GeoEngineers
523 East Second Avenue
Spokane, Washington 99202
509.363.3125

December 26, 2019

Spokane Public Facilities District
720 West Mallon Avenue
Spokane, Washington 99201

Attention: Monte Koch
Director of Facilities and Operations

Subject: Carnation Dairies Spokane Garage PCS Cleanup
Sportsplex Project
Spokane, Washington
File No. 12088-006-04

INTRODUCTION

This report describes petroleum contaminated soil (PCS) investigation and remediation activities conducted from August through November 2019 at the former Carnation Dairies Spokane Garage (Garage) during construction of the Sportsplex project (Site) in Spokane, Washington. The Sportsplex is being constructed over multiple parcels along the former alignment of Cataldo Avenue, between Howard Street and Washington Street, including parcels formerly occupied by the Carnation Dairies Spokane Garage (Vicinity Map, Figure 1). This report has been prepared by GeoEngineers, Inc. (GeoEngineers) for the Spokane Public Facilities District (PFD) under Purchase Order No. 19-57.

This report summarizes field activities, observations and analytical results associated with the PCS investigation and remediation. The investigation and remediation activities were conducted in response to the discovery of PCS during demolition activities at the Site.

SITE DESCRIPTION AND BACKGROUND

CH2M Hill, Inc. (CH2M) conducted a Phase II Environmental Site Assessment (ESA) at the site in March 1999 (CH2M 1999a), which included advancing 11 test pits on or near the site. Petroleum contamination in soil greater than the Model Toxics Control Act (MTCA) Method A cleanup level was identified in one test pit, TP-4, which was advanced in the area of a former fuel dispenser adjacent to the southeast corner of the Garage as identified in a Phase I ESA conducted in 1998 (Leppo 1998). The approximate location of the former fuel dispenser is shown on the Site Plan, Figure 2. Heavy petroleum staining and odors were observed approximately 4 feet below ground surface (bgs) where bedrock was encountered. The contamination appeared to extend to the foundation of the Garage, which

was located to the west and north of the former fuel dispenser. Analytical results for the sample collected at TP-4 indicated concentrations for gasoline-range petroleum hydrocarbons (GRPH), diesel-range petroleum hydrocarbons (DRPH) and oil-range petroleum hydrocarbons (ORPH) were 24,000 milligrams per kilogram (mg/kg), 4,400 mg/kg and 430 mg/kg, respectively. As stated previously, these concentrations are greater than MTCA Method A cleanup levels.

The Site was left relatively undeveloped after the site investigation in 1999. Specifically, remedial activities or site development was not conducted after the 1999 investigation. The Site was primarily used as a storage and parking area after it was acquired by the city of Spokane (City) in the May 2000.

In May 2019 GeoEngineers completed an environmental assessment of the Site, which included advancing three test pits (CD-TP-1, CD-TP-2 and CD-TP-3) near the CH2M Phase II ESA test pit TP-4 to depths ranging from 2.5 to 4.5 feet bgs (GeoEngineers 2019b). Petroleum staining was observed in each of the three test pits at depths ranging from 1 to 2 feet bgs. The samples collected from these supplemental test pits did not exhibit evidence of petroleum hydrocarbons using water sheen and photoionization detector (PID) measurements. Samples from CD-TP-1 and CD-TP-3 were collected from depths indicating the greatest levels of petroleum contamination based on visual observations and were analyzed for petroleum hydrocarbons. A soil sample for CD-TP-2 was not submitted for chemical analysis. Gasoline, diesel and oil-range petroleum hydrocarbons were not detected above MTCA Method A cleanup levels (GeoEngineers 2019b).

During building demolition as part of construction of the Sportsplex facility, the floor slab of the former Garage was demolished and removed. Under the floor slab, Lydig Construction (Lydig) encountered stained soil within the southeast portion of the former Garage footprint and suspected PCS was present. As a result, the suspected PCS was investigated and removed from the site as described in the following sections.

FIELD ACTIVITIES

On August 5, 2019, GeoEngineers traveled to the area where stained soil was observed. GeoEngineers observed surface and subsurface conditions and used hand tools and a PID to estimate the extent and depth of PCS. The suspected soil consisted of black to brown fine to coarse gravel with silt, sand and cobbles, and extended to depths ranging from 0.5 feet bgs to 1.5 feet bgs before bedrock was encountered. We observed a strong petroleum odor and heavy sheen within the PCS unit. GeoEngineers field screened representative soil samples using a PID and sheen pan, and collected three characterization samples (S-1, S-2 and S-3) at the approximate locations shown on Figure 2. Laboratory analytical results indicated that GRPH, DRPH and ORPH were greater than the MTCA Method A cleanup levels (Summary of Chemical Analytical Results – Soil, Table 1). Laboratory analytical reports are included in Appendix A. Through discussions with Lydig and the PFD, it was determined that the PCS would be excavated and disposed at an approved off-site landfill.

On September 17, 2019, GeoEngineers observed a subcontractor to Lydig, (Piersol Construction [Piersol]), excavate approximately 68 tons of PCS. The PCS was directly loaded into haul trucks and disposed at Waste Management's Graham Road landfill. Soil disposal weight tickets are provided in Appendix B. Piersol used an excavator with a flat-bladed bucket to remove soil vertically to bedrock, and laterally to the interior face of cobblestone walls constructed from basalt and located on the south, east

and west ends of the former garage footprint. To the extent practicable, the vertical walls of the former basement were scraped to remove loose cobblestones and soil with visible petroleum staining. Excavation continued until PCS was not observed with field screening to the north.

GeoEngineers field screened and collected five confirmation samples, one from each wall and at the base of the excavation (CD-1C through CD-5C). Analytical results of the confirmation samples (Table 1) indicated that PCS with DRPH and ORPH greater than the MTCA Method A cleanup level remained in place near the southeast extent of the excavation (CD-1C). The results of the remaining confirmation samples suggested the PCS was no longer present at the other remaining areas. Field observations indicated a small amount of fractured soil and rock remained at the site on top of the underlying bedrock near confirmation sample CD-1C.

On November 25, 2019, GeoEngineers returned to the site and observed Piersol excavate an additional 6.5 tons of PCS along the east wall of the former Garage, near the location of sample CD-1C. Soil was removed vertically to bedrock, and laterally to the wall of the former building to the east and south, which was assumed to be cast against bedrock based upon information from test pits, borings and a geophysical survey conducted in the area (GeoEngineers 2019a). GeoEngineers field screened the remaining material and collected one confirmation sample, CD-6C. Analytical results indicated that DRPH and ORPH were less than the respective cleanup levels, but in accordance with Ecology guidance (Ecology 2016) the MTCA Method A cleanup level was exceeded when adding the DRPH and ORPH concentrations together.

CONCLUSION AND RECOMMENDATIONS

Soil investigation and remediation activities were conducted between August 5, 2019 and November 25, 2019 at the former Carnation Dairies Spokane Garage in support if the Sportsplex project in Spokane, Washington. Approximately 75 tons of PCS was removed from the site and disposed at the Graham Road Landfill. The approximate extent of the excavated area is shown on Figure 2. Field screening and analytical results indicate PCS with concentrations greater than the MTCA Method A cleanup levels has been removed from the identified area below the former building slab, with the exception of soil near CD-6C. The presence of bedrock to the east and south prevented further excavation and removal of additional petroleum related contamination at the site. It is our opinion that the volume of suspected PCS left in place in this area is de minimis and likely occurs in small, isolated pockets of soil on top of the underlying bedrock surface. Further removal of petroleum related contamination using traditional construction means and methods is not practical, in our opinion.

REFERENCES

Cahalan, John C. John C. Cahalan to Phil Leinart, “Re: Former Carnation Dairy Facility Located at 411 West Cataldo Street, Spokane, Washington”, June 22, 1990.

CH2M HILL, Inc. 1999a. “Phase II Environmental Site Assessment Limited Subsurface Exploration, ‘Howard Street Property.’” April 1999.

Ecology, 2016. “Guidance for Remediation of Petroleum Contamianted sites.” State of Washingotn Department of Ecology, Toxics Cleanup Program, Plublication No. 10-09-057, Revised June 2016.

GeoEngineers, Inc. 2019a. "Geotechnical Engineering Evaluation Proposed Sportsplex Project, Spokane, Washington." GEI File No. 12088-006-03.

GeoEngineers, Inc. 2019b. "Carnation Dairy Environmental Assessment." GEI File No. 0110-148-16. June 20, 2019.

Leinart, Phil. Phil Leinart to John Cahalan, "Re: Contaminated Property at Carnation Dairy, At or Near West 508 Cataldo Avenue, Spokane, Washington", August 22, 1989.

Leppo Consultants, Inc. 1998. "Phase I Environmental Site Assessment, Mallon Street Property." November 1998.

Respectfully,
GeoEngineers, Inc.

Jedidiah R. Sugalski, PE
Environmental Engineer

Teresa A. Dugger, PE
Associate

JRS:TAD:tjh

Attachments:
Table 1. Summary of Chemical Analytical Results - Soil
Figure 1. Vicinity Map
Figure 2. Site Plan
Attachment A. Laboratory Reports
Attachment B. Disposal Documentation

Table 1

Summary of Chemical Analytical Results - Soil[1]

Sportsplex Project

Spokane, Washington

			Sample ID	**S-1**		**S-2**		**S-3**		**CD-1C**		**CD-2C**		**CD-3C**		**CD-4C**		**CD-5C**		**CD-6C**	
			Sample Date	**8/5/2019**		**8/5/2019**		**8/5/2019**		**10/17/2019**		**10/17/2019**		**10/17/2019**		**10/17/2019**		**10/17/2019**		**11/25/2019**	
			Sample Depth							**9.5-10**		**10-10.5**		**10-10.5**		**11.5-12**		**10.5-11**		**9.5-10**	
Method	**Analyte**	**CUL[4]**	**Units**																		
NWTPH-Gx[2]	GRPH	100[5]	mg/kg	**530**		**83**		**48**		**61**		7	U	**13**		**39**		5	U	NA	
NWTPH-Dx[2]	DRPH	2,000	mg/kg	**26,000**		**3,300**		**2,900**		**2,100**		**79**		**150**		**780**		**42**		**1,900**	
	ORPH	2,000	mg/kg	**23,000**		**440**		**1,400**		**3,400**		**72**		**110**		**550**		**39**		**800**	
	DRPH+ORPH	2,000	mg/kg	**49,000**		**3,740**		**4,300**		**5,500**		**151**		**260**		**1,330**		**81**		**2,700**	
VOCs[3]	Benzene	0.03	mg/kg	0.22	U	0.022	U	0.019	U	0.032	U	0.028	U	0.021	U	0.024	U	0.021	U	NA	
	Toluene	7	mg/kg	1.1	U	0.11	U	0.10	U	0.16	U	0.14	U	0.10	U	0.12	U	0.10	U	NA	
	Ethylbenzene	6	mg/kg	1.1	U	0.11	U	0.10	U	0.16	U	0.14	U	0.10	U	0.12	U	0.10	U	NA	
	m,p-Xylene	NE	mg/kg	4.4	U	0.44	U	0.39	U	0.63	U	0.55	U	0.41	U	0.47	U	0.42	U	NA	
	o-Xylene	NE	mg/kg	2.2	U	0.22	U	0.19	U	0.32	U	0.28	U	0.41	U	0.24	U	0.21	U	NA	
	Xylenes, total	9	mg/kg	6.5	U	0.66	U	0.58	U	0.95	U	0.83	U	0.62	U	0.71	U	0.62	U	NA	

Notes

[1]Samples analyzed by Eurofins TestAmerica located in Spokane Valley, Washington

[2]Gasoline, Diesel and Oil-range petroleum hydrocarbons (GRPH, DRPH and ORPH) analyzed using Northwest Methods NWTPH-Gx and NWTPH-Dx.

[3]Volatile organic compounds (VOCs) analyzed using Environmental Protection Agency (EPA) Method 8260C.

[4]Model Toxics Control Act (MTCA) Method A Unrestricted Land Use Cleanup Levels (CUL).

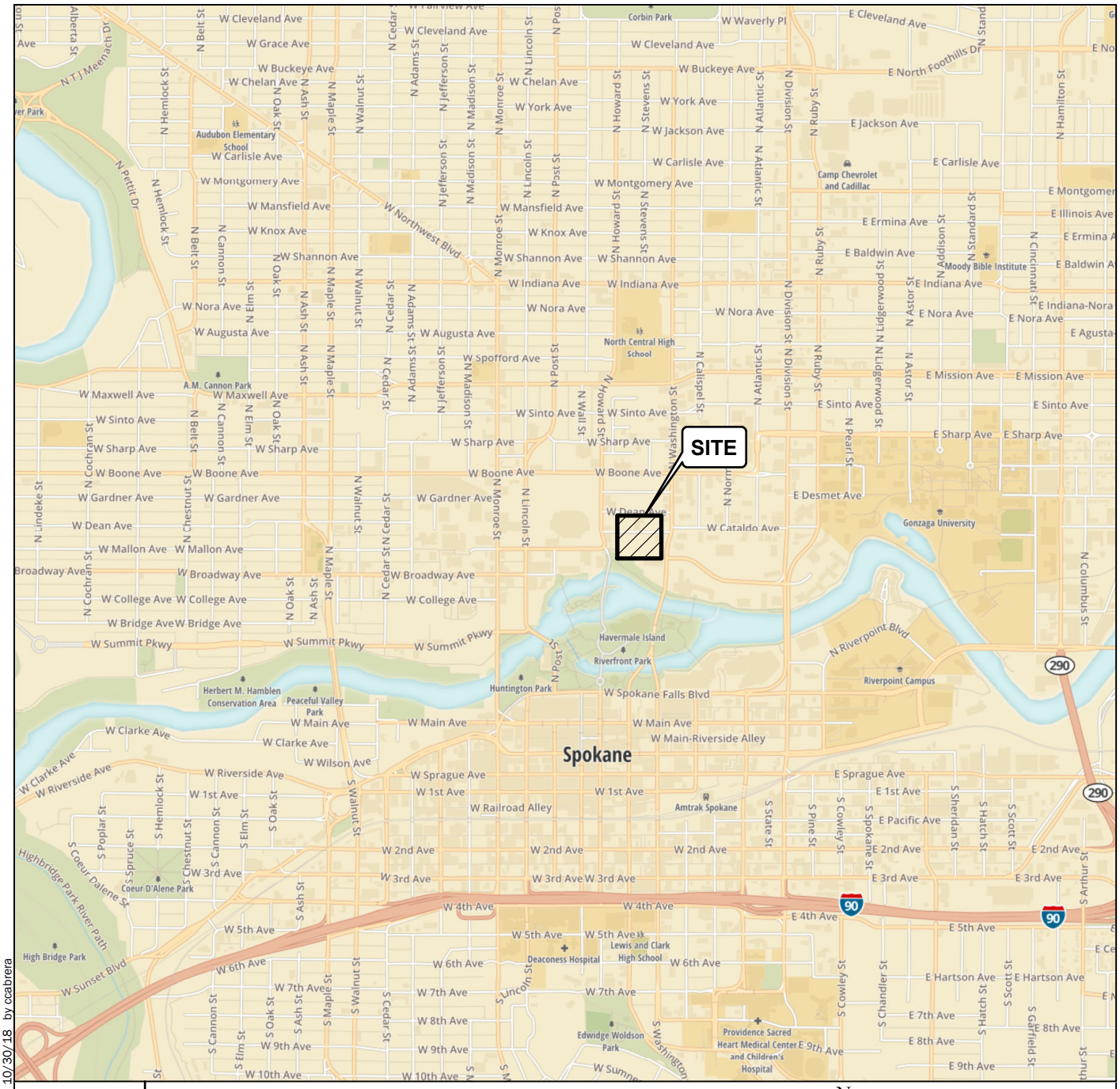
[5]The GRPH CUL is 100 mg/kg unless benzene is present, in which case the CUL is 30 mg/kg.

mg/kg = milligrams per kilogram; NE = not established; NA = not analyzed

Bold indicates analyte was detected.

Bold and grey shading indicates the analyte was detected at concentrations greater than the MTCA Method A Unrestricted Land Use CUL.

Blue shading indicates the analyte was not detected above the reporting limit, but the concentration was greater than or equal to the MTCA Method A Unrestricted Land Use CUL.



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Mapbox Open Street Map, 2018

Projection: NAD 1983 UTM Zone 11N

Vicinity Map

Spokane Sportsplex Facility
Spokane, Washington

GeoEngineers

Figure 1

P:\12\12088006\GIS\MXD\12088006_F01_VicinityMap.mxd Date Exported: 10/30/18 by ccabrera

Legend

- Approximate Initial Characterization Sample Location
- Approximate Confirmation Sample Location
- Former Fuel Dispenser
- Approximate Extent of Excavation
- Sample Results Greater Than MTCA Method A Cleanup Levels
- Sample Results Less Than MTCA Method A Cleanup Levels

30 0 30

Feet

N W E S

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Google Earth, 2019

Projection: NAD 1983 UTM Zone 11N

Site Plan

Carnation Dairy Spokane Garage
Spokane, Washington

GeoEngineers

Figure 2

P:\12\12088006\GIS\12088006_Project\12088006_Project.aprx\12088006_Project Date Exported: 12/26/19 by maugust

ATTACHMENT A
Laboratory Reports

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

Laboratory Job ID: 590-11540-1
Client Project/Site: Spokane Sportsplex Facility/12088-066-04

For:
GeoEngineers Inc
523 East Second Ave
Spokane, Washington 99202

Attn: Dave Lauder

Authorized for release by:
8/16/2019 4:00:48 PM

Randee Arrington, Project Manager II
(509)924-9200
randee.arrington@testamericainc.com

Table of Contents

Case Narrative

Client: GeoEngineers Inc
Job ID: 590-11540-1
Project/Site: Spokane Sportsplex Facility/12088-066-04

Job ID: 590-11540-1

Laboratory: Eurofins TestAmerica, Spokane

Narrative

Receipt
The samples were received on 8/5/2019 12:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.7º C.

GC/MS VOA
Method 8260C: The following sample was diluted due to the nature of the sample matrix: S-1:080519 (590-11540-1). Elevated reporting limits (RLs) are provided.

Method NWTPH-Gx: The sample duplicate precision for the following sample associated with preparation batch 590-23412 and analytical batch 590-23401 was outside control limits: (590-11540-B-3-A DU). The associated Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) precision met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method NWTPH-Dx: The following samples required a dilution due to the nature of the sample matrix: S-1:080519 (590-11540-1) and (590-11540-A-1-B DU). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method NWTPH-Dx: The following samples required a dilution due to the nature of the sample matrix: S-1:080519 (590-11540-1) and S-3:080519 (590-11540-3). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: GeoEngineers Inc
Job ID: 590-11540-1
Project/Site: Spokane Sportsplex Facility/12088-066-04

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
590-11540-1	S-1:080519	Solid	08/05/19 10:10	08/05/19 12:10	
590-11540-2	S-2:080519	Solid	08/05/19 10:30	08/05/19 12:10	
590-11540-3	S-3:080519	Solid	08/05/19 10:50	08/05/19 12:10	

Definitions/Glossary

Client: GeoEngineers Inc
Job ID: 590-11540-1
Project/Site: Spokane Sportsplex Facility/12088-066-04

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: S-1:080519
Lab Sample ID: 590-11540-1
Date Collected: 08/05/19 10:10
Matrix: Solid
Date Received: 08/05/19 12:10
Percent Solids: 94.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.22		mg/Kg	☼	08/05/19 13:35	08/06/19 01:58	10
Ethylbenzene	ND		1.1		mg/Kg	☼	08/05/19 13:35	08/06/19 01:58	10
m,p-Xylene	ND		4.4		mg/Kg	☼	08/05/19 13:35	08/06/19 01:58	10
o-Xylene	ND		2.2		mg/Kg	☼	08/05/19 13:35	08/06/19 01:58	10
Toluene	ND		1.1		mg/Kg	☼	08/05/19 13:35	08/06/19 01:58	10
Xylenes, Total	ND		6.5		mg/Kg	☼	08/05/19 13:35	08/06/19 01:58	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 120*	*08/05/19 13:35*	*08/06/19 01:58*	*10*
4-Bromofluorobenzene (Surr)	*108*		*76 - 122*	*08/05/19 13:35*	*08/06/19 01:58*	*10*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*08/05/19 13:35*	*08/06/19 01:58*	*10*
Toluene-d8 (Surr)	*98*		*80 - 120*	*08/05/19 13:35*	*08/06/19 01:58*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**530**		54		mg/Kg	☼	08/05/19 13:35	08/06/19 01:58	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*41.5 - 162*	*08/05/19 13:35*	*08/06/19 01:58*	*10*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**26000**		210		mg/Kg	☼	08/06/19 15:13	08/07/19 16:52	20
Residual Range Organics (RRO) (C25-C36)	**23000**		520		mg/Kg	☼	08/06/19 15:13	08/07/19 16:52	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*417*	*X*	*50 - 150*	*08/06/19 15:13*	*08/07/19 16:52*	*20*
n-Triacontane-d62	*181*	*X*	*50 - 150*	*08/06/19 15:13*	*08/07/19 16:52*	*20*

Client Sample ID: S-2:080519
Lab Sample ID: 590-11540-2
Date Collected: 08/05/19 10:30
Matrix: Solid
Date Received: 08/05/19 12:10
Percent Solids: 85.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.022		mg/Kg	☼	08/05/19 13:35	08/06/19 02:20	1
Ethylbenzene	ND		0.11		mg/Kg	☼	08/05/19 13:35	08/06/19 02:20	1
m,p-Xylene	ND		0.44		mg/Kg	☼	08/05/19 13:35	08/06/19 02:20	1
o-Xylene	ND		0.22		mg/Kg	☼	08/05/19 13:35	08/06/19 02:20	1
Toluene	ND		0.11		mg/Kg	☼	08/05/19 13:35	08/06/19 02:20	1
Xylenes, Total	ND		0.66		mg/Kg	☼	08/05/19 13:35	08/06/19 02:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 120*	*08/05/19 13:35*	*08/06/19 02:20*	*1*
4-Bromofluorobenzene (Surr)	*114*		*76 - 122*	*08/05/19 13:35*	*08/06/19 02:20*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*	*08/05/19 13:35*	*08/06/19 02:20*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*	*08/05/19 13:35*	*08/06/19 02:20*	*1*

Client Sample ID: S-2:080519
Lab Sample ID: 590-11540-2
Date Collected: 08/05/19 10:30
Matrix: Solid
Date Received: 08/05/19 12:10
Percent Solids: 85.3

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	83		5.5		mg/Kg	☼	08/05/19 13:35	08/06/19 02:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*41.5 - 162*	*08/05/19 13:35*	*08/06/19 02:20*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3300		120		mg/Kg	☼	08/06/19 15:13	08/07/19 17:33	10
Residual Range Organics (RRO) (C25-C36)	440		290		mg/Kg	☼	08/06/19 15:13	08/07/19 17:33	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*133*		*50 - 150*	*08/06/19 15:13*	*08/07/19 17:33*	*10*
n-Triacontane-d62	*110*		*50 - 150*	*08/06/19 15:13*	*08/07/19 17:33*	*10*

Client Sample ID: S-3:080519
Lab Sample ID: 590-11540-3
Date Collected: 08/05/19 10:50
Matrix: Solid
Date Received: 08/05/19 12:10
Percent Solids: 90.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.019		mg/Kg	☼	08/05/19 13:35	08/06/19 02:41	1
Ethylbenzene	ND		0.097		mg/Kg	☼	08/05/19 13:35	08/06/19 02:41	1
m,p-Xylene	ND		0.39		mg/Kg	☼	08/05/19 13:35	08/06/19 02:41	1
o-Xylene	ND		0.19		mg/Kg	☼	08/05/19 13:35	08/06/19 02:41	1
Toluene	ND		0.097		mg/Kg	☼	08/05/19 13:35	08/06/19 02:41	1
Xylenes, Total	ND		0.58		mg/Kg	☼	08/05/19 13:35	08/06/19 02:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 120*	*08/05/19 13:35*	*08/06/19 02:41*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 122*	*08/05/19 13:35*	*08/06/19 02:41*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*	*08/05/19 13:35*	*08/06/19 02:41*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*	*08/05/19 13:35*	*08/06/19 02:41*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	48		4.8		mg/Kg	☼	08/05/19 13:35	08/06/19 02:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*41.5 - 162*	*08/05/19 13:35*	*08/06/19 02:41*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	2900		11		mg/Kg	☼	08/06/19 15:13	08/07/19 17:53	1
Residual Range Organics (RRO) (C25-C36)	1400		27		mg/Kg	☼	08/06/19 15:13	08/07/19 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*49*	*X*	*50 - 150*	*08/06/19 15:13*	*08/07/19 17:53*	*1*
n-Triacontane-d62	*3*	*X*	*50 - 150*	*08/06/19 15:13*	*08/07/19 17:53*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-23412/1-A
Matrix: Solid
Analysis Batch: 23402

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23412

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020		mg/Kg		08/05/19 13:35	08/05/19 19:00	1
Ethylbenzene	ND		0.10		mg/Kg		08/05/19 13:35	08/05/19 19:00	1
m,p-Xylene	ND		0.40		mg/Kg		08/05/19 13:35	08/05/19 19:00	1
o-Xylene	ND		0.20		mg/Kg		08/05/19 13:35	08/05/19 19:00	1
Toluene	ND		0.10		mg/Kg		08/05/19 13:35	08/05/19 19:00	1
Xylenes, Total	ND		0.60		mg/Kg		08/05/19 13:35	08/05/19 19:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 120*	*08/05/19 13:35*	*08/05/19 19:00*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 122*	*08/05/19 13:35*	*08/05/19 19:00*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*	*08/05/19 13:35*	*08/05/19 19:00*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*	*08/05/19 13:35*	*08/05/19 19:00*	*1*

Lab Sample ID: LCS 590-23412/2-A
Matrix: Solid
Analysis Batch: 23402

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23412

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.441	0.445		mg/Kg		101	76 - 129
Ethylbenzene	0.441	0.454		mg/Kg		103	77 - 133
m,p-Xylene	0.441	0.432		mg/Kg		98	78 - 130
o-Xylene	0.441	0.432		mg/Kg		98	77 - 129
Toluene	0.441	0.428		mg/Kg		97	77 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 120*
4-Bromofluorobenzene (Surr)	*98*		*76 - 122*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 590-23412/17-A
Matrix: Solid
Analysis Batch: 23402

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 23412

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.441	0.479		mg/Kg		109	76 - 129	7	25
Ethylbenzene	0.441	0.501		mg/Kg		114	77 - 133	10	25
m,p-Xylene	0.441	0.497		mg/Kg		113	78 - 130	14	32
o-Xylene	0.441	0.480		mg/Kg		109	77 - 129	11	31
Toluene	0.441	0.456		mg/Kg		103	77 - 131	6	36

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 120*
4-Bromofluorobenzene (Surr)	*97*		*76 - 122*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 590-11540-3 DU
Matrix: Solid
Analysis Batch: 23402

Client Sample ID: S-3:080519
Prep Type: Total/NA
Prep Batch: 23412

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Benzene	ND			ND		mg/Kg	☼			NC	20
Ethylbenzene	ND			ND		mg/Kg	☼			NC	20
m,p-Xylene	ND			ND		mg/Kg	☼			NC	20
o-Xylene	ND			ND		mg/Kg	☼			NC	20
Toluene	ND			ND		mg/Kg	☼			NC	20
Xylenes, Total	ND			ND		mg/Kg	☼			NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 120*
4-Bromofluorobenzene (Surr)	*113*		*76 - 122*
Dibromofluoromethane (Surr)	*105*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-23412/1-A
Matrix: Solid
Analysis Batch: 23401

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23412

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		08/05/19 13:35	08/05/19 19:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*41.5 - 162*	*08/05/19 13:35*	*08/05/19 19:00*	*1*

Lab Sample ID: LCS 590-23412/3-A
Matrix: Solid
Analysis Batch: 23401

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23412

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			48.4	52.1		mg/Kg		108	74.4 - 124		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*41.5 - 162*

Lab Sample ID: LCSD 590-23412/18-A
Matrix: Solid
Analysis Batch: 23401

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 23412

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			48.4	46.2		mg/Kg		95	74.4 - 124	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*41.5 - 162*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-23439/1-A
Matrix: Solid
Analysis Batch: 23443

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23439

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		10		mg/Kg		08/06/19 15:13	08/07/19 15:08	1
Residual Range Organics (RRO) (C25-C36)	ND		25		mg/Kg		08/06/19 15:13	08/07/19 15:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*90*		*50 - 150*	*08/06/19 15:13*	*08/07/19 15:08*	*1*
n-Triacontane-d62	*87*		*50 - 150*	*08/06/19 15:13*	*08/07/19 15:08*	*1*

Lab Sample ID: LCS 590-23439/2-A
Matrix: Solid
Analysis Batch: 23443

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23439

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	66.7	62.3		mg/Kg		93	50 - 150
Residual Range Organics (RRO) (C25-C36)	66.7	65.1		mg/Kg		98	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*99*		*50 - 150*
n-Triacontane-d62	*102*		*50 - 150*

Lab Sample ID: 590-11540-1 DU
Matrix: Solid
Analysis Batch: 23443

Client Sample ID: S-1:080519
Prep Type: Total/NA
Prep Batch: 23439

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	26000		31900		mg/Kg	☼	20	40
Residual Range Organics (RRO) (C25-C36)	23000		28100		mg/Kg	☼	22	40

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*55*		*50 - 150*
n-Triacontane-d62	*353*	*X*	*50 - 150*

Lab Chronicle

Client: GeoEngineers Inc
Job ID: 590-11540-1
Project/Site: Spokane Sportsplex Facility/12088-066-04

Client Sample ID: S-1:080519
Lab Sample ID: 590-11540-1
Date Collected: 08/05/19 10:10
Matrix: Solid
Date Received: 08/05/19 12:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			23445	08/07/19 08:53	CWD	TAL SPK

Client Sample ID: S-1:080519
Lab Sample ID: 590-11540-1
Date Collected: 08/05/19 10:10
Matrix: Solid
Date Received: 08/05/19 12:10
Percent Solids: 94.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.169 g	5 mL	23412	08/05/19 13:35	JSP	TAL SPK
Total/NA	Analysis	8260C		10	0.86 mL	43 mL	23402	08/06/19 01:58	MRS	TAL SPK
Total/NA	Prep	5035			5.169 g	5 mL	23412	08/05/19 13:35	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	0.86 mL	43 mL	23401	08/06/19 01:58	MRS	TAL SPK
Total/NA	Prep	3550C			15.22 g	5 mL	23439	08/06/19 15:13	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		20			23443	08/07/19 16:52	MRS	TAL SPK

Client Sample ID: S-2:080519
Lab Sample ID: 590-11540-2
Date Collected: 08/05/19 10:30
Matrix: Solid
Date Received: 08/05/19 12:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			23445	08/07/19 08:53	CWD	TAL SPK

Client Sample ID: S-2:080519
Lab Sample ID: 590-11540-2
Date Collected: 08/05/19 10:30
Matrix: Solid
Date Received: 08/05/19 12:10
Percent Solids: 85.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.328 g	5 mL	23412	08/05/19 13:35	JSP	TAL SPK
Total/NA	Analysis	8260C		1	0.86 mL	43 mL	23402	08/06/19 02:20	MRS	TAL SPK
Total/NA	Prep	5035			6.328 g	5 mL	23412	08/05/19 13:35	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	23401	08/06/19 02:20	MRS	TAL SPK
Total/NA	Prep	3550C			15.05 g	5 mL	23439	08/06/19 15:13	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		10			23443	08/07/19 17:33	MRS	TAL SPK

Client Sample ID: S-3:080519
Lab Sample ID: 590-11540-3
Date Collected: 08/05/19 10:50
Matrix: Solid
Date Received: 08/05/19 12:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			23445	08/07/19 08:53	CWD	TAL SPK

Lab Chronicle

Client: GeoEngineers Inc
Job ID: 590-11540-1
Project/Site: Spokane Sportsplex Facility/12088-066-04

Client Sample ID: S-3:080519
Date Collected: 08/05/19 10:50
Date Received: 08/05/19 12:10

Lab Sample ID: 590-11540-3
Matrix: Solid
Percent Solids: 90.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.479 g	5 mL	23412	08/05/19 13:35	JSP	TAL SPK
Total/NA	Analysis	8260C		1	0.86 mL	43 mL	23402	08/06/19 02:41	MRS	TAL SPK
Total/NA	Prep	5035			6.479 g	5 mL	23412	08/05/19 13:35	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	23401	08/06/19 02:41	MRS	TAL SPK
Total/NA	Prep	3550C			15.53 g	5 mL	23439	08/06/19 15:13	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			23443	08/07/19 17:53	MRS	TAL SPK

Laboratory References:
TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: GeoEngineers Inc
Job ID: 590-11540-1
Project/Site: Spokane Sportsplex Facility/12088-066-04

Laboratory: Eurofins TestAmerica, Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C569	01-06-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: GeoEngineers Inc
Job ID: 590-11540-1
Project/Site: Spokane Sportsplex Facility/12088-066-04

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
Moisture	Percent Moisture	EPA	TAL SPK
3550C	Ultrasonic Extraction	SW846	TAL SPK
5035	Closed System Purge and Trap	SW846	TAL SPK

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

8/16/2019

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11922 E. First Ave., Spokane WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave., Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT: GeoEngineers Inc

REPORT TO: JR Surgalski

ADDRESS: 523 E 2nd Ave Spokane, WA 99202

PHONE: 509-991-4471 FAX:

INVOICE TO:

P.O. NUMBER:

PROJECT NAME: Spokane Sportsplex Facility Demolition Phase Environmental Services

PROJECT NUMBER: 17083-006-04

SAMPLED BY: Bryce Hanson

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: [10] STD. [7] [5] [4] [3] [2] [1] [<1]

Petroleum Hydrocarbon Analyses: [5] STD. [4] [3] [2] [1] [<1]

[OTHER] Specify:

* Turnaround Requests less than standard may incur Rush Charges.

PRESERVATIVE: Methanol | —

REQUESTED ANALYSES: NWTPH Gx | NWTPH Dx | BTEX by EPA 8260

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NWTPH Gx	NWTPH Dx	BTEX by EPA 8260	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	S-1:080519	8/5/19 @ 1010	X	X	X	S			
2	S-2:080519	8/5/19 @ 1030	X	X	X	S			
3	S-3:080519	8/5/19 @ 1050	X	X	X	S			
4									
5									
6									
7									
8									
9									
10									

590-11540 Chain of Custody

RELEASED BY: Bryce Hanson — DATE: 8/5/19
PRINT NAME: Bryce Hanson — FIRM: GeoEngineers — TIME: 1210

RECEIVED BY: Maria Goode — DATE: 8/5/19
PRINT NAME: Maria Goode — FIRM: TASD — TIME: 1210

RELEASED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

RECEIVED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

ADDITIONAL REMARKS:

TEMP: 4.7°C

PAGE OF

TAL-1000 (0714)

Login Sample Receipt Checklist

Client: GeoEngineers Inc

Job Number: 590-11540-1

Login Number: 11540
List Number: 1
Creator: O'Toole, Maria C

List Source: Eurofins TestAmerica, Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

Laboratory Job ID: 590-11860-1
Client Project/Site: Sport Complex 12088-006-04

For:
GeoEngineers Inc
523 East Second Ave
Spokane, Washington 99202

Attn: JR Sugalski

Authorized for release by:
9/26/2019 12:31:02 PM

Randee Arrington, Project Manager II
(509)924-9200
randee.arrington@testamericainc.com

Table of Contents

Case Narrative

Client: GeoEngineers Inc
Project/Site: Sport Complex 12088-006-04

Job ID: 590-11860-1

Job ID: 590-11860-1

Laboratory: Eurofins TestAmerica, Spokane

Narrative

Receipt
The samples were received on 9/17/2019 12:40 PM; the samples arrived in good condition. The temperature of the cooler at receipt was 10.5º C.

Receipt Exceptions
The following samples were received at the laboratory outside the required temperature criteria: CD-1C (9.5-10) (590-11860-1), CD-2C (10-10.5) (590-11860-2), CD-3C (10-10.5) (590-11860-3), CD-4C (11.5-12) (590-11860-4), CD-5C (10.5-11) (590-11860-5) and Trip Blank (590-11860-6). The samples are considered acceptable since they were collected and submitted to the laboratory on the same day and there is evidence that the chilling process has begun.

GC/MS VOA
Method NWTPH-Gx: The continuing calibration verification (CCV) associated with batch 590-24242 recovered above the upper control limit for Gasoline. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel in the following samples: CD-1C (9.5-10) (590-11860-1), CD-2C (10-10.5) (590-11860-2), CD-3C (10-10.5) (590-11860-3), CD-4C (11.5-12) (590-11860-4), CD-5C (10.5-11) (590-11860-5) and (590-11860-A-4-B DU).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: GeoEngineers Inc
Project/Site: Sport Complex 12088-006-04

Job ID: 590-11860-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
590-11860-1	CD-1C (9.5-10)	Solid	09/17/19 09:00	09/17/19 12:40	
590-11860-2	CD-2C (10-10.5)	Solid	09/17/19 09:10	09/17/19 12:40	
590-11860-3	CD-3C (10-10.5)	Solid	09/17/19 09:20	09/17/19 12:40	
590-11860-4	CD-4C (11.5-12)	Solid	09/17/19 10:30	09/17/19 12:40	
590-11860-5	CD-5C (10.5-11)	Solid	09/17/19 09:30	09/17/19 12:40	
590-11860-6	Trip Blank	Solid	09/17/19 09:00	09/17/19 12:40	

Definitions/Glossary

Client: GeoEngineers Inc
Job ID: 590-11860-1
Project/Site: Sport Complex 12088-006-04

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: CD-1C (9.5-10)

Lab Sample ID: 590-11860-1
Date Collected: 09/17/19 09:00
Matrix: Solid
Date Received: 09/17/19 12:40
Percent Solids: 89.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.032	0.016	mg/Kg	☼	09/20/19 10:09	09/20/19 13:05	1
Ethylbenzene	ND		0.16	0.026	mg/Kg	☼	09/20/19 10:09	09/20/19 13:05	1
m,p-Xylene	ND		0.63	0.045	mg/Kg	☼	09/20/19 10:09	09/20/19 13:05	1
o-Xylene	ND		0.32	0.036	mg/Kg	☼	09/20/19 10:09	09/20/19 13:05	1
Toluene	ND		0.16	0.021	mg/Kg	☼	09/20/19 10:09	09/20/19 13:05	1
Xylenes, Total	ND		0.95	0.082	mg/Kg	☼	09/20/19 10:09	09/20/19 13:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 120*	*09/20/19 10:09*	*09/20/19 13:05*	*1*
4-Bromofluorobenzene (Surr)	*103*		*76 - 122*	*09/20/19 10:09*	*09/20/19 13:05*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*	*09/20/19 10:09*	*09/20/19 13:05*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*	*09/20/19 10:09*	*09/20/19 13:05*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**61**		7.9	2.8	mg/Kg	☼	09/20/19 10:09	09/23/19 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*41.5 - 162*	*09/20/19 10:09*	*09/23/19 14:35*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**2100**		22	9.3	mg/Kg	☼	09/20/19 11:52	09/20/19 19:07	2
Residual Range Organics (RRO) (C25-C36)	**3400**		55	11	mg/Kg	☼	09/20/19 11:52	09/20/19 19:07	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*98*		*50 - 150*	*09/20/19 11:52*	*09/20/19 19:07*	*2*
n-Triacontane-d62	*146*		*50 - 150*	*09/20/19 11:52*	*09/20/19 19:07*	*2*

Client Sample ID: CD-2C (10-10.5)

Lab Sample ID: 590-11860-2
Date Collected: 09/17/19 09:10
Matrix: Solid
Date Received: 09/17/19 12:40
Percent Solids: 89.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.028	0.014	mg/Kg	☼	09/20/19 10:09	09/20/19 13:49	1
Ethylbenzene	ND		0.14	0.022	mg/Kg	☼	09/20/19 10:09	09/20/19 13:49	1
m,p-Xylene	ND		0.55	0.039	mg/Kg	☼	09/20/19 10:09	09/20/19 13:49	1
o-Xylene	ND		0.28	0.032	mg/Kg	☼	09/20/19 10:09	09/20/19 13:49	1
Toluene	ND		0.14	0.018	mg/Kg	☼	09/20/19 10:09	09/20/19 13:49	1
Xylenes, Total	ND		0.83	0.071	mg/Kg	☼	09/20/19 10:09	09/20/19 13:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 120*	*09/20/19 10:09*	*09/20/19 13:49*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 122*	*09/20/19 10:09*	*09/20/19 13:49*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*	*09/20/19 10:09*	*09/20/19 13:49*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*	*09/20/19 10:09*	*09/20/19 13:49*	*1*

Client Sample ID: CD-2C (10-10.5)
Lab Sample ID: 590-11860-2
Date Collected: 09/17/19 09:10
Matrix: Solid
Date Received: 09/17/19 12:40
Percent Solids: 89.7

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.9	2.5	mg/Kg	☼	09/20/19 10:09	09/20/19 13:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*41.5 - 162*	*09/20/19 10:09*	*09/20/19 13:49*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**79**		11	4.4	mg/Kg	☼	09/20/19 11:52	09/20/19 19:27	1
Residual Range Organics (RRO) (C25-C36)	**72**		26	5.3	mg/Kg	☼	09/20/19 11:52	09/20/19 19:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*100*		*50 - 150*	*09/20/19 11:52*	*09/20/19 19:27*	*1*
n-Triacontane-d62	*92*		*50 - 150*	*09/20/19 11:52*	*09/20/19 19:27*	*1*

Client Sample ID: CD-3C (10-10.5)
Lab Sample ID: 590-11860-3
Date Collected: 09/17/19 09:20
Matrix: Solid
Date Received: 09/17/19 12:40
Percent Solids: 94.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.021	0.010	mg/Kg	☼	09/20/19 10:09	09/20/19 14:55	1
Ethylbenzene	ND		0.10	0.017	mg/Kg	☼	09/20/19 10:09	09/20/19 14:55	1
m,p-Xylene	ND		0.41	0.029	mg/Kg	☼	09/20/19 10:09	09/20/19 14:55	1
o-Xylene	ND		0.21	0.024	mg/Kg	☼	09/20/19 10:09	09/20/19 14:55	1
Toluene	ND		0.10	0.014	mg/Kg	☼	09/20/19 10:09	09/20/19 14:55	1
Xylenes, Total	ND		0.62	0.053	mg/Kg	☼	09/20/19 10:09	09/20/19 14:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 120*	*09/20/19 10:09*	*09/20/19 14:55*	*1*
4-Bromofluorobenzene (Surr)	*104*		*76 - 122*	*09/20/19 10:09*	*09/20/19 14:55*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*	*09/20/19 10:09*	*09/20/19 14:55*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*	*09/20/19 10:09*	*09/20/19 14:55*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**13**		5.1	1.8	mg/Kg	☼	09/20/19 10:09	09/23/19 15:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*41.5 - 162*	*09/20/19 10:09*	*09/23/19 15:19*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**150**		11	4.4	mg/Kg	☼	09/20/19 11:52	09/20/19 19:46	1
Residual Range Organics (RRO) (C25-C36)	**110**		26	5.3	mg/Kg	☼	09/20/19 11:52	09/20/19 19:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*50 - 150*	*09/20/19 11:52*	*09/20/19 19:46*	*1*
n-Triacontane-d62	*101*		*50 - 150*	*09/20/19 11:52*	*09/20/19 19:46*	*1*

Client Sample ID: CD-4C (11.5-12)

Lab Sample ID: 590-11860-4
Date Collected: 09/17/19 10:30
Matrix: Solid
Date Received: 09/17/19 12:40
Percent Solids: 92.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024	0.012	mg/Kg	☼	09/20/19 10:09	09/20/19 15:39	1
Ethylbenzene	ND		0.12	0.019	mg/Kg	☼	09/20/19 10:09	09/20/19 15:39	1
m,p-Xylene	ND		0.47	0.034	mg/Kg	☼	09/20/19 10:09	09/20/19 15:39	1
o-Xylene	ND		0.24	0.027	mg/Kg	☼	09/20/19 10:09	09/20/19 15:39	1
Toluene	ND		0.12	0.016	mg/Kg	☼	09/20/19 10:09	09/20/19 15:39	1
Xylenes, Total	ND		0.71	0.061	mg/Kg	☼	09/20/19 10:09	09/20/19 15:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 120*	*09/20/19 10:09*	*09/20/19 15:39*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 122*	*09/20/19 10:09*	*09/20/19 15:39*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*	*09/20/19 10:09*	*09/20/19 15:39*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*	*09/20/19 10:09*	*09/20/19 15:39*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**39**		5.9	2.1	mg/Kg	☼	09/20/19 10:09	09/20/19 15:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*41.5 - 162*	*09/20/19 10:09*	*09/20/19 15:39*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**780**		11	4.4	mg/Kg	☼	09/20/19 11:52	09/20/19 20:06	1
Residual Range Organics (RRO) (C25-C36)	**550**		26	5.3	mg/Kg	☼	09/20/19 11:52	09/20/19 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*50 - 150*	*09/20/19 11:52*	*09/20/19 20:06*	*1*
n-Triacontane-d62	*116*		*50 - 150*	*09/20/19 11:52*	*09/20/19 20:06*	*1*

Client Sample ID: CD-5C (10.5-11)

Lab Sample ID: 590-11860-5
Date Collected: 09/17/19 09:30
Matrix: Solid
Date Received: 09/17/19 12:40
Percent Solids: 92.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.021	0.010	mg/Kg	☼	09/20/19 10:09	09/20/19 16:01	1
Ethylbenzene	ND		0.10	0.017	mg/Kg	☼	09/20/19 10:09	09/20/19 16:01	1
m,p-Xylene	ND		0.42	0.030	mg/Kg	☼	09/20/19 10:09	09/20/19 16:01	1
o-Xylene	ND		0.21	0.024	mg/Kg	☼	09/20/19 10:09	09/20/19 16:01	1
Toluene	ND		0.10	0.014	mg/Kg	☼	09/20/19 10:09	09/20/19 16:01	1
Xylenes, Total	ND		0.62	0.054	mg/Kg	☼	09/20/19 10:09	09/20/19 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 120*	*09/20/19 10:09*	*09/20/19 16:01*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 122*	*09/20/19 10:09*	*09/20/19 16:01*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*09/20/19 10:09*	*09/20/19 16:01*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*	*09/20/19 10:09*	*09/20/19 16:01*	*1*

Client: GeoEngineers Inc
Job ID: 590-11860-1
Project/Site: Sport Complex 12088-006-04

Client Sample ID: CD-5C (10.5-11)
Lab Sample ID: 590-11860-5
Date Collected: 09/17/19 09:30
Matrix: Solid
Date Received: 09/17/19 12:40
Percent Solids: 92.4

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.2	1.9	mg/Kg	☼	09/20/19 10:09	09/20/19 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*41.5 - 162*	*09/20/19 10:09*	*09/20/19 16:01*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**42**		11	4.5	mg/Kg	☼	09/20/19 11:52	09/20/19 20:46	1
Residual Range Organics (RRO) (C25-C36)	**39**		27	5.3	mg/Kg	☼	09/20/19 11:52	09/20/19 20:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*104*		*50 - 150*	*09/20/19 11:52*	*09/20/19 20:46*	*1*
n-Triacontane-d62	*95*		*50 - 150*	*09/20/19 11:52*	*09/20/19 20:46*	*1*

Client Sample ID: Trip Blank
Lab Sample ID: 590-11860-6
Date Collected: 09/17/19 09:00
Matrix: Solid
Date Received: 09/17/19 12:40

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020	0.010	mg/Kg		09/20/19 10:09	09/20/19 16:23	1
Ethylbenzene	ND		0.10	0.016	mg/Kg		09/20/19 10:09	09/20/19 16:23	1
m,p-Xylene	ND		0.40	0.029	mg/Kg		09/20/19 10:09	09/20/19 16:23	1
o-Xylene	ND		0.20	0.023	mg/Kg		09/20/19 10:09	09/20/19 16:23	1
Toluene	ND		0.10	0.013	mg/Kg		09/20/19 10:09	09/20/19 16:23	1
Xylenes, Total	ND		0.60	0.052	mg/Kg		09/20/19 10:09	09/20/19 16:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 120*	*09/20/19 10:09*	*09/20/19 16:23*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 122*	*09/20/19 10:09*	*09/20/19 16:23*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*09/20/19 10:09*	*09/20/19 16:23*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*	*09/20/19 10:09*	*09/20/19 16:23*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	1.8	mg/Kg		09/20/19 10:09	09/20/19 16:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*41.5 - 162*	*09/20/19 10:09*	*09/20/19 16:23*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-24237/1-A
Matrix: Solid
Analysis Batch: 24241

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24237

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020	0.010	mg/Kg		09/20/19 10:09	09/20/19 11:58	1
Ethylbenzene	ND		0.10	0.016	mg/Kg		09/20/19 10:09	09/20/19 11:58	1
m,p-Xylene	ND		0.40	0.029	mg/Kg		09/20/19 10:09	09/20/19 11:58	1
o-Xylene	ND		0.20	0.023	mg/Kg		09/20/19 10:09	09/20/19 11:58	1
Toluene	ND		0.10	0.013	mg/Kg		09/20/19 10:09	09/20/19 11:58	1
Xylenes, Total	ND		0.60	0.052	mg/Kg		09/20/19 10:09	09/20/19 11:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 120*	*09/20/19 10:09*	*09/20/19 11:58*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 122*	*09/20/19 10:09*	*09/20/19 11:58*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*	*09/20/19 10:09*	*09/20/19 11:58*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*	*09/20/19 10:09*	*09/20/19 11:58*	*1*

Lab Sample ID: LCS 590-24237/2-A
Matrix: Solid
Analysis Batch: 24241

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24237

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.500	0.527		mg/Kg		105	76 - 129
Ethylbenzene	0.500	0.551		mg/Kg		110	77 - 133
m,p-Xylene	0.500	0.513		mg/Kg		103	78 - 130
o-Xylene	0.500	0.509		mg/Kg		102	77 - 129
Toluene	0.500	0.475		mg/Kg		95	77 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 120*
4-Bromofluorobenzene (Surr)	*100*		*76 - 122*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: 590-11860-2 MS
Matrix: Solid
Analysis Batch: 24241

Client Sample ID: CD-2C (10-10.5)
Prep Type: Total/NA
Prep Batch: 24237

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		0.688	0.724		mg/Kg	☼	105	76 - 129
Ethylbenzene	ND		0.688	0.762		mg/Kg	☼	111	77 - 133
m,p-Xylene	ND		0.688	0.703		mg/Kg	☼	102	78 - 130
o-Xylene	ND		0.688	0.729		mg/Kg	☼	106	77 - 129
Toluene	ND		0.688	0.664		mg/Kg	☼	97	77 - 131

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 120*
4-Bromofluorobenzene (Surr)	*97*		*76 - 122*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 590-11860-2 MSD
Matrix: Solid
Analysis Batch: 24241

Client Sample ID: CD-2C (10-10.5)
Prep Type: Total/NA
Prep Batch: 24237

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		0.688	0.731		mg/Kg	☼	106	76 - 129	1	25
Ethylbenzene	ND		0.688	0.749		mg/Kg	☼	109	77 - 133	2	25
m,p-Xylene	ND		0.688	0.711		mg/Kg	☼	103	78 - 130	1	32
o-Xylene	ND		0.688	0.723		mg/Kg	☼	105	77 - 129	1	31
Toluene	ND		0.688	0.649		mg/Kg	☼	94	77 - 131	2	36

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 120*
4-Bromofluorobenzene (Surr)	*101*		*76 - 122*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: 590-11860-1 DU
Matrix: Solid
Analysis Batch: 24241

Client Sample ID: CD-1C (9.5-10)
Prep Type: Total/NA
Prep Batch: 24237

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Benzene	ND			ND		mg/Kg	☼			NC	20
Ethylbenzene	ND			ND		mg/Kg	☼			NC	20
m,p-Xylene	ND			ND		mg/Kg	☼			NC	20
o-Xylene	ND			ND		mg/Kg	☼			NC	20
Toluene	ND			ND		mg/Kg	☼			NC	20
Xylenes, Total	ND			ND		mg/Kg	☼			NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 120*
4-Bromofluorobenzene (Surr)	*103*		*76 - 122*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-24237/1-A
Matrix: Solid
Analysis Batch: 24242

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24237

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	1.8	mg/Kg		09/20/19 10:09	09/20/19 11:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*41.5 - 162*	*09/20/19 10:09*	*09/20/19 11:58*	*1*

Lab Sample ID: LCS 590-24237/3-A
Matrix: Solid
Analysis Batch: 24242

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24237

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			50.0	61.5		mg/Kg		123	74.4 - 124		

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*41.5 - 162*

Lab Sample ID: LCS 590-24237/3-A
Matrix: Solid
Analysis Batch: 24297

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24237

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			50.0	59.0		mg/Kg		118	74.4 - 124		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*41.5 - 162*

Lab Sample ID: 590-11860-1 DU
Matrix: Solid
Analysis Batch: 24259

Client Sample ID: CD-1C (9.5-10)
Prep Type: Total/NA
Prep Batch: 24237

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Gasoline	61			62.4		mg/Kg	☼			3	32.3

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*41.5 - 162*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-24244/1-A
Matrix: Solid
Analysis Batch: 24245

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24244

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		10	4.2	mg/Kg		09/20/19 11:52	09/20/19 14:03	1
Residual Range Organics (RRO) (C25-C36)	ND		25	5.0	mg/Kg		09/20/19 11:52	09/20/19 14:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*50 - 150*	*09/20/19 11:52*	*09/20/19 14:03*	*1*
n-Triacontane-d62	*75*		*50 - 150*	*09/20/19 11:52*	*09/20/19 14:03*	*1*

Lab Sample ID: LCS 590-24244/2-A
Matrix: Solid
Analysis Batch: 24245

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24244

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics (DRO) (C10-C25)			66.7	70.3		mg/Kg		105	50 - 150		
Residual Range Organics (RRO) (C25-C36)			66.7	68.2		mg/Kg		102	50 - 150		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*98*		*50 - 150*
n-Triacontane-d62	*92*		*50 - 150*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 590-24244/3-A
Matrix: Solid
Analysis Batch: 24245

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 24244

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)			66.7	65.3		mg/Kg		98	50 - 150	7	25
Residual Range Organics (RRO) (C25-C36)			66.7	63.7		mg/Kg		96	50 - 150	7	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*91*		*50 - 150*
n-Triacontane-d62	*83*		*50 - 150*

Lab Sample ID: 590-11860-4 DU
Matrix: Solid
Analysis Batch: 24245

Client Sample ID: CD-4C (11.5-12)
Prep Type: Total/NA
Prep Batch: 24244

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	780			783		mg/Kg	☼			0.5	40
Residual Range Organics (RRO) (C25-C36)	550			583		mg/Kg	☼			6	40

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*106*		*50 - 150*
n-Triacontane-d62	*101*		*50 - 150*

Lab Chronicle

Client: GeoEngineers Inc
Project/Site: Sport Complex 12088-006-04

Job ID: 590-11860-1

Client Sample ID: CD-1C (9.5-10)
Date Collected: 09/17/19 09:00
Date Received: 09/17/19 12:40

Lab Sample ID: 590-11860-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			24193	09/18/19 11:44	AMB	TAL SPK

Client Sample ID: CD-1C (9.5-10)
Date Collected: 09/17/19 09:00
Date Received: 09/17/19 12:40

Lab Sample ID: 590-11860-1
Matrix: Solid
Percent Solids: 89.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.611 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	8260C		1	0.86 mL	43 mL	24241	09/20/19 13:05	JSP	TAL SPK
Total/NA	Prep	5035			7.611 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	24259	09/23/19 14:35	JSP	TAL SPK
Total/NA	Prep	3550C			15.09 g	5 mL	24244	09/20/19 11:52	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		2			24245	09/20/19 19:07	NMI	TAL SPK

Client Sample ID: CD-2C (10-10.5)
Date Collected: 09/17/19 09:10
Date Received: 09/17/19 12:40

Lab Sample ID: 590-11860-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			24193	09/18/19 11:44	AMB	TAL SPK

Client Sample ID: CD-2C (10-10.5)
Date Collected: 09/17/19 09:10
Date Received: 09/17/19 12:40

Lab Sample ID: 590-11860-2
Matrix: Solid
Percent Solids: 89.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			8.836 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	8260C		1	0.86 mL	43 mL	24241	09/20/19 13:49	JSP	TAL SPK
Total/NA	Prep	5035			8.836 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	24242	09/20/19 13:49	JSP	TAL SPK
Total/NA	Prep	3550C			15.89 g	5 mL	24244	09/20/19 11:52	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			24245	09/20/19 19:27	NMI	TAL SPK

Client Sample ID: CD-3C (10-10.5)
Date Collected: 09/17/19 09:20
Date Received: 09/17/19 12:40

Lab Sample ID: 590-11860-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			24193	09/18/19 11:44	AMB	TAL SPK

Lab Chronicle

Client: GeoEngineers Inc
Job ID: 590-11860-1
Project/Site: Sport Complex 12088-006-04

Client Sample ID: CD-3C (10-10.5)
Lab Sample ID: 590-11860-3
Date Collected: 09/17/19 09:20
Matrix: Solid
Date Received: 09/17/19 12:40
Percent Solids: 94.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			10.982 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	8260C		1	0.86 mL	43 mL	24241	09/20/19 14:55	JSP	TAL SPK
Total/NA	Prep	5035			10.982 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	24259	09/23/19 15:19	JSP	TAL SPK
Total/NA	Prep	3550C			15.04 g	5 mL	24244	09/20/19 11:52	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			24245	09/20/19 19:46	NMI	TAL SPK

Client Sample ID: CD-4C (11.5-12)
Lab Sample ID: 590-11860-4
Date Collected: 09/17/19 10:30
Matrix: Solid
Date Received: 09/17/19 12:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			24193	09/18/19 11:44	AMB	TAL SPK

Client Sample ID: CD-4C (11.5-12)
Lab Sample ID: 590-11860-4
Date Collected: 09/17/19 10:30
Matrix: Solid
Date Received: 09/17/19 12:40
Percent Solids: 92.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			9.764 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	8260C		1	0.86 mL	43 mL	24241	09/20/19 15:39	JSP	TAL SPK
Total/NA	Prep	5035			9.764 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	24242	09/20/19 15:39	JSP	TAL SPK
Total/NA	Prep	3550C			15.33 g	5 mL	24244	09/20/19 11:52	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			24245	09/20/19 20:06	NMI	TAL SPK

Client Sample ID: CD-5C (10.5-11)
Lab Sample ID: 590-11860-5
Date Collected: 09/17/19 09:30
Matrix: Solid
Date Received: 09/17/19 12:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			24193	09/18/19 11:44	AMB	TAL SPK

Client Sample ID: CD-5C (10.5-11)
Lab Sample ID: 590-11860-5
Date Collected: 09/17/19 09:30
Matrix: Solid
Date Received: 09/17/19 12:40
Percent Solids: 92.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			11.311 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	8260C		1	0.86 mL	43 mL	24241	09/20/19 16:01	JSP	TAL SPK
Total/NA	Prep	5035			11.311 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	24242	09/20/19 16:01	JSP	TAL SPK
Total/NA	Prep	3550C			15.26 g	5 mL	24244	09/20/19 11:52	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			24245	09/20/19 20:46	NMI	TAL SPK

Lab Chronicle

Client: GeoEngineers Inc
Job ID: 590-11860-1
Project/Site: Sport Complex 12088-006-04

Client Sample ID: Trip Blank
Lab Sample ID: 590-11860-6
Date Collected: 09/17/19 09:00
Matrix: Solid
Date Received: 09/17/19 12:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			10 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	8260C		1	0.86 mL	43 mL	24241	09/20/19 16:23	JSP	TAL SPK
Total/NA	Prep	5035			10 g	10 mL	24237	09/20/19 10:09	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	24242	09/20/19 16:23	JSP	TAL SPK

Laboratory References:

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: GeoEngineers Inc
Job ID: 590-11860-1
Project/Site: Sport Complex 12088-006-04

Laboratory: Eurofins TestAmerica, Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C569	01-06-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: GeoEngineers Inc
Project/Site: Sport Complex 12088-006-04

Job ID: 590-11860-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
Moisture	Percent Moisture	EPA	TAL SPK
3550C	Ultrasonic Extraction	SW846	TAL SPK
5035	Closed System Purge and Trap	SW846	TAL SPK

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Phone (509) 924-9200 Fax (509) 924-9290

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information	Sampler: Justin Orr	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 590-4997-1589.1
Client Contact: JR Sugalski	Phone: (406) 890-1310	E-Mail: randee.arrington@testamericainc.com		Page: Page 1 of 1
Company: GeoEngineers Inc				Job #:
Address: 523 East Second Ave	Due Date Requested: ~~STD~~ ~~JDO 9/17~~ STD 5 days JDO 9/17			
City: Spokane	TAT Requested (days): ~~STD~~ ~~JDO 9/17~~ STD 5 days JDO 9/17			
State, Zip: WA, 99202				
Phone: 509-209-2830(Tel)	PO #: Purchase Order not required			
Email: jsugalski@geoengineers.com	WO #:			
Project Name: ~~Sportsplex~~ ~~Carnation Dairies/0110-148-16~~ ~~Carnation Dairies~~	Project #: 59001800			
Site: Sportsplex 12088-006-04 ~~0110-148-16~~	SSOW#: L6			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH-Dx - DRO and RRO	NWTPH-Gx	8260C - BTEX	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	F	F		
CD-1C (9.5-10)	9/17/19	0900	G	Solid						3	
CD-2C (10-10.5)		0910		Solid						3	
CD-3C (10-10.5)		0920		Solid						3	
CD-4C (11.5-12)		1030		Solid						3	
CD-5C (10.5-11)		0930		Solid						3	
Trip Blank		0900		Solid						1	

590-11860 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	9-17-19/1240	GEI	Maria Wood	9/17/19 12:40	TASPO
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 10.5

Login Sample Receipt Checklist

Client: GeoEngineers Inc

Job Number: 590-11860-1

Login Number: 11860
List Number: 1
Creator: O'Toole, Maria C

List Source: Eurofins TestAmerica, Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	N/A	Received same day of collection; chilling process has begun.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

Laboratory Job ID: 590-12340-1
Client Project/Site: Sportsplex Facility Demo Phase/12088-006

For:
GeoEngineers Inc
523 East Second Ave
Spokane, Washington 99202

Attn: JR Sugalski

Randee Arrington

Authorized for release by:
12/3/2019 10:42:11 AM

Randee Arrington, Project Manager II
(509)924-9200
randee.arrington@testamericainc.com

Table of Contents

Case Narrative

Client: GeoEngineers Inc
Job ID: 590-12340-1
Project/Site: Sportsplex Facility Demo Phase/12088-006

Job ID: 590-12340-1

Laboratory: Eurofins TestAmerica, Spokane

Narrative

Receipt
The sample was received on 11/25/2019 4:29 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.1º C.

Receipt Exceptions
The following sample was received at the laboratory outside the required temperature criteria: CD-6C (9.5-10) (590-12340-1). The sample(s) is considered acceptable since it was collected and submitted to the laboratory on the same day and there is evidence that the chilling process has begun.

GC Semi VOA
Method NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: CD-6C (9.5-10) (590-12340-1). Evidence of matrix interference due to high target analytes is present; therefore, re-extraction and/or re-analysis was not performed.

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel in the following sample: CD-6C (9.5-10) (590-12340-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: GeoEngineers Inc
Job ID: 590-12340-1
Project/Site: Sportsplex Facility Demo Phase/12088-006

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
590-12340-1	CD-6C (9.5-10)	Solid	11/25/19 11:30	11/25/19 16:29	

Definitions/Glossary

Client: GeoEngineers Inc
Job ID: 590-12340-1
Project/Site: Sportsplex Facility Demo Phase/12088-006

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: GeoEngineers Inc
Job ID: 590-12340-1
Project/Site: Sportsplex Facility Demo Phase/12088-006

Client Sample ID: CD-6C (9.5-10)
Lab Sample ID: 590-12340-1
Date Collected: 11/25/19 11:30
Matrix: Solid
Date Received: 11/25/19 16:29
Percent Solids: 75.7

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	1900		13	5.4	mg/Kg	☼	11/27/19 09:57	11/27/19 21:37	1
Residual Range Organics (RRO) (C25-C36)	800		32	6.4	mg/Kg	☼	11/27/19 09:57	11/27/19 21:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*167*	*X*	*50 - 150*	*11/27/19 09:57*	*11/27/19 21:37*	*1*
n-Triacontane-d62	*128*		*50 - 150*	*11/27/19 09:57*	*11/27/19 21:37*	*1*

Client: GeoEngineers Inc
Job ID: 590-12340-1
Project/Site: Sportsplex Facility Demo Phase/12088-006

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-25405/1-A
Matrix: Solid
Analysis Batch: 25406

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25405

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		10	4.2	mg/Kg		11/27/19 07:37	11/27/19 12:47	1
Residual Range Organics (RRO) (C25-C36)	ND		25	5.0	mg/Kg		11/27/19 07:37	11/27/19 12:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*83*		*50 - 150*	*11/27/19 07:37*	*11/27/19 12:47*	*1*
n-Triacontane-d62	*88*		*50 - 150*	*11/27/19 07:37*	*11/27/19 12:47*	*1*

Lab Sample ID: LCS 590-25405/2-A
Matrix: Solid
Analysis Batch: 25406

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 25405

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	66.7	58.6		mg/Kg		88	50 - 150
Residual Range Organics (RRO) (C25-C36)	66.7	62.3		mg/Kg		94	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*88*		*50 - 150*
n-Triacontane-d62	*93*		*50 - 150*

Lab Chronicle

Client: GeoEngineers Inc
Job ID: 590-12340-1
Project/Site: Sportsplex Facility Demo Phase/12088-006

Client Sample ID: CD-6C (9.5-10)
Lab Sample ID: 590-12340-1
Date Collected: 11/25/19 11:30
Matrix: Solid
Date Received: 11/25/19 16:29

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			25403	11/27/19 07:10	AMB	TAL SPK

Client Sample ID: CD-6C (9.5-10)
Lab Sample ID: 590-12340-1
Date Collected: 11/25/19 11:30
Matrix: Solid
Date Received: 11/25/19 16:29
Percent Solids: 75.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			15.47 g	5 mL	25405	11/27/19 09:57	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25406	11/27/19 21:37	NMI	TAL SPK

Laboratory References:

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: GeoEngineers Inc
Job ID: 590-12340-1
Project/Site: Sportsplex Facility Demo Phase/12088-006

Laboratory: Eurofins TestAmerica, Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C569	01-06-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: GeoEngineers Inc
Job ID: 590-12340-1
Project/Site: Sportsplex Facility Demo Phase/12088-006

Method	Method Description	Protocol	Laboratory
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
Moisture	Percent Moisture	EPA	TAL SPK
3550C	Ultrasonic Extraction	SW846	TAL SPK

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Phone (509) 924-9200 Fax (509) 924-9290

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Justin Orr	Lab PM: Arrington, Randee	Carrier Tracking No(s):	COC No: 590-4564-1472.3
Client Contact: Scott Lathen	Phone: (406) 890-1310	E-Mail: randee.arrington@testamericainc.com		Page: Page 8 of 25 → 1 of 1
Company: GeoEngineers Inc				Job #:
Address: 523 East Second Ave	Due Date Requested: STD			
City: Spokane	TAT Requested (days): STD			
State, Zip: WA, 99202				
Phone:	PO #: [redacted]			
Email: jsugalski@geoengineers.com [redacted]	WO #:			
Project Name: Sportsplex Facility Demo Phase	Project #: 59001700			
Site: 12088-006-04	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH-Dx	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
CD-6C (9.5-10)	11/25/19	1130	G	Soil			X	1	

590-12340 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Justin Orr	11-25-19 / 1629	GEI	Marla Orcole	11/25/19 16:29	ESPG
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.9 → 6.1°C

Ver: 01/16/2019

12/3/2019

Login Sample Receipt Checklist

Client: GeoEngineers Inc

Job Number: 590-12340-1

Login Number: 12340
List Number: 1
Creator: O'Toole, Maria C

List Source: Eurofins TestAmerica, Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	N/A	Received same day of collection; chilling process has begun.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

ATTACHMENT B
Disposal Documentation

Graham Road Facility
1820 S. Graham Road
Medical Lake, WA, 99022 Ph: (509)244-0151

Original
Ticket# 598264

Customer Name PIERSOLCO PIERSOL CONSTR
Ticket Date 09/17/2019
Payment Type Credit Account
Manual Ticket#
Route
Hauling Ticket#
Destination
Manifest 114650wa
Profile 114650WA (LF02-Diesel Fuel Impacted Soi)
Generator WA- SPOKANE PFD SPORTSPLEX SPOKANE PFD SPORTSPLEX 720 W MALLON AVE SPOKANE
PO# SPokane PFD Sportsplex

Carrier PIERS PIERSOL CONST.
Vehicle# KYLE
Container
Driver KYLE PETHERS
Check#
Billing# 0001055
Grid

	Time	Scale	Operator	Inbound		
In	09/17/2019 08:38:25	Scale1	ashield2		Gross	107500 lb
Out	09/17/2019 08:50:15	Scale1	ashield2		Tare	42580 lb
					Net	64920 lb
					Tons	32.46

Comments

	Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Cont Soil Pet-RGC-Tons-	100	32.46	Tons				SPOKANE
2	17.5% FEA-17.5% FEA FEE	100		%				SPOKANE
3	SRHD1-Spokane Regional	100	32.46	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver`s Signature Kyle Pethers

The total amount includes fees and taxes that may not all be listed on this ticket due to technical limitation.

Graham Road Facility
1820 S. Graham Road
Medical Lake, WA, 99022 Ph: (509)244-0151

Original
Ticket# 598297

Customer Name PIERSOLCO PIERSOL CONSTR
Ticket Date 09/17/2019
Payment Type Credit Account
Manual Ticket#
Route
Hauling Ticket#
Destination
Manifest 114650WA
Profile 114650WA (LF02-Diesel Fuel Impacted Soi)
Generator WA- SPOKANE PFD SPORTSPLEX SPOKANE PFD SPORTSPLEX 720 W MALLON AVE SPOKANE
PO# SPokane PFD Sportsplex

Carrier PIERS PIERSOL CONST.
Vehicle# KYLE
Container
Driver KYLE PETHERS
Check#
Billing# 0001055
Grid

	Time	Scale	Operator	Inbound	Gross	113320 lb
In	09/17/2019 11:17:31	Scale1	ashield2		Tare	42420 lb
Out	09/17/2019 11:28:39	Scale1	ashield2		Net	70900 lb
					Tons	35.45

Comments

	Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Cont Soil Pet-RGC-Tons-	100	35.45	Tons				SPOKANE
2	17.5% FEA-17.5% FEA FEE	100		%				SPOKANE
3	SRHD1-Spokane Regional	100	35.45	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver`s Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technical limitation.

Graham Road Facility
4820 S. Graham Road
Medical Lake, WA, 99022 Ph: (509)244-0151

Original
Ticket# 603130

Customer Name PIERSOLCO PIERSOL CONSTR
Ticket Date 11/25/2019
Payment Type Credit Account
Manual Ticket#
Route
Hauling Ticket#
Destination
Manifest 114650WA
Profile 114650WA (LF02-Diesel Fuel Impacted Soi)
Generator WA- SPOKANE PFD SPORTSPLEX SPOKANE PFD SPORTSPLEX 720 W MALLON AVE SPOKANE
PO# SPokane PFD Sportsplex

Carrier PIERS PIERSOL CONST.
Vehicle# JOHN
Container
Driver JOHN
Check#
Billing# 0001055
Grid

	Time	Scale	Operator	Inbound	Gross	55180 lb
In	11/25/2019 10:03:07	Scale1	ASHIELD2		Tare	42120 lb
Out	11/25/2019 10:14:55	Scale1	ASHIELD2		Net	13060 lb
					Tons	6.53

Comments

	Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1	Cont Soil Pet-RGC-Tons-	100	6.53	Tons				SPOKANE
2	17.5% FEA-17.5% FEA FEE	100		%				SPOKANE
3	SRHD1-Spokane Regional	100	6.53	Tons				SPOKANE

Total Tax/Fees
Total Ticket

Driver`s Signature

The total amount includes fees and taxes that may not all be listed on this ticket due to technical limitation.