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RE: Shungnak School Tank Heating Oil Release, Shungnak, Alaska; ADEC Spill ID: 20389917201

Subj: Site Assessment Report

This report describes the site assessment field activities conducted at the site of the June 20, 2020 Shungnak School Tank Heating Oil Release in Shungnak, Alaska. This report outlines the field activities conducted in July 2020. An interim report was provided to the Alaska Department of Environmental Conservation (ADEC) on August 5, 2020 which included a portion of the laboratory data received at that time. This final report includes the complete analytical data package and comments received by the ADEC in their review of the interim report.

The site assessment work was conducted by Tanana Commercial and Environmental Management Joint Venture (TC-EM JV) in accordance with our July 9, 2020 work plan that was approved by the ADEC on July 12, 2020.

BACKGROUND

The site is an active ADEC Spills site, identified as the Shungnak School Tank Heating Oil Release, ADEC File No. 20389917201. Shungnak is situated on the Kobuk River in northwest Alaska approximately 153 air miles from Kotzebue, Alaska and 466 air miles from Anchorage, Alaska.

According to the ADEC database, on June 20, 2020 approximately 15,000 gallons of fuel was released from the Shungnak school heating oil tank farm Tank No. 1. The release was due to a three-way valve being in the wrong position and incorrectly shunting fuel from the fuel barge to the school heating oil tank farm, eventually overflowing the already partially full tank. The fuel delivery was intended for the Native Store and the Alaska Village Electrical Cooperative (AVEC) fuel tanks (Photo 1).

Spill Path

Fuel overtopping Tank #1 was reported to have pooled under and around the wood tank platform saturating the ground and filling a roughly 8 foot by 12 foot by 2-foot deep depression located approximately 15 feet northwest of the tanks adjacent to the fence (Photo 2 and Figure 5). The fuel then flowed southwest along the bluff (downgradient) and parallel to a fence for approximately 200 feet before flowing downhill approximately 75 feet into a forested slope for approximately 75 feet (Photo 3). It was reported by personnel in Shungnak that the spill path southwest of the tanks formed a fairly consolidated channel which limited the spill footprint (Figure 5). In-situ surface soil screening by TC-EM JV during in the investigation suggest the spill did not flow into the areas immediately northeast, northwest, and southeast of the spill site.

The three-way valve and fuel pipeline connecting to the beach associated with the spill event is located approximately 15 feet to the east of the tanks (Photos 1). PID soil screening of the surface and one-foot below ground surface (bgs) at locations 10 and 20 feet, respectively, down slope from the valve suggest there was little if any fuel flow in this direction.

During the initial site walk, TC-EM JV documented information from personnel in Shungnak familiar with the site that the small depression (Photo 5) located northeast of the tanks was filled with fuel during the spill. Fuel was pumped from the depression into drums that were located near the southwest corner of the school maintenance building. Some fuel is reported to have spilled on the ground near the school maintenance building as part of this operation. Soil screening by TC-EM JV during the field investigation suggests there was little surficial migration of the spill toward the school maintenance building beyond the fence margin northeast of the tanks.

TC-EM JV arrived on site after a three to four feet of fuel contaminated soil had already been excavated from the site in what was estimated to have been the spill path.

Kobuk River

The Kobuk River lies directly southeast of the bluff where the spill occurred. The Kobuk River is the source of drinking water for Shungnak, and the drinking water collection gallery for the municipal water intake is located approximately 200 feet south of TP-13 near the bank of the river, as shown on Figure 1. As part of this investigation, a sample of raw (pre-treatment) drinking water was collected and analyzed to assess the spills potential impacts to Shungnak water.

Historical Site Background

The spill site is the former location of the Shungnak Bureau of Indian Affairs (BIA) school which was demolished somewhere between 1975 and 1984 according to aerial photography of the site. The 1965 aerial photographs of the site depict numerous fuel drums directly northeast and west of the fuel tanks; no marine header was evident in the photograph indicating these drums may have been used to refill the tanks. The 1974 aerial photograph shows there were up to five tanks located north of the old BIA school site. The 1984 aerial photograph no longer has the former school building but the tanks appear to have been moved from their previous locations. The historical aerial photographs are provided as Figures 2, 3, and 4.

Initial Spill Response

The site has undergone an initial cleanup effort of approximately 350 yards of contaminated soils from the surface of the spill area. The approximate location of the initial removal effort is shown on Figure 4. The excavated soil is being temporarily stored at the landfill (Figure 1 and Photo 6) and the community is working with the NANA regional corporation to acquire additional land in which to permanently store the balance of the soil that has been excavated during the initial response and additional soil that will be generated in future cleanup efforts (proposed site location shown on Figure 1).

Based on conversations with Shungnak personnel, an estimated 250 to 500 gallons of pooled free product was pumped into drums.

PURPOSE AND OBJECTIVES

The purpose of this project is to delineate the extent of the impacts to the site from the June 20, 2020 spill event. The scope of the assessment was to delineate for the purpose of removal of grossly contaminated soil.

On July 14, 2020, at the request of ADEC spills personnel, TC-EM JV conducted an investigation of the school tank farm to delineate the extent of the contaminated soil at the spill site. From July 14 through July 17, 2020 TC-EM JV investigated the spill site collecting soil samples from test pits and conducting in-situ soil testing to delineate the extent of the contaminated soils remaining at the site. A water sample was also collected from the City of Shungnak water plant to assess any impacts to the Kobuk River and community drinking water.

METHODOLOGY

Field activities were conducted on July 14 through 17, 2020. Field screening and analytical sampling was conducted in accordance with the procedures presented in the ADEC *Field Sampling Guidance*, October 2019, and our July 13, 2020 ADEC-approved work plan. Further details on the field screening and soil sampling methods, and laboratory analysis are provided below.

Field Screening Methods

Headspace field screening samples were collected in one-foot increments from the test pits. Headspace samples were collected by filling re-sealable quart size bags approximately 1/3 to 1/2 full with soil. The bags were then agitated before being allowed to develop for at least 10 minutes, but not longer than an hour. All headspace samples were at least 40 degrees Fahrenheit (°F) at the time of readings. After the samples had been allowed to develop, the probe of the MiniRAE 2000 photoionization detector (PID) was inserted into the bag and the displayed reading was recorded in the field notes along with other pertinent information including the location of the sample.

Soil Sampling Methods

Analytical soil samples were collected using clean stainless-steel spoons and placed directly into clean laboratory-provided containers. Volatile samples were collected before semi-volatile and non-volatile samples. Volatile samples were immediately preserved with 25-mL of methanol.

Water Sampling Methods

A single water sample was collected from the City of Shungnak water plant. The water sample was collected directly from the raw water prior to entering the plant treatment system. The raw water tap was allowed to purge for 10 minutes prior to the collection of the sample. Grab samples were filled directly from the free running water after the purging interval. Analytical water samples were collected directly into clean, laboratory-provided containers.

Analytical Methods

The analytical samples were submitted to SGS North America, Inc. (SGS) of Anchorage, Alaska. Each sample was analyzed for gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), volatile organic compounds (VOC), and polycyclic aromatic hydrocarbon (PAH) compounds.

The raw drinking water sample collected from the City of Shungnak water plant was analyzed for VOCs by Method 524.2 and SVOCs by Method 525.

FIELD ACTIVITIES

Field activities were conducted July 14 through 17, 2020. Field activities included drone mapping of the project site, soil screening and collecting analytical samples from the test pits advanced at the site, performing in-situ screening of surface soils, and collecting a single community drinking water sample for analysis. ADEC Qualified Environmental Professional, Phil Barnes, conducted the field sampling activities. Dale Erickson conducted the drone mapping. The City of Shungnak provided a John Deere 690B excavator, a Caterpillar mini excavator and an operator to advance the test pits. Field notes are included in Attachment 1 and photographs of the field activities are provided in Attachment 2. The drone imagery is used for the figures provided in this report.

Test Pits and Sampling

A total of 13 test pits were advanced to delineate and assess the extent of the release in the source area and surrounding areas. The test pits were advanced in relation to the rectangular tank platform and were advanced in the following locations:

- Test Pit 1 (TP-1) was advanced approximately 15 feet northeast from the edge of the tank farm platform to assess the depth of spill into the ground (Photo 5)
- Test Pit 2 (TP-2) was advanced north of the tank farm, but the location was abandoned as significant fuel contamination was obvious in the surface and the test pit was being advanced over a fence which was still in place when this location was attempted (Photo 8).
- Test Pit 3 (TP-3) was advanced approximate 200 feet south of the tank farm on an approximately 22-degree slope at the far southern end of the spill path to assess the concentration of contaminants in the soil in this location. (Photo 9)
- Test Pit 4 (TP-4) was advanced 30 feet northwest of the tank platform to find the northwestern extent of the spill footprint. (Photo 10)
- Test Pit 5 (TP-5) was advanced on the edge of the bluff approximately 15 feet on a line from the southeast corner of the tank platform to assess the southeastern extent of the spill adjacent to the tanks. (Photo 11)
- Test Pit 6 (TP-6) was advanced 50 feet southwest of TP-5 on the edge of the bluff to investigate the depth of the contamination in the spill path. (Photo 12)
- Test Pit 7 (TP-7) was advanced 60 feet southwest of TP-6 on the edge of the bluff to investigate the depth of the contamination in the spill path. (Photo 13)
- Test Pit 8 (TP-8) was advanced approximately 60 feet from TP-7 on the edge of the bluff and approximately 70 feet upslope of TP-3 to investigate the depth of the contamination in the spill path. (Photo 14)
- Test Pit 9 (TP-9) was advanced approximately 25 feet northwest of TP-8 on the northwestern margin of the spill path to investigate the spill footprint boundary. (Photo 14)
- Test Pit 10 (TP-10) was advanced approximately 40 feet on a northwest offset from TP-7 to investigate the spill footprint boundary. (Photos 15, 16, and 17)
- Test Pit 11 (TP-11) was advanced at a location 30 feet northwest from a line extended 30 feet southwest from the northwest edge of the tank farm to investigate the western extent of the spill footprint. (Photo 18)

- Test Pit 12 (TP-12) was advanced at a point located approximately 50 feet north of the tank platform and approximately 30 feet from the southwest corner of the school maintenance building as a step-out for TP-2 and to investigate of the spill flowed off site toward the school maintenance. (Photo 19)
- Test Pit 13 (TP-13) was advance on the bank of the Kobuk River approximately 20 feet from the water and approximately 100 feet southwest of TP -3 to assess if the spill is impacting the Kobuk River. (Photos 20 and 21)

Test pit locations are shown in Figure 3. The test pits were advanced to the maximum excavator reach or until clean soil soils were documented via in-situ PID screening from the excavator bucket. Groundwater was not encountered in any of the test pits adjacent to the spill location with the exception of TP-3 which was excavated adjacent to the Kobuk River.

Surface Screening

Surface and near surface soils were screened offset on a line 10 feet from the former fence line that followed the top of the bluff on the southeast boundary of the spill area (Figure 5). The initial Shungnak spill response excavated approximately 3 feet of soil on a margin following the former fence line (Photo 23). The surface screening was to assess the extent the hillside has been impacted by the spill and to establish a southeastern spill site boundary. The sample location offset was chosen to be able to estimate a conservative foot print and volume of remaining contaminated soil along the bluff. The locations of these surface screening samples are shown on Figure 6.

Additional surface soil screening was completed near TP-3 which was located at the far southeastern extent of the spill site and approximately 175 feet northwest of the Kobuk River. Surface screening was completed here after personnel from Shungnak familiar with the spill indicated other pathways fuel may have followed down the bluff toward the river.

Drinking Water Sample

A single water sample was collected from the City of Shungnak water plant. The water sample was collected from pre-treatment raw water at a location indicated by the plant operator. (Photo 7). Analytical water samples were collected directly into clean, laboratory-provided containers.

Investigative Derived Waste

Investigation derived waste was limited to personal protective equipment, including nitrile gloves, Ziploc bags used for headspace analysis and glass vials previously containing methanol sample preservative for the soil samples. This waste was transported out the community of Shungnak and disposed of as general solid waste when field personnel reached Fairbanks.

RESULTS

A total of 13 analytical soil samples, including one duplicate, were collected from the project site and one analytical water sample was collected from the City of Shungnak water plant. Soil field screening results and detectable analytical results are presented in Table 1. The water sample result is included in Table 2.

Soil Descriptions

Surface soils at the site were suspected to be fill soils brought in after the demolition of the BIA school that formerly occupied the site. The soils across the site were primarily brown silty sand with clay being

encountered in lenses in some test pits (TP-1, TP-4, and TP-7); and consolidated clay at 3 feet bgs in TP-8 and depths greater than 8 feet bgs in TP-9 and TP-10 (Photos 13 and 16). Groundwater was not encountered in any of the test pits with the exception of TP-13 that was excavated adjacent to the Kobuk River where water was noted percolating into the excavation at the depth equivalent to the level of the river. Permafrost was not encountered in any of the test pits.

Surface staining due to the fuel spill could be observed near the tanks. Soils in the ground depression where TP-1 was excavated, and where fuel was reported have pooled during the spill, appeared to be moist because of the presence of fuels. Test pits with lower contaminant concentrations of did not appear to be significantly discolored due to the recentness of the spill event. TP-4, northwest of the tanks, had stained soils at approximately 10 feet bgs that was indicative of weathered fuel.

Headspace and Surface Soil Screening Results

Samples were collected and screened from each test pit. Headspace results are provided below.

Table 1 – Soil Headspace Field Screening Results

Depth (ft bgs)	Headspace Field Result (in ppmv)												
	TP-1	TP-2	TP-3	TP-4	TP-5	TP-6	TP-7	TP-8	TP-9	TP-10	TP-11	TP-12	TP-13
Surface	-	-	41.0	-	-	-	-	-	-	-	-	7.1	-
1	1520	-	1013	6.8	3.8	5.1	1980	4.5	4.1	4.3	11.7^	-	-
2	1600^	-	702	6.0	2.7	1739	2007^	4.8	3.6	4.9	8.5	125^	0.0^
3	1557	-	1110^	5.2	4.6	1833	1658	7.5^	4.0	22.1^	7.3	-	-
4	1271	-	-	3.8	3.6	1772	1685	-	4.2	10.0	3.8	-	-
5	1207	-	-	1.7	3.5	1850	43.3	-	-	5.6	5.4	-	-
6	1188	-	-	5.6	3.9	1992	17.6	-	-	-	-	-	-
7	1038	-	-	79.0	2.1^	1833^	-	-	4.4^	-	6.6	-	-
8	944	-	-	13.7	-	1386	-	-	-	-	-	-	-
9	753	-	-	112*	-	1029	-	-	3.2	-	6.7	-	-
10	-	-	-	7.7	-	992	-	-	-	-	-	-	-
11	-	-	-	14.0	-	6.7	-	-	-	-	-	-	-
12	-	-	-	802*^	-	-	-	-	-	-	-	-	-

Notes:

ppmv Parts per million by volume

bgs Below ground surface

* Suspected historical contamination location

^ Analytical sample collected

- No data for this sample depth

1520 Elevated PID reading

Table 2 – Bluff Field Screening Results

Depth (ft bgs)	In-Situ results (in ppmv)										
	PID-1	PID-2	PID-3	PID-4	PID-5	PID-6	PID-7	PID-8	PID-9	PID-10	PID-11
Surface	0.1	5.2	0.1	1.0	3.4	6.1	0.8	3.8	21.6	14.0	22.7
1	0.1	0.1	0.4	5.4	1.1	1.1	1.4	1.4	16.1	42.8	11.9

Analytical Soil Sample Results

A total of 12 soil samples plus a duplicate were collected from test pits excavated at the site. Table 3 depicts the results of the analytical sampling.

Table 3 – Detected Soil Analytical Results

			Action Level*		Soil Samples														Trip Blank
Analyte	Analysis	Unit	MTG	HH/MAC	TP-1-2	TP-3-3	TP-4-12	TP-5-7	TP-6-7	TP-7-2	TP-8-3	TP-9-7	TP-10-3	TP-11-1	TP-12-2	TP-12-D~	TP-13-2	TB-1	
Sample Depth	-	Ft	-	-	2	3	12	7	7	7	3	7	3	1	2	2	2	-	
Field Heaspace	MiniRae PID	Ppm	-	-	1600	1110	802	79	1833	2007	7.5	4.4	22.1	11.7	125	125	-		
Gasoline Range Organics	AK101	mg/Kg	300	1400	1150	1060	15.2	2.99 U	730	860	3.75 U	2.65 U	3.16 U	3.75 U	6.85	2.67 U	4.17 U	2.53 U	
Diesel Range Organics	AK102	mg/Kg	250	12500	17600	36000	951	20.6 U	16900	18300	22.8 U	20.8 U	21.1 U	21.2 U	2930	3430	27.4 U	-	
Polyaromatic Hydrocarbons	SW8270D	ug/L	varies	varies	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	
Volatile Organic Compounds																			
1,2,4-Trimethylbenzene	SW8260D	ug/Kg	610	43000	153000	186000	2270	59.7 U	125000	184000	91.8	53.1 U	63.2 U	75.1 U	61.9 U	53.3 U	83.4 U	50.7 U	
1,3,5-Trimethylbenzene	SW8260D	ug/Kg	660	37000	42700	50300	635	29.9 U	32900	48900	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U	
Ethylbenzene	SW8260D	ug/Kg	130	49000	15800	12100	139	29.9 U	13800	16000	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U	
Isopropylbenzene (Cumene)	SW8260D	ug/Kg	5600	54000	9300	9210	104	29.9 U	7630	9670	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U	
Naphthalene	SW8260D	ug/Kg	38	29000	10300	9600	103	29.9 U	5990	7690	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U	
Toluene	SW8260D	ug/Kg	6700	200000	10300	4980	60.1	29.9 U	9140	10200	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U	
Xylenes (total)	SW8260D	ug/Kg	1500	57000	89700	77200	865	89.6 U	76300	91400	112 U	79.6 U	94.7 U	113 U	92.8 U	80.0 U	125 U	76.0 U	
n-Propylbenzene	SW8260D	ug/Kg	9100	52000	27400	30500	339	29.9 U	23100	31000	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U	
sec-Butylbenzene	SW8260D	ug/Kg	42000	28000	17100	21900	280	29.9 U	13400	20100	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U	
Other VOCs	SW8260D	ug/Kg	Varies	Varies	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

- Notes:
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ND

3.77 U

635

1150

153000

Ppmv

mg/kg

µg/kg

Tables B1 or B2, Migration to Groundwater (MTG) or Human Health (HH) for Under 40 Inch Zone, Method Two Soil Cleanup Levels (18 AAC 75, October 27, 2018)

Duplicate of proceeding sample

Not detected

Analyte was not detected above the laboratory reporting limit of 3.77 mg/kg

Analyte was detected

Analyte was detected at a concentration greater than the MTG cleanup level

Analyte was detected at a concentration greater than the HH/MAC cleanup level

Parts per million by volume

Milligrams per kilogram

Micrograms per kilogram

Water Sampling Result

One water sample was collected from the Kobuk River raw water intake in the City of Shungnak Water Plant. The sample was collected assess potential impact the spill may be having on the community of Shungnak's water supply. The water samples were analyzed for VOCs via EPA drinking water Method 524.2 and EPA drinking water Method 525. Analytical from the Kobuk River drinking water sample collected are listed in Table 3.

Table 4 – Detected Water Analytical Results

Analyte	Analysis	Unit	Shungnak City Water	Trip Blank
Volatile Organic Compounds	EPA 524.2	ug/L	ND	ND U
Semi-Volatile Organic Compounds	EPA 525	ug/L	ND	-

Notes:

ND Analyte was not detected above the laboratory reporting limit
µg/L Micrograms per liter

QUALITY ASSURANCE

The ADEC Laboratory Data Review Checklist is attached. No quality control issues impacting the usability of the data were noted.

DISCUSSION

In general, the focus of the test pit investigation was to establish the surface footprint of the fuel spill and then excavate vertically in an attempt to delineate the subsurface extent of the spill to enable an estimate of the volume of soil that was impacted by the June 20, 2020 spill event.

The spill area where the school heating oil tanks are located is the site of a former BIA school that was demolished sometime in the later 1970's to early 1980's based on aerial photography. Much of the soils at the site are suspected to be fill, and the initial removal action undertaken by Shungnak has revealed debris that is evidence of the former school under approximately 4 feet of fill soil. Additional debris including buried arctic piping (Photo 118) and a concrete pad were encountered in initial attempts to excavate TP-11 southwest of the tank pad (Figure 3). The approximate edge of the concrete pad located at 4 feet bgs was discovered during the field investigation, but not a corner, and neither the footprint of the concrete pad. In an effort to establish the school footprint on the spill site and correlate potential historical contamination potentially comingled with the current spill event, historical aerial photographs from 1965 and 1984 were reviewed. The 1965 photo depicts the old BIA school and the three tanks located to the north of the school in the approximate location of the existing tanks on the site (Figure 2). The 1975 photo depicts five fuel tanks and includes the old BIA school in addition to structures that appear to be the school maintenance building to the north and the teacher housing to the northwest (Figure 3). The 1984 photo depicts four tanks on the site, and the BIA school is absent (Figure 4).

Approximately 3 to 4 feet of soil was excavated from the site in a 30 by 200-foot area beginning approximately 30 feet southwest of the tank farm. The excavation polygon following the fence line on the southeast side of the project area and continues to the top of the hill on the southwest end of the site. It is estimated that approximately 350 cubic yards of soil was excavated by Shungnak during the initial cleanup effort. Test pits TP-6 through TP-10 were excavated at the top of the bluff on the margin of the initial soil excavation.

The soils across the site in general appear to be either fill material (likely gravel bar barrow) or native soils which consist primarily of silty sand near the surface, silty sand with clay lenses at depths greater than 4 feet bgs, and clay that was encountered as shallow as 4 feet but generally encountered at greater depths. Sloughing and instability was an issue as test pits were advanced beyond approximately 8 feet.

To evaluate if the extent the spill has affected the hillside, EMI established 11 in-situ surface PID screening locations (PID 1 through 11) along the bluff (Figure 4). Test locations were established at 20-foot intervals following to the top of the bluff beginning at the three-way valve, and then offset 90 degrees 10 feet. Both PID 1 and PID 2 were located under the pipeline below the three-way valve. PID-2 was located 20 feet southeast of PID-1. Surface soils were recorded at approximately three to four inches bgs from soils under the vegetated matt layer. Soils were also screened near TP-3 after additional spill flow paths were identified by personnel familiar with the spill site. Results of this screening are depicted in Table 2.

Test Pit Discussion

The following outlines the specific observations of the test pits advanced as part of the site assessment effort. Several test pits were completed within the footprint of the initial removal effort. These locations are denoted below as “disturbed” while areas that have not been excavated as part of the initial removal effort are denoted below as “undisturbed.” The analytical discussion follows this section.

Test Pit 1 (undisturbed): Test Pit TP-1 was advanced in an approximately 10 feet by 12 feet by 2 feet in depth depression where fuel pooled during the spill that is located approximately 15 feet northeast of the wood platform the Shungnak school tanks are resting upon. Standing fuel was pumped into the depression during the spill event, and therefore this is an area of extremely elevated fuel concentration in the soil. This area is also hemmed in by a fence directly to the north that located between the school maintenance building and the tank farm, and a satellite communication dish located directly east northeast that is currently in use providing AT&T telephone service to the community. Therefore, no excavation of the soils has occurred here as has happened in the area of the site southeast of the tanks. Due to space and safety limitation of the test pit location only the smaller Caterpillar mini excavator could be positioned to excavate the test pit creating a limitation on the maximum depth that could be reached in the excavation. Petroleum odors were noted at all depth of TP-1 with the maximum headspace concentration of 1,600 ppm being noted in the 2-foot interval headspace sample. Due to equipment limitations and the sandy soils, there was frequent sloughing in the test pit and therefore it is suspected the lower extent of the excavation represents soils partially homogenized with the upper intervals.

Test Pit 2 (undisturbed): The planned TP-2 location was abandoned in order to advance a test pit (TP-12) further to the northeast between the tank farm and the school maintenance building. TP-2 was initially advanced reaching over a fence that was still in place into the area where there was obvious and notable surface contamination in shallow (less than 1-foot bgs) soils. Rather than advancing deeper due to the obvious contamination, and due to a fence in the way and the limitation of the mini excavator, another test pit (TP-12) was advanced north of TP-2.

Test Pit 3 (undisturbed): Test Pit 3 (TP-3) was advanced approximate 200 feet south of the tank farm on an approximately 22.5-degree slope at the far southern end of the spill path. Due to the steepness of the terrain TP3 was hand excavated to a depth of approximately three feet using a shovel. Headspace samples were collected in on foot intervals from the surface to a depth of three feet bgs. Headspace values at three feet bgs were found to be significantly elevated (1,100 ppm) indicating the limit of subsurface contamination had not been reached.

Test Pit 4 (undisturbed): TP-4 was excavated approximately 30 feet northwest on a line perpendicular to the middle of the northwestern facing edge of the tank platform. The initial TP-4 location was planned roughly 15

feet northwest of the tank platform, but was found to have notably elevated fuel concentrations based visual, olfactory and in-situ PID screening results. The planned TP-4 location was stepped out 15 feet to the northwest to find the limit of surface contamination. TP-4 was excavated to a depth of approximately 13 feet bgs using a John Deere 690B. Although during the excavation in-situ PID screening levels were low (<10 ppm), the test pit was advanced to evaluate the subsurface lateral migration of the spill. Soils were composed of sandy silt with lenses of clay encountered at approximately 10 feet bgs. Sloughing was a problem in the excavation as it was being advanced due to the nature of the soils and there may have been some homogenization of the lifts beyond 10 feet bgs. PID concentrations were under 10 ppm until approximately 7 feet bgs with a headspace reading of 70 ppm. There was an elevated PID reading of 112 ppm at 9 feet bgs, and then an interval of low PID readings (<10 ppm) between 10 and 12 feet bgs. A high headspace reading of 802 ppm was recorded at 12 feet bgs. Both peak PID readings were associated with dark colored soils that may have been weathered fuels that may be associated with historical spills associated with the old BIA school. The 1965 aerial photograph depicts fuel drums that have been estimated to be in approximate location of TP-4. The test pit was completed removing several buckets of likely slough to ensure a sample representative of undisturbed soils was reached. The lift at 13 feet bgs registered a headspace reading of 11.1 ppm suggesting the limit of contamination had been reached.

Test Pit 5 (undisturbed): TP-5 was excavated approximately 15 feet southeast of the tank platform at the top of the bluff. There were no elevated PID readings to 7 feet bgs, the limit of the reach of the mini excavators used to advance the test pit in this location. At 4 feet bgs the PID headspace reading was 4.6 ppm, therefore a sample was collected from this interval.

Test Pit 6 (disturbed): Test pit 6 (TP-6) was advanced 50 feet southwest of TP-5 on the edge of the bluff and encountering significant subsurface contamination. This test pit location was reported to be in the spill path that followed the fence parallel to the bluff. The fence was taken down as part the soil removal that was part of the initial spill response. TP-6 was located where an estimated 3 feet of fuel contaminated soil was previously excavated, therefore TP-6 was advanced beginning at 3 feet bgs original site grade. Soils in this test pit appeared moist due to the presence of fuel contamination. The peak headspace value of 1,992 ppm where a soil analytical sample was collected was recorded at 6 feet bgs. Elevated readings ceased at 11 feet bgs with a PID headspace reading of 6.7 ppm.

Test Pit 7 (disturbed): TP-7 was advanced 60 feet southwest of TP-6 at the top of the bluff along the old fence line. TP-7 is located where approximately 3 feet of contaminated soil was removed. The presence of very elevated fuel concentrations was obvious with peak headspace concentrations of 2,007 ppm in TP-7-2. Significant contamination continued through TP-7-4 with a headspace reading of 1,685 ppm, but then headspace concentrations declined significantly below this depth to 17.6 ppm in TP-7-6.

Test Pit 8 (disturbed): TP-8 was advanced approximately 60 feet from TP-7 on the top of the bluff along the old fence line and approximately 75 feet uphill from TP-3. No contamination was encountered in TP-8 and it appears the initial removal action was successful in removing the gross contamination from this area.

Test Pit 9 (disturbed): TP-9 was advanced approximately 25 feet northwest of TP-8 on the northwestern margin of the reported spill path. No elevated PID readings were encountered in this test pit suggesting the soil removal action was successful in this area. A sample was collected from TP-9-7 where the PID headspace reading was 4.1 ppm. Blue/red stained colored, cold native soil was reached at 9 feet bgs in this test pit.

Test Pit 10 (disturbed): TP-10 was advanced in a location approximately 40 feet northwest of TP-7. Moderately elevated headspace readings were encountered in this test pit. During the investigation, EMI screened the sidewalls of the shallow test pit to delineate the lateral bound of the spill footprint. EMI noted elevated in-situ PID readings on the southeast wall of the test pit and minimal detections on the northwest

sidewall suggesting the test pit was situated on the general boundary of the contamination footprint. TP-10-3 registered a headspace reading of 22.1 ppm.

Test Pit 11 (undisturbed): TP-11 was located approximately 40 feet southwest of the southwest corner of the tank farm. The planned location for TP-11 was 30 feet to the southeast and was offset after encountering gross contamination, significant subsurface debris from the former BIA school demolition and a concrete pad suspected of being the old school boiler pad at approximately 3 to 4 feet bgs. The final TP-11 location demonstrated slightly elevated headspace concentrations at 1-foot bgs of 11.7 ppm. TP-11 was excavated to 10 feet bgs where the PID headspace concentration was 6.7 ppm. Soils were uniformly silty sand to the final depth of the test pit. Although a low concentration of 3.8 ppm headspace was recorded in the TP-11-4, the excavation continued to be advanced to assess lateral migration petroleum contamination since TP-11 was situated close to the source and the reported spill path.

Test Pit 12 (undisturbed): TP-12 was the step out location for TP-2, and was located approximately 40 feet north of the north corner of the tank platform. TP-12 was excavated to a total depth of 3 feet bgs due to the close proximity of communications cabling and an active heating oil tank. TP-12 was advanced to evaluate if the spill flowed down the hill toward the school maintenance building. The surface headspace reading in TP-12 was 7.1 ppm suggested fuels did not flow north toward the school maintenance building. The TP-12-3 headspace sample was elevated at 125 ppm, however the typically silty sand soils in location did not have obvious discoloration, wetness or other sign visual or olfactory signs of contamination.

Test Pit 13 (undisturbed): TP-13 was advanced on the bank of the Kobuk River approximately 20 feet from the water and approximately 100 feet southwest of TP-3 to assess the potential of the spill to be impacting the community of Shungnak's source of drinking water. The test pit was excavated to a depth of 2.5 feet bgs and grab sample was collected from this location. An in-situ PID reading measured 0.0 ppm.

Analytical Discussion

ADEC Method Two, Under 40 Inch Zone, Migration to Groundwater cleanup levels were exceeded for compounds detected in 6 of the twelve test pits samples were collected from during the spill investigation. Fuel constituents present in the analytical results include petroleum range compounds GRO and DRO, and volatile fuel components (VOCs) including 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, ethylbenzene, isopropylbenzene, naphthalene, P & M -xylene, toluene, n-propylbenzene, o-xylene, and sec-butylbenzene.

Analytical samples are identified based on their test pit location and collection depth (e.g., sample TP-1-2 is Test Pit 1 collected at a depth of two-feet bgs). Soils samples were collected from the depth corresponding with the highest PID headspace reading.

The highest DRO detection was 36,000 mg/Kg in sample TP-3-3 (Table 3) which exceeds the ADEC Migration to Groundwater cleanup level of 250 mg/Kg. This was associated with an elevated GRO detection of 1,060 mg/Kg and very elevated VOC values. TP-3 was located at the bottom of the slope on the far end of the spill path where fuel appears to have concentrated based on the analytical results. The second highest DRO value was 17,600 mg/Kg in sample TP-1-2 which was located approximately 15 feet from the spill source in a location where fuel was reported to have pooled on the ground. GRO in TP-1 was 1,150 mg/Kg and VOC concentrations were very elevated which was expected since the source area was undisturbed.

DRO detections were also found in samples TP-6-7 with 16,900 mg/Kg DRO and in TP-7-2 with 18,300 mg/Kg DRO. Both TP-6 and TP-7 were located within spill path as fuel flowed south across the site.

Moderate fuel concentrations were associated with TP-12-2 which was located between the tanks and the school maintenance building to the north. This test pit location was thought to be in the spill path and was additionally placed to delineate the spill footprint. The DRO concentration of 2,930 mg/Kg at TP-12 is relatively low compared with TP-1 located 20 feet to the southeast, and unusual as there were no VOC detections and a low GRO detection (6.58 mg/Kg). Visual and olfactory observation didn't suggest fuel contaminated soils at TP-12, although there was a headspace screening detection of 125 ppm.

In general, GRO and VOC values follow DRO concentrations in magnitude in a consistent pattern across the site. The exception to this is TP-4 with a DRO value of 951 mg/Kg and a GRO value of 15.2 mg/Kg and slightly elevated VOC concentrations. TP-4 is suspected to be a historical contamination source from tanks that were in the location of TP-4 and were removed sometime before 1983. Of the VOC compounds in TP-4, there were exceedances of the Migration to Groundwater cleanup level for 1,2,4-trimethylbenzene (2270 ug/Kg) and a slight exceedance for ethylbenzene (139 ug/Kg). The remaining VOC detections at TP-4 were below the cleanup threshold for the site.

Samples collected from TP-5, TP-8, TP-9, TP-10 and TP-11 were non-detect for any compounds. Headspace for TP-10-3 was slightly elevated at 22.1 ppm and low-level detections were anticipated. However, the results are consistent with the other non-detect locations. These test pit locations were selected to delineate the spill footprint boundary. In the field, the north wall of TP-10 excavation was noted to be clean, while the opposing south wall of the excavation produced elevated in-situ PID readings. The outlier in this pattern was TP-8-3 with an 1,2,4-trimethylbenzene detection of 91.8 ug/Kg. This was unusual since no other fuel or VOC compounds were detected in the sample.

Surface Screening Discussion

The bluff surface screening locations (PID-1 through PID-8) were under low with a high of 6.1 ppm in PID-6-surface and PID-2-surface result of 5.2 ppm. PID-4-1 measured 5.4 ppm. The results are slightly elevated in these locations which could be contributed to biogenic interference. The results are not consistent with a discrete peak that would be registered in the presence of direct contact with petroleum contamination. In both PID-2-surface and PID-6-surface the 1-foot bgs sample locations were 0.1 ppm.

PID locations 9 through 11 were used to delineate the southeast extent of the spill on the hillside near TP-3 and below TP-8. PID-9 through PID-11 in-situ screening results were elevated and are consistent with the presence of petroleum contamination. All of the locations were elevated with a high PID reading of 42.8 ppm in PID-10-1. PID-11-1 was the low with a reading of 11.9 ppm.

CONCLUSIONS AND RECOMMENDATIONS

Petroleum contamination is present and remains in the location of the Shungnak School tank farm. Approximately 350 cubic yards of soil was initially excavated from the site during the initial spill response, but this investigation indicates there is contamination remaining at the site.

Conclusions

Test pit excavations indicate there is petroleum contamination in the vicinity of the tank farm at test pit TP-1 to greater than 9 feet bgs. In general, it appears the depth of the petroleum contamination diminishes toward the southwest. The soil excavated during the initial spill response was successful in removing much of the gross contamination from the site. However, contamination was present to a depth of 10 feet bgs in TP-6 and to a depth of 6 feet bgs in TP-7 in these test pit locations within the flow path of the spill.

Test pits TP-4 and TP-5, located 30 feet northwest and 15 feet southeast of the tank platform, respectively, suggest there was limited surface migration of the spill toward the northwest and southeast.

The spill footprint did not appear to extend north toward the school maintenance building, although there does appear to be surface contamination that may be associated with the transferring fuel from the spill site to drums located at the school maintenance building. Soil screening and analytical results from TP-12 suggest the spill may extend in the subsurface to the north beyond the spill surface footprint.

Stained soil was encountered at 12 feet bgs in Test Pit TP-4, which is typically not characteristic of a recent spill but rather weathered fuels. Based on historical aerial photographs, fuel drums were noted in the approximate location of TP-4. These drums are in the vicinity of the tanks which appear to have since been moved to their current location. While field screening results in the shallow samples from TP-4 were low and did not contain indications of contamination, the deeper contamination may be indicative of former releases and the extent of these historical releases was not evaluated as part of this scope and remains unknown.

Soil contamination is also present on the hillside at the far southeastern end of the spill path above the Kobuk River. Due to the steepness of the terrain at TP-3 the vertical extent of the contamination in this location is unknown without additional investigation.

Gross contamination remains near the tanks, and at the south end of the spill site on the slope leading to the Kobuk River. The initial removal action was successful in removing much of the gross contamination in the area along the bluff adjacent to the tanks. Contaminated soil adjacent to the tanks likely extends beyond 12 feet bgs. Contamination may have migrated away from the spill footprint toward the school maintenance building. The extent of contamination between TP-12 and the school building is not defined.

Recommendations

Based on the data obtained from the July 2020 site assessment, TC-EM JV recommends the following:

- Additional investigation is required in the area northwest of the tanks, in the area of the 3-way valve and the piping network, and near the existing satellite dish. A test pit was not excavated in this area due the existing pipe network and the presence of the tanks. The ADEC Spills Department's preliminary investigation of this area during the initial response indicated the presence of fuel contamination.
- Contamination associated with the spill response at the school maintenance building was noted during the July 2020 field effort. This was a staging area for drums containing recovered fuel. Splashes and spills have impacted the ground and, therefore, contaminated soils in this area should be delineated and included in a future removal action.
- Based on initial sample results from the drinking water sample and regular observations for the presence of sheen on the Kobuk River from Shungnak personnel, contamination from this spill does not appear to have migrated to the Kobuk River and drinking water source. Observations for the presence of sheen and periodic sampling of the drinking water source should continue.
- Due to the elevated concentrations remaining in the spill area and proximity to the school, teaching housing, and elderly residences, air monitoring may be necessary during future removal efforts.
- The highest concentrations reported at the site are located on the slope downgradient of the spill site at TP-3. Additional investigation along the slope and downgradient will be necessary to delineate the

extent of contamination. Since removal of these soils will not likely occur in 2020 as additional information is gathered regarding the extent, best management practices (BMPs) may be necessary to minimize further migration of contamination from upgradient runoff.

- Concentrations in soils at the site exceed ADEC human health/maximum allowable concentrations in several samples. Based on ADEC guidance for landfarm construction, if landfarmed the soils will require a bottom liner.
- Contamination is present in the vicinity of site infrastructure, including at the tanks, piping, and likely near the AT&T satellite dish. Removal of the contamination in these areas will require removal of the infrastructure and locates of utilities that may not be captured during the standard locate requests.

If you have any questions or wish to discuss this project further please do not hesitate to contact the undersigned at (907) 223-3544.

Tanana Commercial/Environmental Management JV



Shayla Marshall, QEP
Project Manager

Attached:

Figure 1 – Vicinity Map

Figure 2 – June 27, 1965 Aerial Photograph

Figure 3 – July 1, 1975 Aerial Photograph

Figure 4 – August 29, 1984 Aerial Photograph

Figure 5 – Site Plan

Figure 6 – July 2020 Sample Locations

Attachment 1 – Field Notes

Attachment 2 – Photo Pages

Attachment 3 – Laboratory Report and Laboratory Data Review Checklist



GRAPHIC SCALE (IN FEET)

VICINITY MAP

SHUNGNAK SPILL
SHUNGNAK, ALASKA

TC-EM JV

EMI JOB: 18130
DRAWN: SIM
REVIEWED: SIM
DATE: 8/5/2020

FIGURE

1



JUNE 27, 1965 AERIAL
PHOTOGRAPH
(QUANTUM SPATIAL)

SHUNGNAK SPILL
SHUNGNAK, ALASKA

TC-EM JV

EMI JOB: 18130
DRAWN: PB
REVIEWED: SIM
DATE:
7/31/2020

FIGURE
2



JULY 1, 1975 AERIAL
PHOTOGRAPH
(QUANTUM SPATIAL)

SHUNGNAK SPILL
SHUNGNAK, ALASKA

TC-EM JV

EMI JOB: 18130
DRAWN: PB
REVIEWED: SIM
DATE:
7/31/2020

FIGURE
3



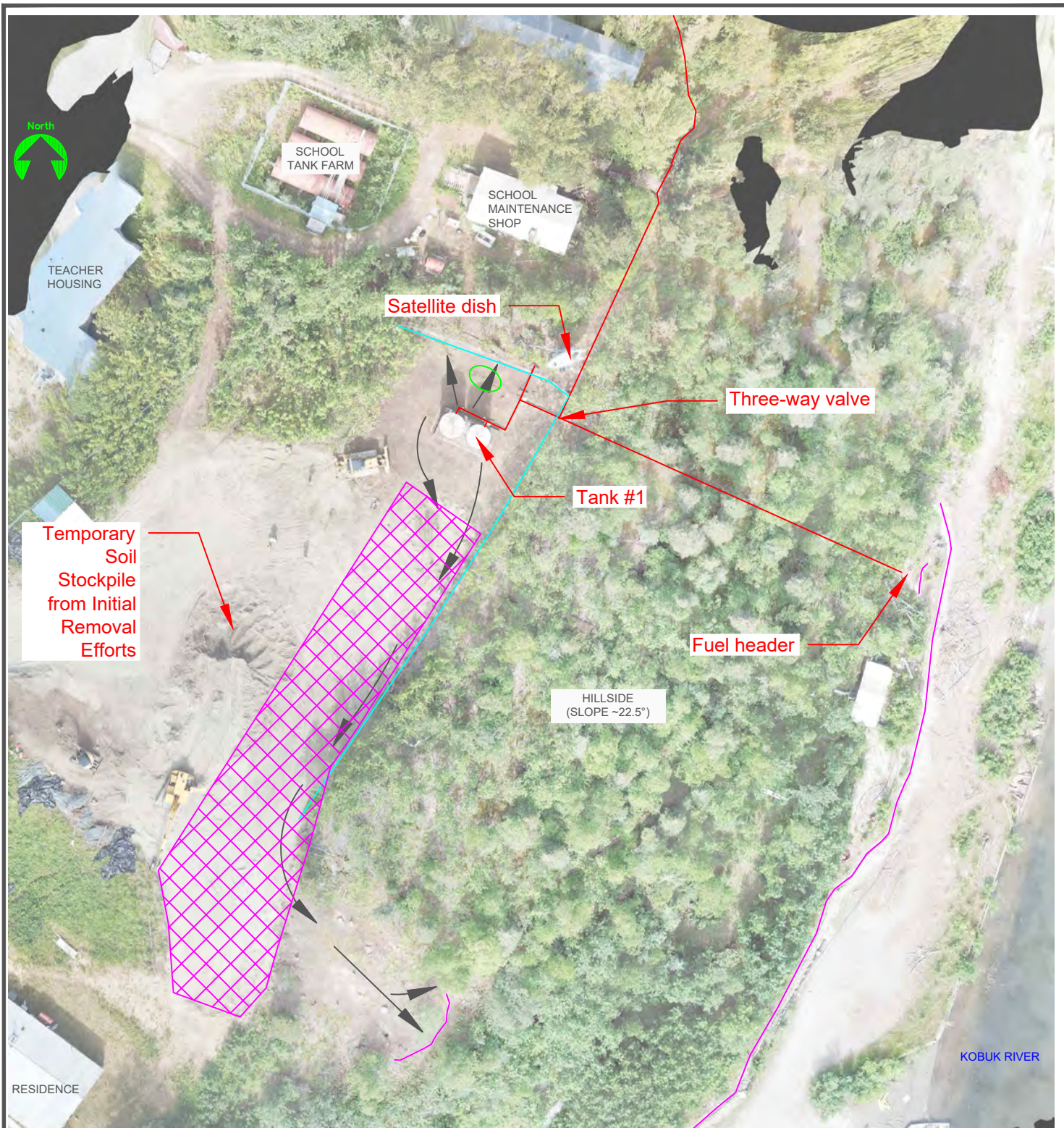
AUGUST 29, 1984 AERIAL
PHOTOGRAPH
(QUANTUM SPATIAL)

SHUNGNAK SPILL
SHUNGNAK, ALASKA

TC-EM JV

EMI JOB: 18130
DRAWN: PB
REVIEWED: SIM
DATE:
7/31/2020

FIGURE
4



LEGEND

- APPROXIMATE LOCATION OF PIPELINE
- APPROXIMATE LOCATION OF FORMER FENCE
- APPROXIMATE LOCATION OF SORBENT BOOM
- ▤ APPROXIMATE LOCATION OF INITIAL EXCAVATION
- APPROXIMATE LOCATION OF SPILL FLOW PATH
- APPROXIMATE LOCATION OF DEPRESSION

BACKGROUND IMAGE FROM DRONE IMAGERY COLLECTED BY TC-EM JV ON JULY 14, 2020.



GRAPHIC SCALE (IN FEET)

SITE PLAN

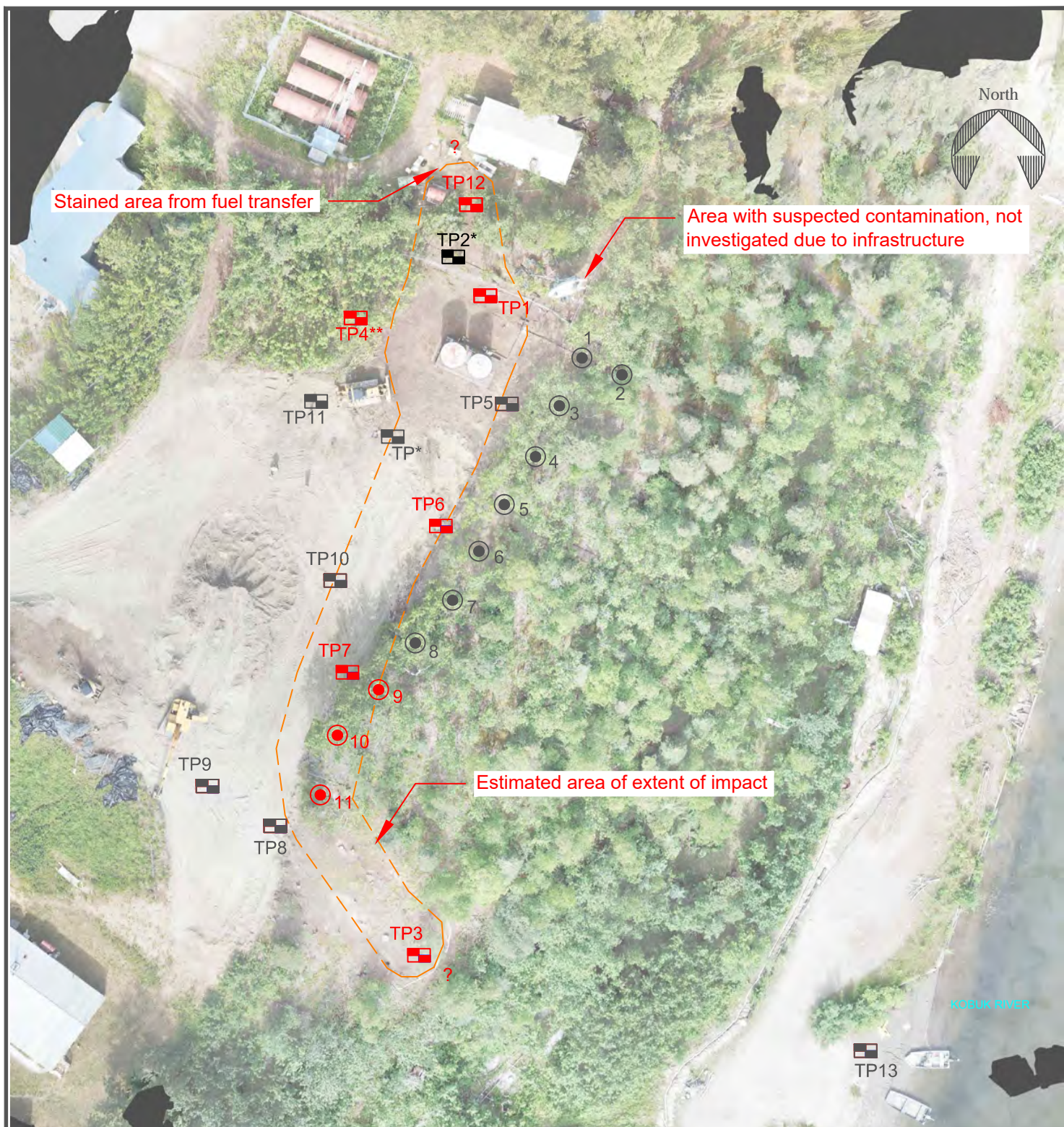
SHUNGNAK SPILL
SHUNGNAK, ALASKA

TC-EM JV

EMI JOB: 18130
DRAWN: PB
REVIEWED: SIM
DATE: 8/5/2020

FIGURE

5



LEGEND

BACKGROUND IMAGE FROM DRONE IMAGERY COLLECTED BY TC-EM JV ON JULY 14, 2020.

- APPROXIMATE LOCATION OF SURFACE SOIL SCREENING SAMPLE (JULY 2020)
- APPROXIMATE LOCATION OF ELEVATED SURFACE SOIL SCREENING SAMPLE (JULY 2020)
- APPROXIMATE LOCATION OF TEST PIT WITH SAMPLES ABOVE MIGRATION TO GROUNDWATER (MTG) CLEANUP LEVEL (JULY 2020)
- APPROXIMATE LOCATION OF TEST PIT LOCATION BELOW MTG CLEANUP LEVEL (JULY 2020)
- * TEST PIT ADVANCED BUT NO SAMPLES COLLECTED
- ** CONTAMINATION APPEARS TO BE FROM HISTORIC RELEASE



GRAPHIC SCALE (IN FEET)

JULY 2020 SAMPLE
LOCATIONS

SHUNGNAK SPILL
SHUNGNAK, ALASKA

TC-EM JV

EMI JOB: 18130
DRAWN: PB
REVIEWED: SIM
DATE:
8/25/2020

FIGURE

6

ATTACHMENT 1

Field Notes

Shugnak SPILL RESPONSE 7/10/2020

INVESTIGATION - Phil Barnes

1403 Calibrate PID

(Minitrac 2000, SN 10731)

Calibrate with ISO butylene 100 ppm

cylinder expiration date 4/7/2024

cylinder @ 400 PSI

Calibration value = 100 ppm

Bump test = 101 ppm

1414 Complete Calibration (PID)

Continue to mob items for
FIELD.

Shugnak 7/14/20

0500 @ ANCH AIRPORT

0715 meet Danny @ FOX

0800 Leave FOX

0900 TRANSIT FOR COVID
TEST

1000 Leave TRANSIT

1115 ARRIVE Shugnak

Dale phone

366-1111

Shugnak SPILL CLEANUP 7/14/20

Phil Barnes, Dale Erickson, Cynthia Erickson

1200 - ARRIVE @ AIRPORT, meet with

Anthony Morris and then

Ride car to the school. Go

Drop off gear.

1241 Kelly Denny - School

Person (Teacher) - Discussion

re: the SPILL AREA may

have the contamination from

the old school, report that

Boxes have been encountered

at the spill site.

1248 Dale and Cynthia to airport

to get Get ice Picks and

other gear.

1250 Eating lunch

1250

1310 Dale and Cynthia Delivered

the Boxes of GEL ICE -

GEL ICE Boxes in the

teachers kitchen where

I am staying. FREEZER

was clean prior to arriving

per Kelly Denny

Return the Rain

Shayla's Cont

7/14/20

1327 Phone call with CRAIG
McLennan the School
DISTRICT PR: instruction
not to move the school or
protect ~~area~~ and not let
Fathers from the Community come
into the building with me.

CRAIG is also getting information
for the internet access.

1335 Site visit with Anthony
Dale and Cynthia
(will make notes re the site water)

1415 Return to School for
Action Plan

1420 Site mapping on site
Figure

1533 Phone Shayla re: the
Trucks still have some
Fuel in them

437-2163

437-5021

Per Shayla

Soil Sample Convention

TP1SS - 5 (depth)

Per Shayla - Phone her @
end of day Re: the Progress

1349 Brent = ~~DOES~~ not know
about City zero @ the site

Phone Anthony re: STEPS
will be @ the site soon.

1353 Calibrate (Bump test) the
PID.

Bump Test - ISO Butylene FRO
Teflon by Filled with 100 ppm
CAL GAS FROM the Steel cylinder
used to calibrate the PID on
7/10/20 (Page 12 of this Book)

Bump test = 84 ppm (Low - Required)
Recalibrated = 108 ppm Bump 108 ppm
CAL ~ 80% High

Rate in the Rain

Shayna's Cont 7/14/20

1618 Per Anthony - mini BX
operator has to work
@ the material stockpile split
- will do PID screen on the
hill side.

Soil screening locations approx
10 feet down hill from
the old fence line -
there are a few fence
posts standing.

1650 TAKE BRIBE TO TAKE DAVE
to the airport and got 4-wheel

1705 Return to the site and
Continue Soil Screening.

PID

1739 Screen soils from along
the bluff or along the
old fence line - offset 10
feet down the bluff to
assess soil conditions beyond
the permitted spill margin.

Shayna's Cont

7/14/20¹⁷

Soil screen location and PID value
PID screen surface soils on the bluff

Location Value Note

PID 1 - Surface $<50(0.1)$ collected

PID 1 - 1 foot $<50(0.1)$ from below
the 3 way

PID 2 - Surface $<50(0.1)$ ^{DAVE} ^{5.2} ^{DAVE} collected
LOC adjacent to the pipeline FEET DOWN
FROM the Beach HILL FROM

PID 2 - 1 foot $<50(0.1)$ ^{PID 1} - sandy silt

PID 3 collected ~~20~~ WEST FROM PID 1

PID 3 - Surface $<50(0.1)$ - ^{DAVE} ^{soils} ^{DUFF}

PID 3 - 1 foot $<50(0.4)$ - sandy silt

Samples beginning w/ 3 or 4 located
20 feet west along the old fence
and 10 feet south (down the hill)

FROM PID 1 (Pipeline T)

PID 4 is 20 feet ^w from 3, etc...

PID-4 - Surface $<50(1 \text{ ppm})$ ^{DAVE}

PID-4 - 1 foot $<50(5.4)$ ^{sandy} ^{silt}

PID-5 - Surface $<50(3.4)$ ^{DAVE}

PID-5 - 1 foot $<50(1.1)$ ^{sandy} ^{silt}

Rite in the Rain

Shinguan Cont.

7/14/20

BLUFF

Soil Screening Cont.

PID 6 - SURFACE	^{ppm} > 50 (6.1 ppm)	DARK
PID 6 - 1 Foot	> 50 (1.1 ppm)	Sandy Silt
PID 7 - SURFACE	^{ppm} ^{ppm} > 50 (0.8)	DARK
PID 7 - 1 Foot	> 50 (1.4)	Sandy Silt
PID 8 - SURFACE	^{ppm} ^{ppm} > 50 (3.8)	DARK
PID 8 - 1 Foot	> 5 (1.4)	Sandy Silt

1600 Complete Screening Samples

Return to the School
(and leave the site for the day)

1635 Shyla Marshall Conversation

- She is on calling the dog
Discussed PPD Screening Results
and Finding of Little Soil
Evidence Along the Ridge
(down the Ridge from the
Excavation Boundary.)

2023 Shinguan Cont.

7/14/2019

Time

2023 - General site notes

- EAST of the tanks adjacent to the fence there is a depression where fuel has likely pooled during the spill event. It is not clear if fuel has gone further past the fence toward the school maintenance Bldg. The slope between the fence down to the maintenance Bldg will be investigated per DEC.

- The fringe along the settle where the soil has been excavated shows ~~but~~ has obvious contamination one to two feet from the face of the excavation

- crews are still removing the soil stockpile from the middle of the spill area.
- obvious fuel contamination is across the site - strong fuel odor is noticeable.

Shungum Court

7/14/20

- Conversation with Anthony suggest there may be a Foundation Basement from the old school (that used to be on the site).
- The tanks still may have fuel in them... The tanks with no still in place... The warning alarms were brought to the site preventing the piping from being disconnected from the tanks. (Piping is located SE from the tanks, and prevents any test pits from being excavated here).
- The fence between the tank farm and the school maintenance lot.
- Metal debris is protruding from the ground SE from the tanks

2:00 End for the Day

Personnel on site: Phil Dwyer
Shungum Court. 7/15/20

overcast in LOR. Light rain, some rain
0730 - on site, manage IDF
Put soils collected during PID
screening onto the soil storage pile
collected bags in a bagging.

- No crew on site, continued with soil screening on the Blom.

822 ADDITIONAL Reconnaissance on the site.

- Continued to screen soils beginning with TP-9 and ending with TP-11 when the end on the Blom was reached. East of T11 is where the spill flowed down the hill - and where test pits are planned.

- MADE A VIDEO Reconnaissance of the site and took still photos on the site.

839 - Anthony on site to operate the mini X to begin to excavate test pits.

7/15/20

865 Begin Test Pitting with bulldozer

TP-1 (in Bowl west of Trench)

- Gross Contamination, in situ PID
- Readings over 800 ppm.
- Soils are sandy with lenses of clay (gray colors)

② 7 ft operator says that
he may be excavating
permeable.

- Soils sandy with gravel
(mostly sand)

③ 8 ft Test pit too deep for
the BX. to continue

Soils sand with finer gravel
Brown color -

- Too much slough in the
BX. - depth was 8' Slough
may be soils from 7'

In-situ PID readings declining
to ~300, still very hot

929 operator filling in TP-1

TP-1 Screening

7/15/20

TP-1-1 1520 ppm

	2	1600
Screening	3	1557
@ 930	4	1271
	5	1207
	6	1128
	7	1033
	8	944
	9	753

} may be slough

G33 TP-2 - ~~excavate~~ side of trench
(over the cone beam)

- TP-2 location being abandoned

1020 Phase with slough, re
test pit progress

842 - Return to the site
1042 -

1052 - collect TP-1-2 soil sample

1107 - screen soils from PID location
on the slope

7/15/20

TP PID Sample Screening

PID 5-5 21.6 ppm
 u u - 1 foot 16.1 ppm

PID 10-5 14 ppm
 u u - 1 foot 12.8 ppm

PID 11-5 22.7 ppm
 u u - 1 foot 11.9 ppm

1120 Hand Excavate TP-3 @
 Bottom of slope @ East
 End of the site.

1143 Hand Excavate PID Screen
 via in-situ around the
 lower HPSDE offset from
 TP-3

- Offset Left 20 feet + 1 foot 16 ppm
- Offset to right 10 feet + 1 ft. = 6 ppm
- on slope u 25 feet uphill and
 to the right (How path indicated
 by Anthony) not went to Garbit
 @ u 6" BGS (surface) 85 ppm (not)

7/15/20²⁵

1205-TP-3 Screening

TP-5 surface - 41 ppm
 TP-3-1 1013 ppm
 TP-3-2 702 ppm
 TP-3-3 1110 ppm

Collect Sample TP-3-3 @ 1209

1213 Screen TP-4

- Located North of the Truck
 Placeron (offset 90°) and
 adjacent to the vegetation line
 (25' North^{west} on the fence)

@ 1219 Surface PD (in-situ) was
 4980 ppm - offsetting
 excavation 10 feet into
 the vegetation

1236 TP-5 (TP-4 on field to)
 clear vegetation

u 1300 Return to school for lunch

1315 Resume BX TP-5

Shingon Cont

7/15/20

1322 Screen TP-5 Samples

TP-5 LOCATED $\frac{12}{20}$ FEET FROM THE MIDDLE OF THE
SE FACING EDGE OF THE TANK PAVED ^{Time} Collected

TP-5-1	3.8 ppm	1233
u-u-2	2.7 u	1241
u-u-3	4.6 u	1243
u-u-4	3.6 u	1245
u-u-5	3.5 u	1250
u-u-6	3.9 u	1253
u-u-7	2.1 u	1318

Sand to very sandy gravel in the tank

Sample TP-5-7 @ 1330 (No odor)

1335: Round Box on TP-4 Now that
the LARGEX is available

TP-4 is offset 10' foot from
the original TP-4 Loc. To Find
the Spill Edge.

1422 Continue to test TP-4

clean down to 8 feet, then

PID picked up over 10 ppm

with TP-4-10 ^{PS} Pumping up

to 50 ppm, and TP-4-10

declining to 14 ppm

Excavating 11 foot lift

Shingon Cont

7/15/20 27

1430 Found Lens of Gray Colored

Horizontal Contamination

@ u 10 foot BES

(on top of the 11 Foot Lift Boxer)

Gray Colored, In-situ PID

Peak > 50 ppm

1452 Continue to test TP-4

with TP-4-12

1441 In-situ PID Reading diminishing

@ u 13 Foot BES, Assume
that Cont. Does not extend
Past 13 feet BES in TP-4

14453 Screen TP-4 Soil

TP-4-1	6.8 ppm	Silty Sand
TP-4-2	6.0 u	" "
TP-4-3	5.2 u	" "
TP-4-4	3.8 u	" "
TP-4-5	1.7 u	" "
TP-4-6	5.6 u	" "
TP-4-7	7.9 u 79.0 ppm	Silty & Silty Sand
TP-4-8	13.7 ppm	Silty Sand, clay
TP-4-9	112.0 ppm	Silty Sand with in the rain

7/15/20

TP-4-10 7.7 ppm Silty sand, clay
 TP-4-11 14.0 ppm Silty sand
 TP-4-12 802 ppm ^{1 Silty sand}
 TP-4-13 11.1 ppm Silty sand

TP-4-13 - There is a significant
 change in Soil Color

There seem to be several lenses
 of fuel contamination, it
 is not clear what is historical
 and what is from the current
 event.

1457 Collect Sample From
 TP-4-12
 Sample Time 1457

1501 LEAVE Site

1530 UPDATE Call to Shouguang

1539 Begin Ex. TP-6 - Located 50
 Feet SW Along the Fence line from TP-5

1627 Encountered Gray, Shredded
 Soils in the TP APPEARS
 to be historical Cont.

7/15/20 29

TP-6 EXCAVATION - EACH LIFT
 APPEARS MOIST AND HAS A
 Strong odor

1632 Continue with TP-6-9

- Soils very sandy and the
 TP is sloughing and is
 not able to measure the
 depth to bottom.

- TP-6-11 is 2.5 ppm in-situ
 - it appears the Bottom
 Extent of the Cont has
 been reached - Complete
 TP-6 EXCAVATION

1659 PID screen TP-6

TP-6-1 5.1 ppm
 TP-6-2 1739 u
 TP-6-3 1833
 TP-6-4 1772
 TP-6-5 1850
 TP-6-6 1792

Shinguan Cont

7/15/20

Screen TP-6 - Cont

TP-6-7 1833 PPM
 TP-6-8 1386 PPM
 TP-6-9 1029 PPM
 TP-6-10 992 PPM
 TP-6-11 6.7 PPM

1712 Collected Sample from
 TP-6-7 @ 1712

1718 Excavate TP-7

... Excavator operator,
 Brent, is leaving the site
 For a moment will resume
 Project when he returns.

1724 Brent (operator) Returns
 to the site.

TP-7 Location is 65 feet
~~Slightly~~ ^{10'} from TP-6 adjacent
 to the bluff. - On the Fence
 Line
 Approximately 3 feet
 material

Shinguan Cont

7/15/20 31

has been excavated here, Test
 Pit depth TP-7 starts
 @ - 3 ft BGS

~~Test~~ Pits TP-7-2 through
 TP-7-4 have strong fuel
 odor
 - Some Gray Soil lenses, but
 hard to tell if it was
 weathered Fuel

1801 Reached the lower extent
 of contamination in TP-7

PID READ in situ was 17.0 ppm
 Operator filling in the test pit.

1811 Move on to TP-8

70 feet East from TP-7 where
 the Fuel spilled down the
 hill. - top of slope.

1822 TP-8 Clean @ 2 feet
 and at 3 foot interval
~~Surface~~ 1 foot interval
 was 1.0 ppm PID.

+ Finish TP-8 - Soils: Sand F.U.,
 Encountered Cold, Gray/Red clay ^{Red in the Rain}
 at the bottom - native soils

1827 Screen TP-7 Soil

TP-7-1 1980 ppm
 TP-7-2 2007 ppm High
 TP-7-3 1653 ppm
 TP-7-4 1685 ppm
 TP-7-5 43.3 ppm
 TP-7-6 12.6 ppm

~~TP-7-7~~ No 7 foot wet

Soils sand, and sand with some gravel

1838 Sample TP-7-2 ^{beginning @} the 5 foot interval

Sample time 1640

1845 Screen TP-8 Soils

TP-8-1 4.5 ppm Silty Sand
 TP-8-2 4.8 ppm Silty Sand
 TP-8-3 7.5 ppm Silty Sand

1848 Collect Sample from

TP-8-3 @ 18:48

LAW

1853 Leave the site for the
 day after emptying soil
 bags into the storage

1930 Completed mining site notes

- Completed Sample Labels for
to Pans Staging / Sample management
- Sample management / planning
Rise Raw water Sample
Planned RAR tomorrow
- Created map on test pit
Locations and planned test
Pit locations for tomorrow

2100 Run Field activities.

0706

Rise 7-15-20

Rise in the Rain

Shugart Cont

7/16/20

Overcast, in 60°F Phil Barnes, Brent op
0706 Bump test PID = 50 ppm

MINIRAB REQUIRES Calibration

0715 Calibration @ 1000 ppm 150 Dufflene
(Gas from Bottle (Lot # 20-7738) INTERAIR
846)
- Complete calibration -

0730 Arrive on site / Communicate
with Brent the operator re:
the next test pit location
and leave message with Shugart

PID Calibration Note: Morning Bump
test quite low (50 ppm) not
sure if this is due to a
mis calibration. Bump testing
follow the the calibration this
morning @ 100 ppm, so good.

PID was slow to recover yesterday
afternoon.

0751 waiting for excavator to arrive
warm

Shugart Cont.

7-16/20 35

0800 Phone call with Shugart

0814 Begin TP-9 Loc in 25 Foot
Plinth on TP-8

0835 Complete TP-9 - Clear
PID Reading to 9 feet BOS
Pumped from 5 foot lift to
seven foot lift (also 5 or
6 foot intercore sample) due
to soil soft and excavator op
digging too deeply. No oil @ 4'
No odor @ 7', Chipped 8' foot
found soil change (clay) @
9 feet, soils cold, blue and
red colored clay. No odor
called the EX @ 9' TP-9
was started in a loc. where
in 3 feet of soil had been
prev. removed (3 feet below
original site grade)

0853 - Begin EX TP-10 - in 40'
from TP-7 area this
in 3 feet of soil previously
removed.

7-16/20

TP-10 Cont. - Found that clay
@ 4' in the excavation. Screened
5.00 ppm since it was shallow. North
side ^{of TP-10} clay, the south side on
the pit was giving in-site info
in the low 20 ppm range - Below
2 feet in on the south end
PID was ND.

915 Had TP-10 Bx, Co &
School (entrance) while the
operator was off-site ~~with~~
~~minutes~~

930 on site, single and screen
TP-9 and TP-10

TP-9 screening

TP-9-1	4.1 PPM	Sand
TP-9-2	3.6 PPM	Sand
TP-9-3	4.0 PPM	Sand
TP-9-4	4.2 PPM	Sand
TP-9-7	4.1 PPM	Sample Sand
TP-9-9	3.2 PPM	Clay, cold

TP-10 Screening

TP-10-1	4.3 PPM	Sand
TP-10-2	4.9 PPM	Sand
TP-10-3	22.1 PPM	Sample, sand
TP-10-4	10.0 PPM	Sand
TP-10-5	5.6 PPM	Clay

TP-9-7 Sample time 0946

TP-10-3 Sample time 0950

0956 Begin TP-11 excavation

TP-11 Located 30' EAST from
the NE^E corner of the Tank
Platform. - On the EDGE (N
EDGE of the area that was / HAS BEEN
Already excavated / removed - TP-11 is
being excavated beginning @
GRADE.

1006 - 1 foot lift TP-11 very
hot, stopped out 10'
North from initial loc

7/16/20

1015 - Debris from the old school in the Excavation - old heat radiator and boiler, old insulated pipe, - Soil has strong fuel odor.

- Found concrete @ 11 ft feet BGS from the school. - offset the TP 11 10 feet to the North to go beyond the debris and the concrete foundation

1024 Screen offset TP-11 Loc

1030 - Found more contamination and BGS on the foundation

1057 - offsetting TP-11 again to find northern boundary or contamination.

✓ Sites waste phone can with Shungnak

1058 Begin TP-11 EX in offset location. - no

1139 Complete TP-11.

Stopped to chat with Shungnak and a dog was on site →

7/16/2039

Stopping work Anthony 11:200
the dog and it left the site.

1141 Screen TP-11 - 50.15

TP-11-1	11.7	ppm Sample
TP-11-2	8.5	sand
TP-11-3	7.3	sand
TP-11-4	3.8	sand
TP-11-5	5.4	sand
TP-11-7	6.6	sand
TP-11-9	6.7	sand

1150 Sample TP-11-1

1157 Begin TP-12 (on slope by school maintenance BGS.)

Operator Digging 2 feet hole to screen within

Collected Sample from the surface and 2 feet BGS. Box have no odor and the PID values were low in site. Cont.

Rite in the Rain

Shungnak Cont.

7/16/20

TP-12 Cont.

- Numerous utility lines adjacent to the test location previously saw excavation of the test pit - stopped @ 2 feet BGS

1215 Screen TP-12

TP-12 - SURFACE 7.1 ppm DUFF

TP-12 - 2 Sample 125 ppm
(High value PID reading, But
No Fuel odor) - Saw with debris

TP-12 - 2 Sample time 1223

1225 Swing the TP-12 Sample Loc
30' from the SW corner point

1731 Return to the School

1247 @ Beach site (TP-13)

Test Pit location approximately
15 feet from the western
River Bank.

Shungnak Cont.

7/16/20 41

1306 Excavate TP-13 - Location
approximately 20 feet
from the River Bank, Down
the hill from the spill site
- Planned Sample collection
Point @ Soil water
interface

In situ PID = ND

1311 Sample from 3-4 foot
interval from within the
excavation.

- Test pit is 2' above
the level of the River -
Bottom of test pit below
water table But no
infilling - sandy clay @
2 feet BGS.

TP-13-2 Sample time 1318
Sample collected directly from TP
1320 Return to the School

1335 to Water Plant for water
Sample - via the waterline
side - Photos of the
Landfill waterline site

Rite in the Rain

Shungnak Cont. 7/16/20

1350 water plant, photos

collected Rain water sample
From rain water tank
(@ 1408)

1415 School - Demos -

- Berry Air Plane on hold -
- Phone call with Sheryl Fox
Status update, and to notify
Flights are on hold.

1500 Sample management and not
catch up

1700 Berry Flight cancelled, remaining
in Shungnak.

End 7/16/20

Shungnak Cont. 7/17/20

overcast, light rain us 500 ft

0900 At School site, waiting for word
on flight from ITRX.

Sample management, Change cooler ice

Soil and water samples collected
During the investigation:

ID	DATE	Time	ANALYSIS
TP-1-2	7/15/20	1052	GRO, DOC, DRO/REC PAH, STOC
TP-3-3	7/15/20	1209	
TP-4-12	7/15/20	1457	
TP-5-7	7/15/20	1330	
TP-6-7	7/15/20	1712	Soil
TP-7-2	7/15/20	1840	
TP-8-3	7/15/20	1848	
TP-9-7	7/16/20	0946	
TP-10-3	7/16/20	0950	
TP-11-1	7/16/20	1117	
TP-12-2	7/16/20	1223	
TP-12-2 DUP	7/16/20	1223	
TP-12-2 DUP	7/16/20	1223	
TP-13-2	7/16/20	1318	

TP! Shungnak City Rain water sample

7/16/20 1408

GRO, DOC, ~~STOC~~
PAH, ~~DRO/REC~~
Note in the Rain.

Shungwan cont

7/17/20

1130 Go to work site for

ADDITIONAL SITE MEASUREMENTS

- TANK PLATFORM 20 x 11

- 3 way valve from the Tank
21 feet from the NE corner
of the tank platform.Line from tank is 13.5 feet
from the corner (NE) to
the Tree, then 14 feet to
the 3-way valve.- Crews have placed a liner
over the TOP of the
Zemung DIRT Stockpile.1236 Replace ICE in the
Sample Coolers1345 TO AIRPORT / Plane - Leave
Shungwan.

1630 ARRIVE FBX

1638 DROP OFF SAMPLES TO

SGS LAB Temp Blank TRMS
2.4 / 1.6 C

Shungwan cont.

7/17/20⁴⁵1815 TO TANKS Commercial RCDG
MADE additional site notes
AND completion time over the
week / Project update.

1915 TO AIRPORT FOR 21:10 FLIGHT

————— END 7/17/20 —————

7/21/20 @ BEMO OFFICE

Bump test PID: 142 ppm

(PID DRIFT FROM

Calibrate PID, ISO butylene 100 ppm

(Bottle # 20-7338)

ATTACHMENT 2

Photo Pages

Photo Log



Photo 1- Northeast facing view of the three-way valve. July 14, 2020.



Photo 2 – Shungnak School Tank Farm/spill site; looking northeast. July 14, 2020

Photo Log



Photo 3 – Southwestern end of the spill site; looking southeast. July 14, 2020



Photo 4 – School maintenance building located approximately 60 feet north of the tanks; looking north.
July 14, 2020

Photo Log



Photo 5 – Depression and test pit location (TP-1) where fuel pooled during the spill event. Looking northwest. July 14, 2020



Photo 6 – Landfill soil storage location; looking northwest. July 16, 2020.

Photo Log



Photo 7 – Kobuk River raw water sample location location in the Shungnak water plant. July 16, 2020



Photo 8 - Test Pit 2 (TP-2) location; looking west-northwest. July 14, 2020

Photo Log



Photo 9 – TP-3 location, located on the bluff on an approximately 22 degree slope; looking northwest.
July 14, 2020



Photo 10 – TP-4 location; looking northwest. July 15, 2020

Photo Log



Photo 11 – TP-5 location; looking east. July 15, 2020.



Photo 12 – TP-6 location; looking northeast. June 15, 2020

Photo Log



Photo 13 -TP-7 excavation, view of clay layers at approximately 6 feet bgs. July 15, 2020



Photo 14 – TP-8 and TP-9 test pit locations; looking southeast. TP-8 is located on the middle right in the photo at the top the bluff and TP-9 is offset northwest from TP-8 and depicted in the photo. June 16, 2020

Photo Log



Photo 15 – TP-10 location; looking southeast. July 16, 2020



Photo 16 – TP-10 soil profile from excavator bucket. July 16, 2020

Photo Log



Photo 17 – TP-10 in excavation soil profile. July 16, 2020



Photo 18 – Initial TP-11 location. Debris is buried BIA school demolition debris; looking southeast. TP-11 was stepped out approximately 30 feet to the northwest from the initial TP-11 location. July 16, 2020

Photo Log



Photo 19 - TP-12 location approximately 25 feet from the school maintenance building; looking south.
July 6, 2020



Photo 20 - TP-13 location on the bank of the Kobuk River; looking northeast. July 16, 2020

Photo Log



Photo 21 – TP-13 location; looking east. The yellow boom in the middle left of the photo can be seen in the middle right of the previous photo. July 16, 2020



Photo 23 – Southeast facing view of the site depicting the excavated soils in the upper right of the photo and the excavated margin on the bluff in the upper middle and left in the photo. July 14, 2020.

ATTACHMENT 3

Laboratory Report and Laboratory Data Review Checklist

Laboratory Report of Analysis

To: Environmental Mgmt Inc (EMI)
206 E Fireweed Ln #201
Anchorage, AK 99503
907-275-4159

Report Number: **1209502**

Client Project: **Shungnak Spill**

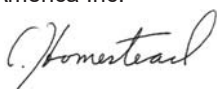
Dear Shayla Marshall,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Chuck at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.


SGS North America
Environmental Services - Alaska Division
General Manager

Charles Homestead
2020.08.19 15:48:36 -08'00'

Chuck Homestead
Project Manager
Charles.Homestead@sgs.com

Date

Case Narrative

SGS Client: **Environmental Mgmt Inc (EMI)**

SGS Project: **1209502**

Project Name/Site: **Shungnak Spill**

Project Contact: **Shayla Marshall**

Refer to sample receipt form for information on sample condition.

TP-1-2 (1209502001) PS

- 8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.
- AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.
- 8270D - The LOQs are elevated due to sample dilution. The sample was analyzed at a dilution due to the sample matrix.
- 8270D - Surrogate recovery for nitrobenzene-d5 does not meet QC criteria due to sample dilution.

TP-3-3 (1209502002) PS

- 8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.
- AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.
- 8270D - The LOQs are elevated due to sample dilution. The sample was analyzed at a dilution due to the sample matrix.
- 8270D - Surrogate recoveries for 2-fluorophenol, phenol-d6, nitrobenzene-d5 and 2,4,6-tribromophenol do not meet QC criteria due to sample dilution.

TP-4-12 (1209502003) PS

- AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.

TP-6-7 (1209502005) PS

- AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.
- 8270D - The LOQs are elevated due to sample dilution. The sample was analyzed at a dilution due to the sample matrix.
- 8270D - Surrogate recoveries for phenol-d6, nitrobenzene-d5 and 2,4,6-tribromophenol do not meet QC criteria due to sample dilution.

TP-7-2 (1209502006) PS

- 8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.
- AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.
- 8270D - The LOQs are elevated due to sample dilution. The sample was analyzed at a dilution due to the sample matrix.
- 8270D - Surrogate recoveries for 2-fluorophenol, phenol-d6, nitrobenzene-d5 and 2,4,6-tribromophenol do not meet QC criteria due to sample dilution.

TP-12-2 (1209502011) PS

- 8260D - Elevated LOQs due to dilution. Sample dilution due to matrix interference causing fluorobenzene internal standard response to be outside of QC criteria.
- 8270D - The LOQs are elevated due to sample dilution. The sample was analyzed at a dilution due to the sample matrix.

TP-12-D (1209502012) PS

- 8270D - The LOQs are elevated due to sample dilution. The sample was analyzed at a dilution due to the sample matrix.

Shungnak City Water (1209502015) PS

- SVOC 525 was analyzed by Eurofins of South Bend, IN.

MB for HBN 1809290 [XXX/43507] (1570652) MB

- AK102 - DRO is detect in the MB greater than one half the LOQ, but less than the LOQ.

1209502006MS (1570389) MS

- 8270D - MS recoveries for several analytes do not meet QC criteria. Refer to the LCS for accuracy requirements.

1209502004(1570945MS) (1570946) MS

Case Narrative

SGS Client: **Environmental Mgmt Inc (EMI)**

SGS Project: **1209502**

Project Name/Site: **Shungnak Spill**

Project Contact: **Shayla Marshall**

8260D - MS recovery for hexachlorobutadiene does not meet QC criteria. Refer to LCS for accuracy requirements.

1209502006MSD (1570390) MSD

8270D - MSD recoveries for several analytes do not meet QC criteria. Refer to the LCS for accuracy requirements.

8270D - MSD RPDs for multiple analytes do not meet QC criteria. Results for these analytes are less than the LOQ in the parent sample.

1209502013MSD (1570857) MSD

8260D - MSD recovery for 1,2,3-trichlorobenzene does not meet QC criteria. Refer to LCS for accuracy requirements.

8260D - MS/MSD RPD for 1,2,4-trichlorobenzene, naphthalene, and 1,2,3-trichlorobenzene do not meet QC criteria.

These analyte were not detected above the LOQ in the parent sample.

1209502004(1570945MSD) (1570947) MSD

8260D - MSD recoveries for several analytes do not meet QC criteria. Refer to LCS for accuracy requirements.

8260D - MS/MSD RPD for several analytes do not meet QC criteria. These analytes were not detected above the LOQ in the parent sample.

TP-2 (1209502016) TB

AK101 - sample pH is greater than 2.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 08/18/2020 5:40:23PM

Report of Manual Integrations

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Analyte</u>	<u>Reason</u>
SW8260D				
1209502001	TP-1-2	VMS20120	4-Isopropyltoluene	SP
1209502001	TP-1-2	VMS20120	Naphthalene	RP
1209502002	TP-3-3	VMS20120	4-Isopropyltoluene	SP
1209502002	TP-3-3	VMS20120	Naphthalene	RP
1209502003	TP-4-12	VMS20120	4-Isopropyltoluene	SP
1209502003	TP-4-12	VMS20120	Naphthalene	RP
1209502005	TP-6-7	VMS20120	4-Isopropyltoluene	SP
1209502005	TP-6-7	VMS20120	Naphthalene	RP
SW8270D				
1570388	LCS for HBN 1809234 [XXX/43498	XMS12174	1-Chloronaphthalene	SP

Manual Integration Reason Code Descriptions

Code	Description
O	Original Chromatogram
M	Modified Chromatogram
SS	Skimmed surrogate
BLG	Closed baseline gap
RP	Reassign peak name
PIR	Pattern integration required
IT	Included tail
SP	Split peak
RSP	Removed split peak
FPS	Forced peak start/stop
BLC	Baseline correction
PNF	Peak not found by software

All DRO/RRO analysis are integrated per SOP.

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TP-1-2	1209502001	07/15/2020	07/21/2020	Soil/Solid (dry weight)
TP-3-3	1209502002	07/15/2020	07/21/2020	Soil/Solid (dry weight)
TP-4-12	1209502003	07/15/2020	07/21/2020	Soil/Solid (dry weight)
TP-5-7	1209502004	07/15/2020	07/21/2020	Soil/Solid (dry weight)
TP-6-7	1209502005	07/15/2020	07/21/2020	Soil/Solid (dry weight)
TP-7-2	1209502006	07/15/2020	07/21/2020	Soil/Solid (dry weight)
TP-8-3	1209502007	07/15/2020	07/21/2020	Soil/Solid (dry weight)
TP-9-7	1209502008	07/16/2020	07/21/2020	Soil/Solid (dry weight)
TP-10-3	1209502009	07/16/2020	07/21/2020	Soil/Solid (dry weight)
TP-11-1	1209502010	07/16/2020	07/21/2020	Soil/Solid (dry weight)
TP-12-2	1209502011	07/16/2020	07/21/2020	Soil/Solid (dry weight)
TP-12-D	1209502012	07/16/2020	07/21/2020	Soil/Solid (dry weight)
TP-13-2	1209502013	07/16/2020	07/21/2020	Soil/Solid (dry weight)
TB-1	1209502014	07/15/2020	07/21/2020	Soil/Solid (dry weight)
Shungnak City Water	1209502015	07/16/2020	07/21/2020	Drinking Water
TP-2	1209502016	07/16/2020	07/21/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
AK102	Diesel Range Organics (S)
AK101	Gasoline Range Organics (S)
AK101	Gasoline Range Organics (W)
SM21 2540G	Percent Solids SM2540G
SW8270D	SW846 8270 Semi-Volatiles by GC/MS (S)
SW8260D	VOC 8260 (S) Field Extracted
EPA 524.2	Volatile Organics by 524.2 (DW)

Detectable Results Summary

Client Sample ID: **TP-1-2**
 Lab Sample ID: 1209502001
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	17600	mg/Kg
Gasoline Range Organics	1150	mg/Kg
1,2,4-Trimethylbenzene	153000	ug/Kg
1,3,5-Trimethylbenzene	42700	ug/Kg
Ethylbenzene	15800	ug/Kg
Isopropylbenzene (Cumene)	9300	ug/Kg
Naphthalene	10300	ug/Kg
n-Propylbenzene	27400	ug/Kg
o-Xylene	35000	ug/Kg
P & M -Xylene	54700	ug/Kg
sec-Butylbenzene	17100	ug/Kg
Toluene	10300	ug/Kg
Xylenes (total)	89700	ug/Kg

Client Sample ID: **TP-3-3**
 Lab Sample ID: 1209502002
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	36000	mg/Kg
Gasoline Range Organics	1060	mg/Kg
1,2,4-Trimethylbenzene	186000	ug/Kg
1,3,5-Trimethylbenzene	50300	ug/Kg
Ethylbenzene	12100	ug/Kg
Isopropylbenzene (Cumene)	9210	ug/Kg
Naphthalene	9600	ug/Kg
n-Propylbenzene	30500	ug/Kg
o-Xylene	31300	ug/Kg
P & M -Xylene	45900	ug/Kg
sec-Butylbenzene	21900	ug/Kg
Toluene	4980	ug/Kg
Xylenes (total)	77200	ug/Kg

Detectable Results Summary

Client Sample ID: **TP-4-12**
 Lab Sample ID: 1209502003
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	951	mg/Kg
Gasoline Range Organics	15.2	mg/Kg
1,2,4-Trimethylbenzene	2270	ug/Kg
1,3,5-Trimethylbenzene	635	ug/Kg
4-Isopropyltoluene	163	ug/Kg
Ethylbenzene	139	ug/Kg
Isopropylbenzene (Cumene)	104	ug/Kg
Naphthalene	103	ug/Kg
n-Propylbenzene	339	ug/Kg
o-Xylene	348	ug/Kg
P & M -Xylene	518	ug/Kg
sec-Butylbenzene	280	ug/Kg
Toluene	60.1	ug/Kg
Xylenes (total)	865	ug/Kg

Client Sample ID: **TP-6-7**
 Lab Sample ID: 1209502005
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	16900	mg/Kg
Gasoline Range Organics	730	mg/Kg
1,2,4-Trimethylbenzene	125000	ug/Kg
1,3,5-Trimethylbenzene	32900	ug/Kg
Ethylbenzene	13800	ug/Kg
Isopropylbenzene (Cumene)	7630	ug/Kg
Naphthalene	5990	ug/Kg
n-Propylbenzene	23100	ug/Kg
o-Xylene	29800	ug/Kg
P & M -Xylene	46600	ug/Kg
sec-Butylbenzene	13400	ug/Kg
Toluene	9140	ug/Kg
Xylenes (total)	76300	ug/Kg



Detectable Results Summary

Client Sample ID: **TP-7-2**
Lab Sample ID: 1209502006
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	18300	mg/Kg
Gasoline Range Organics	860	mg/Kg
1,2,4-Trimethylbenzene	184000	ug/Kg
1,3,5-Trimethylbenzene	48900	ug/Kg
4-Isopropyltoluene	13000	ug/Kg
Ethylbenzene	16000	ug/Kg
Isopropylbenzene (Cumene)	9670	ug/Kg
Naphthalene	7690	ug/Kg
n-Propylbenzene	31000	ug/Kg
o-Xylene	35900	ug/Kg
P & M -Xylene	55500	ug/Kg
sec-Butylbenzene	20100	ug/Kg
Toluene	10200	ug/Kg
Xylenes (total)	91400	ug/Kg

Client Sample ID: **TP-8-3**
Lab Sample ID: 1209502007
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,2,4-Trimethylbenzene	91.8	ug/Kg

Client Sample ID: **TP-12-2**
Lab Sample ID: 1209502011
Semivolatile Organic Fuels
Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	2930	mg/Kg
Gasoline Range Organics	6.85	mg/Kg

Client Sample ID: **TP-12-D**
Lab Sample ID: 1209502012
Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	3430	mg/Kg



Results of TP-1-2

Client Sample ID: **TP-1-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502001
Lab Project ID: 1209502

Collection Date: 07/15/20 10:52
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.5
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	17600		107	33.3	mg/Kg	5		07/31/20 18:04
Surrogates								
5a Androstane (surr)	105		50-150		%	5		07/31/20 18:04

Batch Information

Analytical Batch: XFC15669
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/31/20 18:04
Container ID: 1209502001-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.245 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-1-2

Client Sample ID: **TP-1-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502001
Lab Project ID: 1209502

Collection Date: 07/15/20 10:52
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.5
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
1,2-Dichlorobenzene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
1,3-Dichlorobenzene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
1,4-Dichlorobenzene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
1-Chloronaphthalene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
1-Methylnaphthalene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2,4,5-Trichlorophenol	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2,4,6-Trichlorophenol	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2,4-Dichlorophenol	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2,4-Dimethylphenol	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2,4-Dinitrophenol	64.4 U	64.4	20.2	mg/Kg	20		08/12/20 23:08
2,4-Dinitrotoluene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2,6-Dichlorophenol	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2,6-Dinitrotoluene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2-Chloronaphthalene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2-Chlorophenol	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2-Methyl-4,6-dinitrophenol	42.9 U	42.9	13.3	mg/Kg	20		08/12/20 23:08
2-Methylnaphthalene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2-Methylphenol (o-Cresol)	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2-Nitroaniline	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
2-Nitrophenol	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
3&4-Methylphenol (p&m-Cresol)	21.5 U	21.5	6.65	mg/Kg	20		08/12/20 23:08
3,3-Dichlorobenzidine	10.7 U	10.7	3.22	mg/Kg	20		08/12/20 23:08
3-Nitroaniline	10.7 U	10.7	3.22	mg/Kg	20		08/12/20 23:08
4-Bromophenyl-phenylether	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
4-Chloro-3-methylphenol	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
4-Chloroaniline	21.5 U	21.5	6.65	mg/Kg	20		08/12/20 23:08
4-Chlorophenyl-phenylether	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
4-Nitroaniline	64.4 U	64.4	20.2	mg/Kg	20		08/12/20 23:08
4-Nitrophenol	42.9 U	42.9	13.3	mg/Kg	20		08/12/20 23:08
Acenaphthene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Acenaphthylene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Aniline	42.9 U	42.9	13.3	mg/Kg	20		08/12/20 23:08
Anthracene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Azobenzene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Benzo(a)Anthracene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08

Print Date: 08/18/2020 5:40:35PM

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Results of TP-1-2

Client Sample ID: **TP-1-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502001
Lab Project ID: 1209502

Collection Date: 07/15/20 10:52
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.5
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Benzo[b]Fluoranthene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Benzo[g,h,i]perylene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Benzo[k]fluoranthene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Benzoic acid	32.2 U	32.2	10.1	mg/Kg	20		08/12/20 23:08
Benzyl alcohol	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Bis(2chloro1methylethyl)Ether	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Bis(2-Chloroethoxy)methane	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Bis(2-Chloroethyl)ether	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
bis(2-Ethylhexyl)phthalate	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Butylbenzylphthalate	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Carbazole	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Chrysene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Dibenzo[a,h]anthracene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Dibenzofuran	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Diethylphthalate	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Dimethylphthalate	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Di-n-butylphthalate	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
di-n-Octylphthalate	10.7 U	10.7	3.22	mg/Kg	20		08/12/20 23:08
Fluoranthene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Fluorene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Hexachlorobenzene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Hexachlorobutadiene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Hexachlorocyclopentadiene	15.0 U	15.0	4.29	mg/Kg	20		08/12/20 23:08
Hexachloroethane	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Indeno[1,2,3-c,d] pyrene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Isophorone	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Naphthalene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Nitrobenzene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
N-Nitrosodimethylamine	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
N-Nitroso-di-n-propylamine	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
N-Nitrosodiphenylamine	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Pentachlorophenol	42.9 U	42.9	13.3	mg/Kg	20		08/12/20 23:08
Phenanthrene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Phenol	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08
Pyrene	5.37 U	5.37	1.67	mg/Kg	20		08/12/20 23:08

Print Date: 08/18/2020 5:40:35PM



Results of TP-1-2

Client Sample ID: **TP-1-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502001
Lab Project ID: 1209502

Collection Date: 07/15/20 10:52
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.5
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Surrogates								
2,4,6-Tribromophenol (surr)	46.2		35-125		%	20		08/12/20 23:08
2-Fluorobiphenyl (surr)	94.9		44-115		%	20		08/12/20 23:08
2-Fluorophenol (surr)	64.4		35-115		%	20		08/12/20 23:08
Nitrobenzene-d5 (surr)	0	*	37-122		%	20		08/12/20 23:08
Phenol-d6 (surr)	88		33-122		%	20		08/12/20 23:08
Terphenyl-d14 (surr)	98.3		54-127		%	20		08/12/20 23:08

Batch Information

Analytical Batch: XMS12188
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/12/20 23:08
Container ID: 1209502001-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.672 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-1-2

Client Sample ID: **TP-1-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502001
Lab Project ID: 1209502

Collection Date: 07/15/20 10:52
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.5
Location:

Results by Volatile Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1150		151	45.3	mg/Kg	50		08/02/20 14:53
Surrogates								
4-Bromofluorobenzene (surr)	5060	*	50-150		%	50		08/02/20 14:53

Batch Information

Analytical Batch: VFC15260
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 08/02/20 14:53
Container ID: 1209502001-B

Prep Batch: VXX36030
Prep Method: SW5035A
Prep Date/Time: 07/15/20 10:52
Prep Initial Wt./Vol.: 51.813 g
Prep Extract Vol: 28.9072 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-1-2

Client Sample ID: **TP-1-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502001
Lab Project ID: 1209502

Collection Date: 07/15/20 10:52
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.5
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	2410 U	2410	748	ug/Kg	100		07/24/20 19:51
1,1,1-Trichloroethane	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
1,1,2,2-Tetrachloroethane	241 U	241	74.8	ug/Kg	100		07/24/20 19:51
1,1,2-Trichloroethane	96.5 U	96.5	30.2	ug/Kg	100		07/24/20 19:51
1,1-Dichloroethane	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
1,1-Dichloroethene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
1,1-Dichloropropene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
1,2,3-Trichlorobenzene	6030 U	6030	1810	ug/Kg	100		07/24/20 19:51
1,2,3-Trichloropropane	241 U	241	74.8	ug/Kg	100		07/24/20 19:51
1,2,4-Trichlorobenzene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
1,2,4-Trimethylbenzene	153000	6030	1810	ug/Kg	100		07/24/20 19:51
1,2-Dibromo-3-chloropropane	12100 U	12100	3740	ug/Kg	100		07/24/20 19:51
1,2-Dibromoethane	121 U	121	48.3	ug/Kg	100		07/24/20 19:51
1,2-Dichlorobenzene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
1,2-Dichloroethane	241 U	241	84.5	ug/Kg	100		07/24/20 19:51
1,2-Dichloropropane	1210 U	1210	374	ug/Kg	100		07/24/20 19:51
1,3,5-Trimethylbenzene	42700	3020	941	ug/Kg	100		07/24/20 19:51
1,3-Dichlorobenzene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
1,3-Dichloropropane	1210 U	1210	374	ug/Kg	100		07/24/20 19:51
1,4-Dichlorobenzene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
2,2-Dichloropropane	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
2-Butanone (MEK)	30200 U	30200	9410	ug/Kg	100		07/24/20 19:51
2-Chlorotoluene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
2-Hexanone	12100 U	12100	3740	ug/Kg	100		07/24/20 19:51
4-Chlorotoluene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
4-Isopropyltoluene	12100 U	12100	3020	ug/Kg	100		07/24/20 19:51
4-Methyl-2-pentanone (MIBK)	30200 U	30200	9410	ug/Kg	100		07/24/20 19:51
Acetone	30200 U	30200	9410	ug/Kg	100		07/24/20 19:51
Benzene	1510 U	1510	471	ug/Kg	100		07/24/20 19:51
Bromobenzene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
Bromochloromethane	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
Bromodichloromethane	241 U	241	74.8	ug/Kg	100		07/24/20 19:51
Bromoform	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
Bromomethane	2410 U	2410	748	ug/Kg	100		07/24/20 19:51
Carbon disulfide	12100 U	12100	3740	ug/Kg	100		07/24/20 19:51
Carbon tetrachloride	1510 U	1510	471	ug/Kg	100		07/24/20 19:51

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**Results of TP-1-2**

Client Sample ID: **TP-1-2**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502001
 Lab Project ID: 1209502

Collection Date: 07/15/20 10:52
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):92.5
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
Chloroethane	24100 U	24100	7480	ug/Kg	100		07/24/20 19:51
Chloroform	483 U	483	121	ug/Kg	100		07/24/20 19:51
Chloromethane	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
cis-1,2-Dichloroethene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
cis-1,3-Dichloropropene	1510 U	1510	471	ug/Kg	100		07/24/20 19:51
Dibromochloromethane	603 U	603	181	ug/Kg	100		07/24/20 19:51
Dibromomethane	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
Dichlorodifluoromethane	6030 U	6030	1810	ug/Kg	100		07/24/20 19:51
Ethylbenzene	15800	3020	941	ug/Kg	100		07/24/20 19:51
Freon-113	12100 U	12100	3740	ug/Kg	100		07/24/20 19:51
Hexachlorobutadiene	2410 U	2410	748	ug/Kg	100		07/24/20 19:51
Isopropylbenzene (Cumene)	9300	3020	941	ug/Kg	100		07/24/20 19:51
Methylene chloride	12100 U	12100	3740	ug/Kg	100		07/24/20 19:51
Methyl-t-butyl ether	12100 U	12100	3740	ug/Kg	100		07/24/20 19:51
Naphthalene	10300	3020	941	ug/Kg	100		07/24/20 19:51
n-Butylbenzene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
n-Propylbenzene	27400	3020	941	ug/Kg	100		07/24/20 19:51
o-Xylene	35000	3020	941	ug/Kg	100		07/24/20 19:51
P & M -Xylene	54700	6030	1810	ug/Kg	100		07/24/20 19:51
sec-Butylbenzene	17100	3020	941	ug/Kg	100		07/24/20 19:51
Styrene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
tert-Butylbenzene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
Tetrachloroethene	1510 U	1510	471	ug/Kg	100		07/24/20 19:51
Toluene	10300	3020	941	ug/Kg	100		07/24/20 19:51
trans-1,2-Dichloroethene	3020 U	3020	941	ug/Kg	100		07/24/20 19:51
trans-1,3-Dichloropropene	1510 U	1510	471	ug/Kg	100		07/24/20 19:51
Trichloroethene	603 U	603	181	ug/Kg	100		07/24/20 19:51
Trichlorofluoromethane	6030 U	6030	1810	ug/Kg	100		07/24/20 19:51
Vinyl acetate	12100 U	12100	3740	ug/Kg	100		07/24/20 19:51
Vinyl chloride	96.5 U	96.5	30.2	ug/Kg	100		07/24/20 19:51
Xylenes (total)	89700	9050	2750	ug/Kg	100		07/24/20 19:51
Surrogates							
1,2-Dichloroethane-D4 (surr)	94.3	71-136		%	100		07/24/20 19:51
4-Bromofluorobenzene (surr)	187 *	55-151		%	100		07/24/20 19:51
Toluene-d8 (surr)	97.2	85-116		%	100		07/24/20 19:51

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Results of TP-1-2

Client Sample ID: **TP-1-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502001
Lab Project ID: 1209502

Collection Date: 07/15/20 10:52
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.5
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 19:51
Container ID: 1209502001-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/15/20 10:52
Prep Initial Wt./Vol.: 51.813 g
Prep Extract Vol: 28.9072 mL

Print Date: 08/18/2020 5:40:35PM

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Results of TP-3-3

Client Sample ID: **TP-3-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502002
Lab Project ID: 1209502

Collection Date: 07/15/20 12:09
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	36000		222	68.8	mg/Kg	10		07/31/20 18:14
Surrogates								
5a Androstane (surr)	104		50-150		%	10		07/31/20 18:14

Batch Information

Analytical Batch: XFC15669
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/31/20 18:14
Container ID: 1209502002-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.377 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-3-3

Client Sample ID: **TP-3-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502002
Lab Project ID: 1209502

Collection Date: 07/15/20 12:09
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
1,2-Dichlorobenzene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
1,3-Dichlorobenzene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
1,4-Dichlorobenzene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
1-Chloronaphthalene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
1-Methylnaphthalene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2,4,5-Trichlorophenol	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2,4,6-Trichlorophenol	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2,4-Dichlorophenol	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2,4-Dimethylphenol	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2,4-Dinitrophenol	333 U	333	104	mg/Kg	20		08/12/20 23:42
2,4-Dinitrotoluene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2,6-Dichlorophenol	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2,6-Dinitrotoluene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2-Chloronaphthalene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2-Chlorophenol	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2-Methyl-4,6-dinitrophenol	222 U	222	68.9	mg/Kg	20		08/12/20 23:42
2-Methylnaphthalene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2-Methylphenol (o-Cresol)	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2-Nitroaniline	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
2-Nitrophenol	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
3&4-Methylphenol (p&m-Cresol)	111 U	111	34.4	mg/Kg	20		08/12/20 23:42
3,3-Dichlorobenzidine	55.5 U	55.5	16.7	mg/Kg	20		08/12/20 23:42
3-Nitroaniline	55.5 U	55.5	16.7	mg/Kg	20		08/12/20 23:42
4-Bromophenyl-phenylether	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
4-Chloro-3-methylphenol	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
4-Chloroaniline	111 U	111	34.4	mg/Kg	20		08/12/20 23:42
4-Chlorophenyl-phenylether	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
4-Nitroaniline	333 U	333	104	mg/Kg	20		08/12/20 23:42
4-Nitrophenol	222 U	222	68.9	mg/Kg	20		08/12/20 23:42
Acenaphthene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Acenaphthylene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Aniline	222 U	222	68.9	mg/Kg	20		08/12/20 23:42
Anthracene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Azobenzene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Benzo(a)Anthracene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42

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Results of TP-3-3

Client Sample ID: **TP-3-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502002
Lab Project ID: 1209502

Collection Date: 07/15/20 12:09
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Benzo[b]Fluoranthene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Benzo[g,h,i]perylene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Benzo[k]fluoranthene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Benzoic acid	167 U	167	52.2	mg/Kg	20		08/12/20 23:42
Benzyl alcohol	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Bis(2chloro1methylethyl)Ether	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Bis(2-Chloroethoxy)methane	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Bis(2-Chloroethyl)ether	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
bis(2-Ethylhexyl)phthalate	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Butylbenzylphthalate	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Carbazole	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Chrysene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Dibenzo[a,h]anthracene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Dibenzofuran	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Diethylphthalate	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Dimethylphthalate	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Di-n-butylphthalate	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
di-n-Octylphthalate	55.5 U	55.5	16.7	mg/Kg	20		08/12/20 23:42
Fluoranthene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Fluorene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Hexachlorobenzene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Hexachlorobutadiene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Hexachlorocyclopentadiene	77.7 U	77.7	22.2	mg/Kg	20		08/12/20 23:42
Hexachloroethane	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Indeno[1,2,3-c,d] pyrene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Isophorone	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Naphthalene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Nitrobenzene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
N-Nitrosodimethylamine	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
N-Nitroso-di-n-propylamine	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
N-Nitrosodiphenylamine	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Pentachlorophenol	222 U	222	68.9	mg/Kg	20		08/12/20 23:42
Phenanthrene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Phenol	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42
Pyrene	27.8 U	27.8	8.66	mg/Kg	20		08/12/20 23:42

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Results of TP-3-3

Client Sample ID: **TP-3-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502002
Lab Project ID: 1209502

Collection Date: 07/15/20 12:09
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Surrogates								
2,4,6-Tribromophenol (surr)	0	*	35-125		%	20		08/12/20 23:42
2-Fluorobiphenyl (surr)	96.9		44-115		%	20		08/12/20 23:42
2-Fluorophenol (surr)	0	*	35-115		%	20		08/12/20 23:42
Nitrobenzene-d5 (surr)	0	*	37-122		%	20		08/12/20 23:42
Phenol-d6 (surr)	0	*	33-122		%	20		08/12/20 23:42
Terphenyl-d14 (surr)	97.9		54-127		%	20		08/12/20 23:42

Batch Information

Analytical Batch: XMS12188
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/12/20 23:42
Container ID: 1209502002-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.76 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-3-3

Client Sample ID: **TP-3-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502002
Lab Project ID: 1209502

Collection Date: 07/15/20 12:09
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by Volatile Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1060		84.7	25.4	mg/Kg	20		08/02/20 15:11
Surrogates								
4-Bromofluorobenzene (surr)	4050	*	50-150		%	20		08/02/20 15:11

Batch Information

Analytical Batch: VFC15260
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 08/02/20 15:11
Container ID: 1209502002-B

Prep Batch: VXX36030
Prep Method: SW5035A
Prep Date/Time: 07/15/20 12:09
Prep Initial Wt./Vol.: 38.842 g
Prep Extract Vol: 29.2674 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-3-3

Client Sample ID: **TP-3-3**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502002
 Lab Project ID: 1209502

Collection Date: 07/15/20 12:09
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):89.0
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	3390 U	3390	1050	ug/Kg	100		07/24/20 20:08
1,1,1-Trichloroethane	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
1,1,2,2-Tetrachloroethane	339 U	339	105	ug/Kg	100		07/24/20 20:08
1,1,2-Trichloroethane	135 U	135	42.3	ug/Kg	100		07/24/20 20:08
1,1-Dichloroethane	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
1,1-Dichloroethene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
1,1-Dichloropropene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
1,2,3-Trichlorobenzene	8470 U	8470	2540	ug/Kg	100		07/24/20 20:08
1,2,3-Trichloropropane	339 U	339	105	ug/Kg	100		07/24/20 20:08
1,2,4-Trichlorobenzene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
1,2,4-Trimethylbenzene	186000	8470	2540	ug/Kg	100		07/24/20 20:08
1,2-Dibromo-3-chloropropane	16900 U	16900	5250	ug/Kg	100		07/24/20 20:08
1,2-Dibromoethane	169 U	169	67.7	ug/Kg	100		07/24/20 20:08
1,2-Dichlorobenzene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
1,2-Dichloroethane	339 U	339	119	ug/Kg	100		07/24/20 20:08
1,2-Dichloropropane	1690 U	1690	525	ug/Kg	100		07/24/20 20:08
1,3,5-Trimethylbenzene	50300	4230	1320	ug/Kg	100		07/24/20 20:08
1,3-Dichlorobenzene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
1,3-Dichloropropane	1690 U	1690	525	ug/Kg	100		07/24/20 20:08
1,4-Dichlorobenzene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
2,2-Dichloropropane	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
2-Butanone (MEK)	42300 U	42300	13200	ug/Kg	100		07/24/20 20:08
2-Chlorotoluene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
2-Hexanone	16900 U	16900	5250	ug/Kg	100		07/24/20 20:08
4-Chlorotoluene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
4-Isopropyltoluene	16900 U	16900	4230	ug/Kg	100		07/24/20 20:08
4-Methyl-2-pentanone (MIBK)	42300 U	42300	13200	ug/Kg	100		07/24/20 20:08
Acetone	42300 U	42300	13200	ug/Kg	100		07/24/20 20:08
Benzene	2120 U	2120	660	ug/Kg	100		07/24/20 20:08
Bromobenzene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
Bromochloromethane	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
Bromodichloromethane	339 U	339	105	ug/Kg	100		07/24/20 20:08
Bromoform	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
Bromomethane	3390 U	3390	1050	ug/Kg	100		07/24/20 20:08
Carbon disulfide	16900 U	16900	5250	ug/Kg	100		07/24/20 20:08
Carbon tetrachloride	2120 U	2120	660	ug/Kg	100		07/24/20 20:08

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Results of TP-3-3

Client Sample ID: **TP-3-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502002
Lab Project ID: 1209502

Collection Date: 07/15/20 12:09
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
Chloroethane	33900 U	33900	10500	ug/Kg	100		07/24/20 20:08
Chloroform	677 U	677	169	ug/Kg	100		07/24/20 20:08
Chloromethane	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
cis-1,2-Dichloroethene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
cis-1,3-Dichloropropene	2120 U	2120	660	ug/Kg	100		07/24/20 20:08
Dibromochloromethane	847 U	847	254	ug/Kg	100		07/24/20 20:08
Dibromomethane	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
Dichlorodifluoromethane	8470 U	8470	2540	ug/Kg	100		07/24/20 20:08
Ethylbenzene	12100	4230	1320	ug/Kg	100		07/24/20 20:08
Freon-113	16900 U	16900	5250	ug/Kg	100		07/24/20 20:08
Hexachlorobutadiene	3390 U	3390	1050	ug/Kg	100		07/24/20 20:08
Isopropylbenzene (Cumene)	9210	4230	1320	ug/Kg	100		07/24/20 20:08
Methylene chloride	16900 U	16900	5250	ug/Kg	100		07/24/20 20:08
Methyl-t-butyl ether	16900 U	16900	5250	ug/Kg	100		07/24/20 20:08
Naphthalene	9600	4230	1320	ug/Kg	100		07/24/20 20:08
n-Butylbenzene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
n-Propylbenzene	30500	4230	1320	ug/Kg	100		07/24/20 20:08
o-Xylene	31300	4230	1320	ug/Kg	100		07/24/20 20:08
P & M -Xylene	45900	8470	2540	ug/Kg	100		07/24/20 20:08
sec-Butylbenzene	21900	4230	1320	ug/Kg	100		07/24/20 20:08
Styrene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
tert-Butylbenzene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
Tetrachloroethene	2120 U	2120	660	ug/Kg	100		07/24/20 20:08
Toluene	4980	4230	1320	ug/Kg	100		07/24/20 20:08
trans-1,2-Dichloroethene	4230 U	4230	1320	ug/Kg	100		07/24/20 20:08
trans-1,3-Dichloropropene	2120 U	2120	660	ug/Kg	100		07/24/20 20:08
Trichloroethene	847 U	847	254	ug/Kg	100		07/24/20 20:08
Trichlorofluoromethane	8470 U	8470	2540	ug/Kg	100		07/24/20 20:08
Vinyl acetate	16900 U	16900	5250	ug/Kg	100		07/24/20 20:08
Vinyl chloride	135 U	135	42.3	ug/Kg	100		07/24/20 20:08
Xylenes (total)	77200	12700	3860	ug/Kg	100		07/24/20 20:08
Surrogates							
1,2-Dichloroethane-D4 (surr)	93.5	71-136		%	100		07/24/20 20:08
4-Bromofluorobenzene (surr)	190 *	55-151		%	100		07/24/20 20:08
Toluene-d8 (surr)	96.5	85-116		%	100		07/24/20 20:08

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Results of TP-3-3

Client Sample ID: **TP-3-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502002
Lab Project ID: 1209502

Collection Date: 07/15/20 12:09
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 20:08
Container ID: 1209502002-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/15/20 12:09
Prep Initial Wt./Vol.: 38.842 g
Prep Extract Vol: 29.2674 mL

Print Date: 08/18/2020 5:40:35PM

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Results of TP-4-12

Client Sample ID: **TP-4-12**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502003
Lab Project ID: 1209502

Collection Date: 07/15/20 14:57
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):96.0
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	951	20.8	6.45	mg/Kg	1		07/24/20 23:19
Surrogates							
5a Androstane (surr)	95	50-150		%	1		07/24/20 23:19

Batch Information

Analytical Batch: XFC15666
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/24/20 23:19
Container ID: 1209502003-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.036 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-4-12

Client Sample ID: **TP-4-12**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502003
Lab Project ID: 1209502

Collection Date: 07/15/20 14:57
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):96.0
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
1,2-Dichlorobenzene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
1,3-Dichlorobenzene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
1,4-Dichlorobenzene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
1-Chloronaphthalene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
1-Methylnaphthalene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2,4,5-Trichlorophenol	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2,4,6-Trichlorophenol	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2,4-Dichlorophenol	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2,4-Dimethylphenol	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2,4-Dinitrophenol	3.07 U	3.07	0.962	mg/Kg	1		08/12/20 20:03
2,4-Dinitrotoluene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2,6-Dichlorophenol	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2,6-Dinitrotoluene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2-Chloronaphthalene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2-Chlorophenol	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2-Methyl-4,6-dinitrophenol	2.05 U	2.05	0.634	mg/Kg	1		08/12/20 20:03
2-Methylnaphthalene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2-Methylphenol (o-Cresol)	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2-Nitroaniline	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
2-Nitrophenol	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
3&4-Methylphenol (p&m-Cresol)	1.02 U	1.02	0.317	mg/Kg	1		08/12/20 20:03
3,3-Dichlorobenzidine	0.512 U	0.512	0.153	mg/Kg	1		08/12/20 20:03
3-Nitroaniline	0.512 U	0.512	0.153	mg/Kg	1		08/12/20 20:03
4-Bromophenyl-phenylether	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
4-Chloro-3-methylphenol	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
4-Chloroaniline	1.02 U	1.02	0.317	mg/Kg	1		08/12/20 20:03
4-Chlorophenyl-phenylether	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
4-Nitroaniline	3.07 U	3.07	0.962	mg/Kg	1		08/12/20 20:03
4-Nitrophenol	2.05 U	2.05	0.634	mg/Kg	1		08/12/20 20:03
Acenaphthene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Acenaphthylene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Aniline	2.05 U	2.05	0.634	mg/Kg	1		08/12/20 20:03
Anthracene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Azobenzene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Benzo(a)Anthracene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03

Print Date: 08/18/2020 5:40:35PM



Results of TP-4-12

Client Sample ID: **TP-4-12**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502003
Lab Project ID: 1209502

Collection Date: 07/15/20 14:57
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):96.0
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Benzo[b]Fluoranthene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Benzo[g,h,i]perylene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Benzo[k]fluoranthene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Benzoic acid	1.53 U	1.53	0.481	mg/Kg	1		08/12/20 20:03
Benzyl alcohol	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Bis(2chloro1methylethyl)Ether	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Bis(2-Chloroethoxy)methane	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Bis(2-Chloroethyl)ether	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
bis(2-Ethylhexyl)phthalate	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Butylbenzylphthalate	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Carbazole	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Chrysene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Dibenzo[a,h]anthracene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Dibenzofuran	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Diethylphthalate	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Dimethylphthalate	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Di-n-butylphthalate	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
di-n-Octylphthalate	0.512 U	0.512	0.153	mg/Kg	1		08/12/20 20:03
Fluoranthene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Fluorene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Hexachlorobenzene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Hexachlorobutadiene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Hexachlorocyclopentadiene	0.716 U	0.716	0.205	mg/Kg	1		08/12/20 20:03
Hexachloroethane	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Indeno[1,2,3-c,d] pyrene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Isophorone	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Naphthalene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Nitrobenzene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
N-Nitrosodimethylamine	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
N-Nitroso-di-n-propylamine	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
N-Nitrosodiphenylamine	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Pentachlorophenol	2.05 U	2.05	0.634	mg/Kg	1		08/12/20 20:03
Phenanthrene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Phenol	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03
Pyrene	0.256 U	0.256	0.0798	mg/Kg	1		08/12/20 20:03

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Results of TP-4-12

Client Sample ID: **TP-4-12**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502003
Lab Project ID: 1209502

Collection Date: 07/15/20 14:57
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):96.0
Location:

Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Surrogates							
2,4,6-Tribromophenol (surr)	93.4	35-125		%	1		08/12/20 20:03
2-Fluorobiphenyl (surr)	85.7	44-115		%	1		08/12/20 20:03
2-Fluorophenol (surr)	78.7	35-115		%	1		08/12/20 20:03
Nitrobenzene-d5 (surr)	89.1	37-122		%	1		08/12/20 20:03
Phenol-d6 (surr)	87.3	33-122		%	1		08/12/20 20:03
Terphenyl-d14 (surr)	91.2	54-127		%	1		08/12/20 20:03

Batch Information

Analytical Batch: XMS12188
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/12/20 20:03
Container ID: 1209502003-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.907 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-4-12

Client Sample ID: **TP-4-12**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502003
Lab Project ID: 1209502

Collection Date: 07/15/20 14:57
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):96.0
Location:

Results by Volatile Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	15.2		3.00	0.900	mg/Kg	1		07/28/20 20:54
Surrogates								
4-Bromofluorobenzene (surr)	151	*	50-150		%	1		07/28/20 20:54

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 20:54
Container ID: 1209502003-B

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/15/20 14:57
Prep Initial Wt./Vol.: 46.65 g
Prep Extract Vol: 26.8678 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-4-12

Client Sample ID: **TP-4-12**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502003
Lab Project ID: 1209502

Collection Date: 07/15/20 14:57
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):96.0
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1-Trichloroethane	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
1,1-Dichloroethane	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
1,2,3-Trichlorobenzene	60.0 U	60.0	18.0	ug/Kg	1		07/24/20 15:29
1,2,4-Trimethylbenzene	2270	60.0	18.0	ug/Kg	1		07/24/20 15:29
1,2-Dichlorobenzene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
1,3,5-Trimethylbenzene	635	30.0	9.36	ug/Kg	1		07/24/20 15:29
1,4-Dichlorobenzene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
1,1,1,2-Tetrachloroethane	2.40 U	2.40	0.744	ug/Kg	1		07/24/20 15:29
1,1-Dichloroethene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
1,2,3-Trichloropropane	2.40 U	2.40	0.744	ug/Kg	1		07/24/20 15:29
1,2-Dibromo-3-chloropropane	120 U	120	37.2	ug/Kg	1		07/24/20 15:29
1,2-Dichloroethane	2.40 U	2.40	0.840	ug/Kg	1		07/24/20 15:29
1,3-Dichlorobenzene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
2,2-Dichloropropane	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
2-Hexanone	120 U	120	37.2	ug/Kg	1		07/24/20 15:29
4-Methyl-2-pentanone (MIBK)	300 U	300	93.6	ug/Kg	1		07/24/20 15:29
Bromobenzene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
Bromoform	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
Carbon tetrachloride	15.0 U	15.0	4.68	ug/Kg	1		07/24/20 15:29
Chloroform	4.80 U	4.80	1.20	ug/Kg	1		07/24/20 15:29
cis-1,3-Dichloropropene	15.0 U	15.0	4.68	ug/Kg	1		07/24/20 15:29
Dichlorodifluoromethane	60.0 U	60.0	18.0	ug/Kg	1		07/24/20 15:29
Hexachlorobutadiene	24.0 U	24.0	7.44	ug/Kg	1		07/24/20 15:29
Methyl-t-butyl ether	120 U	120	37.2	ug/Kg	1		07/24/20 15:29
n-Propylbenzene	339	30.0	9.36	ug/Kg	1		07/24/20 15:29
sec-Butylbenzene	280	30.0	9.36	ug/Kg	1		07/24/20 15:29
tert-Butylbenzene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
Tetrachloroethene	15.0 U	15.0	4.68	ug/Kg	1		07/24/20 15:29
Toluene	60.1	30.0	9.36	ug/Kg	1		07/24/20 15:29
trans-1,2-Dichloroethene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
trans-1,3-Dichloropropene	15.0 U	15.0	4.68	ug/Kg	1		07/24/20 15:29
Trichloroethene	6.00 U	6.00	1.80	ug/Kg	1		07/24/20 15:29
Dibromochloromethane	6.00 U	6.00	1.80	ug/Kg	1		07/24/20 15:29
Dibromomethane	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
Trichlorofluoromethane	60.0 U	60.0	18.0	ug/Kg	1		07/24/20 15:29
Ethylbenzene	139	30.0	9.36	ug/Kg	1		07/24/20 15:29

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**Results of TP-4-12**

Client Sample ID: **TP-4-12**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502003
 Lab Project ID: 1209502

Collection Date: 07/15/20 14:57
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):96.0
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Freon-113	120 U	120	37.2	ug/Kg	1		07/24/20 15:29
Vinyl acetate	120 U	120	37.2	ug/Kg	1		07/24/20 15:29
Isopropylbenzene (Cumene)	104	30.0	9.36	ug/Kg	1		07/24/20 15:29
Methylene chloride	120 U	120	37.2	ug/Kg	1		07/24/20 15:29
Naphthalene	103	30.0	9.36	ug/Kg	1		07/24/20 15:29
n-Butylbenzene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
Acetone	300 U	300	93.6	ug/Kg	1		07/24/20 15:29
Benzene	15.0 U	15.0	4.68	ug/Kg	1		07/24/20 15:29
Bromochloromethane	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
Bromodichloromethane	2.40 U	2.40	0.744	ug/Kg	1		07/24/20 15:29
o-Xylene	348	30.0	9.36	ug/Kg	1		07/24/20 15:29
Bromomethane	24.0 U	24.0	7.44	ug/Kg	1		07/24/20 15:29
Carbon disulfide	120 U	120	37.2	ug/Kg	1		07/24/20 15:29
P & M -Xylene	518	60.0	18.0	ug/Kg	1		07/24/20 15:29
1,1-Dichloropropene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
Chlorobenzene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
1,2,4-Trichlorobenzene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
Chloroethane	240 U	240	74.4	ug/Kg	1		07/24/20 15:29
1,2-Dibromoethane	1.20 U	1.20	0.480	ug/Kg	1		07/24/20 15:29
1,2-Dichloropropane	12.0 U	12.0	3.72	ug/Kg	1		07/24/20 15:29
Chloromethane	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
1,3-Dichloropropane	12.0 U	12.0	3.72	ug/Kg	1		07/24/20 15:29
2-Chlorotoluene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
2-Butanone (MEK)	300 U	300	93.6	ug/Kg	1		07/24/20 15:29
cis-1,2-Dichloroethene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
Styrene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
4-Chlorotoluene	30.0 U	30.0	9.36	ug/Kg	1		07/24/20 15:29
1,1,1,2-Tetrachloroethane	24.0 U	24.0	7.44	ug/Kg	1		07/24/20 15:29
4-Isopropyltoluene	163	120	30.0	ug/Kg	1		07/24/20 15:29
1,1,2-Trichloroethane	0.960 U	0.960	0.300	ug/Kg	1		07/24/20 15:29
Vinyl chloride	0.960 U	0.960	0.300	ug/Kg	1		07/24/20 15:29
Xylenes (total)	865	90.0	27.4	ug/Kg	1		07/24/20 15:29
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	71-136		%	1		07/24/20 15:29
4-Bromofluorobenzene (surr)	95.8	55-151		%	1		07/24/20 15:29
Toluene-d8 (surr)	95.6	85-116		%	1		07/24/20 15:29

Print Date: 08/18/2020 5:40:35PM



Results of TP-4-12

Client Sample ID: **TP-4-12**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502003
Lab Project ID: 1209502

Collection Date: 07/15/20 14:57
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):96.0
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 15:29
Container ID: 1209502003-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/15/20 14:57
Prep Initial Wt./Vol.: 46.65 g
Prep Extract Vol: 26.8678 mL

Print Date: 08/18/2020 5:40:35PM

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Results of TP-5-7

Client Sample ID: **TP-5-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502004
Lab Project ID: 1209502

Collection Date: 07/15/20 13:30
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.7
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.6 U	20.6	6.40	mg/Kg	1		07/24/20 23:29
Surrogates							
5a Androstane (surr)	88.3	50-150		%	1		07/24/20 23:29

Batch Information

Analytical Batch: XFC15666
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/24/20 23:29
Container ID: 1209502004-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.36 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-5-7

Client Sample ID: **TP-5-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502004
Lab Project ID: 1209502

Collection Date: 07/15/20 13:30
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.7
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
1,2-Dichlorobenzene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
1,3-Dichlorobenzene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
1,4-Dichlorobenzene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
1-Chloronaphthalene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
1-Methylnaphthalene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2,4,5-Trichlorophenol	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2,4,6-Trichlorophenol	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2,4-Dichlorophenol	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2,4-Dimethylphenol	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2,4-Dinitrophenol	3.13 U	3.13	0.981	mg/Kg	1		08/12/20 20:37
2,4-Dinitrotoluene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2,6-Dichlorophenol	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2,6-Dinitrotoluene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2-Chloronaphthalene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2-Chlorophenol	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2-Methyl-4,6-dinitrophenol	2.09 U	2.09	0.647	mg/Kg	1		08/12/20 20:37
2-Methylnaphthalene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2-Methylphenol (o-Cresol)	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2-Nitroaniline	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
2-Nitrophenol	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
3&4-Methylphenol (p&m-Cresol)	1.04 U	1.04	0.323	mg/Kg	1		08/12/20 20:37
3,3-Dichlorobenzidine	0.522 U	0.522	0.156	mg/Kg	1		08/12/20 20:37
3-Nitroaniline	0.522 U	0.522	0.156	mg/Kg	1		08/12/20 20:37
4-Bromophenyl-phenylether	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
4-Chloro-3-methylphenol	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
4-Chloroaniline	1.04 U	1.04	0.323	mg/Kg	1		08/12/20 20:37
4-Chlorophenyl-phenylether	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
4-Nitroaniline	3.13 U	3.13	0.981	mg/Kg	1		08/12/20 20:37
4-Nitrophenol	2.09 U	2.09	0.647	mg/Kg	1		08/12/20 20:37
Acenaphthene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Acenaphthylene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Aniline	2.09 U	2.09	0.647	mg/Kg	1		08/12/20 20:37
Anthracene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Azobenzene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Benzo(a)Anthracene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37

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Results of TP-5-7

Client Sample ID: **TP-5-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502004
Lab Project ID: 1209502

Collection Date: 07/15/20 13:30
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.7
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Benzo[b]Fluoranthene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Benzo[g,h,i]perylene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Benzo[k]fluoranthene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Benzoic acid	1.56 U	1.56	0.490	mg/Kg	1		08/12/20 20:37
Benzyl alcohol	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Bis(2chloro1methylethyl)Ether	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Bis(2-Chloroethoxy)methane	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Bis(2-Chloroethyl)ether	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
bis(2-Ethylhexyl)phthalate	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Butylbenzylphthalate	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Carbazole	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Chrysene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Dibenzo[a,h]anthracene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Dibenzofuran	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Diethylphthalate	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Dimethylphthalate	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Di-n-butylphthalate	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
di-n-Octylphthalate	0.522 U	0.522	0.156	mg/Kg	1		08/12/20 20:37
Fluoranthene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Fluorene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Hexachlorobenzene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Hexachlorobutadiene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Hexachlorocyclopentadiene	0.730 U	0.730	0.209	mg/Kg	1		08/12/20 20:37
Hexachloroethane	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Indeno[1,2,3-c,d] pyrene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Isophorone	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Naphthalene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Nitrobenzene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
N-Nitrosodimethylamine	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
N-Nitroso-di-n-propylamine	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
N-Nitrosodiphenylamine	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Pentachlorophenol	2.09 U	2.09	0.647	mg/Kg	1		08/12/20 20:37
Phenanthrene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Phenol	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37
Pyrene	0.261 U	0.261	0.0814	mg/Kg	1		08/12/20 20:37

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Results of TP-5-7

Client Sample ID: **TP-5-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502004
Lab Project ID: 1209502

Collection Date: 07/15/20 13:30
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.7
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Surrogates							
2,4,6-Tribromophenol (surr)	82.6	35-125		%	1		08/12/20 20:37
2-Fluorobiphenyl (surr)	69.6	44-115		%	1		08/12/20 20:37
2-Fluorophenol (surr)	60.5	35-115		%	1		08/12/20 20:37
Nitrobenzene-d5 (surr)	61.9	37-122		%	1		08/12/20 20:37
Phenol-d6 (surr)	70.8	33-122		%	1		08/12/20 20:37
Terphenyl-d14 (surr)	87.2	54-127		%	1		08/12/20 20:37

Batch Information

Analytical Batch: XMS12188
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/12/20 20:37
Container ID: 1209502004-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.53 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-5-7

Client Sample ID: **TP-5-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502004
Lab Project ID: 1209502

Collection Date: 07/15/20 13:30
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.7
Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.99 U	2.99	0.896	mg/Kg	1		07/28/20 21:12
Surrogates							
4-Bromofluorobenzene (surr)	108	50-150		%	1		07/28/20 21:12

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 21:12
Container ID: 1209502004-B

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/15/20 13:30
Prep Initial Wt./Vol.: 47.243 g
Prep Extract Vol: 27.0203 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-5-7

Client Sample ID: **TP-5-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502004
Lab Project ID: 1209502

Collection Date: 07/15/20 13:30
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.7
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	23.9 U	23.9	7.41	ug/Kg	1		07/24/20 15:46
1,1,1-Trichloroethane	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
1,1,2,2-Tetrachloroethane	2.39 U	2.39	0.741	ug/Kg	1		07/24/20 15:46
1,1,2-Trichloroethane	0.956 U	0.956	0.299	ug/Kg	1		07/24/20 15:46
1,1-Dichloroethane	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
1,1-Dichloroethene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
1,1-Dichloropropene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
1,2,3-Trichlorobenzene	59.7 U	59.7	17.9	ug/Kg	1		07/24/20 15:46
1,2,3-Trichloropropane	2.39 U	2.39	0.741	ug/Kg	1		07/24/20 15:46
1,2,4-Trichlorobenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
1,2,4-Trimethylbenzene	59.7 U	59.7	17.9	ug/Kg	1		07/25/20 19:31
1,2-Dibromo-3-chloropropane	119 U	119	37.0	ug/Kg	1		07/24/20 15:46
1,2-Dibromoethane	1.19 U	1.19	0.478	ug/Kg	1		07/24/20 15:46
1,2-Dichlorobenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
1,2-Dichloroethane	2.39 U	2.39	0.836	ug/Kg	1		07/24/20 15:46
1,2-Dichloropropane	11.9 U	11.9	3.70	ug/Kg	1		07/24/20 15:46
1,3,5-Trimethylbenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
1,3-Dichlorobenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
1,3-Dichloropropane	11.9 U	11.9	3.70	ug/Kg	1		07/24/20 15:46
1,4-Dichlorobenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
2,2-Dichloropropane	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
2-Butanone (MEK)	299 U	299	93.2	ug/Kg	1		07/24/20 15:46
2-Chlorotoluene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
2-Hexanone	119 U	119	37.0	ug/Kg	1		07/24/20 15:46
4-Chlorotoluene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
4-Isopropyltoluene	119 U	119	29.9	ug/Kg	1		07/24/20 15:46
4-Methyl-2-pentanone (MIBK)	299 U	299	93.2	ug/Kg	1		07/24/20 15:46
Acetone	299 U	299	93.2	ug/Kg	1		07/24/20 15:46
Benzene	14.9 U	14.9	4.66	ug/Kg	1		07/24/20 15:46
Bromobenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
Bromochloromethane	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
Bromodichloromethane	2.39 U	2.39	0.741	ug/Kg	1		07/24/20 15:46
Bromoform	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
Bromomethane	23.9 U	23.9	7.41	ug/Kg	1		07/24/20 15:46
Carbon disulfide	119 U	119	37.0	ug/Kg	1		07/24/20 15:46
Carbon tetrachloride	14.9 U	14.9	4.66	ug/Kg	1		07/24/20 15:46

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Results of TP-5-7

Client Sample ID: **TP-5-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502004
Lab Project ID: 1209502

Collection Date: 07/15/20 13:30
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.7
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
Chloroethane	239 U	239	74.1	ug/Kg	1		07/24/20 15:46
Chloroform	4.78 U	4.78	1.19	ug/Kg	1		07/24/20 15:46
Chloromethane	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
cis-1,2-Dichloroethene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
cis-1,3-Dichloropropene	14.9 U	14.9	4.66	ug/Kg	1		07/24/20 15:46
Dibromochloromethane	5.97 U	5.97	1.79	ug/Kg	1		07/24/20 15:46
Dibromomethane	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
Dichlorodifluoromethane	59.7 U	59.7	17.9	ug/Kg	1		07/24/20 15:46
Ethylbenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
Freon-113	119 U	119	37.0	ug/Kg	1		07/24/20 15:46
Hexachlorobutadiene	23.9 U	23.9	7.41	ug/Kg	1		07/24/20 15:46
Isopropylbenzene (Cumene)	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
Methylene chloride	119 U	119	37.0	ug/Kg	1		07/24/20 15:46
Methyl-t-butyl ether	119 U	119	37.0	ug/Kg	1		07/24/20 15:46
Naphthalene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
n-Butylbenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
n-Propylbenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
o-Xylene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
P & M -Xylene	59.7 U	59.7	17.9	ug/Kg	1		07/24/20 15:46
sec-Butylbenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
Styrene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
tert-Butylbenzene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
Tetrachloroethene	14.9 U	14.9	4.66	ug/Kg	1		07/24/20 15:46
Toluene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
trans-1,2-Dichloroethene	29.9 U	29.9	9.32	ug/Kg	1		07/24/20 15:46
trans-1,3-Dichloropropene	14.9 U	14.9	4.66	ug/Kg	1		07/24/20 15:46
Trichloroethene	5.97 U	5.97	1.79	ug/Kg	1		07/24/20 15:46
Trichlorofluoromethane	59.7 U	59.7	17.9	ug/Kg	1		07/24/20 15:46
Vinyl acetate	119 U	119	37.0	ug/Kg	1		07/24/20 15:46
Vinyl chloride	0.956 U	0.956	0.299	ug/Kg	1		07/24/20 15:46
Xylenes (total)	89.6 U	89.6	27.2	ug/Kg	1		07/24/20 15:46
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	71-136		%	1		07/24/20 15:46
4-Bromofluorobenzene (surr)	94.7	55-151		%	1		07/24/20 15:46
Toluene-d8 (surr)	97.8	85-116		%	1		07/24/20 15:46

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Results of TP-5-7

Client Sample ID: **TP-5-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502004
Lab Project ID: 1209502

Collection Date: 07/15/20 13:30
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.7
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 15:46
Container ID: 1209502004-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/15/20 13:30
Prep Initial Wt./Vol.: 47.243 g
Prep Extract Vol: 27.0203 mL

Analytical Batch: VMS20121
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/25/20 19:31
Container ID: 1209502004-B

Prep Batch: VXX35981
Prep Method: SW5035A
Prep Date/Time: 07/15/20 13:30
Prep Initial Wt./Vol.: 47.243 g
Prep Extract Vol: 27.0203 mL

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Results of TP-6-7

Client Sample ID: **TP-6-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502005
Lab Project ID: 1209502

Collection Date: 07/15/20 17:12
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):91.5
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	16900		108	33.6	mg/Kg	5		07/31/20 18:24
Surrogates								
5a Androstane (surr)	97.3		50-150		%	5		07/31/20 18:24

Batch Information

Analytical Batch: XFC15669
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/31/20 18:24
Container ID: 1209502005-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.253 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-6-7

Client Sample ID: **TP-6-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502005
Lab Project ID: 1209502

Collection Date: 07/15/20 17:12
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):91.5
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
1,2-Dichlorobenzene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
1,3-Dichlorobenzene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
1,4-Dichlorobenzene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
1-Chloronaphthalene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
1-Methylnaphthalene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2,4,5-Trichlorophenol	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2,4,6-Trichlorophenol	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2,4-Dichlorophenol	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2,4-Dimethylphenol	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2,4-Dinitrophenol	64.6 U	64.6	20.2	mg/Kg	20		08/13/20 00:16
2,4-Dinitrotoluene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2,6-Dichlorophenol	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2,6-Dinitrotoluene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2-Chloronaphthalene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2-Chlorophenol	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2-Methyl-4,6-dinitrophenol	43.1 U	43.1	13.4	mg/Kg	20		08/13/20 00:16
2-Methylnaphthalene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2-Methylphenol (o-Cresol)	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2-Nitroaniline	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
2-Nitrophenol	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
3&4-Methylphenol (p&m-Cresol)	21.5 U	21.5	6.68	mg/Kg	20		08/13/20 00:16
3,3-Dichlorobenzidine	10.8 U	10.8	3.23	mg/Kg	20		08/13/20 00:16
3-Nitroaniline	10.8 U	10.8	3.23	mg/Kg	20		08/13/20 00:16
4-Bromophenyl-phenylether	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
4-Chloro-3-methylphenol	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
4-Chloroaniline	21.5 U	21.5	6.68	mg/Kg	20		08/13/20 00:16
4-Chlorophenyl-phenylether	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
4-Nitroaniline	64.6 U	64.6	20.2	mg/Kg	20		08/13/20 00:16
4-Nitrophenol	43.1 U	43.1	13.4	mg/Kg	20		08/13/20 00:16
Acenaphthene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Acenaphthylene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Aniline	43.1 U	43.1	13.4	mg/Kg	20		08/13/20 00:16
Anthracene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Azobenzene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Benzo(a)Anthracene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16

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Results of TP-6-7

Client Sample ID: **TP-6-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502005
Lab Project ID: 1209502

Collection Date: 07/15/20 17:12
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):91.5
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Benzo[b]Fluoranthene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Benzo[g,h,i]perylene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Benzo[k]fluoranthene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Benzoic acid	32.3 U	32.3	10.1	mg/Kg	20		08/13/20 00:16
Benzyl alcohol	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Bis(2chloro1methylethyl)Ether	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Bis(2-Chloroethoxy)methane	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Bis(2-Chloroethyl)ether	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
bis(2-Ethylhexyl)phthalate	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Butylbenzylphthalate	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Carbazole	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Chrysene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Dibenzo[a,h]anthracene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Dibenzofuran	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Diethylphthalate	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Dimethylphthalate	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Di-n-butylphthalate	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
di-n-Octylphthalate	10.8 U	10.8	3.23	mg/Kg	20		08/13/20 00:16
Fluoranthene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Fluorene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Hexachlorobenzene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Hexachlorobutadiene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Hexachlorocyclopentadiene	15.1 U	15.1	4.31	mg/Kg	20		08/13/20 00:16
Hexachloroethane	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Indeno[1,2,3-c,d] pyrene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Isophorone	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Naphthalene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Nitrobenzene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
N-Nitrosodimethylamine	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
N-Nitroso-di-n-propylamine	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
N-Nitrosodiphenylamine	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Pentachlorophenol	43.1 U	43.1	13.4	mg/Kg	20		08/13/20 00:16
Phenanthrene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Phenol	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16
Pyrene	5.38 U	5.38	1.68	mg/Kg	20		08/13/20 00:16

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Results of TP-6-7

Client Sample ID: **TP-6-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502005
Lab Project ID: 1209502

Collection Date: 07/15/20 17:12
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):91.5
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Surrogates								
2,4,6-Tribromophenol (surr)	20.9	*	35-125		%	20		08/13/20 00:16
2-Fluorobiphenyl (surr)	87.7		44-115		%	20		08/13/20 00:16
2-Fluorophenol (surr)	38.5		35-115		%	20		08/13/20 00:16
Nitrobenzene-d5 (surr)	0	*	37-122		%	20		08/13/20 00:16
Phenol-d6 (surr)	0	*	33-122		%	20		08/13/20 00:16
Terphenyl-d14 (surr)	89.7		54-127		%	20		08/13/20 00:16

Batch Information

Analytical Batch: XMS12188
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/13/20 00:16
Container ID: 1209502005-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.846 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-6-7

Client Sample ID: **TP-6-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502005
Lab Project ID: 1209502

Collection Date: 07/15/20 17:12
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):91.5
Location:

Results by Volatile Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	730		26.7	8.00	mg/Kg	10		07/28/20 21:30
Surrogates								
4-Bromofluorobenzene (surr)	4270	*	50-150		%	10		07/28/20 21:30

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 21:30
Container ID: 1209502005-B

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/15/20 17:12
Prep Initial Wt./Vol.: 62.134 g
Prep Extract Vol: 30.3068 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-6-7

Client Sample ID: **TP-6-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502005
Lab Project ID: 1209502

Collection Date: 07/15/20 17:12
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):91.5
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	2130 U	2130	661	ug/Kg	100		07/24/20 20:24
1,1,1-Trichloroethane	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
1,1,2,2-Tetrachloroethane	213 U	213	66.1	ug/Kg	100		07/24/20 20:24
1,1,2-Trichloroethane	85.3 U	85.3	26.7	ug/Kg	100		07/24/20 20:24
1,1-Dichloroethane	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
1,1-Dichloroethene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
1,1-Dichloropropene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
1,2,3-Trichlorobenzene	5330 U	5330	1600	ug/Kg	100		07/24/20 20:24
1,2,3-Trichloropropane	213 U	213	66.1	ug/Kg	100		07/24/20 20:24
1,2,4-Trichlorobenzene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
1,2,4-Trimethylbenzene	125000	5330	1600	ug/Kg	100		07/24/20 20:24
1,2-Dibromo-3-chloropropane	10700 U	10700	3310	ug/Kg	100		07/24/20 20:24
1,2-Dibromoethane	107 U	107	42.7	ug/Kg	100		07/24/20 20:24
1,2-Dichlorobenzene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
1,2-Dichloroethane	213 U	213	74.7	ug/Kg	100		07/24/20 20:24
1,2-Dichloropropane	1070 U	1070	331	ug/Kg	100		07/24/20 20:24
1,3,5-Trimethylbenzene	32900	2670	832	ug/Kg	100		07/24/20 20:24
1,3-Dichlorobenzene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
1,3-Dichloropropane	1070 U	1070	331	ug/Kg	100		07/24/20 20:24
1,4-Dichlorobenzene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
2,2-Dichloropropane	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
2-Butanone (MEK)	26700 U	26700	8320	ug/Kg	100		07/24/20 20:24
2-Chlorotoluene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
2-Hexanone	10700 U	10700	3310	ug/Kg	100		07/24/20 20:24
4-Chlorotoluene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
4-Isopropyltoluene	10700 U	10700	2670	ug/Kg	100		07/24/20 20:24
4-Methyl-2-pentanone (MIBK)	26700 U	26700	8320	ug/Kg	100		07/24/20 20:24
Acetone	26700 U	26700	8320	ug/Kg	100		07/24/20 20:24
Benzene	1330 U	1330	416	ug/Kg	100		07/24/20 20:24
Bromobenzene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
Bromochloromethane	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
Bromodichloromethane	213 U	213	66.1	ug/Kg	100		07/24/20 20:24
Bromoform	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
Bromomethane	2130 U	2130	661	ug/Kg	100		07/24/20 20:24
Carbon disulfide	10700 U	10700	3310	ug/Kg	100		07/24/20 20:24
Carbon tetrachloride	1330 U	1330	416	ug/Kg	100		07/24/20 20:24

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Results of TP-6-7

Client Sample ID: **TP-6-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502005
Lab Project ID: 1209502

Collection Date: 07/15/20 17:12
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):91.5
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
Chloroethane	21300 U	21300	6610	ug/Kg	100		07/24/20 20:24
Chloroform	427 U	427	107	ug/Kg	100		07/24/20 20:24
Chloromethane	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
cis-1,2-Dichloroethene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
cis-1,3-Dichloropropene	1330 U	1330	416	ug/Kg	100		07/24/20 20:24
Dibromochloromethane	533 U	533	160	ug/Kg	100		07/24/20 20:24
Dibromomethane	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
Dichlorodifluoromethane	5330 U	5330	1600	ug/Kg	100		07/24/20 20:24
Ethylbenzene	13800	2670	832	ug/Kg	100		07/24/20 20:24
Freon-113	10700 U	10700	3310	ug/Kg	100		07/24/20 20:24
Hexachlorobutadiene	2130 U	2130	661	ug/Kg	100		07/24/20 20:24
Isopropylbenzene (Cumene)	7630	2670	832	ug/Kg	100		07/24/20 20:24
Methylene chloride	10700 U	10700	3310	ug/Kg	100		07/24/20 20:24
Methyl-t-butyl ether	10700 U	10700	3310	ug/Kg	100		07/24/20 20:24
Naphthalene	5990	2670	832	ug/Kg	100		07/24/20 20:24
n-Butylbenzene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
n-Propylbenzene	23100	2670	832	ug/Kg	100		07/24/20 20:24
o-Xylene	29800	2670	832	ug/Kg	100		07/24/20 20:24
P & M -Xylene	46600	5330	1600	ug/Kg	100		07/24/20 20:24
sec-Butylbenzene	13400	2670	832	ug/Kg	100		07/24/20 20:24
Styrene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
tert-Butylbenzene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
Tetrachloroethene	1330 U	1330	416	ug/Kg	100		07/24/20 20:24
Toluene	9140	2670	832	ug/Kg	100		07/24/20 20:24
trans-1,2-Dichloroethene	2670 U	2670	832	ug/Kg	100		07/24/20 20:24
trans-1,3-Dichloropropene	1330 U	1330	416	ug/Kg	100		07/24/20 20:24
Trichloroethene	533 U	533	160	ug/Kg	100		07/24/20 20:24
Trichlorofluoromethane	5330 U	5330	1600	ug/Kg	100		07/24/20 20:24
Vinyl acetate	10700 U	10700	3310	ug/Kg	100		07/24/20 20:24
Vinyl chloride	85.3 U	85.3	26.7	ug/Kg	100		07/24/20 20:24
Xylenes (total)	76300	8000	2430	ug/Kg	100		07/24/20 20:24
Surrogates							
1,2-Dichloroethane-D4 (surr)	91.7	71-136		%	100		07/24/20 20:24
4-Bromofluorobenzene (surr)	129	55-151		%	100		07/24/20 20:24
Toluene-d8 (surr)	96.8	85-116		%	100		07/24/20 20:24

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Results of TP-6-7

Client Sample ID: **TP-6-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502005
Lab Project ID: 1209502

Collection Date: 07/15/20 17:12
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):91.5
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 20:24
Container ID: 1209502005-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/15/20 17:12
Prep Initial Wt./Vol.: 62.134 g
Prep Extract Vol: 30.3068 mL

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Results of TP-7-2

Client Sample ID: **TP-7-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502006
Lab Project ID: 1209502

Collection Date: 07/15/20 18:40
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	18300		108	33.4	mg/Kg	5		07/31/20 18:34
Surrogates								
5a Androstane (surr)	92.5		50-150		%	5		07/31/20 18:34

Batch Information

Analytical Batch: XFC15669
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/31/20 18:34
Container ID: 1209502006-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.157 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-7-2

Client Sample ID: **TP-7-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502006
Lab Project ID: 1209502

Collection Date: 07/15/20 18:40
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
1,2-Dichlorobenzene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
1,3-Dichlorobenzene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
1,4-Dichlorobenzene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
1-Chloronaphthalene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
1-Methylnaphthalene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2,4,5-Trichlorophenol	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2,4,6-Trichlorophenol	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2,4-Dichlorophenol	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2,4-Dimethylphenol	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2,4-Dinitrophenol	64.7 U	64.7	20.3	mg/Kg	20		08/13/20 00:49
2,4-Dinitrotoluene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2,6-Dichlorophenol	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2,6-Dinitrotoluene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2-Chloronaphthalene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2-Chlorophenol	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2-Methyl-4,6-dinitrophenol	43.1 U	43.1	13.4	mg/Kg	20		08/13/20 00:49
2-Methylnaphthalene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2-Methylphenol (o-Cresol)	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2-Nitroaniline	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
2-Nitrophenol	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
3&4-Methylphenol (p&m-Cresol)	21.6 U	21.6	6.68	mg/Kg	20		08/13/20 00:49
3,3-Dichlorobenzidine	10.8 U	10.8	3.23	mg/Kg	20		08/13/20 00:49
3-Nitroaniline	10.8 U	10.8	3.23	mg/Kg	20		08/13/20 00:49
4-Bromophenyl-phenylether	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
4-Chloro-3-methylphenol	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
4-Chloroaniline	21.6 U	21.6	6.68	mg/Kg	20		08/13/20 00:49
4-Chlorophenyl-phenylether	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
4-Nitroaniline	64.7 U	64.7	20.3	mg/Kg	20		08/13/20 00:49
4-Nitrophenol	43.1 U	43.1	13.4	mg/Kg	20		08/13/20 00:49
Acenaphthene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Acenaphthylene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Aniline	43.1 U	43.1	13.4	mg/Kg	20		08/13/20 00:49
Anthracene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Azobenzene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Benzo(a)Anthracene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49

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Results of TP-7-2

Client Sample ID: **TP-7-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502006
Lab Project ID: 1209502

Collection Date: 07/15/20 18:40
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Benzo[b]Fluoranthene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Benzo[g,h,i]perylene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Benzo[k]fluoranthene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Benzoic acid	32.3 U	32.3	10.1	mg/Kg	20		08/13/20 00:49
Benzyl alcohol	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Bis(2chloro1methylethyl)Ether	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Bis(2-Chloroethoxy)methane	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Bis(2-Chloroethyl)ether	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
bis(2-Ethylhexyl)phthalate	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Butylbenzylphthalate	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Carbazole	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Chrysene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Dibenzo[a,h]anthracene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Dibenzofuran	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Diethylphthalate	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Dimethylphthalate	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Di-n-butylphthalate	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
di-n-Octylphthalate	10.8 U	10.8	3.23	mg/Kg	20		08/13/20 00:49
Fluoranthene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Fluorene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Hexachlorobenzene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Hexachlorobutadiene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Hexachlorocyclopentadiene	15.1 U	15.1	4.31	mg/Kg	20		08/13/20 00:49
Hexachloroethane	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Indeno[1,2,3-c,d] pyrene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Isophorone	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Naphthalene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Nitrobenzene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
N-Nitrosodimethylamine	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
N-Nitroso-di-n-propylamine	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
N-Nitrosodiphenylamine	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Pentachlorophenol	43.1 U	43.1	13.4	mg/Kg	20		08/13/20 00:49
Phenanthrene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Phenol	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49
Pyrene	5.39 U	5.39	1.68	mg/Kg	20		08/13/20 00:49

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Results of TP-7-2

Client Sample ID: **TP-7-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502006
Lab Project ID: 1209502

Collection Date: 07/15/20 18:40
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Surrogates								
2,4,6-Tribromophenol (surr)	22.1	*	35-125		%	20		08/13/20 00:49
2-Fluorobiphenyl (surr)	80.9		44-115		%	20		08/13/20 00:49
2-Fluorophenol (surr)	32.7	*	35-115		%	20		08/13/20 00:49
Nitrobenzene-d5 (surr)	0	*	37-122		%	20		08/13/20 00:49
Phenol-d6 (surr)	0	*	33-122		%	20		08/13/20 00:49
Terphenyl-d14 (surr)	83.5		54-127		%	20		08/13/20 00:49

Batch Information

Analytical Batch: XMS12188
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/13/20 00:49
Container ID: 1209502006-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.64 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-7-2

Client Sample ID: **TP-7-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502006
Lab Project ID: 1209502

Collection Date: 07/15/20 18:40
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by Volatile Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	860		30.8	9.23	mg/Kg	10		07/28/20 21:47
Surrogates								
4-Bromofluorobenzene (surr)	4240	*	50-150		%	10		07/28/20 21:47

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 21:47
Container ID: 1209502006-B

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/15/20 18:40
Prep Initial Wt./Vol.: 51.091 g
Prep Extract Vol: 28.9872 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-7-2

Client Sample ID: **TP-7-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502006
Lab Project ID: 1209502

Collection Date: 07/15/20 18:40
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	2460 U	2460	763	ug/Kg	100		07/27/20 16:36
1,1,1-Trichloroethane	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
1,1,2,2-Tetrachloroethane	246 U	246	76.3	ug/Kg	100		07/27/20 16:36
1,1,2-Trichloroethane	98.5 U	98.5	30.8	ug/Kg	100		07/27/20 16:36
1,1-Dichloroethane	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
1,1-Dichloroethene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
1,1-Dichloropropene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
1,2,3-Trichlorobenzene	6150 U	6150	1850	ug/Kg	100		07/27/20 16:36
1,2,3-Trichloropropane	246 U	246	76.3	ug/Kg	100		07/27/20 16:36
1,2,4-Trichlorobenzene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
1,2,4-Trimethylbenzene	184000	6150	1850	ug/Kg	100		07/27/20 16:36
1,2-Dibromo-3-chloropropane	12300 U	12300	3820	ug/Kg	100		07/27/20 16:36
1,2-Dibromoethane	123 U	123	49.2	ug/Kg	100		07/27/20 16:36
1,2-Dichlorobenzene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
1,2-Dichloroethane	246 U	246	86.2	ug/Kg	100		07/27/20 16:36
1,2-Dichloropropane	1230 U	1230	382	ug/Kg	100		07/27/20 16:36
1,3,5-Trimethylbenzene	48900	3080	960	ug/Kg	100		07/27/20 16:36
1,3-Dichlorobenzene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
1,3-Dichloropropane	1230 U	1230	382	ug/Kg	100		07/27/20 16:36
1,4-Dichlorobenzene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
2,2-Dichloropropane	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
2-Butanone (MEK)	30800 U	30800	9600	ug/Kg	100		07/27/20 16:36
2-Chlorotoluene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
2-Hexanone	12300 U	12300	3820	ug/Kg	100		07/27/20 16:36
4-Chlorotoluene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
4-Isopropyltoluene	13000	12300	3080	ug/Kg	100		07/27/20 16:36
4-Methyl-2-pentanone (MIBK)	30800 U	30800	9600	ug/Kg	100		07/27/20 16:36
Acetone	30800 U	30800	9600	ug/Kg	100		07/27/20 16:36
Benzene	1540 U	1540	480	ug/Kg	100		07/27/20 16:36
Bromobenzene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
Bromochloromethane	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
Bromodichloromethane	246 U	246	76.3	ug/Kg	100		07/27/20 16:36
Bromoform	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
Bromomethane	2460 U	2460	763	ug/Kg	100		07/27/20 16:36
Carbon disulfide	12300 U	12300	3820	ug/Kg	100		07/27/20 16:36
Carbon tetrachloride	1540 U	1540	480	ug/Kg	100		07/27/20 16:36

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**Results of TP-7-2**

Client Sample ID: **TP-7-2**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502006
 Lab Project ID: 1209502

Collection Date: 07/15/20 18:40
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):92.2
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
Chloroethane	24600 U	24600	7630	ug/Kg	100		07/27/20 16:36
Chloroform	492 U	492	123	ug/Kg	100		07/27/20 16:36
Chloromethane	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
cis-1,2-Dichloroethene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
cis-1,3-Dichloropropene	1540 U	1540	480	ug/Kg	100		07/27/20 16:36
Dibromochloromethane	615 U	615	185	ug/Kg	100		07/27/20 16:36
Dibromomethane	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
Dichlorodifluoromethane	6150 U	6150	1850	ug/Kg	100		07/27/20 16:36
Ethylbenzene	16000	3080	960	ug/Kg	100		07/27/20 16:36
Freon-113	12300 U	12300	3820	ug/Kg	100		07/27/20 16:36
Hexachlorobutadiene	2460 U	2460	763	ug/Kg	100		07/27/20 16:36
Isopropylbenzene (Cumene)	9670	3080	960	ug/Kg	100		07/27/20 16:36
Methylene chloride	12300 U	12300	3820	ug/Kg	100		07/27/20 16:36
Methyl-t-butyl ether	12300 U	12300	3820	ug/Kg	100		07/27/20 16:36
Naphthalene	7690	3080	960	ug/Kg	100		07/27/20 16:36
n-Butylbenzene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
n-Propylbenzene	31000	3080	960	ug/Kg	100		07/27/20 16:36
o-Xylene	35900	3080	960	ug/Kg	100		07/27/20 16:36
P & M -Xylene	55500	6150	1850	ug/Kg	100		07/27/20 16:36
sec-Butylbenzene	20100	3080	960	ug/Kg	100		07/27/20 16:36
Styrene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
tert-Butylbenzene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
Tetrachloroethene	1540 U	1540	480	ug/Kg	100		07/27/20 16:36
Toluene	10200	3080	960	ug/Kg	100		07/27/20 16:36
trans-1,2-Dichloroethene	3080 U	3080	960	ug/Kg	100		07/27/20 16:36
trans-1,3-Dichloropropene	1540 U	1540	480	ug/Kg	100		07/27/20 16:36
Trichloroethene	615 U	615	185	ug/Kg	100		07/27/20 16:36
Trichlorofluoromethane	6150 U	6150	1850	ug/Kg	100		07/27/20 16:36
Vinyl acetate	12300 U	12300	3820	ug/Kg	100		07/27/20 16:36
Vinyl chloride	98.5 U	98.5	30.8	ug/Kg	100		07/27/20 16:36
Xylenes (total)	91400	9230	2810	ug/Kg	100		07/27/20 16:36
Surrogates							
1,2-Dichloroethane-D4 (surr)	109	71-136		%	100		07/27/20 16:36
4-Bromofluorobenzene (surr)	237 *	55-151		%	100		07/27/20 16:36
Toluene-d8 (surr)	97	85-116		%	100		07/27/20 16:36

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Results of TP-7-2

Client Sample ID: **TP-7-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502006
Lab Project ID: 1209502

Collection Date: 07/15/20 18:40
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20127
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/27/20 16:36
Container ID: 1209502006-B

Prep Batch: VXX35994
Prep Method: SW5035A
Prep Date/Time: 07/15/20 18:40
Prep Initial Wt./Vol.: 51.091 g
Prep Extract Vol: 28.9872 mL

Print Date: 08/18/2020 5:40:35PM

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Results of TP-8-3

Client Sample ID: **TP-8-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502007
Lab Project ID: 1209502

Collection Date: 07/15/20 18:48
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):87.5
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	22.8 U	22.8	7.05	mg/Kg	1		07/25/20 00:00
Surrogates							
5a Androstane (surr)	89.9	50-150		%	1		07/25/20 00:00

Batch Information

Analytical Batch: XFC15666
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/25/20 00:00
Container ID: 1209502007-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.144 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-8-3

Client Sample ID: **TP-8-3**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502007
 Lab Project ID: 1209502

Collection Date: 07/15/20 18:48
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):87.5
 Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
1,2-Dichlorobenzene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
1,3-Dichlorobenzene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
1,4-Dichlorobenzene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
1-Chloronaphthalene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
1-Methylnaphthalene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2,4,5-Trichlorophenol	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2,4,6-Trichlorophenol	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2,4-Dichlorophenol	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2,4-Dimethylphenol	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2,4-Dinitrophenol	3.36 U	3.36	1.05	mg/Kg	1		08/05/20 15:22
2,4-Dinitrotoluene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2,6-Dichlorophenol	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2,6-Dinitrotoluene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2-Chloronaphthalene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2-Chlorophenol	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2-Methyl-4,6-dinitrophenol	2.24 U	2.24	0.694	mg/Kg	1		08/05/20 15:22
2-Methylnaphthalene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2-Methylphenol (o-Cresol)	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2-Nitroaniline	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
2-Nitrophenol	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
3&4-Methylphenol (p&m-Cresol)	1.12 U	1.12	0.347	mg/Kg	1		08/05/20 15:22
3,3-Dichlorobenzidine	0.559 U	0.559	0.168	mg/Kg	1		08/05/20 15:22
3-Nitroaniline	0.559 U	0.559	0.168	mg/Kg	1		08/05/20 15:22
4-Bromophenyl-phenylether	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
4-Chloro-3-methylphenol	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
4-Chloroaniline	1.12 U	1.12	0.347	mg/Kg	1		08/05/20 15:22
4-Chlorophenyl-phenylether	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
4-Nitroaniline	3.36 U	3.36	1.05	mg/Kg	1		08/05/20 15:22
4-Nitrophenol	2.24 U	2.24	0.694	mg/Kg	1		08/05/20 15:22
Acenaphthene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Acenaphthylene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Aniline	2.24 U	2.24	0.694	mg/Kg	1		08/05/20 15:22
Anthracene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Azobenzene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Benzo(a)Anthracene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22

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Results of TP-8-3

Client Sample ID: **TP-8-3**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502007
 Lab Project ID: 1209502

Collection Date: 07/15/20 18:48
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):87.5
 Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Benzo[b]Fluoranthene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Benzo[g,h,i]perylene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Benzo[k]fluoranthene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Benzoic acid	1.68 U	1.68	0.526	mg/Kg	1		08/05/20 15:22
Benzyl alcohol	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Bis(2chloro1methylethyl)Ether	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Bis(2-Chloroethoxy)methane	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Bis(2-Chloroethyl)ether	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
bis(2-Ethylhexyl)phthalate	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Butylbenzylphthalate	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Carbazole	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Chrysene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Dibenzo[a,h]anthracene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Dibenzofuran	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Diethylphthalate	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Dimethylphthalate	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Di-n-butylphthalate	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
di-n-Octylphthalate	0.559 U	0.559	0.168	mg/Kg	1		08/05/20 15:22
Fluoranthene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Fluorene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Hexachlorobenzene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Hexachlorobutadiene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Hexachlorocyclopentadiene	0.783 U	0.783	0.224	mg/Kg	1		08/05/20 15:22
Hexachloroethane	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Indeno[1,2,3-c,d] pyrene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Isophorone	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Naphthalene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Nitrobenzene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
N-Nitrosodimethylamine	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
N-Nitroso-di-n-propylamine	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
N-Nitrosodiphenylamine	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Pentachlorophenol	2.24 U	2.24	0.694	mg/Kg	1		08/05/20 15:22
Phenanthrene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Phenol	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22
Pyrene	0.280 U	0.280	0.0873	mg/Kg	1		08/05/20 15:22

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Results of TP-8-3

Client Sample ID: **TP-8-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502007
Lab Project ID: 1209502

Collection Date: 07/15/20 18:48
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):87.5
Location:

Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Surrogates							
2,4,6-Tribromophenol (surr)	98.4	35-125		%	1		08/05/20 15:22
2-Fluorobiphenyl (surr)	87.3	44-115		%	1		08/05/20 15:22
2-Fluorophenol (surr)	67.7	35-115		%	1		08/05/20 15:22
Nitrobenzene-d5 (surr)	72.4	37-122		%	1		08/05/20 15:22
Phenol-d6 (surr)	73.8	33-122		%	1		08/05/20 15:22
Terphenyl-d14 (surr)	97.5	54-127		%	1		08/05/20 15:22

Batch Information

Analytical Batch: XMS12174
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/05/20 15:22
Container ID: 1209502007-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.985 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-8-3

Client Sample ID: **TP-8-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502007
Lab Project ID: 1209502

Collection Date: 07/15/20 18:48
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):87.5
Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	3.75 U	3.75	1.12	mg/Kg	1		07/28/20 22:05
Surrogates							
4-Bromofluorobenzene (surr)	113	50-150		%	1		07/28/20 22:05

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 22:05
Container ID: 1209502007-B

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/15/20 18:48
Prep Initial Wt./Vol.: 47.121 g
Prep Extract Vol: 30.8948 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-8-3

Client Sample ID: **TP-8-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502007
Lab Project ID: 1209502

Collection Date: 07/15/20 18:48
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):87.5
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,2,2-Tetrachloroethane	3.00 U	3.00	0.929	ug/Kg	1		07/24/20 16:02
1,1-Dichloroethene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
1,2,3-Trichloropropane	3.00 U	3.00	0.929	ug/Kg	1		07/24/20 16:02
1,2-Dibromo-3-chloropropane	150 U	150	46.5	ug/Kg	1		07/24/20 16:02
1,2-Dichloroethane	3.00 U	3.00	1.05	ug/Kg	1		07/24/20 16:02
1,3-Dichlorobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
1,4-Dichlorobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
2,2-Dichloropropane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
2-Butanone (MEK)	375 U	375	117	ug/Kg	1		07/24/20 16:02
2-Chlorotoluene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
1,1,2-Trichloroethane	1.20 U	1.20	0.375	ug/Kg	1		07/24/20 16:02
2-Hexanone	150 U	150	46.5	ug/Kg	1		07/24/20 16:02
1,1-Dichloroethane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
1,1-Dichloropropene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
1,2,3-Trichlorobenzene	74.9 U	74.9	22.5	ug/Kg	1		07/24/20 16:02
1,3-Dichloropropane	15.0 U	15.0	4.65	ug/Kg	1		07/24/20 16:02
1,2,4-Trichlorobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
1,2,4-Trimethylbenzene	91.8	74.9	22.5	ug/Kg	1		07/24/20 16:02
1,2-Dibromoethane	1.50 U	1.50	0.600	ug/Kg	1		07/24/20 16:02
1,2-Dichlorobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
1,2-Dichloropropane	15.0 U	15.0	4.65	ug/Kg	1		07/24/20 16:02
1,1,1,2-Tetrachloroethane	30.0 U	30.0	9.29	ug/Kg	1		07/24/20 16:02
1,1,1-Trichloroethane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
1,3,5-Trimethylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
4-Chlorotoluene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
4-Isopropyltoluene	150 U	150	37.5	ug/Kg	1		07/24/20 16:02
4-Methyl-2-pentanone (MIBK)	375 U	375	117	ug/Kg	1		07/24/20 16:02
Acetone	375 U	375	117	ug/Kg	1		07/24/20 16:02
Benzene	18.7 U	18.7	5.85	ug/Kg	1		07/24/20 16:02
Bromobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
Bromochloromethane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
Bromodichloromethane	3.00 U	3.00	0.929	ug/Kg	1		07/24/20 16:02
Bromoform	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
Bromomethane	30.0 U	30.0	9.29	ug/Kg	1		07/24/20 16:02
Carbon disulfide	150 U	150	46.5	ug/Kg	1		07/24/20 16:02
Carbon tetrachloride	18.7 U	18.7	5.85	ug/Kg	1		07/24/20 16:02

Print Date: 08/18/2020 5:40:35PM

**Results of TP-8-3**

Client Sample ID: **TP-8-3**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502007
 Lab Project ID: 1209502

Collection Date: 07/15/20 18:48
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):87.5
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
Chloroethane	300 U	300	92.9	ug/Kg	1		07/24/20 16:02
Chloroform	6.00 U	6.00	1.50	ug/Kg	1		07/24/20 16:02
Chloromethane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
cis-1,2-Dichloroethene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
cis-1,3-Dichloropropene	18.7 U	18.7	5.85	ug/Kg	1		07/24/20 16:02
Dibromochloromethane	7.49 U	7.49	2.25	ug/Kg	1		07/24/20 16:02
Dibromomethane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
Dichlorodifluoromethane	74.9 U	74.9	22.5	ug/Kg	1		07/24/20 16:02
Ethylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
Freon-113	150 U	150	46.5	ug/Kg	1		07/24/20 16:02
Hexachlorobutadiene	30.0 U	30.0	9.29	ug/Kg	1		07/24/20 16:02
Isopropylbenzene (Cumene)	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
Methylene chloride	150 U	150	46.5	ug/Kg	1		07/24/20 16:02
Methyl-t-butyl ether	150 U	150	46.5	ug/Kg	1		07/24/20 16:02
Naphthalene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
n-Butylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
n-Propylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
o-Xylene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
P & M -Xylene	74.9 U	74.9	22.5	ug/Kg	1		07/24/20 16:02
sec-Butylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
Styrene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
tert-Butylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
Tetrachloroethene	18.7 U	18.7	5.85	ug/Kg	1		07/24/20 16:02
Toluene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
trans-1,2-Dichloroethene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:02
trans-1,3-Dichloropropene	18.7 U	18.7	5.85	ug/Kg	1		07/24/20 16:02
Trichloroethene	7.49 U	7.49	2.25	ug/Kg	1		07/24/20 16:02
Trichlorofluoromethane	74.9 U	74.9	22.5	ug/Kg	1		07/24/20 16:02
Vinyl acetate	150 U	150	46.5	ug/Kg	1		07/24/20 16:02
Vinyl chloride	1.20 U	1.20	0.375	ug/Kg	1		07/24/20 16:02
Xylenes (total)	112 U	112	34.2	ug/Kg	1		07/24/20 16:02
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	71-136		%	1		07/24/20 16:02
4-Bromofluorobenzene (surr)	93.2	55-151		%	1		07/24/20 16:02
Toluene-d8 (surr)	98.5	85-116		%	1		07/24/20 16:02

Print Date: 08/18/2020 5:40:35PM



Results of TP-8-3

Client Sample ID: **TP-8-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502007
Lab Project ID: 1209502

Collection Date: 07/15/20 18:48
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):87.5
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 16:02
Container ID: 1209502007-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/15/20 18:48
Prep Initial Wt./Vol.: 47.121 g
Prep Extract Vol: 30.8948 mL

Print Date: 08/18/2020 5:40:35PM

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Results of TP-9-7

Client Sample ID: **TP-9-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502008
Lab Project ID: 1209502

Collection Date: 07/16/20 09:46
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.0
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.8 U	20.8	6.44	mg/Kg	1		07/25/20 00:10
Surrogates							
5a Androstane (surr)	108	50-150		%	1		07/25/20 00:10

Batch Information

Analytical Batch: XFC15666
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/25/20 00:10
Container ID: 1209502008-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.395 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-9-7

Client Sample ID: **TP-9-7**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502008
 Lab Project ID: 1209502

Collection Date: 07/16/20 09:46
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.0
 Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
1,2-Dichlorobenzene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
1,3-Dichlorobenzene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
1,4-Dichlorobenzene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
1-Chloronaphthalene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
1-Methylnaphthalene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2,4,5-Trichlorophenol	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2,4,6-Trichlorophenol	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2,4-Dichlorophenol	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2,4-Dimethylphenol	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2,4-Dinitrophenol	3.15 U	3.15	0.988	mg/Kg	1		08/05/20 15:56
2,4-Dinitrotoluene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2,6-Dichlorophenol	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2,6-Dinitrotoluene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2-Chloronaphthalene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2-Chlorophenol	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2-Methyl-4,6-dinitrophenol	2.10 U	2.10	0.652	mg/Kg	1		08/05/20 15:56
2-Methylnaphthalene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2-Methylphenol (o-Cresol)	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2-Nitroaniline	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
2-Nitrophenol	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
3&4-Methylphenol (p&m-Cresol)	1.05 U	1.05	0.326	mg/Kg	1		08/05/20 15:56
3,3-Dichlorobenzidine	0.525 U	0.525	0.158	mg/Kg	1		08/05/20 15:56
3-Nitroaniline	0.525 U	0.525	0.158	mg/Kg	1		08/05/20 15:56
4-Bromophenyl-phenylether	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
4-Chloro-3-methylphenol	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
4-Chloroaniline	1.05 U	1.05	0.326	mg/Kg	1		08/05/20 15:56
4-Chlorophenyl-phenylether	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
4-Nitroaniline	3.15 U	3.15	0.988	mg/Kg	1		08/05/20 15:56
4-Nitrophenol	2.10 U	2.10	0.652	mg/Kg	1		08/05/20 15:56
Acenaphthene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Acenaphthylene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Aniline	2.10 U	2.10	0.652	mg/Kg	1		08/05/20 15:56
Anthracene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Azobenzene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Benzo(a)Anthracene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56

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Results of TP-9-7

Client Sample ID: **TP-9-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502008
Lab Project ID: 1209502

Collection Date: 07/16/20 09:46
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.0
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Benzo[b]Fluoranthene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Benzo[g,h,i]perylene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Benzo[k]fluoranthene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Benzoic acid	1.58 U	1.58	0.494	mg/Kg	1		08/05/20 15:56
Benzyl alcohol	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Bis(2chloro1methylethyl)Ether	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Bis(2-Chloroethoxy)methane	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Bis(2-Chloroethyl)ether	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
bis(2-Ethylhexyl)phthalate	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Butylbenzylphthalate	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Carbazole	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Chrysene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Dibenzo[a,h]anthracene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Dibenzofuran	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Diethylphthalate	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Dimethylphthalate	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Di-n-butylphthalate	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
di-n-Octylphthalate	0.525 U	0.525	0.158	mg/Kg	1		08/05/20 15:56
Fluoranthene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Fluorene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Hexachlorobenzene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Hexachlorobutadiene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Hexachlorocyclopentadiene	0.736 U	0.736	0.210	mg/Kg	1		08/05/20 15:56
Hexachloroethane	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Indeno[1,2,3-c,d] pyrene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Isophorone	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Naphthalene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Nitrobenzene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
N-Nitrosodimethylamine	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
N-Nitroso-di-n-propylamine	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
N-Nitrosodiphenylamine	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Pentachlorophenol	2.10 U	2.10	0.652	mg/Kg	1		08/05/20 15:56
Phenanthrene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Phenol	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56
Pyrene	0.263 U	0.263	0.0820	mg/Kg	1		08/05/20 15:56

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Results of TP-9-7

Client Sample ID: **TP-9-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502008
Lab Project ID: 1209502

Collection Date: 07/16/20 09:46
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.0
Location:

Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Surrogates							
2,4,6-Tribromophenol (surr)	91.9	35-125		%	1		08/05/20 15:56
2-Fluorobiphenyl (surr)	82.7	44-115		%	1		08/05/20 15:56
2-Fluorophenol (surr)	63.4	35-115		%	1		08/05/20 15:56
Nitrobenzene-d5 (surr)	69	37-122		%	1		08/05/20 15:56
Phenol-d6 (surr)	69.3	33-122		%	1		08/05/20 15:56
Terphenyl-d14 (surr)	94.9	54-127		%	1		08/05/20 15:56

Batch Information

Analytical Batch: XMS12174
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/05/20 15:56
Container ID: 1209502008-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.539 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-9-7

Client Sample ID: **TP-9-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502008
Lab Project ID: 1209502

Collection Date: 07/16/20 09:46
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.0
Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.65 U	2.65	0.796	mg/Kg	1		07/28/20 22:23
Surrogates							
4-Bromofluorobenzene (surr)	105	50-150		%	1		07/28/20 22:23

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 22:23
Container ID: 1209502008-B

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/16/20 09:46
Prep Initial Wt./Vol.: 55.029 g
Prep Extract Vol: 27.7519 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-9-7

Client Sample ID: **TP-9-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502008
Lab Project ID: 1209502

Collection Date: 07/16/20 09:46
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.0
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	21.2 U	21.2	6.58	ug/Kg	1		07/24/20 16:19
1,1,1-Trichloroethane	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
1,1,2,2-Tetrachloroethane	2.12 U	2.12	0.658	ug/Kg	1		07/24/20 16:19
1,1,2-Trichloroethane	0.849 U	0.849	0.265	ug/Kg	1		07/24/20 16:19
1,1-Dichloroethane	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
1,1-Dichloroethene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
1,1-Dichloropropene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
1,2,3-Trichlorobenzene	53.1 U	53.1	15.9	ug/Kg	1		07/24/20 16:19
1,2,3-Trichloropropane	2.12 U	2.12	0.658	ug/Kg	1		07/24/20 16:19
1,2,4-Trichlorobenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
1,2,4-Trimethylbenzene	53.1 U	53.1	15.9	ug/Kg	1		07/24/20 16:19
1,2-Dibromo-3-chloropropane	106 U	106	32.9	ug/Kg	1		07/24/20 16:19
1,2-Dibromoethane	1.06 U	1.06	0.425	ug/Kg	1		07/24/20 16:19
1,2-Dichlorobenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
1,2-Dichloroethane	2.12 U	2.12	0.743	ug/Kg	1		07/24/20 16:19
1,2-Dichloropropane	10.6 U	10.6	3.29	ug/Kg	1		07/24/20 16:19
1,3,5-Trimethylbenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
1,3-Dichlorobenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
1,3-Dichloropropane	10.6 U	10.6	3.29	ug/Kg	1		07/24/20 16:19
1,4-Dichlorobenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
2,2-Dichloropropane	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
2-Butanone (MEK)	265 U	265	82.8	ug/Kg	1		07/24/20 16:19
2-Chlorotoluene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
2-Hexanone	106 U	106	32.9	ug/Kg	1		07/24/20 16:19
4-Chlorotoluene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
4-Isopropyltoluene	106 U	106	26.5	ug/Kg	1		07/24/20 16:19
4-Methyl-2-pentanone (MIBK)	265 U	265	82.8	ug/Kg	1		07/24/20 16:19
Acetone	265 U	265	82.8	ug/Kg	1		07/24/20 16:19
Benzene	13.3 U	13.3	4.14	ug/Kg	1		07/24/20 16:19
Bromobenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
Bromochloromethane	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
Bromodichloromethane	2.12 U	2.12	0.658	ug/Kg	1		07/24/20 16:19
Bromoform	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
Bromomethane	21.2 U	21.2	6.58	ug/Kg	1		07/24/20 16:19
Carbon disulfide	106 U	106	32.9	ug/Kg	1		07/24/20 16:19
Carbon tetrachloride	13.3 U	13.3	4.14	ug/Kg	1		07/24/20 16:19

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**Results of TP-9-7**

Client Sample ID: **TP-9-7**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502008
 Lab Project ID: 1209502

Collection Date: 07/16/20 09:46
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.0
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
Chloroethane	212 U	212	65.8	ug/Kg	1		07/24/20 16:19
Chloroform	4.25 U	4.25	1.06	ug/Kg	1		07/24/20 16:19
Chloromethane	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
cis-1,2-Dichloroethene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
cis-1,3-Dichloropropene	13.3 U	13.3	4.14	ug/Kg	1		07/24/20 16:19
Dibromochloromethane	5.31 U	5.31	1.59	ug/Kg	1		07/24/20 16:19
Dibromomethane	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
Dichlorodifluoromethane	53.1 U	53.1	15.9	ug/Kg	1		07/24/20 16:19
Ethylbenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
Freon-113	106 U	106	32.9	ug/Kg	1		07/24/20 16:19
Hexachlorobutadiene	21.2 U	21.2	6.58	ug/Kg	1		07/24/20 16:19
Isopropylbenzene (Cumene)	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
Methylene chloride	106 U	106	32.9	ug/Kg	1		07/24/20 16:19
Methyl-t-butyl ether	106 U	106	32.9	ug/Kg	1		07/24/20 16:19
Naphthalene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
n-Butylbenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
n-Propylbenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
o-Xylene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
P & M -Xylene	53.1 U	53.1	15.9	ug/Kg	1		07/24/20 16:19
sec-Butylbenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
Styrene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
tert-Butylbenzene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
Tetrachloroethene	13.3 U	13.3	4.14	ug/Kg	1		07/24/20 16:19
Toluene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
trans-1,2-Dichloroethene	26.5 U	26.5	8.28	ug/Kg	1		07/24/20 16:19
trans-1,3-Dichloropropene	13.3 U	13.3	4.14	ug/Kg	1		07/24/20 16:19
Trichloroethene	5.31 U	5.31	1.59	ug/Kg	1		07/24/20 16:19
Trichlorofluoromethane	53.1 U	53.1	15.9	ug/Kg	1		07/24/20 16:19
Vinyl acetate	106 U	106	32.9	ug/Kg	1		07/24/20 16:19
Vinyl chloride	0.849 U	0.849	0.265	ug/Kg	1		07/24/20 16:19
Xylenes (total)	79.6 U	79.6	24.2	ug/Kg	1		07/24/20 16:19
Surrogates							
1,2-Dichloroethane-D4 (surr)	106	71-136		%	1		07/24/20 16:19
4-Bromofluorobenzene (surr)	94.3	55-151		%	1		07/24/20 16:19
Toluene-d8 (surr)	99.6	85-116		%	1		07/24/20 16:19

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Results of TP-9-7

Client Sample ID: **TP-9-7**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502008
Lab Project ID: 1209502

Collection Date: 07/16/20 09:46
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):95.0
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 16:19
Container ID: 1209502008-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/16/20 09:46
Prep Initial Wt./Vol.: 55.029 g
Prep Extract Vol: 27.7519 mL

Print Date: 08/18/2020 5:40:35PM

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Results of TP-10-3

Client Sample ID: **TP-10-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502009
Lab Project ID: 1209502

Collection Date: 07/16/20 09:50
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.1
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	21.1 U	21.1	6.56	mg/Kg	1		07/25/20 00:19
Surrogates							
5a Androstane (surr)	87.6	50-150		%	1		07/25/20 00:19

Batch Information

Analytical Batch: XFC15666
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/25/20 00:19
Container ID: 1209502009-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.486 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-10-3

Client Sample ID: **TP-10-3**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502009
 Lab Project ID: 1209502

Collection Date: 07/16/20 09:50
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.1
 Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
1,2-Dichlorobenzene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
1,3-Dichlorobenzene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
1,4-Dichlorobenzene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
1-Chloronaphthalene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
1-Methylnaphthalene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2,4,5-Trichlorophenol	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2,4,6-Trichlorophenol	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2,4-Dichlorophenol	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2,4-Dimethylphenol	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2,4-Dinitrophenol	3.20 U	3.20	1.00	mg/Kg	1		08/05/20 16:30
2,4-Dinitrotoluene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2,6-Dichlorophenol	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2,6-Dinitrotoluene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2-Chloronaphthalene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2-Chlorophenol	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2-Methyl-4,6-dinitrophenol	2.13 U	2.13	0.661	mg/Kg	1		08/05/20 16:30
2-Methylnaphthalene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2-Methylphenol (o-Cresol)	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2-Nitroaniline	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
2-Nitrophenol	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
3&4-Methylphenol (p&m-Cresol)	1.07 U	1.07	0.330	mg/Kg	1		08/05/20 16:30
3,3-Dichlorobenzidine	0.533 U	0.533	0.160	mg/Kg	1		08/05/20 16:30
3-Nitroaniline	0.533 U	0.533	0.160	mg/Kg	1		08/05/20 16:30
4-Bromophenyl-phenylether	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
4-Chloro-3-methylphenol	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
4-Chloroaniline	1.07 U	1.07	0.330	mg/Kg	1		08/05/20 16:30
4-Chlorophenyl-phenylether	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
4-Nitroaniline	3.20 U	3.20	1.00	mg/Kg	1		08/05/20 16:30
4-Nitrophenol	2.13 U	2.13	0.661	mg/Kg	1		08/05/20 16:30
Acenaphthene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Acenaphthylene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Aniline	2.13 U	2.13	0.661	mg/Kg	1		08/05/20 16:30
Anthracene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Azobenzene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Benzo(a)Anthracene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30

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Results of TP-10-3

Client Sample ID: **TP-10-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502009
Lab Project ID: 1209502

Collection Date: 07/16/20 09:50
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.1
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Benzo[b]Fluoranthene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Benzo[g,h,i]perylene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Benzo[k]fluoranthene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Benzoic acid	1.60 U	1.60	0.501	mg/Kg	1		08/05/20 16:30
Benzyl alcohol	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Bis(2chloro1methylethyl)Ether	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Bis(2-Chloroethoxy)methane	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Bis(2-Chloroethyl)ether	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
bis(2-Ethylhexyl)phthalate	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Butylbenzylphthalate	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Carbazole	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Chrysene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Dibenzo[a,h]anthracene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Dibenzofuran	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Diethylphthalate	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Dimethylphthalate	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Di-n-butylphthalate	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
di-n-Octylphthalate	0.533 U	0.533	0.160	mg/Kg	1		08/05/20 16:30
Fluoranthene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Fluorene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Hexachlorobenzene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Hexachlorobutadiene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Hexachlorocyclopentadiene	0.746 U	0.746	0.213	mg/Kg	1		08/05/20 16:30
Hexachloroethane	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Indeno[1,2,3-c,d] pyrene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Isophorone	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Naphthalene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Nitrobenzene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
N-Nitrosodimethylamine	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
N-Nitroso-di-n-propylamine	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
N-Nitrosodiphenylamine	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Pentachlorophenol	2.13 U	2.13	0.661	mg/Kg	1		08/05/20 16:30
Phenanthrene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Phenol	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30
Pyrene	0.266 U	0.266	0.0831	mg/Kg	1		08/05/20 16:30

Print Date: 08/18/2020 5:40:35PM



Results of TP-10-3

Client Sample ID: **TP-10-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502009
Lab Project ID: 1209502

Collection Date: 07/16/20 09:50
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.1
Location:

Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result</u> <u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Surrogates							
2,4,6-Tribromophenol (surr)	89.6	35-125		%	1		08/05/20 16:30
2-Fluorobiphenyl (surr)	79.4	44-115		%	1		08/05/20 16:30
2-Fluorophenol (surr)	58	35-115		%	1		08/05/20 16:30
Nitrobenzene-d5 (surr)	63.6	37-122		%	1		08/05/20 16:30
Phenol-d6 (surr)	65.8	33-122		%	1		08/05/20 16:30
Terphenyl-d14 (surr)	92.4	54-127		%	1		08/05/20 16:30

Batch Information

Analytical Batch: XMS12174
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/05/20 16:30
Container ID: 1209502009-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.684 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-10-3

Client Sample ID: **TP-10-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502009
Lab Project ID: 1209502

Collection Date: 07/16/20 09:50
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.1
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	3.16 U	3.16	0.947	mg/Kg	1		07/28/20 22:41
Surrogates							
4-Bromofluorobenzene (surr)	108	50-150		%	1		07/28/20 22:41

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 22:41
Container ID: 1209502009-B

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/16/20 09:50
Prep Initial Wt./Vol.: 48.232 g
Prep Extract Vol: 28.3475 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-10-3

Client Sample ID: **TP-10-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502009
Lab Project ID: 1209502

Collection Date: 07/16/20 09:50
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.1
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	25.3 U	25.3	7.83	ug/Kg	1		07/24/20 16:35
1,1,1-Trichloroethane	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
1,1,2,2-Tetrachloroethane	2.53 U	2.53	0.783	ug/Kg	1		07/24/20 16:35
1,1,2-Trichloroethane	1.01 U	1.01	0.316	ug/Kg	1		07/24/20 16:35
1,1-Dichloroethane	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
1,1-Dichloroethene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
1,1-Dichloropropene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
1,2,3-Trichlorobenzene	63.2 U	63.2	18.9	ug/Kg	1		07/24/20 16:35
1,2,3-Trichloropropane	2.53 U	2.53	0.783	ug/Kg	1		07/24/20 16:35
1,2,4-Trichlorobenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
1,2,4-Trimethylbenzene	63.2 U	63.2	18.9	ug/Kg	1		07/24/20 16:35
1,2-Dibromo-3-chloropropane	126 U	126	39.2	ug/Kg	1		07/24/20 16:35
1,2-Dibromoethane	1.26 U	1.26	0.505	ug/Kg	1		07/24/20 16:35
1,2-Dichlorobenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
1,2-Dichloroethane	2.53 U	2.53	0.884	ug/Kg	1		07/24/20 16:35
1,2-Dichloropropane	12.6 U	12.6	3.92	ug/Kg	1		07/24/20 16:35
1,3,5-Trimethylbenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
1,3-Dichlorobenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
1,3-Dichloropropane	12.6 U	12.6	3.92	ug/Kg	1		07/24/20 16:35
1,4-Dichlorobenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
2,2-Dichloropropane	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
2-Butanone (MEK)	316 U	316	98.5	ug/Kg	1		07/24/20 16:35
2-Chlorotoluene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
2-Hexanone	126 U	126	39.2	ug/Kg	1		07/24/20 16:35
4-Chlorotoluene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
4-Isopropyltoluene	126 U	126	31.6	ug/Kg	1		07/24/20 16:35
4-Methyl-2-pentanone (MIBK)	316 U	316	98.5	ug/Kg	1		07/24/20 16:35
Acetone	316 U	316	98.5	ug/Kg	1		07/24/20 16:35
Benzene	15.8 U	15.8	4.93	ug/Kg	1		07/24/20 16:35
Bromobenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
Bromochloromethane	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
Bromodichloromethane	2.53 U	2.53	0.783	ug/Kg	1		07/24/20 16:35
Bromoform	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
Bromomethane	25.3 U	25.3	7.83	ug/Kg	1		07/24/20 16:35
Carbon disulfide	126 U	126	39.2	ug/Kg	1		07/24/20 16:35
Carbon tetrachloride	15.8 U	15.8	4.93	ug/Kg	1		07/24/20 16:35

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**Results of TP-10-3**

Client Sample ID: **TP-10-3**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502009
 Lab Project ID: 1209502

Collection Date: 07/16/20 09:50
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.1
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
Chloroethane	253 U	253	78.3	ug/Kg	1		07/24/20 16:35
Chloroform	5.05 U	5.05	1.26	ug/Kg	1		07/24/20 16:35
Chloromethane	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
cis-1,2-Dichloroethene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
cis-1,3-Dichloropropene	15.8 U	15.8	4.93	ug/Kg	1		07/24/20 16:35
Dibromochloromethane	6.32 U	6.32	1.89	ug/Kg	1		07/24/20 16:35
Dibromomethane	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
Dichlorodifluoromethane	63.2 U	63.2	18.9	ug/Kg	1		07/24/20 16:35
Ethylbenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
Freon-113	126 U	126	39.2	ug/Kg	1		07/24/20 16:35
Hexachlorobutadiene	25.3 U	25.3	7.83	ug/Kg	1		07/24/20 16:35
Isopropylbenzene (Cumene)	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
Methylene chloride	126 U	126	39.2	ug/Kg	1		07/24/20 16:35
Methyl-t-butyl ether	126 U	126	39.2	ug/Kg	1		07/24/20 16:35
Naphthalene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
n-Butylbenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
n-Propylbenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
o-Xylene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
P & M -Xylene	63.2 U	63.2	18.9	ug/Kg	1		07/24/20 16:35
sec-Butylbenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
Styrene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
tert-Butylbenzene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
Tetrachloroethene	15.8 U	15.8	4.93	ug/Kg	1		07/24/20 16:35
Toluene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
trans-1,2-Dichloroethene	31.6 U	31.6	9.85	ug/Kg	1		07/24/20 16:35
trans-1,3-Dichloropropene	15.8 U	15.8	4.93	ug/Kg	1		07/24/20 16:35
Trichloroethene	6.32 U	6.32	1.89	ug/Kg	1		07/24/20 16:35
Trichlorofluoromethane	63.2 U	63.2	18.9	ug/Kg	1		07/24/20 16:35
Vinyl acetate	126 U	126	39.2	ug/Kg	1		07/24/20 16:35
Vinyl chloride	1.01 U	1.01	0.316	ug/Kg	1		07/24/20 16:35
Xylenes (total)	94.7 U	94.7	28.8	ug/Kg	1		07/24/20 16:35
Surrogates							
1,2-Dichloroethane-D4 (surr)	106	71-136		%	1		07/24/20 16:35
4-Bromofluorobenzene (surr)	93.7	55-151		%	1		07/24/20 16:35
Toluene-d8 (surr)	99.6	85-116		%	1		07/24/20 16:35

Print Date: 08/18/2020 5:40:35PM



Results of TP-10-3

Client Sample ID: **TP-10-3**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502009
Lab Project ID: 1209502

Collection Date: 07/16/20 09:50
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.1
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 16:35
Container ID: 1209502009-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/16/20 09:50
Prep Initial Wt./Vol.: 48.232 g
Prep Extract Vol: 28.3475 mL

Print Date: 08/18/2020 5:40:35PM

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Results of TP-11-1

Client Sample ID: **TP-11-1**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502010
Lab Project ID: 1209502

Collection Date: 07/16/20 11:47
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	21.2 U	21.2	6.58	mg/Kg	1		07/25/20 00:30
Surrogates							
5a Androstane (surr)	90.4	50-150		%	1		07/25/20 00:30

Batch Information

Analytical Batch: XFC15666
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/25/20 00:30
Container ID: 1209502010-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.083 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-11-1

Client Sample ID: **TP-11-1**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502010
Lab Project ID: 1209502

Collection Date: 07/16/20 11:47
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
1,2-Dichlorobenzene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
1,3-Dichlorobenzene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
1,4-Dichlorobenzene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
1-Chloronaphthalene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
1-Methylnaphthalene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2,4,5-Trichlorophenol	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2,4,6-Trichlorophenol	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2,4-Dichlorophenol	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2,4-Dimethylphenol	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2,4-Dinitrophenol	3.18 U	3.18	0.997	mg/Kg	1		08/05/20 17:04
2,4-Dinitrotoluene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2,6-Dichlorophenol	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2,6-Dinitrotoluene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2-Chloronaphthalene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2-Chlorophenol	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2-Methyl-4,6-dinitrophenol	2.12 U	2.12	0.658	mg/Kg	1		08/05/20 17:04
2-Methylnaphthalene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2-Methylphenol (o-Cresol)	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2-Nitroaniline	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
2-Nitrophenol	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
3&4-Methylphenol (p&m-Cresol)	1.06 U	1.06	0.329	mg/Kg	1		08/05/20 17:04
3,3-Dichlorobenzidine	0.530 U	0.530	0.159	mg/Kg	1		08/05/20 17:04
3-Nitroaniline	0.530 U	0.530	0.159	mg/Kg	1		08/05/20 17:04
4-Bromophenyl-phenylether	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
4-Chloro-3-methylphenol	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
4-Chloroaniline	1.06 U	1.06	0.329	mg/Kg	1		08/05/20 17:04
4-Chlorophenyl-phenylether	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
4-Nitroaniline	3.18 U	3.18	0.997	mg/Kg	1		08/05/20 17:04
4-Nitrophenol	2.12 U	2.12	0.658	mg/Kg	1		08/05/20 17:04
Acenaphthene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Acenaphthylene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Aniline	2.12 U	2.12	0.658	mg/Kg	1		08/05/20 17:04
Anthracene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Azobenzene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Benzo(a)Anthracene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04

Print Date: 08/18/2020 5:40:35PM



Results of TP-11-1

Client Sample ID: **TP-11-1**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502010
Lab Project ID: 1209502

Collection Date: 07/16/20 11:47
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Benzo[b]Fluoranthene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Benzo[g,h,i]perylene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Benzo[k]fluoranthene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Benzoic acid	1.59 U	1.59	0.499	mg/Kg	1		08/05/20 17:04
Benzyl alcohol	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Bis(2chloro1methylethyl)Ether	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Bis(2-Chloroethoxy)methane	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Bis(2-Chloroethyl)ether	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
bis(2-Ethylhexyl)phthalate	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Butylbenzylphthalate	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Carbazole	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Chrysene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Dibenzo[a,h]anthracene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Dibenzofuran	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Diethylphthalate	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Dimethylphthalate	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Di-n-butylphthalate	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
di-n-Octylphthalate	0.530 U	0.530	0.159	mg/Kg	1		08/05/20 17:04
Fluoranthene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Fluorene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Hexachlorobenzene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Hexachlorobutadiene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Hexachlorocyclopentadiene	0.743 U	0.743	0.212	mg/Kg	1		08/05/20 17:04
Hexachloroethane	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Indeno[1,2,3-c,d] pyrene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Isophorone	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Naphthalene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Nitrobenzene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
N-Nitrosodimethylamine	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
N-Nitroso-di-n-propylamine	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
N-Nitrosodiphenylamine	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Pentachlorophenol	2.12 U	2.12	0.658	mg/Kg	1		08/05/20 17:04
Phenanthrene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Phenol	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04
Pyrene	0.265 U	0.265	0.0827	mg/Kg	1		08/05/20 17:04

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Results of TP-11-1

Client Sample ID: **TP-11-1**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502010
Lab Project ID: 1209502

Collection Date: 07/16/20 11:47
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result</u> <u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Surrogates							
2,4,6-Tribromophenol (surr)	89.8	35-125		%	1		08/05/20 17:04
2-Fluorobiphenyl (surr)	71.2	44-115		%	1		08/05/20 17:04
2-Fluorophenol (surr)	56.5	35-115		%	1		08/05/20 17:04
Nitrobenzene-d5 (surr)	58.8	37-122		%	1		08/05/20 17:04
Phenol-d6 (surr)	62.9	33-122		%	1		08/05/20 17:04
Terphenyl-d14 (surr)	93.2	54-127		%	1		08/05/20 17:04

Batch Information

Analytical Batch: XMS12174
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/05/20 17:04
Container ID: 1209502010-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.578 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-11-1

Client Sample ID: **TP-11-1**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502010
Lab Project ID: 1209502

Collection Date: 07/16/20 11:47
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	3.75 U	3.75	1.13	mg/Kg	1		07/28/20 22:59
Surrogates							
4-Bromofluorobenzene (surr)	109	50-150		%	1		07/28/20 22:59

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 22:59
Container ID: 1209502010-B

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/16/20 11:47
Prep Initial Wt./Vol.: 38.785 g
Prep Extract Vol: 27.3523 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-11-1

Client Sample ID: **TP-11-1**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502010
Lab Project ID: 1209502

Collection Date: 07/16/20 11:47
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	30.0 U	30.0	9.31	ug/Kg	1		07/24/20 16:51
1,1,1-Trichloroethane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
1,1,2,2-Tetrachloroethane	3.00 U	3.00	0.931	ug/Kg	1		07/24/20 16:51
1,1,2-Trichloroethane	1.20 U	1.20	0.375	ug/Kg	1		07/24/20 16:51
1,1-Dichloroethane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
1,1-Dichloroethene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
1,1-Dichloropropene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
1,2,3-Trichlorobenzene	75.1 U	75.1	22.5	ug/Kg	1		07/24/20 16:51
1,2,3-Trichloropropane	3.00 U	3.00	0.931	ug/Kg	1		07/24/20 16:51
1,2,4-Trichlorobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
1,2,4-Trimethylbenzene	75.1 U	75.1	22.5	ug/Kg	1		07/24/20 16:51
1,2-Dibromo-3-chloropropane	150 U	150	46.5	ug/Kg	1		07/24/20 16:51
1,2-Dibromoethane	1.50 U	1.50	0.601	ug/Kg	1		07/24/20 16:51
1,2-Dichlorobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
1,2-Dichloroethane	3.00 U	3.00	1.05	ug/Kg	1		07/24/20 16:51
1,2-Dichloropropane	15.0 U	15.0	4.65	ug/Kg	1		07/24/20 16:51
1,3,5-Trimethylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
1,3-Dichlorobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
1,3-Dichloropropane	15.0 U	15.0	4.65	ug/Kg	1		07/24/20 16:51
1,4-Dichlorobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
2,2-Dichloropropane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
2-Butanone (MEK)	375 U	375	117	ug/Kg	1		07/24/20 16:51
2-Chlorotoluene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
2-Hexanone	150 U	150	46.5	ug/Kg	1		07/24/20 16:51
4-Chlorotoluene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
4-Isopropyltoluene	150 U	150	37.5	ug/Kg	1		07/24/20 16:51
4-Methyl-2-pentanone (MIBK)	375 U	375	117	ug/Kg	1		07/24/20 16:51
Acetone	375 U	375	117	ug/Kg	1		07/24/20 16:51
Benzene	18.8 U	18.8	5.86	ug/Kg	1		07/24/20 16:51
Bromobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
Bromochloromethane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
Bromodichloromethane	3.00 U	3.00	0.931	ug/Kg	1		07/24/20 16:51
Bromoform	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
Bromomethane	30.0 U	30.0	9.31	ug/Kg	1		07/24/20 16:51
Carbon disulfide	150 U	150	46.5	ug/Kg	1		07/24/20 16:51
Carbon tetrachloride	18.8 U	18.8	5.86	ug/Kg	1		07/24/20 16:51

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**Results of TP-11-1**

Client Sample ID: **TP-11-1**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502010
 Lab Project ID: 1209502

Collection Date: 07/16/20 11:47
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.9
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chlorobenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
Chloroethane	300 U	300	93.1	ug/Kg	1		07/24/20 16:51
Chloroform	6.01 U	6.01	1.50	ug/Kg	1		07/24/20 16:51
Chloromethane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
cis-1,2-Dichloroethene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
cis-1,3-Dichloropropene	18.8 U	18.8	5.86	ug/Kg	1		07/24/20 16:51
Dibromochloromethane	7.51 U	7.51	2.25	ug/Kg	1		07/24/20 16:51
Dibromomethane	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
Dichlorodifluoromethane	75.1 U	75.1	22.5	ug/Kg	1		07/24/20 16:51
Ethylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
Freon-113	150 U	150	46.5	ug/Kg	1		07/24/20 16:51
Hexachlorobutadiene	30.0 U	30.0	9.31	ug/Kg	1		07/24/20 16:51
Isopropylbenzene (Cumene)	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
Methylene chloride	150 U	150	46.5	ug/Kg	1		07/24/20 16:51
Methyl-t-butyl ether	150 U	150	46.5	ug/Kg	1		07/24/20 16:51
Naphthalene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
n-Butylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
n-Propylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
o-Xylene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
P & M -Xylene	75.1 U	75.1	22.5	ug/Kg	1		07/24/20 16:51
sec-Butylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
Styrene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
tert-Butylbenzene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
Tetrachloroethene	18.8 U	18.8	5.86	ug/Kg	1		07/24/20 16:51
Toluene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
trans-1,2-Dichloroethene	37.5 U	37.5	11.7	ug/Kg	1		07/24/20 16:51
trans-1,3-Dichloropropene	18.8 U	18.8	5.86	ug/Kg	1		07/24/20 16:51
Trichloroethene	7.51 U	7.51	2.25	ug/Kg	1		07/24/20 16:51
Trichlorofluoromethane	75.1 U	75.1	22.5	ug/Kg	1		07/24/20 16:51
Vinyl acetate	150 U	150	46.5	ug/Kg	1		07/24/20 16:51
Vinyl chloride	1.20 U	1.20	0.375	ug/Kg	1		07/24/20 16:51
Xylenes (total)	113 U	113	34.2	ug/Kg	1		07/24/20 16:51
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		07/24/20 16:51
4-Bromofluorobenzene (surr)	93.6	55-151		%	1		07/24/20 16:51
Toluene-d8 (surr)	100	85-116		%	1		07/24/20 16:51

Print Date: 08/18/2020 5:40:35PM



Results of TP-11-1

Client Sample ID: **TP-11-1**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502010
Lab Project ID: 1209502

Collection Date: 07/16/20 11:47
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 16:51
Container ID: 1209502010-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/16/20 11:47
Prep Initial Wt./Vol.: 38.785 g
Prep Extract Vol: 27.3523 mL

Print Date: 08/18/2020 5:40:35PM

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Results of TP-12-2

Client Sample ID: **TP-12-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502011
Lab Project ID: 1209502

Collection Date: 07/16/20 12:23
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.8
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	2930	21.0	6.51	mg/Kg	1		07/25/20 00:40
Surrogates							
5a Androstane (surr)	91.4	50-150		%	1		07/25/20 00:40

Batch Information

Analytical Batch: XFC15666
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/25/20 00:40
Container ID: 1209502011-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.432 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-12-2

Client Sample ID: **TP-12-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502011
Lab Project ID: 1209502

Collection Date: 07/16/20 12:23
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.8
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
1,2-Dichlorobenzene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
1,3-Dichlorobenzene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
1,4-Dichlorobenzene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
1-Chloronaphthalene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
1-Methylnaphthalene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2,4,5-Trichlorophenol	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2,4,6-Trichlorophenol	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2,4-Dichlorophenol	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2,4-Dimethylphenol	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2,4-Dinitrophenol	15.8 U	15.8	4.96	mg/Kg	5		08/12/20 22:01
2,4-Dinitrotoluene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2,6-Dichlorophenol	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2,6-Dinitrotoluene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2-Chloronaphthalene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2-Chlorophenol	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2-Methyl-4,6-dinitrophenol	10.6 U	10.6	3.27	mg/Kg	5		08/12/20 22:01
2-Methylnaphthalene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2-Methylphenol (o-Cresol)	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2-Nitroaniline	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
2-Nitrophenol	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
3&4-Methylphenol (p&m-Cresol)	5.28 U	5.28	1.64	mg/Kg	5		08/12/20 22:01
3,3-Dichlorobenzidine	2.64 U	2.64	0.792	mg/Kg	5		08/12/20 22:01
3-Nitroaniline	2.64 U	2.64	0.792	mg/Kg	5		08/12/20 22:01
4-Bromophenyl-phenylether	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
4-Chloro-3-methylphenol	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
4-Chloroaniline	5.28 U	5.28	1.64	mg/Kg	5		08/12/20 22:01
4-Chlorophenyl-phenylether	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
4-Nitroaniline	15.8 U	15.8	4.96	mg/Kg	5		08/12/20 22:01
4-Nitrophenol	10.6 U	10.6	3.27	mg/Kg	5		08/12/20 22:01
Acenaphthene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Acenaphthylene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Aniline	10.6 U	10.6	3.27	mg/Kg	5		08/12/20 22:01
Anthracene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Azobenzene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Benzo(a)Anthracene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01

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Results of TP-12-2

Client Sample ID: **TP-12-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502011
Lab Project ID: 1209502

Collection Date: 07/16/20 12:23
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.8
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Benzo[b]Fluoranthene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Benzo[g,h,i]perylene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Benzo[k]fluoranthene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Benzoic acid	7.92 U	7.92	2.48	mg/Kg	5		08/12/20 22:01
Benzyl alcohol	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Bis(2chloro1methylethyl)Ether	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Bis(2-Chloroethoxy)methane	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Bis(2-Chloroethyl)ether	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
bis(2-Ethylhexyl)phthalate	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Butylbenzylphthalate	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Carbazole	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Chrysene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Dibenzo[a,h]anthracene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Dibenzofuran	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Diethylphthalate	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Dimethylphthalate	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Di-n-butylphthalate	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
di-n-Octylphthalate	2.64 U	2.64	0.792	mg/Kg	5		08/12/20 22:01
Fluoranthene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Fluorene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Hexachlorobenzene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Hexachlorobutadiene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Hexachlorocyclopentadiene	3.70 U	3.70	1.06	mg/Kg	5		08/12/20 22:01
Hexachloroethane	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Indeno[1,2,3-c,d] pyrene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Isophorone	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Naphthalene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Nitrobenzene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
N-Nitrosodimethylamine	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
N-Nitroso-di-n-propylamine	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
N-Nitrosodiphenylamine	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Pentachlorophenol	10.6 U	10.6	3.27	mg/Kg	5		08/12/20 22:01
Phenanthrene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Phenol	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01
Pyrene	1.32 U	1.32	0.412	mg/Kg	5		08/12/20 22:01

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Results of TP-12-2

Client Sample ID: **TP-12-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502011
Lab Project ID: 1209502

Collection Date: 07/16/20 12:23
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.8
Location:

Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Surrogates							
2,4,6-Tribromophenol (surr)	76.2	35-125		%	5		08/12/20 22:01
2-Fluorobiphenyl (surr)	87.2	44-115		%	5		08/12/20 22:01
2-Fluorophenol (surr)	71.2	35-115		%	5		08/12/20 22:01
Nitrobenzene-d5 (surr)	89.4	37-122		%	5		08/12/20 22:01
Phenol-d6 (surr)	84	33-122		%	5		08/12/20 22:01
Terphenyl-d14 (surr)	89.5	54-127		%	5		08/12/20 22:01

Batch Information

Analytical Batch: XMS12188
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/12/20 22:01
Container ID: 1209502011-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.709 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-12-2

Client Sample ID: **TP-12-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502011
Lab Project ID: 1209502

Collection Date: 07/16/20 12:23
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.8
Location:

Results by Volatile Fuels

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	6.85		3.09	0.928	mg/Kg	1		07/28/20 23:17
Surrogates								
4-Bromofluorobenzene (surr)	98.9		50-150		%	1		07/28/20 23:17

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 23:17
Container ID: 1209502011-B

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/16/20 12:23
Prep Initial Wt./Vol.: 48.173 g
Prep Extract Vol: 27.9761 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-12-2

Client Sample ID: **TP-12-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502011
Lab Project ID: 1209502

Collection Date: 07/16/20 12:23
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.8
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	24.8 U	24.8	7.68	ug/Kg	1		07/24/20 17:08
1,1,1-Trichloroethane	155 U	155	48.3	ug/Kg	5		07/26/20 00:42
1,1,2,2-Tetrachloroethane	2.48 U	2.48	0.768	ug/Kg	1		07/24/20 17:08
1,1,2-Trichloroethane	0.990 U	0.990	0.309	ug/Kg	1		07/24/20 17:08
1,1-Dichloroethane	155 U	155	48.3	ug/Kg	5		07/26/20 00:42
1,1-Dichloroethene	155 U	155	48.3	ug/Kg	5		07/26/20 00:42
1,1-Dichloropropene	155 U	155	48.3	ug/Kg	5		07/26/20 00:42
1,2,3-Trichlorobenzene	61.9 U	61.9	18.6	ug/Kg	1		07/24/20 17:08
1,2,3-Trichloropropane	2.48 U	2.48	0.768	ug/Kg	1		07/24/20 17:08
1,2,4-Trichlorobenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
1,2,4-Trimethylbenzene	61.9 U	61.9	18.6	ug/Kg	1		07/24/20 17:08
1,2-Dibromo-3-chloropropane	124 U	124	38.4	ug/Kg	1		07/24/20 17:08
1,2-Dibromoethane	1.24 U	1.24	0.495	ug/Kg	1		07/24/20 17:08
1,2-Dichlorobenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
1,2-Dichloroethane	12.4 U	12.4	4.33	ug/Kg	5		07/26/20 00:42
1,2-Dichloropropane	61.9 U	61.9	19.2	ug/Kg	5		07/26/20 00:42
1,3,5-Trimethylbenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
1,3-Dichlorobenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
1,3-Dichloropropane	12.4 U	12.4	3.84	ug/Kg	1		07/24/20 17:08
1,4-Dichlorobenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
2,2-Dichloropropane	155 U	155	48.3	ug/Kg	5		07/26/20 00:42
2-Butanone (MEK)	1550 U	1550	483	ug/Kg	5		07/26/20 00:42
2-Chlorotoluene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
2-Hexanone	124 U	124	38.4	ug/Kg	1		07/24/20 17:08
4-Chlorotoluene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
4-Isopropyltoluene	124 U	124	30.9	ug/Kg	1		07/24/20 17:08
4-Methyl-2-pentanone (MIBK)	1550 U	1550	483	ug/Kg	5		07/26/20 00:42
Acetone	1550 U	1550	483	ug/Kg	5		07/26/20 00:42
Benzene	77.4 U	77.4	24.1	ug/Kg	5		07/26/20 00:42
Bromobenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
Bromochloromethane	155 U	155	48.3	ug/Kg	5		07/26/20 00:42
Bromodichloromethane	12.4 U	12.4	3.84	ug/Kg	5		07/26/20 00:42
Bromoform	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
Bromomethane	124 U	124	38.4	ug/Kg	5		07/26/20 00:42
Carbon disulfide	619 U	619	192	ug/Kg	5		07/26/20 00:42
Carbon tetrachloride	77.4 U	77.4	24.1	ug/Kg	5		07/26/20 00:42

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**Results of TP-12-2**

Client Sample ID: **TP-12-2**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502011
 Lab Project ID: 1209502

Collection Date: 07/16/20 12:23
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.8
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
Chloroethane	1240 U	1240	384	ug/Kg	5		07/26/20 00:42
Chloroform	24.8 U	24.8	6.19	ug/Kg	5		07/26/20 00:42
Chloromethane	155 U	155	48.3	ug/Kg	5		07/26/20 00:42
cis-1,2-Dichloroethene	155 U	155	48.3	ug/Kg	5		07/26/20 00:42
cis-1,3-Dichloropropene	77.4 U	77.4	24.1	ug/Kg	5		07/26/20 00:42
Dibromochloromethane	6.19 U	6.19	1.86	ug/Kg	1		07/24/20 17:08
Dibromomethane	155 U	155	48.3	ug/Kg	5		07/26/20 00:42
Dichlorodifluoromethane	309 U	309	92.8	ug/Kg	5		07/26/20 00:42
Ethylbenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
Freon-113	619 U	619	192	ug/Kg	5		07/26/20 00:42
Hexachlorobutadiene	24.8 U	24.8	7.68	ug/Kg	1		07/24/20 17:08
Isopropylbenzene (Cumene)	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
Methylene chloride	619 U	619	192	ug/Kg	5		07/26/20 00:42
Methyl-t-butyl ether	619 U	619	192	ug/Kg	5		07/26/20 00:42
Naphthalene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
n-Butylbenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
n-Propylbenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
o-Xylene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
P & M -Xylene	61.9 U	61.9	18.6	ug/Kg	1		07/24/20 17:08
sec-Butylbenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
Styrene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
tert-Butylbenzene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
Tetrachloroethene	15.5 U	15.5	4.83	ug/Kg	1		07/24/20 17:08
Toluene	30.9 U	30.9	9.66	ug/Kg	1		07/24/20 17:08
trans-1,2-Dichloroethene	155 U	155	48.3	ug/Kg	5		07/26/20 00:42
trans-1,3-Dichloropropene	15.5 U	15.5	4.83	ug/Kg	1		07/24/20 17:08
Trichloroethene	30.9 U	30.9	9.28	ug/Kg	5		07/26/20 00:42
Trichlorofluoromethane	309 U	309	92.8	ug/Kg	5		07/26/20 00:42
Vinyl acetate	124 U	124	38.4	ug/Kg	1		07/24/20 17:08
Vinyl chloride	4.95 U	4.95	1.55	ug/Kg	5		07/26/20 00:42
Xylenes (total)	92.8 U	92.8	28.2	ug/Kg	1		07/24/20 17:08
Surrogates							
1,2-Dichloroethane-D4 (surr)	117	71-136		%	5		07/26/20 00:42
4-Bromofluorobenzene (surr)	77.2	55-151		%	1		07/24/20 17:08
Toluene-d8 (surr)	92.9	85-116		%	1		07/24/20 17:08

Print Date: 08/18/2020 5:40:35PM



Results of TP-12-2

Client Sample ID: **TP-12-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502011
Lab Project ID: 1209502

Collection Date: 07/16/20 12:23
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):93.8
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20121
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/26/20 00:42
Container ID: 1209502011-B

Prep Batch: VXX35981
Prep Method: SW5035A
Prep Date/Time: 07/16/20 12:23
Prep Initial Wt./Vol.: 48.173 g
Prep Extract Vol: 27.9761 mL

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 17:08
Container ID: 1209502011-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/16/20 12:23
Prep Initial Wt./Vol.: 48.173 g
Prep Extract Vol: 27.9761 mL

Print Date: 08/18/2020 5:40:35PM

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Results of TP-12-D

Client Sample ID: **TP-12-D**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502012
Lab Project ID: 1209502

Collection Date: 07/16/20 12:28
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	3430		21.9	6.78	mg/Kg	1		07/25/20 00:50
Surrogates								
5a Androstane (surr)	96.7		50-150		%	1		07/25/20 00:50

Batch Information

Analytical Batch: XFC15666
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/25/20 00:50
Container ID: 1209502012-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.173 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-12-D

Client Sample ID: **TP-12-D**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502012
 Lab Project ID: 1209502

Collection Date: 07/16/20 12:28
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):90.9
 Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
1,2-Dichlorobenzene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
1,3-Dichlorobenzene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
1,4-Dichlorobenzene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
1-Chloronaphthalene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
1-Methylnaphthalene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2,4,5-Trichlorophenol	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2,4,6-Trichlorophenol	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2,4-Dichlorophenol	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2,4-Dimethylphenol	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2,4-Dinitrophenol	16.2 U	16.2	5.08	mg/Kg	5		08/12/20 22:35
2,4-Dinitrotoluene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2,6-Dichlorophenol	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2,6-Dinitrotoluene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2-Chloronaphthalene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2-Chlorophenol	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2-Methyl-4,6-dinitrophenol	10.8 U	10.8	3.35	mg/Kg	5		08/12/20 22:35
2-Methylnaphthalene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2-Methylphenol (o-Cresol)	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2-Nitroaniline	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
2-Nitrophenol	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
3&4-Methylphenol (p&m-Cresol)	5.40 U	5.40	1.68	mg/Kg	5		08/12/20 22:35
3,3-Dichlorobenzidine	2.70 U	2.70	0.811	mg/Kg	5		08/12/20 22:35
3-Nitroaniline	2.70 U	2.70	0.811	mg/Kg	5		08/12/20 22:35
4-Bromophenyl-phenylether	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
4-Chloro-3-methylphenol	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
4-Chloroaniline	5.40 U	5.40	1.68	mg/Kg	5		08/12/20 22:35
4-Chlorophenyl-phenylether	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
4-Nitroaniline	16.2 U	16.2	5.08	mg/Kg	5		08/12/20 22:35
4-Nitrophenol	10.8 U	10.8	3.35	mg/Kg	5		08/12/20 22:35
Acenaphthene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Acenaphthylene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Aniline	10.8 U	10.8	3.35	mg/Kg	5		08/12/20 22:35
Anthracene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Azobenzene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Benzo(a)Anthracene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35

Print Date: 08/18/2020 5:40:35PM

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Member of SGS Group



Results of TP-12-D

Client Sample ID: **TP-12-D**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502012
Lab Project ID: 1209502

Collection Date: 07/16/20 12:28
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Benzo[b]Fluoranthene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Benzo[g,h,i]perylene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Benzo[k]fluoranthene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Benzoic acid	8.11 U	8.11	2.54	mg/Kg	5		08/12/20 22:35
Benzyl alcohol	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Bis(2chloro1methylethyl)Ether	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Bis(2-Chloroethoxy)methane	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Bis(2-Chloroethyl)ether	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
bis(2-Ethylhexyl)phthalate	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Butylbenzylphthalate	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Carbazole	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Chrysene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Dibenzo[a,h]anthracene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Dibenzofuran	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Diethylphthalate	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Dimethylphthalate	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Di-n-butylphthalate	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
di-n-Octylphthalate	2.70 U	2.70	0.811	mg/Kg	5		08/12/20 22:35
Fluoranthene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Fluorene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Hexachlorobenzene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Hexachlorobutadiene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Hexachlorocyclopentadiene	3.78 U	3.78	1.08	mg/Kg	5		08/12/20 22:35
Hexachloroethane	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Indeno[1,2,3-c,d] pyrene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Isophorone	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Naphthalene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Nitrobenzene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
N-Nitrosodimethylamine	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
N-Nitroso-di-n-propylamine	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
N-Nitrosodiphenylamine	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Pentachlorophenol	10.8 U	10.8	3.35	mg/Kg	5		08/12/20 22:35
Phenanthrene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Phenol	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35
Pyrene	1.35 U	1.35	0.422	mg/Kg	5		08/12/20 22:35

Print Date: 08/18/2020 5:40:35PM



Results of TP-12-D

Client Sample ID: **TP-12-D**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502012
Lab Project ID: 1209502

Collection Date: 07/16/20 12:28
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Surrogates							
2,4,6-Tribromophenol (surr)	64	35-125		%	5		08/12/20 22:35
2-Fluorobiphenyl (surr)	88.6	44-115		%	5		08/12/20 22:35
2-Fluorophenol (surr)	70.4	35-115		%	5		08/12/20 22:35
Nitrobenzene-d5 (surr)	85.5	37-122		%	5		08/12/20 22:35
Phenol-d6 (surr)	83.1	33-122		%	5		08/12/20 22:35
Terphenyl-d14 (surr)	90.3	54-127		%	5		08/12/20 22:35

Batch Information

Analytical Batch: XMS12188
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/12/20 22:35
Container ID: 1209502012-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.911 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-12-D

Client Sample ID: **TP-12-D**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502012
Lab Project ID: 1209502

Collection Date: 07/16/20 12:28
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.67 U	2.67	0.800	mg/Kg	1		07/28/20 23:34
Surrogates							
4-Bromofluorobenzene (surr)	98.1	50-150		%	1		07/28/20 23:34

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 23:34
Container ID: 1209502012-B

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/16/20 12:28
Prep Initial Wt./Vol.: 63.561 g
Prep Extract Vol: 30.8054 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-12-D

Client Sample ID: **TP-12-D**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502012
Lab Project ID: 1209502

Collection Date: 07/16/20 12:28
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	21.3 U	21.3	6.61	ug/Kg	1		07/24/20 17:24
1,1,1-Trichloroethane	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
1,1,2,2-Tetrachloroethane	2.13 U	2.13	0.661	ug/Kg	1		07/24/20 17:24
1,1,2-Trichloroethane	0.853 U	0.853	0.267	ug/Kg	1		07/24/20 17:24
1,1-Dichloroethane	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
1,1-Dichloroethene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
1,1-Dichloropropene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
1,2,3-Trichlorobenzene	53.3 U	53.3	16.0	ug/Kg	1		07/24/20 17:24
1,2,3-Trichloropropane	2.13 U	2.13	0.661	ug/Kg	1		07/24/20 17:24
1,2,4-Trichlorobenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
1,2,4-Trimethylbenzene	53.3 U	53.3	16.0	ug/Kg	1		07/24/20 17:24
1,2-Dibromo-3-chloropropane	107 U	107	33.1	ug/Kg	1		07/24/20 17:24
1,2-Dibromoethane	1.07 U	1.07	0.427	ug/Kg	1		07/24/20 17:24
1,2-Dichlorobenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
1,2-Dichloroethane	2.13 U	2.13	0.747	ug/Kg	1		07/24/20 17:24
1,2-Dichloropropane	10.7 U	10.7	3.31	ug/Kg	1		07/24/20 17:24
1,3,5-Trimethylbenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
1,3-Dichlorobenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
1,3-Dichloropropane	10.7 U	10.7	3.31	ug/Kg	1		07/24/20 17:24
1,4-Dichlorobenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
2,2-Dichloropropane	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
2-Butanone (MEK)	267 U	267	83.2	ug/Kg	1		07/24/20 17:24
2-Chlorotoluene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
2-Hexanone	107 U	107	33.1	ug/Kg	1		07/24/20 17:24
4-Chlorotoluene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
4-Isopropyltoluene	107 U	107	26.7	ug/Kg	1		07/24/20 17:24
4-Methyl-2-pentanone (MIBK)	267 U	267	83.2	ug/Kg	1		07/24/20 17:24
Acetone	267 U	267	83.2	ug/Kg	1		07/24/20 17:24
Benzene	13.3 U	13.3	4.16	ug/Kg	1		07/24/20 17:24
Bromobenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
Bromochloromethane	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
Bromodichloromethane	2.13 U	2.13	0.661	ug/Kg	1		07/24/20 17:24
Bromoform	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
Bromomethane	21.3 U	21.3	6.61	ug/Kg	1		07/24/20 17:24
Carbon disulfide	107 U	107	33.1	ug/Kg	1		07/24/20 17:24
Carbon tetrachloride	13.3 U	13.3	4.16	ug/Kg	1		07/24/20 17:24

Print Date: 08/18/2020 5:40:35PM



Results of TP-12-D

Client Sample ID: **TP-12-D**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502012
Lab Project ID: 1209502

Collection Date: 07/16/20 12:28
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
Chloroethane	213 U	213	66.1	ug/Kg	1		07/24/20 17:24
Chloroform	4.27 U	4.27	1.07	ug/Kg	1		07/24/20 17:24
Chloromethane	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
cis-1,2-Dichloroethene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
cis-1,3-Dichloropropene	13.3 U	13.3	4.16	ug/Kg	1		07/24/20 17:24
Dibromochloromethane	5.33 U	5.33	1.60	ug/Kg	1		07/24/20 17:24
Dibromomethane	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
Dichlorodifluoromethane	53.3 U	53.3	16.0	ug/Kg	1		07/24/20 17:24
Ethylbenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
Freon-113	107 U	107	33.1	ug/Kg	1		07/24/20 17:24
Hexachlorobutadiene	21.3 U	21.3	6.61	ug/Kg	1		07/24/20 17:24
Isopropylbenzene (Cumene)	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
Methylene chloride	107 U	107	33.1	ug/Kg	1		07/24/20 17:24
Methyl-t-butyl ether	107 U	107	33.1	ug/Kg	1		07/24/20 17:24
Naphthalene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
n-Butylbenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
n-Propylbenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
o-Xylene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
P & M -Xylene	53.3 U	53.3	16.0	ug/Kg	1		07/24/20 17:24
sec-Butylbenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
Styrene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
tert-Butylbenzene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
Tetrachloroethene	13.3 U	13.3	4.16	ug/Kg	1		07/24/20 17:24
Toluene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
trans-1,2-Dichloroethene	26.7 U	26.7	8.32	ug/Kg	1		07/24/20 17:24
trans-1,3-Dichloropropene	13.3 U	13.3	4.16	ug/Kg	1		07/24/20 17:24
Trichloroethene	5.33 U	5.33	1.60	ug/Kg	1		07/24/20 17:24
Trichlorofluoromethane	53.3 U	53.3	16.0	ug/Kg	1		07/24/20 17:24
Vinyl acetate	107 U	107	33.1	ug/Kg	1		07/24/20 17:24
Vinyl chloride	0.853 U	0.853	0.267	ug/Kg	1		07/24/20 17:24
Xylenes (total)	80.0 U	80.0	24.3	ug/Kg	1		07/24/20 17:24
Surrogates							
1,2-Dichloroethane-D4 (surr)	127	71-136		%	1		07/24/20 17:24
4-Bromofluorobenzene (surr)	78.1	55-151		%	1		07/24/20 17:24
Toluene-d8 (surr)	95.6	85-116		%	1		07/24/20 17:24

Print Date: 08/18/2020 5:40:35PM



Results of TP-12-D

Client Sample ID: **TP-12-D**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502012
Lab Project ID: 1209502

Collection Date: 07/16/20 12:28
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 17:24
Container ID: 1209502012-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/16/20 12:28
Prep Initial Wt./Vol.: 63.561 g
Prep Extract Vol: 30.8054 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-13-2

Client Sample ID: **TP-13-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502013
Lab Project ID: 1209502

Collection Date: 07/16/20 13:18
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):72.4
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	27.4 U	27.4	8.49	mg/Kg	1		07/25/20 01:00
Surrogates							
5a Androstane (surr)	82.6	50-150		%	1		07/25/20 01:00

Batch Information

Analytical Batch: XFC15666
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/25/20 01:00
Container ID: 1209502013-A

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 07/24/20 08:17
Prep Initial Wt./Vol.: 30.256 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-13-2

Client Sample ID: **TP-13-2**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502013
 Lab Project ID: 1209502

Collection Date: 07/16/20 13:18
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%): 72.4
 Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trichlorobenzene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
1,2-Dichlorobenzene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
1,3-Dichlorobenzene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
1,4-Dichlorobenzene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
1-Chloronaphthalene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
1-Methylnaphthalene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2,4,5-Trichlorophenol	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2,4,6-Trichlorophenol	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2,4-Dichlorophenol	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2,4-Dimethylphenol	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2,4-Dinitrophenol	4.06 U	4.06	1.27	mg/Kg	1		08/12/20 21:10
2,4-Dinitrotoluene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2,6-Dichlorophenol	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2,6-Dinitrotoluene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2-Chloronaphthalene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2-Chlorophenol	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2-Methyl-4,6-dinitrophenol	2.71 U	2.71	0.839	mg/Kg	1		08/12/20 21:10
2-Methylnaphthalene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2-Methylphenol (o-Cresol)	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2-Nitroaniline	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
2-Nitrophenol	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
3&4-Methylphenol (p&m-Cresol)	1.35 U	1.35	0.419	mg/Kg	1		08/12/20 21:10
3,3-Dichlorobenzidine	0.676 U	0.676	0.203	mg/Kg	1		08/12/20 21:10
3-Nitroaniline	0.676 U	0.676	0.203	mg/Kg	1		08/12/20 21:10
4-Bromophenyl-phenylether	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
4-Chloro-3-methylphenol	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
4-Chloroaniline	1.35 U	1.35	0.419	mg/Kg	1		08/12/20 21:10
4-Chlorophenyl-phenylether	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
4-Nitroaniline	4.06 U	4.06	1.27	mg/Kg	1		08/12/20 21:10
4-Nitrophenol	2.71 U	2.71	0.839	mg/Kg	1		08/12/20 21:10
Acenaphthene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Acenaphthylene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Aniline	2.71 U	2.71	0.839	mg/Kg	1		08/12/20 21:10
Anthracene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Azobenzene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Benzo(a)Anthracene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10

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Results of TP-13-2

Client Sample ID: **TP-13-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502013
Lab Project ID: 1209502

Collection Date: 07/16/20 13:18
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%): 72.4
Location:

Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzo[a]pyrene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Benzo[b]Fluoranthene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Benzo[g,h,i]perylene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Benzo[k]fluoranthene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Benzoic acid	2.03 U	2.03	0.636	mg/Kg	1		08/12/20 21:10
Benzyl alcohol	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Bis(2chloro1methylethyl)Ether	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Bis(2-Chloroethoxy)methane	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Bis(2-Chloroethyl)ether	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
bis(2-Ethylhexyl)phthalate	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Butylbenzylphthalate	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Carbazole	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Chrysene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Dibenzo[a,h]anthracene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Dibenzofuran	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Diethylphthalate	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Dimethylphthalate	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Di-n-butylphthalate	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
di-n-Octylphthalate	0.676 U	0.676	0.203	mg/Kg	1		08/12/20 21:10
Fluoranthene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Fluorene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Hexachlorobenzene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Hexachlorobutadiene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Hexachlorocyclopentadiene	0.947 U	0.947	0.271	mg/Kg	1		08/12/20 21:10
Hexachloroethane	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Indeno[1,2,3-c,d] pyrene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Isophorone	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Naphthalene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Nitrobenzene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
N-Nitrosodimethylamine	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
N-Nitroso-di-n-propylamine	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
N-Nitrosodiphenylamine	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Pentachlorophenol	2.71 U	2.71	0.839	mg/Kg	1		08/12/20 21:10
Phenanthrene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Phenol	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10
Pyrene	0.338 U	0.338	0.106	mg/Kg	1		08/12/20 21:10

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Results of TP-13-2

Client Sample ID: **TP-13-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502013
Lab Project ID: 1209502

Collection Date: 07/16/20 13:18
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):72.4
Location:

Results by Semivolatile Organics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Surrogates							
2,4,6-Tribromophenol (surr)	80	35-125		%	1		08/12/20 21:10
2-Fluorobiphenyl (surr)	70.6	44-115		%	1		08/12/20 21:10
2-Fluorophenol (surr)	56.7	35-115		%	1		08/12/20 21:10
Nitrobenzene-d5 (surr)	58.2	37-122		%	1		08/12/20 21:10
Phenol-d6 (surr)	67.1	33-122		%	1		08/12/20 21:10
Terphenyl-d14 (surr)	85.4	54-127		%	1		08/12/20 21:10

Batch Information

Analytical Batch: XMS12188
Analytical Method: SW8270D
Analyst: JMG
Analytical Date/Time: 08/12/20 21:10
Container ID: 1209502013-A

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 07/23/20 09:48
Prep Initial Wt./Vol.: 22.957 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-13-2

Client Sample ID: **TP-13-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502013
Lab Project ID: 1209502

Collection Date: 07/16/20 13:18
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):72.4
Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	4.17 U	4.17	1.25	mg/Kg	1		07/28/20 23:52
Surrogates							
4-Bromofluorobenzene (surr)	110	50-150		%	1		07/28/20 23:52

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 23:52
Container ID: 1209502013-B

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/16/20 13:18
Prep Initial Wt./Vol.: 76.162 g
Prep Extract Vol: 45.9882 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-13-2

Client Sample ID: **TP-13-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502013
Lab Project ID: 1209502

Collection Date: 07/16/20 13:18
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%): 72.4
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	33.3 U	33.3	10.3	ug/Kg	1		07/24/20 15:13
1,1,1-Trichloroethane	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
1,1,2,2-Tetrachloroethane	3.33 U	3.33	1.03	ug/Kg	1		07/24/20 15:13
1,1,2-Trichloroethane	1.33 U	1.33	0.417	ug/Kg	1		07/24/20 15:13
1,1-Dichloroethane	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
1,1-Dichloroethene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
1,1-Dichloropropene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
1,2,3-Trichlorobenzene	83.4 U	83.4	25.0	ug/Kg	1		07/24/20 15:13
1,2,3-Trichloropropane	3.33 U	3.33	1.03	ug/Kg	1		07/24/20 15:13
1,2,4-Trichlorobenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
1,2,4-Trimethylbenzene	83.4 U	83.4	25.0	ug/Kg	1		07/24/20 15:13
1,2-Dibromo-3-chloropropane	167 U	167	51.7	ug/Kg	1		07/24/20 15:13
1,2-Dibromoethane	1.67 U	1.67	0.667	ug/Kg	1		07/24/20 15:13
1,2-Dichlorobenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
1,2-Dichloroethane	3.33 U	3.33	1.17	ug/Kg	1		07/24/20 15:13
1,2-Dichloropropane	16.7 U	16.7	5.17	ug/Kg	1		07/24/20 15:13
1,3,5-Trimethylbenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
1,3-Dichlorobenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
1,3-Dichloropropane	16.7 U	16.7	5.17	ug/Kg	1		07/24/20 15:13
1,4-Dichlorobenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
2,2-Dichloropropane	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
2-Butanone (MEK)	417 U	417	130	ug/Kg	1		07/24/20 15:13
2-Chlorotoluene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
2-Hexanone	167 U	167	51.7	ug/Kg	1		07/24/20 15:13
4-Chlorotoluene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
4-Isopropyltoluene	167 U	167	41.7	ug/Kg	1		07/24/20 15:13
4-Methyl-2-pentanone (MIBK)	417 U	417	130	ug/Kg	1		07/24/20 15:13
Acetone	417 U	417	130	ug/Kg	1		07/24/20 15:13
Benzene	20.8 U	20.8	6.50	ug/Kg	1		07/24/20 15:13
Bromobenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
Bromochloromethane	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
Bromodichloromethane	3.33 U	3.33	1.03	ug/Kg	1		07/24/20 15:13
Bromoform	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
Bromomethane	33.3 U	33.3	10.3	ug/Kg	1		07/24/20 15:13
Carbon disulfide	167 U	167	51.7	ug/Kg	1		07/24/20 15:13
Carbon tetrachloride	20.8 U	20.8	6.50	ug/Kg	1		07/24/20 15:13

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**Results of TP-13-2**

Client Sample ID: **TP-13-2**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502013
 Lab Project ID: 1209502

Collection Date: 07/16/20 13:18
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):72.4
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
Chloroethane	333 U	333	103	ug/Kg	1		07/24/20 15:13
Chloroform	6.67 U	6.67	1.67	ug/Kg	1		07/24/20 15:13
Chloromethane	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
cis-1,2-Dichloroethene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
cis-1,3-Dichloropropene	20.8 U	20.8	6.50	ug/Kg	1		07/24/20 15:13
Dibromochloromethane	8.34 U	8.34	2.50	ug/Kg	1		07/24/20 15:13
Dibromomethane	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
Dichlorodifluoromethane	83.4 U	83.4	25.0	ug/Kg	1		07/24/20 15:13
Ethylbenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
Freon-113	167 U	167	51.7	ug/Kg	1		07/24/20 15:13
Hexachlorobutadiene	33.3 U	33.3	10.3	ug/Kg	1		07/24/20 15:13
Isopropylbenzene (Cumene)	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
Methylene chloride	167 U	167	51.7	ug/Kg	1		07/24/20 15:13
Methyl-t-butyl ether	167 U	167	51.7	ug/Kg	1		07/24/20 15:13
Naphthalene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
n-Butylbenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
n-Propylbenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
o-Xylene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
P & M -Xylene	83.4 U	83.4	25.0	ug/Kg	1		07/24/20 15:13
sec-Butylbenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
Styrene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
tert-Butylbenzene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
Tetrachloroethene	20.8 U	20.8	6.50	ug/Kg	1		07/24/20 15:13
Toluene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
trans-1,2-Dichloroethene	41.7 U	41.7	13.0	ug/Kg	1		07/24/20 15:13
trans-1,3-Dichloropropene	20.8 U	20.8	6.50	ug/Kg	1		07/24/20 15:13
Trichloroethene	8.34 U	8.34	2.50	ug/Kg	1		07/24/20 15:13
Trichlorofluoromethane	83.4 U	83.4	25.0	ug/Kg	1		07/24/20 15:13
Vinyl acetate	167 U	167	51.7	ug/Kg	1		07/24/20 15:13
Vinyl chloride	1.33 U	1.33	0.417	ug/Kg	1		07/24/20 15:13
Xylenes (total)	125 U	125	38.0	ug/Kg	1		07/24/20 15:13
Surrogates							
1,2-Dichloroethane-D4 (surr)	98.5	71-136		%	1		07/24/20 15:13
4-Bromofluorobenzene (surr)	97.8	55-151		%	1		07/24/20 15:13
Toluene-d8 (surr)	100	85-116		%	1		07/24/20 15:13

Print Date: 08/18/2020 5:40:35PM



Results of TP-13-2

Client Sample ID: **TP-13-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502013
Lab Project ID: 1209502

Collection Date: 07/16/20 13:18
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):72.4
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 15:13
Container ID: 1209502013-B

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/16/20 13:18
Prep Initial Wt./Vol.: 76.162 g
Prep Extract Vol: 45.9882 mL

Print Date: 08/18/2020 5:40:35PM



Results of TB-1

Client Sample ID: **TB-1**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502014
Lab Project ID: 1209502

Collection Date: 07/15/20 09:00
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.53 U	2.53	0.760	mg/Kg	1		07/28/20 19:42
Surrogates							
4-Bromofluorobenzene (surr)	105	50-150		%	1		07/28/20 19:42

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 07/28/20 19:42
Container ID: 1209502014-A

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 07/15/20 09:00
Prep Initial Wt./Vol.: 49.32 g
Prep Extract Vol: 25 mL

Print Date: 08/18/2020 5:40:35PM



Results of TB-1

Client Sample ID: **TB-1**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502014
Lab Project ID: 1209502

Collection Date: 07/15/20 09:00
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	20.3 U	20.3	6.29	ug/Kg	1		07/24/20 14:56
1,1,1-Trichloroethane	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
1,1,2,2-Tetrachloroethane	2.03 U	2.03	0.629	ug/Kg	1		07/24/20 14:56
1,1,2-Trichloroethane	0.811 U	0.811	0.253	ug/Kg	1		07/24/20 14:56
1,1-Dichloroethane	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
1,1-Dichloroethene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
1,1-Dichloropropene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
1,2,3-Trichlorobenzene	50.7 U	50.7	15.2	ug/Kg	1		07/24/20 14:56
1,2,3-Trichloropropane	2.03 U	2.03	0.629	ug/Kg	1		07/24/20 14:56
1,2,4-Trichlorobenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
1,2,4-Trimethylbenzene	50.7 U	50.7	15.2	ug/Kg	1		07/24/20 14:56
1,2-Dibromo-3-chloropropane	101 U	101	31.4	ug/Kg	1		07/24/20 14:56
1,2-Dibromoethane	1.01 U	1.01	0.406	ug/Kg	1		07/24/20 14:56
1,2-Dichlorobenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
1,2-Dichloroethane	2.03 U	2.03	0.710	ug/Kg	1		07/24/20 14:56
1,2-Dichloropropane	10.1 U	10.1	3.14	ug/Kg	1		07/24/20 14:56
1,3,5-Trimethylbenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
1,3-Dichlorobenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
1,3-Dichloropropane	10.1 U	10.1	3.14	ug/Kg	1		07/24/20 14:56
1,4-Dichlorobenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
2,2-Dichloropropane	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
2-Butanone (MEK)	253 U	253	79.1	ug/Kg	1		07/24/20 14:56
2-Chlorotoluene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
2-Hexanone	101 U	101	31.4	ug/Kg	1		07/24/20 14:56
4-Chlorotoluene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
4-Isopropyltoluene	101 U	101	25.3	ug/Kg	1		07/24/20 14:56
4-Methyl-2-pentanone (MIBK)	253 U	253	79.1	ug/Kg	1		07/24/20 14:56
Acetone	253 U	253	79.1	ug/Kg	1		07/24/20 14:56
Benzene	12.7 U	12.7	3.95	ug/Kg	1		07/24/20 14:56
Bromobenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
Bromochloromethane	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
Bromodichloromethane	2.03 U	2.03	0.629	ug/Kg	1		07/24/20 14:56
Bromoform	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
Bromomethane	20.3 U	20.3	6.29	ug/Kg	1		07/24/20 14:56
Carbon disulfide	101 U	101	31.4	ug/Kg	1		07/24/20 14:56
Carbon tetrachloride	12.7 U	12.7	3.95	ug/Kg	1		07/24/20 14:56

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**Results of TB-1**

Client Sample ID: **TB-1**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502014
 Lab Project ID: 1209502

Collection Date: 07/15/20 09:00
 Received Date: 07/21/20 09:13
 Matrix: Soil/Solid (dry weight)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chlorobenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
Chloroethane	203 U	203	62.9	ug/Kg	1		07/24/20 14:56
Chloroform	4.06 U	4.06	1.01	ug/Kg	1		07/24/20 14:56
Chloromethane	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
cis-1,2-Dichloroethene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
cis-1,3-Dichloropropene	12.7 U	12.7	3.95	ug/Kg	1		07/24/20 14:56
Dibromochloromethane	5.07 U	5.07	1.52	ug/Kg	1		07/24/20 14:56
Dibromomethane	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
Dichlorodifluoromethane	50.7 U	50.7	15.2	ug/Kg	1		07/24/20 14:56
Ethylbenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
Freon-113	101 U	101	31.4	ug/Kg	1		07/24/20 14:56
Hexachlorobutadiene	20.3 U	20.3	6.29	ug/Kg	1		07/24/20 14:56
Isopropylbenzene (Cumene)	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
Methylene chloride	101 U	101	31.4	ug/Kg	1		07/24/20 14:56
Methyl-t-butyl ether	101 U	101	31.4	ug/Kg	1		07/24/20 14:56
Naphthalene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
n-Butylbenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
n-Propylbenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
o-Xylene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
P & M -Xylene	50.7 U	50.7	15.2	ug/Kg	1		07/24/20 14:56
sec-Butylbenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
Styrene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
tert-Butylbenzene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
Tetrachloroethene	12.7 U	12.7	3.95	ug/Kg	1		07/24/20 14:56
Toluene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
trans-1,2-Dichloroethene	25.3 U	25.3	7.91	ug/Kg	1		07/24/20 14:56
trans-1,3-Dichloropropene	12.7 U	12.7	3.95	ug/Kg	1		07/24/20 14:56
Trichloroethene	5.07 U	5.07	1.52	ug/Kg	1		07/24/20 14:56
Trichlorofluoromethane	50.7 U	50.7	15.2	ug/Kg	1		07/24/20 14:56
Vinyl acetate	101 U	101	31.4	ug/Kg	1		07/24/20 14:56
Vinyl chloride	0.811 U	0.811	0.253	ug/Kg	1		07/24/20 14:56
Xylenes (total)	76.0 U	76.0	23.1	ug/Kg	1		07/24/20 14:56

Surrogates

1,2-Dichloroethane-D4 (surr)	96.5	71-136	%	1	07/24/20 14:56
4-Bromofluorobenzene (surr)	91.5	55-151	%	1	07/24/20 14:56
Toluene-d8 (surr)	99.7	85-116	%	1	07/24/20 14:56

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Results of TB-1

Client Sample ID: **TB-1**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502014
Lab Project ID: 1209502

Collection Date: 07/15/20 09:00
Received Date: 07/21/20 09:13
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
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Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/24/20 14:56
Container ID: 1209502014-A

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 07/15/20 09:00
Prep Initial Wt./Vol.: 49.32 g
Prep Extract Vol: 25 mL

Print Date: 08/18/2020 5:40:35PM

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Results of Shungnak City Water

Client Sample ID: **Shungnak City Water**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502015
Lab Project ID: 1209502
PWSID: 340361

Collection Date: 07/16/20 14:08
Received Date: 07/21/20 09:13
Matrix: Drinking Water
Solids (%):
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
1,1,1-Trichloroethane	0.500 U	0.500	0.150	ug/L	1	(<200)	07/23/20 23:00
1,1,2,2-Tetrachloroethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
1,1,2-Trichloroethane	0.500 U	0.500	0.150	ug/L	1	(<5)	07/23/20 23:00
1,1-Dichloroethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
1,1-Dichloroethene	0.500 U	0.500	0.150	ug/L	1	(<7)	07/23/20 23:00
1,1-Dichloropropene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
1,2,3-Trichlorobenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
1,2,3-Trichloropropane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
1,2,4-Trichlorobenzene	0.500 U	0.500	0.150	ug/L	1	(<70)	07/23/20 23:00
1,2,4-Trimethylbenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
1,2-Dibromo-3-chloropropane	2.00 U	2.00	0.620	ug/L	1		07/23/20 23:00
1,2-Dibromoethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
1,2-Dichlorobenzene	0.500 U	0.500	0.250	ug/L	1	(<600)	07/23/20 23:00
1,2-Dichloroethane	0.500 U	0.500	0.150	ug/L	1	(<5)	07/23/20 23:00
1,2-Dichloropropane	0.500 U	0.500	0.200	ug/L	1	(<5)	07/23/20 23:00
1,3,5-Trimethylbenzene	1.00 U	1.00	0.150	ug/L	1		07/23/20 23:00
1,3-Dichlorobenzene	0.500 U	0.500	0.150	ug/L	1		07/23/20 23:00
1,3-Dichloropropane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
1,4-Dichlorobenzene	0.500 U	0.500	0.150	ug/L	1	(<75)	07/23/20 23:00
2,2-Dichloropropane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
2-Chlorotoluene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
4-Chlorotoluene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
4-Isopropyltoluene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Benzene	0.500 U	0.500	0.200	ug/L	1	(<5)	07/23/20 23:00
Bromobenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Bromochloromethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Bromodichloromethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Bromoform	0.500 U	0.500	0.250	ug/L	1		07/23/20 23:00
Bromomethane	2.00 U	2.00	0.620	ug/L	1		07/23/20 23:00
Carbon tetrachloride	0.500 U	0.500	0.150	ug/L	1	(<5)	07/23/20 23:00
Chlorobenzene	0.500 U	0.500	0.150	ug/L	1	(<100)	07/23/20 23:00
Chloroethane	1.00 U	1.00	0.310	ug/L	1		07/23/20 23:00
Chloroform	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Chloromethane	2.00 U	2.00	0.600	ug/L	1		07/23/20 23:00
cis-1,2-Dichloroethene	0.500 U	0.500	0.200	ug/L	1	(<70)	07/23/20 23:00

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Results of Shungnak City Water

Client Sample ID: **Shungnak City Water**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502015
Lab Project ID: 1209502
PWSID: 340361

Collection Date: 07/16/20 14:08
Received Date: 07/21/20 09:13
Matrix: Drinking Water
Solids (%):
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
cis-1,3-Dichloropropene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Dibromochloromethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Dibromomethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Dichlorodifluoromethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Ethylbenzene	0.500 U	0.500	0.200	ug/L	1	(<700)	07/23/20 23:00
Hexachlorobutadiene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Isopropylbenzene (Cumene)	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Methylene chloride	0.500 U	0.500	0.400	ug/L	1	(<5)	07/23/20 23:00
Methyl-t-butyl ether	1.00 U	1.00	0.310	ug/L	1		07/23/20 23:00
Naphthalene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
n-Butylbenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
n-Propylbenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
o-Xylene	0.500 U	0.500	0.200	ug/L	1		07/23/20 23:00
P & M -Xylene	0.500 U	0.500	0.400	ug/L	1		07/23/20 23:00
sec-Butylbenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Styrene	0.500 U	0.500	0.200	ug/L	1	(<100)	07/23/20 23:00
tert-Butylbenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Tetrachloroethene	0.500 U	0.500	0.150	ug/L	1	(<5)	07/23/20 23:00
Toluene	0.500 U	0.500	0.200	ug/L	1	(<1000)	07/23/20 23:00
Total Trihalomethanes	2.00 U	2.00	0.600	ug/L	1	(<80)	07/23/20 23:00
trans-1,2-Dichloroethene	0.500 U	0.500	0.200	ug/L	1	(<100)	07/23/20 23:00
trans-1,3-Dichloropropene	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Trichloroethene	0.500 U	0.500	0.200	ug/L	1	(<5)	07/23/20 23:00
Trichlorofluoromethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 23:00
Vinyl chloride	0.400 U	0.400	0.200	ug/L	1	(<2)	07/23/20 23:00
Xylenes (total)	0.500 U	0.500	0.500	ug/L	1	(<10000)	07/23/20 23:00
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	70-130		%	1		07/23/20 23:00
4-Bromofluorobenzene (surr)	106	70-130		%	1		07/23/20 23:00
Toluene-d8 (surr)	114	70-130		%	1		07/23/20 23:00

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Results of **Shungnak City Water**

Client Sample ID: **Shungnak City Water**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502015
Lab Project ID: 1209502
PWSID: 340361

Collection Date: 07/16/20 14:08
Received Date: 07/21/20 09:13
Matrix: Drinking Water
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20117
Analytical Method: EPA 524.2
Analyst: NRB
Analytical Date/Time: 07/23/20 23:00
Container ID: 1209502015-J

Prep Batch: VXX35974
Prep Method: SW5030B
Prep Date/Time: 07/23/20 15:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-2

Client Sample ID: **TP-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502016
Lab Project ID: 1209502

Collection Date: 07/16/20 14:00
Received Date: 07/21/20 09:13
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.100 U	0.100	0.0310	mg/L	1		07/21/20 17:45
Surrogates							
4-Bromofluorobenzene (surr)	88	50-150		%	1		07/21/20 17:45

Batch Information

Analytical Batch: VFC15239
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 07/21/20 17:45
Container ID: 1209502016-A

Prep Batch: VXX35960
Prep Method: SW5030B
Prep Date/Time: 07/21/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Results of TP-2

Client Sample ID: **TP-2**
 Client Project ID: **Shungnak Spill**
 Lab Sample ID: 1209502016
 Lab Project ID: 1209502

Collection Date: 07/16/20 14:00
 Received Date: 07/21/20 09:13
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
1,1,1-Trichloroethane	0.500 U	0.500	0.150	ug/L	1	(<200)	07/23/20 20:41
1,1,2,2-Tetrachloroethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
1,1,2-Trichloroethane	0.500 U	0.500	0.150	ug/L	1	(<5)	07/23/20 20:41
1,1-Dichloroethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
1,1-Dichloroethene	0.500 U	0.500	0.150	ug/L	1	(<7)	07/23/20 20:41
1,1-Dichloropropene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
1,2,3-Trichlorobenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
1,2,3-Trichloropropane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
1,2,4-Trichlorobenzene	0.500 U	0.500	0.150	ug/L	1	(<70)	07/23/20 20:41
1,2,4-Trimethylbenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
1,2-Dibromo-3-chloropropane	2.00 U	2.00	0.620	ug/L	1		07/23/20 20:41
1,2-Dibromoethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
1,2-Dichlorobenzene	0.500 U	0.500	0.250	ug/L	1	(<600)	07/23/20 20:41
1,2-Dichloroethane	0.500 U	0.500	0.150	ug/L	1	(<5)	07/23/20 20:41
1,2-Dichloropropane	0.500 U	0.500	0.200	ug/L	1	(<5)	07/23/20 20:41
1,3,5-Trimethylbenzene	1.00 U	1.00	0.150	ug/L	1		07/23/20 20:41
1,3-Dichlorobenzene	0.500 U	0.500	0.150	ug/L	1		07/23/20 20:41
1,3-Dichloropropane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
1,4-Dichlorobenzene	0.500 U	0.500	0.150	ug/L	1	(<75)	07/23/20 20:41
2,2-Dichloropropane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
2-Chlorotoluene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
4-Chlorotoluene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
4-Isopropyltoluene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Benzene	0.500 U	0.500	0.200	ug/L	1	(<5)	07/23/20 20:41
Bromobenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Bromochloromethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Bromodichloromethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Bromoform	0.500 U	0.500	0.250	ug/L	1		07/23/20 20:41
Bromomethane	2.00 U	2.00	0.620	ug/L	1		07/23/20 20:41
Carbon tetrachloride	0.500 U	0.500	0.150	ug/L	1	(<5)	07/23/20 20:41
Chlorobenzene	0.500 U	0.500	0.150	ug/L	1	(<100)	07/23/20 20:41
Chloroethane	1.00 U	1.00	0.310	ug/L	1		07/23/20 20:41
Chloroform	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Chloromethane	2.00 U	2.00	0.600	ug/L	1		07/23/20 20:41
cis-1,2-Dichloroethene	0.500 U	0.500	0.200	ug/L	1	(<70)	07/23/20 20:41

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Results of TP-2

Client Sample ID: **TP-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502016
Lab Project ID: 1209502

Collection Date: 07/16/20 14:00
Received Date: 07/21/20 09:13
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
cis-1,3-Dichloropropene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Dibromochloromethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Dibromomethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Dichlorodifluoromethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Ethylbenzene	0.500 U	0.500	0.200	ug/L	1	(<700)	07/23/20 20:41
Hexachlorobutadiene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Isopropylbenzene (Cumene)	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Methylene chloride	0.500 U	0.500	0.400	ug/L	1	(<5)	07/23/20 20:41
Methyl-t-butyl ether	1.00 U	1.00	0.310	ug/L	1		07/23/20 20:41
Naphthalene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
n-Butylbenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
n-Propylbenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
o-Xylene	0.500 U	0.500	0.200	ug/L	1		07/23/20 20:41
P & M -Xylene	0.500 U	0.500	0.400	ug/L	1		07/23/20 20:41
sec-Butylbenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Styrene	0.500 U	0.500	0.200	ug/L	1	(<100)	07/23/20 20:41
tert-Butylbenzene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Tetrachloroethene	0.500 U	0.500	0.150	ug/L	1	(<5)	07/23/20 20:41
Toluene	0.500 U	0.500	0.200	ug/L	1	(<1000)	07/23/20 20:41
Total Trihalomethanes	2.00 U	2.00	0.600	ug/L	1	(<80)	07/23/20 20:41
trans-1,2-Dichloroethene	0.500 U	0.500	0.200	ug/L	1	(<100)	07/23/20 20:41
trans-1,3-Dichloropropene	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Trichloroethene	0.500 U	0.500	0.200	ug/L	1	(<5)	07/23/20 20:41
Trichlorofluoromethane	1.00 U	1.00	0.250	ug/L	1		07/23/20 20:41
Vinyl chloride	0.400 U	0.400	0.200	ug/L	1	(<2)	07/23/20 20:41
Xylenes (total)	0.500 U	0.500	0.500	ug/L	1	(<10000)	07/23/20 20:41
Surrogates							
1,2-Dichloroethane-D4 (surr)	108	70-130		%	1		07/23/20 20:41
4-Bromofluorobenzene (surr)	106	70-130		%	1		07/23/20 20:41
Toluene-d8 (surr)	117	70-130		%	1		07/23/20 20:41

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Results of TP-2

Client Sample ID: **TP-2**
Client Project ID: **Shungnak Spill**
Lab Sample ID: 1209502016
Lab Project ID: 1209502

Collection Date: 07/16/20 14:00
Received Date: 07/21/20 09:13
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS20117
Analytical Method: EPA 524.2
Analyst: NRB
Analytical Date/Time: 07/23/20 20:41
Container ID: 1209502016-D

Prep Batch: VXX35974
Prep Method: SW5030B
Prep Date/Time: 07/23/20 15:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:35PM



Method Blank

Blank ID: MB for HBN 1809230 [SPT/11084]
Blank Lab ID: 1570374

Matrix: Soil/Solid (dry weight)

QC for Samples:

1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT11084
Analytical Method: SM21 2540G
Instrument:
Analyst: AEQ
Analytical Date/Time: 7/22/2020 5:15:00PM

Print Date: 08/18/2020 5:40:41PM

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Duplicate Sample Summary

Original Sample ID: 1203560002

Duplicate Sample ID: 1570375

QC for Samples:

1209502001, 1209502002, 1209502003, 1209502004, 1209502005

Analysis Date: 07/22/2020 17:15

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	53.2	53.9	%	1.20	(< 15)

Batch Information

Analytical Batch: SPT11084

Analytical Method: SM21 2540G

Instrument:

Analyst: AEQ

Print Date: 08/18/2020 5:40:43PM

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Duplicate Sample Summary

Original Sample ID: 1209502005

Duplicate Sample ID: 1570376

Analysis Date: 07/22/2020 17:15

Matrix: Soil/Solid (dry weight)

QC for Samples:

1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	91.5	91.2	%	0.29	(< 15)

Batch Information

Analytical Batch: SPT11084

Analytical Method: SM21 2540G

Instrument:

Analyst: AEQ

Print Date: 08/18/2020 5:40:43PM

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Duplicate Sample Summary

Original Sample ID: 1209502012

Duplicate Sample ID: 1570377

QC for Samples:

1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Analysis Date: 07/22/2020 17:15

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	90.9	90.0	%	0.96	(< 15)

Batch Information

Analytical Batch: SPT11084

Analytical Method: SM21 2540G

Instrument:

Analyst: AEQ

Print Date: 08/18/2020 5:40:43PM

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Duplicate Sample Summary

Original Sample ID: 1209502013

Duplicate Sample ID: 1570378

QC for Samples:

1209502013

Analysis Date: 07/22/2020 17:15

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	72.4	72.8	%	0.49	(< 15)

Batch Information

Analytical Batch: SPT11084

Analytical Method: SM21 2540G

Instrument:

Analyst: AEQ

Print Date: 08/18/2020 5:40:43PM

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Method Blank

Blank ID: MB for HBN 1809187 [VXX/35960]
Blank Lab ID: 1570180

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209502016

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	89.5	50-150		%

Batch Information

Analytical Batch: VFC15239
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: ALJ
Analytical Date/Time: 7/21/2020 1:03:00PM

Prep Batch: VXX35960
Prep Method: SW5030B
Prep Date/Time: 7/21/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:50PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35960]
Blank Spike Lab ID: 1570183
Date Analyzed: 07/21/2020 13:56

Spike Duplicate ID: LCSD for HBN 1209502 [VXX35960]
Spike Duplicate Lab ID: 1570184
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209502016

Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	1.04	104	1.00	1.02	102	(60-120)	1.60	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	95.4	95	0.0500	93.3	93	(50-150)	2.20	

Batch Information

Analytical Batch: **VFC15239**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **ALJ**

Prep Batch: **VXX35960**
Prep Method: **SW5030B**
Prep Date/Time: **07/21/2020 06:00**
Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:53PM



Method Blank

Blank ID: MB for HBN 1809310 [VXX/35974]

Blank Lab ID: 1570730

QC for Samples:

1209502015, 1209502016

Matrix: Drinking Water

Results by EPA 524.2

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.500U	1.00	0.250	ug/L
1,1,1-Trichloroethane	0.250U	0.500	0.150	ug/L
1,1,2,2-Tetrachloroethane	0.500U	1.00	0.250	ug/L
1,1,2-Trichloroethane	0.250U	0.500	0.150	ug/L
1,1-Dichloroethane	0.500U	1.00	0.250	ug/L
1,1-Dichloroethene	0.250U	0.500	0.150	ug/L
1,1-Dichloropropene	0.500U	1.00	0.250	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.250	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.250	ug/L
1,2,4-Trichlorobenzene	0.250U	0.500	0.150	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.250	ug/L
1,2-Dibromo-3-chloropropane	1.00U	2.00	0.620	ug/L
1,2-Dibromoethane	0.500U	1.00	0.250	ug/L
1,2-Dichlorobenzene	0.250U	0.500	0.250	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.250U	0.500	0.200	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.150	ug/L
1,3-Dichlorobenzene	0.250U	0.500	0.150	ug/L
1,3-Dichloropropane	0.500U	1.00	0.250	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.250	ug/L
2-Chlorotoluene	0.500U	1.00	0.250	ug/L
4-Chlorotoluene	0.500U	1.00	0.250	ug/L
4-Isopropyltoluene	0.500U	1.00	0.250	ug/L
Benzene	0.250U	0.500	0.200	ug/L
Bromobenzene	0.500U	1.00	0.250	ug/L
Bromochloromethane	0.500U	1.00	0.250	ug/L
Bromodichloromethane	0.500U	1.00	0.250	ug/L
Bromoform	0.250U	0.500	0.250	ug/L
Bromomethane	1.00U	2.00	0.620	ug/L
Carbon tetrachloride	0.250U	0.500	0.150	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.250	ug/L
Chloromethane	1.00U	2.00	0.600	ug/L
cis-1,2-Dichloroethene	0.250U	0.500	0.200	ug/L
cis-1,3-Dichloropropene	0.500U	1.00	0.250	ug/L
Dibromochloromethane	0.500U	1.00	0.250	ug/L

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Method Blank

Blank ID: MB for HBN 1809310 [VXX/35974]
Blank Lab ID: 1570730

Matrix: Drinking Water

QC for Samples:
1209502015, 1209502016

Results by EPA 524.2

Parameter	Results	LOQ/CL	DL	Units
Dibromomethane	0.500U	1.00	0.250	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.250	ug/L
Ethylbenzene	0.250U	0.500	0.200	ug/L
Hexachlorobutadiene	0.500U	1.00	0.250	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.250	ug/L
Methylene chloride	0.250U	0.500	0.400	ug/L
Methyl-t-butyl ether	0.500U	1.00	0.310	ug/L
Naphthalene	0.500U	1.00	0.250	ug/L
n-Butylbenzene	0.500U	1.00	0.250	ug/L
n-Propylbenzene	0.500U	1.00	0.250	ug/L
o-Xylene	0.250U	0.500	0.200	ug/L
P & M -Xylene	0.250U	0.500	0.400	ug/L
sec-Butylbenzene	0.500U	1.00	0.250	ug/L
Styrene	0.250U	0.500	0.200	ug/L
tert-Butylbenzene	0.500U	1.00	0.250	ug/L
Tetrachloroethene	0.250U	0.500	0.150	ug/L
Toluene	0.250U	0.500	0.200	ug/L
trans-1,2-Dichloroethene	0.250U	0.500	0.200	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.250	ug/L
Trichloroethene	0.250U	0.500	0.200	ug/L
Trichlorofluoromethane	0.500U	1.00	0.250	ug/L
Vinyl chloride	0.200U	0.400	0.200	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	107	70-130		%
4-Bromofluorobenzene (surr)	108	70-130		%
Toluene-d8 (surr)	116	70-130		%

Batch Information

Analytical Batch: VMS20117
Analytical Method: EPA 524.2
Instrument: VSA Agilent GC/MS 7890B/5977A
Analyst: NRB
Analytical Date/Time: 7/23/2020 3:39:00PM

Prep Batch: VXX35974
Prep Method: SW5030B
Prep Date/Time: 7/23/2020 3:00:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:40:57PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35974]

Blank Spike Lab ID: 1570731

Date Analyzed: 07/23/2020 16:49

Spike Duplicate ID: LCSD for HBN 1209502 [VXX35974]

Spike Duplicate Lab ID: 1570732

Matrix: Drinking Water

QC for Samples: 1209502015, 1209502016

Results by EPA 524.2

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	30.5	102	30	31.0	103	(70-130)	1.90	(< 30)
1,1,1-Trichloroethane	30	26.5	89	30	26.1	87	(70-130)	1.70	(< 30)
1,1,2,2-Tetrachloroethane	30	32.7	109	30	32.8	109	(70-130)	0.29	(< 30)
1,1,2-Trichloroethane	30	29.7	99	30	30.1	100	(70-130)	1.30	(< 30)
1,1-Dichloroethane	30	25.8	86	30	25.6	86	(70-130)	0.60	(< 30)
1,1-Dichloroethene	30	27.3	91	30	27.2	91	(70-130)	0.45	(< 30)
1,1-Dichloropropene	30	26.4	88	30	25.9	86	(70-130)	1.90	(< 30)
1,2,3-Trichlorobenzene	30	34.9	116	30	34.6	115	(70-130)	0.96	(< 30)
1,2,3-Trichloropropane	30	31.9	106	30	32.1	107	(70-130)	0.43	(< 30)
1,2,4-Trichlorobenzene	30	36.0	120	30	35.8	119	(70-130)	0.62	(< 30)
1,2,4-Trimethylbenzene	30	35.0	117	30	34.8	116	(70-130)	0.49	(< 30)
1,2-Dibromo-3-chloropropane	30	33.2	111	30	33.7	112	(70-130)	1.60	(< 30)
1,2-Dibromoethane	30	30.0	100	30	30.5	102	(70-130)	1.50	(< 30)
1,2-Dichlorobenzene	30	32.6	109	30	32.7	109	(70-130)	0.37	(< 30)
1,2-Dichloroethane	30	24.1	80	30	24.3	81	(70-130)	0.82	(< 30)
1,2-Dichloropropane	30	24.4	81	30	24.3	81	(70-130)	0.14	(< 30)
1,3,5-Trimethylbenzene	30	34.9	116	30	34.5	115	(70-130)	1.10	(< 30)
1,3-Dichlorobenzene	30	33.9	113	30	33.9	113	(70-130)	0.07	(< 30)
1,3-Dichloropropane	30	29.8	99	30	30.0	100	(70-130)	0.77	(< 30)
1,4-Dichlorobenzene	30	34.2	114	30	34.2	114	(70-130)	0.15	(< 30)
2,2-Dichloropropane	30	29.2	97	30	28.8	96	(70-130)	1.20	(< 30)
2-Chlorotoluene	30	34.0	113	30	34.0	113	(70-130)	0.14	(< 30)
4-Chlorotoluene	30	34.5	115	30	34.6	115	(70-130)	0.35	(< 30)
4-Isopropyltoluene	30	35.9	120	30	35.6	119	(70-130)	0.87	(< 30)
Benzene	30	25.6	85	30	25.1	84	(70-130)	1.90	(< 30)
Bromobenzene	30	33.2	111	30	32.9	110	(70-130)	1.00	(< 30)
Bromochloromethane	30	26.0	87	30	26.0	87	(70-130)	0.06	(< 30)
Bromodichloromethane	30	25.2	84	30	25.0	84	(70-130)	0.52	(< 30)
Bromoform	30	32.3	108	30	32.5	108	(70-130)	0.71	(< 30)
Bromomethane	30	29.2	98	30	32.8	109	(70-130)	11.30	(< 30)
Carbon tetrachloride	30	27.0	90	30	26.8	89	(70-130)	0.80	(< 30)
Chlorobenzene	30	29.6	99	30	30.1	100	(70-130)	1.70	(< 30)
Chloroethane	30	34.1	114	30	33.9	113	(70-130)	0.52	(< 30)

Print Date: 08/18/2020 5:41:01PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35974]

Blank Spike Lab ID: 1570731

Date Analyzed: 07/23/2020 16:49

Spike Duplicate ID: LCSD for HBN 1209502 [VXX35974]

Spike Duplicate Lab ID: 1570732

Matrix: Drinking Water

QC for Samples: 1209502015, 1209502016

Results by EPA 524.2

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Chloroform	30	25.3	84	30	25.3	84	(70-130)	0.05	(< 30)
Chloromethane	30	27.8	93	30	27.3	91	(70-130)	1.90	(< 30)
cis-1,2-Dichloroethene	30	25.2	84	30	25.0	83	(70-130)	0.99	(< 30)
cis-1,3-Dichloropropene	30	25.8	86	30	25.6	86	(70-130)	0.43	(< 30)
Dibromochloromethane	30	31.6	105	30	31.9	106	(70-130)	1.10	(< 30)
Dibromomethane	30	25.1	84	30	25.3	84	(70-130)	0.67	(< 30)
Dichlorodifluoromethane	30	31.3	104	30	30.5	102	(70-130)	2.60	(< 30)
Ethylbenzene	30	30.4	101	30	30.8	103	(70-130)	1.40	(< 30)
Hexachlorobutadiene	30	36.2	121	30	35.5	118	(70-130)	2.00	(< 30)
Isopropylbenzene (Cumene)	30	31.3	104	30	31.8	106	(70-130)	1.60	(< 30)
Methylene chloride	30	25.6	85	30	25.7	86	(70-130)	0.55	(< 30)
Methyl-t-butyl ether	45	37.7	84	45	37.9	84	(70-130)	0.34	(< 30)
Naphthalene	30	36.1	120	30	36.2	121	(70-130)	0.15	(< 30)
n-Butylbenzene	30	37.5	125	30	37.2	124	(70-130)	0.95	(< 30)
n-Propylbenzene	30	34.9	116	30	34.5	115	(70-130)	0.97	(< 30)
o-Xylene	30	30.8	103	30	31.4	105	(70-130)	1.80	(< 30)
P & M -Xylene	60	63.3	105	60	64.1	107	(70-130)	1.40	(< 30)
sec-Butylbenzene	30	35.6	119	30	35.0	117	(70-130)	1.50	(< 30)
Styrene	30	31.5	105	30	31.8	106	(70-130)	1.10	(< 30)
tert-Butylbenzene	30	34.7	116	30	34.3	114	(70-130)	1.30	(< 30)
Tetrachloroethene	30	31.1	104	30	31.5	105	(70-130)	1.20	(< 30)
Toluene	30	29.2	97	30	27.1	90	(70-130)	7.70	(< 30)
trans-1,2-Dichloroethene	30	26.5	88	30	26.2	87	(70-130)	0.96	(< 30)
trans-1,3-Dichloropropene	30	32.6	109	30	33.2	111	(70-130)	1.80	(< 30)
Trichloroethene	30	26.2	87	30	25.9	86	(70-130)	1.10	(< 30)
Trichlorofluoromethane	30	37.9	126	30	37.7	126	(70-130)	0.64	(< 30)
Vinyl chloride	30	30.6	102	30	29.9	100	(70-130)	2.30	(< 30)

Surrogates

1,2-Dichloroethane-D4 (surr)	30	105	105	30	105	105	(70-130)	0.18
4-Bromofluorobenzene (surr)	30	108	108	30	105	105	(70-130)	3.10
Toluene-d8 (surr)	30	116	116	30	106	106	(70-130)	8.70

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35974]
Blank Spike Lab ID: 1570731
Date Analyzed: 07/23/2020 16:49

Spike Duplicate ID: LCSD for HBN 1209502 [VXX35974]
Spike Duplicate Lab ID: 1570732
Matrix: Drinking Water

QC for Samples: 1209502015, 1209502016

Results by EPA 524.2

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			

Batch Information

Analytical Batch: VMS20117
Analytical Method: EPA 524.2
Instrument: VSA Agilent GC/MS 7890B/5977A
Analyst: NRB

Prep Batch: VXX35974
Prep Method: SW5030B
Prep Date/Time: 07/23/2020 15:00
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1809333 [VXX/35978]
Blank Lab ID: 1570854

Matrix: Soil/Solid (dry weight)

QC for Samples:

1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013, 1209502014

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	10.0U	20.0	6.20	ug/Kg
1,1,1-Trichloroethane	12.5U	25.0	7.80	ug/Kg
1,1,2,2-Tetrachloroethane	1.00U	2.00	0.620	ug/Kg
1,1,2-Trichloroethane	0.400U	0.800	0.250	ug/Kg
1,1-Dichloroethane	12.5U	25.0	7.80	ug/Kg
1,1-Dichloroethene	12.5U	25.0	7.80	ug/Kg
1,1-Dichloropropene	12.5U	25.0	7.80	ug/Kg
1,2,3-Trichlorobenzene	25.0U	50.0	15.0	ug/Kg
1,2,3-Trichloropropane	1.00U	2.00	0.620	ug/Kg
1,2,4-Trichlorobenzene	12.5U	25.0	7.80	ug/Kg
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,2-Dibromo-3-chloropropane	50.0U	100	31.0	ug/Kg
1,2-Dibromoethane	0.500U	1.00	0.400	ug/Kg
1,2-Dichlorobenzene	12.5U	25.0	7.80	ug/Kg
1,2-Dichloroethane	1.00U	2.00	0.700	ug/Kg
1,2-Dichloropropane	5.00U	10.0	3.10	ug/Kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/Kg
1,3-Dichlorobenzene	12.5U	25.0	7.80	ug/Kg
1,3-Dichloropropane	5.00U	10.0	3.10	ug/Kg
1,4-Dichlorobenzene	12.5U	25.0	7.80	ug/Kg
2,2-Dichloropropane	12.5U	25.0	7.80	ug/Kg
2-Butanone (MEK)	125U	250	78.0	ug/Kg
2-Chlorotoluene	12.5U	25.0	7.80	ug/Kg
2-Hexanone	50.0U	100	31.0	ug/Kg
4-Chlorotoluene	12.5U	25.0	7.80	ug/Kg
4-Isopropyltoluene	50.0U	100	25.0	ug/Kg
4-Methyl-2-pentanone (MIBK)	125U	250	78.0	ug/Kg
Acetone	125U	250	78.0	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Bromobenzene	12.5U	25.0	7.80	ug/Kg
Bromochloromethane	12.5U	25.0	7.80	ug/Kg
Bromodichloromethane	1.00U	2.00	0.620	ug/Kg
Bromoform	12.5U	25.0	7.80	ug/Kg
Bromomethane	10.0U	20.0	6.20	ug/Kg
Carbon disulfide	50.0U	100	31.0	ug/Kg
Carbon tetrachloride	6.25U	12.5	3.90	ug/Kg
Chlorobenzene	12.5U	25.0	7.80	ug/Kg
Chloroethane	100U	200	62.0	ug/Kg

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Method Blank

Blank ID: MB for HBN 1809333 [VXX/35978]
Blank Lab ID: 1570854

Matrix: Soil/Solid (dry weight)

QC for Samples:

1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013, 1209502014

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloroform	2.00U	4.00	1.00	ug/Kg
Chloromethane	12.5U	25.0	7.80	ug/Kg
cis-1,2-Dichloroethene	12.5U	25.0	7.80	ug/Kg
cis-1,3-Dichloropropene	6.25U	12.5	3.90	ug/Kg
Dibromochloromethane	2.50U	5.00	1.50	ug/Kg
Dibromomethane	12.5U	25.0	7.80	ug/Kg
Dichlorodifluoromethane	25.0U	50.0	15.0	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
Freon-113	50.0U	100	31.0	ug/Kg
Hexachlorobutadiene	10.0U	20.0	6.20	ug/Kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/Kg
Methylene chloride	50.0U	100	31.0	ug/Kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/Kg
Naphthalene	12.5U	25.0	7.80	ug/Kg
n-Butylbenzene	12.5U	25.0	7.80	ug/Kg
n-Propylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
sec-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Styrene	12.5U	25.0	7.80	ug/Kg
tert-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Tetrachloroethene	6.25U	12.5	3.90	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg
trans-1,2-Dichloroethene	12.5U	25.0	7.80	ug/Kg
trans-1,3-Dichloropropene	6.25U	12.5	3.90	ug/Kg
Trichloroethene	2.50U	5.00	1.50	ug/Kg
Trichlorofluoromethane	25.0U	50.0	15.0	ug/Kg
Vinyl acetate	50.0U	100	31.0	ug/Kg
Vinyl chloride	0.400U	0.800	0.250	ug/Kg
Xylenes (total)	37.5U	75.0	22.8	ug/Kg
Surrogates				
1,2-Dichloroethane-D4 (surr)	107	71-136		%
4-Bromofluorobenzene (surr)	100	55-151		%
Toluene-d8 (surr)	98.8	85-116		%

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Method Blank

Blank ID: MB for HBN 1809333 [VXX/35978]
Blank Lab ID: 1570854

Matrix: Soil/Solid (dry weight)

QC for Samples:

1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013, 1209502014

Results by SW8260D

Parameter

Results

LOQ/CL

DL

Units

Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 7/24/2020 10:33:00AM

Prep Batch: VXX35978
Prep Method: SW5035A
Prep Date/Time: 7/24/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 08/18/2020 5:41:06PM

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35978]

Blank Spike Lab ID: 1570855

Date Analyzed: 07/24/2020 11:27

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013, 1209502014

Results by SW8260D

Parameter	Blank Spike (ug/Kg)			CL
	Spike	Result	Rec (%)	
1,1,1,2-Tetrachloroethane	750	682	91	(78-125)
1,1,1-Trichloroethane	750	805	107	(73-130)
1,1,2,2-Tetrachloroethane	750	678	90	(70-124)
1,1,2-Trichloroethane	750	672	90	(78-121)
1,1-Dichloroethane	750	706	94	(76-125)
1,1-Dichloroethene	750	725	97	(70-131)
1,1-Dichloropropene	750	704	94	(76-125)
1,2,3-Trichlorobenzene	750	671	89	(66-130)
1,2,3-Trichloropropane	750	673	90	(73-125)
1,2,4-Trichlorobenzene	750	697	93	(67-129)
1,2,4-Trimethylbenzene	750	717	96	(75-123)
1,2-Dibromo-3-chloropropane	750	657	88	(61-132)
1,2-Dibromoethane	750	685	91	(78-122)
1,2-Dichlorobenzene	750	676	90	(78-121)
1,2-Dichloroethane	750	713	95	(73-128)
1,2-Dichloropropane	750	696	93	(76-123)
1,3,5-Trimethylbenzene	750	672	90	(73-124)
1,3-Dichlorobenzene	750	681	91	(77-121)
1,3-Dichloropropane	750	671	89	(77-121)
1,4-Dichlorobenzene	750	691	92	(75-120)
2,2-Dichloropropane	750	790	105	(67-133)
2-Butanone (MEK)	2250	2010	89	(51-148)
2-Chlorotoluene	750	689	92	(75-122)
2-Hexanone	2250	2000	89	(53-145)
4-Chlorotoluene	750	698	93	(72-124)
4-Isopropyltoluene	750	723	96	(73-127)
4-Methyl-2-pentanone (MIBK)	2250	1940	86	(65-135)
Acetone	2250	2060	92	(36-164)
Benzene	750	748	100	(77-121)
Bromobenzene	750	702	94	(78-121)
Bromochloromethane	750	708	95	(78-125)
Bromodichloromethane	750	805	107	(75-127)
Bromoform	750	725	97	(67-132)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35978]

Blank Spike Lab ID: 1570855

Date Analyzed: 07/24/2020 11:27

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013, 1209502014

Results by SW8260D

Parameter	Blank Spike (ug/Kg)			CL
	Spike	Result	Rec (%)	
Bromomethane	750	796	106	(53-143)
Carbon disulfide	1130	1130	100	(63-132)
Carbon tetrachloride	750	736	98	(70-135)
Chlorobenzene	750	707	94	(79-120)
Chloroethane	750	705	94	(59-139)
Chloroform	750	696	93	(78-123)
Chloromethane	750	764	102	(50-136)
cis-1,2-Dichloroethene	750	753	100	(77-123)
cis-1,3-Dichloropropene	750	711	95	(74-126)
Dibromochloromethane	750	694	93	(74-126)
Dibromomethane	750	735	98	(78-125)
Dichlorodifluoromethane	750	834	111	(29-149)
Ethylbenzene	750	694	93	(76-122)
Freon-113	1130	1140	101	(66-136)
Hexachlorobutadiene	750	991	132	(61-135)
Isopropylbenzene (Cumene)	750	682	91	(68-134)
Methylene chloride	750	750	100	(70-128)
Methyl-t-butyl ether	1130	1090	97	(73-125)
Naphthalene	750	597	80	(62-129)
n-Butylbenzene	750	757	101	(70-128)
n-Propylbenzene	750	686	91	(73-125)
o-Xylene	750	705	94	(77-123)
P & M -Xylene	1500	1390	93	(77-124)
sec-Butylbenzene	750	708	95	(73-126)
Styrene	750	690	92	(76-124)
tert-Butylbenzene	750	703	94	(73-125)
Tetrachloroethene	750	671	89	(73-128)
Toluene	750	636	85	(77-121)
trans-1,2-Dichloroethene	750	728	97	(74-125)
trans-1,3-Dichloropropene	750	686	91	(71-130)
Trichloroethene	750	716	95	(77-123)
Trichlorofluoromethane	750	790	105	(62-140)
Vinyl acetate	750	702	94	(50-151)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35978]

Blank Spike Lab ID: 1570855

Date Analyzed: 07/24/2020 11:27

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013, 1209502014

Results by SW8260D

Parameter	Blank Spike (ug/Kg)			CL
	Spike	Result	Rec (%)	
Vinyl chloride	750	765	102	(56-135)
Xylenes (total)	2250	2090	93	(78-124)
Surrogates				
1,2-Dichloroethane-D4 (surr)	750	104	104	(71-136)
4-Bromofluorobenzene (surr)	750	100	100	(55-151)
Toluene-d8 (surr)	750	97.8	98	(85-116)

Batch Information

Analytical Batch: VMS20120

Analytical Method: SW8260D

Instrument: VQA 7890/5975 GC/MS

Analyst: KAJ

Prep Batch: VXX35978

Prep Method: SW5035A

Prep Date/Time: 07/24/2020 06:00

Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 08/18/2020 5:41:09PM

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Matrix Spike Summary

Original Sample ID: 1209502013
 MS Sample ID: 1570856 MS
 MSD Sample ID: 1570857 MSD

Analysis Date: 07/24/2020 15:13
 Analysis Date: 07/24/2020 12:29
 Analysis Date: 07/24/2020 12:46
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013, 1209502014

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	33.3U	1251	1232	99	1251	1376	110	78-125	11.00	(< 20)
1,1,1-Trichloroethane	41.7U	1251	1506	120	1251	1561	124	73-130	3.60	(< 20)
1,1,2,2-Tetrachloroethane	3.33U	1251	1220	98	1251	1291	103	70-124	5.70	(< 20)
1,1,2-Trichloroethane	1.33U	1251	1217	97	1251	1358	109	78-121	10.90	(< 20)
1,1-Dichloroethane	41.7U	1251	1304	104	1251	1327	106	76-125	1.80	(< 20)
1,1-Dichloroethene	41.7U	1251	1374	110	1251	1373	110	70-131	0.08	(< 20)
1,1-Dichloropropene	41.7U	1251	1319	105	1251	1395	112	76-125	6.00	(< 20)
1,2,3-Trichlorobenzene	83.4U	1251	1280	102	1251	1657	132 *	66-130	25.50 *	(< 20)
1,2,3-Trichloropropane	3.33U	1251	1269	101	1251	1395	111	73-125	9.20	(< 20)
1,2,4-Trichlorobenzene	41.7U	1251	1315	105	1251	1616	129	67-129	20.20 *	(< 20)
1,2,4-Trimethylbenzene	83.4U	1251	1309	105	1251	1409	112	75-123	7.10	(< 20)
1,2-Dibromo-3-chloropropane	167U	1251	1229	98	1251	1395	111	61-132	12.30	(< 20)
1,2-Dibromoethane	1.67U	1251	1229	98	1251	1365	109	78-122	10.40	(< 20)
1,2-Dichlorobenzene	41.7U	1251	1258	101	1251	1374	110	78-121	8.80	(< 20)
1,2-Dichloroethane	3.33U	1251	1293	103	1251	1323	106	73-128	2.40	(< 20)
1,2-Dichloropropane	16.7U	1251	1279	102	1251	1356	108	76-123	5.90	(< 20)
1,3,5-Trimethylbenzene	41.7U	1251	1271	102	1251	1395	111	73-124	9.00	(< 20)
1,3-Dichlorobenzene	41.7U	1251	1261	101	1251	1378	110	77-121	8.90	(< 20)
1,3-Dichloropropane	16.7U	1251	1210	97	1251	1337	107	77-121	10.00	(< 20)
1,4-Dichlorobenzene	41.7U	1251	1264	101	1251	1381	111	75-120	9.00	(< 20)
2,2-Dichloropropane	41.7U	1251	1478	118	1251	1506	121	67-133	2.20	(< 20)
2-Butanone (MEK)	417U	3757	3646	97	3757	3826	102	51-148	4.80	(< 20)
2-Chlorotoluene	41.7U	1251	1269	101	1251	1374	110	75-122	7.90	(< 20)
2-Hexanone	167U	3757	3729	99	3757	4102	109	53-145	9.40	(< 20)
4-Chlorotoluene	41.7U	1251	1271	102	1251	1381	111	72-124	8.60	(< 20)
4-Isopropyltoluene	167U	1251	1296	104	1251	1381	110	73-127	6.40	(< 20)
4-Methyl-2-pentanone (MIBK)	417U	3757	3564	95	3757	3798	101	65-135	6.60	(< 20)
Acetone	417U	3757	3785	101	3757	3757	100	36-164	0.94	(< 20)
Benzene	20.8U	1251	1362	109	1251	1450	116	77-121	6.00	(< 20)
Bromobenzene	41.7U	1251	1287	103	1251	1365	109	78-121	5.90	(< 20)
Bromochloromethane	41.7U	1251	1283	103	1251	1283	102	78-125	0.11	(< 20)
Bromodichloromethane	3.33U	1251	1464	117	1251	1533	122	75-127	3.90	(< 20)
Bromoform	41.7U	1251	1325	106	1251	1478	118	67-132	11.00	(< 20)
Bromomethane	33.3U	1251	1492	120	1251	1478	118	53-143	1.40	(< 20)
Carbon disulfide	167U	1878	2086	111	1878	1975	105	63-132	5.50	(< 20)
Carbon tetrachloride	20.8U	1251	1381	110	1251	1450	116	70-135	4.90	(< 20)
Chlorobenzene	41.7U	1251	1312	105	1251	1436	114	79-120	8.60	(< 20)

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Matrix Spike Summary

Original Sample ID: 1209502013
 MS Sample ID: 1570856 MS
 MSD Sample ID: 1570857 MSD

Analysis Date: 07/24/2020 15:13
 Analysis Date: 07/24/2020 12:29
 Analysis Date: 07/24/2020 12:46
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013, 1209502014

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Chloroethane	333U	1251	1349	108	1251	1409	113	59-139	4.40	(< 20)
Chloroform	6.67U	1251	1275	102	1251	1298	104	78-123	1.80	(< 20)
Chloromethane	41.7U	1251	1436	115	1251	1395	111	50-136	2.90	(< 20)
cis-1,2-Dichloroethene	41.7U	1251	1355	108	1251	1372	110	77-123	1.20	(< 20)
cis-1,3-Dichloropropene	20.8U	1251	1298	104	1251	1377	110	74-126	6.00	(< 20)
Dibromochloromethane	8.34U	1251	1254	100	1251	1395	111	74-126	10.30	(< 20)
Dibromomethane	41.7U	1251	1326	106	1251	1344	107	78-125	1.40	(< 20)
Dichlorodifluoromethane	83.4U	1251	1533	122	1251	1506	120	29-149	1.50	(< 20)
Ethylbenzene	41.7U	1251	1305	104	1251	1423	114	76-122	9.10	(< 20)
Freon-113	167U	1878	2169	116	1878	2265	121	66-136	4.40	(< 20)
Hexachlorobutadiene	33.3U	1251	1685	134	1251	1588	127	61-135	5.20	(< 20)
Isopropylbenzene (Cumene)	41.7U	1251	1296	104	1251	1436	115	68-134	10.20	(< 20)
Methylene chloride	167U	1251	1370	110	1251	1367	109	70-128	0.19	(< 20)
Methyl-t-butyl ether	167U	1878	1975	106	1878	2141	114	73-125	8.00	(< 20)
Naphthalene	41.7U	1251	1169	93	1251	1464	117	62-129	22.80	* (< 20)
n-Butylbenzene	41.7U	1251	1326	106	1251	1395	112	70-128	5.10	(< 20)
n-Propylbenzene	41.7U	1251	1240	99	1251	1356	108	73-125	8.90	(< 20)
o-Xylene	41.7U	1251	1309	105	1251	1450	116	77-123	10.60	(< 20)
P & M -Xylene	83.4U	2500	2597	104	2500	2873	115	77-124	9.80	(< 20)
sec-Butylbenzene	41.7U	1251	1278	102	1251	1352	108	73-126	5.70	(< 20)
Styrene	41.7U	1251	1289	103	1251	1409	113	76-124	9.10	(< 20)
tert-Butylbenzene	41.7U	1251	1260	101	1251	1377	110	73-125	8.90	(< 20)
Tetrachloroethene	20.8U	1251	1264	101	1251	1423	114	73-128	12.00	(< 20)
Toluene	41.7U	1251	1180	94	1251	1302	104	77-121	9.90	(< 20)
trans-1,2-Dichloroethene	41.7U	1251	1381	111	1251	1373	110	74-125	0.77	(< 20)
trans-1,3-Dichloropropene	20.8U	1251	1244	99	1251	1381	111	71-130	10.70	(< 20)
Trichloroethene	8.34U	1251	1325	106	1251	1409	112	77-123	6.00	(< 20)
Trichlorofluoromethane	83.4U	1251	1506	120	1251	1533	122	62-140	2.00	(< 20)
Vinyl acetate	167U	1251	1261	101	1251	1343	107	50-151	6.20	(< 20)
Vinyl chloride	1.33U	1251	1436	115	1251	1395	111	56-135	3.60	(< 20)
Xylenes (total)	125U	3757	3909	104	3757	4323	115	78-124	10.10	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		1251	1307	104	1251	1210	97	71-136	7.60	
4-Bromofluorobenzene (surr)		1134	935	82	1134	1001	88	55-151	7.00	
Toluene-d8 (surr)		1251	1235	99	1251	1250	100	85-116	1.30	

Print Date: 08/18/2020 5:41:12PM



Matrix Spike Summary

Original Sample ID: 1209502013
MS Sample ID: 1570856 MS
MSD Sample ID: 1570857 MSD

Analysis Date:
Analysis Date: 07/24/2020 12:29
Analysis Date: 07/24/2020 12:46
Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502007, 1209502008,
1209502009, 1209502010, 1209502011, 1209502012, 1209502013, 1209502014

Results by SW8260D

Parameter	Sample	Matrix Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			

Batch Information

Analytical Batch: VMS20120
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 7/24/2020 12:29:00PM

Prep Batch: VXX35978
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 7/24/2020 6:00:00AM
Prep Initial Wt./Vol.: 76.16g
Prep Extract Vol: 45.99mL

Print Date: 08/18/2020 5:41:12PM

Method Blank

Blank ID: MB for HBN 1809348 [VXX/35981]

Blank Lab ID: 1570943

QC for Samples:

1209502004, 1209502011

Matrix: Soil/Solid (dry weight)

Results by SW8260D

Parameter	Results	LOQ/CL	DL	Units
1,1,1-Trichloroethane	12.5U	25.0	7.80	ug/Kg
1,1-Dichloroethane	12.5U	25.0	7.80	ug/Kg
1,1-Dichloroethene	12.5U	25.0	7.80	ug/Kg
1,1-Dichloropropene	12.5U	25.0	7.80	ug/Kg
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,2-Dichloroethane	1.00U	2.00	0.700	ug/Kg
1,2-Dichloropropane	5.00U	10.0	3.10	ug/Kg
2,2-Dichloropropane	12.5U	25.0	7.80	ug/Kg
2-Butanone (MEK)	125U	250	78.0	ug/Kg
4-Methyl-2-pentanone (MIBK)	125U	250	78.0	ug/Kg
Acetone	125U	250	78.0	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Bromochloromethane	12.5U	25.0	7.80	ug/Kg
Bromodichloromethane	1.00U	2.00	0.620	ug/Kg
Bromomethane	10.0U	20.0	6.20	ug/Kg
Carbon disulfide	50.0U	100	31.0	ug/Kg
Carbon tetrachloride	6.25U	12.5	3.90	ug/Kg
Chloroethane	100U	200	62.0	ug/Kg
Chloroform	2.00U	4.00	1.00	ug/Kg
Chloromethane	12.5U	25.0	7.80	ug/Kg
cis-1,2-Dichloroethene	12.5U	25.0	7.80	ug/Kg
cis-1,3-Dichloropropene	6.25U	12.5	3.90	ug/Kg
Dibromomethane	12.5U	25.0	7.80	ug/Kg
Dichlorodifluoromethane	25.0U	50.0	15.0	ug/Kg
Freon-113	50.0U	100	31.0	ug/Kg
Methylene chloride	50.0U	100	31.0	ug/Kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/Kg
trans-1,2-Dichloroethene	12.5U	25.0	7.80	ug/Kg
Trichloroethene	2.50U	5.00	1.50	ug/Kg
Trichlorofluoromethane	25.0U	50.0	15.0	ug/Kg
Vinyl chloride	0.400U	0.800	0.250	ug/Kg
Surrogates				
1,2-Dichloroethane-D4 (surr)	102	71-136		%
4-Bromofluorobenzene (surr)	101	55-151		%
Toluene-d8 (surr)	102	85-116		%



Method Blank

Blank ID: MB for HBN 1809348 [VXX/35981]
Blank Lab ID: 1570943

Matrix: Soil/Solid (dry weight)

QC for Samples:
1209502004, 1209502011

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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Batch Information

Analytical Batch: VMS20121
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 7/25/2020 4:57:00PM

Prep Batch: VXX35981
Prep Method: SW5035A
Prep Date/Time: 7/25/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 08/18/2020 5:41:15PM

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35981]

Blank Spike Lab ID: 1570944

Date Analyzed: 07/25/2020 17:14

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502004, 1209502011

Results by SW8260D

Parameter	Blank Spike (ug/Kg)			CL
	Spike	Result	Rec (%)	
1,1,1-Trichloroethane	750	879	117	(73-130)
1,1-Dichloroethane	750	771	103	(76-125)
1,1-Dichloroethene	750	799	107	(70-131)
1,1-Dichloropropene	750	807	108	(76-125)
1,2,4-Trimethylbenzene	750	903	120	(75-123)
1,2-Dichloroethane	750	727	97	(73-128)
1,2-Dichloropropane	750	773	103	(76-123)
2,2-Dichloropropane	750	850	113	(67-133)
2-Butanone (MEK)	2250	2050	91	(51-148)
4-Methyl-2-pentanone (MIBK)	2250	1980	88	(65-135)
Acetone	2250	2030	90	(36-164)
Benzene	750	839	112	(77-121)
Bromochloromethane	750	705	94	(78-125)
Bromodichloromethane	750	847	113	(75-127)
Bromomethane	750	819	109	(53-143)
Carbon disulfide	1130	1160	103	(63-132)
Carbon tetrachloride	750	810	108	(70-135)
Chloroethane	750	789	105	(59-139)
Chloroform	750	738	98	(78-123)
Chloromethane	750	887	118	(50-136)
cis-1,2-Dichloroethene	750	770	103	(77-123)
cis-1,3-Dichloropropene	750	769	103	(74-126)
Dibromomethane	750	737	98	(78-125)
Dichlorodifluoromethane	750	1070	143	(29-149)
Freon-113	1130	1330	118	(66-136)
Methylene chloride	750	793	106	(70-128)
Methyl-t-butyl ether	1130	1180	105	(73-125)
trans-1,2-Dichloroethene	750	790	105	(74-125)
Trichloroethene	750	806	108	(77-123)
Trichlorofluoromethane	750	869	116	(62-140)
Vinyl chloride	750	870	116	(56-135)

Surrogates

Print Date: 08/18/2020 5:41:19PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35981]

Blank Spike Lab ID: 1570944

Date Analyzed: 07/25/2020 17:14

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502004, 1209502011

Results by SW8260D

Parameter	Blank Spike (%)			CL
	Spike	Result	Rec (%)	
1,2-Dichloroethane-D4 (surr)	750	92.2	92	(71-136)
4-Bromofluorobenzene (surr)	750	102	102	(55-151)
Toluene-d8 (surr)	750	103	103	(85-116)

Batch Information

Analytical Batch: VMS20121

Analytical Method: SW8260D

Instrument: VQA 7890/5975 GC/MS

Analyst: KAJ

Prep Batch: VXX35981

Prep Method: SW5035A

Prep Date/Time: 07/25/2020 06:00

Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 08/18/2020 5:41:19PM



Matrix Spike Summary

Original Sample ID: 1570945
 MS Sample ID: 1570946 MS
 MSD Sample ID: 1570947 MSD

Analysis Date: 07/25/2020 19:31
 Analysis Date: 07/25/2020 18:09
 Analysis Date: 07/25/2020 18:26
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1209502004, 1209502011

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1-Trichloroethane	13.3U	794	884	111	794	934	118	73-130	5.60	(< 20)
1,1-Dichloroethane	13.3U	794	778	98	794	803	101	76-125	3.20	(< 20)
1,1-Dichloroethene	13.3U	794	815	103	794	847	107	70-131	3.80	(< 20)
1,1-Dichloropropene	13.3U	794	801	101	794	871	110	76-125	8.40	(< 20)
1,2,4-Trimethylbenzene	26.4U	794	919	116	794	999	126 *	75-123	8.30	(< 20)
1,2-Dichloroethane	1.06U	794	740	93	794	743	94	73-128	0.40	(< 20)
1,2-Dichloropropane	5.30U	794	765	96	794	812	102	76-123	6.00	(< 20)
2,2-Dichloropropane	13.3U	794	882	111	794	922	116	67-133	4.50	(< 20)
2-Butanone (MEK)	133U	2380	2070	87	2380	2140	90	51-148	3.30	(< 20)
4-Methyl-2-pentanone (MIBK)	133U	2380	2010	84	2380	2040	86	65-135	1.30	(< 20)
Acetone	133U	2380	2100	88	2380	2090	88	36-164	0.28	(< 20)
Benzene	6.60U	794	823	104	794	878	111	77-121	6.50	(< 20)
Bromochloromethane	13.3U	794	733	92	794	724	91	78-125	1.20	(< 20)
Bromodichloromethane	1.06U	794	854	108	794	874	110	75-127	2.30	(< 20)
Bromomethane	10.6U	794	885	112	794	887	112	53-143	0.24	(< 20)
Carbon disulfide	53.0U	1190	1250	105	1190	1240	104	63-132	0.66	(< 20)
Carbon tetrachloride	6.60U	794	808	102	794	866	109	70-135	6.90	(< 20)
Chloroethane	106U	794	858	108	794	809	102	59-139	5.80	(< 20)
Chloroform	2.12U	794	743	94	794	761	96	78-123	2.40	(< 20)
Chloromethane	13.3U	794	899	113	794	904	114	50-136	0.59	(< 20)
cis-1,2-Dichloroethene	13.3U	794	794	100	794	809	102	77-123	1.90	(< 20)
cis-1,3-Dichloropropene	6.60U	794	772	97	794	814	103	74-126	5.30	(< 20)
Dibromomethane	13.3U	794	759	96	794	753	95	78-125	0.81	(< 20)
Dichlorodifluoromethane	26.4U	794	1050	133	794	1100	138	29-149	4.10	(< 20)
Freon-113	53.0U	1190	1290	109	1190	1430	120	66-136	10.10	(< 20)
Methylene chloride	53.0U	794	803	101	794	797	100	70-128	0.76	(< 20)
Methyl-t-butyl ether	53.0U	1190	1140	96	1190	1230	103	73-125	7.20	(< 20)
trans-1,2-Dichloroethene	13.3U	794	802	101	794	838	106	74-125	4.30	(< 20)
Trichloroethene	2.65U	794	794	100	794	858	108	77-123	7.80	(< 20)
Trichlorofluoromethane	26.4U	794	857	108	794	901	114	62-140	5.10	(< 20)
Vinyl chloride	0.423U	794	893	112	794	902	114	56-135	1.10	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		794	769	97	794	706	89	71-136	8.60	
4-Bromofluorobenzene (surr)		1320	1120	85	1320	1190	90	55-151	5.90	
Toluene-d8 (surr)		794	803	101	794	824	104	85-116	2.50	

Print Date: 08/18/2020 5:41:21PM



Matrix Spike Summary

Original Sample ID: 1570945
MS Sample ID: 1570946 MS
MSD Sample ID: 1570947 MSD

QC for Samples: 1209502004, 1209502011

Analysis Date:
Analysis Date: 07/25/2020 18:09
Analysis Date: 07/25/2020 18:26
Matrix: Solid/Soil (Wet Weight)

Results by SW8260D

Parameter	Sample	Matrix Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			

Batch Information

Analytical Batch: VMS20121
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 7/25/2020 6:09:00PM

Prep Batch: VXX35981
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 7/25/2020 6:00:00AM
Prep Initial Wt./Vol.: 47.24g
Prep Extract Vol: 25.00mL

Print Date: 08/18/2020 5:41:21PM



Method Blank

Blank ID: MB for HBN 1809417 [VXX/35994]

Blank Lab ID: 1571182

QC for Samples:

1209502006

Matrix: Soil/Solid (dry weight)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	10.0U	20.0	6.20	ug/Kg
1,1,1-Trichloroethane	12.5U	25.0	7.80	ug/Kg
1,1,2,2-Tetrachloroethane	1.00U	2.00	0.620	ug/Kg
1,1,2-Trichloroethane	0.400U	0.800	0.250	ug/Kg
1,1-Dichloroethane	12.5U	25.0	7.80	ug/Kg
1,1-Dichloroethene	12.5U	25.0	7.80	ug/Kg
1,1-Dichloropropene	12.5U	25.0	7.80	ug/Kg
1,2,3-Trichlorobenzene	25.0U	50.0	15.0	ug/Kg
1,2,3-Trichloropropane	1.00U	2.00	0.620	ug/Kg
1,2,4-Trichlorobenzene	12.5U	25.0	7.80	ug/Kg
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,2-Dibromo-3-chloropropane	50.0U	100	31.0	ug/Kg
1,2-Dibromoethane	0.500U	1.00	0.400	ug/Kg
1,2-Dichlorobenzene	12.5U	25.0	7.80	ug/Kg
1,2-Dichloroethane	1.00U	2.00	0.700	ug/Kg
1,2-Dichloropropane	5.00U	10.0	3.10	ug/Kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/Kg
1,3-Dichlorobenzene	12.5U	25.0	7.80	ug/Kg
1,3-Dichloropropane	5.00U	10.0	3.10	ug/Kg
1,4-Dichlorobenzene	12.5U	25.0	7.80	ug/Kg
2,2-Dichloropropane	12.5U	25.0	7.80	ug/Kg
2-Butanone (MEK)	125U	250	78.0	ug/Kg
2-Chlorotoluene	12.5U	25.0	7.80	ug/Kg
2-Hexanone	50.0U	100	31.0	ug/Kg
4-Chlorotoluene	12.5U	25.0	7.80	ug/Kg
4-Isopropyltoluene	50.0U	100	25.0	ug/Kg
4-Methyl-2-pentanone (MIBK)	125U	250	78.0	ug/Kg
Acetone	125U	250	78.0	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Bromobenzene	12.5U	25.0	7.80	ug/Kg
Bromochloromethane	12.5U	25.0	7.80	ug/Kg
Bromodichloromethane	1.00U	2.00	0.620	ug/Kg
Bromoform	12.5U	25.0	7.80	ug/Kg
Bromomethane	10.0U	20.0	6.20	ug/Kg
Carbon disulfide	50.0U	100	31.0	ug/Kg
Carbon tetrachloride	6.25U	12.5	3.90	ug/Kg
Chlorobenzene	12.5U	25.0	7.80	ug/Kg
Chloroethane	100U	200	62.0	ug/Kg

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Method Blank

Blank ID: MB for HBN 1809417 [VXX/35994]
Blank Lab ID: 1571182

Matrix: Soil/Solid (dry weight)

QC for Samples:
1209502006

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloroform	2.00U	4.00	1.00	ug/Kg
Chloromethane	12.5U	25.0	7.80	ug/Kg
cis-1,2-Dichloroethene	12.5U	25.0	7.80	ug/Kg
cis-1,3-Dichloropropene	6.25U	12.5	3.90	ug/Kg
Dibromochloromethane	2.50U	5.00	1.50	ug/Kg
Dibromomethane	12.5U	25.0	7.80	ug/Kg
Dichlorodifluoromethane	25.0U	50.0	15.0	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
Freon-113	50.0U	100	31.0	ug/Kg
Hexachlorobutadiene	10.0U	20.0	6.20	ug/Kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/Kg
Methylene chloride	50.0U	100	31.0	ug/Kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/Kg
Naphthalene	12.5U	25.0	7.80	ug/Kg
n-Butylbenzene	12.5U	25.0	7.80	ug/Kg
n-Propylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
sec-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Styrene	12.5U	25.0	7.80	ug/Kg
tert-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Tetrachloroethene	6.25U	12.5	3.90	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg
trans-1,2-Dichloroethene	12.5U	25.0	7.80	ug/Kg
trans-1,3-Dichloropropene	6.25U	12.5	3.90	ug/Kg
Trichloroethene	2.50U	5.00	1.50	ug/Kg
Trichlorofluoromethane	25.0U	50.0	15.0	ug/Kg
Vinyl acetate	50.0U	100	31.0	ug/Kg
Vinyl chloride	0.400U	0.800	0.250	ug/Kg
Xylenes (total)	37.5U	75.0	22.8	ug/Kg
Surrogates				
1,2-Dichloroethane-D4 (surr)	100	71-136		%
4-Bromofluorobenzene (surr)	99.1	55-151		%
Toluene-d8 (surr)	101	85-116		%

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Method Blank

Blank ID: MB for HBN 1809417 [VXX/35994]
Blank Lab ID: 1571182

QC for Samples:
1209502006

Matrix: Soil/Solid (dry weight)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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Batch Information

Analytical Batch: VMS20127
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 7/27/2020 8:32:00AM

Prep Batch: VXX35994
Prep Method: SW5035A
Prep Date/Time: 7/27/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 08/18/2020 5:41:23PM

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35994]

Blank Spike Lab ID: 1571183

Date Analyzed: 07/27/2020 08:48

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502006

Results by SW8260D

Parameter	Blank Spike (ug/Kg)			CL
	Spike	Result	Rec (%)	
1,1,1,2-Tetrachloroethane	750	787	105	(78-125)
1,1,1-Trichloroethane	750	906	121	(73-130)
1,1,2,2-Tetrachloroethane	750	774	103	(70-124)
1,1,2-Trichloroethane	750	767	102	(78-121)
1,1-Dichloroethane	750	772	103	(76-125)
1,1-Dichloroethene	750	810	108	(70-131)
1,1-Dichloropropene	750	819	109	(76-125)
1,2,3-Trichlorobenzene	750	908	121	(66-130)
1,2,3-Trichloropropane	750	807	108	(73-125)
1,2,4-Trichlorobenzene	750	933	124	(67-129)
1,2,4-Trimethylbenzene	750	892	119	(75-123)
1,2-Dibromo-3-chloropropane	750	808	108	(61-132)
1,2-Dibromoethane	750	768	102	(78-122)
1,2-Dichlorobenzene	750	847	113	(78-121)
1,2-Dichloroethane	750	736	98	(73-128)
1,2-Dichloropropane	750	772	103	(76-123)
1,3,5-Trimethylbenzene	750	884	118	(73-124)
1,3-Dichlorobenzene	750	858	114	(77-121)
1,3-Dichloropropane	750	764	102	(77-121)
1,4-Dichlorobenzene	750	860	115	(75-120)
2,2-Dichloropropane	750	890	119	(67-133)
2-Butanone (MEK)	2250	2080	92	(51-148)
2-Chlorotoluene	750	892	119	(75-122)
2-Hexanone	2250	2240	100	(53-145)
4-Chlorotoluene	750	878	117	(72-124)
4-Isopropyltoluene	750	892	119	(73-127)
4-Methyl-2-pentanone (MIBK)	2250	1960	87	(65-135)
Acetone	2250	2050	91	(36-164)
Benzene	750	832	111	(77-121)
Bromobenzene	750	856	114	(78-121)
Bromochloromethane	750	704	94	(78-125)
Bromodichloromethane	750	854	114	(75-127)
Bromoform	750	807	108	(67-132)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35994]

Blank Spike Lab ID: 1571183

Date Analyzed: 07/27/2020 08:48

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502006

Results by SW8260D

Parameter	Blank Spike (ug/Kg)			CL
	Spike	Result	Rec (%)	
Bromomethane	750	825	110	(53-143)
Carbon disulfide	1130	1190	105	(63-132)
Carbon tetrachloride	750	834	111	(70-135)
Chlorobenzene	750	834	111	(79-120)
Chloroethane	750	800	107	(59-139)
Chloroform	750	739	99	(78-123)
Chloromethane	750	902	120	(50-136)
cis-1,2-Dichloroethene	750	759	101	(77-123)
cis-1,3-Dichloropropene	750	772	103	(74-126)
Dibromochloromethane	750	786	105	(74-126)
Dibromomethane	750	737	98	(78-125)
Dichlorodifluoromethane	750	1090	146	(29-149)
Ethylbenzene	750	855	114	(76-122)
Freon-113	1130	1360	121	(66-136)
Hexachlorobutadiene	750	927	124	(61-135)
Isopropylbenzene (Cumene)	750	865	115	(68-134)
Methylene chloride	750	757	101	(70-128)
Methyl-t-butyl ether	1130	1170	104	(73-125)
Naphthalene	750	816	109	(62-129)
n-Butylbenzene	750	895	119	(70-128)
n-Propylbenzene	750	889	119	(73-125)
o-Xylene	750	869	116	(77-123)
P & M -Xylene	1500	1730	115	(77-124)
sec-Butylbenzene	750	886	118	(73-126)
Styrene	750	836	111	(76-124)
tert-Butylbenzene	750	891	119	(73-125)
Tetrachloroethene	750	837	112	(73-128)
Toluene	750	762	102	(77-121)
trans-1,2-Dichloroethene	750	797	106	(74-125)
trans-1,3-Dichloropropene	750	791	105	(71-130)
Trichloroethene	750	807	108	(77-123)
Trichlorofluoromethane	750	877	117	(62-140)
Vinyl acetate	750	764	102	(50-151)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35994]

Blank Spike Lab ID: 1571183

Date Analyzed: 07/27/2020 08:48

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502006

Results by SW8260D

Parameter	Blank Spike (ug/Kg)			CL
	Spike	Result	Rec (%)	
Vinyl chloride	750	880	117	(56-135)
Xylenes (total)	2250	2590	115	(78-124)
Surrogates				
1,2-Dichloroethane-D4 (surr)	750	93.7	94	(71-136)
4-Bromofluorobenzene (surr)	750	98.7	99	(55-151)
Toluene-d8 (surr)	750	101	101	(85-116)

Batch Information

Analytical Batch: VMS20127

Analytical Method: SW8260D

Instrument: VQA 7890/5975 GC/MS

Analyst: KAJ

Prep Batch: VXX35994

Prep Method: SW5035A

Prep Date/Time: 07/27/2020 06:00

Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 08/18/2020 5:41:27PM



Matrix Spike Summary

Original Sample ID: 1203623015
 MS Sample ID: 1571184 MS
 MSD Sample ID: 1571185 MSD

Analysis Date: 07/27/2020 10:47
 Analysis Date: 07/27/2020 9:25
 Analysis Date: 07/27/2020 9:41
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502006

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	9.60U	668	638	96	668	727	109	78-125	13.00	(< 20)
1,1,1-Trichloroethane	11.9U	668	743	111	668	799	120	73-130	7.50	(< 20)
1,1,2,2-Tetrachloroethane	0.960U	668	668	100	668	713	107	70-124	6.40	(< 20)
1,1,2-Trichloroethane	0.383U	668	624	93	668	704	105	78-121	12.10	(< 20)
1,1-Dichloroethane	11.9U	668	645	97	668	692	104	76-125	6.90	(< 20)
1,1-Dichloroethene	11.9U	668	671	101	668	719	108	70-131	6.80	(< 20)
1,1-Dichloropropene	11.9U	668	662	99	668	724	108	76-125	8.90	(< 20)
1,2,3-Trichlorobenzene	23.9U	668	695	104	668	956	143 *	66-130	31.60 *	(< 20)
1,2,3-Trichloropropane	0.960U	668	706	106	668	688	103	73-125	2.60	(< 20)
1,2,4-Trichlorobenzene	11.9U	668	725	108	668	943	141 *	67-129	26.20 *	(< 20)
1,2,4-Trimethylbenzene	23.9U	668	751	112	668	805	120	75-123	7.00	(< 20)
1,2-Dibromo-3-chloropropane	47.9U	668	654	98	668	760	114	61-132	14.90	(< 20)
1,2-Dibromoethane	0.479U	668	629	94	668	707	106	78-122	11.70	(< 20)
1,2-Dichlorobenzene	11.9U	668	687	103	668	760	114	78-121	10.00	(< 20)
1,2-Dichloroethane	0.960U	668	628	94	668	662	99	73-128	5.20	(< 20)
1,2-Dichloropropane	4.79U	668	640	96	668	695	104	76-123	8.30	(< 20)
1,3,5-Trimethylbenzene	11.9U	668	729	109	668	751	112	73-124	2.90	(< 20)
1,3-Dichlorobenzene	11.9U	668	704	105	668	771	115	77-121	9.00	(< 20)
1,3-Dichloropropane	4.79U	668	622	93	668	699	105	77-121	11.80	(< 20)
1,4-Dichlorobenzene	11.9U	668	706	106	668	776	116	75-120	9.40	(< 20)
2,2-Dichloropropane	11.9U	668	739	111	668	794	119	67-133	7.10	(< 20)
2-Butanone (MEK)	120U	2006	1737	87	2006	1934	97	51-148	10.80	(< 20)
2-Chlorotoluene	11.9U	668	727	109	668	778	116	75-122	6.80	(< 20)
2-Hexanone	47.9U	2006	1861	93	2006	2089	104	53-145	11.80	(< 20)
4-Chlorotoluene	11.9U	668	733	110	668	769	115	72-124	4.80	(< 20)
4-Isopropyltoluene	47.9U	668	743	111	668	801	120	73-127	7.70	(< 20)
4-Methyl-2-pentanone (MIBK)	120U	2006	1696	85	2006	1892	94	65-135	11.00	(< 20)
Acetone	120U	2006	1748	87	2006	1923	96	36-164	10.00	(< 20)
Benzene	6.00U	668	681	102	668	745	112	77-121	8.90	(< 20)
Bromobenzene	11.9U	668	715	107	668	748	112	78-121	4.70	(< 20)
Bromochloromethane	11.9U	668	603	90	668	638	96	78-125	5.80	(< 20)
Bromodichloromethane	0.960U	668	716	107	668	765	115	75-127	6.80	(< 20)
Bromoform	11.9U	668	655	98	668	751	112	67-132	13.80	(< 20)
Bromomethane	9.60U	668	732	110	668	782	117	53-143	6.60	(< 20)
Carbon disulfide	47.9U	1002	1030	103	1002	1055	106	63-132	2.70	(< 20)
Carbon tetrachloride	6.00U	668	678	102	668	729	109	70-135	7.10	(< 20)
Chlorobenzene	11.9U	668	676	101	668	755	113	79-120	10.90	(< 20)

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Matrix Spike Summary

Original Sample ID: 1203623015
 MS Sample ID: 1571184 MS
 MSD Sample ID: 1571185 MSD

Analysis Date: 07/27/2020 10:47
 Analysis Date: 07/27/2020 9:25
 Analysis Date: 07/27/2020 9:41
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502006

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Chloroethane	96.0U	668	711	106	668	715	107	59-139	0.49	(< 20)
Chloroform	1.92U	668	618	93	668	664	100	78-123	7.10	(< 20)
Chloromethane	11.9U	668	759	114	668	800	120	50-136	5.30	(< 20)
cis-1,2-Dichloroethene	11.9U	668	662	99	668	678	102	77-123	2.50	(< 20)
cis-1,3-Dichloropropene	6.00U	668	647	97	668	701	105	74-126	7.90	(< 20)
Dibromochloromethane	2.40U	668	638	96	668	718	107	74-126	11.70	(< 20)
Dibromomethane	11.9U	668	632	95	668	668	100	78-125	5.50	(< 20)
Dichlorodifluoromethane	23.9U	668	889	133	668	933	140	29-149	4.70	(< 20)
Ethylbenzene	11.9U	668	683	102	668	760	114	76-122	10.70	(< 20)
Freon-113	47.9U	1002	1075	107	1002	1158	116	66-136	7.90	(< 20)
Hexachlorobutadiene	9.60U	668	968	145 *	668	1005	150 *	61-135	3.70	(< 20)
Isopropylbenzene (Cumene)	11.9U	668	680	102	668	751	112	68-134	9.90	(< 20)
Methylene chloride	47.9U	668	657	98	668	700	105	70-128	6.30	(< 20)
Methyl-t-butyl ether	47.9U	1002	982	98	1002	1075	107	73-125	8.70	(< 20)
Naphthalene	11.9U	668	640	96	668	822	123	62-129	24.90 *	(< 20)
n-Butylbenzene	11.9U	668	771	116	668	823	123	70-128	6.40	(< 20)
n-Propylbenzene	11.9U	668	731	109	668	774	116	73-125	5.70	(< 20)
o-Xylene	11.9U	668	686	103	668	766	115	77-123	11.10	(< 20)
P & M -Xylene	23.9U	1334	1365	102	1334	1510	113	77-124	10.20	(< 20)
sec-Butylbenzene	11.9U	668	739	111	668	779	117	73-126	5.20	(< 20)
Styrene	11.9U	668	664	99	668	743	111	76-124	11.20	(< 20)
tert-Butylbenzene	11.9U	668	731	109	668	785	118	73-125	7.10	(< 20)
Tetrachloroethene	6.00U	668	665	100	668	756	113	73-128	12.80	(< 20)
Toluene	11.9U	668	618	93	668	698	104	77-121	12.00	(< 20)
trans-1,2-Dichloroethene	11.9U	668	663	99	668	724	108	74-125	8.90	(< 20)
trans-1,3-Dichloropropene	6.00U	668	645	97	668	727	109	71-130	12.00	(< 20)
Trichloroethene	2.40U	668	658	99	668	720	108	77-123	9.00	(< 20)
Trichlorofluoromethane	23.9U	668	732	110	668	769	115	62-140	5.00	(< 20)
Vinyl acetate	47.9U	668	645	97	668	699	105	50-151	8.10	(< 20)
Vinyl chloride	0.383U	668	745	111	668	791	118	56-135	6.00	(< 20)
Xylenes (total)	35.9U	2006	2048	102	2006	2275	114	78-124	10.50	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		668	653	98	668	630	94	71-136	3.50	
4-Bromofluorobenzene (surr)		1117	989	89	1117	1029	92	55-151	4.00	
Toluene-d8 (surr)		668	668	100	668	688	103	85-116	2.80	

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Matrix Spike Summary

Original Sample ID: 1203623015
MS Sample ID: 1571184 MS
MSD Sample ID: 1571185 MSD

QC for Samples: 1209502006

Analysis Date:
Analysis Date: 07/27/2020 9:25
Analysis Date: 07/27/2020 9:41
Matrix: Soil/Solid (dry weight)

Results by SW8260D

Parameter	Sample	Matrix Spike (%)			Spike Duplicate (%)				CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)				

Batch Information

Analytical Batch: VMS20127
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 7/27/2020 9:25:00AM

Prep Batch: VXX35994
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 7/27/2020 6:00:00AM
Prep Initial Wt./Vol.: 58.06g
Prep Extract Vol: 25.00mL

Print Date: 08/18/2020 5:41:29PM



Method Blank

Blank ID: MB for HBN 1809467 [VXX/35999]
Blank Lab ID: 1571466

Matrix: Soil/Solid (dry weight)

QC for Samples:

1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013, 1209502014

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.936J	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	99.7	50-150		%

Batch Information

Analytical Batch: VFC15251
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: E.L
Analytical Date/Time: 7/28/2020 7:25:00PM

Prep Batch: VXX35999
Prep Method: SW5035A
Prep Date/Time: 7/28/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 08/18/2020 5:41:32PM

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX35999]
Blank Spike Lab ID: 1571467
Date Analyzed: 07/28/2020 18:49

Spike Duplicate ID: LCSD for HBN 1209502 [VXX35999]
Spike Duplicate Lab ID: 1571468
Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013, 1209502014

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	15.0	120	12.5	14.7	118	(60-120)	1.80	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	103	103	1.25	102	102	(50-150)	1.30	

Batch Information

Analytical Batch: **VFC15251**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **E.L**

Prep Batch: **VXX35999**
Prep Method: **SW5035A**
Prep Date/Time: **07/28/2020 06:00**
Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 08/18/2020 5:41:37PM



Method Blank

Blank ID: MB for HBN 1809735 [VXX/36030]

Blank Lab ID: 1572319

QC for Samples:

1209502001, 1209502002

Matrix: Soil/Solid (dry weight)

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.25U	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	83.8	50-150		%

Batch Information

Analytical Batch: VFC15260

Analytical Method: AK101

Instrument: Agilent 7890 PID/FID

Analyst: ALJ

Analytical Date/Time: 8/2/2020 1:40:00PM

Prep Batch: VXX36030

Prep Method: SW5035A

Prep Date/Time: 8/2/2020 6:00:00AM

Prep Initial Wt./Vol.: 50 g

Prep Extract Vol: 25 mL

Print Date: 08/18/2020 5:41:41PM

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [VXX36030]
Blank Spike Lab ID: 1572320
Date Analyzed: 08/02/2020 13:04

Spike Duplicate ID: LCSD for HBN 1209502 [VXX36030]
Spike Duplicate Lab ID: 1572321
Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	12.5	100	12.5	12.8	103	(60-120)	2.60	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	84.9	85	1.25	87.7	88	(50-150)	3.30	

Batch Information

Analytical Batch: **VFC15260**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **ALJ**

Prep Batch: **VXX36030**
Prep Method: **SW5035A**
Prep Date/Time: **08/02/2020 06:00**
Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 08/18/2020 5:41:45PM



Method Blank

Blank ID: MB for HBN 1809234 [XXX/43498]
Blank Lab ID: 1570387

Matrix: Soil/Solid (dry weight)

QC for Samples:

1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by SW8270D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,2,4-Trichlorobenzene	0.125U	0.250	0.0780	mg/Kg
1,2-Dichlorobenzene	0.125U	0.250	0.0780	mg/Kg
1,3-Dichlorobenzene	0.125U	0.250	0.0780	mg/Kg
1,4-Dichlorobenzene	0.125U	0.250	0.0780	mg/Kg
1-Chloronaphthalene	0.125U	0.250	0.0780	mg/Kg
1-Methylnaphthalene	0.125U	0.250	0.0780	mg/Kg
2,4,5-Trichlorophenol	0.125U	0.250	0.0780	mg/Kg
2,4,6-Trichlorophenol	0.125U	0.250	0.0780	mg/Kg
2,4-Dichlorophenol	0.125U	0.250	0.0780	mg/Kg
2,4-Dimethylphenol	0.125U	0.250	0.0780	mg/Kg
2,4-Dinitrophenol	1.50U	3.00	0.940	mg/Kg
2,4-Dinitrotoluene	0.125U	0.250	0.0780	mg/Kg
2,6-Dichlorophenol	0.125U	0.250	0.0780	mg/Kg
2,6-Dinitrotoluene	0.125U	0.250	0.0780	mg/Kg
2-Chloronaphthalene	0.125U	0.250	0.0780	mg/Kg
2-Chlorophenol	0.125U	0.250	0.0780	mg/Kg
2-Methyl-4,6-dinitrophenol	1.00U	2.00	0.620	mg/Kg
2-Methylnaphthalene	0.125U	0.250	0.0780	mg/Kg
2-Methylphenol (o-Cresol)	0.125U	0.250	0.0780	mg/Kg
2-Nitroaniline	0.125U	0.250	0.0780	mg/Kg
2-Nitrophenol	0.125U	0.250	0.0780	mg/Kg
3&4-Methylphenol (p&m-Cresol)	0.500U	1.00	0.310	mg/Kg
3,3-Dichlorobenzidine	0.250U	0.500	0.150	mg/Kg
3-Nitroaniline	0.250U	0.500	0.150	mg/Kg
4-Bromophenyl-phenylether	0.125U	0.250	0.0780	mg/Kg
4-Chloro-3-methylphenol	0.125U	0.250	0.0780	mg/Kg
4-Chloroaniline	0.500U	1.00	0.310	mg/Kg
4-Chlorophenyl-phenylether	0.125U	0.250	0.0780	mg/Kg
4-Nitroaniline	1.50U	3.00	0.940	mg/Kg
4-Nitrophenol	1.00U	2.00	0.620	mg/Kg
Acenaphthene	0.125U	0.250	0.0780	mg/Kg
Acenaphthylene	0.125U	0.250	0.0780	mg/Kg
Aniline	1.00U	2.00	0.620	mg/Kg
Anthracene	0.125U	0.250	0.0780	mg/Kg
Azobenzene	0.125U	0.250	0.0780	mg/Kg
Benzo(a)Anthracene	0.125U	0.250	0.0780	mg/Kg
Benzo[a]pyrene	0.125U	0.250	0.0780	mg/Kg
Benzo[b]Fluoranthene	0.125U	0.250	0.0780	mg/Kg

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Method Blank

Blank ID: MB for HBN 1809234 [XXX/43498]
Blank Lab ID: 1570387

Matrix: Soil/Solid (dry weight)

QC for Samples:

1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by SW8270D

Parameter	Results	LOQ/CL	DL	Units
Benzo[g,h,i]perylene	0.125U	0.250	0.0780	mg/Kg
Benzo[k]fluoranthene	0.125U	0.250	0.0780	mg/Kg
Benzoic acid	0.750U	1.50	0.470	mg/Kg
Benzyl alcohol	0.125U	0.250	0.0780	mg/Kg
Bis(2chloro1methylethyl)Ether	0.125U	0.250	0.0780	mg/Kg
Bis(2-Chloroethoxy)methane	0.125U	0.250	0.0780	mg/Kg
Bis(2-Chloroethyl)ether	0.125U	0.250	0.0780	mg/Kg
bis(2-Ethylhexyl)phthalate	0.125U	0.250	0.0780	mg/Kg
Butylbenzylphthalate	0.125U	0.250	0.0780	mg/Kg
Carbazole	0.125U	0.250	0.0780	mg/Kg
Chrysene	0.125U	0.250	0.0780	mg/Kg
Dibenzo[a,h]anthracene	0.125U	0.250	0.0780	mg/Kg
Dibenzofuran	0.125U	0.250	0.0780	mg/Kg
Diethylphthalate	0.125U	0.250	0.0780	mg/Kg
Dimethylphthalate	0.125U	0.250	0.0780	mg/Kg
Di-n-butylphthalate	0.125U	0.250	0.0780	mg/Kg
di-n-Octylphthalate	0.250U	0.500	0.150	mg/Kg
Fluoranthene	0.125U	0.250	0.0780	mg/Kg
Fluorene	0.125U	0.250	0.0780	mg/Kg
Hexachlorobenzene	0.125U	0.250	0.0780	mg/Kg
Hexachlorobutadiene	0.125U	0.250	0.0780	mg/Kg
Hexachlorocyclopentadiene	0.350U	0.700	0.200	mg/Kg
Hexachloroethane	0.125U	0.250	0.0780	mg/Kg
Indeno[1,2,3-c,d] pyrene	0.125U	0.250	0.0780	mg/Kg
Isophorone	0.125U	0.250	0.0780	mg/Kg
Naphthalene	0.125U	0.250	0.0780	mg/Kg
Nitrobenzene	0.125U	0.250	0.0780	mg/Kg
N-Nitrosodimethylamine	0.125U	0.250	0.0780	mg/Kg
N-Nitroso-di-n-propylamine	0.125U	0.250	0.0780	mg/Kg
N-Nitrosodiphenylamine	0.125U	0.250	0.0780	mg/Kg
Pentachlorophenol	1.00U	2.00	0.620	mg/Kg
Phenanthrene	0.125U	0.250	0.0780	mg/Kg
Phenol	0.125U	0.250	0.0780	mg/Kg
Pyrene	0.125U	0.250	0.0780	mg/Kg
Surrogates				
2,4,6-Tribromophenol (surr)	75.3	35-125		%
2-Fluorobiphenyl (surr)	60.1	44-115		%
2-Fluorophenol (surr)	52.9	35-115		%

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Method Blank

Blank ID: MB for HBN 1809234 [XXX/43498]
Blank Lab ID: 1570387

Matrix: Soil/Solid (dry weight)

QC for Samples:

1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by SW8270D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrobenzene-d5 (surr)	54.4	37-122		%
Phenol-d6 (surr)	57.9	33-122		%
Terphenyl-d14 (surr)	88.8	54-127		%

Batch Information

Analytical Batch: XMS12174
Analytical Method: SW8270D
Instrument: HP 6890/5973 SSA
Analyst: JMG
Analytical Date/Time: 8/5/2020 11:26:00AM

Prep Batch: XXX43498
Prep Method: SW3550C
Prep Date/Time: 7/23/2020 9:48:05AM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 1 mL

Print Date: 08/18/2020 5:41:48PM

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [XXX43498]

Blank Spike Lab ID: 1570388

Date Analyzed: 08/05/2020 11:43

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by SW8270D

Parameter	Blank Spike (mg/Kg)			CL
	Spike	Result	Rec (%)	
1,2,4-Trichlorobenzene	4.44	2.72	61	(34-118)
1,2-Dichlorobenzene	4.44	2.47	56	(33-117)
1,3-Dichlorobenzene	4.44	2.51	56	(30-115)
1,4-Dichlorobenzene	4.44	2.48	56	(31-115)
1-Chloronaphthalene	1.78	1.18	66	(48-115)
1-Methylnaphthalene	4.44	3.19	72	(40-119)
2,4,5-Trichlorophenol	4.44	3.76	85	(41-124)
2,4,6-Trichlorophenol	4.44	3.62	82	(39-126)
2,4-Dichlorophenol	4.44	3.46	78	(40-122)
2,4-Dimethylphenol	4.44	3.61	81	(30-127)
2,4-Dinitrophenol	8	7.61	95	(62-113)
2,4-Dinitrotoluene	4.44	3.46	78	(48-126)
2,6-Dichlorophenol	1.78	1.41	79	(41-117)
2,6-Dinitrotoluene	4.44	3.33	75	(46-124)
2-Chloronaphthalene	4.44	3.11	70	(41-114)
2-Chlorophenol	4.44	3.07	69	(34-121)
2-Methyl-4,6-dinitrophenol	8	8.08	101	(29-132)
2-Methylnaphthalene	4.44	2.72	61	(38-122)
2-Methylphenol (o-Cresol)	4.44	3.12	70	(32-122)
2-Nitroaniline	4.44	3.98	89	(44-127)
2-Nitrophenol	4.44	3.39	76	(36-123)
3&4-Methylphenol (p&m-Cresol)	6.22	5.24	84	(34-119)
3,3-Dichlorobenzidine	4.44	4.11	92	(22-121)
3-Nitroaniline	4.44	4.10	92	(33-119)
4-Bromophenyl-phenylether	4.44	3.81	86	(46-124)
4-Chloro-3-methylphenol	4.44	3.60	81	(45-122)
4-Chloroaniline	4.44	3.47	78	(17-106)
4-Chlorophenyl-phenylether	4.44	3.61	81	(45-121)
4-Nitroaniline	4.44	4.24	95	(77-120)
4-Nitrophenol	6.22	6.00	96	(30-132)
Acenaphthene	4.44	3.55	80	(40-123)
Acenaphthylene	4.44	3.79	85	(32-132)
Aniline	4.44	2.67	60	(24-89)

Print Date: 08/18/2020 5:41:52PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [XXX43498]

Blank Spike Lab ID: 1570388

Date Analyzed: 08/05/2020 11:43

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by SW8270D

Parameter	Blank Spike (mg/Kg)			CL
	Spike	Result	Rec (%)	
Anthracene	4.44	3.69	83	(47-123)
Azobenzene	4.44	3.67	83	(39-125)
Benzo(a)Anthracene	4.44	4.33	98	(49-126)
Benzo[a]pyrene	4.44	4.26	96	(45-129)
Benzo[b]Fluoranthene	4.44	4.21	95	(45-132)
Benzo[g,h,i]perylene	4.44	4.42	99	(43-134)
Benzo[k]fluoranthene	4.44	4.13	93	(47-132)
Benzoic acid	6.22	5.11	82	(53-124)
Benzyl alcohol	4.44	2.92	66	(29-122)
Bis(2chloro1methylethyl)Ether	4.44	3.07	69	(33-131)
Bis(2-Chloroethoxy)methane	4.44	3.16	71	(36-121)
Bis(2-Chloroethyl)ether	4.44	3.08	69	(31-120)
bis(2-Ethylhexyl)phthalate	4.44	4.75	107	(51-133)
Butylbenzylphthalate	4.44	4.67	105	(48-132)
Carbazole	4.44	4.07	92	(50-123)
Chrysene	4.44	4.18	94	(50-124)
Dibenzo[a,h]anthracene	4.44	4.55	102	(45-134)
Dibenzofuran	4.44	3.10	70	(44-120)
Diethylphthalate	4.44	3.99	90	(50-124)
Dimethylphthalate	4.44	4.14	93	(48-124)
Di-n-butylphthalate	4.44	4.12	93	(51-128)
di-n-Octylphthalate	4.44	4.61	104	(45-140)
Fluoranthene	4.44	3.79	85	(50-127)
Fluorene	4.44	3.76	85	(43-125)
Hexachlorobenzene	4.44	3.42	77	(45-122)
Hexachlorobutadiene	4.44	3.07	69	(32-123)
Hexachlorocyclopentadiene	4.44	2.60	59	(34-74)
Hexachloroethane	4.44	2.50	56	(28-117)
Indeno[1,2,3-c,d] pyrene	4.44	4.44	100	(45-133)
Isophorone	4.44	3.16	71	(30-122)
Naphthalene	4.44	3.10	70	(35-123)
Nitrobenzene	4.44	2.73	61	(34-122)
N-Nitrosodimethylamine	4.44	2.79	63	(23-120)

Print Date: 08/18/2020 5:41:52PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [XXX43498]

Blank Spike Lab ID: 1570388

Date Analyzed: 08/05/2020 11:43

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by SW8270D

Parameter	Blank Spike (mg/Kg)			CL
	Spike	Result	Rec (%)	
N-Nitroso-di-n-propylamine	4.44	3.90	88	(36-120)
N-Nitrosodiphenylamine	4.44	3.30	74	(38-127)
Pentachlorophenol	6.22	5.74	92	(25-133)
Phenanthrene	4.44	3.84	86	(50-121)
Phenol	4.44	3.05	69	(34-121)
Pyrene	4.44	4.38	99	(47-127)
Surrogates				
2,4,6-Tribromophenol (surr)	8.89	95.1	95	(35-125)
2-Fluorobiphenyl (surr)	4.44	76.7	77	(44-115)
2-Fluorophenol (surr)	8.89	63.7	64	(35-115)
Nitrobenzene-d5 (surr)	4.44	71.9	72	(37-122)
Phenol-d6 (surr)	8.89	72.3	72	(33-122)
Terphenyl-d14 (surr)	4.44	102	102	(54-127)

Batch Information

Analytical Batch: XMS12174

Analytical Method: SW8270D

Instrument: HP 6890/5973 SSA

Analyst: JMG

Prep Batch: XXX43498

Prep Method: SW3550C

Prep Date/Time: 07/23/2020 09:48

Spike Init Wt./Vol.: 4.44 mg/Kg Extract Vol: 1 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 08/18/2020 5:41:52PM



Matrix Spike Summary

Original Sample ID: 1209502006
 MS Sample ID: 1570389 MS
 MSD Sample ID: 1570390 MSD

Analysis Date: 08/13/2020 0:49
 Analysis Date: 08/13/2020 1:23
 Analysis Date: 08/13/2020 1:57
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by SW8270D

Parameter	Sample	Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trichlorobenzene	5.39U	4.77	3.21J	67	4.82	3.23J	67	34-118	0.75	(< 20)
1,2-Dichlorobenzene	5.39U	4.77	2.51J	53	4.82	2.39J	50	33-117	5.10	(< 20)
1,3-Dichlorobenzene	5.39U	4.77	2.28J	48	4.82	2.21J	46	30-115	3.10	(< 20)
1,4-Dichlorobenzene	5.39U	4.77	2.51J	53	4.82	2.28J	47	31-115	9.70	(< 20)
1-Chloronaphthalene	5.39U	1.91	2.69U	0 *	1.93	2.69U	0 *	48-115	0.00	(< 20)
1-Methylnaphthalene	5.39U	4.77	7.48	157 *	4.82	6.98	145 *	40-119	6.90	(< 20)
2,4,5-Trichlorophenol	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	41-124	0.00	(< 20)
2,4,6-Trichlorophenol	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	39-126	0.00	(< 20)
2,4-Dichlorophenol	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	40-122	0.00	(< 20)
2,4-Dimethylphenol	5.39U	4.77	3.86J	81	4.82	3.77J	78	30-127	2.30	(< 20)
2,4-Dinitrophenol	64.7U	8.60	32.4U	0 *	8.67	32.4U	0 *	62-113	0.00	(< 20)
2,4-Dinitrotoluene	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	48-126	0.00	(< 20)
2,6-Dichlorophenol	5.39U	1.91	2.69U	0 *	1.93	2.69U	0 *	41-117	0.00	(< 20)
2,6-Dinitrotoluene	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	46-124	0.00	(< 20)
2-Chloronaphthalene	5.39U	4.77	2.69U	0 *	4.82	3.05J	63	41-114	0.00	(< 20)
2-Chlorophenol	5.39U	4.77	2.43J	51	4.82	2.40J	50	34-121	1.20	(< 20)
2-Methyl-4,6-dinitrophenol	43.1U	8.60	21.6U	0 *	8.67	21.6U	0 *	29-132	0.00	(< 20)
2-Methylnaphthalene	5.39U	4.77	6.59	138 *	4.82	6.36	132 *	38-122	3.70	(< 20)
2-Methylphenol (o-Cresol)	5.39U	4.77	2.92J	61	4.82	2.93J	61	32-122	0.42	(< 20)
2-Nitroaniline	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	44-127	0.00	(< 20)
2-Nitrophenol	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	36-123	0.00	(< 20)
3&4-Methylphenol (p&m-Cresol)	21.6U	6.69	10.8U	0 *	6.74	10.8U	0 *	34-119	0.00	(< 20)
3,3-Dichlorobenzidine	10.8U	4.77	3.67J	77	4.82	3.60J	75	22-121	1.60	(< 20)
3-Nitroaniline	10.8U	4.77	4.02J	84	4.82	4.07J	85	33-119	0.98	(< 20)
4-Bromophenyl-phenylether	5.39U	4.77	3.71J	78	4.82	3.73J	78	46-124	0.49	(< 20)
4-Chloro-3-methylphenol	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	45-122	0.00	(< 20)
4-Chloroaniline	21.6U	4.77	10.8U	0 *	4.82	10.8U	0 *	17-106	0.00	(< 20)
4-Chlorophenyl-phenylether	5.39U	4.77	4.19J	88	4.82	4.28J	89	45-121	2.10	(< 20)
4-Nitroaniline	64.7U	4.77	32.4U	0 *	4.82	32.4U	0 *	77-120	0.00	(< 20)
4-Nitrophenol	43.1U	6.69	21.6U	0 *	6.74	21.6U	0 *	30-132	0.00	(< 20)
Acenaphthene	5.39U	4.77	4.48J	94	4.82	4.47J	93	40-123	0.11	(< 20)
Acenaphthylene	5.39U	4.77	4.34J	91	4.82	4.30J	89	32-132	0.81	(< 20)
Aniline	43.1U	4.77	21.6U	0 *	4.82	21.6U	0 *	24-89	0.00	(< 20)
Anthracene	5.39U	4.77	3.97J	83	4.82	3.95J	82	47-123	0.71	(< 20)
Azobenzene	5.39U	4.77	3.67J	77	4.82	3.64J	76	39-125	0.56	(< 20)
Benzo(a)Anthracene	5.39U	4.77	4.13J	87	4.82	4.11J	85	49-126	0.65	(< 20)
Benzo[a]pyrene	5.39U	4.77	4.02J	84	4.82	3.88J	81	45-129	3.60	(< 20)

Print Date: 08/18/2020 5:41:54PM



Matrix Spike Summary

Original Sample ID: 1209502006
 MS Sample ID: 1570389 MS
 MSD Sample ID: 1570390 MSD

Analysis Date: 08/13/2020 0:49
 Analysis Date: 08/13/2020 1:23
 Analysis Date: 08/13/2020 1:57
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by SW8270D

Parameter	Sample	Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzo[b]Fluoranthene	5.39U	4.77	4.01J	84	4.82	3.90J	81	45-132	2.60	(< 20)
Benzo[g,h,i]perylene	5.39U	4.77	3.47J	73	4.82	3.63J	76	43-134	4.50	(< 20)
Benzo[k]fluoranthene	5.39U	4.77	4.34J	91	4.82	4.20J	87	47-132	3.10	(< 20)
Benzoic acid	32.3U	6.69	16.1U	0 *	6.74	16.1U	0 *	53-124	0.00	(< 20)
Benzyl alcohol	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	29-122	0.00	(< 20)
Bis(2chloro1methylethyl)Ether	5.39U	4.77	2.83J	59	4.82	2.69U	0 *	33-131	0.00	(< 20)
Bis(2-Chloroethoxy)methane	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	36-121	0.00	(< 20)
Bis(2-Chloroethyl)ether	5.39U	4.77	5.77	121 *	4.82	5.10J	106	31-120	12.50	(< 20)
bis(2-Ethylhexyl)phthalate	5.39U	4.77	4.06J	85	4.82	3.98J	83	51-133	1.90	(< 20)
Butylbenzylphthalate	5.39U	4.77	4.08J	85	4.82	3.93J	82	48-132	3.80	(< 20)
Carbazole	5.39U	4.77	4.48J	94	4.82	4.30J	89	50-123	4.10	(< 20)
Chrysene	5.39U	4.77	3.96J	83	4.82	3.98J	83	50-124	0.51	(< 20)
Dibenzo[a,h]anthracene	5.39U	4.77	3.54J	74	4.82	3.64J	76	45-134	3.20	(< 20)
Dibenzofuran	5.39U	4.77	3.82J	80	4.82	3.85J	80	44-120	0.75	(< 20)
Diethylphthalate	5.39U	4.77	4.73J	99	4.82	4.67J	97	50-124	1.10	(< 20)
Dimethylphthalate	5.39U	4.77	4.73J	99	4.82	2.69U	0 *	48-124	0.00	(< 20)
Di-n-butylphthalate	5.39U	4.77	4.65J	97	4.82	4.51J	94	51-128	3.00	(< 20)
di-n-Octylphthalate	10.8U	4.77	3.77J	79	4.82	3.60J	75	45-140	4.40	(< 20)
Fluoranthene	5.39U	4.77	4.48J	94	4.82	4.30J	89	50-127	4.10	(< 20)
Fluorene	5.39U	4.77	4.56J	95	4.82	4.59J	95	43-125	0.75	(< 20)
Hexachlorobenzene	5.39U	4.77	3.10J	65	4.82	3.15J	65	45-122	1.40	(< 20)
Hexachlorobutadiene	5.39U	4.77	3.44J	72	4.82	3.31J	69	32-123	3.80	(< 20)
Hexachlorocyclopentadiene	15.1U	4.77	7.55U	0 *	4.82	7.55U	0 *	34-74	0.00	(< 20)
Hexachloroethane	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	28-117	0.00	(< 20)
Indeno[1,2,3-c,d] pyrene	5.39U	4.77	3.51J	74	4.82	3.51J	73	45-133	0.07	(< 20)
Isophorone	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	30-122	0.00	(< 20)
Naphthalene	5.39U	4.77	8.72	183 *	4.82	8.44	175 *	35-123	3.40	(< 20)
Nitrobenzene	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	34-122	0.00	(< 20)
N-Nitrosodimethylamine	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	23-120	0.00	(< 20)
N-Nitroso-di-n-propylamine	5.39U	4.77	2.69U	0 *	4.82	2.69U	0 *	36-120	0.00	(< 20)
N-Nitrosodiphenylamine	5.39U	4.77	3.35J	70	4.82	3.26J	68	38-127	2.70	(< 20)
Pentachlorophenol	43.1U	6.69	21.6U	0 *	6.74	21.6U	0 *	25-133	0.00	(< 20)
Phenanthrene	5.39U	4.77	4.11J	86	4.82	4.05J	84	50-121	1.60	(< 20)
Phenol	5.39U	4.77	2.49J	52	4.82	2.34J	49	34-121	6.00	(< 20)
Pyrene	5.39U	4.77	3.90J	82	4.82	3.88J	81	47-127	0.48	(< 20)
Surrogates										
2,4,6-Tribromophenol (surr)		9.56	5.73	60	9.63	5.55	58	35-125	3.20	

Print Date: 08/18/2020 5:41:54PM



Matrix Spike Summary

Original Sample ID: 1209502006
MS Sample ID: 1570389 MS
MSD Sample ID: 1570390 MSD

Analysis Date:
Analysis Date: 08/13/2020 1:23
Analysis Date: 08/13/2020 1:57
Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007,
1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by SW8270D

Parameter	Sample	Matrix Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
2-Fluorobiphenyl (surr)		4.77	3.98	83	4.82	4.02	84	44-115	0.99	
2-Fluorophenol (surr)		9.56	3.43	36	9.63	3.24	34	* 35-115	5.60	
Nitrobenzene-d5 (surr)		4.77	0.00	0	4.82	0.00	0	* 37-122	0.00	
Phenol-d6 (surr)		9.56	5.61	59	9.63	0.00	0	* 33-122	200.00	
Terphenyl-d14 (surr)		4.77	4.10	86	4.82	4.07	85	54-127	0.89	

Batch Information

Analytical Batch: XMS12188
Analytical Method: SW8270D
Instrument: HP 6890/5973 SSA
Analyst: JMG
Analytical Date/Time: 8/13/2020 1:23:00AM

Prep Batch: XXX43498
Prep Method: Sonication Extraction Soil SW8270
Prep Date/Time: 7/23/2020 9:48:05AM
Prep Initial Wt./Vol.: 22.70g
Prep Extract Vol: 1.00mL

Print Date: 08/18/2020 5:41:54PM



Method Blank

Blank ID: MB for HBN 1809290 [XXX/43507]
Blank Lab ID: 1570652

Matrix: Soil/Solid (dry weight)

QC for Samples:

1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	13.5J	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	93.8	60-120		%

Batch Information

Analytical Batch: XFC15666
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CDM
Analytical Date/Time: 7/24/2020 10:29:00PM

Prep Batch: XXX43507
Prep Method: SW3550C
Prep Date/Time: 7/24/2020 8:17:28AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 5 mL

Print Date: 08/18/2020 5:41:56PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1209502 [XXX43507]
Blank Spike Lab ID: 1570653
Date Analyzed: 07/24/2020 22:39

Spike Duplicate ID: LCSD for HBN 1209502 [XXX43507]
Spike Duplicate Lab ID: 1570654
Matrix: Soil/Solid (dry weight)

QC for Samples: 1209502001, 1209502002, 1209502003, 1209502004, 1209502005, 1209502006, 1209502007, 1209502008, 1209502009, 1209502010, 1209502011, 1209502012, 1209502013

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	833	664	80	833	660	79	(75-125)	0.65	(< 20)
Surrogates									
5a Androstane (surr)	16.7	105	105	16.7	104	104	(60-120)	0.81	

Batch Information

Analytical Batch: **XFC15666**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CDM**

Prep Batch: **XXX43507**
Prep Method: **SW3550C**
Prep Date/Time: **07/24/2020 08:17**
Spike Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL

Print Date: 08/18/2020 5:42:00PM

Nelson, Justin (Anchorage)

From: Marshall, Shayla <smarshall@emi-alaska.com>
Sent: Monday, July 20, 2020 10:15 AM
To: Nelson, Justin (Anchorage)
Subject: [EXTERNAL] Incoming Shungnak Samples

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

Justin.

We delivered samples to Fairbanks for the Shungnak spill project Friday evening. We have 5-day RUSH listed on the COC. The ADEC has since said that the standard turnaround for soil is fine. However, because the spill site is upgradient to the water supply for the community, they would like a 5-day rush on the water sample. Is that possible?

Shayla

Vkd | ol#P dwdkda#
Y lfn#Suhvghq#
Hqylrqp hqwd#P dgdjhp hqwd#f#
R #<3 : ,#5:50<669#
F #<3 : ,#55606877#

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Nelson, Justin (Anchorage)

From: Marshall, Shayla <smarshall@emi-alaska.com>
Sent: Tuesday, July 28, 2020 11:22 AM
To: Nelson, Justin (Anchorage)
Subject: RE: [EXTERNAL] Incoming Shungnak Samples

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

This is the request we received from the ADEC regarding the Shungnak City Water Sample results:

Thank you Shayla, can you please have the lab submit the samples as “special” through the EDRS drinking water reporting system . The Shugnak PWS ID is 340361

Does this make sense or feasible with you?

Shayla

From: Nelson, Justin (Anchorage) <Justin.Nelson@sgs.com>
Sent: Monday, July 27, 2020 5:15 PM
To: Marshall, Shayla <smarshall@emi-alaska.com>
Subject: RE: [EXTERNAL] Incoming Shungnak Samples

Here's what I've got. PAH is in prelim status, but won't change.

Justin A. Nelson
Environmental, Health & Safety
Client Service Manager, Alaska

Phone: + 01 907 562 2343
Direct: + 01 907 550 3205

From: Marshall, Shayla <smarshall@emi-alaska.com>
Sent: Monday, July 27, 2020 4:52 PM
To: Nelson, Justin (Anchorage) <Justin.Nelson@sgs.com>
Subject: RE: [EXTERNAL] Incoming Shungnak Samples

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

Still any luck? I'm getting hounded by both the ADEC Spills Department and ADEC Drinking Water—sorry.

From: Nelson, Justin (Anchorage) <Justin.Nelson@sgs.com>
Sent: Monday, July 27, 2020 11:13 AM
To: Marshall, Shayla <smarshall@emi-alaska.com>
Subject: RE: [EXTERNAL] Incoming Shungnak Samples

Yeah, I'll generate one in a bit here, in the meantime:

RRO: 0.476 mg/L
DRO: ND
All 524 VOC: ND

No PAH data yet. Hopefully I get that soon and then I'll do a prelim.

Justin A. Nelson
Environmental, Health & Safety
Client Service Manager, Alaska

Phone: + 01 907 562 2343
Direct: + 01 907 550 3205

From: Marshall, Shayla <smarshall@emi-alaska.com>
Sent: Monday, July 27, 2020 11:08 AM
To: Nelson, Justin (Anchorage) <Justin.Nelson@sgs.com>
Subject: RE: [EXTERNAL] Incoming Shungnak Samples

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments.

Is there a chance we can get a prelim of the water sample results minute the SVOCs?

From: Marshall, Shayla
Sent: Thursday, July 23, 2020 3:25 PM
To: Nelson, Justin (Anchorage) <Justin.Nelson@sgs.com>
Subject: RE: [EXTERNAL] Incoming Shungnak Samples

Thanks.

From: Nelson, Justin (Anchorage) <Justin.Nelson@sgs.com>
Sent: Thursday, July 23, 2020 3:24 PM
To: Marshall, Shayla <smarshall@emi-alaska.com>
Subject: RE: [EXTERNAL] Incoming Shungnak Samples

We're not going to get the 525 SVOC on a rush TAT, I should have the rest of the data in time.

Justin A. Nelson
Environmental, Health & Safety
Client Service Manager, Alaska

Phone: + 01 907 562 2343
Direct: + 01 907 550 3205

From: Marshall, Shayla <smarshall@emi-alaska.com>
Sent: Monday, July 20, 2020 10:15 AM
To: Nelson, Justin (Anchorage) <Justin.Nelson@sgs.com>
Subject: [EXTERNAL] Incoming Shungnak Samples

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments.

Justin.

We delivered samples to Fairbanks for the Shungnak spill project Friday evening. We have 5-day RUSH listed on the COC. The ADEC has since said that the standard turnaround for soil is fine. However, because the spill site is upgradient to the water supply for the community, they would like a 5-day rush on the water sample. Is that possible?

Shayla

Vkd|@#P dWkd@#
Y lfh#SuhvghqW#
Hqylrop hqwd@P dgdjhp hqW#qf#
R #<3 : #5:50<669#
F#<3 : #55606877#

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EMI					Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.										Page <u> 1 </u> of <u> 2 </u>			
Section 1	CLIENT: Phil Barnes PHONE NO: 907-272-9336					Section 3		Preservative										
	CONTACT: Shungnak Spill PROJECT/ PWSID/ PERMIT#:					# C O N T A I N E R S	Type C = COMP G = GRAB MI = Multi Incremental Soils	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">MeOH</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> </div>										
	REPORTS TO: Phil Barnes E-MAIL: pbarnes@emi-alaska.com							<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">GRO / VOCs (AK 101/8260)</div> <div style="text-align: center;">DRO (AK101)</div> <div style="text-align: center;">SVOCs (8270D)</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> <div style="text-align: center;">None</div> </div>										
	INVOICE TO: EMI QUOTE #: P.O. #:																	
Section 2	RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE													REMARKS/ LOC ID
	(1AB)	TP-1-2	07/15/20	10:52	soil	2	Grab	X	X	X								
	(2AB)	TP-3-3	07/15/20	12:09	soil	2	Grab	X	X	X								
	(3AB)	TP-4-12	07/15/20	14:57	soil	2	Grab	X	X	X								
	(4AB)	TP-5-7	07/15/20	13:30	soil	2	Grab	X	X	X								
	(5AB)	TP-6-7	07/15/20	17:12	soil	2	Grab	X	X	X								
	(6AB)	TP-7-2	07/15/20	18:40	soil	2	Grab	X	X	X								
	(7AB)	TP-8-3	07/15/20	18:48	soil	2	Grab	X	X	X								
	(8AB)	TP-9-7	07/16/20	09:46	soil	2	Grab	X	X	X								
	(9AB)	TP-10-3	07/16/20	09:50	soil	2	Grab	X	X	X								
	(10AB)	TP-11-1	07/16/20	11:47	soil	2	Grab	X	X	X								
	Section 5	Relinquished By: (1)		Date	Time	Received By:		Section 4		DOD Project? Yes <u>No</u>		Data Deliverable Requirements:						
		Date	Time			Cooler ID: <u> </u> 1 of 1		Level II										
		Requested Turnaround Time and/or Special Instructions:																
		5-Day RUSH Water only RUSH Profile # 334804																
Relinquished By: (2)		Date	Time	Received By:				Temp Blank °C: <u>2.4, 1.6</u> or Ambient []		Chain of Custody Seal: (Circle) <u>INTACT</u> <u>BROKEN</u> <u>ABSENT</u>								
Relinquished By: (3)		Date	Time	Received By:														
Relinquished By: (4)		Date	Time	Received For Laboratory By:														



e-Sample Receipt Form

SGS Workorder #:

1209502



1 2 0 9 5 0 2

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
Chain of Custody / Temperature Requirements			N/A	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Yes	1F,1B		
COC accompanied samples?	Yes			
DOD: Were samples received in COC corresponding coolers?	N/A			
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required				
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 of 1	@ 1.5 °C	Therm. ID: D30
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
*If >6°C, were samples collected <8 hours ago?		N/A		
If <0°C, were sample containers ice free?		N/A		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.				
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes			
Do samples match COC** (i.e., sample IDs, dates/times collected)?	No	Incorrect amount of trip blanks.Proceeded.		
Note: If times differ <1hr, record details & login per COC. *Note: If sample information on containers differs from COC, SGS will default to COC information				
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	No	Missing analyses for sample 15.Proceeded to schedule DRO/RRO,GRO and PAH SIM per sample labels.		
Were proper containers (type/mass/volume/preservative***)used?	N/A	N/A ***Exemption permitted for metals (e.g,200.8/6020A).		
Volatile / LL-Hg Requirements				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes			
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes			
Were all soil VOAs field extracted with MeOH+BFB?	Yes			
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				



e-Sample Receipt Form FBK

SGS Workorder #:

1209502

1209502

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
Chain of Custody / Temperature Requirements			Yes	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location		N/A		
COC accompanied samples?		Yes		
DOD: Were samples received in COC corresponding coolers?		N/A		
<input type="checkbox"/> **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required				
Temperature blank compliant* (i.e., 0-6 °C after CF)?		Yes	Cooler ID: 1	@ 2.4 °C Therm. ID: D63
		Yes	Cooler ID: 2	@ 1.6 °C Therm. ID: D60
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.			Cooler ID:	@ °C Therm. ID:
			Cooler ID:	@ °C Therm. ID:
			Cooler ID:	@ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?				
If <0°C, were sample containers ice free?				
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.				
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Do samples match COC** (i.e., sample IDs, dates/times collected)?		N/C		
**Note: If times differ <1hr, record details & login per COC.				
***Note: If sample information on containers differs from COC, SGS will default to COC information				
Were samples in good condition (no leaks/cracks/breakage)?		Yes		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals))		Yes		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?		Yes		
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?		N/C		
Were all soil VOAs field extracted with MeOH+BFB?		N/C		
For Rush/Short Hold Time, was RUSH/Short HT email sent?		Yes	5 day requested	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				
SGS Profile #			0	



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1209502001-A	No Preservative Required	OK			
1209502001-B	Methanol field pres. 4 C	OK			
1209502002-A	No Preservative Required	OK			
1209502002-B	Methanol field pres. 4 C	OK			
1209502003-A	No Preservative Required	OK			
1209502003-B	Methanol field pres. 4 C	OK			
1209502004-A	No Preservative Required	OK			
1209502004-B	Methanol field pres. 4 C	OK			
1209502005-A	No Preservative Required	OK			
1209502005-B	Methanol field pres. 4 C	OK			
1209502006-A	No Preservative Required	OK			
1209502006-B	Methanol field pres. 4 C	OK			
1209502007-A	No Preservative Required	OK			
1209502007-B	Methanol field pres. 4 C	OK			
1209502008-A	No Preservative Required	OK			
1209502008-B	Methanol field pres. 4 C	OK			
1209502009-A	No Preservative Required	OK			
1209502009-B	Methanol field pres. 4 C	OK			
1209502010-A	No Preservative Required	OK			
1209502010-B	Methanol field pres. 4 C	OK			
1209502011-A	No Preservative Required	OK			
1209502011-B	Methanol field pres. 4 C	OK			
1209502012-A	No Preservative Required	OK			
1209502012-B	Methanol field pres. 4 C	OK			
1209502013-A	No Preservative Required	OK			
1209502013-B	Methanol field pres. 4 C	OK			
1209502014-A	Methanol field pres. 4 C	OK			
1209502015-A	HCL to pH < 2	OK			
1209502015-B	HCL to pH < 2	OK			
1209502015-C	No Preservative Required	OK			
1209502015-D	No Preservative Required	OK			
1209502015-E	No Preservative Required	OK			
1209502015-F	No Preservative Required	OK			
1209502015-G	HCL to pH < 2	OK			
1209502015-H	HCL to pH < 2	OK			
1209502015-I	HCL to pH < 2	OK			
1209502015-J	HCL to pH < 2	OK			
1209502015-K	HCL to pH < 2	OK			
1209502015-L	HCL to pH < 2	OK			
1209502016-A	HCL to pH < 2	OK			
1209502016-B	HCL to pH < 2	OK			
1209502016-C	HCL to pH < 2	OK			
1209502016-D	HCL to pH < 2	OK			
1209502016-E	HCL to pH < 2	OK			
1209502016-F	HCL to pH < 2	OK			

Container Id

Preservative

Container
Condition

Container Id

Preservative

Container
Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-18-12
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

110 South Hill Street
 South Bend, IN 46617
 Tel: (574) 233-4777
 Fax: (574) 233-8207
 1 800 332 4345

Laboratory Report

Client: SGS North America Inc.

 Attn: Julie Shumway
 200 West Potter Drive
 Anchorage, AK 99518

Report: 492425
 Priority: Standard Written
 Status: Final
 PWS ID: Not Supplied
 Alaska Lab ID #: IN00035

Sample Information					
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4680246	Shungnak City Water	525.2	07/16/20 14:08	Client	07/23/20 09:30

Report Summary

Note: See attached page for additional comments.

Note: Sample containers were provided by the client. The sample submitted for Method 525.2 analysis was received at a pH of 7, which is outside of method requirements. The sample pH was adjusted by laboratory personnel prior to analysis.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Traci Chlebowski at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.



 Authorized Signature

 Title

08/06/2020

 Date

Client Name: SGS North America Inc.
 Report #: 492425

Sampling Point: Shungnak City Water

PWS ID: Not Supplied

Semi-volatile Organic Chemicals									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	EEA ID #
15972-60-8	Alachlor	525.2	2 *	0.1	< 0.1	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
309-00-2	Aldrin	525.2	---	0.1	< 0.1	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
1912-24-9	Atrazine	525.2	3 *	0.1	< 0.1	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
50-32-8	Benzo(a)pyrene	525.2	0.2 *	0.02	< 0.02	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
58-89-9	gamma-BHC (Lindane)	525.2	0.2 *	0.02	< 0.02	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
23184-66-9	Butachlor	525.2	---	0.1	< 0.1	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
60-57-1	Dieldrin	525.2	---	0.1	< 0.1	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
103-23-1	Di(2-ethylhexyl)adipate	525.2	400 *	0.6	< 0.6	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
117-81-7	Di(2-ethylhexyl)phthalate	525.2	6 *	0.6	< 0.6	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
72-20-8	Endrin	525.2	2 *	0.01	< 0.01	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
76-44-8	Heptachlor	525.2	0.4 *	0.04	< 0.04	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
1024-57-3	Heptachlor epoxide	525.2	0.2 *	0.02	< 0.02	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
118-74-1	Hexachlorobenzene	525.2	1 *	0.1	< 0.1	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
77-47-4	Hexachlorocyclopentadiene	525.2	50 *	0.1	< 0.1	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
72-43-5	Methoxychlor	525.2	40 *	0.1	< 0.1	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
51218-45-2	Metolachlor	525.2	---	0.1	< 0.1	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
21087-64-9	Metribuzin	525.2	---	0.1	< 0.1	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
1918-16-7	Propachlor	525.2	---	0.1	< 0.1	ug/L	07/28/20 08:13	07/29/20 09:32	4680246
122-34-9	Simazine	525.2	4 *	0.07	< 0.07	ug/L	07/28/20 08:13	07/29/20 09:32	4680246

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

If applicable, the calculation of the matrix spike (MS) or matrix spike duplicate (MSD) percent recovery is as follows: $(\text{MS or MSD value} - \text{Sample value}) \times 100 / \text{spike target} / \text{dilution factor} = \text{Recovery \%}$

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

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492425
olina

Locations Nationwide

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5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

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F088 COC REF LAB 20190411

Eurofins Eaton Analytical

Run Log

Run ID: 277708 Method: 525.2

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
CCC	4683127	Shungnak City Water	OS	DH	07/28/2020 18:50	525.2-DH-060720A.mth
LFB	4683119		RW	DH	07/28/2020 19:32	525.2-DH-060720A.mth
LMB	4683116		RW	DH	07/28/2020 22:20	525.2-DH-060720A.mth
CCC	4683128		OS	DH	07/29/2020 06:44	525.2-DH-060720A.mth
FS	4680246		SW	DH	07/29/2020 09:32	525.2-DH-060720A.mth
CCC	4683129		OS	DH	07/29/2020 16:33	525.2-DH-060720A.mth

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCC	IS-Chrysene-d12	525.2	N/A	---		1591000	1591000	ug/L	100	50 - 150	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1568000	1568000	ug/L	100	50 - 150	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	SS-Triphenylphosphate	525.2	N/A	---		5.4080	5.0	ug/L	108	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	IS-Acenaphthene-d10	525.2	N/A	---		1620000	1620000	ug/L	100	50 - 150	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	IS-p-Terphenyl-d14	525.2	N/A	---		1846000	1846000	ug/L	100	50 - 150	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	SS-1,3-Dimethyl-2-nitrobenzene	525.2	N/A	---		5.0500	5.0	ug/L	101	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	SS-Perylene-d12	525.2	N/A	---		4.8710	5.0	ug/L	97	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Alachlor	525.2	0.1	---		2.1030	2.0	ug/L	105	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Aldrin	525.2	0.1	---		2.2610	2.0	ug/L	113	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Atrazine	525.2	0.1	---		2.1070	2.0	ug/L	105	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Benzo(a)pyrene	525.2	0.02	---		1.9040	2.0	ug/L	95	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	gamma-BHC (Lindane)	525.2	0.02	---		2.0900	2.0	ug/L	104	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Butachlor	525.2	0.1	---		1.8900	2.0	ug/L	94	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Dieldrin	525.2	0.1	---		1.8670	2.0	ug/L	93	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Di(2-ethylhexyl)adipate	525.2	0.6	---		2.2410	2.0	ug/L	112	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Di(2-ethylhexyl)phthalate	525.2	0.6	---		2.2710	2.0	ug/L	114	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Endrin	525.2	0.01	---		2.0740	2.0	ug/L	104	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Heptachlor	525.2	0.04	---		2.0290	2.0	ug/L	101	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Heptachlor epoxide	525.2	0.02	---		2.0390	2.0	ug/L	102	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Hexachlorobenzene	525.2	0.1	---		2.1170	2.0	ug/L	106	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Hexachlorocyclopentadiene	525.2	0.1	---		1.9420	2.0	ug/L	97	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Methoxychlor	525.2	0.1	---		2.1060	2.0	ug/L	105	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Metolachlor	525.2	0.1	---		2.0160	2.0	ug/L	101	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Metribuzin	525.2	0.1	---		1.9960	2.0	ug/L	100	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Propachlor	525.2	0.1	---		2.1090	2.0	ug/L	105	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
CCC	Simazine	525.2	0.07	---		2.0860	2.0	ug/L	104	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 18:50	4683127
LFB	IS-Chrysene-d12	525.2	N/A	---		1551000	1591000	ug/L	97	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	IS-Phenanthrene-d10	525.2	N/A	---		1548000	1568000	ug/L	99	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	SS-Triphenylphosphate	525.2	N/A	---		5.3980	5.0	ug/L	108	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	IS-Acenaphthene-d10	525.2	N/A	---		1608000	1620000	ug/L	99	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	IS-p-Terphenyl-d14	525.2	N/A	---		1915000	1846000	ug/L	104	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	SS-1,3-Dimethyl-2-nitrobenzene	525.2	N/A	---		4.9940	5.0	ug/L	100	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	SS-Perylene-d12	525.2	N/A	---		4.6500	5.0	ug/L	93	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Alachlor	525.2	0.1	---		2.1180	2.0	ug/L	106	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Aldrin	525.2	0.1	---		2.1030	2.0	ug/L	105	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Atrazine	525.2	0.1	---		2.1170	2.0	ug/L	106	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Benzo(a)pyrene	525.2	0.02	---		1.8110	2.0	ug/L	91	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	gamma-BHC (Lindane)	525.2	0.02	---		2.0750	2.0	ug/L	104	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Butachlor	525.2	0.1	---		1.9370	2.0	ug/L	97	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Dieldrin	525.2	0.1	---		1.8440	2.0	ug/L	92	70 - 130	---	---	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
LFB	Di(2-ethylhexyl)adipate	525.2	0.6	---		2.2590	2.0	ug/L	113	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Di(2-ethylhexyl)phthalate	525.2	0.6	---		2.2720	2.0	ug/L	114	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Endrin	525.2	0.01	---		2.1920	2.0	ug/L	110	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Heptachlor	525.2	0.04	---		1.9510	2.0	ug/L	98	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Heptachlor epoxide	525.2	0.02	---		2.0280	2.0	ug/L	101	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Hexachlorobenzene	525.2	0.1	---		2.0040	2.0	ug/L	100	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Hexachlorocyclopentadiene	525.2	0.1	---		1.7690	2.0	ug/L	88	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Methoxychlor	525.2	0.1	---		2.1840	2.0	ug/L	109	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Metolachlor	525.2	0.1	---		2.0730	2.0	ug/L	104	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Metribuzin	525.2	0.1	---		2.0520	2.0	ug/L	103	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Propachlor	525.2	0.1	---		2.1110	2.0	ug/L	106	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LFB	Simazine	525.2	0.07	---		2.0810	2.0	ug/L	104	70 - 130	----	----	1.0	07/28/2020 08:13	07/28/2020 19:32	4683119
LMB	IS-Chrysene-d12	525.2	N/A	---		1389000	1591000	ug/L	87	70 - 130	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	IS-Phenanthrene-d10	525.2	N/A	---		1347000	1568000	ug/L	86	70 - 130	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	SS-Triphenylphosphate	525.2	N/A	---		5.2940	5.0	ug/L	109	70 - 130	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	IS-Acenaphthene-d10	525.2	N/A	---		1427000	1620000	ug/L	88	70 - 130	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	IS-p-Terphenyl-d14	525.2	N/A	---		1763000	1846000	ug/L	96	70 - 130	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	SS-1,3-Dimethyl-2-nitrobenzene	525.2	N/A	---		4.9460	5.0	ug/L	102	70 - 130	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	SS-Perylene-d12	525.2	N/A	---		4.0650	5.0	ug/L	84	70 - 130	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Alachlor	525.2	0.1	---	<	0.1		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Aldrin	525.2	0.1	---	<	0.1		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Atrazine	525.2	0.1	---	<	0.1		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Benzo(a)pyrene	525.2	0.02	---	<	0.02		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	gamma-BHC (Lindane)	525.2	0.02	---	<	0.02		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Butachlor	525.2	0.1	---	<	0.1		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Dieldrin	525.2	0.1	---	<	0.1		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Di(2-ethylhexyl)adipate	525.2	0.6	---	<	0.6		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Di(2-ethylhexyl)phthalate	525.2	0.6	---	<	0.6		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Endrin	525.2	0.01	---	<	0.01		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Heptachlor	525.2	0.04	---	<	0.04		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Heptachlor epoxide	525.2	0.02	---	<	0.02		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Hexachlorobenzene	525.2	0.1	---	<	0.1		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Hexachlorocyclopentadiene	525.2	0.1	---	<	0.1		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Methoxychlor	525.2	0.1	---	<	0.1		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Metolachlor	525.2	0.1	---	<	0.1		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Metribuzin	525.2	0.1	---	<	0.1		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Propachlor	525.2	0.1	---	<	0.1		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
LMB	Simazine	525.2	0.07	---	<	0.07		ug/L	---	---	----	----	0.97	07/28/2020 08:13	07/28/2020 22:20	4683116
CCC	IS-Chrysene-d12	525.2	N/A	---		1479000	1479000	ug/L	100	50 - 150	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1470000	1470000	ug/L	100	50 - 150	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	SS-Triphenylphosphate	525.2	N/A	---		5.4760	5.0	ug/L	110	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCC	IS-Acenaphthene-d10	525.2	N/A	---		1547000	1547000	ug/L	100	50 - 150	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	IS-p-Terphenyl-d14	525.2	N/A	---		1717000	1717000	ug/L	100	50 - 150	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	SS-1,3-Dimethyl-2-nitrobenzene	525.2	N/A	---		5.1680	5.0	ug/L	103	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	SS-Perylene-d12	525.2	N/A	---		5.0070	5.0	ug/L	100	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Alachlor	525.2	0.1	---		2.1100	2.0	ug/L	106	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Aldrin	525.2	0.1	---		2.2430	2.0	ug/L	112	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Atrazine	525.2	0.1	---		2.1260	2.0	ug/L	106	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Benzo(a)pyrene	525.2	0.02	---		1.9710	2.0	ug/L	99	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	gamma-BHC (Lindane)	525.2	0.02	---		2.1420	2.0	ug/L	107	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Butachlor	525.2	0.1	---		1.9200	2.0	ug/L	96	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Dieldrin	525.2	0.1	---		1.8580	2.0	ug/L	93	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Di(2-ethylhexyl)adipate	525.2	0.6	---		2.2590	2.0	ug/L	113	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Di(2-ethylhexyl)phthalate	525.2	0.6	---		2.2880	2.0	ug/L	114	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Endrin	525.2	0.01	---		2.0420	2.0	ug/L	102	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Heptachlor	525.2	0.04	---		2.0210	2.0	ug/L	101	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Heptachlor epoxide	525.2	0.02	---		2.0150	2.0	ug/L	101	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Hexachlorobenzene	525.2	0.1	---		2.0970	2.0	ug/L	105	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Hexachlorocyclopentadiene	525.2	0.1	---		1.7730	2.0	ug/L	89	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Methoxychlor	525.2	0.1	---		1.9430	2.0	ug/L	97	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Metolachlor	525.2	0.1	---		2.0720	2.0	ug/L	104	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Metribuzin	525.2	0.1	---		1.9780	2.0	ug/L	99	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Propachlor	525.2	0.1	---		2.0830	2.0	ug/L	104	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
CCC	Simazine	525.2	0.07	---		2.0350	2.0	ug/L	102	70 - 130	----	----	1.0	07/28/2020 08:13	07/29/2020 06:44	4683128
FS	IS-Chrysene-d12	525.2	N/A	Shungnak City Water		1390000	1479000	ug/L	94	70 - 130	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	IS-Phenanthrene-d10	525.2	N/A	Shungnak City Water		1321000	1470000	ug/L	90	70 - 130	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	SS-Triphenylphosphate	525.2	N/A	Shungnak City Water		5.6720	5.0	ug/L	111	70 - 130	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	IS-Acenaphthene-d10	525.2	N/A	Shungnak City Water		1414000	1547000	ug/L	91	70 - 130	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	IS-p-Terphenyl-d14	525.2	N/A	Shungnak City Water		1755000	1717000	ug/L	102	70 - 130	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	SS-1,3-Dimethyl-2-nitrobenzene	525.2	N/A	Shungnak City Water		4.9480	5.0	ug/L	97	70 - 130	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	SS-Perylene-d12	525.2	N/A	Shungnak City Water		4.6210	5.0	ug/L	91	70 - 130	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Alachlor	525.2	0.1	Shungnak City Water	<	0.1		ug/L	----	----	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Aldrin	525.2	0.1	Shungnak City Water	<	0.1		ug/L	----	----	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Atrazine	525.2	0.1	Shungnak City Water	<	0.1		ug/L	----	----	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Benzo(a)pyrene	525.2	0.02	Shungnak City Water	<	0.02		ug/L	----	----	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	gamma-BHC (Lindane)	525.2	0.02	Shungnak City Water	<	0.02		ug/L	----	----	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Butachlor	525.2	0.1	Shungnak City Water	<	0.1		ug/L	----	----	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Dieldrin	525.2	0.1	Shungnak City Water	<	0.1		ug/L	----	----	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Di(2-ethylhexyl)adipate	525.2	0.6	Shungnak City Water	<	0.6		ug/L	----	----	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Di(2-ethylhexyl)phthalate	525.2	0.6	Shungnak City Water	<	0.6		ug/L	----	----	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Endrin	525.2	0.01	Shungnak City Water	<	0.01		ug/L	----	----	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Heptachlor	525.2	0.04	Shungnak City Water	<	0.04		ug/L	----	----	----	----	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Heptachlor epoxide	525.2	0.02	Shungnak City Water	<	0.02		ug/L	---	---	---	---	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Hexachlorobenzene	525.2	0.1	Shungnak City Water	<	0.1		ug/L	---	---	---	---	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Hexachlorocyclopentadiene	525.2	0.1	Shungnak City Water	<	0.1		ug/L	---	---	---	---	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Methoxychlor	525.2	0.1	Shungnak City Water	<	0.1		ug/L	---	---	---	---	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Metolachlor	525.2	0.1	Shungnak City Water	<	0.1		ug/L	---	---	---	---	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Metribuzin	525.2	0.1	Shungnak City Water	<	0.1		ug/L	---	---	---	---	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Propachlor	525.2	0.1	Shungnak City Water	<	0.1		ug/L	---	---	---	---	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
FS	Simazine	525.2	0.07	Shungnak City Water	<	0.07		ug/L	---	---	---	---	1.02	07/28/2020 08:13	07/29/2020 09:32	4680246
CCC	IS-Chrysene-d12	525.2	N/A	---		1508000	1508000	ug/L	100	50 - 150	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1487000	1487000	ug/L	100	50 - 150	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	SS-Triphenylphosphate	525.2	N/A	---		5.4020	5.0	ug/L	108	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	IS-Acenaphthene-d10	525.2	N/A	---		1562000	1562000	ug/L	100	50 - 150	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	IS-p-Terphenyl-d14	525.2	N/A	---		1682000	1682000	ug/L	100	50 - 150	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	SS-1,3-Dimethyl-2-nitrobenzene	525.2	N/A	---		5.1680	5.0	ug/L	103	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	SS-Perylene-d12	525.2	N/A	---		4.7720	5.0	ug/L	95	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Alachlor	525.2	0.1	---		2.0550	2.0	ug/L	103	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Aldrin	525.2	0.1	---		2.2570	2.0	ug/L	113	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Atrazine	525.2	0.1	---		2.0540	2.0	ug/L	103	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Benzo(a)pyrene	525.2	0.02	---		1.8180	2.0	ug/L	91	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	gamma-BHC (Lindane)	525.2	0.02	---		2.0820	2.0	ug/L	104	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Butachlor	525.2	0.1	---		1.8750	2.0	ug/L	94	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Dieldrin	525.2	0.1	---		1.7780	2.0	ug/L	89	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Di(2-ethylhexyl)adipate	525.2	0.6	---		2.1870	2.0	ug/L	109	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Di(2-ethylhexyl)phthalate	525.2	0.6	---		2.2460	2.0	ug/L	112	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Endrin	525.2	0.01	---		1.9440	2.0	ug/L	97	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Heptachlor	525.2	0.04	---		1.9150	2.0	ug/L	96	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Heptachlor epoxide	525.2	0.02	---		1.9760	2.0	ug/L	99	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Hexachlorobenzene	525.2	0.1	---		2.0860	2.0	ug/L	104	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Hexachlorocyclopentadiene	525.2	0.1	---		1.5080	2.0	ug/L	75	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Methoxychlor	525.2	0.1	---		1.7760	2.0	ug/L	89	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Metolachlor	525.2	0.1	---		2.0010	2.0	ug/L	100	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Metribuzin	525.2	0.1	---		1.9520	2.0	ug/L	98	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Propachlor	525.2	0.1	---		2.0730	2.0	ug/L	104	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129
CCC	Simazine	525.2	0.07	---		1.9920	2.0	ug/L	100	70 - 130	---	---	1.0	07/28/2020 08:13	07/29/2020 16:33	4683129

Eurofins Eaton Analytical

Run Log

Run ID: 277862 Method: 525.2

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
CCC	4686581		OS	DH	07/31/2020 19:11	525.2-DH-060720A.mth
LFB	4686574		RW	DH	07/31/2020 19:53	525.2-DH-060720A.mth
CCC	4686582		OS	DH	08/01/2020 07:47	525.2-DH-060720A.mth
CCC	4686583		OS	DH	08/01/2020 17:37	525.2-DH-060720A.mth

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCC	IS-Chrysene-d12	525.2	N/A	---		1608000	1608000	ug/L	100	50 - 150	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1613000	1613000	ug/L	100	50 - 150	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	SS-Triphenylphosphate	525.2	N/A	---		5.4190	5.0	ug/L	108	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	IS-Acenaphthene-d10	525.2	N/A	---		1667000	1667000	ug/L	100	50 - 150	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	IS-p-Terphenyl-d14	525.2	N/A	---		1931000	1931000	ug/L	100	50 - 150	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	SS-1,3-Dimethyl-2-nitrobenzene	525.2	N/A	---		5.0970	5.0	ug/L	102	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	SS-Perylene-d12	525.2	N/A	---		4.9430	5.0	ug/L	99	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Atachlor	525.2	0.1	---		2.1110	2.0	ug/L	106	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Aldrin	525.2	0.1	---		2.2300	2.0	ug/L	112	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Atrazine	525.2	0.1	---		2.1480	2.0	ug/L	107	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Benzo(a)pyrene	525.2	0.02	---		1.9440	2.0	ug/L	97	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	gamma-BHC (Lindane)	525.2	0.02	---		2.1520	2.0	ug/L	108	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Butachlor	525.2	0.1	---		1.9490	2.0	ug/L	97	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Dieldrin	525.2	0.1	---		1.9070	2.0	ug/L	95	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Di(2-ethylhexyl)adipate	525.2	0.6	---		2.2990	2.0	ug/L	115	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Di(2-ethylhexyl)phthalate	525.2	0.6	---		2.3380	2.0	ug/L	117	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Endrin	525.2	0.01	---		2.1840	2.0	ug/L	109	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Heptachlor	525.2	0.04	---		2.0380	2.0	ug/L	102	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Heptachlor epoxide	525.2	0.02	---		2.0110	2.0	ug/L	101	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Hexachlorobenzene	525.2	0.1	---		2.0950	2.0	ug/L	105	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Hexachlorocyclopentadiene	525.2	0.1	---		2.0060	2.0	ug/L	100	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Methoxychlor	525.2	0.1	---		2.2410	2.0	ug/L	112	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Metolachlor	525.2	0.1	---		2.0660	2.0	ug/L	103	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Metribuzin	525.2	0.1	---		1.9920	2.0	ug/L	100	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Propachlor	525.2	0.1	---		2.1050	2.0	ug/L	105	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
CCC	Simazine	525.2	0.07	---		2.0810	2.0	ug/L	104	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:11	4686581
LFB	IS-Chrysene-d12	525.2	N/A	---		1506000	1608000	ug/L	94	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	IS-Phenanthrene-d10	525.2	N/A	---		1457000	1613000	ug/L	90	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	SS-Triphenylphosphate	525.2	N/A	---		5.4090	5.0	ug/L	108	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	IS-Acenaphthene-d10	525.2	N/A	---		1549000	1667000	ug/L	93	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	IS-p-Terphenyl-d14	525.2	N/A	---		1833000	1931000	ug/L	95	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	SS-1,3-Dimethyl-2-nitrobenzene	525.2	N/A	---		4.9460	5.0	ug/L	99	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	SS-Perylene-d12	525.2	N/A	---		4.6370	5.0	ug/L	93	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Atachlor	525.2	0.1	---		2.1650	2.0	ug/L	108	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Aldrin	525.2	0.1	---		2.1640	2.0	ug/L	108	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Atrazine	525.2	0.1	---		2.1770	2.0	ug/L	109	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Benzo(a)pyrene	525.2	0.02	---		1.7350	2.0	ug/L	87	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	gamma-BHC (Lindane)	525.2	0.02	---		2.1180	2.0	ug/L	106	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Butachlor	525.2	0.1	---		1.9490	2.0	ug/L	97	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Dieldrin	525.2	0.1	---		1.9010	2.0	ug/L	95	70 - 130	---	---	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
LFB	Di(2-ethylhexyl)adipate	525.2	0.6	---		2.3010	2.0	ug/L	115	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Di(2-ethylhexyl)phthalate	525.2	0.6	---		2.3550	2.0	ug/L	118	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Endrin	525.2	0.01	---		2.3250	2.0	ug/L	116	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Heptachlor	525.2	0.04	---		2.0050	2.0	ug/L	100	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Heptachlor epoxide	525.2	0.02	---		2.0320	2.0	ug/L	102	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Hexachlorobenzene	525.2	0.1	---		2.0780	2.0	ug/L	104	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Hexachlorocyclopentadiene	525.2	0.1	---		1.8040	2.0	ug/L	90	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Methoxychlor	525.2	0.1	---		2.2420	2.0	ug/L	112	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Metolachlor	525.2	0.1	---		2.1340	2.0	ug/L	107	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Metribuzin	525.2	0.1	---		2.0730	2.0	ug/L	104	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Propachlor	525.2	0.1	---		2.0920	2.0	ug/L	105	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
LFB	Simazine	525.2	0.07	---		2.2000	2.0	ug/L	110	70 - 130	----	----	1.0	07/31/2020 07:54	07/31/2020 19:53	4686574
CCC	IS-Chrysene-d12	525.2	N/A	---		1418000	1418000	ug/L	100	50 - 150	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1441000	1441000	ug/L	100	50 - 150	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	SS-Triphenylphosphate	525.2	N/A	---		5.4910	5.0	ug/L	110	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	IS-Acenaphthene-d10	525.2	N/A	---		1518000	1518000	ug/L	100	50 - 150	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	IS-p-Terphenyl-d14	525.2	N/A	---		1687000	1687000	ug/L	100	50 - 150	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	SS-1,3-Dimethyl-2-nitrobenzene	525.2	N/A	---		5.0190	5.0	ug/L	100	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	SS-Perylene-d12	525.2	N/A	---		5.0040	5.0	ug/L	100	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Alachlor	525.2	0.1	---		2.0690	2.0	ug/L	103	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Aldrin	525.2	0.1	---		2.2630	2.0	ug/L	113	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Atrazine	525.2	0.1	---		2.1030	2.0	ug/L	105	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Benzo(a)pyrene	525.2	0.02	---		1.9240	2.0	ug/L	96	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	gamma-BHC (Lindane)	525.2	0.02	---		2.1340	2.0	ug/L	107	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Butachlor	525.2	0.1	---		1.9810	2.0	ug/L	99	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Dieldrin	525.2	0.1	---		1.8770	2.0	ug/L	94	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Di(2-ethylhexyl)adipate	525.2	0.6	---		2.2930	2.0	ug/L	115	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Di(2-ethylhexyl)phthalate	525.2	0.6	---		2.3170	2.0	ug/L	116	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Endrin	525.2	0.01	---		2.1600	2.0	ug/L	108	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Heptachlor	525.2	0.04	---		2.0200	2.0	ug/L	101	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Heptachlor epoxide	525.2	0.02	---		2.0790	2.0	ug/L	104	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Hexachlorobenzene	525.2	0.1	---		2.1240	2.0	ug/L	106	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Hexachlorocyclopentadiene	525.2	0.1	---		1.8090	2.0	ug/L	90	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Methoxychlor	525.2	0.1	---		2.0930	2.0	ug/L	105	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Metolachlor	525.2	0.1	---		2.0280	2.0	ug/L	101	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Metribuzin	525.2	0.1	---		1.9990	2.0	ug/L	100	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Propachlor	525.2	0.1	---		2.1380	2.0	ug/L	107	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	Simazine	525.2	0.07	---		2.0280	2.0	ug/L	101	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 07:47	4686582
CCC	IS-Chrysene-d12	525.2	N/A	---		1455000	1455000	ug/L	100	50 - 150	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	IS-Phenanthrene-d10	525.2	N/A	---		1419000	1419000	ug/L	100	50 - 150	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	SS-Triphenylphosphate	525.2	N/A	---		5.2830	5.0	ug/L	106	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583

QC Summary Report (cont.)

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCC	IS-Acenaphthene-d10	525.2	N/A	---		1501000	1501000	ug/L	100	50 - 150	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	IS-p-Terphenyl-d14	525.2	N/A	---		1669000	1669000	ug/L	100	50 - 150	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	SS-1,3-Dimethyl-2-nitrobenzene	525.2	N/A	---		5.0000	5.0	ug/L	100	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	SS-Perylene-d12	525.2	N/A	---		4.6700	5.0	ug/L	93	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Alachlor	525.2	0.1	---		2.0640	2.0	ug/L	103	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Aldrin	525.2	0.1	---		2.2970	2.0	ug/L	115	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Atrazine	525.2	0.1	---		2.1120	2.0	ug/L	106	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Benzo(a)pyrene	525.2	0.02	---		1.8260	2.0	ug/L	91	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	gamma-BHC (Lindane)	525.2	0.02	---		2.1570	2.0	ug/L	108	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Butachlor	525.2	0.1	---		1.9030	2.0	ug/L	95	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Dieldrin	525.2	0.1	---		1.7890	2.0	ug/L	89	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Di(2-ethylhexyl)adipate	525.2	0.6	---		2.2400	2.0	ug/L	112	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Di(2-ethylhexyl)phthalate	525.2	0.6	---		2.2990	2.0	ug/L	115	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Endrin	525.2	0.01	---		1.9600	2.0	ug/L	98	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Heptachlor	525.2	0.04	---		2.0250	2.0	ug/L	101	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Heptachlor epoxide	525.2	0.02	---		1.9550	2.0	ug/L	98	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Hexachlorobenzene	525.2	0.1	---		2.1460	2.0	ug/L	107	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Hexachlorocyclopentadiene	525.2	0.1	---		1.8760	2.0	ug/L	94	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Methoxychlor	525.2	0.1	---		1.9150	2.0	ug/L	96	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Metolachlor	525.2	0.1	---		2.0300	2.0	ug/L	102	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Metribuzin	525.2	0.1	---		2.0530	2.0	ug/L	103	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Propachlor	525.2	0.1	---		2.0700	2.0	ug/L	104	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583
CCC	Simazine	525.2	0.07	---		2.0080	2.0	ug/L	100	70 - 130	----	----	1.0	07/31/2020 07:54	08/01/2020 17:37	4686583

Sample Type Key

<u>Type (Abbr.)</u>	<u>Sample Type</u>	<u>Type (Abbr.)</u>	<u>Sample Type</u>
CCC	Continuing Calibration Check		
FS	Field Sample		
LFB	Laboratory Fortified Blank		
LMB	Laboratory Method Blank		

END OF REPORT

SGS DW Chemistry Certified Analyses

Applicable to PWSID Samples

ADEC DW-Chemical Certificate AK00971, expires 6-30-2021

Method/ Test Name	Reference	Analyte	Method/ Test Name	Reference	Analyte
200.8	EPA	Aluminum	524.2	EPA	Benzene-R
200.8	EPA	Antimony	524.2	EPA	Bromodichloromethane-T
200.8	EPA	Arsenic	524.2	EPA	Bromoform-T
200.8	EPA	Barium	524.2	EPA	Carbon Tetrachloride-R
200.8	EPA	Beryllium	524.2	EPA	Chlorobenzene-R
200.8	EPA	Cadmium	524.2	EPA	Chloroform-T
200.8	EPA	Chromium	524.2	EPA	cis-1,2-Dichloroethylene-R
200.8	EPA	Copper	524.2	EPA	Dibromochloromethane-T
200.8	EPA	Lead	524.2	EPA	Dichloromethane (Methylene Chloride)-R
200.8	EPA	Manganese	524.2	EPA	Ethylbenzene-R
200.8	EPA	Mercury	524.2	EPA	Styrene-R
200.8	EPA	Nickel	524.2	EPA	Tetrachloroethylene-R
200.8	EPA	Selenium	524.2	EPA	Toluene-R
200.8	EPA	Silver	524.2	EPA	Total THM-T
200.8	EPA	Thallium	524.2	EPA	Total Xylenes-R
200.8	EPA	Zinc	524.2	EPA	trans-1,2 Dichloroethylene
300.0	EPA	Chloride	524.2	EPA	Trichloroethylene-R
300.0	EPA	Fluoride	524.2	EPA	Vinyl Chloride-R
300.0	EPA	Nitrate-N	2120B	SM 21st ed	Color
300.0	EPA	Nitrate-Nitrite as N	2130B	SM 21st ed	Turbidity
300.0	EPA	Nitrite-N	2320B	SM 21st ed	Alkalinity
300.0	EPA	Sulfate	2510B	SM 21st ed	Conductivity
524.2	EPA	1,1,1-Trichloroethane-R	2540C	SM 21st ed	TDS
524.2	EPA	1,1,2-Trichloroethane-R	4500-CN-C,E	SM 21st ed	Cyanide
524.2	EPA	1,1-Dichloroethylene-R	4500-H-B	SM 21st ed	pH
524.2	EPA	1,2,4-Trichlorobenzene-R	4500-NO3-F	SM 21st ed	Nitrate-N
524.2	EPA	1,2-Dichlorobenzene-R	4500-NO3-F	SM 21st ed	Nitrite-N
524.2	EPA	1,2-Dichloroethane-R	4500-P-E	SM 21st ed	Ortho-phosphate
524.2	EPA	1,2-Dichloropropane-R	5310B	SM 21st ed	Dissolved Organic Carbon (DOC)
524.2	EPA	1,4-Dichlorobenzene-R	5310B	SM 21st ed	Total Organic Carbon (TOC)

ADEC DW-Micro Certificate AK00971, expires 6-30-2021

Method/ Test Name	Reference	Analyte	Method/ Test Name	Reference	Analyte
9215 B HPC Pour Plate	SM	Heterotrophic	9223 B Colilert-18 MPN	SM	E. coli
9223 B Colilert MPN	SM	E. coli	9223 B Colilert-18 PA	SM	E. coli
9223 B Colilert PA	SM	E. coli	9223 B Colilert-18 PA	SM	Total Coliform
9223 B Colilert PA	SM	Total Coliform			

Laboratory Data Review Checklist

Completed By:

Phil Barnes

Title:

Qualified Environmental Professional

Date:

August 20, 2020

Consultant Firm:

TC-EM JV

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1209502

Laboratory Report Date:

August 19, 2020

CS Site Name:

Shungnak School Tank Heating Oil Release

ADEC File Number:

Spill No. 20389917201

Hazard Identification Number:

NA

1209502

Laboratory Report Date:

August 19, 2020

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Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes ☒ No ☐ N/A ☐ Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes ☒ No ☒ N/A ☐ Comments:

Analysis for 524.2 and 525 were performed by Eurofins in South Bend, Indiana

2. Chain of Custody (CoC)

- a. CoC information completed, signed, and dated (including released/received by)?

Yes ☒ No ☐ N/A ☐ Comments:

- b. Correct analyses requested?

Yes ☒ No ☐ N/A ☐ Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes ☒ No ☐ N/A ☐ Comments:

2.4 and 1.6° C

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

Yes ☒ No ☐ N/A ☐ Comments:

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

Yes ☒ No ☐ N/A ☐ Comments:

No issues noted

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

Yes ☐ No ☒ N/A ☐ Comments:

No issues noted.

e. Data quality or usability affected?

Comments:

No issues noted; data considered usable.

4. Case Narrative

a. Present and understandable?

Yes ☒ No ☐ N/A ☐ Comments:

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

Yes ☐ No ☒ N/A ☐ Comments:

c. Were all corrective actions documented?

Yes ☐ No ☐ N/A ☒ Comments:

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

Comments:

The case narrative does not note effect on data quality/usability

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5. Samples Results

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

Yes ☒ No ☐ N/A ☐ Comments:

b. All applicable holding times met?

Yes ☒ No ☐ N/A ☐ Comments:

c. All soils reported on a dry weight basis?

Yes ☒ No ☐ N/A ☐ Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes ☐ No ☒ N/A ☐ Comments:

LOQs were exceeded for several VOC and PAH compounds for soil samples. See following table with applicable LOQs *italicized*.

e. Data quality or usability affected?

LOQs exceeded cleanup levels for the site as a result of sample dilution due to high levels of target analytes in the sample matrix. The data is considered usable as many of these samples also contained concentrations of the compounds of concern that exceeded ADEC cleanup levels.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes ☒ No ☐ N/A ☐ Comments:

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ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes ☒ No ☐ N/A ☐ Comments:

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Not Applicable

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

Yes ☐ No ☐ N/A ☒ Comments:

v. Data quality or usability affected?

Comments:

Not Applicable

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes ☒ No ☐ N/A ☐ Comments:

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

Yes ☐ No ☐ N/A ☒ Comments:

Metals not analyzed in the project samples

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

Yes ☒ No ☐ N/A ☐ Comments:

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

Yes ☒ No ☐ N/A ☐ Comments:

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

Comments:

Not Applicable

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

Yes ☐ No ☐ N/A ☒ Comments:

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

Comments:

Not applicable

- c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

- i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes ☐ No ☐ N/A ☒ Comments:

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes ☐ No ☐ N/A ☒ Comments:

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes ☐ No ☐ N/A ☒ Comments:

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- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes ☐ No ☐ N/A ☒ Comments:

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

Comments:

N/A

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

Yes ☐ No ☐ N/A ☒ Comments:

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

Comments:

N/A

- d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

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

Yes ☒ No ☐ N/A ☐ Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes ☐ No ☒ N/A ☐ Comments:

8620D (TP1-2, TP3-3, and TP7-2), 101 (TP1-2, TP3-3, TP4-12, TP6-7 and TP7-2), and 8720D (TP1-2, TP3-3, TP6-7 and TP7-2)

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

Yes ☒ No ☐ N/A ☐ Comments:

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iv. Data quality or usability affected?

Comments:

Surrogate recoveries for the following compounds were not met: 4-bromobenzene: (1209502_001, 1209502_002, 1209502_003, 1209502_005, 1209502_006); Nitrobenzene-d5: (1209502_001, 1209502_002, 1209502_055, 1209502_006); 2-fluorophenol: (1209502_003, 1209502_006); phenol-d6: (1209502_002, 1209502_005, 1209502_006); Nitrobenzene-d5: (1209502_005, 1209502_006); 2,4,6-tribromophenol: (1209502_002, 1209502_005, 1209502_006); However, detection for contaminants of concern at the site were higher than the site cleanup level, therefore the data is considered to be usable for the project purposes.

e. Trip Blanks

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

Yes ☒ No ☐ N/A ☐

Comments:

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

Yes ☒ No ☐ N/A ☐

Comments:

iii. All results less than LOQ and project specified objectives?

Yes ☒ No ☐ N/A ☐

Comments:

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A

v. Data quality or usability affected?

Comments:

N/A

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f. Field Duplicate

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

Yes ☒ No ☐ N/A ☐ Comments:

TP-12-2 is the primary sample; TP-12D and TP-2 are duplicate samples.

- ii. Submitted blind to lab?

Yes ☒ No ☐ N/A ☐ Comments:

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes ☒ No ☐ N/A ☐ Comments:

TP-12-2 DRO/TP-12D DRO 84.2%

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

Comments:

The highest of the concentration results were used for decision making purposes.

- g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes ☐ No ☒ N/A ☐ Comments:

Disposable equipment used for sampling

- i. All results less than LOQ and project specified objectives?

Yes ☐ No ☐ N/A ☒ Comments:

See above

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ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Not Applicable

iii. Data quality or usability affected?

Comments:

Not Applicable

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

a. Defined and appropriate?

Yes ☐ No ☐ N/A ☒

Comments:

Shungnak July 2020 Sample Results

Analyte	Analysis	Unit	Action Level	TP-1-2	TP-3-3	TP-4-12	TP-5-7	TP-6-7	TP-7-2	TP-8-3	TP-9-7	TP-10-3	TP-11-1	TP-12-2	TP-12-D	TP-13-2	TB-1
Gasoline Range Organics	AK101	mg/Kg	300	1150	1060	15.2	2.99 U	730	860	3.75 U	2.65 U	3.16 U	3.75 U	6.85	2.67 U	4.17 U	2.53 U
Diesel Range Organics	AK102	mg/Kg	250	17600	36000	951	20.6 U	16900	18300	22.8 U	20.8 U	21.1 U	21.2 U	2930	3430	27.4 U	
Volatile Organic Compounds																	
1,1,1,2-Tetrachloroethane	SW8260D	ug/Kg	22	2410 U	3390 U	24.0 U	23.9 U	2130 U	2460 U	30.0 U	21.2 U	25.3 U	30.0 U	24.8 U	21.3 U	33.3 U	20.3 U
1,1,2,2-Tetrachloroethane	SW8260D	ug/Kg	3	241 U	339 U	2.40 U	2.39 U	213 U	246 U	3.00 U	2.12 U	2.53 U	3.00 U	2.48 U	2.13 U	3.33 U	2.03 U
1,1,2-Trichloroethane	SW8260D	ug/Kg	1.4	96.5 U	135 U	0.960 U	0.956 U	85.3 U	98.5 U	1.20 U	0.849 U	1.01 U	1.20 U	0.990 U	0.853 U	1.33 U	0.811 U
1,1-Dichloroethane	SW8260D	ug/Kg	92	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	155 U	26.7 U	41.7 U	25.3 U
1,1-Dichloroethene	SW8260D	ug/Kg	1200	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	155 U	26.7 U	41.7 U	25.3 U
1,2,3-Trichlorobenzene	SW8260D	ug/Kg	150	6030 U	8470 U	60.0 U	59.7 U	5330 U	6150 U	74.9 U	53.1 U	63.2 U	75.1 U	61.9 U	53.3 U	83.4 U	50.7 U
1,2,3-Trichloropropane	SW8260D	ug/Kg	0.031	241 U	339 U	2.40 U	2.39 U	213 U	246 U	3.00 U	2.12 U	2.53 U	3.00 U	2.48 U	2.13 U	3.33 U	2.03 U
1,2,4-Trichlorobenzene	SW8260D	ug/Kg	82	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
1,2,4-Trimethylbenzene	SW8260D	ug/Kg	610	153000	186000	2270	59.7 U	125000	184000	91.8	53.1 U	63.2 U	75.1 U	61.9 U	53.3 U	83.4 U	50.7 U
1,2-Dibromoethane	SW8260D	ug/Kg	0.24	121 U	169 U	1.20 U	1.19 U	107 U	123 U	1.50 U	1.06 U	1.26 U	1.50 U	1.24 U	1.07 U	1.67 U	1.01 U
1,2-Dichlorobenzene	SW8260D	ug/Kg	2400	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
1,2-Dichloroethane	SW8260D	ug/Kg	5.5	241 U	339 U	2.40 U	2.39 U	213 U	246 U	3.00 U	2.12 U	2.53 U	3.00 U	12.4 U	2.13 U	3.33 U	2.03 U
1,2-Dichloropropane	SW8260D	ug/Kg	30	1210 U	1690 U	12.0 U	11.9 U	1070 U	1230 U	15.0 U	10.6 U	12.6 U	15.0 U	61.9 U	10.7 U	16.7 U	10.1 U
1,3,5-Trimethylbenzene	SW8260D	ug/Kg	660	42700	50300	635	29.9 U	32900	48900	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
1,3-Dichlorobenzene	SW8260D	ug/Kg	2300	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
1,4-Dichlorobenzene	SW8260D	ug/Kg	37	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
2-Butanone (MEK)	SW8260D	ug/Kg	15000	30200 U	42300 U	300 U	299 U	26700 U	30800 U	375 U	265 U	316 U	375 U	1550 U	267 U	417 U	253 U
2-Hexanone	SW8260D	ug/Kg	110	12100 U	16900 U	120 U	119 U	10700 U	12300 U	150 U	106 U	126 U	150 U	124 U	107 U	167 U	101 U
4-Isopropyltoluene	SW8260D	ug/Kg		12100 U	16900 U	163	119 U	10700 U	13000	150 U	106 U	126 U	150 U	124 U	107 U	167 U	101 U
4-Methyl-2-pentanone (MIBK)	SW8260D	ug/Kg	18000	30200 U	42300 U	300 U	299 U	26700 U	30800 U	375 U	265 U	316 U	375 U	1550 U	267 U	417 U	253 U
Acetone	SW8260D	ug/Kg	38000	30200 U	42300 U	300 U	299 U	26700 U	30800 U	375 U	265 U	316 U	375 U	1550 U	267 U	417 U	253 U
Benzene	SW8260D	ug/Kg	22	1510 U	2120 U	15.0 U	14.9 U	1330 U	1540 U	18.7 U	13.3 U	15.8 U	18.8 U	77.4 U	13.3 U	20.8 U	12.7 U
Bromobenzene	SW8260D	ug/Kg	360	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
Bromodichloromethane	SW8260D	ug/Kg	4.3	241 U	339 U	2.40 U	2.39 U	213 U	246 U	3.00 U	2.12 U	2.53 U	3.00 U	12.4 U	2.13 U	3.33 U	2.03 U
Bromoform	SW8260D	ug/Kg	100	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
Bromomethane	SW8260D	ug/Kg	24	2410 U	3390 U	24.0 U	23.9 U	2130 U	2460 U	30.0 U	21.2 U	25.3 U	30.0 U	124 U	21.3 U	33.3 U	20.3 U
Carbon disulfide	SW8260D	ug/Kg	2900	12100 U	16900 U	120 U	119 U	10700 U	12300 U	150 U	106 U	126 U	150 U	619 U	107 U	167 U	101 U
Carbon tetrachloride	SW8260D	ug/Kg	21	1510 U	2120 U	15.0 U	14.9 U	1330 U	1540 U	18.7 U	13.3 U	15.8 U	18.8 U	77.4 U	13.3 U	20.8 U	12.7 U
Chlorobenzene	SW8260D	ug/Kg	460	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
Chloroform	SW8260D	ug/Kg	7.1	483 U	677 U	4.80 U	4.78 U	427 U	492 U	6.00 U	4.25 U	5.05 U	6.01 U	24.8 U	4.27 U	6.67 U	4.06 U
Chloromethane	SW8260D	ug/Kg	610	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	155 U	26.7 U	41.7 U	25.3 U
Dibromochloromethane	SW8260D	ug/Kg	2.7	603 U	847 U	6.00 U	5.97 U	533 U	615 U	7.49 U	5.31 U	6.32 U	7.51 U	6.19 U	5.33 U	8.34 U	5.07 U
Dibromomethane	SW8260D	ug/Kg	25	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	155 U	26.7 U	41.7 U	25.3 U
Dichlorodifluoromethane	SW8260D	ug/Kg	3900	6030 U	8470 U	60.0 U	59.7 U	5330 U	6150 U	74.9 U	53.1 U	63.2 U	75.1 U	309 U	53.3 U	83.4 U	50.7 U
Ethylbenzene	SW8260D	ug/Kg	130	15800	12100	139	29.9 U	13800	16000	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
Hexachlorobutadiene	SW8260D	ug/Kg	20	2410 U	3390 U	24.0 U	23.9 U	2130 U	2460 U	30.0 U	21.2 U	25.3 U	30.0 U	24.8 U	21.3 U	33.3 U	20.3 U
Isopropylbenzene (Cumene)	SW8260D	ug/Kg	5600	9300	9210	104	29.9 U	7630	9670	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
Methyl-t-butyl ether	SW8260D	ug/Kg	400	12100 U	16900 U	120 U	119 U	10700 U	12300 U	150 U	106 U	126 U	150 U	619 U	107 U	167 U	101 U
Methylene chloride	SW8260D	ug/Kg	330	12100 U	16900 U	120 U	119 U	10700 U	12300 U	150 U	106 U	126 U	150 U	619 U	107 U	167 U	101 U
Naphthalene	SW8260D	ug/Kg	38	10300	9600	103	29.9 U	5990	7690	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
Tetrachloroethene	SW8260D	ug/Kg	190	1510 U	2120 U	15.0 U	14.9 U	1330 U	1540 U	18.7 U	13.3 U	15.8 U	18.8 U	15.5 U	13.3 U	20.8 U	12.7 U
Toluene	SW8260D	ug/Kg	6700	10300	4980	60.1	29.9 U	9140	10200	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
Trichloroethene	SW8260D	ug/Kg	11	603 U	847 U	6.00 U	5.97 U	533 U	615 U	7.49 U	5.31 U	6.32 U	7.51 U	30.9 U	5.33 U	8.34 U	5.07 U
Vinyl acetate	SW8260D	ug/Kg	1100	12100 U	16900 U	120 U	119 U	10700 U	12300 U	150 U	106 U	126 U	150 U	124 U	107 U	167 U	101 U
Vinyl chloride	SW8260D	ug/Kg	0.8	96.5 U	135 U	0.960 U	0.956 U	85.3 U	98.5 U	1.20 U	0.849 U	1.01 U	1.20 U	4.95 U	0.853 U	1.33 U	0.811 U
Xylenes (total)	SW8260D	ug/Kg	1500	89700	77200	865	89.6 U	76300	91400	112 U	79.6 U	94.7 U	113 U	92.8 U	80.0 U	125 U	76.0 U
cis-1,2-Dichloroethene	SW8260D	ug/Kg	120	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	155 U	26.7 U	41.7 U	25.3 U
n-Butylbenzene	SW8260D	ug/Kg	23000	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U

Analyte	Analysis	Unit	Action Level	TP-1-2	TP-3-3	TP-4-12	TP-5-7	TP-6-7	TP-7-2	TP-8-3	TP-9-7	TP-10-3	TP-11-1	TP-12-2	TP-12-D	TP-13-2	TB-1
n-Propylbenzene	SW8260D	ug/Kg	9100	27400	30500	339	29.9 U	23100	31000	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
sec-Butylbenzene	SW8260D	ug/Kg	42000	17100	21900	280	29.9 U	13400	20100	37.5 U	26.5 U	31.6 U	37.5 U	30.9 U	26.7 U	41.7 U	25.3 U
trans-1,2-Dichloroethene	SW8260D	ug/Kg	1300	3020 U	4230 U	30.0 U	29.9 U	2670 U	3080 U	37.5 U	26.5 U	31.6 U	37.5 U	155 U	26.7 U	41.7 U	25.3 U
Other VOCs	SW8260D	ug/Kg	varies														
Polyaromatic Hydrocarbons																	
1,2,4-Trichlorobenzene	SW8270D	mg/Kg	0.082	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
1,2-Dichlorobenzene	SW8270D	mg/Kg	2.4	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
1,3-Dichlorobenzene	SW8270D	mg/Kg	2.3	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
1,4-Dichlorobenzene	SW8270D	mg/Kg	0.037	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
1-Methylnaphthalene	SW8270D	mg/Kg	0.41	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
2-Methylnaphthalene	SW8270D	mg/Kg	1.3	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Acenaphthene	SW8270D	mg/Kg	37	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Acenaphthylene	SW8270D	mg/Kg	18	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Benzo(a)Anthracene	SW8270D	mg/Kg	0.7	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Benzo[a]pyrene	SW8270D	mg/Kg	1.9	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Benzo[b]Fluoranthene	SW8270D	mg/Kg	20	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Benzyl alcohol	SW8270D	mg/Kg	5.7	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Bis(2-Chloroethyl)ether	SW8270D	mg/Kg	0.00042	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Chrysene	SW8270D	mg/Kg	600	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Dibenzofuran	SW8270D	mg/Kg	0.97	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Hexachlorobenzene	SW8270D	mg/Kg	0.0082	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Hexachlorobutadiene	SW8270D	mg/Kg	0.02	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Hexachlorocyclopentadiene	SW8270D	mg/Kg	0.0093	15.0 U	77.7 U	0.716 U	0.730 U	15.1 U	15.1 U	0.783 U	0.736 U	0.746 U	0.743 U	3.70 U	3.78 U	0.947 U	-
Hexachloroethane	SW8270D	mg/Kg	0.018	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Isophorone	SW8270D	mg/Kg	2.7	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Naphthalene	SW8270D	mg/Kg	0.038	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Nitrobenzene	SW8270D	mg/Kg	0.0079	5.37 U	27.8 U	0.256 U	0.261 U	5.38 U	5.39 U	0.280 U	0.263 U	0.266 U	0.265 U	1.32 U	1.35 U	0.338 U	-
Pentachlorophenol	SW8270D	mg/Kg	0.0043	42.9 U	222 U	2.05 U	2.09 U	43.1 U	43.1 U	2.24 U	2.10 U	2.13 U	2.12 U	10.6 U	10.8 U	2.71 U	-

Notes:	
*	Tables B1 or B2, Migration to Groundwater (MTG) or Human Health (HH) for Under 40 Inch Zone, Method Two Soil Cleanup Levels (18 AAC 75, October 27, 2018)
1150	Above ADEC MTG Cleanup Level
153000	Analyte was detected at a concentration greater than the HH/MAC cleanup level
mg/kg	Milligrams per kilogram
ug/kg	Micrograms per kilogram
19.7 U	Concentration not detected Above the Limit of Quantitation (LOQ)
0.840 U	Concentration not detected Above the LOQ, but LOQ is equal to or greater than the ADEC Cleanup Level
J	Estimated concentration reported above the Detection Limit but below the LOQ
114	Detectable concentration reported in the project sample
-	Not analyzed
ND	Not detected