Corrective Action Plan

Penske Trucking Facility
2211 South 2000 West
Salt Lake City, Utah

January 22, 2019

Terracon Project No. 61167364

Submitted to:
Utah Department of Environmental Quality
Division of Water Quality

Prepared for:
Penske Truck Leasing Co., L.P.
Reading, PA

terracon.com

Terracon

Environmental ■ Facilities ■ Geotechnical ■ Materials

Terracon

January 22, 2019

Utah Division of Water Quality
195 North 1950 West
Salt Lake City, Utah

Attn: Mr. Wynn John
P: 801.536.4355
E: wjohn@utah.gov

RE: Corrective Action Plan
Penske Trucking Facility
2211 South 2000 West
West Valley City, Utah
Terracon Project No. 61167364

Dear Mr. John:

Terracon Consultants, Inc. (Terracon), on behalf of our client, Penske Truck Leasing Co., L.P., respectfully submits this Corrective Action Plan (CAP) pertaining to the release of new oil at the above-referenced site.

Please contact our office at [801] 545-8500 if you have questions regarding the information presented in this CAP.

Sincerely,

Terracon Consultants, Inc.

Amy B. Findley
Project Manager

Benjamin B. Bowers
Authorized Project Reviewer

Andy R. King, P.G.
Senior Project Manager

LICENSED PROFESSIONAL GEOLOGIST
ANDY R. KING
5252847-2250
STATE OF UTAH
1/22/2019

TABLE OF CONTENTS

Page

1.0 **INTRODUCTION 1**

1.1 Site Description 1
1.2 Background Information 1
1.3 Water Rights Search 3

2.0 **SITE CHARACTERIZATION 3**

3.0 **CORRECTIVE ACTION APPROACH 4**

4.0 **BEST PRACTICES 5**

4.1 Public Notice 5
4.2 Contingency Plan 5

APPENDICES

Appendix A Exhibits
Exhibit 1 – Topographic Map
Exhibit 2 – Utility Map Overview
Exhibit 3 – Utility Map: Service Area

Appendix B Water Rights Information

Appendix C Limited Site Investigation Reports

Corrective Action Plan
Penske Trucking Facility
2211 South 2000 West
West Valley City, Utah

Terracon Project No. 61167364
January 22, 2019

1.0 INTRODUCTION

Terracon Consultants (Terracon), on behalf of Penske Truck Leasing Co., L.P. submits this Corrective Action Plan (CAP) to conduct a limited remedial action pertaining to the release of new oil at the Penske facility located in West Valley, Utah.

1.1 Site Description

The site is developed as a commercial truck leasing facility located at 2211 South 2000 West, in a commercial area within West Valley City (Appendix A; Exhibit 1). The facility leases trucks and services the leased trucks. A new oil aboveground storage tank (AST) is located in the maintenance shop with sub-grade piping directing the product to the dispenser islands located south of the building, and a 20,000-gallon diesel UST and a 12,000-gallon gasoline UST are located south of the service island (Exhibit 2).

1.2 Background Information

A new oil release was discovered by Penske personnel on April 13, 2016, and it was observed to have filled the buried secondary containment line conduit between the new oil AST in the maintenance shop and the dispenser islands to the south of the building. At Penske's request, Terracon mobilized to the site on April 14, 2016, to observe site conditions, including the removal of approximately 50 gallons of new oil from the conduit and access sumps. On April 15, 2016, at Penske's request, Terracon reported the release to the Utah Department of Environmental Quality (UDEQ), Incident Number 12576. Based on Terracon's discussions with the UDEQ and the Salt Lake County Health Department, it was recommended that a subsurface investigation be conducted to evaluate whether impacts from the release were present in soil and/or groundwater in the vicinity of the new oil supply line conduit and sumps.

Terracon reviewed documents available on the UDEQ's Division of Environmental Response (DERR's) website that provided information about a previous release from Penske's underground storage tank (UST) system (Release Site IJM). According to the website, the facility has a 20,000-gallon diesel UST and a 12,000-gallon gasoline UST currently in use, installed in 1993. The records also list seven USTs that were removed from service in 1993: four 20,000-gallon diesel USTs, one 20,000-gallon gasoline UST, a 2,000-gallon new oil UST, and a 500-gallon waste oil UST. The fuel USTs were collocated in a common tank basin in approximately the same location as the current USTs.

At the time of the UST closures in 1993, impacts to soils and groundwater were observed and subsequent investigations and corrective action ensued. According to the Closure Memorandum on file with DERR, dated December 19, 1997, approximately 9,000 gallons of product were removed from the surface of the groundwater at the site, over 168,000 gallons of contaminated groundwater were treated and discharged to the sanitary sewer, and approximately 2,700 tons of contaminated soil was excavated and disposed off-site. Investigations conducted throughout 1994 showed low to non-detectable concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX), diesel-range hydrocarbons (TPH-DRO) at concentrations near the DERR Tier 1 Screening Levels (up to 5,400 mg/kg), and naphthalene above Tier 1 Screening Levels in soils near and to the northeast of the UST basin. Groundwater sampling results showed low to non-detectable concentrations of target petroleum constituents in samples collected from four quarters of monitoring. The release received regulatory closure in January 1998, based on soil impacts remaining at concentrations near or below Tier 1 SLs and the absence of detectable constituents in groundwater.

1.2.1 Limited Site Investigation – June 2016

In June 2016, Terracon conducted a Limited Site Investigation (report dated July 20, 2016). Terracon advanced four soil borings (BH-1 through BH-4) on the site to investigate the reported release. Based on the results of the investigation, subsurface soils and groundwater have been impacted by petroleum hydrocarbons along the new oil product piping line. The concentrations of TPH-Oil and Grease reported in the soil and groundwater samples were above the DERR Initial Screen Levels (ISLs) and/or Tier 1 Screening Levels. Apparent free product was observed in the water sample collected at location BH-4, at the south end of the dispenser island. Terracon noticed petroleum odors and soil staining that appeared to indicate impacts from petroleum other than oil and grease at the site, suggesting a release from the nearby underground storage tank system located south and up-gradient of soil boring BH-4.

A copy of the report is included in **Appendix C**.

1.2.2 Additional Limited Site Investigation – December 2017

In December 2016, Terracon conducted an Additional Limited Site Investigation (report dated February 13, 2017). The objective of the additional LSI was to further assess the vertical and horizontal extent of the new oil release at the site and to investigate the possibility of a new release from the UST system. Terracon advanced eleven soil borings on the site, with monitoring wells installed at five of the eleven boring locations.

The results reported concentrations of TPH-Oil and Grease above an ISL in shallow soils along the new oil line, with one boring, BH-2, reporting a concentration that exceeded the Tier 1 Screening Level. Concentrations of TPH-DRO were reported in several borings at deeper depths, and were attributed to the historic UST release at the site. The concentration of TPH-Oil and

Grease reported in a groundwater sample (MW-1) collected adjacent to the southern new oil piping sump exceeded the Tier 1 Screening Level.

A copy of the report is included in **Appendix C**.

1.2.3 Groundwater Sampling Event

In April 2018, at the request of the DERR, Terracon conducted a groundwater monitoring event (report dated May 14, 2018). The scope of work was to collect groundwater samples from each of the five monitoring wells installed at the site to be analyzed for the presence of MBTEXN, TPH-GRO and TPH-DRO. As free product was observed in MW-1, a sample was not collected. Groundwater samples collected from MW-2 thru MW-5 did not report MBTEXN, TPH-GRO or TPH-DRO concentrations above the laboratory detection limit.

A copy of the report is included in **Appendix C**.

1.3 Water Rights Search

A point of diversion water rights search was conducted on the Utah Division of Water Rights interactive website. No water wells were identified within 500 feet of the highest measured concentration greater than an ISL.

The closest water well (Water Right 59-5650) is located approximately 785 feet cross-gradient from the site. The closest down-gradient well (Water Right 59-1818), used for commercial purposes, is located approximately 1,550 feet northeast of the site, across the 2100 South Freeway. It is not anticipated that these wells would be affected by conditions at the site. The location maps and Water Right details for these two wells are included in **Appendix B**.

2.0 SITE CHARACTERIZATION

The soil and groundwater analytical results reported during the site investigations did not report benzene or gasoline-range hydrocarbons indicative of a gasoline release. The concentrations of TPH-DRO reported in soils and groundwater were attributed to the historic release. The soil impacts originating from the new oil release appear to be located along the piping conduit and extend along the pipe line to the access sump located south of the new oil dispenser located in the dispenser island. New oil has accumulated within MW-1, located immediately adjacent to the access sump.

Depth to groundwater has been measured between 5.81 and 9.07 feet below the top of casings in the monitoring wells installed at the site. The site-specific groundwater gradient was calculated using the well casing elevations and depth-to-groundwater measurements. The calculations

indicate the gradient in the area is relatively flat, and groundwater in the vicinity of the wells appears to flow to the north-northeast.

Land use at the facility and surrounding area is commercial / light industrial. Utility corridors were marked at the site (Appendix 1; Exhibit 3), and all main utility lines enter the property and building from the west. Based on the results of the soil and groundwater samples collected at the site, and with groundwater flow direction reported to flow to the north-northeast, it does not appear that this release has impacted the west side of the site where the main utility corridors are present. As the release consisted of new oil, and laboratory analytical results reported non-detect concentrations of MTBE, benzene and TPH-GRO in soil and groundwater samples, the potential for vapor intrusion is low.

3.0 CORRECTIVE ACTION APPROACH

Given the local land use, lack of impact to main utility corridors, and the type of hydrocarbons present, the cleanup levels used to evaluate concentrations of hydrocarbons in soil and groundwater at the site should be the UDEQ Tier 1 Screening Levels for soil and groundwater. Although not directly applicable to this site as the release did not originate from an UST and is not gasoline or diesel related, the UDEQ Tier 1 Screening Level for TRPH can be used to direct the corrective action in an effort to remediate soil and groundwater impacted by the new oil release.

The proposed approach is to remove free product observed in one monitoring well at the site, and conduct groundwater sampling to evaluate and monitor groundwater conditions. The CAP would consist of the following:

- Conduct two vacuum extraction events to remove product that has accumulated in MW-1, with proper off-site disposal of the recovered product. The second event would be conducted approximately three months after the initial event to allow for product, if remaining, to accumulate in the well.

- At the time of each vacuum extraction event, Terracon will evaluate the surrounding wells for the presence of free product.

- Conduct semi-annual groundwater monitoring events after the vacuum events until upgrades to the facility UST system are implemented by Penske.

This approach was selected as a practical means to address product that has accumulated in MW-1 and prevent potential migration of product.

As excavation of impacted soils will require concrete cutting and closure of the services bays and fuel islands, Penske will address the impacted soil during a planned upgrade to the fuel system at the facility in 2023. Penske will develop a Work Plan for UDWQ approval to evaluate and address impacted soils.

4.0 BEST PRACTICES

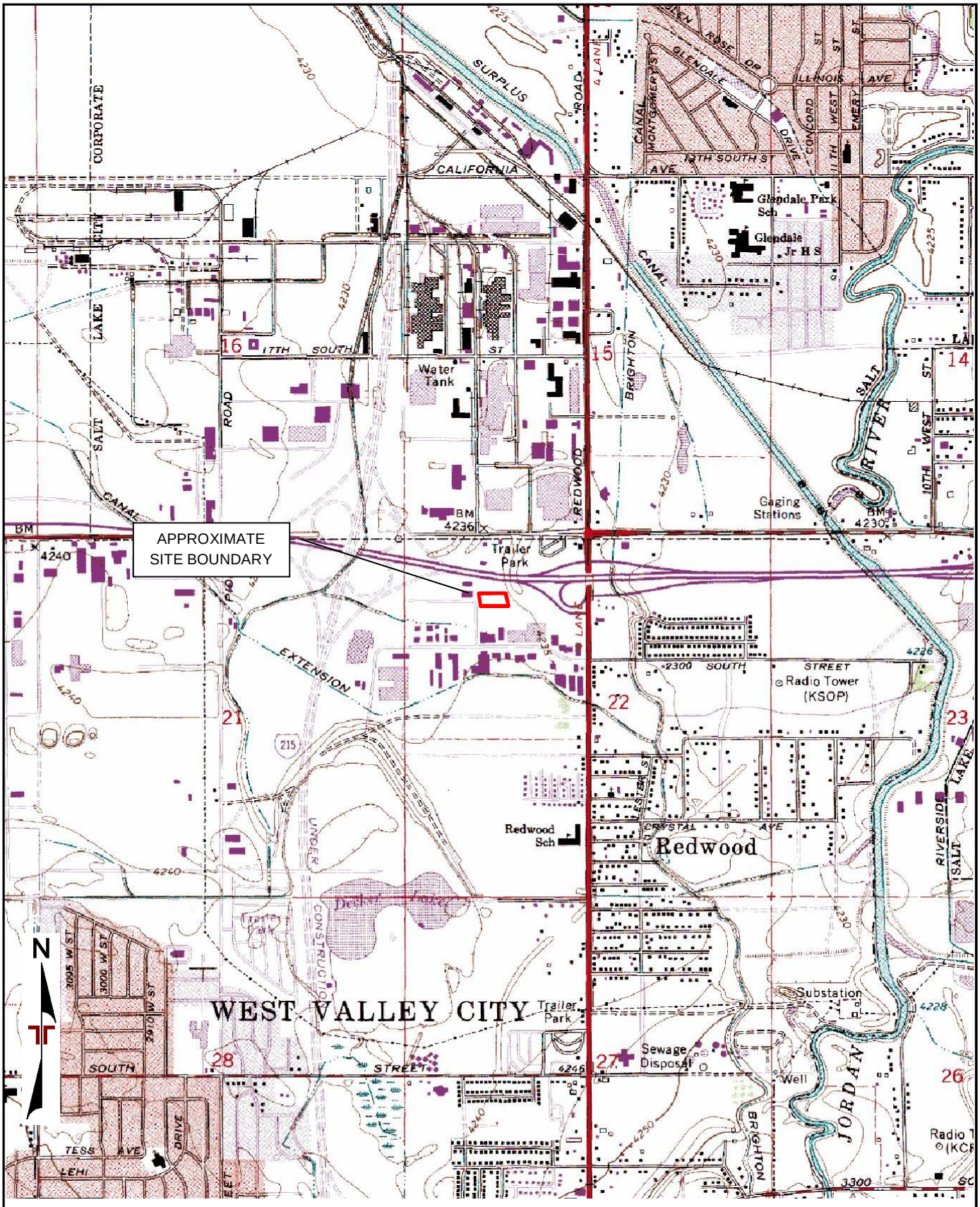
4.1 Public Notice

Terracon will prepare a Public Notice on behalf of Penske detailing the corrective measurements to be implemented at the site. The Public Notice will be published in the local newspapers and will provide 30 calendar days for public comments to be submitted.

4.2 Contingency Plan

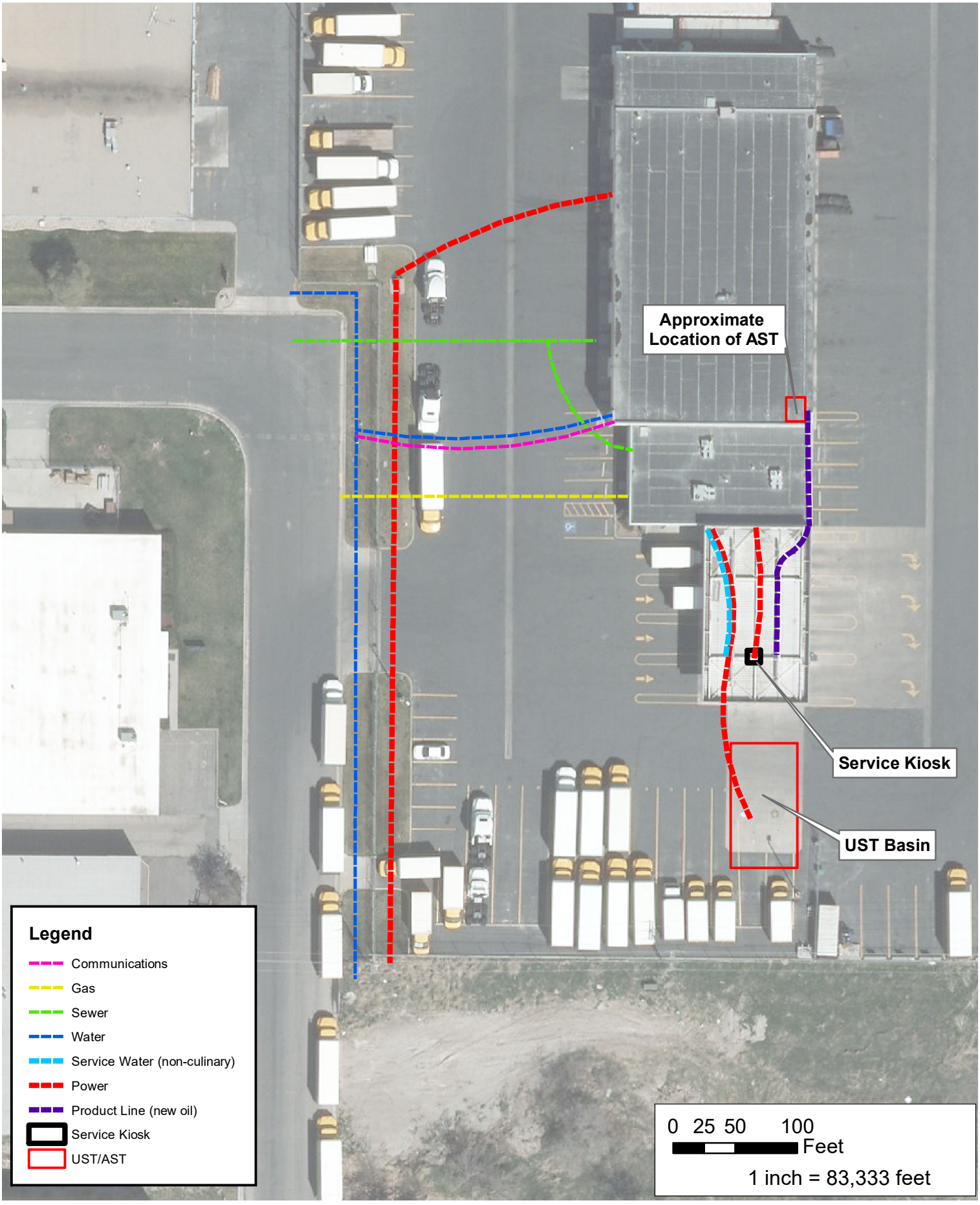
In the event that significant changes or increases to petroleum hydrocarbon concentrations in groundwater are reported, Penske will work with the UDWQ to evaluate additional corrective actions that may be appropriate for the site.

APPENDIX A
Exhibits



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY
QUADRANGLES INCLUDE: SALT LAKE CITY SOUTH, UT (1/1/1999).

Project Manager: ABF	Project No. 61167364	Terracon	TOPOGRAPHIC MAP	Exhibit
Drawn by: NMS	Scale: 1"=2,000'	6949 S High Tech Dr Ste 100	Penske Trucking Facility	1
Checked by: BBB	File Name: Ex 1	Midvale, UT 84047-3707	2211 South 2000 West West Valley, UT	
Approved by: BBB	Date: 1/10/17			



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NOTES: This Product is intended for informational purposes only and may not be suitable for legal, engineering, or surveying purposes.

DATA SOURCES: Aerial Photography provided by AGRC (2012 HRO).

N

Project No.:	61167364
Drawn By:	AT
Reviewed By:	ABF
Date:	August 2018

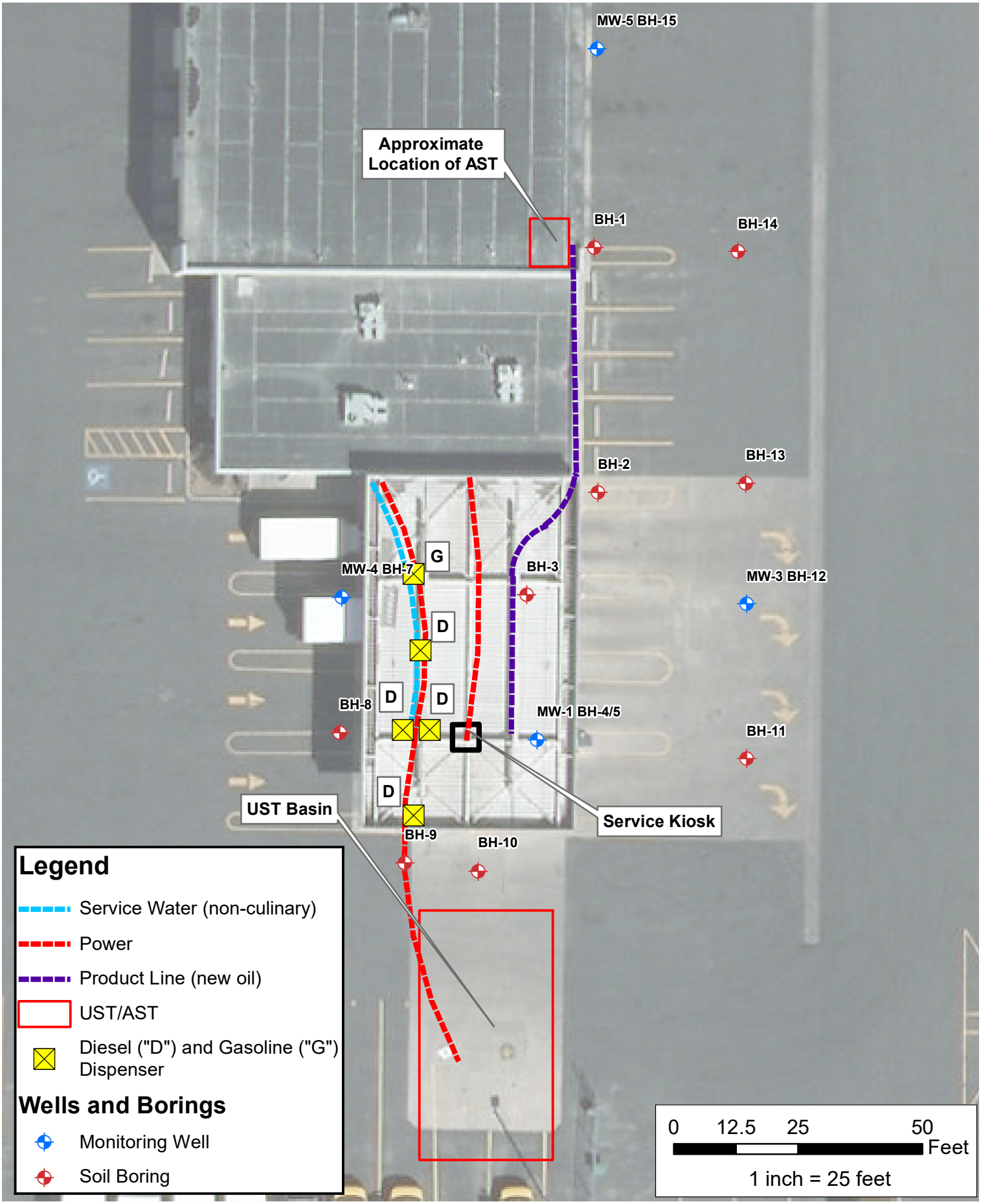
Terracon
Consulting Engineers & Scientists
6949 S. High Tech Dr. Midvale, UT 84047
PH. (801) 545-8500 terracon.com

UTILITY MAP OVERVIEW

PENSKE TRUCKING NEW OIL RELEASE
2211 South 2000 West
West Valley, Utah

EXHIBIT

2



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NOTES: This Product is intended for informational purposes only and may not be suitable for legal, engineering, or surveying purposes.

DATA SOURCES: Aerial Photography provided by AGRC (2012 HRO).

N

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6949 S. High Tech Dr. Midvale, UT 84047
PH. (801) 545-8500 terracon.com

UTILITY MAP: SERVICE AREA

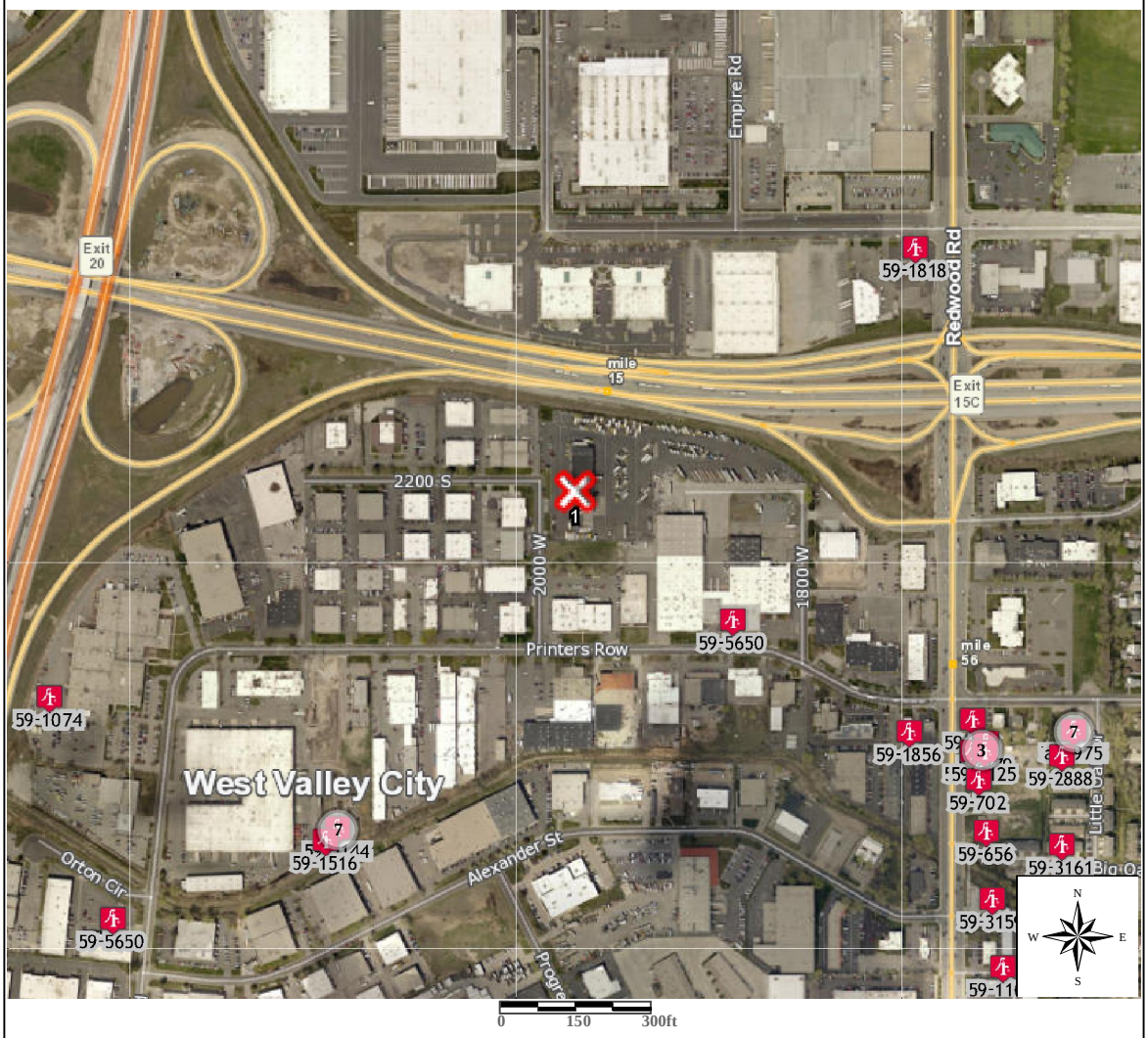
PENSKE TRUCKING NEW OIL RELEASE
2211 South 2000 West
West Valley, Utah

EXHIBIT

3

APPENDIX B
Water Right Information

Water Rights Map



Point (1) Location: Address: 2211 S 2000 W, SALT LAKE CITY

STATE OF UTAH -- DIVISION OF WATER RIGHTS -- DATA PRINT OUT for 59-1818(U1186)

WATER RIGHT: 59-1818 APPLICATION/CLAIM NO.: U1186 CERT. NO.:

OWNERSHIP**********

NAME: George P. Condas
ADDR: c/o Condas Brothers
1757 West 2100 South
Salt Lake City UT 84119

NAME: John P. Condas
ADDR: c/o Condas Brothers
1757 West 2100 South
Salt Lake City UT 84119

NAME: Margareta P. Ellis
ADDR: c/o Condas Brothers
1757 West 2100 South
Salt Lake City UT 84119

NAME: Harry P. Frieda
ADDR: c/o Condas Brothers
1757 West 2100 South
Salt Lake City UT 84119

NAME: Tessie P. Madsen
ADDR: c/o Condas Brothers
1757 West 2100 South
Salt Lake City UT 84119

DATES, ETC.**********

LAND OWNED BY APPLICANT? COUNTY TAX ID#:
FILED: 12/12/1935|PRIORITY: 12/ /1934|PUB BEGAN: |PUB ENDED: |NEWSPAPER:
ProtestEnd: |PROTESTED: [No]|HEARNG HLD: |SE ACTION: [ ]|ActionDate: |PROOF DUE:
EXTENSION: |ELEC/PROOF:[ ]|ELEC/PROOF: |CERT/WUC: 06/30/1975|LAP, ETC: |LAPS LETTER:
RUSH LETTR: |RENOVATE: |RECON REQ: |TYPE: [ ]

PD BOOK: [59-2]|MAP: [63a]|PUB DATE: 04/00/1977

Type of Right: Underground Water Claim Source of Info: Proposed Determination Status:

LOCATION OF WATER RIGHT**********

FLOW: 0.013 cfs

SOURCE: Underground Water Well

COUNTY: Salt Lake COMMON DESCRIPTION:

POINT OF DIVERSION -- UNDERGROUND:
(1) S 45 ft W 95 ft from N4 cor, Sec 22, T 1S, R 1W, SLBM
DIAMETER OF WELL: 2 ins. DEPTH: 136 to ft. YEAR DRILLED: 1934 WELL LOG? No WELL ID#:

USES OF WATER RIGHT******** ELU -- Equivalent Livestock Unit (cow, horse, etc.) ******** EDU -- Equivalent Domestic Unit or 1 Family
(The Beneficial Use Amount is the quantity of Use that this Water Right contributes to the Group Total.)

WATER USE GROUP NO. 419273.

COMMERCIAL: Used for commercial purposes in club. PERIOD OF USE: 01/01 TO 12/31
Acre Feet Contributed by this Right for this Use: 9.41174

**********E N D O F D A T A**********

STATE OF UTAH -- DIVISION OF WATER RIGHTS -- DATA PRINT OUT for 59-5650(A72635)

WATER RIGHT: 59-5650 APPLICATION/CLAIM NO.: A72635 CERT. NO.:

==========
OWNERSHIP**********
==========

NAME: Jordan Valley Water Conservancy District (Public Water Supplier)
ADDR: 8215 South 1300 West
West Jordan, UT 84088

==========
DATES, ETC.**********
==========

LAND OWNED BY APPLICANT? No COUNTY TAX ID#:
FILED: 12/30/1999|PRIORITY: 12/30/1999|PUB BEGAN: 02/24/2000|PUB ENDED: 03/02/2000|NEWSPAPER: Deseret News
ProtestEnd:03/22/2000|PROTESTED: [Yes]|HEARNG HLD: |SE ACTION: [ ]|ActionDate: |PROOF DUE:
EXTENSION: |ELEC/PROOF:[ ]|ELEC/PROOF: |CERT/WUC: |LAP, ETC: |LAPS LETTER:
RUSH LETTR: |RENOVATE: |RECON REQ: |TYPE: [ ]

PD BOOK: [59-]|MAP: [ ]|PUB DATE:

Type of Right: Application to Appropriate Source of Info: Application to Appropriate Status: Unapproved

==========
LOCATION OF WATER RIGHT**********
==========

FLOW: 1.35 cfs OR 802.0 acre-feet

SOURCE: Underground Water Wells (shallow aquifer only)

COUNTY: Salt Lake COMMON DESCRIPTION: JVWCD Service Area

POINTS OF DIVERSION -- UNDERGROUND:
(1) N 2084 ft W 507 ft from SE cor, Sec 21, T 1S, R 1W, SLBM
DIAMETER OF WELL: 10 ins. DEPTH: 10 to 120 ft. YEAR DRILLED: WELL LOG? No WELL ID#:
Comment: Well No. 2F29
(2) N 2672 ft W 614 ft from SE cor, Sec 21, T 1S, R 1W, SLBM
DIAMETER OF WELL: 10 ins. DEPTH: 10 to 120 ft. YEAR DRILLED: WELL LOG? No WELL ID#:
Comment: Well No. 2F28
(3) N 2109 ft E 1057 ft from SW cor, Sec 22, T 1S, R 1W, SLBM
DIAMETER OF WELL: 10 ins. DEPTH: 10 to 120 ft. YEAR DRILLED: WELL LOG? No WELL ID#:
Comment: Well No. 2F30
(4) S 1487 ft E 1824 ft from NW cor, Sec 22, T 1S, R 1W, SLBM
DIAMETER OF WELL: 10 ins. DEPTH: 10 to 120 ft. YEAR DRILLED: WELL LOG? No WELL ID#:
Comment: Well No. 2F27
(5) S 1340 ft E 968 ft from NW cor, Sec 27, T 1S, R 1W, SLBM
DIAMETER OF WELL: 10 ins. DEPTH: 10 to 120 ft. YEAR DRILLED: WELL LOG? No WELL ID#:
Comment: Well No. 2F31

==========
USES OF WATER RIGHT******** ELU -- Equivalent Livestock Unit (cow, horse, etc.) ******** EDU -- Equivalent Domestic Unit or 1 Family
(The Beneficial Use Amount is the quantity of Use that this Water Right contributes to the Group Total.)
==========

WATER USE GROUP NO. 412055. Water Rights Appurtenant to the following use(s):
57-2230(CERT),2231(CERT),2425(CERT),2426(CERT),2427(CERT),2507(CERT),2508(CERT),2510(APP),2511(APP),2520(APP),2524(APP),2528(APP)
2552(APP),2580(APP),2793(CERT),2794(CERT),2893(CERT),3016(APP),3017(CERT),3018(CERT),3019(CERT),7401(APP),7402(APP),7403(APP)
7404(APP),7405(APP),7958(APP),8339(APP),8451(CERT),8667(UNAP),8712(APP),8758(REJ),8759(REJ),8760(REJ),8761(REJ),8762(REJ)
8763(REJ),8764(REJ),8765(REJ),8766(REJ),8770(APP),8811(APP),8817(APP),8832(APP),8863(APP),8939(APP),8941(REJ),10115(APP)
10117(APP),10134(APP),10158(APP),10159(APP),10160(REJ),10178(REJ),10197(UNAP),10198(UNAP),10199(UNAP),10200(UNAP),10201(UNAP)
10202(UNAP),10203(UNAP),10204(UNAP),10205(UNAP),10206(UNAP),10207(UNAP),10208(UNAP),10209(UNAP),10210(UNAP),10211(UNAP),10212(UNAP
10216(UNAP),10217(UNAP),10218(UNAP),10219(UNAP),10220(UNAP),10221(UNAP),10222(UNAP),10223(UNAP),10224(UNAP),10225(UNAP),10226(UNAP
10227(UNAP),10228(UNAP),10229(UNAP),10230(UNAP),10231(UNAP),10232(UNAP),10233(UNAP),10234(UNAP),10235(UNAP),10236(UNAP),10237(UNAP
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10288(APP),10351(APP),59-1210(CERT),1531(APP),1532(APP),1535(APP),1536(APP),3529(DEC),5513(WUC),5619(SHAR),5625(UNAP),5626(UNAP)
5627(UNAP),5628(UNAP),5629(UNAP),5630(UNAP),5631(UNAP),5632(UNAP),5633(UNAP),5634(UNAP),5635(UNAP),5636(UNAP),5637(UNAP)
5638(UNAP),5639(UNAP),5640(UNAP),5641(UNAP),5642(UNAP),5643(UNAP),5645(UNAP),5646(UNAP),5647(UNAP),5648(UNAP),5649(UNAP)
5650(UNAP),5651(UNAP),5652(UNAP),5653(UNAP),5654(UNAP),5655(UNAP),5656(UNAP),5659(SHAR),5786(APP),5878(APP),5954(APP)

MUNICIPAL: Jordan Valley Water Conservancy District PERIOD OF USE: 01/01 TO 12/31
Acre Feet Contributed by this Right for this Use: 802.0

OTHER COMMENTS**********

QUANTITY OF WATER: The flow rate and annual volume limits for this Application are shown. The annual withdrawal volume of these wells, together with the other Group 2F wells shown in Attachment A, will be limited to 4,880 acre-feet per year. This volume limitation is substantially less than the year-round pumping capacity of all of the Group 2F wells, and accounts for seasonal variations and peaking flow rates for the collective group. If pumped year-round, fewer than the total number of wells shown on Attachment A could extract the volume limitation for this group of wells.

PROTESTANTS**********

NAME: Central Utah Water Conservancy District
ADDR: c/o Richard Tullis
355 West University Parkway
Orem, UT 84058
TYPE: APPL
RCVD:

NAME: Draper Irrigation Company
ADDR: P.O. Box 275
Draper, UT 84020
TYPE: APPL
RCVD:

NAME: Great Salt Lake Audubon (Late)
ADDR: c/o Mr. Jeff Salt
723 East 3120 South
Salt Lake City, UT 84106
TYPE: APPL
RCVD:

NAME: John D. Jacob
ADDR: c/o James E. Karkut
P. O. Box 45898
Salt Lake City, UT 84145-0898
TYPE: APPL
RCVD:

NAME: Justin Walsh (Late)
ADDR: 3105 Lynncrest Cove
Salt Lake City, UT 84118
TYPE: APPL
RCVD:

NAME: Kennecott Utah Copper Corporation
ADDR: c/o Larry M. Trimble
P. O. Box 6001
Magna, UT 84044-6001
TYPE: APPL
RCVD:

NAME: Lower Jordan River Water Users Association
ADDR: c/o Jody L. Williams
50 West Broadway, 8th Floor
Salt Lake City, UT 84101-2034
TYPE: APPL
RCVD:

NAME: Metropolitan Water District of Salt Lake
ADDR: c/o Scott H. Martin
P. O. Box 45000
Salt Lake City, UT 84145
TYPE: APPL
RCVD:

NAME: New State Inc.
ADDR: c/o Owen Kent Covey
P. O. Box 58483
Salt Lake City, UT 84158-8483
TYPE: APPL
RCVD:

NAME: PacifiCorp
ADDR: c/o Jody L. Williams
50 West Broadway, 8th Floor
Salt Lake City, UT 84101-2034
TYPE: APPL
RCVD:

NAME: Provo River Water User's Association
ADDR: 1788 North State Street
Orem, UT 84057
TYPE: APPL
RCVD:

NAME: Provo River Water User`s Association
ADDR: c/o Scott H. Martin
PO Box 45000
Salt Lake City, UT 84145-5000
TYPE: APPL
RCVD:

NAME: Riverton City (Late)
ADDR: PO Box 429
Riverton, UT 84065
TYPE: APPL
RCVD:

NAME: Salt Lake City Corporation
ADDR: c/o LeRoy W. Hooton
1530 South West Temple
Salt Lake City, UT 84115
TYPE: APPL
RCVD:

NAME: Sandy City
ADDR: Department of Public Utilities
10000 Centennial Parkway
Sandy, UT 84070
TYPE: APPL
RCVD:

NAME: State of Utah Division of Wildlife Resources
ADDR: c/o John Kimball
1594 West North Temple, Suite 2110 P.O. Box 146301
Salt Lake City, UT 84114-6301
TYPE: APPL
RCVD:

NAME: USA Bureau of Reclamation
ADDR: c/o Jonathan Jones
302 East 1860 South
Provo, UT 84606-7317
TYPE: APPL
RCVD:

NAME: Utah Lake Distributing Company
ADDR: c/o Scott H. Martin
P. O. Box 45000
Salt lake City, UT 84145
TYPE: APPL
RCVD:

NAME: Welcome Irrigation & Water Company
ADDR: c/o Evan Johnson
327 North 200 East #2
American Fork, UT 84003
TYPE: APPL
RCVD:

NAME: West Crescent Irrigation Company
ADDR: c/o Douglas McKay
11710 South 700 West
Draper, UT 84020
TYPE: APPL
RCVD:

NAME: City of West Jordan (Late)
ADDR: Department of Public Works
8030 South 4000 West
West Jordan, UT 84088
TYPE: APPL
RCVD:

NAME:
ADDR:
TYPE: APPL
RCVD:

**********E N D O F D A T A**********

APPENDIX C
Limited Site Investigation Reports

Limited Site Investigation Report

Penske Trucking Facility – New Oil Release

2211 South 2000 West

Salt Lake City, Utah

July 20, 2016

Terracon Project No. 61167364

Prepared for:
Penske Trucking
Reading, Pennsylvania

Prepared by:
Terracon Consultants, Inc.
Midvale, Utah

Terracon Consultants, Inc. 6949 South High Tech Drive Midvale, Utah 84047
P [801] 545 8500 terracon.com

July 20, 2016

Penske Trucking
P.O. Box 7635
Reading, PA 19603

Attn: Mr. Brian Yazemboski
E: Brian.Yazemboski@penske.com

Re: Limited Site Investigation Report
Penske Trucking Facility - New Oil Release
2211 South 2000 West
West Valley City, Utah
Terracon Project No. 61167364

Dear Mr. Yazemboski:

Terracon is pleased to provide this report regarding the Limited Site Investigation (LSI) activities conducted at the above-referenced site. Terracon has performed the LSI pursuant to our proposal P61167492, dated June 8, 2016.

We appreciate the opportunity to have performed these services for you. Please contact our office at (801) 545-8500 if you have questions regarding this information or if we can provide any other services.

Sincerely,

Terracon Consultants, Inc.

Nancy Saunders
Environmental Scientist

Ben Bowers
Environmental Department Manager

Attachments

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

1.1 Site Description 1
1.2 Project Background 1
1.3 Scope of Work 1
1.4 Standard of Care 2
1.5 Additional Scope Limitations 2
1.6 Reliance 2

2.0 METHODOLOGY 2

2.1 Environmental Borings 2
2.2 Sampling Program 3
2.3 Laboratory Analytical Methods 4

3.0 DATA EVALUATION 4

3.1 Subsurface Conditions 4
3.2 Soil Analytical Results 5
3.3 Groundwater Analytical Results 5

4.0 FINDINGS AND CONCLUSIONS 5

APPENDICES

Appendix A Figures

Figure 1 – Topographic Map
Figure 2 – Site Diagram

Appendix B Soil Boring Logs

Appendix C Tables

Appendix D Chain of Custody and Laboratory Data Sheets

LIMITED SITE INVESTIGATION REPORT
Penske Trucking Facility New Oil Release
2211 South 2000 West
West Valley City, Utah

Terracon Project No. 61167364
July 20, 2016

1.0 INTRODUCTION

1.1 Site Description

Site Name	Penske Trucking facility
Site Location/Address	2211 South 2000 West, West Valley City, Utah
General Site Description	The site is an active trucking facility with four pump islands for dispensing diesel, gasoline, and motor oil. The facility is used for fueling, servicing, and renting trucks.

Figure 1 (Appendix A) presents the site location on a portion of the USGS 7.5-minute series topographic map. **Figure 2** is a site diagram that indicates the approximate locations of the soil sampling points in relation to pertinent site features.

1.2 Project Background

Penske personnel discovered a release from a pressurized new oil supply line at the facility on April 13, 2016. The leak was identified in the line located between the new oil aboveground storage tank (AST) located in the maintenance garage area and the outdoor service bays and was observed to fill the buried service line conduit with oil. At Penske's request, Terracon mobilized to the site on April 14, 2016, to observe site conditions, including the removal of approximately 50 gallons of new oil from the conduit. Terracon reported the release to the Utah Department of Environmental Quality (DEQ) on April 15, 2016, and has had subsequent discussions with the Salt Lake Valley Health Department (SLVHD). Based on Terracon's discussions with DEQ and the SLVHD, a subsurface investigation was recommended to evaluate whether impacts from the spill are present in soil or groundwater in the vicinity of the supply line conduit and sumps.

1.3 Scope of Work

The objectives of this LSI were to evaluate the subsurface for evidence of environmental impacts associated with the new oil release identified within the supply line conduit and sumps. Soil and groundwater samples were collected and submitted for analytical laboratory analyses of Total Recoverable Petroleum Hydrocarbons (TRPH), using EPA Method 1664 SGT.

1.4 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These LSI services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal, and were not restricted by ASTM E1903-11.

1.5 Additional Scope Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the onsite activities and other services performed under this scope of work. Such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this LSI. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

1.6 Reliance

The report will be prepared for the exclusive use and reliance of Penske Trucking, its subsidiaries and affiliates, and their successors, assigns and grantees. Use or reliance by any other party is prohibited without the written authorization of Penske Trucking and Terracon. Reliance on the LSI report by the client and all authorized parties will be subject to the terms, conditions and limitations stated in the proposal, LSI report, and Terracon's Agreement. The limitation of liability defined in the Agreement is the aggregate limit of Terracon's liability to the client and all relying parties.

2.0 METHODOLOGY

2.1 Environmental Borings

Prior to drilling, the public utility location service (Blue Stakes) was notified at least 48 hours prior to drilling as required by law. In addition, a subcontracted private utility location service was used to identify and mark subsurface utilities in the area of each boring location.

Terracon advanced four borings at the site on June 28, 2016, along the product line where the release was noted:

- One boring was placed outside the garage area, east of the new oil AST,
- One boring was placed between the AST and first service bay,
- Two borings were located adjacent to the north and south service bay sumps (east), where the oil supply hose splits (with a tee fitting) to the service bays.

The approximate boring locations are shown on **Figure 2 (Appendix A)**.

Mechanized drilling services were performed by Direct Push Services, a State of Utah-licensed Monitoring Well Driller, using a direct-push drilling rig under the supervision of a Terracon Environmental Field Geologist. Mechanized drilling equipment was cleaned using a high-pressure washer prior to beginning the project and before beginning each soil boring. Non-dedicated sampling equipment was cleaned using an Alconox® detergent wash and potable water rinse prior to commencement of the project and between the collection of each sample.

Soil samples were collected continuously, using core barrel samplers to document lithology, color, and relative moisture content. The soil samples were field screened using sensory methods and a photoionization detector (PID) to detect the presence of total volatile organic chemicals (TVOCs). One soil sample was collected from each boring, based on the evidence of contamination, as described above.

Groundwater samples were collected from each soil boring (converted to temporary groundwater sampling points), using a peristaltic pump. A section of dedicated tubing was inserted into the drive point. The sample tubing was connected to a dedicated section of flexible polyethylene hose at the surface and was then passed through a peristaltic hose pump. The sampling points were developed to reduce turbidity, then the water column within the tool was purged. Following probe development and purging, the peristaltic pump was used to collect a groundwater sample directly into laboratory-supplied sample containers.

After completing the sample collection, the borings were abandoned by backfilling with bentonite clay pellets, adding water to hydrate the bentonite clay, and restoring the surface with asphalt or concrete patch or soil to match the surrounding area.

2.2 Sampling Program

Terracon's sampling program consisted of the following:

- Collection of one soil sample from each of the four borings installed at the site.
- Collection of one groundwater grab sample from each soil boring.

The soil and groundwater samples were collected and placed in laboratory-prepared containers, labeled, and placed on ice in a cooler. The samples and completed chain-of-custody forms were shipped via FedEx to ESC Laboratories, a Utah-certified laboratory for analysis on a standard (7-day) turn around.

2.3 Laboratory Analytical Methods

The samples collected from the borings were analyzed for TPH-Oil and Grease, as shown in the following table.

Location	Analysis	Sample Type	No. of Samples	Laboratory Method
New Oil Hydraulic Conduit	TPH-Oil and Grease	Soil	4	EPA Method 9071B SGT
New Oil Hydraulic Conduit	TPH-Oil and Grease	Groundwater	4	EPA Method 1664 SGT

3.0 DATA EVALUATION

Please refer to Table 1 (Appendix C) for a summary of the laboratory analytical results for all soil samples. Please refer to Table 2 (Appendix C) for a summary of the laboratory analytical results for all groundwater samples. The executed chain-of-custody form and laboratory data sheets are provided in Appendix D.

Tables 1 and 2 also include comparative regulatory screening levels. For regulated petroleum hydrocarbon constituents, the regulatory screening levels included the Initial Screening Levels (ISLs) and the Tier 1 Screening Levels established by the Utah Department of Environmental Quality (UDEQ), Division of Environmental Response and Remediation (DERR). Although not strictly enforceable, as the new oil release was from an AST system and not governed by UST rules, other regulating authorities, such as the SLVHD and the Utah Division of Water Quality, typically defer to these standards.

3.1 Subsurface Conditions

Soils observed at the site appear to generally consist of a sandy gravel layer approximately 5 to 7.5 feet thick, underlain by fine-grain materials consisting of silty sands and sandy silts to the bottom of the borings, which were advanced to 15 feet below ground surface (bgs). Elevated PID readings (above 10 parts per million [ppm]) were observed in all borings, either in the upper three feet of soils or at the soil/groundwater interface. Generally, the readings were slightly elevated, ranging from approximately 12 to 30 ppm. A PID reading of 100 ppm was observed in soils from boring BH-4, advanced adjacent to the southern-most dispenser sump, in soils from 8 to 8.5 feet bgs, just above the water surface. These soils also displayed slight greyish staining. Groundwater was encountered at a depth of approximately 10 to 11 feet bgs in the borings. In boring BH-4, the groundwater appeared to have an oily sheen. Copies of the boring logs are presented in Appendix B.

3.2 Soil Analytical Results

Sample results from the soil samples showed TPH-Oil and Grease present at concentrations above DERR's ISL of 1,000 milligrams per kilogram (mg/kg) in all borings. The sample from BH-4 reported TPH-Oil and Grease at 15,000 mg/kg, over the DERR's Tier 1 SL of 10,000 mg/kg.

3.3 Groundwater Analytical Results

TPH-Oil and Grease was detected in the groundwater samples from all borings. With the exception of the sample from BH-4, the concentrations were well below DERR screening levels. The sample from BH-4 contained 1,750 milligrams per liter (mg/L), over the DERR screening level of 10 mg/L for both the ISL and Tier 1 ISL.

4.0 FINDINGS AND CONCLUSIONS

Based on the results of this limited site investigation, subsurface soils and groundwater have been impacted by petroleum hydrocarbons along the new oil product piping line. The concentrations of TPH-Oil and Grease reported in the groundwater samples from BH-1, BH-2, and BH-3 indicate minor impacts from the new oil release; however, the results from the sample from BH-4 and field observations of an oily sheen suggest undissolved oil (free product) may be present at this location.

Terracon recommends that additional sampling be conducted to investigate the extent of those impacts exceeding the DERR's Screening Levels. Specifically, soil and groundwater should be sampled in the vicinity of borings BH-2 and BH-4 to better assess the vertical and areal extent of new oil in the subsurface. The results of the sampling should be reported to the Utah Division of Water Quality, who regulates releases that have impacted waters of the State.

Terracon appreciates being of service to you on this project. If you have any questions, require additional information, or need additional assistance, please contact us.

APPENDIX A

Figures

APPENDIX B

Soil Boring Logs

APPENDIX C

Tables

APPENDIX D

Chain of Custody and Laboratory Data Sheets

Additional Limited Site Investigation

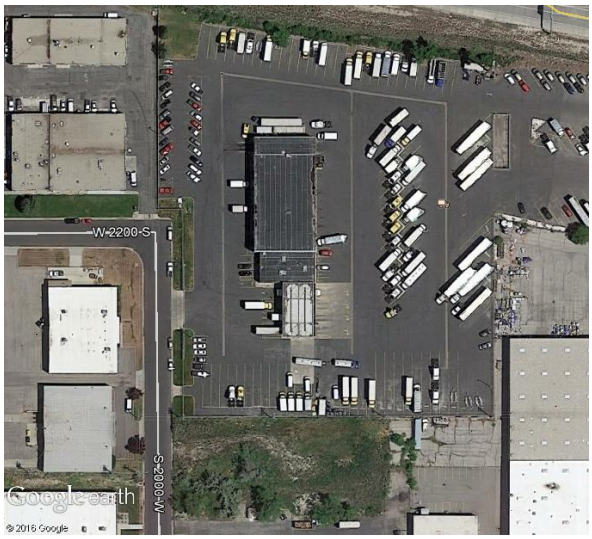
Penske Trucking Facility

2211 South 2000 West

Salt Lake City, Utah

February 13, 2017

Terracon Project No. 61167364



Prepared for:
Penske Truck Leasing Co., L.P.
Salt Lake City, Utah

Prepared by:
Terracon Consultants, Inc.
Salt Lake City, Utah

Offices Nationwide
Employee-Owned
Established in 1965
terracon.com

Terracon

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

February 13, 2017

Penske Truck Leasing Co., L.P.
P.O. Box 7635
Reading, Pennsylvania 19603

Attn: Mr. Chris Hawk
P: 610-775-6123
E: christopher.hawk@penske.com

Re: Additional Limited Site Investigation
Penske Trucking
2211 South 2000 West
West Valley City, Salt Lake County, Utah
Terracon Project No. 61167364

Dear Mr. Hawk:

Terracon is pleased to provide this report regarding the additional limited site investigation (LSI) activities conducted at the above-referenced site. Terracon performed the LSI pursuant to the scope of work authorized in Terracon's Proposal P61167965, dated November 30, 2016, and authorized December 9, 2016.

We appreciate the opportunity to have performed these services for you. Please contact our office at [801] 545-8500 if you have questions regarding this information or if we can provide any other services.

Sincerely,

Terracon Consultants, Inc.

Nancy Saunders
Environmental Scientist

Benjamin B. Bowers
Environmental Department Manager

TABLE OF CONTENTS

Page

1.0 **INTRODUCTION** **1**

1.1 Site Description 1
1.2 Project Background 1
1.3 Scope of Work 2
1.4 Standard of Care 2
1.5 Additional Scope Limitations 3
1.6 Reliance 3

2.0 **METHODOLOGY** **3**

2.1 Environmental Soil Borings 3
2.2 Environmental Sampling Program 4
2.3 Two-Inch Monitoring Well Installation and Development 5
2.4 Groundwater Gradient 5

3.0 **LABORATORY ANALYTICAL METHODS** **6**

4.0 **DATA EVALUATION** **7**

4.1 General Observations 7
4.2 Soil Sample Results 7
4.3 Results for Groundwater Samples 8

5.0 **FINDINGS AND RECOMMENDATIONS** **9**

APPENDICES

Appendix A Exhibits

Exhibit 1 – Topographic Map
Exhibit 2 – Site Diagram
Exhibit 3 – Groundwater Gradient Map

Appendix B Soil Boring Logs

Appendix C Data Tables

Table 1 Groundwater Survey Data
Table 2 Soil Analytical Results
Table 3 Groundwater Analytical Results

Appendix D Chain of Custody and Laboratory Data Sheets

ADDITIONAL LIMITED SITE INVESTIGATION REPORT
Penske Trucking Facility
2211 South 2000 West
West Valley City, Utah

Terracon Project No. 61167364
February 13, 2017

1.0 INTRODUCTION

1.1 Site Description

Site Name	Penske Trucking facility
Site Location/Address	2211 South 2000 West, West Valley City, Utah
General Site Description	The site is an active trucking facility with four pump islands for dispensing diesel, gasoline, and motor oil. The facility is used for fueling, servicing, and renting trucks.

Exhibit 1 (Appendix A) presents the site location on a portion of the USGS 7.5-minute series topographic map. **Exhibit 2** is a site diagram that indicates the approximate locations of the soil sampling points in relation to pertinent site features. **Exhibit 3** shows the groundwater gradient measured during this investigation.

1.2 Project Background

A new oil release was discovered by Penske personnel on April 13, 2016, and it was observed to have filled the buried secondary containment line conduit between the new oil aboveground storage tank (AST) in the maintenance shop and the dispenser islands to the south of the building. At Penske's request, Terracon mobilized to the site on April 14, 2016, to observe site conditions, including the removal of approximately 50 gallons of new oil from the conduit and access sumps. On April 15, 2016, at Penske's request, Terracon reported the release to the Utah Department of Environmental Quality (DEQ), Incident Number 12576, and has had subsequent discussions with the Salt Lake County Health Department. Based on Terracon's discussions with the DEQ and the Salt Lake County Health Department, it was recommended that a subsurface investigation be conducted to evaluate whether impacts from the release were present in soil and/or groundwater in the vicinity of the new oil supply line conduit and sumps.

On June 28, 2016, Terracon advanced four soil borings (BH-1 through BH-4) on the site to investigate the reported release. Based on the results of the investigation, subsurface soils and groundwater have been impacted by petroleum hydrocarbons along the new oil product piping line. The concentrations of TPH-Oil and Grease reported in the soil and groundwater samples were above the Utah Division of Environmental Response and Remediation (DERR) Initial Screen Levels (ISLs) and/or Tier 1 Screening Levels. Apparent undissolved oil (free product) was observed in the water sample collected at location BH-4, at the south end of the dispenser island.

Terracon also noticed petroleum odors and soil staining that appeared to indicate impacts from petroleum other than oil and grease at the site, suggesting a release from the nearby underground storage tank system located south and up-gradient of soil boring BH-4.

Terracon reviewed documents available for review at DERR's website that provided information about a previous release from Penske's underground storage tank (UST) system (Release ID IJM), located south of the dispenser islands where the new oil release was observed. According to the website, the facility has a 20,000-gallon diesel UST and a 12,000-gallon gasoline UST currently in use. These two composite USTs were installed in 1993. The records also list seven other USTs that were removed from service in 1993: four 20,000-gallon diesel USTs, one 20,000-gallon gasoline UST, a 2,000-gallon new oil UST, and a 500-gallon waste oil UST. The fuel USTs were collocated in a common tank basin in approximately the same location as the current USTs.

At the time of the UST closure in 1993, impacts to soils and groundwater were observed and subsequent investigations and corrective action ensued. According to the Closure Memorandum on file with DERR, dated December 19, 1997, 9,000 gallons of product were removed from the surface of the groundwater at the site, over 168,000 gallons of contaminated groundwater were treated and discharged to the sanitary sewer, and approximately 2,700 tons of contaminated soil was overexcavated and disposed of off site. Investigations conducted throughout 1994 showed TPH-DRO at concentrations near the Tier 1 SLs (up to 5,400 mg/kg), low to non-detectable concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX), and naphthalene above Tier 1 SLs in soils near and to the northeast of the UST basin). Groundwater sampling results showed low to non-detectable concentrations of target petroleum constituents in samples collected from four quarters of monitoring. The release received regulatory closure in January 1998, based on soil impacts remaining at concentrations near or below Tier 1 SLs and the absence of detectable constituents in groundwater.

1.3 Scope of Work

The objective of the additional LSI was to further assess the vertical and horizontal extent of the new oil release at the site and to investigate the possibility of a new release from the UST system. In accordance with Terracon's Proposal P61167965, dated November 30, 2016, Terracon advanced eleven soil borings on the site; monitoring wells were installed at five of the eleven boring locations. Terracon collected subsurface soil and groundwater samples from the borings and submitted the samples to independent Utah-certified laboratories for analysis.

1.4 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, express or implied, regarding the findings, conclusions, or recommendations. Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These LSI services

were performed in accordance with the scope of work agreed upon with you, our client, as reflected in our proposal, and were not restricted by ASTM E1903-11.

1.5 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work. Such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable, or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this LSI. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

1.6 Reliance

This LSI report has been prepared for the exclusive use and reliance of Penske Truck Leasing Co., L.P. Use or reliance by any other party is prohibited without the written authorization of Penske Truck Leasing Co., L.P. and Terracon.

Reliance on the LSI report by the client and all authorized parties will be subject to the terms, conditions and limitations stated in the proposal, LSI Report, and the Terms and Conditions in the Master Service Agreement (MSA) between Penske Truck Leasing Co., L.P and Terracon. The limitation of liability defined in the MSA is the aggregate limit of Terracon's liability to Penske Truck Leasing Co., L.P and all relying parties.

2.0 METHODOLOGY

2.1 Environmental Soil Borings

Prior to conducting the site investigation, the public utility location service (Blue Stakes) was notified 48 hours prior to arrival and Blue Stakes marked the site. In addition, on December 20, 2016, Terracon directed a private utility locator (Direct Push Services of Salt Lake City, Utah) to conduct a geophysical survey of the areas around the proposed borehole locations at the site to identify any buried utilities. The geophysical survey was conducted using Geophysical Survey Systems, Inc. DC300® ground penetration radar equipment, a Fisher Lab Gemini 3® magnetometer, and a Rycom 8878 pipe and cable locator. Boring locations were adjusted to accommodate the presence of buried utility lines identified by the private utility locator.

Borings were advanced and wells installed on December 20 and 21, 2016, by Nancy Saunders, a Terracon Environmental Geologist and Utah UST Groundwater and Soil Sampler (#GS0522). As part of the approved scope of work, eleven soil borings (BH-5 through BH-11) were advanced on the site to allow the collection of subsurface soil and groundwater samples for petroleum hydrocarbons. The boring locations are shown on Exhibit 2 (Appendix A). Boring BH-5 was co-located at the location of BH-4 from the previous investigation to confirm the presence of petroleum hydrocarbons other than oil and grease and to allow for the installation of a groundwater monitoring well to further monitor groundwater impacts and free product at this location. This sampling location is indicated as BH-4/5 MW-1 on the site plan.

Drilling services were performed by Direct Push Services, Inc., a State of Utah-licensed Monitoring Well Driller, using direct-push drilling equipment under the supervision of a Terracon Environmental Field Geologist. Soil samples were collected from the soil borings using a five-foot macro-core sampler. Drilling equipment was cleaned using a high-pressure washer prior to beginning the project and between borehole locations. Sampling equipment was cleaned using an Alconox® wash and potable water before beginning the project and before collecting each soil sample.

Soils were cored continuously, using core barrel samplers and observed to document lithology, color, field evidence of environmental impact, and relative moisture content. The soil samples were also field-screened using a portable photoionization detector (PID) to evaluate the potential presence of total volatile organic compounds (TVOCs). Following sample collection, five of the eleven borings were completed as monitoring wells, as indicated on the site plan (Appendix A). The remaining borings were abandoned by backfilling with bentonite clay pellets, adding water to hydrate the bentonite clay, and restoring the surface to match the surrounding area.

2.2 Environmental Sampling Program

Terracon's sampling program consisted of the following:

- Terracon collected one subsurface soil sample from each soil boring from the interval most likely to contain environmental impacts as determined in the field by the sampling professional (as indicated by visual staining, changes in lithology, noticeable odors, PID readings, and other field indicators of contamination). As agreed upon with the Client, additional samples were collected to assess the vertical extent of contamination in several borings where field observations indicated impacts were present. Based on elevated PID readings, odors, and staining, an additional soil sample was collected from the bottom of each of the following borings: BH-5, BH-8, BH-9, and BH-10.
- One groundwater sample was collected from each of the soil borings, using a new section of polyethylene tubing inserted into the temporary stainless steel direct push sampling point. The sample tubing was connected to a peristaltic pump, using a dedicated section of polyethylene hose at the ground surface. The sampling point was developed as needed to reduce the turbidity and to purge the water column within the tool. Following development, groundwater samples were collected from each of the temporary sampling

points.

- Although not initially included in the Scope of Work, after review of DERR records revealed that gasoline has historically been used at the site and is currently being stored in the UST system, Terracon returned to the site to collect groundwater samples from three of the newly installed monitoring wells. These samples were submitted to the analytical laboratory for analysis of gasoline range total petroleum hydrocarbons (TPH-GRO).

The soil and groundwater samples were collected and placed in laboratory-prepared containers, labeled, and placed on ice in a cooler. The samples and completed chain-of-custody forms were transported to an independent State-certified analytical laboratory for analysis on a standard (7-day) turnaround.

2.3 Two-Inch Monitoring Well Installation and Development

Five of the eleven Geoprobe borings were converted to 2-inch-diameter monitoring wells in order to provide reproducible groundwater sample data and measure the site-specific groundwater gradient and direction of flow: BH-5, BH-6, and BH-7, BH-12, and BH-15. The monitoring wells were constructed as follows:

- Installation of 10 feet of 2-inch diameter, 0.010-inch machine slotted polyvinyl chloride (PVC) well screen with a threaded bottom cap
- Installation of 2-inch diameter, threaded, flush-joint PVC riser pipe to the surface
- Addition of pre-sieved 20/40 grade silica sand for annular sand pack around the well screen from the bottom of the boring to approximately 2 feet above the top of the well screen
- Placement of 2 feet of hydrated bentonite pellets above the sand pack
- Addition of cement/bentonite slurry to the surface
- Installation of a 7-inch diameter, circular, bolt-down, steel, monitoring well cover with a locking well cap inset in a flush-mount, concrete well pad.

The wells were developed after their installation to remove excessive sediment and prepare for future sample collection, as required.

2.4 Groundwater Gradient

The top of the PVC casing in each of the five wells was surveyed relative to an arbitrary datum point on site and mapped relative to on-site structures and features. Depth-to-groundwater measurements were collected January 3, 2017, following development and equilibration, with the exception of MW-2, which was measured on December 29, 2016. It should be noted that a depth to water measurement was not obtained from MW-1. The presence of a layer of undissolved, highly viscous product interfered with both the electronic water level-product sensor, as well as

the mechanical measuring tape-petroleum paste well sounding equipment. The site-specific groundwater gradient was calculated using the well casing elevations and depth-to-groundwater measurements. Table 1 (Appendix B), is a summary of the survey and depth to groundwater measurement data. The calculations indicate groundwater in the vicinity of the wells flows to the north-northeast as shown on the Groundwater Gradient Map (Exhibit 3, Appendix A).

3.0 LABORATORY ANALYTICAL METHODS

Soil and groundwater samples collected from the borings during the investigation on December 20 and 21, 2016, were submitted to a Utah-certified analytical laboratory (Environmental Science Corporation [ESC] in Mount Juliet, Tennessee) under strict chain–of-custody for analysis. Samples were collected and placed in laboratory-prepared containers and placed on ice in a cooler.

The soil and groundwater samples collected from the borings were analyzed for methyl tert-butyl ether (MTBE), benzene, toluene, ethyl benzene, xylenes, and naphthalene (BTEXN), and total petroleum hydrocarbons – diesel range organics (TPH-DRO) with silica gel treatment (SGT) and total recoverable petroleum hydrocarbons (TRPH) reported by the lab as TPH – Oil and Grease.

As described in Section 2.2, additional groundwater samples were collected from three of the newly installed monitoring wells (MW-2, MW-3, and MW4) on January 26, 2017. Samples from the monitoring wells were submitted to SGS Accutest (Accutest), a Utah-certified analytical laboratory in Wheat Ridge, Colorado, for analysis of TPH-GRO.

Samples were analyzed using the following methods:

Analysis	Sample Type	No. of Samples	Laboratory Method	Analytical Laboratory
TPH-DRO -SGT	Soil	11	EPA Method 8015	ESC
MTBE, BTEXN	Soil	11	EPA Method 8260	ESC
TRPH	Soil	11	EPA Method 1664	ESC
TRPH	Groundwater	11	EPA Method 1664	ESC
TPH-DRO -SGT	Groundwater	11	EPA Method 8015	ESC
MTBE, BTEXN	Groundwater	11	EPA Method 8260	ESC
TPH-GRO	Groundwater	3	EPA Method 8260	Accutest

4.0 DATA EVALUATION

A summary of laboratory analytical results for soil samples is presented in Table 2 (Appendix C). Table 3 (Appendix C) presents a summary of the laboratory analytical results for all groundwater samples. The tables include data from the initial Limited Site Investigation, conducted in June 2016. The executed chain-of-custody form and laboratory data sheets are provided in Appendix D.

The tables also include comparative regulatory screening levels published by the Utah Department of Environmental Quality (UDEQ), Division of Environmental Response and Remediation (DERR) for petroleum constituents.

4.1 General Observations

Soils observed at the site appear to generally consist of a fill layer consisting of silty gravel to gravel approximately 5 to 7.5 feet thick, underlain by fine-grain materials consisting of silty sands and sandy silts to the bottom of the borings, which were advanced to 15 feet below ground surface (bgs). Elevated PID readings (above 10 parts per million [ppm]) were observed in the majority of the borings, with the exceptions of BH-6, BH-7, BH-13, BH-14, and BH-15. PID readings were highest in soils from approximately seven to 10 feet bgs in borings BH-8 (120 ppm), BH-9 (134 ppm), and BH-10 (144 ppm). PID readings were below 3 ppm in all borings at depths greater than 12 feet bgs.

Saturated soils were logged at depths of approximately 8 to 10 feet bgs; depths to water measured in the five monitoring wells ranged from 5.81 to 6.72 bgs. An apparent layer of free product was encountered in Monitoring Well MW-1; however, the thickness could not be measured due to the extremely viscous nature of the product, which interfered with the electronic product-water interface probe. Copies of the boring logs are presented in Appendix B.

4.2 Soil Sample Results

4.2.1 Oil and Grease

Sample results from the recent soil samples showed TPH-Oil and Grease present at concentrations above DERR's ISL of 1,000 mg/kg in the samples from BH-5 and BH-9, from depths of approximately 7.5 to 8.5 feet bgs.

During Terracon's previous investigation, TPH-Oil and Grease exceeded the ISL in samples collected from shallow soils along the new oil product line from borings BH-1 and BH-2 at depths of 2.5 to 3 feet bgs and in deeper soils from borings BH-3 and 4 at depths of approximately 11 feet and 8 feet, respectively. In addition, the sample from BH-2 collected from 3 feet bgs exceeded the Tier 1 Screening Level of 10,000 mg/kg.

4.2.2 TPH-DRO

TPH-DRO concentrations exceeded the DERR ISL of 500 mg/kg in the samples from borings BH-5, BH-8, BH-9, BH-10, and BH-11 from soils collected from 7.5 to 10 feet bgs. As noted in Section 2.2, elevated PID readings observed in borings BH-5, BH-8, BH-9, and BH-10, indicated impacts were present in soils at from 7.5 to 10 feet bgs. As a result, samples were collected from the bottom of each of these borings from soils at a depth of 14.5 feet bgs, in order to evaluate the vertical extent of impacts. No petroleum hydrocarbons were reported above laboratory detection levels in any of the samples collected from the bottom of the borings.

4.2.3 MBTEX, BTEXN

Several petroleum-related volatile compounds, ethyl-benzene, naphthalene, toluene, and total xylenes, were detected in several samples; however, they were reported at concentrations below regulatory screening levels.

4.3 Results for Groundwater Samples

4.3.1 TPH - Oil and Grease

TPH-Oil and Grease exceeded the DERR's ISL of 10 milligrams per liter (mg/L) in the sample from BH-5 (15.5 mg/L) during this investigation. Previously, the sample from BH-4 (essentially the same location) reported TPH Oil and Grease at a concentration of 1,750 mg/L. This higher concentration suggests the presence of undissolved (free) product. The presence of a product layer was verified during well development and collecting depth to groundwater measurements from the monitoring well installed in this location (MW-1), although the exact thickness was not ascertained. The wide range in analytical results for Oil and Grease at this sampling location is likely the result of the presence of product in the samples at the time of collection.

TPH Oil and Grease was detected at low concentrations (below laboratory reporting limits) at several other sample locations but in all cases below regulatory levels.

4.3.2 TPH-DRO

TPH-DRO was reported at concentrations above DERR's ISL of 1 mg/L in the groundwater samples from borings BH-5 (3.03 mg/L) and BH-9 (1.42 mg/L). DRO was detected in samples from all of the remaining borings from this investigation at concentrations below the ISL.

4.3.3 TPH-GRO

TPH-GRO was not reported in any of the groundwater samples at concentrations above the laboratory detection level.

4.3.4 MTBE, BTEXN

Naphthalene, ethylbenzene, and toluene were detected in several groundwater samples but at concentrations below regulatory levels. No other constituents exceeded their respective laboratory detection levels.

5.0 FINDINGS AND RECOMMENDATIONS

Petroleum hydrocarbons as Oil and Grease were detected in soil and groundwater samples at concentrations above DERR's ISLs or Tier 1 SLs from both this and the previous Terracon investigations. The highest concentration observed in soils was from relatively shallow soils from boring BH-2 (15,000 mg/kg at 3 feet bgs). Elevated concentrations (above ISLs) were observed in samples from along the new product line from the previous investigation; however, with the exception of a sample from BH-9, which reported 1,190 mg/kg TPH-oil and grease, it was not observed in samples from the current investigation, indicating its presence is limited to soils in the immediate vicinity of the product piping line.

TPH oil and grease was present in the groundwater sample from BH-4/5 at concentrations above Tier I SLs. As with soils, it was not reported at elevated concentrations (above ISLs) in samples collected at a distance from the product piping line. Although free product was observed at BH-4/5 (MW-1), it was not observed in any of the down-gradient monitoring wells and groundwater samples collected from the soil borings advanced during the current investigation. As such, the free product and dissolved TPH-oil and grease groundwater plumes do not appear to have migrated significantly from the product line.

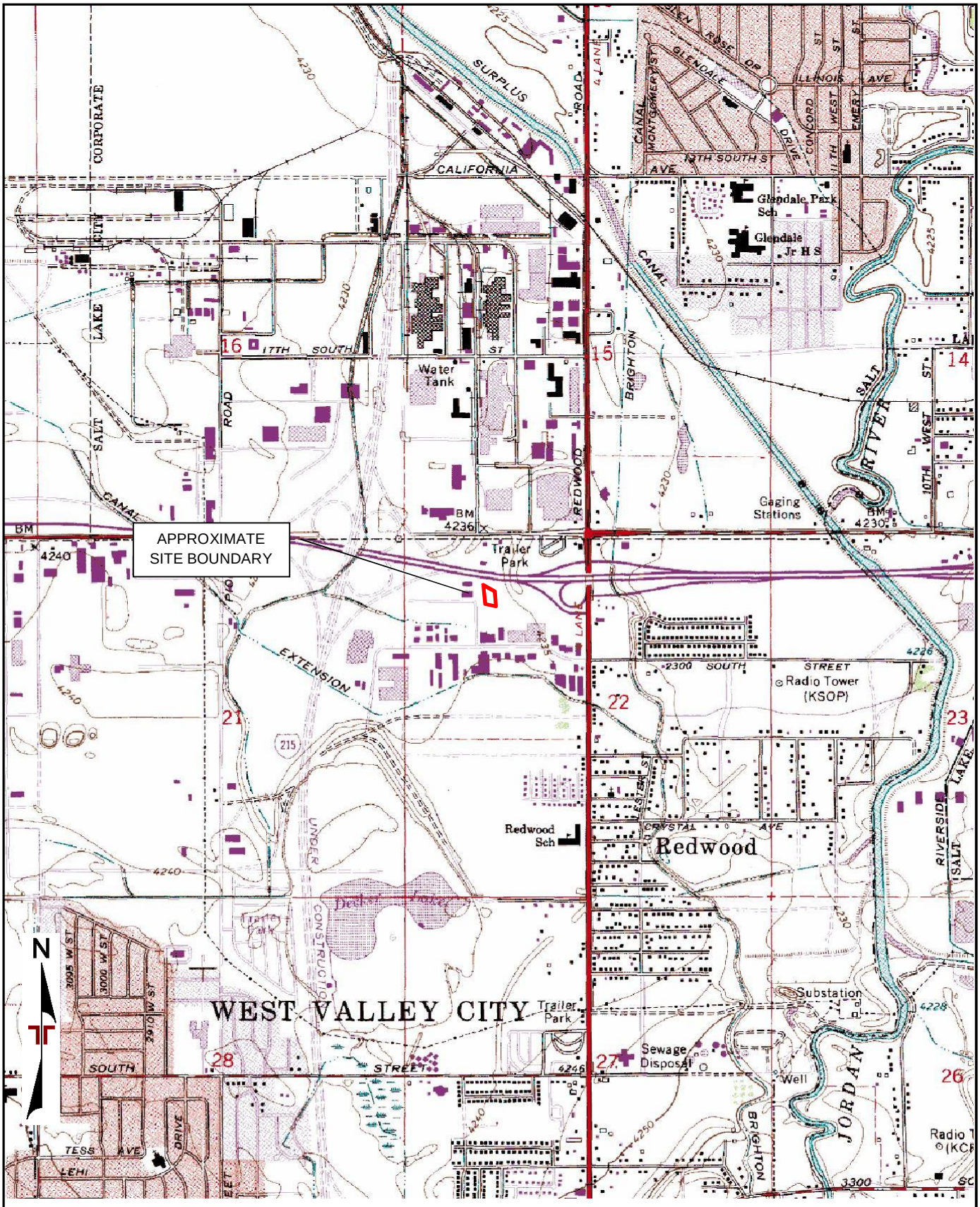
TPH-DRO was also detected in both the soil and groundwater samples at concentrations exceeding DERR's ISLs and/or Tier 1 SLs from the borings advanced during this investigation. It is not possible to discern from this investigation's data if the impacts observed in soils represent a new release from the existing USTs or residual contamination from the previous release. However, the concentrations observed during this investigation are below those remaining at the site when Release IJM was closed by the DERR. TPH-DRO impacts in groundwater are limited to samples collected near the down-gradient side of the UST basin, from boreholes BH-5 and BH-9. Concentrations of TPH-DRO in these two locations exceed ISLs but are below the Tier 1 SLs typically used for evaluating commercial facilities.

In general, concentrations of TPH-Oil and Grease and TPH-DRO are relatively low, and the volatile constituents, MTBE, benzene, ethylbenzene, naphthalene, toluene, and xylenes, are also low or not detected. However, an area of shallow soils with TPH-Oil and Grease concentrations above DERR Tier 1 SLs remains along the new product piping line (near Boring BH-2). Terracon recommends these shallow soils be removed from the subsurface and the piping line be inspected and repaired, if necessary, to prevent further releases of new oil.

In addition, Terracon recommends addressing the presence of free product in MW-1. Free product removal should be conducted and the free product and dissolved petroleum hydrocarbon plume should be monitored. Terracon further recommends that the results of this Additional LSI be reported to the Utah DERR, who regulates releases from underground storage tank systems.

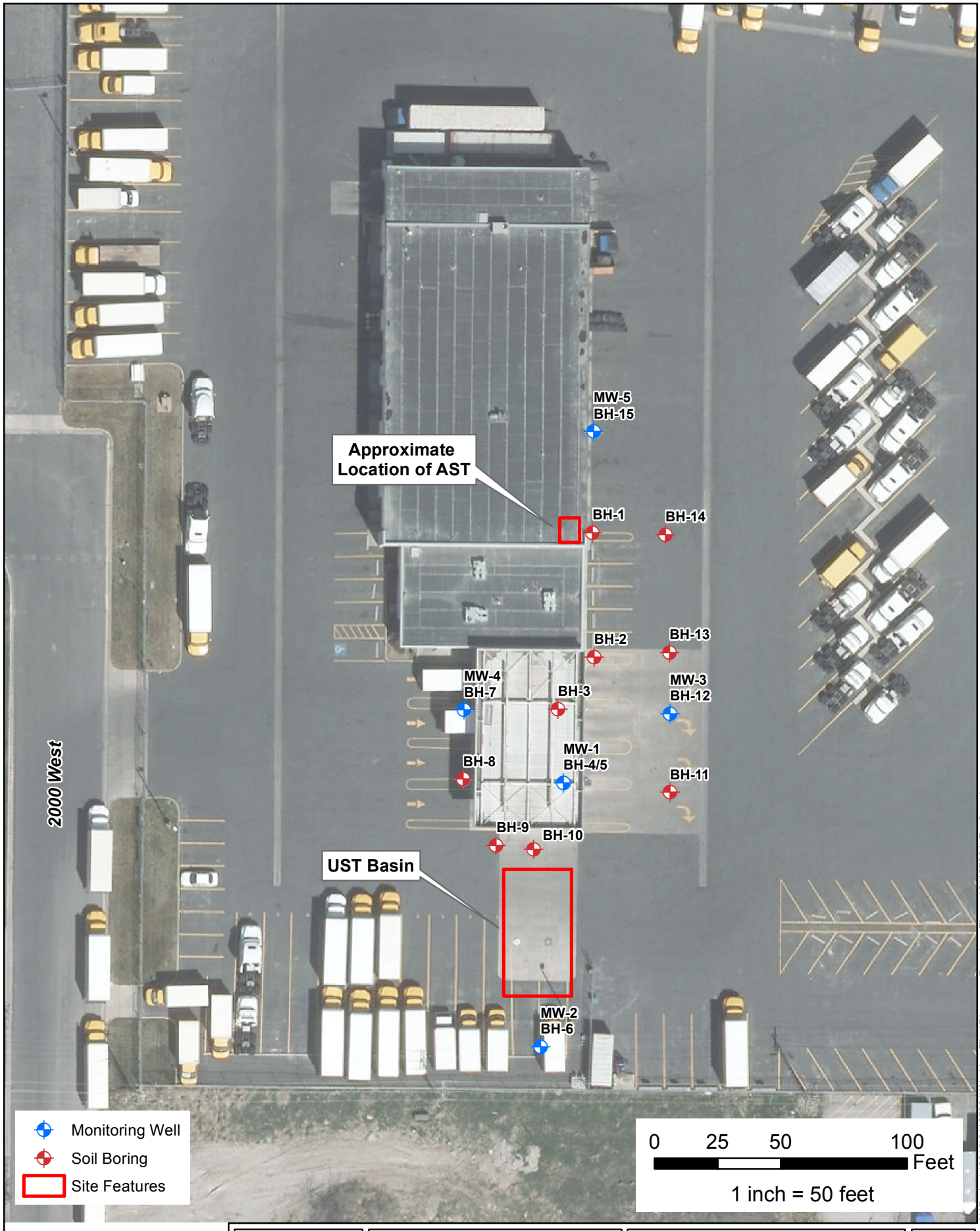
Terracon appreciates being of service to you on this project. If you have any questions, or require additional services, please contact us.

APPENDIX A
Exhibits



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY
QUADRANGLES INCLUDE: SALT LAKE CITY SOUTH, UT (1/1/1999).

Project Manager: NMS	Project No. 61167364	Terracon	TOPOGRAPHIC MAP	Exhibit
Drawn by: NMS	Scale: 1"=2,000'	6949 S High Tech Dr Ste 100	Penske Trucking Additional LSI	1
Checked by: BBB	File Name: Ex 1	Midvale, UT 84047-3707	2211 South 2000 West	
Approved by: BBB	Date: 1/10/17		West Valley, UT	



NOTES: This Product is intended for informational purposes only and may not be suitable for legal, engineering, or surveying purposes.

DATA SOURCES: Aerial Photography provided by AGRC (2012 HRO).

N

Project No.:	61167364
Drawn By:	JK
Reviewed By:	BBB
Date:	01/10/2017

Terracon
Consulting Engineers & Scientists
6949 S. High Tech Dr. Midvale, UT 84047
PH. (801) 545-8500 terracon.com

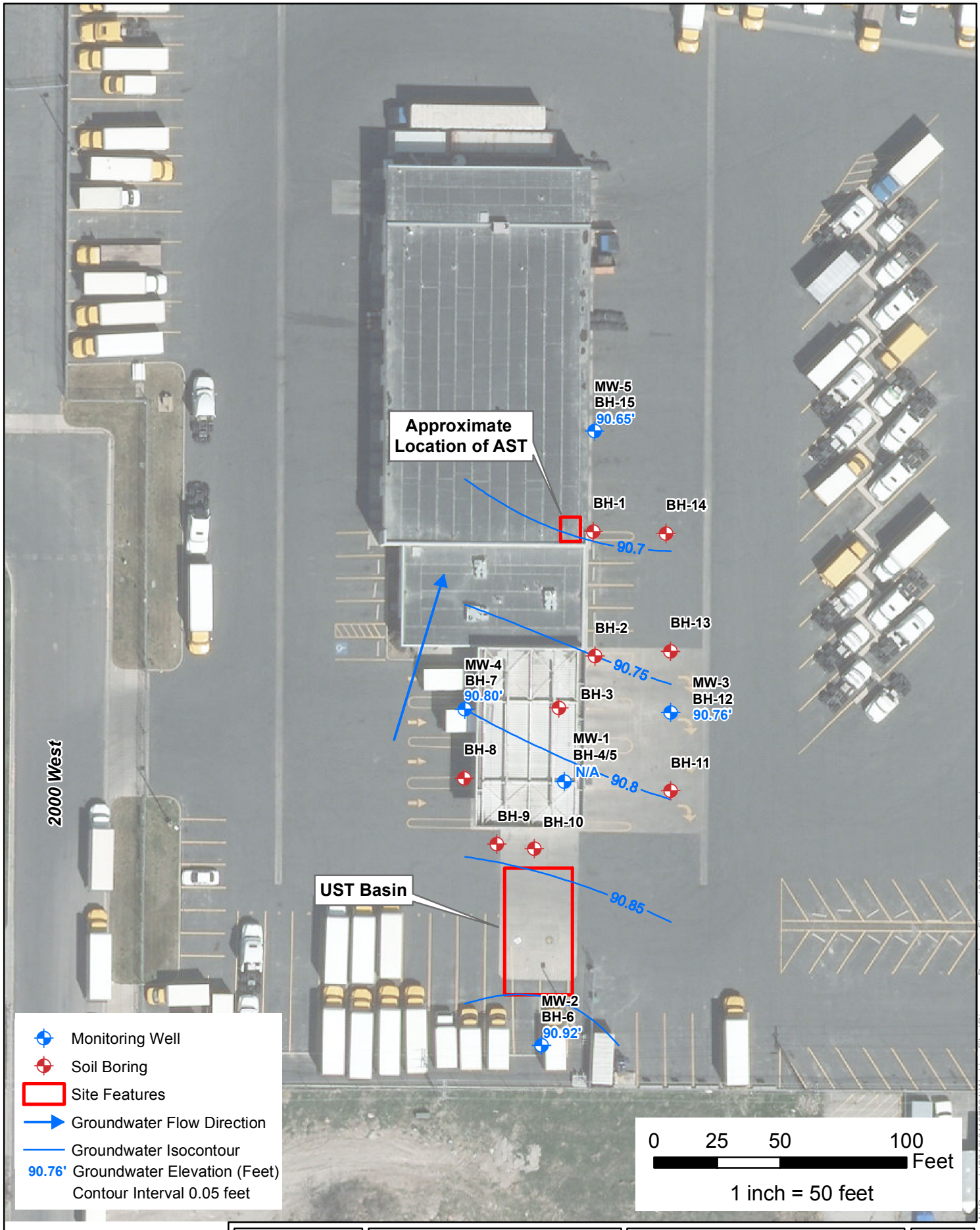
SITE DIAGRAM

PENSKE TRUCKING ADDITIONAL LSI
2211 South 2000 West
West Valley, Utah

EXHIBIT

2

N:\Projects\2016\61167364\Working Files\Diagrams-Drawings-Figures\61167364_Ex_2.mxd



NOTES: This Product is intended for informational purposes only and may not be suitable for legal, engineering, or surveying purposes.

DATA SOURCES: Aerial Photography provided by AGRC (2012 HRO).

N

Project No.:	61167364
Drawn By:	JK
Reviewed By:	BBB
Date:	01/10/2017

Terracon
Consulting Engineers & Scientists
6949 S. High Tech Dr. Midvale, UT 84047
PH. (801) 545-8500 terracon.com

GROUNDWATER GRADIENT MAP

PENSKE TRUCKING ADDITIONAL LSI
2211 South 2000 West
West Valley, Utah

EXHIBIT
3

N:\Projects\2016\61167364\Working Files\Diagrams-Drawings-Figures\61167364_Ex_3.mxd

APPENDIX B
Soil Boring Logs

WELL LOG NO. BH-5 / MW-1

PROJECT: Penske Additional LSI

CLIENT: Penske Truck Leasing Co., LP
Reading, PA

SITE: 2211 S 2000 W
West Valley City, UT

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION	INSTALLATION DETAILS
0.5	**CONCRETE**	Flush mount
	FILL - SILTY GRAVEL (GM)	Hydrated bentonite pellets
4.5	**GRAVELLY LEAN CLAY (GC)**, gray, moist, becoming wet at 7'	20/40 Silica Sand
7.5	**CLAY (CL)**, gray, moist, stiff	0.010 in PVC Screen
10.0	**CLAYEY SAND (SC)**, gray, loose, saturated	
12.0	**CLAY (CL)**, gray, soft, interbedded with clayey sand layers, 2" thick, every 8", saturated	
16.0	***Boring Terminated at 16 Feet***	

Well Completion: Surface Mount

DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	P.I.D. (ppm)	Sample
5	▽		100	0.3	
				2.5	
				28	
				55	BH-5 @ 8.5
				73	
10				4.5	
				1.5	
				1.5	
				1.5	
15				1.5	BH-5 @ 14.5

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

See Appendices for description of field procedures.

See Appendices for description of laboratory procedures and additional data (if any).

See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *7.5' While drilling*

Terracon
6949 S High Tech Dr Ste 100
Midvale, UT

Well Started: 12/20/2016 | Well Completed: 12/20/2016

Drill Rig: Geoprobe | Driller: DPS

Project No.: 61167364 | Exhibit: B-1

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 61167364_PENSKE TRUCKING NEW OIL RELEASE LSI_12.20.2016.GPJ TERRACON_DATATEMPLATE.GDT 1/11/17

WELL LOG NO. BH-6 / MW-2

PROJECT: Penske Additional LSI

CLIENT: Penske Truck Leasing Co., LP
Reading, PA

SITE: 2211 S 2000 W
West Valley City, UT

DEPTH	MATERIAL DESCRIPTION	INSTALLATION DETAILS
	LOCATION See Exhibit A-2	Well Completion:
0.8	**ASPHALT CONCRETE**	Flush mount
	FILL - GRAVEL (GP)	Hydrated bentonite pellets; 20/40 Silica Sand; 0.010 in PVC Screen
7.0	**SILT (ML)**, dark brown, stiff, moist	
10.0	**SILTY SAND (SM)**, dark brown, loose, saturated, very fine grained, ~40% fines	
16.0	***Boring Terminated at 16 Feet***	

DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	P.I.D. (ppm)	Sample
5				0.6	
	▽			0.7	
10				3	BH-6 @ 10'
				0.8	
				0.9	
15				0.6	

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

See Appendices for description of field procedures.

See Appendices for description of laboratory procedures and additional data (if any).

See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *8.25' While drilling*

Terracon
6949 S High Tech Dr Ste 100
Midvale, UT

Well Started: 12/20/2016 | Well Completed: 12/20/2016

Drill Rig: Geoprobe | Driller: DPS

Project No.: 61167364 | Exhibit: B-2

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 61167364_PENSKE TRUCKING NEW OIL RELEASE LSI_12.20.2016.GPJ TERRACON_DATATEMPLATE.GDT 1/11/17

WELL LOG NO. BH-12 / MW-3

PROJECT: Penske Additional LSI

CLIENT: Penske Truck Leasing Co., LP
Reading, PA

SITE: 2211 S 2000 W
West Valley City, UT

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION
	FILL - GRAVEL (GP)
4.5	**SILT (ML)**, dark brown, moist, soft, color change to gray, medium stiff at 7'
7.8	**SILTY SAND (SM)**, loose, saturated, gray, with dark grey staining
9.0	**CLAY (CL)**, pale brown, stiff, moist
10.8	**SILTY SAND (SM)**, light borwn, dense, saturated, ~40% fines
16.0	***Boring Terminated at 16 Feet***

INSTALLATION DETAILS

Well Completion: Flush mount; Hydrated bentonite pellets; 20/40 Silica Sand; 0.010 in PVC Screen

DEPTH (ft)	P.I.D. (ppm)	Sample
5	0.5	
	1.5	
	7.0	
	28.0	BH-12 @ 8.5'
10	4	
	2.8	
	1.1	
15		

WATER LEVEL OBSERVATIONS; SAMPLE TYPE; RECOVERY (%)

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

See Appendices for description of field procedures.

See Appendices for description of laboratory procedures and additional data (if any).

See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

8' While drilling

Terracon
6949 S High Tech Dr Ste 100
Midvale, UT

Well Started: 12/20/2016 | Well Completed: 12/20/2016

Drill Rig: Geoprobe | Driller: DPS

Project No.: 61167364 | Exhibit: B-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 61167364_PENSKE TRUCKING NEW OIL RELEASE LSI_12.20.2016.GPJ TERRACON_DATATEMPLATE.GDT 1/11/17

WELL LOG NO. BH-7 / MW-4

PROJECT: Penske Additional LSI

CLIENT: Penske Truck Leasing Co., LP
Reading, PA

SITE: 2211 S 2000 W
West Valley City, UT

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION
0.5	**ASPHALT CONCRETE**
	FILL - GRAVEL (GP)
4.5	
	SILT (ML), soft, gray, moist
8.0	
	SILTY SAND (SM), medium dense, saturated, gray, color change to brown at 9.5', very fine grained
13.5	
	SILT (ML), light brown, medium stiffness, moist
16.0	
	Boring Terminated at 16 Feet

INSTALLATION DETAILS

Well Completion:

Flush mount

Hydrated bentonite pellets

20/40 Silica Sand

0.010 in PVC Screen

DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	P.I.D. (ppm)	Sample
5	▽			0.5	
				0.5	
				0.6	
				0.7	
10				1.0	BH-7 @ 10'
				0.6	
				0.6	
15				0.5	

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

See Appendices for description of field procedures.

See Appendices for description of laboratory procedures and additional data (if any).

See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *8' While drilling*

Terracon
6949 S High Tech Dr Ste 100
Midvale, UT

Well Started: 12/20/2016 | Well Completed: 12/20/2016

Drill Rig: Geoprobe | Driller: DPS

Project No.: 61167364 | Exhibit: B-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 61167364_PENSKE TRUCKING NEW OIL RELEASE LSI_12.20.2016.GPJ TERRACON_DATATEMPLATE.GDT 1/11/17

WELL LOG NO. BH-15 / MW-5

PROJECT: Penske Additional LSI

CLIENT: Penske Truck Leasing Co., LP
Reading, PA

SITE: 2211 S 2000 W
West Valley City, UT

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION
	FILL - GRAVEL (GP)
4.0	**SILT (ML)**, brown, stiff, moist, color change to gray at 7'
7.5	**SILTY SAND (SM)**, slightly dense, saturated, gray, very fine grained
9.5	**CLAY (CL)**, pale brown, medium soft, interbedded with clayey sand lenses rouhgly 1" thick every ~6", orange staining from 13.5-16'
16.0	***Boring Terminated at 16 Feet***

INSTALLATION DETAILS

Well Completion:

Flush mount

Hydrated bentonite pellets

20/40 Silica Sand

0.010 in PVC Screen

DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	P.I.D. (ppm)	Sample
5	▽			0.6	
				0.7	
				0.7	
				0.8	
10				1.8	
				1.4	
				1.7	BH-15 @ 10.5'
				5.8	
15				1.2	

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

See Appendices for description of field procedures.

See Appendices for description of laboratory procedures and additional data (if any).

See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *8' While drilling*

Terracon
6949 S High Tech Dr Ste 100
Midvale, UT

Well Started: 12/20/2016 | Well Completed: 12/20/2016

Drill Rig: Geoprobe | Driller: DPS

Project No.: 61167364 | Exhibit: B-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 61167364_PENSKE TRUCKING NEW OIL RELEASE LSI_12.20.2016.GPJ TERRACON_DATATEMPLATE.GDT 1/11/17

BORING LOG NO. BH-8

PROJECT: Penske Additional LSI

CLIENT: Penske Truck Leasing Co., LP
Reading, PA

SITE: 2211 S 2000 W
West Valley City, UT

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION	P.I.D. (ppm)	Sample
0.5	**ASPHALT CONCRETE**		
	FILL - GRAVEL (GP)		
6.0		2.4	
	SILT (ML), stiff, moist, brown	2.6	
7.5			
	CLAY (CL), soft, wet, gray, slight dark grey staining	58.4	BH-8 @ 8.0'
9.0		120	
	CLAYEY SAND (SC), medium dense, wet, gray, very fine, ~40% fines	17.2	
10.0			
	SILTY SAND WITH GRAVEL (SM), loose, saturated, pea gravel sized, brown	5.4	
11.5			
	SILTY SAND (SM), medium dense, saturated, very fine grained, interbedded with silty clay layers, brown with orange mottled staining	3.8	
		2.8	
		2.4	
15.0		2.9	BH-8 @ 14.5'
	Boring Terminated at 15 Feet		

DEPTH (ft): 5, 10, 15

WATER LEVEL OBSERVATIONS | SAMPLE TYPE | RECOVERY (%)

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

See Appendices for description of field procedures.

See Appendices for description of laboratory procedures and additional data (if any).

See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
6949 S High Tech Dr Ste 100
Midvale, UT

Boring Started: 12/20/2016 | Boring Completed: 12/20/2016

Drill Rig: Geoprobe | Driller: DPS

Project No.: 61167364 | Exhibit: B-8

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 61167364_PENSKE TRUCKING NEW OIL RELEASE LSI_12.20.2016.GPJ TERRACON_DATATEMPLATE.GDT 1/11/17

BORING LOG NO. BH-9

PROJECT: Penske Additional LSI

CLIENT: Penske Truck Leasing Co., LP
Reading, PA

SITE: 2211 S 2000 W
West Valley City, UT

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION
0.5	**ASPHALT CONCRETE**
	FILL - GRAVEL (GP)
6.0	**SILT (ML)**, light brown, stiff, moist, color change to gray at 7.5', becoming saturated at 8.5', dark gray staining at 9.0'
10.0	**SILTY GRAVEL (GM)**, gray, medium dense, saturated
11.0	**SILTY SAND (SM)**, light brown, medium dense, saturated, very fine to fine grained
15.0	***Boring Terminated at 15 Feet***

DEPTH (ft)	P.I.D. (ppm)	Sample
5	0.4	
	1.1	
	134	BH-9 @ 7.5'
	113	
10	10.5	
	3.5	
	5.8	
	2.8	
15	2.0	BH-9 @ 14.5'

WATER LEVEL OBSERVATIONS; SAMPLE TYPE; RECOVERY (%)

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

See Appendices for description of field procedures.

See Appendices for description of laboratory procedures and additional data (if any).

See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *9' While drilling*

Terracon
6949 S High Tech Dr Ste 100
Midvale, UT

Boring Started: 12/20/2016 | Boring Completed: 12/20/2016

Drill Rig: Geoprobe | Driller: DPS

Project No.: 61167364 | Exhibit: B-9

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 61167364_PENSKE TRUCKING NEW OIL RELEASE LSI_12.20.2016.GPJ TERRACON_DATATEMPLATE.GDT 1/11/17

BORING LOG NO. BH-10

PROJECT: Penske Additional LSI

CLIENT: Penske Truck Leasing Co., LP
Reading, PA

SITE: 2211 S 2000 W
West Valley City, UT

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION	P.I.D. (ppm)	Sample
	FILL - GRAVEL (GP)		
		0.0	
		0.5	
6.0			
	SILT (ML), gray, moist, medium stiffness		
		0.6	
		0.7	
		110	
		144	BH-10 @ 9'
10.0			
	SILTY SAND (SM), gray, loose, with 2" thick layer of pea gravel at 11', saturated at 11'	78	
		1.7	
11.5			
	CLAY (CL), grayy, stiff		
13.0			
	SILTY SAND (SM), brown, dense, saturated, very fine grained, ~40% fines	2.4	
		2.6	BH-10 @ 14.5'
15.0			
	Boring Terminated at 15 Feet		

5 10 15

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

See Appendices for description of field procedures.

See Appendices for description of laboratory procedures and additional data (if any).

See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
6949 S High Tech Dr Ste 100
Midvale, UT

Boring Started: 12/20/2016 | Boring Completed: 12/20/2016

Drill Rig: Geoprobe | Driller: DPS

Project No.: 61167364 | Exhibit: B-10

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 61167364_PENSKE TRUCKING NEW OIL RELEASE LSI_12.20.2016.GPJ TERRACON_DATATEMPLATE.GDT 1/11/17

BORING LOG NO. BH-11

PROJECT: Penske Additional LSI

CLIENT: Penske Truck Leasing Co., LP
Reading, PA

SITE: 2211 S 2000 W
West Valley City, UT

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	P.I.D. (ppm)	Sample
0.5	**ASPHALT CONCRETE**						
	FILL - GRAVEL (GP)				60	2.0	
4.0	**SILT (ML)**, stiff, brown, moist						
5.0	**SILTY CLAY (CL)**, stiff, gray, moist	5					
6.0	**SANDY SILT (ML)**, loose, brown, moist						
7.0	**SILTY CLAY (ML)**, stiff, gray, moist, slight odor, becoming saturated @ 8'		▽		50	30 80 45 3.5	BH-11 @ 8.0'
10.0	**SANDY SILT (ML)**, stiff, dark gray, moist	10				3.1	
11.0	**SILTY SAND (SM)**, medium dense, gray, saturated, mottled orange staining, interbedded silty clay layers				50	1.7 2.0 1.6	
15.0	***Boring Terminated at 15 Feet***	15				1.7	

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

See Appendices for description of field procedures.

See Appendices for description of laboratory procedures and additional data (if any).

See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *8' While drilling*

Terracon
6949 S High Tech Dr Ste 100
Midvale, UT

Boring Started: 12/20/2016 | Boring Completed: 12/20/2016

Drill Rig: Geoprobe | Driller: DPS

Project No.: 61167364 | Exhibit: B-11

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 61167364_PENSKE TRUCKING NEW OIL RELEASE LSI_12.20.2016.GPJ TERRACON_DATATEMPLATE.GDT 1/11/17

BORING LOG NO. BH-13

PROJECT: Penske Additional LSI

CLIENT: Penske Truck Leasing Co., LP
Reading, PA

SITE: 2211 S 2000 W
West Valley City, UT

LOCATION See Exhibit A-2

DEPTH	MATERIAL DESCRIPTION	P.I.D. (ppm)	Sample
0.0	**ASPHALT CONCRETE**		
1.0	**FILL - GRAVEL (GP)**		
4.0	**SILTY SAND (SM)**, medium dense, light brown, moist		
5.0	**SILTY CLAY (CL)**, medium dense, light brown, some oragne staining	1.4	
		1.7	
		2.8	BH-13 @ 9.0'
10.0	**SILTY GRAVEL (GM)**, medium dense, brown, wet, pea sized gravel	1.7	
12.0	**SANDY SILT (ML)**, medium dense, brown with ~15% orange staining, minor componenets of interbedded clayey silt		
		1.6	
15.0	***Boring Terminated at 15 Feet***		

DEPTH (ft): 5, 10, 15

WATER LEVEL OBSERVATIONS: ▽ 9.75' While drilling

SAMPLE TYPE

RECOVERY (%)

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

See Appendices for description of field procedures.

See Appendices for description of laboratory procedures and additional data (if any).

See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *9.75' While drilling*

Terracon
6949 S High Tech Dr Ste 100
Midvale, UT

Boring Started: 12/20/2016 | Boring Completed: 12/20/2016

Drill Rig: Geoprobe | Driller: DPS

Project No.: 61167364 | Exhibit: B-13

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 61167364_PENSKE TRUCKING NEW OIL RELEASE LSI_12.20.2016.GPJ TERRACON_DATATEMPLATE.GDT 1/11/17

BORING LOG NO. BH-14

PROJECT: Penske Additional LSI

CLIENT: Penske Truck Leasing Co., LP
Reading, PA

SITE: 2211 S 2000 W
West Valley City, UT

GRAPHIC LOG	LOCATION See Exhibit A-2 DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	P.I.D. (ppm)	Sample
		FILL - GRAVEL (GP)						
	4.0					100		
		SILT (ML), gray	5				0.5 0.5	
	7.5						0.6	
		SILTY SAND (SM), loose, saturated, medium brown, ~40% fines		▽			1.0	
	11.5		10				1.7 9	BH-14 @ 0.5'
		CLAY (CL), pale brown, medium soft, interbedded with clayey sand lenses roughly 1" thick every ~6"; orange staining from 13.5-15'					6 1.1	
	15.0		15				1.7	
		Boring Terminated at 15 Feet						

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

See Appendices for description of field procedures.

See Appendices for description of laboratory procedures and additional data (if any).

See Appendices for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *8' While drilling*

Terracon
6949 S High Tech Dr Ste 100
Midvale, UT

Boring Started: 12/20/2016 | Boring Completed: 12/20/2016

Drill Rig: Geoprobe | Driller: DPS

Project No.: 61167364 | Exhibit: B-14

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ENVIRONMENTAL SMART LOG 61167364_PENSKE TRUCKING NEW OIL RELEASE LSI_12.20.2016.GPJ TERRACON_DATATEMPLATE.GDT 1/11/17

APPENDIX C
Data Tables

TABLE 1
GROUNDWATER SURVEY DATA
PENSKE TRUCKING 2211 S 2000 W, WEST VALLEY CITY, UTAH
Terracon Project No. 61167364

MONITORING WELL	Top of Casing Elevation (relative to datum of 100')	Depth to Groundwater (feet from top of well casing)	Groundwater Elevation (relative to datum of 100')
MW-1	97.3	N/A	-
MW-2	97.21	6.29	90.92
MW-3	96.57	5.81	90.76
MW-4	97.32	6.52	90.8
MW-5	97.37	6.72	90.65

Depth to groundwater measured on 1/3/2016
except for MW-2 which was measured 12/29/2016

TABLE 2
SOIL ANALYTICAL RESULTS
PENSKE TRUCKING 2211 S 2000 W, WEST VALLEY CITY, UTAH
Terracon Project No. 61167364

Analyte			TPH - OIL & GREASE		TPH - DIESEL		Methyl tert Butyl Ether		BENZENE		ETHYLBENZENE		NAPHTHALENE		TOLUENE		XYLENES, TOTAL	
Utah DERR Initial Screening Levels Soil 5/15/2006			1000		500		0.3		0.2		5		51		9		142	
Utah DERR Tier 1 Screening Levels Soil 5/15/2006			10000		5000		0.3		0.9		23		51		25		142	
Lab Sample ID	**Client Sample ID**	**Date Collected**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
L844589-01	BH-1 2.5 FT	06/28/2016	4850		NA		NA		NA		NA		NA		NA		NA	
L844589-02	BH-2 3 FT	06/28/2016	15000	V	NA		NA		NA		NA		NA		NA		NA	
L844589-03	BH-3 11 FT	06/28/2016	4460		NA		NA		NA		NA		NA		NA		NA	
L844589-04	BH-4 8 FT	06/28/2016	4210		NA		NA		NA		NA		NA		NA		NA	
L880430-01	BH-5 8.5	12/20/2016	2650		856		<0.00316		<0.00316		<0.00316		0.105		0.00623	J	0.0029	J
L880430-23	BH-5 14.5	12/20/2016	<133		<5.3		<0.00331		<0.00331		<0.00331		<0.0166		<0.0166		<0.00994	
L880430-02	BH-6 10.0	12/20/2016	<121		<4.84		<0.00303		<0.00303		<0.00303		<0.0151		<0.0151		<0.00908	
L880430-03	BH-7 10.0	12/20/2016	47.9	J	<4.79		<0.00292		<0.00299		<0.00299		<0.015		<0.015		<0.00898	
L880430-04	BH-8 8.0	12/21/2016	259		507		<0.00323		<0.00323		0.00793		1.4		<0.0162		0.00436	J
L880430-24	BH-8 14.5	12/21/2016	<131		<5.24		<0.00328		<0.00328		<0.00328		<0.0164		<0.0164		<0.00983	
L880430-05	BH-9 7.5	12/21/2016	1190		3570		<0.00335		<0.00335		0.472		7.86		<0.0167		0.0169	J
L880430-25	BH-9 14.5	12/21/2016	<132		<5.28		<0.0033		<0.0033		<0.0033		<0.0165		<0.0165		<0.0099	
L880430-06	BH-10 9.0	12/20/2016	891		1650		<0.00338		<0.00338		0.071		6.86		<0.0169		0.0108	
L880430-26	BH-10 14.5	12/20/2016	<132		<5.29		<0.00331		<0.00331		<0.00331		<0.0165		<0.0165		<0.00993	
L880430-07	BH-11 8.0	12/21/2016	492		945		<0.00342		<0.00342		<0.00683		0.146		<0.0171		<0.0205	
L880430-08	BH-12 8.5	12/20/2016	76.5	J	87.8		<0.00319		<0.00319		<0.00319		0.0863		0.00185	J	0.00292	J
L880430-09	BH-13 9.0	12/21/2016	65.2	J	<5.22		<0.00326		<0.00326		<0.00326		0.00163	J	<0.0163		<0.00978	
L880430-10	BH-14 10.5	12/20/2016	50.5	J	<5.05		<0.00316		<0.00316		<0.00316		<0.0158		<0.0158		<0.00948	
L880430-11	BH-15 10.5	12/20/2016	<136		<5.42		<0.00339		<0.00339		<0.00339		<0.0169		<0.0169		<0.0102	

Notes:
Results in milligrams per kilogram (mg/kg)
Q (Qualifiers):
J: The identification of the analyte is acceptable; the reported value is an estimate.
V: The sample concentration is too high to evaluate accurate spike recoveries.
NA - Not analyzed
< - Not detected above laboratory reporting limit
gray - shaded values reported above laboratory reporting limit
blue - shaded values reported above DERR Initial Screening Levels
green - shaded values reported above DERR Tier 1 Screening Levels

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
PENSKE TRUCKING 2211 S 2000 W, WEST VALLEY CITY, UTAH
Terracon Project No. 61167364

Method			1664A		3511/8015		8260B		8260B		8260B		8260B		8260B		8260B	
Analyte			TPH - OIL & GREASE		TPH - DIESEL		TPH - GASOLINE		METHYL T-BUTYL ETHER		BENZENE		ETHYLBENZENE		NAPHTHALENE		TOLUENE		XYLENES, TOTAL	
UT Initial Screening Levels Groundwater 5/15/2006			10		1		1		0.2		0.005		0.7		0.7		1		10	
UT Tier 1 Screening Levels Groundwater 5/15/2006			10		10		10		0.2		0.3		4		0.7		3		10	
Lab Sample ID	**Client Sample ID**	**Date Collected**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
L844589-05	BH-1 GW	06/28/2016	1.11	J	NA		NA		NA		NA		NA		NA		NA		NA	
L844589-06	BH-2 GW	06/28/2016	0.941	J	NA		NA		NA		NA		NA		NA		NA		NA	
L844589-07	BH-3 GW	06/28/2016	6.78		NA		NA		NA		NA		NA		NA		NA		NA	
L844589-08	BH-4 GW	06/28/2016	1750		NA		NA		NA		NA		NA		NA		NA		NA	
L880430-12	BH-5 GW	12/20/2016	15.5		3.03		NA		<0.001		<0.001		<0.001		<0.005		0.00515		<0.003	
L880430-13	BH-6 GW	12/20/2016	<5.26		0.178		NA		<0.001		<0.001		<0.001		<0.005		<0.001		<0.003	
L880430-14	BH-7 GW	12/20/2016	<5.26		0.0695	J	NA		<0.001		<0.001		<0.001		<0.005		<0.001		<0.003	
L880430-15	BH-8 GW	12/21/2016	2.95	J	0.446		NA		<0.001		<0.001		<0.001		0.00168	J	<0.001		<0.003	
L880430-16	BH-9 GW	12/21/2016	3.68	J	1.42		NA		<0.001		<0.001		0.00093	J	0.0198		<0.001		<0.003	
L880430-17	BH-10 GW	12/20/2016	4.84	J	0.838		NA		<0.001		<0.001		<0.001		0.00652		<0.001		<0.003	
L880430-18	BH-11 GW	12/21/2016	<5.26		0.173		NA		<0.001		<0.001		<0.001		0.0018	J	<0.001		<0.003	
L880430-19	BH-12 GW	12/20/2016	4.21	J	0.288		NA		<0.001		<0.001		<0.001		<0.005		<0.001		<0.003	
L880430-20	BH-13 GW	12/21/2016	<5.26		0.0639	J	NA		<0.001		<0.001		<0.001		<0.005		<0.001		<0.003	
L880430-21	BH-14 GW	12/20/2016	<5.26		0.0838	J	NA		<0.001		<0.001		<0.001		<0.005		<0.001		<0.003	
L880430-22	BH-15 GW	12/20/2016	1.89	J	0.0536	J	NA		<0.001		<0.001		<0.001		<0.005		<0.001		<0.003	
D90794-1	MW-2	1/26/2017	NA		NA		<0.200		NA		NA		NA		NA		NA		NA	
D90794-2	MW-3	1/26/2017	NA		NA		<0.200		NA		NA		NA		NA		NA		NA	
D90794-3	MW-4	1/26/2017	NA		NA		<0.200		NA		NA		NA		NA		NA		NA	

Notes:
Results in milligrams per liter (mg/l)
Q (Qualifiers):
J: The identification of the analyte is acceptable; the reported value is an estimate.
NA - Not analyzed
< - Not detected above laboratory reporting limit
gray - shaded values reported above laboratory reporting limit
blue - shaded values reported above DERR Initial Screening Levels
green - shaded values reported above DERR Tier 1 Screening Levels

APPENDIX D
Chain of Custody and Laboratory Data Sheets

ANALYTICAL REPORT

January 18, 2017

Terracon - Salt Lake City, UT

Sample Delivery Group:	L880430
Samples Received:	12/22/2016
Project Number:	6117965
Description:	Penske LSI

Report To: Nancy Saunders
6949 South High Tech Drive
Midvale, UT 84047

Entire Report Reviewed By:

Nancy McLain
Technical Service Representative

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

TABLE OF CONTENTS

[1]Cp: Cover Page 1

[2]Tc: Table of Contents 2

[3]Ss: Sample Summary 4

[4]Cn: Case Narrative 9

[5]Sr: Sample Results 10

BH-5 8.5 L880430-01 10

BH-6 10.0 L880430-02 11

BH-7 10.0 L880430-03 12

BH-8 8.0 L880430-04 13

BH-9 7.5 L880430-05 14

BH-10 9.0 L880430-06 15

BH-11 8.0 L880430-07 16

BH-12 8.5 L880430-08 17

BH-13 9.0 L880430-09 18

BH-14 10.5 L880430-10 19

BH-15 10.5 L880430-11 20

BH-5 GW L880430-12 21

BH-6 GW L880430-13 22

BH-7 GW L880430-14 23

BH-8 GW L880430-15 24

BH-9 GW L880430-16 25

BH-10 GW L880430-17 26

BH-11 GW L880430-18 27

BH-12 GW L880430-19 28

BH-13 GW L880430-20 29

BH-14 GW L880430-21 30

BH-15 GW L880430-22 31

BH-5 14.5 L880430-23 32

BH-8 14.5 L880430-24 33

BH-9 14.5 L880430-25 34

BH-10 14.5 L880430-26 35

[6]Qc: Quality Control Summary 36

Total Solids by Method 2540 G-2011 36

Wet Chemistry by Method 1664A 38

Wet Chemistry by Method 9071B 39

Volatile Organic Compounds (GC/MS) by Method 8260B 40

Semi-Volatile Organic Compounds (GC) by Method 3511/8015 42

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO 43

[7]Gl: Glossary of Terms 44

[8]Al: Accreditations & Locations 45

[9]Sc: Chain of Custody

46

BH-5 8.5 L880430-01 Solid

Collected by: Nancy Saunders | Collected date/time: 12/20/16 10:10 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	5	12/29/16 21:47	12/30/16 15:52	TH
Total Solids by Method 2540 G-2011	WG938287	1	12/23/16 11:25	12/23/16 11:32	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 11:47	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:51	SHG

BH-6 10.0 L880430-02 Solid

Collected by: Nancy Saunders | Collected date/time: 12/20/16 11:45 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	1	12/29/16 21:47	12/30/16 11:01	TH
Total Solids by Method 2540 G-2011	WG938287	1	12/23/16 11:25	12/23/16 11:32	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 12:46	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:53	SHG

BH-7 10.0 L880430-03 Solid

Collected by: Nancy Saunders | Collected date/time: 12/20/16 14:45 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	1	12/29/16 21:47	12/30/16 11:13	TH
Total Solids by Method 2540 G-2011	WG938287	1	12/23/16 11:25	12/23/16 11:32	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 13:01	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:54	SHG

BH-8 8.0 L880430-04 Solid

Collected by: Nancy Saunders | Collected date/time: 12/21/16 11:30 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	1	12/29/16 21:47	12/30/16 15:03	TH
Total Solids by Method 2540 G-2011	WG938287	1	12/23/16 11:25	12/23/16 11:32	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 13:16	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:54	SHG

BH-9 7.5 L880430-05 Solid

Collected by: Nancy Saunders | Collected date/time: 12/21/16 10:45 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	10	12/29/16 21:47	12/30/16 15:40	TH
Total Solids by Method 2540 G-2011	WG938287	1	12/23/16 11:25	12/23/16 11:32	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	100	12/23/16 11:53	12/26/16 17:14	CAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 13:31	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:54	SHG

BH-10 9.0 L880430-06 Solid

Collected by: Nancy Saunders | Collected date/time: 12/20/16 10:45 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	5	12/29/16 21:47	12/30/16 15:15	TH
Total Solids by Method 2540 G-2011	WG938287	1	12/23/16 11:25	12/23/16 11:32	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	100	12/23/16 11:53	12/26/16 17:29	CAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 13:46	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:55	SHG

BH-11 8.0 L880430-07 Solid

Collected by: Nancy Saunders | Collected date/time: 12/21/16 12:25 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	5	12/29/16 21:47	12/30/16 15:28	TH
Total Solids by Method 2540 G-2011	WG938287	1	12/23/16 11:25	12/23/16 11:32	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 14:01	CAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	50	12/23/16 11:53	12/26/16 16:59	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:55	SHG

BH-12 8.5 L880430-08 Solid

Collected by: Nancy Saunders | Collected date/time: 12/20/16 13:05 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	1	12/29/16 21:47	12/30/16 11:50	TH
Total Solids by Method 2540 G-2011	WG938287	1	12/23/16 11:25	12/23/16 11:32	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 16:30	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:56	SHG

BH-13 9.0 L880430-09 Solid

Collected by: Nancy Saunders | Collected date/time: 12/21/16 13:05 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	1	12/29/16 21:47	12/30/16 12:02	TH
Total Solids by Method 2540 G-2011	WG938287	1	12/23/16 11:25	12/23/16 11:32	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 16:44	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:56	SHG

BH-14 10.5 L880430-10 Solid

Collected by: Nancy Saunders | Collected date/time: 12/20/16 13:50 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	1	12/29/16 21:47	12/30/16 12:48	TH
Total Solids by Method 2540 G-2011	WG938287	1	12/23/16 11:25	12/23/16 11:32	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 14:45	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:56	SHG

BH-15 10.5 L880430-11 Solid

Collected by: Nancy Saunders | Collected date/time: 12/20/16 15:40 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	1	12/29/16 21:47	12/30/16 13:00	TH
Total Solids by Method 2540 G-2011	WG938295	1	12/27/16 13:41	12/27/16 13:49	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 15:00	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:56	SHG

BH-5 GW L880430-12 GW

Collected by: Nancy Saunders | Collected date/time: 12/20/16 09:20 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG938051	1	12/22/16 22:38	12/28/16 22:36	TRF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938419	1	12/26/16 17:49	12/26/16 17:49	CAH
Wet Chemistry by Method 1664A	WG938192	1	12/23/16 13:59	12/23/16 17:25	SHG

BH-6 GW L880430-13 GW

Collected by: Nancy Saunders | Collected date/time: 12/20/16 11:10 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG938051	1	12/22/16 22:38	12/28/16 17:21	TRF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938419	1	12/26/16 18:10	12/26/16 18:10	CAH
Wet Chemistry by Method 1664A	WG938192	1	12/23/16 13:59	12/23/16 17:25	SHG

BH-7 GW L880430-14 GW

Collected by: Nancy Saunders | Collected date/time: 12/20/16 15:00 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG938051	1	12/22/16 22:38	12/28/16 17:39	TRF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938419	1	12/26/16 18:31	12/26/16 18:31	CAH
Wet Chemistry by Method 1664A	WG938192	1	12/23/16 13:59	12/23/16 17:26	SHG

BH-8 GW L880430-15 GW

Collected by: Nancy Saunders | Collected date/time: 12/21/16 11:40 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG938051	1	12/22/16 22:38	12/28/16 17:56	TRF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938419	1	12/26/16 18:52	12/26/16 18:52	CAH
Wet Chemistry by Method 1664A	WG938192	1	12/23/16 13:59	12/23/16 17:26	SHG

BH-9 GW L880430-16 GW

Collected by: Nancy Saunders | Collected date/time: 12/21/16 10:50 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG938051	1	12/22/16 22:38	12/28/16 18:14	TRF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938419	1	12/26/16 19:12	12/26/16 19:12	CAH
Wet Chemistry by Method 1664A	WG938192	1	12/23/16 13:59	12/23/16 17:26	SHG

BH-10 GW L880430-17 GW

Collected by: Nancy Saunders | Collected date/time: 12/20/16 11:00 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG938051	1	12/22/16 22:38	12/28/16 18:31	TRF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938419	1	12/26/16 19:33	12/26/16 19:33	CAH
Wet Chemistry by Method 1664A	WG938192	1	12/23/16 13:59	12/23/16 17:26	SHG

BH-11 GW L880430-18 GW

Collected by: Nancy Saunders | Collected date/time: 12/21/16 12:30 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG938051	1	12/22/16 22:38	12/28/16 19:41	TRF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938419	1	12/26/16 19:54	12/26/16 19:54	CAH
Wet Chemistry by Method 1664A	WG938192	1	12/23/16 13:59	12/23/16 17:26	SHG

BH-12 GW L880430-19 GW

Collected by: Nancy Saunders | Collected date/time: 12/20/16 13:15 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG938051	1	12/22/16 22:38	12/28/16 19:59	TRF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938419	1	12/26/16 20:15	12/26/16 20:15	CAH
Wet Chemistry by Method 1664A	WG938192	1	12/23/16 13:59	12/23/16 17:27	SHG

BH-13 GW L880430-20 GW

Collected by: Nancy Saunders | Collected date/time: 12/21/16 12:55 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG938051	1	12/22/16 22:38	12/28/16 20:16	TRF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938419	1	12/26/16 20:36	12/26/16 20:36	CAH
Wet Chemistry by Method 1664A	WG938192	1	12/23/16 13:59	12/23/16 17:27	SHG

BH-14 GW L880430-21 GW

Collected by: Nancy Saunders | Collected date/time: 12/20/16 13:50 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG938051	1	12/22/16 22:38	12/28/16 22:01	TRF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938419	1	12/26/16 20:57	12/26/16 20:57	CAH
Wet Chemistry by Method 1664A	WG938192	1	12/23/16 13:59	12/23/16 17:27	SHG

BH-15 GW L880430-22 GW

Collected by: Nancy Saunders | Collected date/time: 12/20/16 15:45 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG938051	1	12/22/16 22:38	12/28/16 22:19	TRF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938419	1	12/26/16 21:18	12/26/16 21:18	CAH
Wet Chemistry by Method 1664A	WG938192	1	12/23/16 13:59	12/23/16 17:27	SHG

BH-5 14.5 L880430-23 Solid

Collected by: Nancy Saunders | Collected date/time: 12/20/16 10:20 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	1	12/29/16 21:47	12/30/16 13:49	TH
Total Solids by Method 2540 G-2011	WG938295	1	12/27/16 13:41	12/27/16 13:49	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 15:15	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:57	SHG

BH-8 14.5 L880430-24 Solid

Collected by: Nancy Saunders | Collected date/time: 12/21/16 11:35 | Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	1	12/29/16 21:47	12/30/16 14:01	TH
Total Solids by Method 2540 G-2011	WG938295	1	12/27/16 13:41	12/27/16 13:49	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 15:30	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:57	SHG

BH-9 14.5 L880430-25 Solid

Collected by: Nancy Saunders
Collected date/time: 12/21/16 10:25
Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	1	12/29/16 21:47	12/30/16 14:26	TH
Total Solids by Method 2540 G-2011	WG938295	1	12/27/16 13:41	12/27/16 13:49	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 15:45	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:58	SHG

BH-10 14.5 L880430-26 Solid

Collected by: Nancy Saunders
Collected date/time: 12/20/16 10:50
Received date/time: 12/22/16 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG939093	1	12/29/16 21:47	12/30/16 14:14	TH
Total Solids by Method 2540 G-2011	WG938295	1	12/27/16 13:41	12/27/16 13:49	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG938315	25	12/23/16 11:53	12/26/16 16:00	CAH
Wet Chemistry by Method 9071B	WG938837	1	12/27/16 10:30	12/29/16 11:58	SHG

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Nancy F. McLain

Nancy McLain
Technical Service Representative

Sample Handling and Receiving

The following analysis were performed from an unpreserved, insufficiently or inadequately preserved sample.

ESC Sample ID	Project Sample ID	Method
L880430-13	BH-6 GW	1664A
L880430-14	BH-7 GW	1664A
L880430-22	BH-15 GW	1664A

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	79.0		1	12/23/2016 11:32	WG938287

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	2650		41.8	127	1	12/29/2016 11:51	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00158	0.00316	25	12/26/2016 11:47	WG938315
Ethylbenzene	U		0.00158	0.00316	25	12/26/2016 11:47	WG938315
Methyl tert-butyl ether	U		0.00158	0.00316	25	12/26/2016 11:47	WG938315
Naphthalene	0.105		0.00158	0.0158	25	12/26/2016 11:47	WG938315
Toluene	0.00623	J	0.00158	0.0158	25	12/26/2016 11:47	WG938315
Xylenes, Total	0.00290	J	0.00158	0.00949	25	12/26/2016 11:47	WG938315
(S) Toluene-d8	*101*			*88.7-115*		*12/26/2016 11:47*	WG938315
(S) Dibromofluoromethane	*100*			*76.3-123*		*12/26/2016 11:47*	WG938315
(S) 4-Bromofluorobenzene	*105*			*69.7-129*		*12/26/2016 11:47*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	856		4.86	25.3	5	12/30/2016 15:52	WG939093
(S) o-Terphenyl	*111*			*50.0-150*		*12/30/2016 15:52*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	82.6		1	12/23/2016 11:32	WG938287

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	U		40.0	121	1	12/29/2016 11:53	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00151	0.00303	25	12/26/2016 12:46	WG938315
Ethylbenzene	U		0.00151	0.00303	25	12/26/2016 12:46	WG938315
Methyl tert-butyl ether	U		0.00151	0.00303	25	12/26/2016 12:46	WG938315
Naphthalene	U		0.00151	0.0151	25	12/26/2016 12:46	WG938315
Toluene	U		0.00151	0.0151	25	12/26/2016 12:46	WG938315
Xylenes, Total	U		0.00151	0.00908	25	12/26/2016 12:46	WG938315
(S) Toluene-d8	*100*			*88.7-115*		*12/26/2016 12:46*	WG938315
(S) Dibromofluoromethane	*100*			*76.3-123*		*12/26/2016 12:46*	WG938315
(S) 4-Bromofluorobenzene	*100*			*69.7-129*		*12/26/2016 12:46*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	U		0.931	4.84	1	12/30/2016 11:01	WG939093
(S) o-Terphenyl	*87.8*			*50.0-150*		*12/30/2016 11:01*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	83.5		1	12/23/2016 11:32	WG938287

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	47.9	J	39.5	120	1	12/29/2016 11:54	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00150	0.00299	25	12/26/2016 13:01	WG938315
Ethylbenzene	U		0.00150	0.00299	25	12/26/2016 13:01	WG938315
Methyl tert-butyl ether	U		0.00150	0.00299	25	12/26/2016 13:01	WG938315
Naphthalene	U		0.00150	0.0150	25	12/26/2016 13:01	WG938315
Toluene	U		0.00150	0.0150	25	12/26/2016 13:01	WG938315
Xylenes, Total	U		0.00150	0.00898	25	12/26/2016 13:01	WG938315
(S) Toluene-d8	*101*			*88.7-115*		*12/26/2016 13:01*	WG938315
(S) Dibromofluoromethane	*99.8*			*76.3-123*		*12/26/2016 13:01*	WG938315
(S) 4-Bromofluorobenzene	*100*			*69.7-129*		*12/26/2016 13:01*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	U		0.921	4.79	1	12/30/2016 11:13	WG939093
(S) o-Terphenyl	*84.6*			*50.0-150*		*12/30/2016 11:13*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	77.3		1	12/23/2016 11:32	WG938287

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	259		42.7	129	1	12/29/2016 11:54	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00162	0.00323	25	12/26/2016 13:16	WG938315
Ethylbenzene	0.00793		0.00162	0.00323	25	12/26/2016 13:16	WG938315
Methyl tert-butyl ether	U		0.00162	0.00323	25	12/26/2016 13:16	WG938315
Naphthalene	1.40		0.00162	0.0162	25	12/26/2016 13:16	WG938315
Toluene	U		0.00162	0.0162	25	12/26/2016 13:16	WG938315
Xylenes, Total	0.00436	J	0.00162	0.00970	25	12/26/2016 13:16	WG938315
(S) Toluene-d8	*101*			*88.7-115*		*12/26/2016 13:16*	WG938315
(S) Dibromofluoromethane	*100*			*76.3-123*		*12/26/2016 13:16*	WG938315
(S) 4-Bromofluorobenzene	*109*			*69.7-129*		*12/26/2016 13:16*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	507		0.995	5.18	1	12/30/2016 15:03	WG939093
(S) o-Terphenyl	*125*			*50.0-150*		*12/30/2016 15:03*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	74.7		1	12/23/2016 11:32	WG938287

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	1190		44.2	134	1	12/29/2016 11:54	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00167	0.00335	25	12/26/2016 13:31	WG938315
Ethylbenzene	0.472		0.00669	0.0134	100	12/26/2016 17:14	WG938315
Methyl tert-butyl ether	U		0.00167	0.00335	25	12/26/2016 13:31	WG938315
Naphthalene	7.86		0.00669	0.0669	100	12/26/2016 17:14	WG938315
Toluene	U		0.00167	0.0167	25	12/26/2016 13:31	WG938315
Xylenes, Total	0.0169	J	0.00669	0.0401	100	12/26/2016 17:14	WG938315
(S) Toluene-d8	*101*			*88.7-115*		*12/26/2016 17:14*	WG938315
(S) Toluene-d8	*101*			*88.7-115*		*12/26/2016 13:31*	WG938315
(S) Dibromofluoromethane	*99.7*			*76.3-123*		*12/26/2016 13:31*	WG938315
(S) Dibromofluoromethane	*99.7*			*76.3-123*		*12/26/2016 17:14*	WG938315
(S) 4-Bromofluorobenzene	*105*			*69.7-129*		*12/26/2016 17:14*	WG938315
(S) 4-Bromofluorobenzene	*106*			*69.7-129*		*12/26/2016 13:31*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	3570		10.3	53.5	10	12/30/2016 15:40	WG939093
(S) o-Terphenyl	*570*	J1		*50.0-150*		*12/30/2016 15:40*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	74.0		1	12/23/2016 11:32	WG938287

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	891		44.6	135	1	12/29/2016 11:55	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00169	0.00338	25	12/26/2016 13:46	WG938315
Ethylbenzene	0.0710		0.00169	0.00338	25	12/26/2016 13:46	WG938315
Methyl tert-butyl ether	U		0.00169	0.00338	25	12/26/2016 13:46	WG938315
Naphthalene	6.86		0.00675	0.0675	100	12/26/2016 17:29	WG938315
Toluene	U		0.00169	0.0169	25	12/26/2016 13:46	WG938315
Xylenes, Total	0.0108		0.00169	0.0101	25	12/26/2016 13:46	WG938315
(S) Toluene-d8	*101*			*88.7-115*		*12/26/2016 13:46*	WG938315
(S) Toluene-d8	*101*			*88.7-115*		*12/26/2016 17:29*	WG938315
(S) Dibromofluoromethane	*100*			*76.3-123*		*12/26/2016 17:29*	WG938315
(S) Dibromofluoromethane	*99.8*			*76.3-123*		*12/26/2016 13:46*	WG938315
(S) 4-Bromofluorobenzene	*108*			*69.7-129*		*12/26/2016 13:46*	WG938315
(S) 4-Bromofluorobenzene	*103*			*69.7-129*		*12/26/2016 17:29*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	1650		5.19	27.0	5	12/30/2016 15:15	WG939093
(S) o-Terphenyl	*337*	J1		*50.0-150*		*12/30/2016 15:15*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.2		1	12/23/2016 11:32	WG938287

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	492		45.1	137	1	12/29/2016 11:55	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00171	0.00342	25	12/26/2016 14:01	WG938315
Ethylbenzene	U		0.00342	0.00683	50	12/26/2016 16:59	WG938315
Methyl tert-butyl ether	U		0.00171	0.00342	25	12/26/2016 14:01	WG938315
Naphthalene	0.146		0.00171	0.0171	25	12/26/2016 14:01	WG938315
Toluene	U		0.00171	0.0171	25	12/26/2016 14:01	WG938315
Xylenes, Total	U		0.00342	0.0205	50	12/26/2016 16:59	WG938315
(S) Toluene-d8	*101*			*88.7-115*		*12/26/2016 16:59*	WG938315
(S) Toluene-d8	*101*			*88.7-115*		*12/26/2016 14:01*	WG938315
(S) Dibromofluoromethane	*99.5*			*76.3-123*		*12/26/2016 14:01*	WG938315
(S) Dibromofluoromethane	*99.7*			*76.3-123*		*12/26/2016 16:59*	WG938315
(S) 4-Bromofluorobenzene	*98.1*			*69.7-129*		*12/26/2016 16:59*	WG938315
(S) 4-Bromofluorobenzene	*96.7*			*69.7-129*		*12/26/2016 14:01*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	945		5.25	27.3	5	12/30/2016 15:28	WG939093
(S) o-Terphenyl	*119*			*50.0-150*		*12/30/2016 15:28*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	78.4		1	12/23/2016 11:32	WG938287

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	76.5	J	42.1	127	1	12/29/2016 11:56	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00159	0.00319	25	12/26/2016 16:30	WG938315
Ethylbenzene	U		0.00159	0.00319	25	12/26/2016 16:30	WG938315
Methyl tert-butyl ether	U		0.00159	0.00319	25	12/26/2016 16:30	WG938315
Naphthalene	0.0863		0.00159	0.0159	25	12/26/2016 16:30	WG938315
Toluene	0.00185	J	0.00159	0.0159	25	12/26/2016 16:30	WG938315
Xylenes, Total	0.00292	J	0.00159	0.00956	25	12/26/2016 16:30	WG938315
(S) Toluene-d8	*102*			*88.7-115*		*12/26/2016 16:30*	WG938315
(S) Dibromofluoromethane	*99.4*			*76.3-123*		*12/26/2016 16:30*	WG938315
(S) 4-Bromofluorobenzene	*105*			*69.7-129*		*12/26/2016 16:30*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	87.8		0.980	5.10	1	12/30/2016 11:50	WG939093
(S) o-Terphenyl	*114*			*50.0-150*		*12/30/2016 11:50*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	76.7		1	12/23/2016 11:32	WG938287

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	65.2	J	43.0	130	1	12/29/2016 11:56	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00163	0.00326	25	12/26/2016 16:44	WG938315
Ethylbenzene	U		0.00163	0.00326	25	12/26/2016 16:44	WG938315
Methyl tert-butyl ether	U		0.00163	0.00326	25	12/26/2016 16:44	WG938315
Naphthalene	0.00163	J	0.00163	0.0163	25	12/26/2016 16:44	WG938315
Toluene	U		0.00163	0.0163	25	12/26/2016 16:44	WG938315
Xylenes, Total	U		0.00163	0.00978	25	12/26/2016 16:44	WG938315
(S) Toluene-d8	*100*			*88.7-115*		*12/26/2016 16:44*	WG938315
(S) Dibromofluoromethane	*99.7*			*76.3-123*		*12/26/2016 16:44*	WG938315
(S) 4-Bromofluorobenzene	*99.8*			*69.7-129*		*12/26/2016 16:44*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	U		1.00	5.22	1	12/30/2016 12:02	WG939093
(S) o-Terphenyl	*79.2*			*50.0-150*		*12/30/2016 12:02*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	79.1		1	12/23/2016 11:32	WG938287

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	50.5	J	41.7	126	1	12/29/2016 11:56	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00158	0.00316	25	12/26/2016 14:45	WG938315
Ethylbenzene	U		0.00158	0.00316	25	12/26/2016 14:45	WG938315
Methyl tert-butyl ether	U		0.00158	0.00316	25	12/26/2016 14:45	WG938315
Naphthalene	U		0.00158	0.0158	25	12/26/2016 14:45	WG938315
Toluene	U		0.00158	0.0158	25	12/26/2016 14:45	WG938315
Xylenes, Total	U		0.00158	0.00948	25	12/26/2016 14:45	WG938315
(S) Toluene-d8	*101*			*88.7-115*		*12/26/2016 14:45*	WG938315
(S) Dibromofluoromethane	*99.6*			*76.3-123*		*12/26/2016 14:45*	WG938315
(S) 4-Bromofluorobenzene	*100*			*69.7-129*		*12/26/2016 14:45*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	U		0.972	5.05	1	12/30/2016 12:48	WG939093
(S) o-Terphenyl	*79.0*			*50.0-150*		*12/30/2016 12:48*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.8		1	12/27/2016 13:49	WG938295

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	U		44.7	136	1	12/29/2016 11:56	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00169	0.00339	25	12/26/2016 15:00	WG938315
Ethylbenzene	U		0.00169	0.00339	25	12/26/2016 15:00	WG938315
Methyl tert-butyl ether	U		0.00169	0.00339	25	12/26/2016 15:00	WG938315
Naphthalene	U		0.00169	0.0169	25	12/26/2016 15:00	WG938315
Toluene	U		0.00169	0.0169	25	12/26/2016 15:00	WG938315
Xylenes, Total	U		0.00169	0.0102	25	12/26/2016 15:00	WG938315
(S) Toluene-d8	*100*			*88.7-115*		*12/26/2016 15:00*	WG938315
(S) Dibromofluoromethane	*99.4*			*76.3-123*		*12/26/2016 15:00*	WG938315
(S) 4-Bromofluorobenzene	*99.7*			*69.7-129*		*12/26/2016 15:00*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	U		1.04	5.42	1	12/30/2016 13:00	WG939093
(S) o-Terphenyl	*82.1*			*50.0-150*		*12/30/2016 13:00*	WG939093

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH - Oil & Grease	15.5		0.725	5.26	1	12/23/2016 17:25	WG938192

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.000331	0.00100	1	12/26/2016 17:49	WG938419
Toluene	0.00515		0.000412	0.00100	1	12/26/2016 17:49	WG938419
Ethylbenzene	U		0.000384	0.00100	1	12/26/2016 17:49	WG938419
Xylenes, Total	U		0.00106	0.00300	1	12/26/2016 17:49	WG938419
Methyl tert-butyl ether	U		0.000367	0.00100	1	12/26/2016 17:49	WG938419
Naphthalene	U		0.00100	0.00500	1	12/26/2016 17:49	WG938419
(S) Toluene-d8	*101*			*80.0-120*		*12/26/2016 17:49*	WG938419
(S) Dibromofluoromethane	*93.4*			*76.0-123*		*12/26/2016 17:49*	WG938419
(S) a,a,a-Trifluorotoluene	*108*			*80.0-120*		*12/26/2016 17:49*	WG938419
(S) 4-Bromofluorobenzene	*107*			*80.0-120*		*12/26/2016 17:49*	WG938419

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
DRO w/ SGT	3.03		0.0247	0.100	1	12/28/2016 22:36	WG938051
(S) o-Terphenyl	*89.5*			*50.0-150*		*12/28/2016 22:36*	WG938051

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH - Oil & Grease	U		0.725	5.26	1	12/23/2016 17:25	WG938192

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.000331	0.00100	1	12/26/2016 18:10	WG938419
Toluene	U		0.000412	0.00100	1	12/26/2016 18:10	WG938419
Ethylbenzene	U		0.000384	0.00100	1	12/26/2016 18:10	WG938419
Xylenes, Total	U		0.00106	0.00300	1	12/26/2016 18:10	WG938419
Methyl tert-butyl ether	U		0.000367	0.00100	1	12/26/2016 18:10	WG938419
Naphthalene	U		0.00100	0.00500	1	12/26/2016 18:10	WG938419
(S) Toluene-d8	*102*			*80.0-120*		*12/26/2016 18:10*	WG938419
(S) Dibromofluoromethane	*89.0*			*76.0-123*		*12/26/2016 18:10*	WG938419
(S) a,a,a-Trifluorotoluene	*109*			*80.0-120*		*12/26/2016 18:10*	WG938419
(S) 4-Bromofluorobenzene	*108*			*80.0-120*		*12/26/2016 18:10*	WG938419

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
DRO w/ SGT	0.178		0.0247	0.100	1	12/28/2016 17:21	WG938051
(S) o-Terphenyl	*87.7*			*50.0-150*		*12/28/2016 17:21*	WG938051

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH - Oil & Grease	U		0.725	5.26	1	12/23/2016 17:26	WG938192

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.000331	0.00100	1	12/26/2016 18:31	WG938419
Toluene	U		0.000412	0.00100	1	12/26/2016 18:31	WG938419
Ethylbenzene	U		0.000384	0.00100	1	12/26/2016 18:31	WG938419
Xylenes, Total	U		0.00106	0.00300	1	12/26/2016 18:31	WG938419
Methyl tert-butyl ether	U		0.000367	0.00100	1	12/26/2016 18:31	WG938419
Naphthalene	U		0.00100	0.00500	1	12/26/2016 18:31	WG938419
(S) Toluene-d8	*103*			*80.0-120*		*12/26/2016 18:31*	WG938419
(S) Dibromofluoromethane	*92.5*			*76.0-123*		*12/26/2016 18:31*	WG938419
(S) a,a,a-Trifluorotoluene	*110*			*80.0-120*		*12/26/2016 18:31*	WG938419
(S) 4-Bromofluorobenzene	*108*			*80.0-120*		*12/26/2016 18:31*	WG938419

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
DRO w/ SGT	0.0695	J	0.0247	0.100	1	12/28/2016 17:39	WG938051
(S) o-Terphenyl	*87.9*			*50.0-150*		*12/28/2016 17:39*	WG938051

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH - Oil & Grease	2.95	J	0.725	5.26	1	12/23/2016 17:26	WG938192

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.000331	0.00100	1	12/26/2016 18:52	WG938419
Toluene	U		0.000412	0.00100	1	12/26/2016 18:52	WG938419
Ethylbenzene	U		0.000384	0.00100	1	12/26/2016 18:52	WG938419
Xylenes, Total	U		0.00106	0.00300	1	12/26/2016 18:52	WG938419
Methyl tert-butyl ether	U		0.000367	0.00100	1	12/26/2016 18:52	WG938419
Naphthalene	0.00168	J	0.00100	0.00500	1	12/26/2016 18:52	WG938419
(S) Toluene-d8	*99.6*			*80.0-120*		*12/26/2016 18:52*	WG938419
(S) Dibromofluoromethane	*91.8*			*76.0-123*		*12/26/2016 18:52*	WG938419
(S) a,a,a-Trifluorotoluene	*108*			*80.0-120*		*12/26/2016 18:52*	WG938419
(S) 4-Bromofluorobenzene	*108*			*80.0-120*		*12/26/2016 18:52*	WG938419

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
DRO w/ SGT	0.446		0.0247	0.100	1	12/28/2016 17:56	WG938051
(S) o-Terphenyl	*90.2*			*50.0-150*		*12/28/2016 17:56*	WG938051

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH - Oil & Grease	3.68	J	0.725	5.26	1	12/23/2016 17:26	WG938192

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.000331	0.00100	1	12/26/2016 19:12	WG938419
Toluene	U		0.000412	0.00100	1	12/26/2016 19:12	WG938419
Ethylbenzene	0.000930	J	0.000384	0.00100	1	12/26/2016 19:12	WG938419
Xylenes, Total	U		0.00106	0.00300	1	12/26/2016 19:12	WG938419
Methyl tert-butyl ether	U		0.000367	0.00100	1	12/26/2016 19:12	WG938419
Naphthalene	0.0198		0.00100	0.00500	1	12/26/2016 19:12	WG938419
(S) Toluene-d8	*102*			*80.0-120*		*12/26/2016 19:12*	WG938419
(S) Dibromofluoromethane	*95.4*			*76.0-123*		*12/26/2016 19:12*	WG938419
(S) a,a,a-Trifluorotoluene	*108*			*80.0-120*		*12/26/2016 19:12*	WG938419
(S) 4-Bromofluorobenzene	*112*			*80.0-120*		*12/26/2016 19:12*	WG938419

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
DRO w/ SGT	1.42		0.0247	0.100	1	12/28/2016 18:14	WG938051
(S) o-Terphenyl	*89.0*			*50.0-150*		*12/28/2016 18:14*	WG938051

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH - Oil & Grease	4.84	J	0.725	5.26	1	12/23/2016 17:26	WG938192

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.000331	0.00100	1	12/26/2016 19:33	WG938419
Toluene	U		0.000412	0.00100	1	12/26/2016 19:33	WG938419
Ethylbenzene	U		0.000384	0.00100	1	12/26/2016 19:33	WG938419
Xylenes, Total	U		0.00106	0.00300	1	12/26/2016 19:33	WG938419
Methyl tert-butyl ether	U		0.000367	0.00100	1	12/26/2016 19:33	WG938419
Naphthalene	0.00652		0.00100	0.00500	1	12/26/2016 19:33	WG938419
(S) Toluene-d8	*100*			*80.0-120*		*12/26/2016 19:33*	WG938419
(S) Dibromofluoromethane	*92.6*			*76.0-123*		*12/26/2016 19:33*	WG938419
(S) a,a,a-Trifluorotoluene	*105*			*80.0-120*		*12/26/2016 19:33*	WG938419
(S) 4-Bromofluorobenzene	*107*			*80.0-120*		*12/26/2016 19:33*	WG938419

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
DRO w/ SGT	0.838		0.0247	0.100	1	12/28/2016 18:31	WG938051
(S) o-Terphenyl	*81.5*			*50.0-150*		*12/28/2016 18:31*	WG938051

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH - Oil & Grease	U		0.725	5.26	1	12/23/2016 17:26	WG938192

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.000331	0.00100	1	12/26/2016 19:54	WG938419
Toluene	U		0.000412	0.00100	1	12/26/2016 19:54	WG938419
Ethylbenzene	U		0.000384	0.00100	1	12/26/2016 19:54	WG938419
Xylenes, Total	U		0.00106	0.00300	1	12/26/2016 19:54	WG938419
Methyl tert-butyl ether	U		0.000367	0.00100	1	12/26/2016 19:54	WG938419
Naphthalene	0.00180	J	0.00100	0.00500	1	12/26/2016 19:54	WG938419
(S) Toluene-d8	*100*			*80.0-120*		*12/26/2016 19:54*	WG938419
(S) Dibromofluoromethane	*92.0*			*76.0-123*		*12/26/2016 19:54*	WG938419
(S) a,a,a-Trifluorotoluene	*109*			*80.0-120*		*12/26/2016 19:54*	WG938419
(S) 4-Bromofluorobenzene	*108*			*80.0-120*		*12/26/2016 19:54*	WG938419

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
DRO w/ SGT	0.173		0.0247	0.100	1	12/28/2016 19:41	WG938051
(S) o-Terphenyl	*85.9*			*50.0-150*		*12/28/2016 19:41*	WG938051

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH - Oil & Grease	4.21	J	0.725	5.26	1	12/23/2016 17:27	WG938192

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.000331	0.00100	1	12/26/2016 20:15	WG938419
Toluene	U		0.000412	0.00100	1	12/26/2016 20:15	WG938419
Ethylbenzene	U		0.000384	0.00100	1	12/26/2016 20:15	WG938419
Xylenes, Total	U		0.00106	0.00300	1	12/26/2016 20:15	WG938419
Methyl tert-butyl ether	U		0.000367	0.00100	1	12/26/2016 20:15	WG938419
Naphthalene	U		0.00100	0.00500	1	12/26/2016 20:15	WG938419
(S) Toluene-d8	*103*			*80.0-120*		*12/26/2016 20:15*	WG938419
(S) Dibromofluoromethane	*90.0*			*76.0-123*		*12/26/2016 20:15*	WG938419
(S) a,a,a-Trifluorotoluene	*109*			*80.0-120*		*12/26/2016 20:15*	WG938419
(S) 4-Bromofluorobenzene	*109*			*80.0-120*		*12/26/2016 20:15*	WG938419

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
DRO w/ SGT	0.288		0.0247	0.100	1	12/28/2016 19:59	WG938051
(S) o-Terphenyl	*91.4*			*50.0-150*		*12/28/2016 19:59*	WG938051

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH - Oil & Grease	U		0.725	5.26	1	12/23/2016 17:27	WG938192

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.000331	0.00100	1	12/26/2016 20:36	WG938419
Toluene	U		0.000412	0.00100	1	12/26/2016 20:36	WG938419
Ethylbenzene	U		0.000384	0.00100	1	12/26/2016 20:36	WG938419
Xylenes, Total	U		0.00106	0.00300	1	12/26/2016 20:36	WG938419
Methyl tert-butyl ether	U		0.000367	0.00100	1	12/26/2016 20:36	WG938419
Naphthalene	U		0.00100	0.00500	1	12/26/2016 20:36	WG938419
(S) Toluene-d8	*101*			*80.0-120*		*12/26/2016 20:36*	WG938419
(S) Dibromofluoromethane	*91.6*			*76.0-123*		*12/26/2016 20:36*	WG938419
(S) a,a,a-Trifluorotoluene	*106*			*80.0-120*		*12/26/2016 20:36*	WG938419
(S) 4-Bromofluorobenzene	*109*			*80.0-120*		*12/26/2016 20:36*	WG938419

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
DRO w/ SGT	0.0639	J	0.0247	0.100	1	12/28/2016 20:16	WG938051
(S) o-Terphenyl	*87.4*			*50.0-150*		*12/28/2016 20:16*	WG938051

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH - Oil & Grease	U		0.725	5.26	1	12/23/2016 17:27	WG938192

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.000331	0.00100	1	12/26/2016 20:57	WG938419
Toluene	U		0.000412	0.00100	1	12/26/2016 20:57	WG938419
Ethylbenzene	U		0.000384	0.00100	1	12/26/2016 20:57	WG938419
Xylenes, Total	U		0.00106	0.00300	1	12/26/2016 20:57	WG938419
Methyl tert-butyl ether	U		0.000367	0.00100	1	12/26/2016 20:57	WG938419
Naphthalene	U		0.00100	0.00500	1	12/26/2016 20:57	WG938419
(S) Toluene-d8	*102*			*80.0-120*		*12/26/2016 20:57*	WG938419
(S) Dibromofluoromethane	*89.3*			*76.0-123*		*12/26/2016 20:57*	WG938419
(S) a,a,a-Trifluorotoluene	*111*			*80.0-120*		*12/26/2016 20:57*	WG938419
(S) 4-Bromofluorobenzene	*106*			*80.0-120*		*12/26/2016 20:57*	WG938419

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
DRO w/ SGT	0.0838	J	0.0247	0.100	1	12/28/2016 22:01	WG938051
(S) o-Terphenyl	*88.2*			*50.0-150*		*12/28/2016 22:01*	WG938051

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPH - Oil & Grease	1.89	J	0.725	5.26	1	12/23/2016 17:27	WG938192

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.000331	0.00100	1	12/26/2016 21:18	WG938419
Toluene	U		0.000412	0.00100	1	12/26/2016 21:18	WG938419
Ethylbenzene	U		0.000384	0.00100	1	12/26/2016 21:18	WG938419
Xylenes, Total	U		0.00106	0.00300	1	12/26/2016 21:18	WG938419
Methyl tert-butyl ether	U		0.000367	0.00100	1	12/26/2016 21:18	WG938419
Naphthalene	U		0.00100	0.00500	1	12/26/2016 21:18	WG938419
(S) Toluene-d8	*99.8*			*80.0-120*		*12/26/2016 21:18*	WG938419
(S) Dibromofluoromethane	*91.3*			*76.0-123*		*12/26/2016 21:18*	WG938419
(S) a,a,a-Trifluorotoluene	*108*			*80.0-120*		*12/26/2016 21:18*	WG938419
(S) 4-Bromofluorobenzene	*108*			*80.0-120*		*12/26/2016 21:18*	WG938419

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
DRO w/ SGT	0.0536	J	0.0247	0.100	1	12/28/2016 22:19	WG938051
(S) o-Terphenyl	*89.1*			*50.0-150*		*12/28/2016 22:19*	WG938051

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.4		1	12/27/2016 13:49	WG938295

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	U		43.8	133	1	12/29/2016 11:57	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00166	0.00331	25	12/26/2016 15:15	WG938315
Ethylbenzene	U		0.00166	0.00331	25	12/26/2016 15:15	WG938315
Methyl tert-butyl ether	U		0.00166	0.00331	25	12/26/2016 15:15	WG938315
Naphthalene	U		0.00166	0.0166	25	12/26/2016 15:15	WG938315
Toluene	U		0.00166	0.0166	25	12/26/2016 15:15	WG938315
Xylenes, Total	U		0.00166	0.00994	25	12/26/2016 15:15	WG938315
(S) Toluene-d8	*100*			*88.7-115*		*12/26/2016 15:15*	WG938315
(S) Dibromofluoromethane	*99.6*			*76.3-123*		*12/26/2016 15:15*	WG938315
(S) 4-Bromofluorobenzene	*100*			*69.7-129*		*12/26/2016 15:15*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	U		1.02	5.30	1	12/30/2016 13:49	WG939093
(S) o-Terphenyl	*88.6*			*50.0-150*		*12/30/2016 13:49*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	76.3		1	12/27/2016 13:49	WG938295

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	U		43.2	131	1	12/29/2016 11:57	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00164	0.00328	25	12/26/2016 15:30	WG938315
Ethylbenzene	U		0.00164	0.00328	25	12/26/2016 15:30	WG938315
Methyl tert-butyl ether	U		0.00164	0.00328	25	12/26/2016 15:30	WG938315
Naphthalene	U		0.00164	0.0164	25	12/26/2016 15:30	WG938315
Toluene	U		0.00164	0.0164	25	12/26/2016 15:30	WG938315
Xylenes, Total	U		0.00164	0.00983	25	12/26/2016 15:30	WG938315
(S) Toluene-d8	*100*			*88.7-115*		*12/26/2016 15:30*	WG938315
(S) Dibromofluoromethane	*99.2*			*76.3-123*		*12/26/2016 15:30*	WG938315
(S) 4-Bromofluorobenzene	*99.6*			*69.7-129*		*12/26/2016 15:30*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	U		1.01	5.24	1	12/30/2016 14:01	WG939093
(S) o-Terphenyl	*81.3*			*50.0-150*		*12/30/2016 14:01*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.7		1	12/27/2016 13:49	WG938295

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	U		43.6	132	1	12/29/2016 11:58	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00165	0.00330	25	12/26/2016 15:45	WG938315
Ethylbenzene	U		0.00165	0.00330	25	12/26/2016 15:45	WG938315
Methyl tert-butyl ether	U		0.00165	0.00330	25	12/26/2016 15:45	WG938315
Naphthalene	U		0.00165	0.0165	25	12/26/2016 15:45	WG938315
Toluene	U		0.00165	0.0165	25	12/26/2016 15:45	WG938315
Xylenes, Total	U		0.00165	0.00990	25	12/26/2016 15:45	WG938315
(S) Toluene-d8	*100*			*88.7-115*		*12/26/2016 15:45*	WG938315
(S) Dibromofluoromethane	*99.6*			*76.3-123*		*12/26/2016 15:45*	WG938315
(S) 4-Bromofluorobenzene	*100*			*69.7-129*		*12/26/2016 15:45*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	U		1.02	5.28	1	12/30/2016 14:26	WG939093
(S) o-Terphenyl	*81.1*			*50.0-150*		*12/30/2016 14:26*	WG939093

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.5		1	12/27/2016 13:49	WG938295

Wet Chemistry by Method 9071B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH - Oil & Grease	U		43.7	132	1	12/29/2016 11:58	WG938837

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00165	0.00331	25	12/26/2016 16:00	WG938315
Ethylbenzene	U		0.00165	0.00331	25	12/26/2016 16:00	WG938315
Methyl tert-butyl ether	U		0.00165	0.00331	25	12/26/2016 16:00	WG938315
Naphthalene	U		0.00165	0.0165	25	12/26/2016 16:00	WG938315
Toluene	U		0.00165	0.0165	25	12/26/2016 16:00	WG938315
Xylenes, Total	U		0.00165	0.00993	25	12/26/2016 16:00	WG938315
(S) Toluene-d8	*101*			*88.7-115*		*12/26/2016 16:00*	WG938315
(S) Dibromofluoromethane	*99.5*			*76.3-123*		*12/26/2016 16:00*	WG938315
(S) 4-Bromofluorobenzene	*99.1*			*69.7-129*		*12/26/2016 16:00*	WG938315

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
DRO W/ SGT	U		1.02	5.29	1	12/30/2016 14:14	WG939093
(S) o-Terphenyl	*79.9*			*50.0-150*		*12/30/2016 14:14*	WG939093

Method Blank (MB)

(MB) R3187143-1 12/23/16 11:32

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000100			

L880430-10 Original Sample (OS) • Duplicate (DUP)

(OS) L880430-10 12/23/16 11:32 • (DUP) R3187143-3 12/23/16 11:32

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	79.1	79.1	1	0.0821		5

Laboratory Control Sample (LCS)

(LCS) R3187143-2 12/23/16 11:32

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3187523-1 12/27/16 13:49

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000200			

L880427-01 Original Sample (OS) • Duplicate (DUP)

(OS) L880427-01 12/27/16 13:49 • (DUP) R3187523-3 12/27/16 13:49

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	85.3	84.6	1	0.747		5

Laboratory Control Sample (LCS)

(LCS) R3187523-2 12/27/16 13:49

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3187110-1 12/23/16 17:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH - Oil & Grease	U		0.725	5.00

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

(LCS) R3187110-2 12/23/16 17:23 • (LCSD) R3187110-3 12/23/16 17:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH - Oil & Grease	20.0	19.0	19.4	95.0	97.0	78.0-114			2.08	18

Method Blank (MB)

(MB) R3187926-1 12/29/16 11:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH - Oil & Grease	U		33.0	100

L880430-24 Original Sample (OS) • Duplicate (DUP)

(OS) L880430-24 12/29/16 11:57 • (DUP) R3187926-6 12/29/16 11:57

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TPH - Oil & Grease	U	0.000	1	0.000		20

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

(LCS) R3187926-2 12/29/16 11:49 • (LCSD) R3187926-3 12/29/16 11:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH - Oil & Grease	2000	2130	2140	107	107	80.0-120			0.468	20

L880430-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L880430-01 12/29/16 11:51 • (MS) R3187926-4 12/29/16 11:52 • (MSD) R3187926-5 12/29/16 11:52

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH - Oil & Grease	2530	2650	5230	5330	102	106	1	80.0-120			1.92	20

Method Blank (MB)

(MB) R3187220-3 12/26/16 11:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.0000500	0.000100
Ethylbenzene	U		0.0000500	0.000100
Methyl tert-butyl ether	U		0.0000500	0.000100
Naphthalene	U		0.0000500	0.000500
Toluene	U		0.0000500	0.000500
Xylenes, Total	U		0.0000500	0.000300
(S) Toluene-d8	*100*			*88.7-115*
(S) Dibromofluoromethane	*101*			*76.3-123*
(S) 4-Bromofluorobenzene	*99.8*			*69.7-129*

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

(LCS) R3187220-1 12/26/16 10:03 • (LCSD) R3187220-2 12/26/16 10:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0202	0.0201	80.6	80.4	72.6-120			0.220	20
Ethylbenzene	0.0250	0.0234	0.0231	93.4	92.6	78.6-124			0.940	20
Methyl tert-butyl ether	0.0250	0.0238	0.0236	95.3	94.5	70.2-122			0.820	20
Naphthalene	0.0250	0.0236	0.0249	94.5	99.7	69.9-132			5.39	20
Toluene	0.0250	0.0230	0.0222	92.0	89.0	76.7-116			3.35	20
Xylenes, Total	0.0750	0.0722	0.0714	96.2	95.2	78.1-123			1.05	20
(S) Toluene-d8				*101*	*101*	*88.7-115*				
(S) Dibromofluoromethane				*101*	*101*	*76.3-123*				
(S) 4-Bromofluorobenzene				*99.3*	*99.3*	*69.7-129*				

L880430-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L880430-01 12/26/16 11:47 • (MS) R3187220-4 12/26/16 12:02 • (MSD) R3187220-5 12/26/16 12:17

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0316	U	0.750	0.780	94.8	98.6	25	47.8-131			3.97	22.8
Ethylbenzene	0.0316	U	0.789	0.811	99.7	103	25	44.8-135			2.81	26.9
Methyl tert-butyl ether	0.0316	U	0.767	0.798	96.9	101	25	50.4-131			3.97	24.8
Naphthalene	0.0316	0.105	0.721	0.786	77.9	86.2	25	18.4-145			8.66	34
Toluene	0.0316	0.00623	0.770	0.786	96.6	98.6	25	47.8-127			2.06	24.3
Xylenes, Total	0.0949	0.00290	2.38	2.46	100	103	25	42.7-135			3.24	26.6
(S) Toluene-d8					*101*	*101*		*88.7-115*				
(S) Dibromofluoromethane					*100*	*101*		*76.3-123*				
(S) 4-Bromofluorobenzene					*102*	*102*		*69.7-129*				

Method Blank (MB)

(MB) R3188020-3 12/26/16 12:43

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Methyl tert-butyl ether	U		0.000367	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*99.2*			*90.0-115*
(S) Dibromofluoromethane	*90.5*			*79.0-121*
(S) a,a,a-Trifluorotoluene	*106*			*90.4-116*
(S) 4-Bromofluorobenzene	*108*			*80.1-120*

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

(LCS) R3188020-1 12/26/16 11:41 • (LCSD) R3188020-2 12/26/16 12:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0183	0.0186	73.2	74.3	73.0-122			1.54	20
Ethylbenzene	0.0250	0.0245	0.0234	98.0	93.5	80.9-121			4.70	20
Methyl tert-butyl ether	0.0250	0.0176	0.0187	70.4	74.7	70.1-125			5.96	20
Naphthalene	0.0250	0.0185	0.0190	74.0	76.0	69.7-134			2.65	20
Toluene	0.0250	0.0207	0.0213	82.9	85.4	77.9-116			2.97	20
Xylenes, Total	0.0750	0.0723	0.0724	96.5	96.5	79.2-122			0.0100	20
(S) Toluene-d8				*98.4*	*99.5*	*90.0-115*				
(S) Dibromofluoromethane				*92.3*	*91.6*	*79.0-121*				
(S) a,a,a-Trifluorotoluene				*106*	*104*	*90.4-116*				
(S) 4-Bromofluorobenzene				*108*	*103*	*80.1-120*				

Method Blank (MB)

(MB) R3187127-1 12/23/16 23:26

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
DRO W/ SGT	U		0.0247	0.100
(S) o-Terphenyl	*91.0*			*50.0-150*

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

(LCS) R3187127-2 12/23/16 23:44 • (LCSD) R3187127-3 12/24/16 00:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
DRO W/ SGT	1.50	1.82	1.84	121	123	70.0-130			1.46	20
(S) o-Terphenyl				*113*	*107*	*50.0-150*				

Method Blank (MB)

(MB) R3188265-1 12/30/16 10:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
DRO W/ SGT	U		0.769	4.00
(S) o-Terphenyl	*85.6*			*50.0-150*

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

(LCS) R3188265-2 12/30/16 10:36 • (LCSD) R3188265-3 12/30/16 10:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
DRO W/ SGT	60.0	44.3	47.1	73.9	78.4	50.0-150			5.98	20
(S) o-Terphenyl				*86.7*	*86.4*	*50.0-150*				

L880430-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L880430-09 12/30/16 12:02 • (MS) R3188265-4 12/30/16 12:14 • (MSD) R3188265-5 12/30/16 12:27

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
DRO W/ SGT	78.2	U	68.2	65.7	87.2	84.0	1	50.0-150			3.81	20
(S) o-Terphenyl					*89.1*	*87.5*		*50.0-150*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.

ACCREDITATIONS & LOCATIONS

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

***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

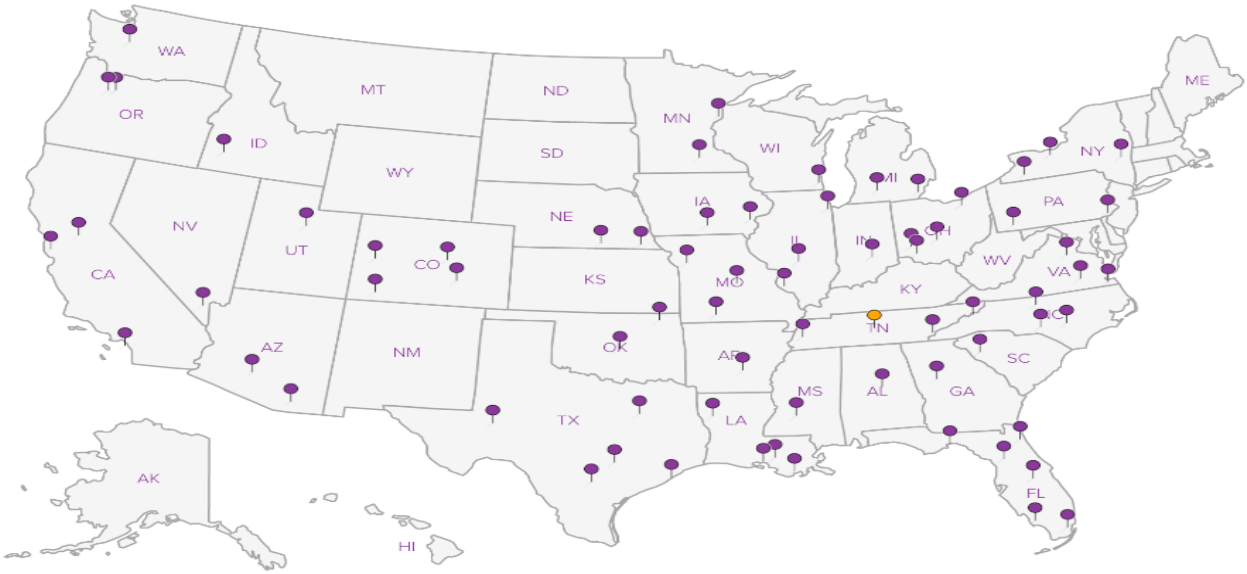
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

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

Our Locations

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



Chain of Custody Page 1 of 4

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L880430

1039

Company Name/Address:
Terracon
6949 South High Tech Drive, STE. 100
Midvale, UT 84047

Billing Information:
TERRDUT

Report to:
Nancy Saunders

Email To:
nancy.saunders@terracon.com

Project Description: Penske LSI

City/State Collected: SLC/UT

Phone: 801-746-5473
Fax:

Client Project #
61167965

Lab Project #

Collected by (print):
NANCY SAUNDERS

Site/Facility ID #

P.O. #

Collected by (signature):
Nancy Saunders

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed
Std. TAT

Email? ___No ✓Yes
FAX? ✓No ___Yes

Acctnum: TERRDUT
Template:
Prelogin:
TSR: Daphne Richards
Cooler:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH-DRO-SGT/ (1) 4oz CLR	BTEXN, TRPH/ (1) 4oz CLR SGT	Rem./Contaminant	Sample # (lab only)
BH-5 @ 8.5'	GRAB	SS	8.5	12/20/16	10:10	2	X	X		-01
BH-6 @ 10.0'		SS	10.0	12/20/16	11:45	2	X	X		-02
BH-7 @ 10.0'		SS	10.0	12/20/16	14:45	2	X	X		-03
BH-8 @ ~~8~~ 8.0'		SS	8.0'	12/21/16	11:30	2	X	X		-04
BH-9 @ 7.5'		SS	7.5	12/21/16	10:45	2	X	X		-05
BH-10 @ 9.0'		SS	9.0	12/20/16	10:45	2	X	X		-06
BH-11 @ 8.0'		SS	8.0	12/21/16	12:25	2	X	X		-07
BH-12 @ 8.5'		SS	8.5	12/20/16	13:05	2	X	X		-08
BH-13 @ 9.0'		SS	9.0'	12/21/16	13:05	2	X	X		-09
BH-14 @ 10.5'		SS	10.5'	12/20/16	~~13:35~~ 13:50	2	X	X		-10

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

pH ___ Temp ___
Flow ___ Other ___

12-094

Remarks:

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Nancy Saunders	12/21/16	1545	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	12/21/16	1700	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ SWA

Temp: 2.1 °C Bottles Received: 82

Date: 12-22-16 Time: 0830

Condition: MR (lab use only)

COC Seal Intact: ✓Y ___N ___NA

pH Checked: NCF:

Chain of Custody Page 2 of 4

ESC LABS — YOUR LAB OF CHOICE

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

L# L940430

Table #

Acctnum: TERRDUT

Template:

Prelogin:

TSR: Daphne Richards

Cooler:

Shipped Via:

Company Name/Address:
Terracon
6949 South High Tech Drive, STE. 100
Midvale, UT 84047

Billing Information:
TERRDUT

Report to:
Nancy Saunders

Email To:
nancy.saunders@terracon.com

Project Description: Penske LSI

City/State Collected: SLC/UT

Phone: 801-746-5473
Fax:

Client Project # 61167965

Lab Project #

Collected by (print): NANCY SAUNDERS

Site/Facility ID #

P.O. #

Collected by (signature): NANCY SAUNDERS
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: Std TAT

Email? ___No ✓Yes
FAX? ✓No ___Yes

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH-DRO-SGT/ (1) 4oz CLR	BTEXN, TRPH/ (1) 4oz CLR SGT								Rem./Contaminant	Sample # (lab only)
BH-15 @ 10.5'	GRAB	SS	10.5	12/20/16	15:40	2	X	X									-11
~~BH-16 @~~ NS		SS															
BH-5 @ 14.5'		SS	14.5	12/20/16	10:20	1	✓	✓	HOLD								-23
BH-8 @ 14.5'		SS	14.5	12/21/16	11:35	1	✓	✓	HOLD								-24
BH-9 @ 14.5		SS	14.5	12/21/16	10:25	2	✓	✓	HOLD								-25
BH-10 @ 14.5'		SS	14.5	12/20/16	10:50	2	✓	✓	HOLD								-26

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

Remarks:

pH ___ Temp ___
Flow ___ Other ___

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ___

Temp: 2.1 °C Bottles Received: 82

Date: 12-22-16 Time: 1830

Hold #

Condition: a (lab use only)

COC Seal Intact: ✓Y ___N ___NA

pH Checked: NCF:

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Nancy Saunders	12/21/16	1545	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	12/21/16	1700	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Company Name/Address:
Terracon
6949 South High Tech Drive, STE. 100
Midvale, UT 84047

Billing Information:
TERRDUT

Report to: Nancy Saunders
Email To: nancy.saunders@terracon.com

Project Description: Penske LSI
City/State Collected: SLC/UT

Phone: 801-746-5473
Fax:

Client Project # 61167965
Lab Project #

Collected by (print): NANCY SAUNDERS
Site/Facility ID #
P.O. #

Collected by (signature): Nancy Saunders
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: Std TAT
Email? ___No ✓Yes
FAX? ✓No ___Yes

Analysis / Container / Preservative

Chain of Custody Page 3 of 4

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L480430
Table #
Acctnum: TERRDUT
Template:
Prelogin:
TSR: Daphne Richards
Cooler:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH-DRO-SGT/ (2) 40ml AMB/ HCl-BT	BTEXN/ (2) 40ml AMB/HCl	TRPH/ (1) 1L CLR/ HCl - SGT								Rem./Contaminant	Sample # (lab only)
BH-5 GW	GRAB	GW		12/20/16	9:20	5	X	X	X									-12
BH-6 GW		GW		12/20/16	11:10	5	X	X	X									-13
BH-7 GW		GW		12/20/16	15:00	5	X	X	X									-14
BH-8 GW		GW		12/21/16	11:40	5	X	X	X									-15
BH- 9 GW		GW		12/21/16	10:50	5	X	X	X									-16
BH-10 GW		GW		12/20/16	11:00	5	X	X	X									-17
BH-11 GW		GW		12/21/16	12:30	5	X	X	X									-18
BH-12 GW		GW		12/20/16	13:15	5	X	X	X									-19
BH-13 GW		GW		12/21/16	12:55	5	X	X	X									-20
BH-14 GW	↓	GW		12/20/16	13:30	5	X	X	X									-21

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

MW 12-22-16

pH _____ Temp _____
Flow _____ Other _____

Remarks:

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Nancy Saunders	12/21/16	1555	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	12/21/16	1700	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			MWT

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____
Temp: 2-1 °C Bottles Received: 82
Date: 12-22-16 Time: 0830

Condition: ✓ MW (lab use only)
COC Seal Intact: ✓ Y ___N ___NA
pH Checked: NCF:

CI

Chain of Custody Page 4 of 4

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L480430

Table #

Acctnum: TERRDUT

Template:

Prelogin:

TSR: Daphne Richards

Cooler:

Shipped Via:

Company Name/Address:	Billing Information:
Terracon 6949 South High Tech Drive, STE. 100 Midvale, UT 84047	TERRDUT

Report to:	Email To:
Nancy Saunders	nancy.saunders@terracon.com

Project Description:	City/State Collected:
Penske LSI	SLC / UT

Phone:	Client Project #	Lab Project #
801-746-5473 Fax:	61167965	

Collected by (print):	Site/Facility ID #	P.O. #
NANCY SAUNDERS		

Collected by (signature): Nancy Saunders
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: Std TAT

Email? ___ No ✓ Yes
FAX? ✓ No ___ Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH-DRO-SGT/ (2) 40ml AMB/ HCl-BT	BTEXN/ (2) 40ml AMB/HCl	TRPH/ (1) 1L CLR/ HCl - SGT	Rem./Contaminant	Sample # (lab only)
BH-15 GW	GRAB	GW		12/20/16	1545	5	X	X	X		-22
~~BH-16 GW~~ NS		GW									

Analysis / Container / Preservative

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Nancy Saunders	12/21/16	1555	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	12/21/16	1700	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: 2.1 °C Bottles Received: 82

Date: 12-22-16 Time: 0830

Condition: (lab use only)

COC Seal Intact: ✓ Y ___ N ___ NA

pH Checked: NCF:

CI

ESC
LAB SCIENCES
YOUR LAB OF CHOICE

Cooler Receipt Form

Client: TERRDOT	SDG# L6400136
Cooler Received/Opened On: 12/22 /16	Temperature Upon Receipt: 2.1 °c
Received By: Michael Witherspoon	
Signature: MWJ	

Receipt Check List	Yes	No	N/A
Were custody seals on outside of cooler and intact?	✓		
Were custody papers properly filled out?	✓		
Did all bottles arrive in good condition?		✓	
Were correct bottles used for the analyses requested?	✓		
Was sufficient amount of sample sent in each bottle?	✓		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)			✓
If applicable, was an observable VOA headspace present?		✓	
Non Conformance Generated. (If yes see attached NCF)			

Greg Dearmon

From: Daphne Richards
Sent: Thursday, December 22, 2016 2:59 PM
To: Login
Subject: L880430 TERRDUT RX

Please run the HOLD samples on L880430 per client request

thanks

Daphne Richards
E-mail: drichards@esclabsciences.com
Phone: 800-767-5859 Ext. 9662
Direct: 615-773-9662

ESC
LAB SCIENCES

Happy Holidays from ESC Lab Sciences.
We will be closed for the 2016/2017 Winter Holidays on Monday December 26th and Monday January 2nd 2017.
We at ESC wish you and yours a wonderful holiday season!

Greg Dearmon

ESC Lab Sciences
Non-Conformance Form

Login #:L880430	Client:TERRDUT	Date:12/22/16	Evaluated by:Greg D.

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Improper temperature		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	Improper preservation		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courier
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments:Received one broken vial for BH-11 GW

Client informed by:		Call		Email		Voice Mail		Date:	Time:
TSR Initials:	Client Contact:								

Login Instructions:

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

e-Hardcopy 2.0
Automated Report

Technical Report for

Penske Truck Leasing Co., L.P.

Penske Additional LSI

61167364

SGS Accutest Job Number: D90794

Sampling Date: 01/26/17

Report to:

Terracon Consulting
6949 S High Tech Drive
Midvale, UT 84047
ben.bowers@terracon.com; nancy.saunders@terracon.com

ATTN: Ben Bowers

Total number of pages in report: **18**

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

Scott Heideman
Laboratory Director

Client Service contact: Jen Jorschumb 303-425-6021

Certifications: CO (CO00049), ID (CO00049), NE (NE-OS-06-04), ND (R-027), NJ (CO007), OK (D9942) UT (NELAP CO00049), LA (LA150028), TX (T104704511), WY (8TMS-L)

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Table of Contents

Section 1: Sample Summary **3**
Section 2: Summary of Hits **4**
Section 3: Sample Results **5**
3.1: D90794-1: MW-2 6
3.2: D90794-2: MW-3 7
3.3: D90794-3: MW-4 8
3.4: D90794-4: TRIP BLANK 9
Section 4: Misc. Forms **10**
4.1: Chain of Custody 11
Section 5: GC/MS Volatiles - QC Data Summaries **13**
5.1: Method Blank Summary 14
5.2: Blank Spike Summary 15
5.3: Matrix Spike/Matrix Spike Duplicate Summary 17

Sample Summary

Penske Truck Leasing Co., L.P.

Job No: D90794

Penske Additional LSI
Project No: 61167364

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D90794-1	01/26/17	12:10	RT	01/27/17	AQ	Ground Water	MW-2
D90794-2	01/26/17	13:45	RT	01/27/17	AQ	Ground Water	MW-3
D90794-3	01/26/17	12:55	RT	01/27/17	AQ	Ground Water	MW-4
D90794-4	01/26/17	00:00	RT	01/27/17	AQ	Trip Blank Water	TRIP BLANK

Summary of Hits

Job Number: D90794
Account: Penske Truck Leasing Co., L.P.
Project: Penske Additional LSI
Collected: 01/26/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method

D90794-1 **MW-2**

No hits reported in this sample.

D90794-2 **MW-3**

No hits reported in this sample.

D90794-3 **MW-4**

No hits reported in this sample.

D90794-4 **TRIP BLANK**

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-2		
Lab Sample ID:	D90794-1	**Date Sampled:**	01/26/17
Matrix:	AQ - Ground Water	**Date Received:**	01/27/17
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Penske Additional LSI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V40973.D	1	02/03/17	TL	n/a	n/a	V7V2242
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
17060-07-0	1,2-Dichloroethane-D4	103%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

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

Report of Analysis

Client Sample ID:	MW-3		
Lab Sample ID:	D90794-2	**Date Sampled:**	01/26/17
Matrix:	AQ - Ground Water	**Date Received:**	01/27/17
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Penske Additional LSI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V40974.D	1	02/03/17	TL	n/a	n/a	V7V2242
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		70-130%
17060-07-0	1,2-Dichloroethane-D4	100%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

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

Report of Analysis

Client Sample ID:	MW-4		
Lab Sample ID:	D90794-3	**Date Sampled:**	01/26/17
Matrix:	AQ - Ground Water	**Date Received:**	01/27/17
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Penske Additional LSI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V40975.D	1	02/03/17	TL	n/a	n/a	V7V2242
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		70-130%
17060-07-0	1,2-Dichloroethane-D4	96%		70-130%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

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

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	D90794-4	**Date Sampled:**	01/26/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	01/27/17
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Penske Additional LSI		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V40972.D	1	02/03/17	TL	n/a	n/a	V7V2242
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		70-130%
17060-07-0	1,2-Dichloroethane-D4	109%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

SGS ACCUTEST

PAGE 1 OF 1

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

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: D90794

Client / Reporting Information

Company Name: Terracon Consulting
Street Address: 19495 High Tech Dr
City: Monument, CO
Project Contact: Ben Bowers
Phone # / Email: Ben.Bowers@Terracon.com
Sampler(s) Name(s): Ryan Thomas

Project Information

Project Name: Penske Additional LSI
Street:
City, State:
Project #: 61167864
Client Purchase Order #: PENSKE Account
Project Manager: Mallory Saunders

Billing Information (if different from Report to)

Company Name: PENSKE
Street Address:
City, State ZIP:
Attention: Chris Hawk

Requested Analysis (see TEST CODE sheet)

TPH-GRO 8260

Matrix Codes

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

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of Bottles	Number of preserved Bottles: HCl	MeOH	HNO3	H2SO4	NONE	DI Water	MeOH	ENCORE	LAB USE ONLY
	MW-2		1/26/17	12:10	RT	GW	3	✓								01
	MW-3		1/26/17	13:45	RT	GW	3	✓								02
	MW-4		1/26/17	12:55	RT	GW	3	✓								03
	TRIP Blank		1/26/17	N/A	RT	TB	2	✓								04

Turnaround Time (Business days)

- ☐ Std. 15 Business Days
- ☑ Std. 10 Business Days
- ☐ 5 Day RUSH
- ☐ 3 Day Emergency
- ☐ 2 Day Emergency
- ☐ 1 Day Emergency
- ☐
- Emergency & Rush T/A date available VIA Labtink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ COMMBN
- ☐ COMMBN+
- ☐
- Commercial "A" = Results Only
- Commercial "B" = Results + QC Summary
- Commercial BN = Results/QC/Narrative (+ = chromatograms)
- ☐ State Forms Required
- ☐ Send Forms to State
- ☐ Report by Fax
- ☐ Report by PDF
- ☐ EDD Format

Comments / Special Instructions

Penske account

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

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
	1/26/17 14:50	1 FED Ex 16:00	2 FX		2 1-27-17 1025
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 3	Custody Seal # ☑ Intact ☐ Not Intact	Preserved where applicable ☑	On Ice ☑ Cooler Temp: 4.1

SGS Accutest Sample Receipt Summary

Job Number: D90794 **Client:** TERRACON **Project:** PENSKE

Date / Time Received: 1/27/2017 10:05:00 AM **Delivery Method:** **Airbill #'s:** FX

Cooler Temps (Initial/Adjusted): #1: (4.1/4.1);

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

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

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

Comments

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

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

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

D90794: Chain of Custody
Page 2 of 2

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D90794
Account: PENSKELC Penske Truck Leasing Co., L.P.
Project: Penske Additional LSI

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V2242-MB	7V40966.D	1	02/03/17	TL	n/a	n/a	V7V2242

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

D90794-1, D90794-2, D90794-3, D90794-4

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	70-130%
17060-07-0	1,2-Dichloroethane-D4	101%	70-130%
2037-26-5	Toluene-D8	100%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

Blank Spike Summary

Job Number: D90794
Account: PENSKELC Penske Truck Leasing Co., L.P.
Project: Penske Additional LSI

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V2242-BS	7V40964.D	1	02/03/17	TL	n/a	n/a	V7V2242

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

D90794-1, D90794-2, D90794-3, D90794-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)		ND		56-136

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	70-130%
17060-07-0	1,2-Dichloroethane-D4	97%	70-130%
2037-26-5	Toluene-D8	101%	70-130%
460-00-4	4-Bromofluorobenzene	99%	70-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D90794
Account: PENSKELC Penske Truck Leasing Co., L.P.
Project: Penske Additional LSI

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V2242-BS	7V40965.D	1	02/03/17	TL	n/a	n/a	V7V2242

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

D90794-1, D90794-2, D90794-3, D90794-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	2000	2060	103	56-136

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	70-130%
17060-07-0	1,2-Dichloroethane-D4	102%	70-130%
2037-26-5	Toluene-D8	102%	70-130%
460-00-4	4-Bromofluorobenzene	102%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D90794
Account: PENSKELC Penske Truck Leasing Co., L.P.
Project: Penske Additional LSI

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D90685-16MS	7V40968.D	1	02/03/17	TL	n/a	n/a	V7V2242
D90685-16MSD	7V40969.D	1	02/03/17	TL	n/a	n/a	V7V2242
D90685-16	7V40967.D	1	02/03/17	TL	n/a	n/a	V7V2242

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

D90794-1, D90794-2, D90794-3, D90794-4

CAS No.	Compound	D90685-16 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD

CAS No.	Surrogate Recoveries	MS	MSD	D90685-16	Limits
1868-53-7	Dibromofluoromethane	99%	102%	104%	70-130%
17060-07-0	1,2-Dichloroethane-D4	101%	99%	97%	70-130%
2037-26-5	Toluene-D8	99%	98%	102%	70-130%
460-00-4	4-Bromofluorobenzene	96%	97%	102%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D90794
Account: PENSKELC Penske Truck Leasing Co., L.P.
Project: Penske Additional LSI

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D90685-16MS	7V40970.D	1	02/03/17	TL	n/a	n/a	V7V2242
D90685-16MSD	7V40971.D	1	02/03/17	TL	n/a	n/a	V7V2242
D90685-16	7V40967.D	1	02/03/17	TL	n/a	n/a	V7V2242

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

D90794-1, D90794-2, D90794-3, D90794-4

CAS No.	Compound	D90685-16 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		2000	2200	110	2000	2200	110	0	56-136/30

CAS No.	Surrogate Recoveries	MS	MSD	D90685-16	Limits
1868-53-7	Dibromofluoromethane	101%	108%	104%	70-130%
17060-07-0	1,2-Dichloroethane-D4	98%	102%	97%	70-130%
2037-26-5	Toluene-D8	102%	98%	102%	70-130%
460-00-4	4-Bromofluorobenzene	99%	98%	102%	70-130%

* = Outside of Control Limits.

Groundwater Sampling Event

Penske Trucking
2211 South 2000 West
West Valley City, Utah
Facility Identification No. 4001113, Release Site NNL

May 14, 2018

Terracon Project No. 61167364

Prepared for:
Utah Department of Environmental Quality
Division of Environmental Response and Remediation
Salt Lake City, Utah

Prepared by:
Terracon Consultants, Inc.
Midvale, Utah

May 14, 2018

Utah Department of Environmental Quality
Division of Environmental Response and Remediation
P.O. Box 144840
Salt Lake City, Utah 84114-4840

Attn: Ms. Lauran Ortman
E: lortman@utah.gov

Re: Groundwater Monitoring Report
Penske Trucking
2211 South 2000 West
West Valley City, Salt Lake County, Utah
Facility Identification No. 4001113, Release Site NNL
Terracon Project No. 61167364 – Task 2

Dear Ms. Ortman:

Terracon Consultants, Inc. (Terracon) is pleased to submit this report documenting a single groundwater monitoring event conducted at the Penske Trucking facility located at 2211 South 2000 West, West Valley City, Utah.

We appreciate the opportunity to have performed these services for you. Please contact our office at (801) 545-8500 if you have questions regarding this information or if we can provide any other services.

Sincerely,
Terracon Consultants, Inc.

Amy Findley
Senior Project Manager
Utah Certified UST Consultant CC 0238

Ben B. Bowers
Authorized Project Reviewer
Utah Certified UST Consultant CC 0195

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

1.1 Site Description 1
1.2 Project Background 1
1.3 Scope of Work 3
1.4 Standard of Care 3
1.5 Additional Scope Limitations 3
1.6 Reliance 3

2.0 GROUNDWATER SAMPLING EVENT 4

2.1 Groundwater Sample Collection 4
2.2 Observations 4

3.0 LABORATORY ANALYTICAL METHODS 4

4.0 DATA EVALUATION 5

4.1 Groundwater Sample Results 5

5.0 FINDINGS AND CONCLUSIONS 5

APPENDICES

Appendix A Exhibits

Exhibit 1: Topographic Map
Exhibit 2: Site Diagram
Exhibit 3: Groundwater Gradient Map

Appendix B Data Table

Appendix C Groundwater Data Log

Appendix D Chain of Custody and Laboratory Data Sheets

1.0 INTRODUCTION

1.1 Site Description

Site Name	Penske Trucking facility
Site Location/Address	2211 South 2000 West, West Valley City, Utah
General Site Description	The site is an active trucking facility with four pump islands for dispensing diesel, gasoline, and motor oil. The facility is used for fueling, servicing, and renting trucks.

Exhibit 1 (Appendix A) presents the site location on a portion of the USGS 7.5-minute series topographic map. **Exhibit 2** is a site diagram that indicates the approximate locations of the sampling points in relation to pertinent site features. **Exhibit 3** shows the groundwater gradient measured during this investigation.

1.2 Project Background

A new oil release was discovered by Penske personnel on April 13, 2016, and it was observed to have filled the buried secondary containment line conduit between the new oil aboveground storage tank (AST) in the maintenance shop and the dispenser islands to the south of the building. At Penske's request, Terracon mobilized to the site on April 14, 2016, to observe site conditions, including the removal of approximately 50 gallons of new oil from the conduit and access sumps. On April 15, 2016, at Penske's request, Terracon reported the release to the Utah Department of Environmental Quality (UDEQ), Incident Number 12576.

Terracon reviewed documents available on the UDEQ's Division of Environmental Response (DERR's) website that provided information about a previous release, Release ID IJM, from Penske's underground storage tank (UST) system located south of the dispenser islands where the new oil release was observed. According to the website, the facility has a 20,000-gallon diesel UST and a 12,000-gallon gasoline UST currently in use, installed in 1993.

The records listed seven other USTs that were removed from service in 1993: four 20,000-gallon diesel USTs, one 20,000-gallon gasoline UST, a 2,000-gallon new oil UST, and a 500-gallon waste oil UST. The fuel USTs were co-located in a common tank basin in approximately the same location as the current USTs. At the time of the UST closure in 1993, impacts to soils and groundwater were observed and subsequent investigations and corrective action ensued. According to the Closure Memorandum on file with DERR, dated December 19, 1997, 9,000 gallons of product were removed from the surface of the groundwater at the site, over 168,000 gallons of impacted groundwater were treated and discharged to the sanitary sewer, and approximately 2,700 tons of impacted soil was excavated and disposed off-site. Investigations conducted throughout 1994 reported concentrations of naphthalene above the Tier 1 Screening

Level in soils near and to the northeast of the UST basin, concentrations of TPH-DRO at concentrations near the Tier 1 Screening Level, and low to non-detectable concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX). Groundwater sampling results reported low to non-detectable concentrations of target petroleum constituents in samples collected from four quarters of monitoring. The release received regulatory closure in January 1998, based on soil impacts remaining at concentrations near or below Tier 1 Screening Levels and the absence of detectable constituents in groundwater.

Based on Terracon's discussions with the UDEQ and the Salt Lake County Health Department, it was recommended that a subsurface investigation be conducted to evaluate whether impacts from the release were present in soil and/or groundwater in the vicinity of the new oil supply line conduit and sumps.

1.2.1 Limited Site Investigations

In June 2016, Terracon conducted a Limited Site Investigation (reported dated July 20, 2016). Four soil borings (BH-1 through BH-4) were installed on the site to investigate the reported new oil release. Based on the results of the investigation, subsurface soils and groundwater have been impacted by petroleum hydrocarbons along the new oil product piping line. The concentrations of total recoverable petroleum hydrocarbons (TRPH) reported in the soil and groundwater samples were above the DERR Initial Screen Levels (ISLs) and/or Tier 1 Screening Levels (Tier 1). Apparent undissolved oil (free product) was observed in the water sample collected at location BH-4, at the south end of the dispenser island. Terracon also noticed petroleum odors and soil staining that appeared to indicate impacts from petroleum other than oil and grease at the site, suggesting a potential release from the nearby underground storage tank system located south and up-gradient of soil boring BH-4.

In December 2016, Terracon conducted an Additional Limited Site Investigation (report dated February 13, 2017). The objective of the additional LSI was to further assess the vertical and horizontal extent of the new oil release at the site and to investigate the possibility of a new release from the UST system.

Based on the two Limited Site Investigations conducted at the site, concentrations of MBTEXN and TPH-GRO were not reported above a Screening Level. TPH-Oil and Grease (TRPH) was reported in soils and groundwater that exceeded the ISL and Tier 1 Screening Level along the new oil conduit. The concentrations of TPH-DRO reported in soils and groundwater exceeded the ISL. It was unclear whether the diesel-range impacts to soils and groundwater identified during the investigations were left in place post-closure of Release ID IJM or were a result of a new release associated with the UST basin.

1.3 Scope of Work

Work Plan NNL-01 was prepared in response to a *Request for Work Plan and Budget for Groundwater Sampling* issued by the DERR, dated February 12, 2018. Terracon subsequently received an *Approval for Work Plan and Budget No. NNL-01 for Groundwater Sampling Petroleum Storage Tank Trust Fund* issued by the DERR, dated March 14, 2018. The objective of this groundwater sampling event was to assess the current groundwater conditions at the site.

1.4 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal, and were not restricted by ASTM E1903-13.

1.5 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work. Such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this investigation. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

1.6 Reliance

This report has been prepared for the exclusive use and reliance of the Utah Department of Environmental Quality (UDEQ) and Penske Truck Leasing Company, LP. Use or reliance by any other party is prohibited without the written authorization of the UDEQ, Penske Truck Leasing Company, LP and Terracon.

Reliance on the report by the client and all authorized parties will be subject to the terms, conditions and limitations stated in the proposal, report, and Terracon's Terms and Conditions. The limitation of liability defined in the Terms and Conditions is the aggregate limit of Terracon's liability to the client and all relying parties.

2.0 GROUNDWATER SAMPLING EVENT

2.1 Groundwater Sample Collection

On April 10, 2018, Terracon measured free product thickness and depth to groundwater in the 5 existing monitoring wells (MW-1 through MW-5), using a product-water interface probe.

Prior to collecting the groundwater samples, each sampled well was purged of three well volumes in order to remove stagnant water from the casings. Purge water was surface applied in the vicinity of the well that generated the water and allowed to evaporate and/or infiltrate into surface soils. Care was taken not to allow purge water to affect nearby receptors (e.g., storm water catch basins, other monitoring wells, utilities, etc.) or residential properties.

The groundwater data log is included as Appendix C.

2.2 Observations

Free-product was observed in monitoring well MW-1 at approximately 3.2 feet below ground surface (bgs). The product was viscous, and depth to water and total thickness of product could not accurately be measured, but is estimated to be around 5 to 5.5 feet thick.

Depth-to-water at the site was measured to range between 8.31 to 9.07 feet bgs. Exhibit 3 (Appendix A) displays the measured groundwater gradient at the site. The overall flow direction was to the north-northeast, consistent with the previous LSI. It should be noted that the groundwater elevation displayed on Exhibit 3 did not include the elevation of groundwater in MW-5, as the gradient was flat when including that data point.

3.0 LABORATORY ANALYTICAL METHODS

All groundwater samples were collected and placed in laboratory-prepared containers, labeled, and placed on ice in a cooler and transported to Chemtech-Ford Analytical Laboratory in Sandy, Utah.

The groundwater samples were submitted for analysis of methyl tertiary-butyl ether, benzene, toluene, ethylbenzene, total xylenes, and naphthalene (MBTEXN) and total petroleum hydrocarbons – gasoline range organics (TPH-GRO), using EPA Method 8260B, and total petroleum hydrocarbons – diesel range organics (TPH-DRO), using EPA Method 8015B.

As the four groundwater samples submitted for analyses did not report petroleum hydrocarbon concentrations that exceeded a UDEQ Screening Level, the additional analyses included in the Work Plan were not performed on the samples. The executed chain-of-custody form and laboratory data sheets are provided in Appendix D.

4.0 DATA EVALUATION

Please refer to Table 1 (Appendix B) for a summary of the groundwater sample results. Groundwater sample results collected from two site investigations conducted by Terracon are included in the table for reference. The results are compared to the ISLs and the Tier 1 Screening Levels established by the DERR for comparison.

4.1 Groundwater Sample Results

As shown in Table 1, free-product was observed in MW-1, and therefore, a groundwater sample was not collected.

No constituents were reported above the laboratory reporting limits in the groundwater samples collected from the other four monitoring wells.

5.0 FINDINGS AND CONCLUSIONS

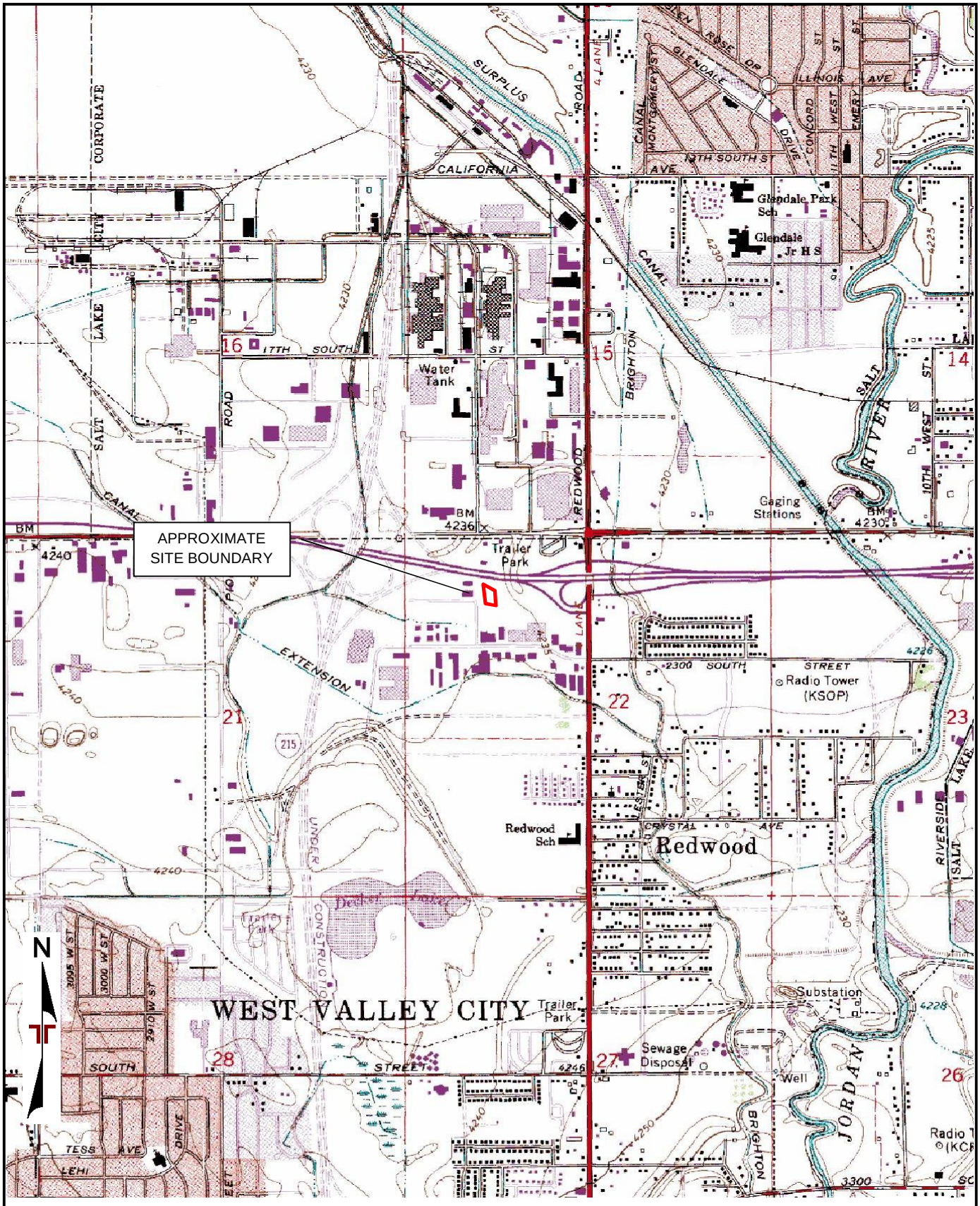
Groundwater sampling results for the current monitoring event indicated product is pooled in the vicinity of MW-1. No other monitoring wells reported concentrations of constituents of concern above the laboratory reporting limit.

Based on the lack of detections of dissolved gasoline or diesel hydrocarbons, it appears that the product observed in MW-1 may be related to the new oil release. The reported detections of TPH-DRO in the previous investigations appear to be related to the historic release from the UST basin.

Terracon appreciates being of service to you on this project. If you have any questions, require additional information, or need additional assistance, please contact us.

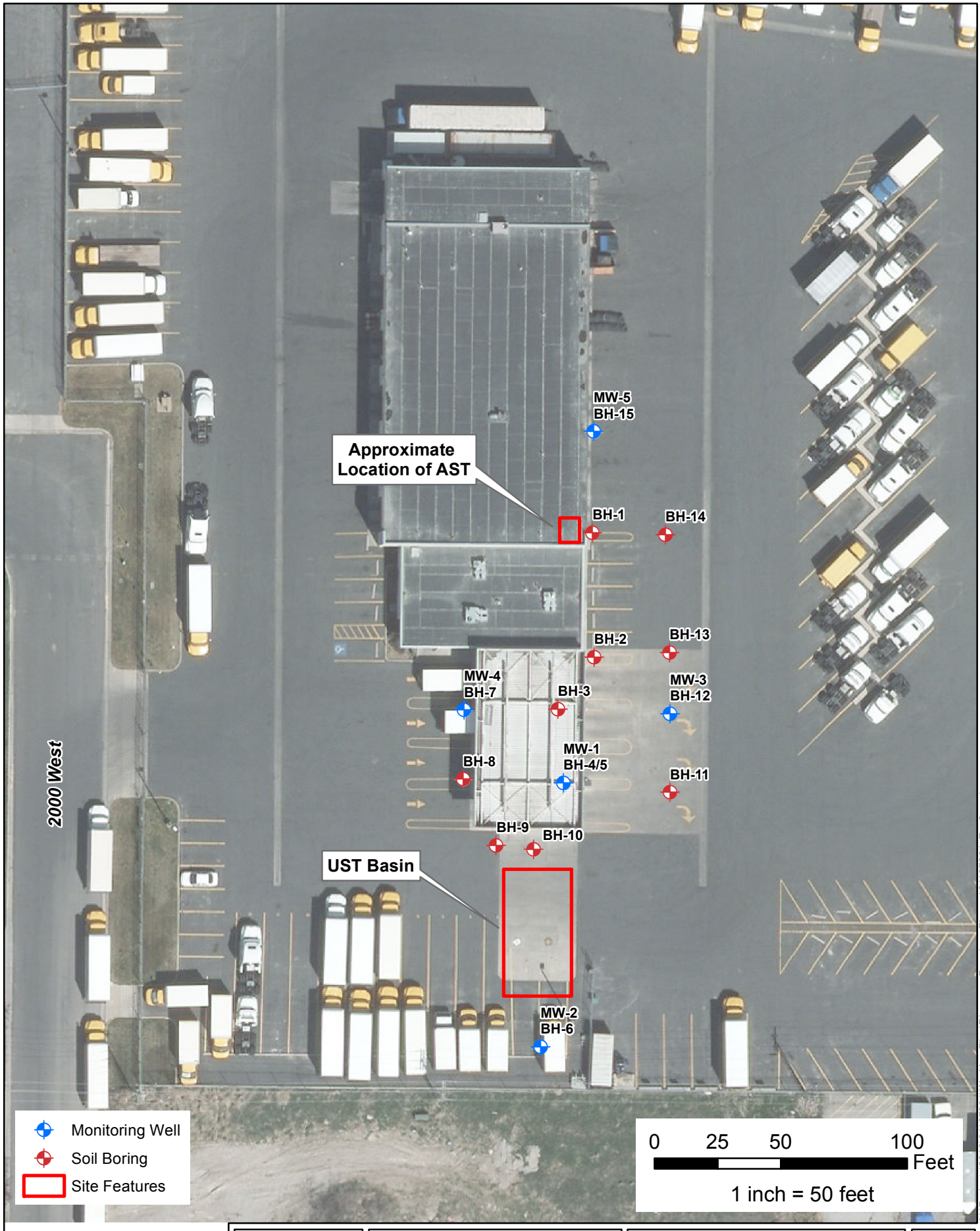
APPENDIX A

Exhibits



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY
QUADRANGLES INCLUDE: SALT LAKE CITY SOUTH, UT (1/1/1999).

Project Manager: NMS	Project No. 61167364	Terracon 6949 S High Tech Dr Ste 100 Midvale, UT 84047-3707	TOPOGRAPHIC MAP	Exhibit
Drawn by: NMS	Scale: 1"=2,000'		Penske Trucking Facility 2211 South 2000 West West Valley, UT	1
Checked by: BBB	File Name: Ex 1			
Approved by: BBB	Date: 1/10/17			



NOTES: This Product is intended for informational purposes only and may not be suitable for legal, engineering, or surveying purposes.

DATA SOURCES: Aerial Photography provided by AGRC (2012 HRO).

N

Project No.:	61167364
Drawn By:	JK
Reviewed By:	BBB
Date:	01/10/2017

Terracon
Consulting Engineers & Scientists
6949 S. High Tech Dr. Midvale, UT 84047
PH. (801) 545-8500 terracon.com

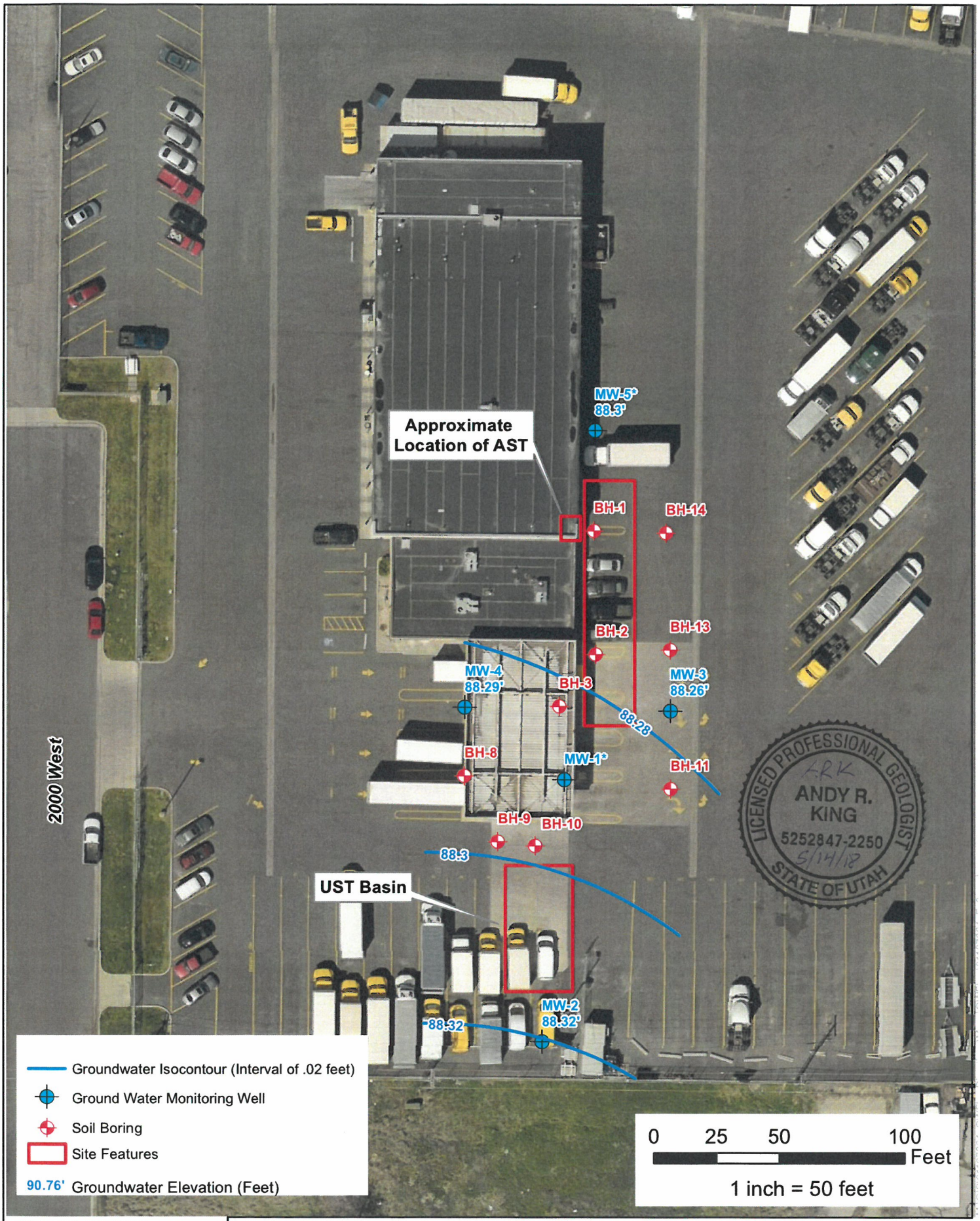
SITE DIAGRAM

PENSKE TRUCKING ADDITIONAL LSI
2211 South 2000 West
West Valley, Utah

EXHIBIT

2

N:\Projects\2016\61167364\Working Files\Diagrams-Drawings-Figures\61167364_Ex_2.mxd



NOTES: This Product is intended for informational purposes only and may not be suitable for legal, engineering, or surveying purposes.

* Signifies that the ground water monitoring well was not used to generate the contours displayed

DATA SOURCES: Aerial Photography provided by AGRC (2012 HRO).

N

Project No.:	61167364
Drawn By:	NOW
Reviewed By:	BBB
Date:	May 2018

Terracon
Consulting Engineers & Scientists
6949 S. High Tech Dr. Midvale, UT 84047
PH. (801) 545-8500 terracon.com

GROUNDWATER GRADIENT MAP

PENSKE TRUCKING NEW OIL RELEASE
2211 South 2000 West
West Valley, Utah

EXHIBIT 3

APPENDIX B

Data Table

Table 1 - Groundwater Sample Results
Penske Trucking Facility - West Valley City
Facility Identification No. 4001113, Release Site NNL
Results in milligrams per liter (mg/l)

Method		1664A	3511/8015	8260B	8260B	8260B	8260B	8260B	8260B	8260B
Analyte		**TRPH**	**TPH-DRO**	**TPH-GRO**	**MTBE**	**BENZENE**	**ETHYLBENZENE**	**NAPHTHALENE**	**TOLUENE**	**XYLENES, TOTAL**
ISL		10	1	1	0.2	0.005	0.7	0.7	1	10
Tier 1		10	10	10	0.2	0.3	4	0.7	3	10
Sample ID	**Date Collected**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Initial Limited Site Investigation										
BH-1 GW	06/28/2016	1.11	NA	NA	NA	NA	NA	NA	NA	NA
BH-2 GW	06/28/2016	0.941	NA	NA	NA	NA	NA	NA	NA	NA
BH-3 GW	06/28/2016	6.78	NA	NA	NA	NA	NA	NA	NA	NA
BH-4 GW	06/28/2016	1750	NA	NA	NA	NA	NA	NA	NA	NA
Additional Limited Site Investigation										
BH-5 GW	12/20/2016	15.5	3.03	NA	<0.001	<0.001	<0.001	<0.005	0.00515	<0.003
BH-6 GW	12/20/2016	<5.26	0.178	NA	<0.001	<0.001	<0.001	<0.005	<0.001	<0.003
BH-7 GW	12/20/2016	<5.26	0.0695	NA	<0.001	<0.001	<0.001	<0.005	<0.001	<0.003
BH-8 GW	12/21/2016	2.95	0.446	NA	<0.001	<0.001	<0.001	0.00168	<0.001	<0.003
BH-9 GW	12/21/2016	3.68	1.42	NA	<0.001	<0.001	0.00093	0.0198	<0.001	<0.003
BH-10 GW	12/20/2016	4.84	0.838	NA	<0.001	<0.001	<0.001	0.00652	<0.001	<0.003
BH-11 GW	12/21/2016	<5.26	0.173	NA	<0.001	<0.001	<0.001	0.0018	<0.001	<0.003
BH-12 GW	12/20/2016	4.21	0.288	NA	<0.001	<0.001	<0.001	<0.005	<0.001	<0.003
BH-13 GW	12/21/2016	<5.26	0.0639	NA	<0.001	<0.001	<0.001	<0.005	<0.001	<0.003
BH-14 GW	12/20/2016	<5.26	0.0838	NA	<0.001	<0.001	<0.001	<0.005	<0.001	<0.003
BH-15 GW	12/20/2016	1.89	0.0536	NA	<0.001	<0.001	<0.001	<0.005	<0.001	<0.003
MW-2	1/26/2017	NA	NA	<0.200	NA	NA	NA	NA	NA	NA
MW-3	1/26/2017	NA	NA	<0.200	NA	NA	NA	NA	NA	NA
MW-4	1/26/2017	NA	NA	<0.200	NA	NA	NA	NA	NA	NA
Work Plan NNL-01										
GW-MW1	4/10/2018	NA	Free Product - Not Sampled							
GW-MW2	4/10/2018	NA	<1.0	<0.125	<0.005	<0.005	<0.012	<0.012	<0.012	<0.012
GW-MW3	4/10/2018	NA	<1.0	<0.125	<0.005	<0.005	<0.012	<0.012	<0.012	<0.012
GW-MW4	4/10/2018	NA	<1.0	<0.125	<0.005	<0.005	<0.012	<0.012	<0.012	<0.012
GW-MW5	4/10/2018	NA	<1.0	<0.125	<0.005	<0.005	<0.012	<0.012	<0.012	<0.012

ISL - UDEQ's Initial Screening Levels for petroleum hydrocarbons in groundwater.
Tier 1 - UDEQ's Tier 1 Screening Levels for petroleum hydrocarbons in groundwater.
NA - Not analyzed. TRPH - Total Recoverable Petroleum Hydrocarbons. TPH - Total Petroleum Hydrocarbons. DRO - diesel range. GRO - gasoline range.
gray - shaded values reported above laboratory reporting limit
blue - shaded values reported above DERR Initial Screening Levels
green - shaded values reported above DERR Tier 1 Screening Levels

APPENDIX C

Groundwater Data Log

Terracon

Consulting Engineers & Scientists

Monitoring Well Data Sheet

Project Name: Penske Trucking Facility	**Project #:** 61167364 Task 2

Monitoring Well ID	Date	Sample Time	Measurements			Calculations			Notes
			Depth to Water (DTW)	Total Depth of Well (TD)	Depth to Product (DTP)	Product Thickness (DTW-DTP)	*Water Column Length (TD-DTW)*	Purge Volume (Gal / Ltr)	Comments
MW-3	4-10-18	10:05	8.31	14.60	n/a	n/a	6.29	3.02gal	Purged 4.4 gal. No odors, no sheen.
MW-5	4-10-18	11:00	9.07	14.14	n/a	n/a	5.07	2.43gal	Purged 3.8 gal. No odors, no sheen.
MW-2	4-10-18	11:40	8.89	14.62	n/a	n/a	5.73	2.75gal	Purged 4.2 gal. No odors, no sheen.
MW-1	4-10-18	n/a	n/a	n/a	3.2	n/a	n/a	n/a	Product so thick could not obtain depth to water. Did not sample.
MW-4	4-10-18	13:05	9.03	15.31	n/a	n/a	6.28	3.01gal	Purged 4.4 gal. No odors, no sheen.

Notes: MW-1 had product at approximately 3.2' below top of casing. Product was very thick, opaque, brown, and featured a petroleum odor.

APPENDIX D

Chain of Custody and Laboratory Data Sheets

CHEMTECH-FORD
LABORATORIES

4/12/2018

Work Order: 18D0523
Project: Penske (61167364 Task 2)

Terracon IHI
Attn: Amy Findley
6949 S. High Tech Dr.
Midvale, UT 84047

Client Service Contact: 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags, or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.

NELAP ACCREDITED TNI LABORATORY

Approved By:

Mark Broadhead, Project Manager

Chemtech-Ford Laboratories
Serving the Intermountain West Since 1953

9632 South 500 West
Sandy, UT 84070
O:(801) 262-7299 F: (866) 792-0093
www.ChemtechFord.com

Certificate of Analysis

Terracon IHI
Amy Findley
6949 S. High Tech Dr.
Midvale, UT 84047

PO#: **61167364 Task 2**
Receipt: **4/10/18 13:46 @ 11.3** °C
Date Reported: 4/12/2018
Project Name: **Penske (61167364 Task 2)**

Sample ID: **GW-MW3**

Matrix: **Water**
Lab ID: **18D0523-01**
Date Sampled: **4/10/18 10:05**
Sampled By: **Client**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
MBTEXn							
Benzene	ND	mg/L	0.005	EPA 8260B/C 5030A	4/11/18	4/11/18	
Ethylbenzene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Methyl tert-Butyl Ether (MTBE)	ND	mg/L	0.005	EPA 8260B/C 5030A	4/11/18	4/11/18	
Naphthalene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Toluene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Xylenes, total	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Gasoline Range							
Gasoline Range Organics	ND	mg/L	0.125	EPA 8260B/5030A	4/11/18	4/11/18	
Diesel Range							
Diesel Range Organics	ND	mg/L	1.0	EPA 8015 C	4/11/18	4/11/18	

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Amy Findley
6949 S. High Tech Dr.
Midvale, UT 84047

PO#: **61167364 Task 2**
Receipt: **4/10/18 13:46 @ 11.3** °C
Date Reported: 4/12/2018
Project Name: **Penske (61167364 Task 2)**

Sample ID: **GW-MW5**

Matrix: **Water**
Lab ID: **18D0523-02**
Date Sampled: **4/10/18 11:00**
Sampled By: **Client**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
MBTEXn							
Benzene	ND	mg/L	0.005	EPA 8260B/C 5030A	4/11/18	4/11/18	
Ethylbenzene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Methyl tert-Butyl Ether (MTBE)	ND	mg/L	0.005	EPA 8260B/C 5030A	4/11/18	4/11/18	
Naphthalene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Toluene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Xylenes, total	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Gasoline Range							
Gasoline Range Organics	ND	mg/L	0.125	EPA 8260B/5030A	4/11/18	4/11/18	
Diesel Range							
Diesel Range Organics	ND	mg/L	1.0	EPA 8015 C	4/11/18	4/11/18	

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PO#: **61167364 Task 2**
Receipt: **4/10/18 13:46 @ 11.3** °C
Date Reported: 4/12/2018
Project Name: **Penske (61167364 Task 2)**

Sample ID: **GW-MW2**

Matrix: **Water**
Lab ID: **18D0523-03**
Date Sampled: **4/10/18 11:40**
Sampled By: **Client**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
MBTEXn							
Benzene	ND	mg/L	0.005	EPA 8260B/C 5030A	4/11/18	4/11/18	
Ethylbenzene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Methyl tert-Butyl Ether (MTBE)	ND	mg/L	0.005	EPA 8260B/C 5030A	4/11/18	4/11/18	
Naphthalene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Toluene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Xylenes, total	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Gasoline Range							
Gasoline Range Organics	ND	mg/L	0.125	EPA 8260B/5030A	4/11/18	4/11/18	
Diesel Range							
Diesel Range Organics	ND	mg/L	1.0	EPA 8015 C	4/11/18	4/11/18	

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PO#: **61167364 Task 2**
Receipt: **4/10/18 13:46 @ 11.3** °C
Date Reported: 4/12/2018
Project Name: **Penske (61167364 Task 2)**

Sample ID: **GW-MW4**

Matrix: **Water**
Lab ID: **18D0523-04**
Date Sampled: **4/10/18 13:05**
Sampled By: **Client**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
MBTEXn							
Benzene	ND	mg/L	0.005	EPA 8260B/C 5030A	4/11/18	4/11/18	
Ethylbenzene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Methyl tert-Butyl Ether (MTBE)	ND	mg/L	0.005	EPA 8260B/C 5030A	4/11/18	4/11/18	
Naphthalene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Toluene	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Xylenes, total	ND	mg/L	0.012	EPA 8260B/C 5030A	4/11/18	4/11/18	
Gasoline Range							
Gasoline Range Organics	ND	mg/L	0.125	EPA 8260B/5030A	4/11/18	4/11/18	
Diesel Range							
Diesel Range Organics	ND	mg/L	1.0	EPA 8015 C	4/11/18	4/11/18	

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PO#: **61167364 Task 2**
Receipt: **4/10/18 13:46 @ 11.3** °C
Date Reported: 4/12/2018
Project Name: **Penske (61167364 Task 2)**

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit (MRL).
1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million.
1 ug/L = one microgram per liter or 1 ug/kg = one microgram per kilogram = 1 part per billion.
1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.

CHEMTECH - FORD ANALYTICAL LABORATORY

CHAIN OF CUSTODY

COMPANY: Terracon Consultants
ADDRESS: 6949 High Tech Dr
CITY/STATE/ZIP: Midvale UT 84047
PHONE #: 801 913 8072 FAX:
CONTACT: Amy Findley PROJECT: Penske (61167364 Task 2)
EMAIL: amy.findley@terracon.com

BILLING ADDRESS: Same
BILLING CITY/STATE/ZIP: same
PURCHASE ORDER #: 61167364 Task 2
INVOICE EMAIL ADDRESS: amy.findley@terracon.com

CHEMTECH-FORD LABORATORIES

TURNAROUND REQUIRED:* 3day (need results on 4-13-18)

* Expedited turnaround subject to additional charge

3 day 4-13-18
RUSH
Friday
S-8194, ULINE, 800-295-5510

Lab Use Only	CLIENT SAMPLE INFORMATION					TESTS REQUESTED				Bacteria			
D0523	LOCATION / IDENTIFICATION	DATE	TIME	MATRIX	Field: Residual Chlorine	MBTEXN (8260)	GRO (8260)	DRO (8015)		Total Coliform + E. coli (Presence/Absence)	Total Coliform + E. coli (Enumerated)	HPC (Plate Count)	E. Coli Only
-01	1. GW-MW3	4-10-18	10:05	GW		X	X	X					
-02	2. GW-MW5	4-10-18	11:00	GW		X	X	X					
-03	3. GW-MW2	4-10-18	11:40	GW		X	X	X					
-04	4. GW-MW4	4-10-18	13:05	GW		X	X	X					
	5.												
	6.												
	7.												
	8.												
	9.												
	10.												

Sampled by: [print] | Sampled by: [signature]

ON ICE NOT ON ICE Temp (C°): 11.3

Samples received outside the EPA recommended temperature range of 0-6 C° may be rejected.

Special Instructions:
Hold samples for fractionation - we will instruct wether to proceed with fractionation on Friday 4-13. Call Amy w/ questions.

Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time
	4-10-18 @13:46	Annette Mills	4-10-18 13:46
Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time
Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time

CHEMTECH-FORD
9632 South 500 West
Sandy, UT 84070
801.262.7299 PHONE
866.792.0093 FAX
www.chemtechford.com

Payment Terms are net 30 days OAC. 1.5% interest charge per month (18% per annum). Client agress to pay collection costs and attorney's fees.

Work Order # D0523

CHEMTECH FORD LABORATORIES
Sample Receipt

CHEMTECH-FORD LABORATORIES

Delivery Method:

☐ UPS ☐ USPS
☐ FedEx ☐ Chemtech Courier
☒ Walk-in ☐ Customer Courier

Receiving Temperature 11.3 °C

Sample #	Container	Chemtech Lot # or Preservative	Number of Subsamples	Preserved by Client/Third Party	Preserved in Receiving Laboratory	Filtered in Field by Client	Misc Volume (oz/mL)	Comments
-01-04	W (1-4)	783						
	X (1-2)							

Sample Condition (check if *yes*)

- ☐ Custody Seals
- ☑ Containers Intact
- ☑ COC/Labels Agree
- ☑ Preservation Confirmed
- ☑ Received on Ice
- ☑ Correct Containers(s)
- ☑ Sufficent Sample Volume
- ☐ Headspace Present (VOC)
- ☐ Temperature Blank
- ☑ Received within Holding Time

Plastic Containers

A- Plastic Unpreserved
B- Miscellaneous Plastic
C- Cyanide Qt (NaOH)
E- Coliform/Ecoli/HPC
F- Sulfide Qt (Zn Acetate)
L- Mercury 1631
M- Metals Pint (HNO3)
N- Nutrient Pint (H2SO4)
R- Radiological (HNO3)
S- Sludge Cups/Tubs
Q- Plastic Bag

Glass Containers

D- 625 (Na2S2O3)
G- Glass Unpreserved
H- HAAs (NH4Cl)
J- 508/515/525 (Na2SO3)
K- 515.3 Herbicides
O- Oil & Grease (HCl)
P- Phenols (H2SO4)
T- TOC/TOX (H3PO4)
U- 531 (MCAA, Na2S2O3)
V- 524/THMs (Ascorbic Acid)
W- 8260 VOC (1:1 HCl)
X- Vial Unpreserved
Y- 624/504 (Na2S2O3)
Z- Miscellaneous Glass