoranthene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Fluorene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Hexachlorobenzene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Hexachlorobutadiene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Hexachlorocyclopentadiene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Hexachloroethane	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Hexachloropropene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Indeno(1,2,3-cd)pyrene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Isophorone	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Isosafrole	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Naphthalene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
n-Decane	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Nitrobenzene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
N-Nitrosodiethylamine	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
N-Nitrosodimethylamine	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
N-Nitrosodi-n-butylamine	< 0.375	0.375	mg/Kg	1	8/16/2020 7:29:00 PM
N-Nitrosodi-n-propylamine	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
N-Nitrosodiphenylamine	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
n-Octadecane	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
o-Toluidine	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Pentachlorobenzene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Pentachloroethane	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Pentachloronitrobenzene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Pentachlorophenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Phenacetin	< 0.433	0.433	mg/Kg	1	8/16/2020 7:29:00 PM
Phenanthrene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

Original

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 6825 E 38th Street
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Analytical Report

(continuous)

WO#: 2008110

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008110

Project: 2320-003

EPA 8270D IN SOILS

SW8270D SW3550C Analyst: KP

Phenol	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Pyrene	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Pyridine	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Safrole	< 0.318	0.318	mg/Kg	1	8/16/2020 7:29:00 PM
Surr: 2,4,6-Tribromophenol	58.4	15.7 - 105	%Rec	1	8/16/2020 7:29:00 PM
Surr: 2-Fluorobiphenyl	47.3	7.83 - 102	%Rec	1	8/16/2020 7:29:00 PM
Surr: 2-Fluorophenol	56.7	5 - 92.3	%Rec	1	8/16/2020 7:29:00 PM
Surr: Nitrobenzene-d5	61.8	5.31 - 91.7	%Rec	1	8/16/2020 7:29:00 PM
Surr: Phenol-d5	59.2	5.51 - 97.7	%Rec	1	8/16/2020 7:29:00 PM
Surr: Terphenyl-d14	39.8	28.8 - 128	%Rec	1	8/16/2020 7:29:00 PM

PCBS IN SOIL - N

SW8082A Analyst: 8727

Aroclor 1016	< 23.7	23.7	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1221	< 23.7	23.7	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1232	< 23.7	23.7	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1242	< 23.7	23.7	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1248	< 23.7	23.7	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1254	< 23.7	23.7	ug/kg	1	8/14/2020 3:09:00 PM
Aroclor 1260	< 23.7	23.7	ug/kg	1	8/14/2020 3:09:00 PM
Surr: Decachlorobiphenyl	108	39 - 134	%Rec	1	8/14/2020 3:09:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005 Analyst: 8727

Hydrocarbons C12 - C28	88.6	32.1	mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C28 - C35	64.1	32.1	mg/kg	1	8/14/2020 3:09:00 PM
Hydrocarbons C6 - C12	< 32.1	32.1	mg/kg	1	8/14/2020 3:09:00 PM
Total TPH	156	32.1	mg/kg	1	8/14/2020 3:09:00 PM
Surr: 1-Chlorooctane	77.0	70 - 130	%Rec	1	8/14/2020 3:09:00 PM
Surr: p-Terphenyl	80.0	70 - 130	%Rec	1	8/14/2020 3:09:00 PM

PH IN SOIL OR SEDIMENT

SW9045D Analyst: DW

Hydrogen Ion (pH)	7.92	0.100	pH Units	1	8/6/2020 1:50:00 PM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: 4500 F-C, 2011

Sample ID: MB-R44176	SampType: MBLK	TestCode: FLUOR_S	Units: mg/Kg	Prep Date:	RunNo: 44176						
Client ID: PBS	Batch ID: R44176	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478158						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	< 0.200	0.200									

Sample ID: LCS-R44176	SampType: LCS	TestCode: FLUOR_S	Units: mg/Kg	Prep Date:	RunNo: 44176						
Client ID: LCSS	Batch ID: R44176	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478159						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.95	0.200	2.000	0	97.5	80	120				

Sample ID: 2008024-001AMS	SampType: MS	TestCode: FLUOR_S	Units: mg/Kg	Prep Date:	RunNo: 44176						
Client ID: BatchQC	Batch ID: R44176	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478161						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	4.97	0.200	5.000	0	99.4	94.3	106				

Sample ID: 2008024-001AMSD	SampType: MSD	TestCode: FLUOR_S	Units: mg/Kg	Prep Date:	RunNo: 44176						
Client ID: BatchQC	Batch ID: R44176	TestNo: 4500 F-C, 201		Analysis Date: 8/10/2020	SeqNo: 478162						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	5.40	0.200	5.000	0	108	94.3	106	4.970	8.29	5.08	RS

Qualifiers: H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits
 M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW1010A

Sample ID: MB-R44201	SampType: MBLK	TestCode: IGN_S	Units: °F	Prep Date:	RunNo: 44201						
Client ID: PBS	Batch ID: R44201	TestNo: SW1010A		Analysis Date: 8/10/2020	SeqNo: 478299						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ignitability	>200	80.0									

Sample ID: LCS-R44201	SampType: LCS	TestCode: IGN_S	Units: °F	Prep Date:	RunNo: 44201						
Client ID: LCSS	Batch ID: R44201	TestNo: SW1010A		Analysis Date: 8/10/2020	SeqNo: 478300						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ignitability	80.0	80.0	79.80	0	100	96.74	103.26				

Sample ID: 2008021-001ADUP	SampType: DUP	TestCode: IGN_S	Units: °F	Prep Date:	RunNo: 44201						
Client ID: BatchQC	Batch ID: R44201	TestNo: SW1010A		Analysis Date: 8/10/2020	SeqNo: 478302						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ignitability	>200	80.0						0	0	20	

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110
 24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW1010A

Sample ID: MB-R44427	SampType: MBLK	TestCode: IGN	Units: °F	Prep Date:	RunNo: 44427						
Client ID: PBW	Batch ID: R44427	TestNo: SW1010A		Analysis Date: 8/20/2020	SeqNo: 481124						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ignitability	>200	80.0									

Sample ID: LCS-R44427	SampType: LCS	TestCode: IGN	Units: °F	Prep Date:	RunNo: 44427						
Client ID: LCSW	Batch ID: R44427	TestNo: SW1010A		Analysis Date: 8/20/2020	SeqNo: 481125						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ignitability	80.0	80.0	79.80	0	100	96.74	103.26				

Sample ID: 2008153-001CDUP	SampType: DUP	TestCode: IGN	Units: °F	Prep Date:	RunNo: 44427						
Client ID: BatchQC	Batch ID: R44427	TestNo: SW1010A		Analysis Date: 8/20/2020	SeqNo: 481132						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ignitability	>200	80.0						0	0	20	

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW6010B

Sample ID: MB-12337	SampType: MBLK	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/7/2020	RunNo: 44251						
Client ID: PBW	Batch ID: 12337	TestNo: SW6010B	SW3010A	Analysis Date: 8/11/2020	SeqNo: 478834						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 0.00500	0.00500									
Barium	< 0.0100	0.0100									
Cadmium	< 0.00100	0.00100									
Chromium	< 0.0100	0.0100									
Lead	< 0.00500	0.00500									
Selenium	< 0.00500	0.00500									
Silver	< 0.00200	0.00200									

Sample ID: LCS-12337	SampType: LCS	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/7/2020	RunNo: 44251						
Client ID: LCSW	Batch ID: 12337	TestNo: SW6010B	SW3010A	Analysis Date: 8/11/2020	SeqNo: 478835						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.94	0.00500	2.000	0	96.8	85	115				
Barium	2.00	0.0100	2.000	0	100	85	115				
Cadmium	1.99	0.00100	2.000	0	99.6	85	115				
Chromium	1.97	0.0100	2.000	0	98.6	85	115				
Lead	2.03	0.00500	2.000	0	102	85	115				
Selenium	1.90	0.00500	2.000	0	95.2	85	115				
Silver	0.954	0.00200	1.000	0	95.4	85	115				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW6010B

Sample ID: 2008027-002BMS	SampType: MS	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/7/2020	RunNo: 44251						
Client ID: BatchQC	Batch ID: 12337	TestNo: SW6010B	SW3010A	Analysis Date: 8/11/2020	SeqNo: 478837						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.93	0.00500	2.000	0	96.4	92.7	105				
Barium	1.98	0.0100	2.000	0.01727	98.3	93.6	109				
Cadmium	1.96	0.00100	2.000	0	97.8	94.5	105				
Chromium	1.96	0.0100	2.000	0	97.9	93.1	107				
Lead	1.95	0.00500	2.000	0	97.6	92.5	107				
Selenium	1.88	0.00500	2.000	0	94.0	86.5	109				
Silver	0.950	0.00200	1.000	0	95.0	91.3	106				

Sample ID: 2008027-002BMSD	SampType: MSD	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/7/2020	RunNo: 44251						
Client ID: BatchQC	Batch ID: 12337	TestNo: SW6010B	SW3010A	Analysis Date: 8/11/2020	SeqNo: 478838						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.95	0.00500	2.000	0	97.3	92.7	105	1.928	0.929	1.87	
Barium	1.98	0.0100	2.000	0.01727	97.9	93.6	109	1.984	0.455	2.9	
Cadmium	1.97	0.00100	2.000	0	98.6	94.5	105	1.956	0.865	1.89	
Chromium	1.97	0.0100	2.000	0	98.7	93.1	107	1.958	0.814	3.89	
Lead	1.98	0.00500	2.000	0	98.9	92.5	107	1.953	1.22	3.09	
Selenium	1.90	0.00500	2.000	0	94.8	86.5	109	1.879	0.848	2.19	
Silver	0.934	0.00200	1.000	0	93.4	91.3	106	0.9499	1.69	3.96	

Qualifiers: H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits
 M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW6010B

Sample ID: MB-12364	SampType: MBLK	TestCode: MET_S_ICP	Units: mg/Kg	Prep Date: 8/12/2020	RunNo: 44383						
Client ID: PBS	Batch ID: 12364	TestNo: SW6010B	3050B	Analysis Date: 8/18/2020	SeqNo: 480546						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 0.493	0.493									
Barium	< 0.246	0.246									
Cadmium	< 0.246	0.246									
Chromium	< 0.246	0.246									
Lead	< 0.123	0.123									
Selenium	< 0.493	0.493									
Silver	< 0.0493	0.0493									

Sample ID: LCS-12364	SampType: LCS	TestCode: MET_S_ICP	Units: mg/Kg	Prep Date: 8/12/2020	RunNo: 44383						
Client ID: LCSS	Batch ID: 12364	TestNo: SW6010B	3050B	Analysis Date: 8/18/2020	SeqNo: 480547						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	46.5	0.495	49.50	0	94.0	80	120				
Barium	49.5	0.248	49.50	0	100	80	120				
Cadmium	48.8	0.248	49.50	0	98.6	80	120				
Chromium	48.3	0.248	49.50	0	97.7	80	120				
Lead	50.7	0.124	49.50	0	102	80	120				
Selenium	47.1	0.495	49.50	0	95.2	80	120				
Silver	25.0	0.0495	24.75	0	101	80	120				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW6010B

Sample ID:	2008088-001AMS	SampType:	MS	TestCode:	MET_S_ICP	Units:	mg/Kg	Prep Date:	8/12/2020	RunNo:	44383
Client ID:	BatchQC	Batch ID:	12364	TestNo:	SW6010B	3050B		Analysis Date:	8/18/2020	SeqNo:	480550
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.5	0.455	45.45	0.5834	50.3	42.8	118				
Barium	4X	0.227	45.45	1,815	-1,260	3.77	178				S
Cadmium	28.3	0.227	45.45	0	62.3	57.5	113				
Chromium	40.8	0.227	45.45	22.51	40.1	45.5	122				S
Lead	24.2	0.114	45.45	4.059	44.3	13.4	135				
Selenium	21.4	0.455	45.45	0	47.2	44	114				
Silver	16.3	0.0455	22.73	0	71.6	62.7	112				

Sample ID:	2008088-001AMSD	SampType:	MSD	TestCode:	MET_S_ICP	Units:	mg/Kg	Prep Date:	8/12/2020	RunNo:	44383
Client ID:	BatchQC	Batch ID:	12364	TestNo:	SW6010B	3050B		Analysis Date:	8/18/2020	SeqNo:	480551
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.1	0.455	45.45	0.5834	49.5	42.8	118	23.45	1.56	7.54	
Barium	4X	0.227	45.45	1,815	-1,290	3.77	178	1,241	1.05	20.8	S
Cadmium	27.9	0.227	45.45	0	61.3	57.5	113	28.32	1.62	6.24	
Chromium	39.7	0.227	45.45	22.51	37.8	45.5	122	40.75	2.60	7.06	S
Lead	24.0	0.114	45.45	4.059	43.8	13.4	135	24.20	0.943	9.19	
Selenium	21.1	0.455	45.45	0	46.3	44	114	21.44	1.81	6.71	
Silver	16.0	0.0455	22.73	0	70.6	62.7	112	16.28	1.49	6.22	

Qualifiers: H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits
 M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW7.3.3.2

Sample ID: MB-R44214	SampType: MBLK	TestCode: REACTCN	Units: ppm	Prep Date:	RunNo: 44256
Client ID: PBW	Batch ID: R44256	TestNo: SW7.3.3.2		Analysis Date: 8/12/2020	SeqNo: 478928
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Cyanide, Reactive	< 0.0200	0.0200			

Sample ID: LCS-R44214	SampType: LCS	TestCode: REACTCN	Units: ppm	Prep Date:	RunNo: 44256
Client ID: LCSW	Batch ID: R44256	TestNo: SW7.3.3.2		Analysis Date: 8/12/2020	SeqNo: 478928
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Cyanide, Reactive	< 0.0200	0.0200	0.1250	0	0 0 0 120

Sample ID: 2008049-001AMS	SampType: MS	TestCode: REACTCN	Units: ppm	Prep Date:	RunNo: 44256
Client ID: BatchQC	Batch ID: R44256	TestNo: SW7.3.3.2		Analysis Date: 8/12/2020	SeqNo: 478931
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Cyanide, Reactive	< 0.0200	0.0200	0.1250	0	0 0.02 91.5 S

Sample ID: 2008049-001AMSD	SampType: MSD	TestCode: REACTCN	Units: ppm	Prep Date:	RunNo: 44256
Client ID: BatchQC	Batch ID: R44256	TestNo: SW7.3.3.2		Analysis Date: 8/12/2020	SeqNo: 478932
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Cyanide, Reactive	< 0.0200	0.0200	0.1250	0	0 0.02 91.5 0 0 74 S

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW7.3.4.2

Sample ID: MB-R44178	SampType: MBLK	TestCode: REACTS	Units: ppm	Prep Date:	RunNo: 44200						
Client ID: PBW	Batch ID: R44200	TestNo: SW7.3.4.2		Analysis Date: 8/10/2020	SeqNo: 478278						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide, Reactive	< 0.0500	0.0500									

Sample ID: LCS-R44178	SampType: LCS	TestCode: REACTS	Units: ppm	Prep Date:	RunNo: 44200						
Client ID: LCSW	Batch ID: R44200	TestNo: SW7.3.4.2		Analysis Date: 8/10/2020	SeqNo: 478279						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide, Reactive	0.358	0.0500	0.4000	0	89.5	0	120				

Sample ID: 2007533-002AMS	SampType: MS	TestCode: REACTS	Units: ppm	Prep Date:	RunNo: 44200						
Client ID: BatchQC	Batch ID: R44200	TestNo: SW7.3.4.2		Analysis Date: 8/10/2020	SeqNo: 478281						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide, Reactive	0.629	0.0500	0.8000	0	78.6	1.6	144				

Sample ID: 2007533-002AMSD	SampType: MSD	TestCode: REACTS	Units: ppm	Prep Date:	RunNo: 44200						
Client ID: BatchQC	Batch ID: R44200	TestNo: SW7.3.4.2		Analysis Date: 8/10/2020	SeqNo: 478282						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide, Reactive	0.525	0.0500	0.8000	0	65.6	1.6	144	0.6290	18.0	29.4	

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW7470A

Sample ID: MB-R44171	SampType: MBLK	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171
Client ID: PBW	Batch ID: R44171	TestNo: SW7470A		Analysis Date: 8/7/2020	SeqNo: 477938
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	< 0.0000500	0.0000500			

Sample ID: LCS-R44171	SampType: LCS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171
Client ID: LCSW	Batch ID: R44171	TestNo: SW7470A		Analysis Date: 8/7/2020	SeqNo: 477938
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00100	0.0000500	0.001000	0	100 85 115

Sample ID: 2008024-014CMS	SampType: MS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171
Client ID: BatchQC	Batch ID: R44171	TestNo: SW7470A		Analysis Date: 8/7/2020	SeqNo: 477941
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00106	0.0000500	0.001000	0	106 77.8 119

Sample ID: 2008024-014CMSD	SampType: MSD	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171
Client ID: BatchQC	Batch ID: R44171	TestNo: SW7470A		Analysis Date: 8/7/2020	SeqNo: 477942
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.00105	0.0000500	0.001000	0	105 77.8 119 0.001056 0.380 1.89

Qualifiers: H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits
 M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110
 24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW7470A

Sample ID: 2008070-001BMS	SampType: MS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171						
Client ID: BatchQC	Batch ID: R44171	TestNo: SW7470A	Analysis Date: 8/7/2020	SeqNo: 477949							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00105	0.0000500	0.001000	0	105	77.8	119				

Sample ID: 2008070-001BMSD	SampType: MSD	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44171						
Client ID: BatchQC	Batch ID: R44171	TestNo: SW7470A	Analysis Date: 8/7/2020	SeqNo: 477950							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00105	0.0000500	0.001000	0	105	77.8	119	0.001052	0.190	1.89	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW7471B

Sample ID: MB-R44301	SampType: MBLK	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44301
Client ID: PBS	Batch ID: R44301	TestNo: SW7471B	Analysis Date: 8/14/2020	SeqNo: 479524	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	< 0.0250	0.0250			

Sample ID: LCS-R44301	SampType: LCS	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44301
Client ID: LCSS	Batch ID: R44301	TestNo: SW7471B	Analysis Date: 8/14/2020	SeqNo: 479525	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.251	0.0250	0.2500	0	100 80 120

Sample ID: 2008088-001AMS	SampType: MS	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44301
Client ID: BatchQC	Batch ID: R44301	TestNo: SW7471B	Analysis Date: 8/14/2020	SeqNo: 479527	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.232	0.0250	0.2272	0	102 71.4 137

Sample ID: 2008088-001AMSD	SampType: MSD	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44301
Client ID: BatchQC	Batch ID: R44301	TestNo: SW7471B	Analysis Date: 8/14/2020	SeqNo: 479528	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.232	0.0250	0.2272	0	102 71.4 137 0.2325 0.388 6.2

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110
 24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW7471B

Sample ID: 2008110-009DMS	SampType: MS	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44301						
Client ID: D-6	Batch ID: R44301	TestNo: SW7471B		Analysis Date: 8/14/2020	SeqNo: 479535						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.196	0.0250	0.1818	0	108	71.4	137				

Sample ID: 2008110-009DMSD	SampType: MSD	TestCode: HG_S	Units: mg/Kg	Prep Date:	RunNo: 44301						
Client ID: D-6	Batch ID: R44301	TestNo: SW7471B		Analysis Date: 8/14/2020	SeqNo: 479536						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.196	0.0250	0.1818	0	108	71.4	137	0.1958	0.102	6.2	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8021B

Sample ID: MB-R44151	SampType: MBLK	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 44151						
Client ID: PBS	Batch ID: R44151	TestNo: SW8021B		Analysis Date: 8/6/2020	SeqNo: 477720						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 2.00	2.00									
Ethylbenzene	< 5.00	5.00									
Toluene	< 5.00	5.00									
Xylenes, Total	< 15.0	15.0									
Surr: 4-Bromofluorobenzene	46.9		50.00		93.9	39.1	160				
Surr: Trifluorotoluene	44.2		50.00		88.3	17.8	149				

Sample ID: LCS-R44151	SampType: LCS	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 44151						
Client ID: LCSS	Batch ID: R44151	TestNo: SW8021B		Analysis Date: 8/6/2020	SeqNo: 477721						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	105	2.00	100.0	0	105	80	120				
Ethylbenzene	105	5.00	100.0	0	105	80	120				
Toluene	102	5.00	100.0	0	102	80	120				
Xylenes, Total	317	15.0	300.0	0	106	80	120				
Surr: 4-Bromofluorobenzene	111		100.0		111	39.1	160				
Surr: Trifluorotoluene	108		100.0		108	17.8	149				

Sample ID: 2008064-001AMS	SampType: MS	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 44151						
Client ID: BatchQC	Batch ID: R44151	TestNo: SW8021B		Analysis Date: 8/6/2020	SeqNo: 477723						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	13.7	0.250	12.50	0	109	70.2	129				

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8021B

Sample ID: 2008064-001AMS	SampType: MS	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 44151						
Client ID: BatchQC	Batch ID: R44151	TestNo: SW8021B		Analysis Date: 8/6/2020	SeqNo: 477723						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	13.8	0.625	12.50	0	110	43.8	152				
Toluene	13.5	0.625	12.50	0	108	52.7	139				
Xylenes, Total	41.9	1.88	37.50	0	112	28.5	170				
Surr: 4-Bromofluorobenzene	14.6		12.50		117	39.1	160				
Surr: Trifluorotoluene	14.6		12.50		117	17.8	149				

Sample ID: 2008064-001AMSD	SampType: MSD	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 44151						
Client ID: BatchQC	Batch ID: R44151	TestNo: SW8021B		Analysis Date: 8/6/2020	SeqNo: 477724						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	12.9	0.250	12.50	0	103	70.2	129	13.66	5.74	20.1	
Ethylbenzene	13.2	0.625	12.50	0	105	43.8	152	13.80	4.82	14.6	
Toluene	12.7	0.625	12.50	0	102	52.7	139	13.49	6.01	18.3	
Xylenes, Total	40.1	1.88	37.50	0	107	28.5	170	41.94	4.51	12.8	
Surr: 4-Bromofluorobenzene	14.0		12.50		112	39.1	160		0	0	
Surr: Trifluorotoluene	13.8		12.50		110	17.8	149		0	0	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: MB-R44269	SampType: MBLK	TestCode: 8260_W	Units: mg/L	Prep Date:	RunNo: 44269						
Client ID: PBW	Batch ID: R44269	TestNo: SW8260C		Analysis Date: 8/12/2020	SeqNo: 479112						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	< 0.00500	0.00500									
1,1,1-Trichloroethane	< 0.00500	0.00500									
1,1,2,2-Tetrachloroethane	< 0.00500	0.00500									
1,1,2-Trichloroethane	< 0.00500	0.00500									
1,1-Dichloroethane	< 0.00500	0.00500									
1,1-Dichloroethene	< 0.00500	0.00500									
1,1-Dichloropropene	< 0.00500	0.00500									
1,2,3-Trichloropropane	< 0.00500	0.00500									
1,2,4-Trimethylbenzene	< 0.00500	0.00500									
1,2-Dibromoethane	< 0.00500	0.00500									
1,2-Dichlorobenzene	< 0.00500	0.00500									
1,2-Dichloroethane	< 0.00500	0.00500									
1,2-Dichloropropane	< 0.00500	0.00500									
1,3,5-Trimethylbenzene	< 0.00500	0.00500									
1,3-Dichlorobenzene	< 0.00500	0.00500									
1,3-Dichloropropane	< 0.00500	0.00500									
1,4-Dichlorobenzene	< 0.00500	0.00500									
2,2-Dichloropropane	< 0.00500	0.00500									
2-Butanone	< 0.00500	0.00500									
2-Chloroethyl vinyl ether	< 0.00500	0.00500									
2-Chlorotoluene	< 0.00500	0.00500									
2-Hexanone	< 0.00500	0.00500									
4-Chlorotoluene	< 0.00500	0.00500									
4-Methyl-2-pentanone	< 0.00500	0.00500									
Acetone	< 0.00500	0.00500									
Acetonitrile	< 0.00500	0.00500									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: MB-R44269	SampType: MBLK	TestCode: 8260_W	Units: mg/L	Prep Date:	RunNo: 44269						
Client ID: PBW	Batch ID: R44269	TestNo: SW8260C		Analysis Date: 8/12/2020	SeqNo: 479112						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acrolein	< 0.00500	0.00500									
Acrylonitrile	< 0.00500	0.00500									
Allyl chloride	< 0.00500	0.00500									
Benzene	< 0.00500	0.00500									
Bromobenzene	< 0.00500	0.00500									
Bromochloromethane	< 0.00500	0.00500									
Bromodichloromethane	< 0.00500	0.00500									
Bromoform	< 0.00500	0.00500									
Bromomethane	< 0.00500	0.00500									
Carbon disulfide	< 0.00500	0.00500									
Carbon tetrachloride	< 0.00500	0.00500									
Chlorobenzene	< 0.00500	0.00500									
Chlorodibromomethane	< 0.00500	0.00500									
Chloroethane	< 0.00500	0.00500									
Chloroform	< 0.00500	0.00500									
Chloromethane	< 0.00500	0.00500									
Chloroprene	< 0.00500	0.00500									
cis-1,2-Dichloroethene	< 0.00500	0.00500									
cis-1,3-Dichloropropene	< 0.00500	0.00500									
cis-1,4-Dichloro-2-butene	< 0.00500	0.00500									
Dibromomethane	< 0.00500	0.00500									
Dichlorodifluoromethane	< 0.00500	0.00500									
Ethyl methacrylate	< 0.00500	0.00500									
Ethylbenzene	< 0.00500	0.00500									
Isopropylbenzene	< 0.00500	0.00500									
m,p-Xylene	< 0.00500	0.00500									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: MB-R44269	SampType: MBLK	TestCode: 8260_W	Units: mg/L	Prep Date:	RunNo: 44269						
Client ID: PBW	Batch ID: R44269	TestNo: SW8260C		Analysis Date: 8/12/2020	SeqNo: 479112						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methacrylonitrile	< 0.00500	0.00500									
Methyl methacrylate	< 0.00500	0.00500									
Methyl tert-butyl ether	< 0.00500	0.00500									
Methylene chloride	< 0.00500	0.00500									
n-Butylbenzene	< 0.00500	0.00500									
n-Propylbenzene	< 0.00500	0.00500									
o-Xylene	< 0.00500	0.00500									
Propionitrile	< 0.00500	0.00500									
sec-Butylbenzene	< 0.00500	0.00500									
Styrene	< 0.00500	0.00500									
tert-Butylbenzene	< 0.00500	0.00500									
Tetrachloroethene	< 0.00500	0.00500									
Toluene	< 0.00500	0.00500									
trans-1,2-Dichloroethene	< 0.00500	0.00500									
trans-1,3-Dichloropropene	< 0.00500	0.00500									
trans-1,4-Dichloro-2-butene	< 0.00500	0.00500									
Trichloroethene	< 0.00500	0.00500									
Trichlorofluoromethane	< 0.00500	0.00500									
Vinyl acetate	< 0.00500	0.00500									
Vinyl chloride	< 0.00500	0.00500									
Xylenes, Total	< 0.00500	0.00500									
Surr: 4-Bromofluorobenzene	47.5		50.00		95.0	78.2	119				
Surr: Dibromofluoromethane	52.0		50.00		104	89.2	116				
Surr: Toluene-d8	48.6		50.00		97.1	84.7	111				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: LCS-R44269	SampType: LCS	TestCode: 8260_W	Units: mg/L	Prep Date:	RunNo: 44269						
Client ID: LCSW	Batch ID: R44269	TestNo: SW8260C		Analysis Date: 8/12/2020	SeqNo: 479113						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.115	0.00500	0.100	0	115	80	120				
Benzene	0.109	0.00500	0.100	0	109	80	120				
Chlorobenzene	0.111	0.00500	0.100	0	111	80	120				
Toluene	0.108	0.00500	0.100	0	108	80	120				
Trichloroethene	0.110	0.00500	0.100	0	110	80	120				
Surr: 4-Bromofluorobenzene	47.6		50.00		95.2	78.2	119				
Surr: Dibromofluoromethane	52.4		50.00		105	89.2	116				
Surr: Toluene-d8	48.7		50.00		97.4	84.7	111				

Sample ID: 2008203-001AMS	SampType: MS	TestCode: 8260_W	Units: mg/L	Prep Date:	RunNo: 44269						
Client ID: BatchQC	Batch ID: R44269	TestNo: SW8260C		Analysis Date: 8/12/2020	SeqNo: 479113						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.105	0.00500	0.100	0	105	82.5	117				
Benzene	0.104	0.00500	0.100	0	104	77.7	120				
Chlorobenzene	0.107	0.00500	0.100	0	107	80.4	119				
Toluene	0.101	0.00500	0.100	0	101	80.9	118				
Trichloroethene	0.0987	0.00500	0.100	0	98.7	74.4	125				
Surr: 4-Bromofluorobenzene	51.8		50.00		104	78.2	119				
Surr: Dibromofluoromethane	52.6		50.00		105	89.2	116				
Surr: Toluene-d8	48.5		50.00		97.0	84.7	111				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110
 24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.112	0.00500	0.100	0	112	82.5	117	0.105	5.90	11.2	
Benzene	0.111	0.00500	0.100	0	111	77.7	120	0.104	6.32	11	
Chlorobenzene	0.111	0.00500	0.100	0	111	80.4	119	0.107	3.95	10.1	
Toluene	0.107	0.00500	0.100	0	107	80.9	118	0.101	6.14	10.8	
Trichloroethene	0.106	0.00500	0.100	0	106	74.4	125	0.0987	7.51	10.8	
Surr: 4-Bromofluorobenzene	50.8		50.00		102	78.2	119		0	0	
Surr: Dibromofluoromethane	51.8		50.00		104	89.2	116		0	0	
Surr: Toluene-d8	48.2		50.00		96.3	84.7	111		0	0	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: MB-12351	SampType: MBLK	TestCode: 8260_s	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: PBS	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478636						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	< 0.00491	0.00491									
1,1,1-Trichloroethane	< 0.00491	0.00491									
1,1,2,2-Tetrachloroethane	< 0.00491	0.00491									
1,1,2-Trichloroethane	< 0.00491	0.00491									
1,1-Dichloroethane	< 0.00491	0.00491									
1,1-Dichloroethene	< 0.00491	0.00491									
1,1-Dichloropropene	< 0.00491	0.00491									
1,2,3-Trichloropropane	< 0.00491	0.00491									
1,2,4-Trimethylbenzene	< 0.00491	0.00491									
1,2-Dibromoethane	< 0.00491	0.00491									
1,2-Dichlorobenzene	< 0.00491	0.00491									
1,2-Dichloroethane	< 0.00491	0.00491									
1,2-Dichloropropane	< 0.00491	0.00491									
1,3,5-Trimethylbenzene	< 0.00491	0.00491									
1,3-Dichlorobenzene	< 0.00491	0.00491									
1,3-Dichloropropane	< 0.00491	0.00491									
1,4-Dichlorobenzene	< 0.00491	0.00491									
2,2-Dichloropropane	< 0.00491	0.00491									
2-Butanone	< 0.0196	0.0196									
2-Chloroethyl vinyl ether	< 0.00491	0.00491									
2-Chlorotoluene	< 0.00491	0.00491									
2-Hexanone	< 0.00491	0.00491									
4-Chlorotoluene	< 0.00491	0.00491									
4-Methyl-2-pentanone	< 0.00491	0.00491									
Acetone	< 0.00491	0.00491									
Acetonitrile	< 0.00491	0.00491									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: MB-12351	SampType: MBLK	TestCode: 8260_s	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: PBS	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478636						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acrolein	< 0.00491	0.00491									
Acrylonitrile	< 0.00491	0.00491									
Allyl chloride	< 0.00491	0.00491									
Benzene	< 0.00491	0.00491									
Bromobenzene	< 0.00491	0.00491									
Bromochloromethane	< 0.00491	0.00491									
Bromodichloromethane	< 0.00491	0.00491									
Bromoform	< 0.00491	0.00491									
Bromomethane	< 0.00491	0.00491									
Carbon disulfide	< 0.00491	0.00491									
Carbon tetrachloride	< 0.00491	0.00491									
Chlorobenzene	< 0.00491	0.00491									
Chlorodibromomethane	< 0.00491	0.00491									
Chloroethane	< 0.00491	0.00491									
Chloroform	< 0.00491	0.00491									
Chloromethane	< 0.00491	0.00491									
Chloroprene	< 0.00491	0.00491									
cis-1,2-Dichloroethene	< 0.00491	0.00491									
cis-1,3-Dichloropropene	< 0.00491	0.00491									
cis-1,4-Dichloro-2-butene	< 0.00491	0.00491									
Dibromomethane	< 0.00491	0.00491									
Dichlorodifluoromethane	< 0.00491	0.00491									
Ethyl methacrylate	< 0.00491	0.00491									
Ethylbenzene	< 0.00491	0.00491									
Isopropylbenzene	< 0.00491	0.00491									
m,p-Xylene	< 0.00491	0.00491									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: MB-12351	SampType: MBLK	TestCode: 8260_s	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: PBS	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478636						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methacrylonitrile	< 0.00491	0.00491									
Methyl methacrylate	< 0.00491	0.00491									
Methyl tert-butyl ether	< 0.00491	0.00491									
Methylene chloride	< 0.00491	0.00491									
n-Butylbenzene	< 0.00491	0.00491									
n-Propylbenzene	< 0.00491	0.00491									
o-Xylene	< 0.00491	0.00491									
Propionitrile	< 0.00491	0.00491									
sec-Butylbenzene	< 0.00491	0.00491									
Styrene	< 0.00491	0.00491									
tert-Butylbenzene	< 0.00491	0.00491									
Tetrachloroethene	< 0.00491	0.00491									
Toluene	< 0.00491	0.00491									
trans-1,2-Dichloroethene	< 0.00491	0.00491									
trans-1,3-Dichloropropene	< 0.00491	0.00491									
trans-1,4-Dichloro-2-butene	< 0.00491	0.00491									
Trichloroethene	< 0.00491	0.00491									
Trichlorofluoromethane	< 0.00491	0.00491									
Vinyl acetate	< 0.00491	0.00491									
Vinyl chloride	< 0.00491	0.00491									
Xylenes, Total	< 0.00491	0.00491									
Surr: 4-Bromofluorobenzene	46.6		49.12		94.8	74.3	104				
Surr: Dibromofluoromethane	46.6		49.12		94.9	75.9	134				
Surr: Toluene-d8	51.0		49.12		104	71.9	115				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: LCS-12351	SampType: LCS	TestCode: 8260_s	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: LCSS	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478637						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.106	0.00501	0.100	0	106	80	120				
Benzene	0.104	0.00501	0.100	0	104	80	120				
Chlorobenzene	0.0992	0.00501	0.100	0	99.0	80	120				
Toluene	0.104	0.00501	0.100	0	104	80	120				
Trichloroethene	0.0991	0.00501	0.100	0	98.9	80	120				
Surr: 4-Bromofluorobenzene	48.9		50.10		97.6	74.3	104				
Surr: Dibromofluoromethane	51.0		50.10		102	75.9	134				
Surr: Toluene-d8	49.5		50.10		98.9	71.9	115				

Sample ID: 2008024-016DMS	SampType: MS	TestCode: 8260_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: BatchQC	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478639						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.101	0.00663	0.133	0	76.4	70.4	125				
Benzene	0.0975	0.00663	0.133	0.00503	69.7	54.7	131				
Chlorobenzene	0.0736	0.00663	0.133	0	55.5	62.5	129				S
Toluene	0.0875	0.00663	0.133	0.0118	57.1	61.2	131				S
Trichloroethene	0.0829	0.00663	0.133	0	62.5	43.6	99				
Surr: 4-Bromofluorobenzene	65.2		66.31		98.4	74.3	104				
Surr: Dibromofluoromethane	73.9		66.31		111	75.9	134				
Surr: Toluene-d8	67.0		66.31		101	71.9	115				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110
 24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8260C

Sample ID: 2008024-016DMSD	SampType: MSD	TestCode: 8260_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44236						
Client ID: BatchQC	Batch ID: 12351	TestNo: SW8260C	SW5035A	Analysis Date: 8/11/2020	SeqNo: 478640						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.132	0.00658	0.132	0	100	70.4	125	0.101	26.4	50.1	
Benzene	0.124	0.00658	0.132	0.00503	90.2	54.7	131	0.0975	23.7	37.8	
Chlorobenzene	0.103	0.00658	0.132	0	78.3	62.5	129	0.0736	33.3	37	
Toluene	0.113	0.00658	0.132	0.0118	77.1	61.2	131	0.0875	25.5	51.5	
Trichloroethene	0.108	0.00658	0.132	0	82.4	43.6	99	0.0829	26.7	45.3	
Surr: 4-Bromofluorobenzene	62.8		65.79		95.5	74.3	104		0	0	
Surr: Dibromofluoromethane	64.3		65.79		97.7	75.9	134		0	0	
Surr: Toluene-d8	65.5		65.79		99.5	71.9	115		0	0	

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008049	SampType: MBLK	TestCode: 8270_W	Units: mg/L	Prep Date:	RunNo: 44317						
Client ID: PBW	Batch ID: 12348	TestNo: SW8270D	SW3510C	Analysis Date: 8/16/2020	SeqNo: 479720						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	< 0.0100	0.0100									
1,2,4-Trichlorobenzene	< 0.0100	0.0100									
1,2-Dichlorobenzene	< 0.0100	0.0100									
1,2-Diphenylhydrazine	< 0.0100	0.0100									
1,3,5-Trinitrobenzene	< 0.0100	0.0100									
1,3-Dichlorobenzene	< 0.0100	0.0100									
1,3-Dinitrobenzene	< 0.0100	0.0100									
1,4-Dichlorobenzene	< 0.0100	0.0100									
1-Methylnaphthalene	< 0.0100	0.0100									
1-Naphthylamine	< 0.0100	0.0100									
1-Nitroso-piperidine	< 0.0100	0.0100									
2,2'-oxybis(1-Chloropropane)	< 0.0100	0.0100									
2,3,4,6-Tetrachlorophenol	< 0.0100	0.0100									
2,3-Dichloroaniline	< 0.0100	0.0100									
2,4,5-Trichlorophenol	< 0.0100	0.0100									
2,4,6-Trichlorophenol	< 0.0100	0.0100									
2,4-Dichlorophenol	< 0.0100	0.0100									
2,4-Dimethylphenol	< 0.0100	0.0100									
2,4-Dinitrophenol	< 0.0100	0.0100									
2,4-Dinitrotoluene	< 0.0100	0.0100									
2,6-Dichlorophenol	< 0.0100	0.0100									
2,6-Dinitrotoluene	< 0.0100	0.0100									
2-Acetylaminofluorene	< 0.0100	0.0100									
2-Chloronaphthalene	< 0.0100	0.0100									
2-Chlorophenol	< 0.0100	0.0100									
2-Methylnaphthalene	< 0.0100	0.0100									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008049	SampType: MBLK	TestCode: 8270_W	Units: mg/L	Prep Date:	RunNo: 44317						
Client ID: PBW	Batch ID: 12348	TestNo: SW8270D	SW3510C	Analysis Date: 8/16/2020	SeqNo: 479720						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylphenol	< 0.0100	0.0100									
2-Naphthylamine	< 0.0100	0.0100									
2-Nitroaniline	< 0.0100	0.0100									
2-Nitrophenol	< 0.0100	0.0100									
3,3'-Dichlorobenzidine	< 0.0100	0.0100									
3-Methylcholanthrene	< 0.0100	0.0100									
3-Nitroaniline	< 0.0100	0.0100									
4,6-Dinitro-2-methylphenol	< 0.0100	0.0100									
4-Aminobiphenyl	< 0.0100	0.0100									
4-Bromophenyl phenyl ether	< 0.0100	0.0100									
4-Chloro-3-methylphenol	< 0.0100	0.0100									
4-Chloroaniline	< 0.0100	0.0100									
4-Chlorophenyl phenyl ether	< 0.0100	0.0100									
4-Methylphenol	< 0.0100	0.0100									
4-Nitroaniline	< 0.0100	0.0100									
4-Nitrophenol	< 0.0100	0.0100									
5-Nitro-o-toluidine	< 0.0100	0.0100									
7,12-Dimethylbenz(a)anthracene	< 0.0100	0.0100									
Acenaphthene	< 0.0100	0.0100									
Acenaphthylene	< 0.0100	0.0100									
Acetophenone	< 0.0100	0.0100									
alpha-Terpineol	< 0.0100	0.0100									
Aniline	< 0.0100	0.0100									
Anthracene	< 0.0100	0.0100									
Benz(a)anthracene	< 0.0100	0.0100									
Benzidine	< 0.0100	0.0100									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008049	SampType: MBLK	TestCode: 8270_W	Units: mg/L	Prep Date:	RunNo: 44317						
Client ID: PBW	Batch ID: 12348	TestNo: SW8270D	SW3510C	Analysis Date: 8/16/2020	SeqNo: 479720						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	< 0.0100	0.0100									
Benzo(b)fluoranthene	< 0.0100	0.0100									
Benzo(g,h,i)perylene	< 0.0100	0.0100									
Benzo(k)fluoranthene	< 0.0100	0.0100									
Benzyl alcohol	< 0.0100	0.0100									
Biphenyl	< 0.0100	0.0100									
Bis(2-chloroethoxy)methane	< 0.0100	0.0100									
Bis(2-chloroethyl) ether	< 0.0100	0.0100									
Bis(2-ethylhexyl) phthalate	< 0.0100	0.0100									
Butyl benzyl phthalate	< 0.0100	0.0100									
Carbazole	< 0.0100	0.0100									
Chrysene	< 0.0100	0.0100									
Dibenz(a,h)anthracene	< 0.0100	0.0100									
Dibenzofuran	< 0.0100	0.0100									
Diethyl phthalate	< 0.0100	0.0100									
Dimethyl phthalate	< 0.0100	0.0100									
Di-n-butyl phthalate	< 0.0100	0.0100									
Di-n-octyl phthalate	< 0.0100	0.0100									
Diphenylamine	< 0.0100	0.0100									
Fluoranthene	< 0.0100	0.0100									
Fluorene	< 0.0100	0.0100									
Hexachlorobenzene	< 0.0100	0.0100									
Hexachlorobutadiene	< 0.0100	0.0100									
Hexachlorocyclopentadiene	< 0.0100	0.0100									
Hexachloroethane	< 0.0100	0.0100									
Hexachloropropene	< 0.0100	0.0100									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008049	SampType: MBLK	TestCode: 8270_W	Units: mg/L	Prep Date:	RunNo: 44317						
Client ID: PBW	Batch ID: 12348	TestNo: SW8270D	SW3510C	Analysis Date: 8/16/2020	SeqNo: 479720						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	< 0.0100	0.0100									
Isophorone	< 0.0100	0.0100									
Isosafrole	< 0.0100	0.0100									
Naphthalene	< 0.0100	0.0100									
n-Decane	< 0.0100	0.0100									
Nitrobenzene	< 0.0100	0.0100									
N-Nitrosodiethylamine	< 0.0100	0.0100									
N-Nitrosodimethylamine	< 0.0100	0.0100									
N-Nitrosodi-n-butylamine	< 0.0100	0.0100									
N-Nitrosodi-n-propylamine	< 0.0100	0.0100									
N-Nitrosodiphenylamine	< 0.0100	0.0100									
n-Octadecane	< 0.0100	0.0100									
o-Toluidine	< 0.0100	0.0100									
Pentachlorobenzene	< 0.0100	0.0100									
Pentachloroethane	< 0.0100	0.0100									
Pentachloronitrobenzene	< 0.0100	0.0100									
Pentachlorophenol	< 0.0100	0.0100									
Phenacetin	< 0.0100	0.0100									
Phenanthrene	< 0.0100	0.0100									
Phenol	< 0.0100	0.0100									
Pyrene	< 0.0100	0.0100									
Pyridine	< 0.0100	0.0100									
Safrole	< 0.0100	0.0100									
Surr: 2,4,6-Tribromophenol	71.7		100.0		71.7	10.4		112			
Surr: 2-Fluorobiphenyl	31.7		50.00		63.3	16.7		103			
Surr: 2-Fluorophenol	65.0		100.0		65.0	5		84.6			

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008049	SampType: MBLK	TestCode: 8270_W	Units: mg/L	Prep Date:	RunNo: 44317						
Client ID: PBW	Batch ID: 12348	TestNo: SW8270D	SW3510C	Analysis Date: 8/16/2020	SeqNo: 479720						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: Nitrobenzene-d5	39.7		50.00		79.5	15.4	110				
Surr: Phenol-d5	57.3		100.0		57.3	5	89.1				
Surr: Terphenyl-d14	43.6		50.00		87.2	9.18	137				

Sample ID: LCS2008049	SampType: LCS	TestCode: 8270_W	Units: mg/L	Prep Date:	RunNo: 44317						
Client ID: LCSW	Batch ID: 12348	TestNo: SW8270D	SW3510C	Analysis Date: 8/16/2020	SeqNo: 479721						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4,5-Tetrachlorobenzene	0.0335	0.0100	0.0500	0	67.1	41.4	84.7				
1,2,4-Trichlorobenzene	0.0345	0.0100	0.0500	0	68.9	38.2	82.8				
1,2-Dichlorobenzene	0.0288	0.0100	0.0500	0	57.7	39.7	75.1				
1,2-Diphenylhydrazine	0.0379	0.0100	0.0500	0	75.7	24.5	122				
1,3,5-Trinitrobenzene	0.0360	0.0100	0.0500	0	71.9	38.8	106				
1,3-Dichlorobenzene	0.0285	0.0100	0.0500	0	57.0	37.7	75				
1,3-Dinitrobenzene	0.0417	0.0100	0.0500	0	83.5	59.5	110				
1,4-Dichlorobenzene	0.0280	0.0100	0.0500	0	55.9	37.8	75.3				
1-Methylnaphthalene	0.0361	0.0100	0.0500	0	72.3	24.9	110				
1-Naphthylamine	0.0293	0.0100	0.0500	0	58.6	5	178				
1-Nitroso-piperidine	0.0360	0.0100	0.0500	0	72.0	44.7	90				
2,2'-oxybis(1-Chloropropane)	0.0308	0.0100	0.0500	0	61.6	42.7	76.7				
2,3,4,6-Tetrachlorophenol	0.0362	0.0100	0.0500	0	72.4	57.9	112				
2,3-Dichloroaniline	0.0335	0.0100	0.0500	0	67.1	15.3	119				
2,4,5-Trichlorophenol	0.0399	0.0100	0.0500	0	79.8	59.7	115				
2,4,6-Trichlorophenol	0.0370	0.0100	0.0500	0	74.0	63.9	108				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008049	SampType: LCS	TestCode: 8270_W	Units: mg/L	Prep Date:	RunNo: 44317						
Client ID: LCSW	Batch ID: 12348	TestNo: SW8270D	SW3510C	Analysis Date: 8/16/2020	SeqNo: 479721						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-Dichlorophenol	0.0373	0.0100	0.0500	0	74.6	53.3	116				
2,4-Dimethylphenol	0.0297	0.0100	0.0500	0	59.4	54.7	106				
2,4-Dinitrophenol	0.0406	0.0100	0.0500	0	81.2	17.9	160				
2,4-Dinitrotoluene	0.0372	0.0100	0.0500	0	74.4	51.6	114				
2,6-Dichlorophenol	0.0337	0.0100	0.0500	0	67.3	50	103				
2,6-Dinitrotoluene	0.0363	0.0100	0.0500	0	72.6	56.4	105				
2-Acetylaminofluorene	0.0439	0.0100	0.0500	0	87.7	44.5	123				
2-Chloronaphthalene	0.0340	0.0100	0.0500	0	67.9	41	88.7				
2-Chlorophenol	0.0306	0.0100	0.0500	0	61.1	38.3	96.7				
2-Methylnaphthalene	0.0362	0.0100	0.0500	0	72.4	28.4	99.6				
2-Methylphenol	0.0355	0.0100	0.0500	0	71.1	41.1	103				
2-Naphthylamine	0.0269	0.0100	0.0500	0	53.9	5	353				
2-Nitroaniline	0.0324	0.0100	0.0500	0	64.7	56.9	122				
2-Nitrophenol	0.0356	0.0100	0.0500	0	71.1	52.3	104				
3,3'-Dichlorobenzidine	0.0384	0.0100	0.0500	0	76.9	23.3	105				
3-Methylcholanthrene	0.0292	0.0100	0.0500	0	58.3	45.2	185				
3-Nitroaniline	0.0368	0.0100	0.0500	0	73.7	40	118				
4,6-Dinitro-2-methylphenol	0.0387	0.0100	0.0500	0	77.3	23.3	142				
4-Aminobiphenyl	0.0375	0.0100	0.0500	0	75.1	38.3	93.5				
4-Bromophenyl phenyl ether	0.0401	0.0100	0.0500	0	80.2	16.9	122				
4-Chloro-3-methylphenol	0.0372	0.0100	0.0500	0	74.5	41.5	139				
4-Chloroaniline	0.0312	0.0100	0.0500	0	62.4	30	94.2				
4-Chlorophenyl phenyl ether	0.0371	0.0100	0.0500	0	74.3	15.9	120				
4-Methylphenol	0.0351	0.0100	0.0500	0	70.1	85	221				S
4-Nitroaniline	0.0355	0.0100	0.0500	0	71.0	39.4	121				
4-Nitrophenol	0.0195	0.0100	0.0500	0	38.9	7.05	132				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008049	SampType: LCS	TestCode: 8270_W	Units: mg/L	Prep Date:	RunNo: 44317						
Client ID: LCSW	Batch ID: 12348	TestNo: SW8270D	SW3510C	Analysis Date: 8/16/2020	SeqNo: 479721						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
5-Nitro-o-toluidine	0.0341	0.0100	0.0500	0	68.2	43.1	111				
7,12-Dimethylbenz(a)anthracene	0.0359	0.0100	0.0500	0	71.9	42.3	169				
Acenaphthene	0.0353	0.0100	0.0500	0	70.5	28.7	101				
Acenaphthylene	0.0318	0.0100	0.0500	0	63.6	34.9	99.5				
Acetophenone	0.0351	0.0100	0.0500	0	70.3	20.5	97.5				
alpha-Terpineol	< 0.0100	0.0100	0.0500	0	0	45.9	91.9				S
Aniline	0.0207	0.0100	0.0500	0	41.5	5	69.2				
Anthracene	0.0358	0.0100	0.0500	0	71.5	17.8	119				
Benz(a)anthracene	0.0398	0.0100	0.0500	0	79.5	22.2	127				
Benzidine	0.0234	0.0100	0.0500	0	46.7	5	74.3				
Benzo(a)pyrene	0.0356	0.0100	0.0500	0	71.1	21.2	168				
Benzo(b)fluoranthene	0.0364	0.0100	0.0500	0	72.8	22.7	160				
Benzo(g,h,i)perylene	0.0361	0.0100	0.0500	0	72.1	5	151				
Benzo(k)fluoranthene	0.0366	0.0100	0.0500	0	73.1	20	159				
Benzyl alcohol	0.0322	0.0100	0.0500	0	64.3	42.7	103				
Biphenyl	0.0332	0.0100	0.0500	0	66.3	48.2	88.4				
Bis(2-chloroethoxy)methane	0.0350	0.0100	0.0500	0	70.0	48.6	91.3				
Bis(2-chloroethyl) ether	0.0312	0.0100	0.0500	0	62.5	27.2	95.1				
Bis(2-ethylhexyl) phthalate	0.0438	0.0100	0.0500	0	87.7	39.4	128				
Butyl benzyl phthalate	0.0431	0.0100	0.0500	0	86.3	13.8	146				
Carbazole	0.0380	0.0100	0.0500	0	76.1	17	121				
Chrysene	0.0404	0.0100	0.0500	0	80.8	20.8	121				
Dibenz(a,h)anthracene	0.0363	0.0100	0.0500	0	72.6	5	112				
Dibenzofuran	0.0348	0.0100	0.0500	0	69.6	24	109				
Diethyl phthalate	0.0364	0.0100	0.0500	0	72.8	54.5	97.5				
Dimethyl phthalate	0.0360	0.0100	0.0500	0	72.0	59.6	95.7				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008049	SampType: LCS	TestCode: 8270_W	Units: mg/L	Prep Date:	RunNo: 44317						
Client ID: LCSW	Batch ID: 12348	TestNo: SW8270D	SW3510C	Analysis Date: 8/16/2020	SeqNo: 479721						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Di-n-butyl phthalate	0.0410	0.0100	0.0500	0	82.0	11.2	134				
Di-n-octyl phthalate	0.0399	0.0100	0.0500	0	79.7	18.4	191				
Diphenylamine	0.0357	0.0100	0.0500	0	71.3	36.3	95.9				
Fluoranthene	0.0374	0.0100	0.0500	0	74.9	9.56	124				
Fluorene	0.0354	0.0100	0.0500	0	70.8	25.7	110				
Hexachlorobenzene	0.0390	0.0100	0.0500	0	78.0	21.7	115				
Hexachlorobutadiene	0.0367	0.0100	0.0500	0	73.3	18	91.9				
Hexachlorocyclopentadiene	0.0190	0.0100	0.0500	0	38.1	5	198				
Hexachloroethane	0.0282	0.0100	0.0500	0	56.5	25.3	85.6				
Hexachloropropene	0.0341	0.0100	0.0500	0	68.2	27.4	91.5				
Indeno(1,2,3-cd)pyrene	0.0373	0.0100	0.0500	0	74.6	9.22	155				
Isophorone	0.0338	0.0100	0.0500	0	67.5	31.6	86.4				
Isosafrole	0.0333	0.0100	0.0500	0	66.6	43.8	85.2				
Naphthalene	0.0350	0.0100	0.0500	0	70.1	44.8	84				
n-Decane	0.0258	0.0100	0.0500	0	51.7	25.6	75.5				
Nitrobenzene	0.0351	0.0100	0.0500	0	70.1	46.2	88.7				
N-Nitrosodiethylamine	0.0292	0.0100	0.0500	0	58.3	8.75	109				
N-Nitrosodimethylamine	0.0240	0.0100	0.0500	0	48.1	11.7	97.3				
N-Nitrosodi-n-butylamine	0.0340	0.0100	0.0500	0	67.9	42	104				
N-Nitrosodi-n-propylamine	0.0322	0.0100	0.0500	0	64.4	51.1	84.5				
N-Nitrosodiphenylamine	0.0384	0.0100	0.0500	0	76.8	36.9	93.9				
n-Octadecane	0.0372	0.0100	0.0500	0	74.4	41.6	112				
o-Toluidine	0.0317	0.0100	0.0500	0	63.5	37	86.4				
Pentachlorobenzene	0.0344	0.0100	0.0500	0	68.8	51.7	88				
Pentachloroethane	0.0267	0.0100	0.0500	0	53.5	37.5	72.1				
Pentachloronitrobenzene	0.0366	0.0100	0.0500	0	73.1	52.8	101				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008049	SampType: LCS	TestCode: 8270_W	Units: mg/L	Prep Date:	RunNo: 44317						
Client ID: LCSW	Batch ID: 12348	TestNo: SW8270D	SW3510C	Analysis Date: 8/16/2020	SeqNo: 479721						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	0.0388	0.0100	0.0500	0	77.5	7.8	151				
Phenacetin	0.0371	0.0100	0.0500	0	74.2	43.7	112				
Phenanthrene	0.0376	0.0100	0.0500	0	75.2	18.6	118				
Phenol	0.0273	0.0100	0.0500	0	54.6	35	101				
Pyrene	0.0398	0.0100	0.0500	0	79.5	17.5	150				
Pyridine	0.0221	0.0100	0.0500	0	44.1	5	81.9				
Safrole	0.0346	0.0100	0.0500	0	69.2	48.2	101				
Surr: 2,4,6-Tribromophenol	75.4		100.0		75.4	10.4	112				
Surr: 2-Fluorobiphenyl	32.6		50.00		65.2	16.7	103				
Surr: 2-Fluorophenol	52.6		100.0		52.6	5	84.6				
Surr: Nitrobenzene-d5	33.3		50.00		66.5	15.4	110				
Surr: Phenol-d5	49.0		100.0		49.0	5	89.1				
Surr: Terphenyl-d14	33.8		50.00		67.5	9.18	137				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008024	SampType: MBLK	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: PBS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480381						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	< 0.313	0.313									
1,2,4-Trichlorobenzene	< 0.313	0.313									
1,2-Dichlorobenzene	< 0.313	0.313									
1,2-Diphenylhydrazine	< 0.313	0.313									
1,3,5-Trinitrobenzene	< 0.313	0.313									
1,3-Dichlorobenzene	< 0.313	0.313									
1,3-Dinitrobenzene	< 0.313	0.313									
1,4-Dichlorobenzene	< 0.313	0.313									
1-Methylnaphthalene	< 0.313	0.313									
1-Naphthylamine	< 0.503	0.503									
1-Nitroso-piperidine	< 0.313	0.313									
2,2'-oxybis(1-Chloropropane)	< 0.313	0.313									
2,3,4,6-Tetrachlorophenol	< 0.313	0.313									
2,3-Dichloroaniline	< 0.313	0.313									
2,4,5-Trichlorophenol	< 0.313	0.313									
2,4,6-Trichlorophenol	< 0.313	0.313									
2,4-Dichlorophenol	< 0.313	0.313									
2,4-Dimethylphenol	< 0.313	0.313									
2,4-Dinitrophenol	< 0.550	0.550									
2,4-Dinitrotoluene	< 0.313	0.313									
2,6-Dichlorophenol	< 0.313	0.313									
2,6-Dinitrotoluene	< 0.313	0.313									
2-Acetylaminofluorene	< 0.313	0.313									
2-Chloronaphthalene	< 0.313	0.313									
2-Chlorophenol	< 0.313	0.313									
2-Methylnaphthalene	< 0.313	0.313									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110
 24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008024	SampType: MBLK	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: PBS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480381						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylphenol	< 0.313	0.313									
2-Naphthylamine	< 0.493	0.493									
2-Nitroaniline	< 0.341	0.341									
2-Nitrophenol	< 0.313	0.313									
3,3'-Dichlorobenzidine	< 0.417	0.417									
3-Methylcholanthrene	< 0.313	0.313									
3-Nitroaniline	< 0.370	0.370									
4,6-Dinitro-2-methylphenol	< 0.322	0.322									
4-Aminobiphenyl	< 0.313	0.313									
4-Bromophenyl phenyl ether	< 0.313	0.313									
4-Chloro-3-methylphenol	< 0.313	0.313									
4-Chloroaniline	< 0.313	0.313									
4-Chlorophenyl phenyl ether	< 0.313	0.313									
4-Methylphenol	< 0.313	0.313									
4-Nitroaniline	< 0.427	0.427									
4-Nitrophenol	< 0.313	0.313									
5-Nitro-o-toluidine	< 0.313	0.313									
7,12-Dimethylbenz(a)anthracene	< 0.313	0.313									
Acenaphthene	< 0.313	0.313									
Acenaphthylene	< 0.313	0.313									
Acetophenone	< 0.313	0.313									
alpha-Terpineol	< 0.379	0.379									
Aniline	< 0.313	0.313									
Anthracene	< 0.313	0.313									
Benz(a)anthracene	< 0.313	0.313									
Benzidine	< 0.360	0.360									

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008024	SampType: MBLK	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: PBS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480381						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	< 0.313	0.313									
Benzo(b)fluoranthene	< 0.313	0.313									
Benzo(g,h,i)perylene	< 0.313	0.313									
Benzo(k)fluoranthene	< 0.313	0.313									
Benzyl alcohol	< 0.465	0.465									
Biphenyl	< 0.313	0.313									
Bis(2-chloroethoxy)methane	< 0.313	0.313									
Bis(2-chloroethyl) ether	< 0.313	0.313									
Bis(2-ethylhexyl) phthalate	< 0.408	0.408									
Butyl benzyl phthalate	< 0.379	0.379									
Carbazole	< 0.313	0.313									
Chrysene	< 0.313	0.313									
Dibenz(a,h)anthracene	< 0.313	0.313									
Dibenzofuran	< 0.313	0.313									
Diethyl phthalate	< 0.313	0.313									
Dimethyl phthalate	< 0.313	0.313									
Di-n-butyl phthalate	< 0.313	0.313									
Di-n-octyl phthalate	< 0.313	0.313									
Diphenylamine	< 0.313	0.313									
Fluoranthene	< 0.313	0.313									
Fluorene	< 0.313	0.313									
Hexachlorobenzene	< 0.313	0.313									
Hexachlorobutadiene	< 0.313	0.313									
Hexachlorocyclopentadiene	< 0.313	0.313									
Hexachloroethane	< 0.313	0.313									
Hexachloropropene	< 0.313	0.313									

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008024	SampType: MBLK	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: PBS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480381						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	< 0.313	0.313									
Isophorone	< 0.313	0.313									
Isosafrole	< 0.313	0.313									
Naphthalene	< 0.313	0.313									
n-Decane	< 0.313	0.313									
Nitrobenzene	< 0.313	0.313									
N-Nitrosodiethylamine	< 0.313	0.313									
N-Nitrosodimethylamine	< 0.313	0.313									
N-Nitrosodi-n-butylamine	< 0.370	0.370									
N-Nitrosodi-n-propylamine	< 0.313	0.313									
N-Nitrosodiphenylamine	< 0.313	0.313									
n-Octadecane	< 0.313	0.313									
o-Toluidine	< 0.313	0.313									
Pentachlorobenzene	< 0.313	0.313									
Pentachloroethane	< 0.313	0.313									
Pentachloronitrobenzene	< 0.313	0.313									
Pentachlorophenol	< 0.313	0.313									
Phenacetin	< 0.427	0.427									
Phenanthrene	< 0.313	0.313									
Phenol	< 0.313	0.313									
Pyrene	< 0.313	0.313									
Pyridine	< 0.313	0.313									
Safrole	< 0.313	0.313									
Surr: 2,4,6-Tribromophenol	1.88		3.129		60.2	15.7	105				
Surr: 2-Fluorobiphenyl	0.758		1.564		48.5	7.83	102				
Surr: 2-Fluorophenol	1.62		3.129		51.9	5	92.3				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: MB2008024	SampType: MBLK	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: PBS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480381						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: Nitrobenzene-d5	0.887		1.564		56.7	5.31	91.7				
Surr: Phenol-d5	1.64		3.129		52.5	5.51	97.7				
Surr: Terphenyl-d14	1.13		1.564		72.3	28.8	128				

Sample ID: LCS2008024	SampType: LCS	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: LCSS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480382						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4,5-Tetrachlorobenzene	1.01	0.440	1.583	0	64.1	5	150				
1,2,4-Trichlorobenzene	1.09	0.440	1.583	0	68.6	5	73				
1,2-Dichlorobenzene	0.881	0.440	1.583	0	55.6	5	150				
1,2-Diphenylhydrazine	1.19	0.440	1.583	0	75.1	5	150				
1,3,5-Trinitrobenzene	1.16	0.440	1.583	0	73.4	5	150				
1,3-Dichlorobenzene	0.813	0.440	1.583	0	51.4	5	150				
1,3-Dinitrobenzene	1.00	0.440	1.583	0	63.3	5	150				
1,4-Dichlorobenzene	0.830	0.440	1.583	0	52.5	5	66				
1-Methylnaphthalene	1.19	0.440	1.583	0	75.3	5	150				
1-Naphthylamine	0.728	0.707	1.583	0	46.0	5	150				
1-Nitroso-piperidine	1.23	0.440	1.583	0	77.5	5	150				
2,2'-oxybis(1-Chloropropane)	0.956	0.440	1.583	0	60.4	5	150				
2,3,4,6-Tetrachlorophenol	1.21	0.440	1.583	0	76.7	5	150				
2,3-Dichloroaniline	1.05	0.440	1.583	0	66.6	5	150				
2,4,5-Trichlorophenol	1.21	0.440	1.583	0	76.3	5	150				
2,4,6-Trichlorophenol	1.16	0.440	1.583	0	73.3	5	150				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008024	SampType: LCS	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: LCSS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480382						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4-Dichlorophenol	1.19	0.440	1.583	0	75.4	5	150				
2,4-Dimethylphenol	0.944	0.440	1.583	0	59.6	5	150				
2,4-Dinitrophenol	1.46	0.774	1.583	0	92.3	5	150				
2,4-Dinitrotoluene	1.18	0.440	1.583	0	74.7	5	108				
2,6-Dichlorophenol	1.02	0.440	1.583	0	64.7	5	150				
2,6-Dinitrotoluene	1.13	0.440	1.583	0	71.7	5	150				
2-Acetylaminofluorene	1.59	0.440	1.583	0	100	5	150				
2-Chloronaphthalene	1.09	0.440	1.583	0	69.1	5	150				
2-Chlorophenol	0.989	0.440	1.583	0	62.5	5	73				
2-Methylnaphthalene	1.14	0.440	1.583	0	71.9	5	150				
2-Methylphenol	1.12	0.440	1.583	0	70.5	5	150				
2-Naphthylamine	0.758	0.693	1.583	0	47.9	5	150				
2-Nitroaniline	1.07	0.480	1.583	0	67.7	5	150				
2-Nitrophenol	1.10	0.440	1.583	0	69.7	5	150				
3,3'-Dichlorobenzidine	1.11	0.587	1.583	0	70.3	5	150				
3-Methylcholanthrene	0.952	0.440	1.583	0	60.1	5	150				
3-Nitroaniline	1.12	0.520	1.583	0	70.9	5	150				
4,6-Dinitro-2-methylphenol	1.24	0.453	1.583	0	78.1	5	150				
4-Aminobiphenyl	1.20	0.440	1.583	0	76.0	5	150				
4-Bromophenyl phenyl ether	1.31	0.440	1.583	0	82.9	5	150				
4-Chloro-3-methylphenol	1.19	0.440	1.583	0	75.2	5	91				
4-Chloroaniline	0.943	0.440	1.583	0	59.6	5	150				
4-Chlorophenyl phenyl ether	1.20	0.440	1.583	0	75.8	5	150				
4-Methylphenol	1.12	0.440	1.583	0	70.5	5	150				
4-Nitroaniline	1.04	0.600	1.583	0	65.7	5	150				
4-Nitrophenol	0.753	0.440	1.583	0	47.6	5	127				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008024	SampType: LCS	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: LCSS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480382						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
5-Nitro-o-toluidine	1.06	0.440	1.583	0	66.7	5	150				
7,12-Dimethylbenz(a)anthracene	1.15	0.440	1.583	0	72.7	5	150				
Acenaphthene	1.12	0.440	1.583	0	70.9	5	97				
Acenaphthylene	1.01	0.440	1.583	0	64.0	5	150				
Acetophenone	1.10	0.440	1.583	0	69.7	5	150				
alpha-Terpineol	1.21	0.533	1.583	0	76.2	5	150				
Aniline	0.654	0.440	1.583	0	41.3	5	150				
Anthracene	1.17	0.440	1.583	0	73.6	5	150				
Benz(a)anthracene	1.33	0.440	1.583	0	83.9	5	150				
Benzidine	0.592	0.507	1.583	0	37.4	5	150				
Benzo(a)pyrene	1.19	0.440	1.583	0	74.9	5	150				
Benzo(b)fluoranthene	1.21	0.440	1.583	0	76.2	5	150				
Benzo(g,h,i)perylene	1.11	0.440	1.583	0	70.2	5	150				
Benzo(k)fluoranthene	1.17	0.440	1.583	0	73.8	5	150				
Benzyl alcohol	0.966	0.653	1.583	0	61.0	5	150				
Biphenyl	1.02	0.440	1.583	0	64.5	5	150				
Bis(2-chloroethoxy)methane	1.15	0.440	1.583	0	72.3	5	150				
Bis(2-chloroethyl) ether	0.953	0.440	1.583	0	60.2	5	150				
Bis(2-ethylhexyl) phthalate	1.53	0.573	1.583	0	96.7	5	150				
Butyl benzyl phthalate	1.51	0.533	1.583	0	95.5	5	150				
Carbazole	1.27	0.440	1.583	0	80.4	5	150				
Chrysene	1.29	0.440	1.583	0	81.8	5	150				
Dibenz(a,h)anthracene	1.03	0.440	1.583	0	65.3	5	150				
Dibenzofuran	1.12	0.440	1.583	0	70.9	5	150				
Diethyl phthalate	1.20	0.440	1.583	0	75.8	5	150				
Dimethyl phthalate	1.19	0.440	1.583	0	74.9	5	150				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008024	SampType: LCS	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: LCSS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480382						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Di-n-butyl phthalate	1.42	0.440	1.583	0	89.8	5	150				
Di-n-octyl phthalate	1.52	0.440	1.583	0	96.1	5	150				
Diphenylamine	1.17	0.440	1.583	0	73.8	5	150				
Fluoranthene	1.26	0.440	1.583	0	79.4	5	150				
Fluorene	1.16	0.440	1.583	0	73.5	5	150				
Hexachlorobenzene	1.30	0.440	1.583	0	81.8	5	150				
Hexachlorobutadiene	1.09	0.440	1.583	0	68.8	5	150				
Hexachlorocyclopentadiene	< 0.440	0.440	1.583	0	0	5	150				S
Hexachloroethane	0.813	0.440	1.583	0	51.3	5	150				
Hexachloropropene	0.970	0.440	1.583	0	61.3	5	150				
Indeno(1,2,3-cd)pyrene	1.16	0.440	1.583	0	73.5	5	150				
Isophorone	1.09	0.440	1.583	0	68.8	5	150				
Isosafrole	0.985	0.440	1.583	0	62.2	5	150				
Naphthalene	1.11	0.440	1.583	0	69.9	5	150				
n-Decane	0.591	0.440	1.583	0	37.3	5	150				
Nitrobenzene	1.09	0.440	1.583	0	68.7	5	150				
N-Nitrosodiethylamine	0.910	0.440	1.583	0	57.5	5	150				
N-Nitrosodimethylamine	0.912	0.440	1.583	0	57.6	5	150				
N-Nitrosodi-n-butylamine	1.22	0.520	1.583	0	77.2	5	150				
N-Nitrosodi-n-propylamine	1.03	0.440	1.583	0	65.2	5	64				S
N-Nitrosodiphenylamine	1.21	0.440	1.583	0	76.3	5	150				
n-Octadecane	1.21	0.440	1.583	0	76.2	5	150				
o-Toluidine	0.939	0.440	1.583	0	59.3	5	150				
Pentachlorobenzene	1.13	0.440	1.583	0	71.2	5	150				
Pentachloroethane	0.793	0.440	1.583	0	50.1	5	150				
Pentachloronitrobenzene	1.17	0.440	1.583	0	74.2	5	150				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: LCS2008024	SampType: LCS	TestCode: 8270_S	Units: mg/Kg	Prep Date:	RunNo: 44319						
Client ID: LCSS	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480382						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	1.46	0.440	1.583	0	92.3	5	111				
Phenacetin	1.28	0.600	1.583	0	80.6	5	150				
Phenanthrene	1.24	0.440	1.583	0	78.0	5	150				
Phenol	1.06	0.440	1.583	0	67.1	5	78				
Pyrene	1.29	0.440	1.583	0	81.6	5	130				
Pyridine	0.734	0.440	1.583	0	46.4	5	150				
Safrole	1.16	0.440	1.583	0	73.0	5	150				
Surr: 2,4,6-Tribromophenol	2.50		3.166		79.0	15.7	105				
Surr: 2-Fluorobiphenyl	1.05		1.583		66.5	7.83	102				
Surr: 2-Fluorophenol	1.93		3.166		60.9	5	92.3				
Surr: Nitrobenzene-d5	1.07		1.583		67.6	5.31	91.7				
Surr: Phenol-d5	2.03		3.166		64.0	5.51	97.7				
Surr: Terphenyl-d14	1.11		1.583		70.3	28.8	128				

Sample ID: 2008024-016EMS	SampType: MS	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: BatchQC	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480387						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	0.457	0.329	1.643	0	27.8	5	150				
1,2,4-Trichlorobenzene	0.549	0.329	1.643	0	33.4	5	110				
1,2-Dichlorobenzene	0.492	0.329	1.643	0	30.0	5	150				
1,2-Diphenylhydrazine	0.964	0.329	1.643	0	58.7	5	150				
1,3,5-Trinitrobenzene	0.822	0.329	1.643	0	50.0	5	150				
1,3-Dichlorobenzene	0.424	0.329	1.643	0	25.8	5	150				

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMS	SampType: MS	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: BatchQC	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480387						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	0.751	0.329	1.643	0	45.7	5	150				
1,4-Dichlorobenzene	0.438	0.329	1.643	0	26.7	5	81.1				
1-Methylnaphthalene	0.744	0.329	1.643	0	45.3	5	150				m
1-Naphthylamine	< 0.528	0.528	1.643	0	0	5	150				S
1-Nitroso-piperidine	0.986	0.329	1.643	0	60.0	5	150				
2,2'-oxybis(1-Chloropropane)	0.654	0.329	1.643	0	39.8	5	150				
2,3,4,6-Tetrachlorophenol	0.726	0.329	1.643	0	44.2	5	150				
2,3-Dichloroaniline	0.855	0.329	1.643	0	52.0	5	150				
2,4,5-Trichlorophenol	0.946	0.329	1.643	0	57.6	5	150				
2,4,6-Trichlorophenol	0.919	0.329	1.643	0	55.9	5	150				
2,4-Dichlorophenol	1.01	0.329	1.643	0	61.2	5	150				m
2,4-Dimethylphenol	0.844	0.329	1.643	0	51.4	5	150				m
2,4-Dinitrophenol	0.808	0.578	1.643	0	49.2	5	150				
2,4-Dinitrotoluene	0.917	0.329	1.643	0	55.8	11.2	114				
2,6-Dichlorophenol	0.844	0.329	1.643	0	51.4	5	150				m
2,6-Dinitrotoluene	0.816	0.329	1.643	0	49.6	5	150				
2-Acetylaminofluorene	1.37	0.329	1.643	0	83.3	5	150				
2-Chloronaphthalene	0.766	0.329	1.643	0	46.6	5	150				
2-Chlorophenol	0.873	0.329	1.643	0	53.1	5	89.9				
2-Methylnaphthalene	0.683	0.329	1.643	0	41.5	5	150				
2-Methylphenol	1.02	0.329	1.643	0	61.9	5	150				
2-Naphthylamine	< 0.518	0.518	1.643	0	0	5	150				S
2-Nitroaniline	0.834	0.359	1.643	0	50.7	5	150				
2-Nitrophenol	0.859	0.329	1.643	0	52.3	5	150				
3,3'-Dichlorobenzidine	0.906	0.438	1.643	0	55.2	5	150				
3-Methylcholanthrene	< 0.329	0.329	1.643	0	0	5	150				S

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMS	SampType: MS	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: BatchQC	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480387						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
3-Nitroaniline	0.856	0.388	1.643	0	52.1	5	150				
4,6-Dinitro-2-methylphenol	0.761	0.339	1.643	0	46.3	5	150				
4-Aminobiphenyl	0.984	0.329	1.643	0	59.9	5	150				
4-Bromophenyl phenyl ether	0.788	0.329	1.643	0	48.0	5	150				
4-Chloro-3-methylphenol	1.06	0.329	1.643	0	64.4	5	121				
4-Chloroaniline	0.677	0.329	1.643	0	41.2	5	150				m
4-Chlorophenyl phenyl ether	0.727	0.329	1.643	0	44.2	5	150				
4-Methylphenol	0.894	0.329	1.643	0	54.4	5	150				
4-Nitroaniline	0.752	0.448	1.643	0	45.7	5	150				
4-Nitrophenol	0.466	0.329	1.643	0	28.4	5	137				
5-Nitro-o-toluidine	0.794	0.329	1.643	0	48.3	5	150				
7,12-Dimethylbenz(a)anthracene	0.427	0.329	1.643	0	26.0	5	150				
Acenaphthene	0.695	0.329	1.643	0	42.3	5	153				
Acenaphthylene	0.609	0.329	1.643	0	37.1	5	150				
Acetophenone	0.889	0.329	1.643	0	54.1	5	150				
alpha-Terpineol	0.962	0.398	1.643	0	58.5	5	150				m
Aniline	0.389	0.329	1.643	0	23.7	5	150				
Anthracene	0.728	0.329	1.643	0	44.3	5	150				
Benz(a)anthracene	0.641	0.329	1.643	0	39.0	5	150				
Benzidine	< 0.378	0.378	1.643	0	0	5	150				S
Benzo(a)pyrene	0.492	0.329	1.643	0	29.9	5	150				
Benzo(b)fluoranthene	0.518	0.329	1.643	0	31.5	5	150				
Benzo(g,h,i)perylene	0.407	0.329	1.643	0	24.8	5	150				
Benzo(k)fluoranthene	0.556	0.329	1.643	0	33.8	5	150				m
Benzyl alcohol	0.753	0.488	1.643	0	45.8	5	150				
Biphenyl	0.664	0.329	1.643	0	40.4	5	150				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMS	SampType: MS	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: BatchQC	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480387						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bis(2-chloroethoxy)methane	0.917	0.329	1.643	0	55.8	5	150				m
Bis(2-chloroethyl) ether	0.761	0.329	1.643	0	46.3	5	150				
Bis(2-ethylhexyl) phthalate	0.478	0.428	1.643	0	29.1	5	150				
Butyl benzyl phthalate	1.03	0.398	1.643	0	62.5	5	150				
Carbazole	0.939	0.329	1.643	0	57.1	5	150				
Chrysene	0.672	0.329	1.643	0	40.9	5	150				
Dibenz(a,h)anthracene	0.414	0.329	1.643	0	25.2	5	150				
Dibenzofuran	0.760	0.329	1.643	0	46.3	5	150				
Diethyl phthalate	0.913	0.329	1.643	0	55.5	5	150				
Dimethyl phthalate	0.869	0.329	1.643	0	52.9	5	150				
Di-n-butyl phthalate	0.960	0.329	1.643	0	58.4	5	150				
Di-n-octyl phthalate	0.581	0.329	1.643	0	35.3	5	150				
Diphenylamine	0.792	0.329	1.643	0	48.2	5	150				
Fluoranthene	0.676	0.329	1.643	0	41.1	5	150				
Fluorene	0.706	0.329	1.643	0	42.9	5	150				
Hexachlorobenzene	0.388	0.329	1.643	0	23.6	5	150				
Hexachlorobutadiene	0.477	0.329	1.643	0	29.1	5	150				
Hexachlorocyclopentadiene	< 0.329	0.329	1.643	0	0	5	150				S
Hexachloroethane	0.391	0.329	1.643	0	23.8	5	150				
Hexachloropropene	0.369	0.329	1.643	0	22.5	5	150				
Indeno(1,2,3-cd)pyrene	0.431	0.329	1.643	0	26.2	5	150				
Isophorone	0.873	0.329	1.643	0	53.1	5	150				m
Isosafrole	0.683	0.329	1.643	0	41.6	5	150				m
Naphthalene	0.695	0.329	1.643	0	42.3	5	150				
n-Decane	< 0.329	0.329	1.643	0	0	5	150				S
Nitrobenzene	0.813	0.329	1.643	0	49.5	5	150				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMS	SampType: MS	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: BatchQC	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480387						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine	0.781	0.329	1.643	0	47.5	5	150				
N-Nitrosodimethylamine	0.752	0.329	1.643	0	45.7	5	150				
N-Nitrosodi-n-butylamine	0.933	0.388	1.643	0	56.7	5	150				m
N-Nitrosodi-n-propylamine	0.861	0.329	1.643	0	52.4	5	92.4				m
N-Nitrosodiphenylamine	0.948	0.329	1.643	0	57.7	5	150				
n-Octadecane	< 0.329	0.329	1.643	0	0	5	150				S
o-Toluidine	0.722	0.329	1.643	0	43.9	5	150				
Pentachlorobenzene	0.441	0.329	1.643	0	26.8	5	150				
Pentachloroethane	0.470	0.329	1.643	0	28.6	5	150				
Pentachloronitrobenzene	0.471	0.329	1.643	0	28.6	5	150				
Pentachlorophenol	0.831	0.329	1.643	0	50.6	5	176				
Phenacetin	1.06	0.448	1.643	0	64.3	5	150				
Phenanthrene	0.830	0.329	1.643	0	50.5	5	150				
Phenol	0.997	0.329	1.643	0	60.6	6.16	94.2				
Pyrene	0.740	0.329	1.643	0	45.1	5	340				
Pyridine	0.575	0.329	1.643	0	35.0	5	150				
Safrole	0.784	0.329	1.643	0	47.7	5	150				
Surr: 2,4,6-Tribromophenol	1.88		3.287		57.1	15.7	105				
Surr: 2-Fluorobiphenyl	0.702		1.643		42.7	7.83	102				m
Surr: 2-Fluorophenol	1.70		3.287		51.7	5	92.3				
Surr: Nitrobenzene-d5	0.831		1.643		50.6	5.31	91.7				
Surr: Phenol-d5	1.79		3.287		54.4	5.51	97.7				
Surr: Terphenyl-d14	0.582		1.643		35.4	28.8	128				

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMSD	SampType: MSD	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: BatchQC	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480388						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	0.450	0.321	1.607	0	28.0	5	150	0.4572	1.54	50	
1,2,4-Trichlorobenzene	0.557	0.321	1.607	0	34.6	5	110	0.5491	1.36	80.2	
1,2-Dichlorobenzene	0.516	0.321	1.607	0	32.1	5	150	0.4924	4.64	50	
1,2-Diphenylhydrazine	0.927	0.321	1.607	0	57.7	5	150	0.9641	3.90	50	
1,3,5-Trinitrobenzene	0.851	0.321	1.607	0	52.9	5	150	0.8217	3.47	50	
1,3-Dichlorobenzene	0.424	0.321	1.607	0	26.4	5	150	0.4240	0.0571	50	
1,3-Dinitrobenzene	0.813	0.321	1.607	0	50.6	5	150	0.7513	7.93	50	
1,4-Dichlorobenzene	0.435	0.321	1.607	0	27.1	5	81.1	0.4382	0.687	80.8	
1-Methylnaphthalene	0.743	0.321	1.607	0	46.2	5	150	0.7444	0.234	50	
1-Naphthylamine	< 0.516	0.516	1.607	0	0	5	150	0	0	50	S
1-Nitroso-piperidine	1.04	0.321	1.607	0	64.7	5	150	0.9861	5.29	50	
2,2'-oxybis(1-Chloropropane)	0.660	0.321	1.607	0	41.1	5	150	0.6537	0.983	50	
2,3,4,6-Tetrachlorophenol	0.752	0.321	1.607	0	46.8	5	150	0.7258	3.60	50	
2,3-Dichloroaniline	0.697	0.321	1.607	0	43.4	5	150	0.8546	20.3	50	
2,4,5-Trichlorophenol	0.935	0.321	1.607	0	58.2	5	150	0.9462	1.22	50	
2,4,6-Trichlorophenol	0.907	0.321	1.607	0	56.5	5	150	0.9187	1.26	50	
2,4-Dichlorophenol	1.06	0.321	1.607	0	65.7	5	150	1.006	4.81	50	m
2,4-Dimethylphenol	0.863	0.321	1.607	0	53.7	5	150	0.8443	2.20	50	m
2,4-Dinitrophenol	0.848	0.565	1.607	0	52.8	5	150	0.8078	4.87	50	
2,4-Dinitrotoluene	0.907	0.321	1.607	0	56.4	11.2	114	0.9173	1.19	36.6	
2,6-Dichlorophenol	0.915	0.321	1.607	0	57.0	5	150	0.8440	8.11	50	m
2,6-Dinitrotoluene	0.832	0.321	1.607	0	51.8	5	150	0.8157	1.92	50	
2-Acetylaminofluorene	1.43	0.321	1.607	0	88.9	5	150	1.370	4.26	50	
2-Chloronaphthalene	0.805	0.321	1.607	0	50.1	5	150	0.7659	4.97	50	m
2-Chlorophenol	0.887	0.321	1.607	0	55.2	5	89.9	0.8725	1.65	49.2	
2-Methylnaphthalene	0.726	0.321	1.607	0	45.2	5	150	0.6826	6.22	50	m

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMSD	SampType: MSD	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: BatchQC	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480388						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylphenol	1.12	0.321	1.607	0	69.6	5	150	1.018	9.44	50	m
2-Naphthylamine	< 0.506	0.506	1.607	0	0	5	150	0	0	50	S
2-Nitroaniline	0.827	0.351	1.607	0	51.5	5	150	0.8340	0.842	50	
2-Nitrophenol	0.901	0.321	1.607	0	56.1	5	150	0.8592	4.71	50	
3,3'-Dichlorobenzidine	0.959	0.428	1.607	0	59.7	5	150	0.9064	5.65	50	
3-Methylcholanthrene	< 0.321	0.321	1.607	0	0	5	150	0	0	50	S
3-Nitroaniline	0.933	0.380	1.607	0	58.1	5	150	0.8556	8.64	50	
4,6-Dinitro-2-methylphenol	0.827	0.331	1.607	0	51.5	5	150	0.7606	8.36	50	
4-Aminobiphenyl	0.990	0.321	1.607	0	61.6	5	150	0.9841	0.628	50	
4-Bromophenyl phenyl ether	0.778	0.321	1.607	0	48.4	5	150	0.7882	1.30	50	
4-Chloro-3-methylphenol	1.12	0.321	1.607	0	69.5	5	121	1.058	5.37	52.2	
4-Chloroaniline	0.712	0.321	1.607	0	44.3	5	150	0.6770	5.11	50	m
4-Chlorophenyl phenyl ether	0.715	0.321	1.607	0	44.5	5	150	0.7268	1.67	50	
4-Methylphenol	0.988	0.321	1.607	0	61.5	5	150	0.8941	9.95	50	
4-Nitroaniline	0.926	0.438	1.607	0	57.7	5	150	0.7517	20.8	50	
4-Nitrophenol	0.525	0.321	1.607	0	32.6	5	137	0.4665	11.7	50.1	
5-Nitro-o-toluidine	0.995	0.321	1.607	0	61.9	5	150	0.7945	22.4	50	
7,12-Dimethylbenz(a)anthracene	0.393	0.321	1.607	0	24.4	5	150	0.4266	8.27	50	
Acenaphthene	0.686	0.321	1.607	0	42.7	5	153	0.6946	1.17	58.7	
Acenaphthylene	0.692	0.321	1.607	0	43.1	5	150	0.6089	12.7	50	
Acetophenone	0.908	0.321	1.607	0	56.5	5	150	0.8891	2.15	50	
alpha-Terpineol	1.04	0.389	1.607	0	64.5	5	150	0.9618	7.46	50	m
Aniline	0.399	0.321	1.607	0	24.8	5	150	0.3891	2.57	50	
Anthracene	0.699	0.321	1.607	0	43.5	5	150	0.7281	4.01	50	
Benz(a)anthracene	0.649	0.321	1.607	0	40.4	5	150	0.6411	1.25	50	
Benzidine	< 0.370	0.370	1.607	0	0	5	150	0	0	50	S

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMSD	SampType: MSD	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: BatchQC	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480388						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.463	0.321	1.607	0	28.8	5	150	0.4917	6.05	50	
Benzo(b)fluoranthene	0.488	0.321	1.607	0	30.4	5	150	0.5176	5.92	50	
Benzo(g,h,i)perylene	0.356	0.321	1.607	0	22.2	5	150	0.4074	13.4	50	
Benzo(k)fluoranthene	0.522	0.321	1.607	0	32.5	5	150	0.5561	6.35	50	m
Benzyl alcohol	0.828	0.477	1.607	0	51.5	5	150	0.7527	9.53	50	
Biphenyl	0.658	0.321	1.607	0	40.9	5	150	0.6637	0.923	50	
Bis(2-chloroethoxy)methane	0.949	0.321	1.607	0	59.1	5	150	0.9173	3.36	50	m
Bis(2-chloroethyl) ether	0.766	0.321	1.607	0	47.7	5	150	0.7606	0.745	50	
Bis(2-ethylhexyl) phthalate	0.451	0.419	1.607	0	28.1	5	150	0.4784	5.94	50	
Butyl benzyl phthalate	1.10	0.389	1.607	0	68.7	5	150	1.028	7.13	50	
Carbazole	0.967	0.321	1.607	0	60.2	5	150	0.9389	2.94	50	
Chrysene	0.670	0.321	1.607	0	41.7	5	150	0.6723	0.357	50	
Dibenz(a,h)anthracene	0.385	0.321	1.607	0	23.9	5	150	0.4137	7.28	50	
Dibenzofuran	0.760	0.321	1.607	0	47.3	5	150	0.7603	0.0624	50	
Diethyl phthalate	0.947	0.321	1.607	0	58.9	5	150	0.9127	3.67	50	
Dimethyl phthalate	0.876	0.321	1.607	0	54.5	5	150	0.8692	0.819	50	
Di-n-butyl phthalate	0.959	0.321	1.607	0	59.7	5	150	0.9598	0.0415	50	
Di-n-octyl phthalate	0.561	0.321	1.607	0	34.9	5	150	0.5807	3.47	50	
Diphenylamine	0.857	0.321	1.607	0	53.4	5	150	0.7915	7.97	50	
Fluoranthene	0.679	0.321	1.607	0	42.2	5	150	0.6760	0.401	50	
Fluorene	0.748	0.321	1.607	0	46.5	5	150	0.7058	5.77	50	
Hexachlorobenzene	0.342	0.321	1.607	0	21.3	5	150	0.3881	12.7	50	
Hexachlorobutadiene	0.487	0.321	1.607	0	30.3	5	150	0.4774	1.89	50	
Hexachlorocyclopentadiene	< 0.321	0.321	1.607	0	0	5	150	0	0	50	S
Hexachloroethane	0.400	0.321	1.607	0	24.9	5	150	0.3908	2.30	50	
Hexachloropropene	0.336	0.321	1.607	0	20.9	5	150	0.3692	9.53	50	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMSD	SampType: MSD	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: BatchQC	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480388						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	0.370	0.321	1.607	0	23.0	5	150	0.4309	15.3	50	
Isophorone	0.924	0.321	1.607	0	57.5	5	150	0.8732	5.70	50	
Isosafrole	0.678	0.321	1.607	0	42.2	5	150	0.6833	0.818	50	m
Naphthalene	0.711	0.321	1.607	0	44.3	5	150	0.6949	2.31	50	
n-Decane	< 0.321	0.321	1.607	0	0	5	150	0	0	50	S
Nitrobenzene	0.835	0.321	1.607	0	52.0	5	150	0.8134	2.67	50	
N-Nitrosodiethylamine	0.838	0.321	1.607	0	52.1	5	150	0.7809	7.02	50	
N-Nitrosodimethylamine	0.769	0.321	1.607	0	47.9	5	150	0.7517	2.27	50	
N-Nitrosodi-n-butylamine	0.952	0.380	1.607	0	59.3	5	150	0.9326	2.09	50	
N-Nitrosodi-n-propylamine	0.892	0.321	1.607	0	55.5	5	92.4	0.8609	3.54	69.4	
N-Nitrosodiphenylamine	0.930	0.321	1.607	0	57.9	5	150	0.9479	1.92	50	
n-Octadecane	< 0.321	0.321	1.607	0	0	5	150	0	0	50	S
o-Toluidine	0.755	0.321	1.607	0	47.0	5	150	0.7221	4.45	50	
Pentachlorobenzene	0.418	0.321	1.607	0	26.0	5	150	0.4406	5.32	50	
Pentachloroethane	0.478	0.321	1.607	0	29.7	5	150	0.4705	1.54	50	
Pentachloronitrobenzene	0.470	0.321	1.607	0	29.2	5	150	0.4708	0.240	50	
Pentachlorophenol	0.835	0.321	1.607	0	52.0	5	176	0.8313	0.453	60.1	
Phenacetin	1.13	0.438	1.607	0	70.6	5	150	1.057	7.05	50	
Phenanthrene	0.810	0.321	1.607	0	50.4	5	150	0.8297	2.38	50	
Phenol	0.929	0.321	1.607	0	57.8	6.16	94.2	0.9967	7.00	44.7	
Pyrene	0.787	0.321	1.607	0	49.0	5	340	0.7404	6.07	62.9	
Pyridine	0.551	0.321	1.607	0	34.3	5	150	0.5754	4.30	50	
Safrole	0.821	0.321	1.607	0	51.1	5	150	0.7839	4.69	50	
Surr: 2,4,6-Tribromophenol	1.92		3.213		59.8	15.7	105		0	0	
Surr: 2-Fluorobiphenyl	0.580		1.607		36.1	7.83	102		0	0	
Surr: 2-Fluorophenol	1.80		3.213		56.1	5	92.3		0	0	

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110
 24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8270D

Sample ID: 2008024-016EMSD	SampType: MSD	TestCode: 8270_S	Units: mg/Kg	Prep Date: 8/11/2020	RunNo: 44319						
Client ID: BatchQC	Batch ID: 12350	TestNo: SW8270D	SW3550C	Analysis Date: 8/16/2020	SeqNo: 480388						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: Nitrobenzene-d5	0.888		1.607		55.3	5.31	91.7		0	0	
Surr: Phenol-d5	1.95		3.213		60.8	5.51	97.7		0	0	
Surr: Terphenyl-d14	0.589		1.607		36.7	28.8	128		0	0	

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008110

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW9045D

Sample ID: LCS-R44126	SampType: LCS	TestCode: PH_S	Units: pH Units	Prep Date:	RunNo: 44126						
Client ID: LCSS	Batch ID: R44126	TestNo: SW9045D	Analysis Date: 8/6/2020	SeqNo: 477468							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	9.01	0.100	9.000	0	100	80	120				

Sample ID: 2008024-010ADUP	SampType: DUP	TestCode: PH_S	Units: pH Units	Prep Date:	RunNo: 44126						
Client ID: BatchQC	Batch ID: R44126	TestNo: SW9045D	Analysis Date: 8/6/2020	SeqNo: 477479							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	8.08	0.100						8.070	0.124	1.4	

Sample ID: 2008110-009DDUP	SampType: DUP	TestCode: PH_S	Units: pH Units	Prep Date:	RunNo: 44126						
Client ID: D-6	Batch ID: R44126	TestNo: SW9045D	Analysis Date: 8/6/2020	SeqNo: 477490							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	7.91	0.100						7.920	0.126	1.4	

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



Chain of Custody Record

Laboratory Number: **20081011**

Client Information:

Company Name:

ATM ELMWOOD

Contact Name:

JUSTIN SCOTT

Address:

City, State, Zip:

Phone Number:

Fax Number:

Email Address:

TULSA, OK 74128

Ext:

Ext:

Billing Information:

PO Number:

Project Name/Number:

Quote Number:

Sampler's Signature

Required QC Level

Bill Monthly

Shipping Method:

Page 1 of 1

Turn Time Standard

- 1 Day
- 2 Day
- Other

(Rush turn times will incur a surcharge and must be pre-approved by lab.)

Which Regulations Apply:

- RCRA
- POTW
- NPDES
- USDA/FDA
- RECAP/RISC
- Drinking Water
- Distribution
- Special
- State
- Other

Matrix Code:

- AQ = Aqueous
- DW = Drinking
- WW = Waste
- MW = Mont. Well
- LQ = Liquid
- SO = Soil
- O = Oil
- SL = Sludge
- F = Food
- SW = Swab
- SOL = Solid

Container

- P=Plastic
- G=Glass, V=Vail

Pres.

- HCl, HNO₃, H₂SO₄, NaOH, Na₂S₂O₈

Requested Tests

- TCR
- TEXAS 1005
- VOCs
- SUDCS
- PCRA 8 METALS
- PCBS
- PCII
- PH
- BTEX
- FLUORIDES
- TCLP BENZENE

Comments

SL-1, METALS

Sample ID/Description	Date	Time	Grab/Composite	Matrix	Quantity	Type	Pres.	Requested Tests	Comments
D-1	8/5/20	08:50	G	SO	5	G	Na ₂ S ₂ O ₈	TCR, TEXAS 1005, VOCs, SUDCS, PCRA 8 METALS, PCBS, PCII, PH, BTEX, FLUORIDES, TCLP BENZENE	GREEN COUNTRY TESTING CHAIN OF CUSTODY ATTACHMENT OF ... PAGES
D-2	"	09:15	G	SO	5	G	"		
D-3	"	09:40	C	SO	5	G	"		
D-4	"	10:10	C	SO	5	G	"		
D-5	"	10:40	C	SO	5	G	"		
AST-1	"	13:35	G	WW	6	G	HCl		
SL-1	"	14:20	C	SL	4	G	-		
TULO BANK	"	15:10	G	WW	2	V			
D-6	"	10:45	C	SO	5	G	Na ₂ S ₂ O ₈		

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
<i>[Signature]</i>	8/5/20 16:37	<i>[Signature]</i>	8/5/20 16:37	
				Received office? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
				Temp: <i>4</i>

All samples submitted to Green Country Testing for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples.

Green Country Testing reserves the right to return unused sample portions.

Green Country Testing
6825 East 38th Street • Tulsa, OK 74145
918-828-9977 • Fax (918)828-7756

Green Country Testing, Inc.
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August 24, 2020

Justin Scott
A & M Engineering
10010 E. 16th St.
Tulsa, OK 74128-4813
TEL: (918) 665-6575
FAX: (918) 665-6576

RE: 2320-003

Order No.: 2008255

Dear Justin Scott:

Green Country Testing, Inc. received 4 sample(s) on 8/11/2020 for the analyses presented in the following report.

In accordance with your instructions, Green Country Testing conducted the analysis shown on the following pages on samples submitted by your company. The results relate only to the items tested. Unless otherwise noted, all analysis were conducted using EPA approved methodologies. Test reports meet all the NELAC requirements. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by Green Country Testing.

Certifications/Accreditation: OK - 7604 - AR - ADEQ - KS - E-10232

A scope of Certified/Accredited parameters is available upon request. If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Duzan", with a stylized flourish at the end.

Brian Duzan
Laboratory Director

CC:
Accounts Payable
Jeff Elbert

Original

Green Country Testing, Inc.
6825 E 38th Street
Tulsa, OK 74145
TEL: 918-828-9977 FAX: 918-828-7756
Website: www.greencountrytesting.com



Case Narrative

WO#: 2008255
Date: 8/24/2020

CLIENT: A & M Engineering
Project: 2320-003

2008255
TX_1005_W has been Sub Contracted.

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Analytical Report

(continuous)

WO#: 2008255

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008255

Project: 2320-003

Lab ID: 2008255-001

Collection Date: 8/11/2020 12:02:00 PM

Client Sample ID: GW-1

Matrix: MONITOR WELL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
RCRA METALS IN WATER				E245.1, 1994		Analyst: JF
MERCURY IN WATER, TOTAL						
Mercury	0.00359	0.000500		mg/L	1	8/13/2020 8:03:00 AM
RCRA METALS IN WATER				E200.7, 1994	SW3010A	Analyst: KR
METALS IN WATER BY ICP, TOTAL						
Arsenic	1.05	0.0500		mg/L	10	8/18/2020 7:40:12 PM
Barium	29.1	0.100		mg/L	10	8/18/2020 7:40:12 PM
Cadmium	0.0410	0.0100		mg/L	10	8/18/2020 7:40:12 PM
Chromium	3.70	0.100		mg/L	10	8/18/2020 7:40:12 PM
Lead	2.25	0.0500		mg/L	10	8/18/2020 7:40:12 PM
Selenium	< 0.0500	0.0500		mg/L	10	8/18/2020 7:40:12 PM
Silver	< 0.0200	0.0200		mg/L	10	8/18/2020 7:40:12 PM
BTEX IN WATER				SW8021B		Analyst: BWD
BTEX IN WATER						
Benzene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Toluene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Xylenes, Total	< 0.0150	0.0150		mg/L	1	8/11/2020 5:00:00 PM
Surr: 4-Bromofluorobenzene	115	47.4 - 179		%Rec	1	8/11/2020 5:00:00 PM
Surr: Trifluorotoluene	106	31.8 - 175		%Rec	1	8/11/2020 5:00:00 PM
TNRCC 1005 IN WATER - N				TNRCC 1005		Analyst: 8727
Hydrocarbons C12 - C28	< 0.910	0.910		mg/L	1	8/20/2020 5:04:00 PM
Hydrocarbons C28 - C35	< 0.910	0.910		mg/L	1	8/20/2020 5:04:00 PM
Hydrocarbons C6 - C12	< 0.910	0.910		mg/L	1	8/20/2020 5:04:00 PM
Total TPH	< 0.910	0.910		mg/L	1	8/20/2020 5:04:00 PM
Surr: 1-Chlorooctane	83.0	70 - 130		%Rec	1	8/20/2020 5:04:00 PM
Surr: p-Terphenyl	90.0	70 - 130		%Rec	1	8/20/2020 5:04:00 PM
FLUORIDE				4500 F-C, 2011		Analyst: CW
Fluoride	0.629	0.200		mg/L	1	8/14/2020 9:47:00 AM

Qualifiers: H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
 PL Permit Limit
 RL Reporting Detection Limit

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Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008255

Date Reported: 8/24/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008255

Qualifiers: H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

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Analytical Report

(continuous)

WO#: 2008255

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008255

Project: 2320-003

Lab ID: 2008255-002

Collection Date: 8/11/2020 12:04:00 PM

Client Sample ID: GW-2

Matrix: MONITOR WELL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN WATER
 MERCURY IN WATER, TOTAL**

E245.1, 1994

Analyst: **JF**

Mercury	< 0.000500	0.000500		mg/L	1	8/13/2020 8:03:00 AM
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**RCRA METALS IN WATER
 METALS IN WATER BY ICP, TOTAL**

E200.7, 1994

SW3010A

Analyst: **KR**

Arsenic	0.925	0.0500		mg/L	10	8/18/2020 7:57:57 PM
Barium	25.3	0.100		mg/L	10	8/18/2020 7:57:57 PM
Cadmium	0.0366	0.0100		mg/L	10	8/18/2020 7:57:57 PM
Chromium	3.32	0.100		mg/L	10	8/18/2020 7:57:57 PM
Lead	1.98	0.0500		mg/L	10	8/18/2020 7:57:57 PM
Selenium	< 0.0500	0.0500		mg/L	10	8/18/2020 7:57:57 PM
Silver	< 0.0200	0.0200		mg/L	10	8/18/2020 7:57:57 PM

**BTEX IN WATER
 BTEX IN WATER**

SW8021B

Analyst: **BWD**

Benzene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Toluene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Xylenes, Total	< 0.0150	0.0150		mg/L	1	8/11/2020 5:00:00 PM
Surr: 4-Bromofluorobenzene	105	47.4 - 179		%Rec	1	8/11/2020 5:00:00 PM
Surr: Trifluorotoluene	103	31.8 - 175		%Rec	1	8/11/2020 5:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 0.910	0.910		mg/L	1	8/20/2020 5:04:00 PM
Hydrocarbons C28 - C35	< 0.910	0.910		mg/L	1	8/20/2020 5:04:00 PM
Hydrocarbons C6 - C12	< 0.910	0.910		mg/L	1	8/20/2020 5:04:00 PM
Total TPH	< 0.910	0.910		mg/L	1	8/20/2020 5:04:00 PM
Surr: 1-Chlorooctane	92.0	70 - 130		%Rec	1	8/20/2020 5:04:00 PM
Surr: p-Terphenyl	103	70 - 130		%Rec	1	8/20/2020 5:04:00 PM

FLUORIDE

4500 F-C, 2011

Analyst: **CW**

Fluoride	0.664	0.200		mg/L	1	8/14/2020 9:47:00 AM
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Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
W	Sample container temperature is out of limit as specified at testcode

M	Manual Integration used to determine area response
PL	Permit Limit
RL	Reporting Detection Limit

Original

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Analytical Report

(continuous)

WO#: 2008255

Date Reported: 8/24/2020

CLIENT: A & M Engineering
Project: 2320-003

Lab Order: 2008255

Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
W	Sample container temperature is out of limit as specified at testcode

M	Manual Integration used to determine area response
PL	Permit Limit
RL	Reporting Detection Limit

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Analytical Report

(continuous)

WO#: 2008255

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008255

Project: 2320-003

Lab ID: 2008255-003

Collection Date: 8/11/2020 12:11:00 PM

Client Sample ID: R-2

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**RCRA METALS IN WATER
 MERCURY IN WATER, TOTAL**

E245.1, 1994

Analyst: **JF**

Mercury	< 0.0000500	0.0000500		mg/L	1	8/19/2020 4:36:00 PM
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**RCRA METALS IN WATER
 METALS IN WATER BY ICP, TOTAL**

E200.7, 1994

SW3010A

Analyst: **KR**

Arsenic	< 0.00500	0.00500		mg/L	1	8/18/2020 6:34:19 PM
Barium	< 0.0100	0.0100		mg/L	1	8/18/2020 6:34:19 PM
Cadmium	< 0.00100	0.00100		mg/L	1	8/18/2020 6:34:19 PM
Chromium	< 0.0100	0.0100		mg/L	1	8/18/2020 6:34:19 PM
Lead	< 0.00500	0.00500		mg/L	1	8/18/2020 6:34:19 PM
Selenium	< 0.00500	0.00500		mg/L	1	8/18/2020 6:34:19 PM
Silver	0.00256	0.00200		mg/L	1	8/18/2020 6:34:19 PM

**BTEX IN WATER
 BTEX IN WATER**

SW8021B

Analyst: **BWD**

Benzene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Toluene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Xylenes, Total	< 0.0150	0.0150		mg/L	1	8/11/2020 5:00:00 PM
Surr: 4-Bromofluorobenzene	102	47.4 - 179		%Rec	1	8/11/2020 5:00:00 PM
Surr: Trifluorotoluene	103	31.8 - 175		%Rec	1	8/11/2020 5:00:00 PM

TNRCC 1005 IN WATER - N

TNRCC 1005

Analyst: **8727**

Hydrocarbons C12 - C28	< 0.900	0.900		mg/L	1	8/20/2020 5:04:00 PM
Hydrocarbons C28 - C35	< 0.900	0.900		mg/L	1	8/20/2020 5:04:00 PM
Hydrocarbons C6 - C12	< 0.900	0.900		mg/L	1	8/20/2020 5:04:00 PM
Total TPH	< 0.900	0.900		mg/L	1	8/20/2020 5:04:00 PM
Surr: 1-Chlorooctane	68.0	70 - 130	S	%Rec	1	8/20/2020 5:04:00 PM
Surr: p-Terphenyl	76.0	70 - 130		%Rec	1	8/20/2020 5:04:00 PM

FLUORIDE

4500 F-C, 2011

Analyst: **CW**

Fluoride	< 0.200	0.200		mg/L	1	8/14/2020 9:47:00 AM
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Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected at the Reporting Limit	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Original

Green Country Testing, Inc.
 6825 E 38th Street
 Tulsa, OK 74145
 TEL: 918-828-9977 FAX: 918-828-7756
 Website: www.greencountrytesting.com



Analytical Report

(continuous)

WO#: 2008255

Date Reported: 8/24/2020

CLIENT: A & M Engineering

Lab Order: 2008255

Project: 2320-003

Lab ID: 2008255-004

Collection Date: 8/11/2020 12:15:00 PM

Client Sample ID: Tirp Blank

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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BTEX IN WATER
BTEX IN WATER

SW8021B

Analyst: **BWD**

Benzene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Toluene	< 0.00500	0.00500		mg/L	1	8/11/2020 5:00:00 PM
Xylenes, Total	< 0.0150	0.0150		mg/L	1	8/11/2020 5:00:00 PM
Surr: 4-Bromofluorobenzene	96.4	47.4 - 179		%Rec	1	8/11/2020 5:00:00 PM
Surr: Trifluorotoluene	92.7	31.8 - 175		%Rec	1	8/11/2020 5:00:00 PM

Qualifiers:	H	M
H	Holding times for preparation or analysis exceeded	M Manual Integration used to determine area response
ND	Not Detected at the Reporting Limit	PL Permit Limit
R	RPD outside accepted recovery limits	RL Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode	



QC SUMMARY REPORT

WO#: 2008255

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: 4500 F-C, 2011

Sample ID: MB-R44292	SampType: MBLK	TestCode: FLUOR	Units: mg/L	Prep Date:	RunNo: 44292						
Client ID: PBW	Batch ID: R44292	TestNo: 4500 F-C, 201		Analysis Date: 8/14/2020	SeqNo: 479444						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	< 0.200	0.200									

Sample ID: LCS-R44292	SampType: LCS	TestCode: FLUOR	Units: mg/L	Prep Date:	RunNo: 44292						
Client ID: LCSW	Batch ID: R44292	TestNo: 4500 F-C, 201		Analysis Date: 8/14/2020	SeqNo: 479445						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.96	0.200	2.000	0	98.0	80	120				

Sample ID: 2008255-001DMS	SampType: MS	TestCode: FLUOR	Units: mg/L	Prep Date:	RunNo: 44292						
Client ID: GW-1	Batch ID: R44292	TestNo: 4500 F-C, 201		Analysis Date: 8/14/2020	SeqNo: 479447						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	5.41	0.200	5.000	0.6290	95.6	81.1	126				

Sample ID: 2008255-001DMSD	SampType: MSD	TestCode: FLUOR	Units: mg/L	Prep Date:	RunNo: 44292						
Client ID: GW-1	Batch ID: R44292	TestNo: 4500 F-C, 201		Analysis Date: 8/14/2020	SeqNo: 479448						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	5.57	0.200	5.000	0.6290	98.8	81.1	126	5.410	2.91	13	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008255

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: E200.7, 1994

Sample ID: MB-12372	SampType: MBLK	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/14/2020	RunNo: 44380						
Client ID: PBW	Batch ID: 12372	TestNo: E200.7, 1994	SW3010A	Analysis Date: 8/18/2020	SeqNo: 480507						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 0.00500	0.00500									
Barium	< 0.0100	0.0100									
Cadmium	< 0.00100	0.00100									
Chromium	< 0.0100	0.0100									
Lead	< 0.00500	0.00500									
Selenium	< 0.00500	0.00500									
Silver	< 0.00200	0.00200									

Sample ID: LCS-12372	SampType: LCS	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/14/2020	RunNo: 44380						
Client ID: LCSW	Batch ID: 12372	TestNo: E200.7, 1994	SW3010A	Analysis Date: 8/18/2020	SeqNo: 480508						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.88	0.00500	2.000	0	94.2	85	115				
Barium	1.94	0.0100	2.000	0	97.2	85	115				
Cadmium	1.94	0.00100	2.000	0	96.8	85	115				
Chromium	1.95	0.0100	2.000	0	97.6	85	115				
Lead	2.00	0.00500	2.000	0	100	85	115				
Selenium	1.87	0.00500	2.000	0	93.4	85	115				
Silver	0.936	0.00200	1.000	0	93.6	85	115				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008255

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: E200.7, 1994

Sample ID: 2008266-001DMS	SampType: MS	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/14/2020	RunNo: 44380						
Client ID: BatchQC	Batch ID: 12372	TestNo: E200.7, 1994	SW3010A	Analysis Date: 8/18/2020	SeqNo: 480510						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.90	0.00500	2.000	0	95.0	92.7	105				
Barium	2.06	0.0100	2.000	0.05815	100	93.6	109				
Cadmium	1.92	0.00100	2.000	0	96.2	94.5	105				
Chromium	1.95	0.0100	2.000	0	97.6	93.1	107				
Lead	1.95	0.00500	2.000	0.01974	96.3	92.5	107				
Selenium	1.87	0.00500	2.000	0	93.7	86.5	109				
Silver	0.959	0.00200	1.000	0.003226	95.6	91.3	106				

Sample ID: 2008266-001DMSD	SampType: MSD	TestCode: MET_WW_T	Units: mg/L	Prep Date: 8/14/2020	RunNo: 44380						
Client ID: BatchQC	Batch ID: 12372	TestNo: E200.7, 1994	SW3010A	Analysis Date: 8/18/2020	SeqNo: 480511						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.90	0.00500	2.000	0	95.0	92.7	105	1.899	0.0526	1.87	
Barium	2.07	0.0100	2.000	0.05815	100	93.6	109	2.060	0.291	2.9	
Cadmium	1.92	0.00100	2.000	0	96.2	94.5	105	1.924	0.0520	1.89	
Chromium	1.96	0.0100	2.000	0	98.2	93.1	107	1.951	0.664	3.89	
Lead	1.95	0.00500	2.000	0.01974	96.4	92.5	107	1.946	0.0514	3.09	
Selenium	1.88	0.00500	2.000	0	93.8	86.5	109	1.874	0.0533	2.19	
Silver	0.968	0.00200	1.000	0.003226	96.5	91.3	106	0.9589	0.996	3.96	

Qualifiers: H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits
 M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008255

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: E245.1, 1994

Sample ID: MB-R44271	SampType: MBLK	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44271						
Client ID: PBW	Batch ID: R44271	TestNo: E245.1, 1994		Analysis Date: 8/13/2020	SeqNo: 479143						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	< 0.0000500	0.0000500									

Sample ID: LCS-R44271	SampType: LCS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44271						
Client ID: LCSW	Batch ID: R44271	TestNo: E245.1, 1994		Analysis Date: 8/13/2020	SeqNo: 479144						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00103	0.0000500	0.001000	0	103	85	115				

Sample ID: 2008209-001CMS	SampType: MS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44271						
Client ID: BatchQC	Batch ID: R44271	TestNo: E245.1, 1994		Analysis Date: 8/13/2020	SeqNo: 479146						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.000608	0.0000500	0.001000	0	60.8	77.8	119				S

Sample ID: 2008209-001CMSD	SampType: MSD	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44271						
Client ID: BatchQC	Batch ID: R44271	TestNo: E245.1, 1994		Analysis Date: 8/13/2020	SeqNo: 479147						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.000572	0.0000500	0.001000	0	57.2	77.8	119	0.0006080	6.08	1.89	RS

Qualifiers:
 H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



QC SUMMARY REPORT

WO#: 2008255

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: E245.1, 1994

Sample ID: 2008252-001AMS	SampType: MS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44271						
Client ID: BatchQC	Batch ID: R44271	TestNo: E245.1, 1994		Analysis Date: 8/13/2020	SeqNo: 479151						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.00107 0.0000500 0.001000 0 107 77.8 119

Sample ID: 2008252-001AMSD	SampType: MSD	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44271						
Client ID: BatchQC	Batch ID: R44271	TestNo: E245.1, 1994		Analysis Date: 8/13/2020	SeqNo: 479152						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.00107 0.0000500 0.001000 0 107 77.8 119 0.001073 0.467 1.89

Sample ID: LCS-R44400	SampType: LCS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44400						
Client ID: LCSW	Batch ID: R44400	TestNo: E245.1, 1994		Analysis Date: 8/19/2020	SeqNo: 480746						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.000996 0.0000500 0.001000 0 99.6 85 115

Sample ID: MB-R44400	SampType: MBLK	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44400						
Client ID: PBW	Batch ID: R44400	TestNo: E245.1, 1994		Analysis Date: 8/19/2020	SeqNo: 480747						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury < 0.0000500 0.0000500

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008255

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: E245.1, 1994

Sample ID: 2008255-003CMS	SampType: MS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44400						
Client ID: R-2	Batch ID: R44400	TestNo: E245.1, 1994	Analysis Date: 8/19/2020	SeqNo: 480749							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.000968	0.0000500	0.001000	0	96.8	77.8	119				

Sample ID: 2008255-003CMSD	SampType: MSD	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44400						
Client ID: R-2	Batch ID: R44400	TestNo: E245.1, 1994	Analysis Date: 8/19/2020	SeqNo: 480750							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.000970	0.0000500	0.001000	0	97.0	77.8	119	0.0009678	0.268	1.89	

Sample ID: 2008308-001BMS	SampType: MS	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44400						
Client ID: BatchQC	Batch ID: R44400	TestNo: E245.1, 1994	Analysis Date: 8/19/2020	SeqNo: 480755							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.000905	0.0000500	0.001000	0	90.5	77.8	119				

Sample ID: 2008308-001BMSD	SampType: MSD	TestCode: HG_WW	Units: mg/L	Prep Date:	RunNo: 44400						
Client ID: BatchQC	Batch ID: R44400	TestNo: E245.1, 1994	Analysis Date: 8/19/2020	SeqNo: 480756							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.000911	0.0000500	0.001000	0	91.1	77.8	119	0.0009051	0.683	1.89	

Qualifiers: H Holding times for preparation or analysis exceeded M Manual Integration used to determine area response ND Not Detected at the Reporting Limit
 PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit
 S Spike Recovery outside accepted recovery limits W Sample container temperature is out of limit as specified at testcode



QC SUMMARY REPORT

WO#: 2008255

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8021B

Sample ID: MB-R44250	SampType: MBLK	TestCode: BTEX_W	Units: mg/L	Prep Date:	RunNo: 44250						
Client ID: PBW	Batch ID: R44250	TestNo: SW8021B		Analysis Date: 8/11/2020	SeqNo: 478782						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 0.00500	0.00500									
Ethylbenzene	< 0.00500	0.00500									
Toluene	< 0.00500	0.00500									
Xylenes, Total	< 0.00500	0.00500									
Surr: 4-Bromofluorobenzene	49.2		50.00		98.3	47.4	179				
Surr: Trifluorotoluene	45.3		50.00		90.6	31.8	175				

Sample ID: LCS-R44250	SampType: LCS	TestCode: BTEX_W	Units: mg/L	Prep Date:	RunNo: 44250						
Client ID: LCSW	Batch ID: R44250	TestNo: SW8021B		Analysis Date: 8/11/2020	SeqNo: 478783						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.100	0.00500	0.100	0	100	80	120				
Ethylbenzene	0.106	0.00500	0.100	0	106	80	120				
Toluene	0.102	0.00500	0.100	0	102	80	120				
Xylenes, Total	0.323	0.00500	0.300	0	108	80	120				
Surr: 4-Bromofluorobenzene	112		100.0		112	47.4	179				
Surr: Trifluorotoluene	107		100.0		107	31.8	175				

Sample ID: 2008152-021AMS	SampType: MS	TestCode: BTEX_W	Units: mg/L	Prep Date:	RunNo: 44250						
Client ID: BatchQC	Batch ID: R44250	TestNo: SW8021B		Analysis Date: 8/11/2020	SeqNo: 478785						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0974	0.00500	0.100	0	97.4	62.5	134				

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out of limit as specified at testcode		



QC SUMMARY REPORT

WO#: 2008255

24-Aug-20

Client: A & M Engineering
Project: 2320-003

TestNo: SW8021B

Sample ID: 2008152-021AMS	SampType: MS	TestCode: BTEX_W	Units: mg/L	Prep Date:	RunNo: 44250						
Client ID: BatchQC	Batch ID: R44250	TestNo: SW8021B		Analysis Date: 8/11/2020	SeqNo: 478785						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	0.102	0.00500	0.100	0	102	79.3	125				
Toluene	0.0986	0.00500	0.100	0	98.6	65.1	130				
Xylenes, Total	0.310	0.00500	0.300	0	103	66.6	140				
Surr: 4-Bromofluorobenzene	106		100.0		106	47.4	179				
Surr: Trifluorotoluene	106		100.0		106	31.8	175				

Sample ID: 2008152-021AMSD	SampType: MSD	TestCode: BTEX_W	Units: mg/L	Prep Date:	RunNo: 44250						
Client ID: BatchQC	Batch ID: R44250	TestNo: SW8021B		Analysis Date: 8/11/2020	SeqNo: 478786						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.101	0.00500	0.100	0	101	62.5	134	0.0974	3.73	14.9	
Ethylbenzene	0.108	0.00500	0.100	0	108	79.3	125	0.102	5.35	14.4	
Toluene	0.103	0.00500	0.100	0	103	65.1	130	0.0986	3.98	15.4	
Xylenes, Total	0.326	0.00500	0.300	0	109	66.6	140	0.310	5.06	12.7	
Surr: 4-Bromofluorobenzene	111		100.0		111	47.4	179		0	0	
Surr: Trifluorotoluene	111		100.0		111	31.8	175		0	0	

Qualifiers: H Holding times for preparation or analysis exceeded
 PL Permit Limit
 S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area response
 R RPD outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
 RL Reporting Detection Limit



Chain of Custody Record

Laboratory Number

LAB 82855114

Client Information:		Billing Information:		PO Number:		Project Name/Number:		Page 1 of 1	
Company Name: AEM Environmental		Quote Number:		2320-003		Requested Tests:		Turn Time Standard	
Contact Name: Terry Scott		Required QC Level:		Bill Monthly		Shipping Method:		<input checked="" type="checkbox"/> 1 Day	
Address: 1090 E. 16th St.		TWSA, OK 74128		<input type="checkbox"/> Yes		UPS / FedEx / Airborne		<input type="checkbox"/> 2 Day	
City, State, Zip:		Ext:		<input type="checkbox"/> No		DHL / GCT / Hand Mail		<input type="checkbox"/> Other	
Phone Number: (918) 665-6575								(Rush turn times will incur a surcharge and must be pre-approved by lab.)	
Fax Number:									
Email Address:									

Sample ID/Description	Date	Time	Grab/Composite	Matrix	Quantity	Container	Type	Pres	Requested Tests	Comments		
											SO = Soil	O = Oil
GW-1	8/11/20	12:02	G	MW	7	G,P	HCL, HNO3, H2SO4, NaOH, Na2S2O8	TPH - TEXAS LOSS	BTEX	PERA 8 METALS	FLUORIDES	#6814-146 141
GW-2	8/11/20	12:04	G	MW	7	G,P	HCL, HNO3, H2SO4, NaOH, Na2S2O8	TPH - TEXAS LOSS	BTEX	PERA 8 METALS	FLUORIDES	159, 118, 122
RZ-2	8/11/20	12:11	G	AR	7	G,P	HCL, HNO3, H2SO4, NaOH, Na2S2O8	TPH - TEXAS LOSS	BTEX	PERA 8 METALS	FLUORIDES	121, 9, 6, 163
TRP 200K	8/11/20	12:15	G	AR	2	G	HCL, HNO3, H2SO4, NaOH, Na2S2O8	TPH - TEXAS LOSS	BTEX	PERA 8 METALS	FLUORIDES	119, 13, 15, 8

Relinquished by:	Date/Time: 8/11/20 14:49	Received by:	Date/Time: 8-11-20 1449	Field Notes: pH = 7.13 @ 25.2°C
Received on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Temp: 15.4°C				

GREEN COUNTRY TESTING
CHAIN OF CUSTODY
ATTACHMENT
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All samples submitted to Green Country Testing for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples.