EllisEnvironmental
a division of thevisiongroup inc.

June 2, 2017

Ms. Kim Shelley, Acting Director
Division of Water Quality
P.O. Box 144870
Salt Lake City, UT 84114-4870

Re: Summary and Phase 3 Contaminant Investigation; Transwest Pick-A-Part, 3586 North 2000 West, Farr West, UT 84404

To Ms. Shelley:

This is the third and final phase of site investigation for the groundwater contaminated by diesel fuel at Transwest Pick-A-Part in Farr West, Utah.

Discharger: Transwest Pick-A-Part
Company Contact: Mr. John Roberts
Company Address: 4651 North Digital Drive, Lehi, UT 84043
Telephone Number: 801.738.0200
Project Location: 3586 North 2000 West, Farr West, UT
Technical Contact: Mr. Mark T. Ellis, Ellis Environmental, 801.768.0675
DWQ Contact: Mr. Wynn John

Site History
Transwest Pick-A-Part is located at 3586 North 2000 West, Farr West, Utah; refer to the site maps in Appendix A. The current business operation is automotive salvage. This location has seen a history of automotive salvage since the 1960's. A crusher for compacting vehicles for recycle was located north of the north building, in a fenced compound. The crusher had not been used for a number of years. The crusher was powered by a hydraulic press, fueled with a diesel fired engine. The engine fuel was stored in an aboveground storage tank (AST) on the south side of the crusher. The crusher was removed from the property and the AST was moved northwest of the crusher pad. The AST is set upon a stand and has secondary containment.

A bona fide prospective buyer has made an offer to buy the Transwest Pick-A-Part property. In the course of environmental due diligence, an environmental consultant from Texas called Enercon collected soil and groundwater samples on the Transwest Pick-A-Part property, showing excessive Diesel Range Organics (DRO) in the groundwater down gradient of the crusher AST. Following up on the Enercon report, Ellis Environmental collected additional soil and groundwater samples for DRO. As a result of the later sampling, the owner of Transwest Pick-A-Part authorized a report of fuel released to waters of the State, sent to the Division of Water Quality on February 27, 2017.

A Contaminant Investigation and Corrective Action Plan was sent to Mr. Walt Baker, Director on

April 18, 2017. Soil borings GP1-6 generated 6 soil samples and 6 groundwater samples. The plan recommended Subsurface Metabolism Enhancement (SME, pat. # 6,464,005) to clean the contamination. The push probe data were suspect, so monitor wells were recommended to be installed to verify the groundwater quality.

Soil borings were advanced and sampled, plus groundwater monitor wells were installed, MW1-6 April 17 & 19, 2017. MW3&4 were located in the same cluster as the prior soil borings, GP1-6. Comparing the DRO values for the averages of cluster GP1-6 and MW3&4, the Geoprobe open boring groundwater data are 12 times the value as the DRO sampled in the monitor wells, substantiating the suspicion of the push probe groundwater data. An area of concern was found to be MW6 on the north side of the lot and down gradient of the diesel fuel aboveground storage tank (AST). A report of these findings was submitted to Mr. Baker, dated May 15, 2017. This report recommended additional monitor wells to identify an acceptable datum of DRO in MW6 and verify the extent of the DRO plume.

This report is the third phase of site investigation. This report isolates the DRO contamination to the area around MW6. DRO is not found elsewhere over the Tier 1 Screening Levels.

Phase 3 Site Investigation Objectives

The crusher area is segregated from the rest of the property with a fence around the crusher lot, referred to as a "lot". There are other fenced areas, but this lot is the area of interest for DRO contamination.

The May 15, 2017 or phase 2 investigation found that groundwater contamination thought to originate at the Crusher Pond was quite mild for DRO contamination. However, an area of high contamination was found at MW6, located near the north fence of this lot. Monitor wells were installed west, east and north of MW6. Refer to figures 6 for the soil boring locations and 7 for the monitor well locations. Soil sample bias from the soil borings keyed first to any elevation in the boring with apparent petroleum odor or staining. The saturated soil layer was another sampling bias.

Investigation Procedures

Soil and groundwater samples are collected, documented, preserved, transported and surrendered according to chain of custody procedures outlined in the Standard Operating Procedures (SOP) previously submitted and accepted by Division of Environmental Response & Remediation (DERR) of the Department of Environmental Quality (DEQ) and resubmitted to Division of Water Quality (DWQ) with this report in Appendix E.

Soil samples were obtained using a Geoprobe push probe. Refer to the attached Logs of Boring for the borings GP14-16 (Appendix C). Earlier reports include the Logs of Boring for GP1-13. Refer to Figure 6 for the location of the soil borings. Soil for sampling was biased towards stained or odoriferous soils or soils that were saturated. A photograph of each soil core was collected and may be viewed in Appendix B.

Groundwater samples were collected from the open boring in GP1-6. These samples were viewed

as unacceptable due to unusually high concentrations reported. All other groundwater samples were collected from monitor wells (MW1-9). Refer to Figure 7 of monitor wells, Appendix A.

Top of Casing measurements and surface measurements for calculating groundwater potentiometry were measured May 5 and 25, 2017. The table of groundwater measurements is found in the table in Appendix D. Figure 8 shows the map of groundwater potentiometry (Appendix A).

Phase 3 Soil Sample Findings

As with the previous 2 phases of this site investigation, soil was found not to be highly contaminated with petroleum. The detected DRO values of these 3 soil borings ranged from <26.4 to 34.5 mg/kg:

- Soil contamination as DRO was highest at the west and cross gradient boring, GP14 (MW7) at 34.5 mg/kg.
- Soil DRO at the east (GP15/MW8) and cross gradient to MW6 was measured at 30.6 mg/kg.
- Soil DRO was lowest to the north and down gradient on the adjoining lot (GP16 or MW9), measured at <26.4 mg/kg.

Analytical reports for the soil samples are found in Appendix D, as is the Sample Summary.

Phase 3 Groundwater Findings

Groundwater samples from the 3 monitor wells in this 3rd phase of site investigation showed no gasoline or diesel additives or markers as Methyl tert-Butyl Ether, Benzene, Toluene, Ethylbenzene, Total Xylenes, Naphthalene (MBTEXN). Concentrations of DRO are low:

- MW7 DRO measured at 0.83 mg/L;
- MW8 DRO measured at 0.812 mg/L;
- MW9DRO measured at 1.02 mg/L.

Analytical reports for the groundwater samples are found in Appendix D, as is the Sample Summary.

Gasoline Range Organics (GRO) was not measured since gasoline is not found on the property and is not a target contaminant. Likewise, the MTBEX that are markers for gasoline were nearly all non detectable or very low concentration and are not target contaminants on this property.

The MW8 DRO at 0.812 mg/L shows that the DRO measured at MW6 at 99.2 mg/L did not originated from the diesel fuel AST to the east. The contamination in MW6 is isolated and likely due to a local spill.

Static Water Level

The normal protocol for site investigation includes measuring top of casing and depth to static water level so that groundwater potentiometry may be calculated. Groundwater flow direction and gradient depends upon an assumption that the top of the well casing stays intact from one measuring event to another.

During site work on May 22, the flush mounted well vaults that had been set April 25 had been broken. A large front end loader had been working on some of the concrete slabs that had been part

of the crusher. The loader crushed the well vault concrete for MW2,3&4. It was feared that the Top of Casing measurements may have been affected, so the 9 monitor wells were re-surveyed on May 25. The top of casing did not appear to have been greatly disturbed. Static water level measurements are included in Appendix C.

As of May 25, 2017, groundwater is flowing to the northwest. Refer to Figure 8. Groundwater flows are subject to seasonal change with changing groundwater elevation, irrigation and precipitation events.

Summary of Site Investigation

The site investigation required installation of groundwater monitor wells. The topographical and groundwater gradients run to the northwest. Down gradient- cross gradient wells include MW1,7&9. Refer to Figure 8, the potentiometric map of groundwater. MW1 & 7 measure DRO at less than the Tier 1 Screening Level of 1 mg/L. DRO in MW9 is 1.02 mg/L, which is still very low compared to the value in MW6 at 99.2 mg/L. The interior wells also show DRO at relatively low values, less than the Tier 1 Screening Levels and Criteria.

All soil and groundwater samples were evaluated with a level 1 Quality Assurance/Quality Control assessment. All soil and groundwater samples were analyzed within the required holding time, 7 days for unfixed samples and 14 days for acid-fixed samples.

Cleanup Target Recommendations

The crusher pond is drying up and will not exist in a week or two. On May 25 of this year, the pond was about 2 inches deep. The diesel fuel in the pond is also volatilizing and is not considered significant for remediation.

Appropriate cleanup target for the DRO is the Tier 1 Screening Level of 10 mg/L, based upon the following considerations:

- DWQ biases towards federal Maximum Contaminant Level (MCL) for groundwater cleanup. However, there is no MCL for DRO. The groundwater gradient runs to the northwest, where the cross and down gradient wells are near or below the Initial Screening Level (ISL) for diesel fuel of 1 mg/L.

- The contaminated area has been used for vehicle salvage since sometime between 1963 and 1966; refer to the aerial photos of those years in Appendix A. This property is used for legitimate industrial and/or manufacturing use and has been so used for over 51 years. Transwest Pick-A-Part is currently zoned[1] M-1, Manufacturing by City of Farr West. The projected use of the Transwest Pick-A-Part property is by a company that will continue the current auto salvage industry.

- Down gradient of the contaminated lot is 2000 West Street and a truck salvage company, also zoned M-1. There are no adjoining, down gradient residential properties, which lie about 0.5 mile down gradient. The Willard Canal lies 0.46 mile down gradient, between the nearest down gradient residences and the release site.

- Soil at the Transwest Pick-A-Part is not contaminated above any current soil standard, either Initial Screening Levels (ISL) or Tier 1 Screening Level (Tier 1).

- Groundwater at MW6 (see map of wells in Appendix A) has been shown in the monitor well data to exceed the diesel range organics (DRO) Tier 1 maximum of 10 mg/L, with 166 mg/L. The down gradient monitor well is MW9, which measures DRO at 1.02 mg/L. The cross gradient wells to the west are MW1 and MW7 with DRO concentrations of <0.477 and 0.83 mg/L, respectively. The contamination is contained on the Transwest Pick-A-Part property.

- DRO is a biologically targeted energy source and does not persist in the soil or groundwater. Cleaning the source area to Tier 1 Screening Level initiates remediation that the down gradient biota will complete.

- Cleanup will be limited to the groundwater in the area around MW6 and can be accomplished quickly, putting the commerce of property transfer back on track for this property.

Mark T. Ellis | June 2, 2017

Mark T. Ellis, Consultant
Ellis Environmental

Date

David B. Johnson, PE, PLS, MBA

Appendices

A	Maps
B	Photographs
C	Logs of Boring
D	Laboratory Reports
E	Standard Operating Procedures
F	Statements of Qualifications

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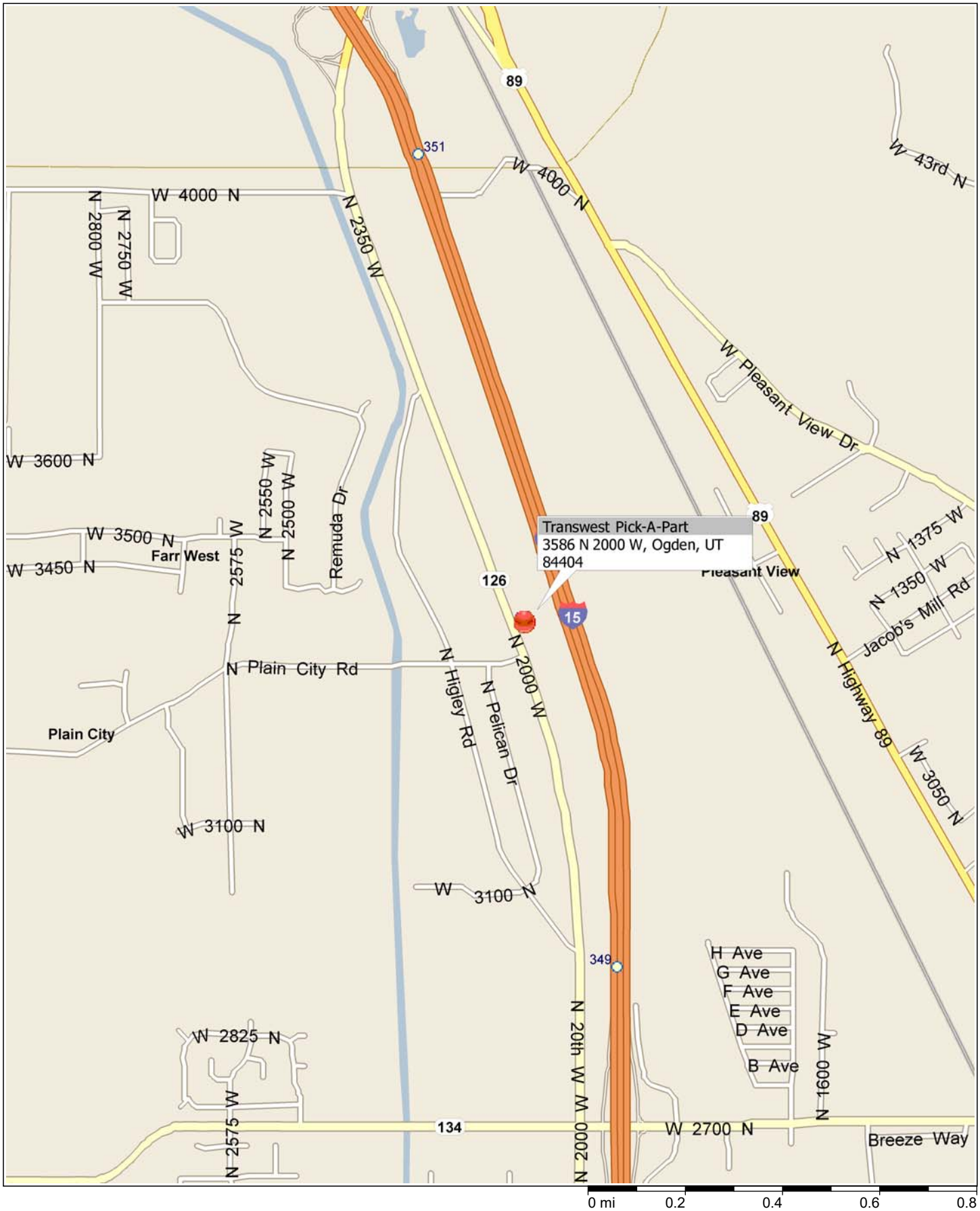
Endnotes

1. http://farrwestcity.net/docs/planning/genplan/Zoning-Map-July-2011.pdf

Appendix A

Maps

Utah, United States, North America



Ellis Environmental

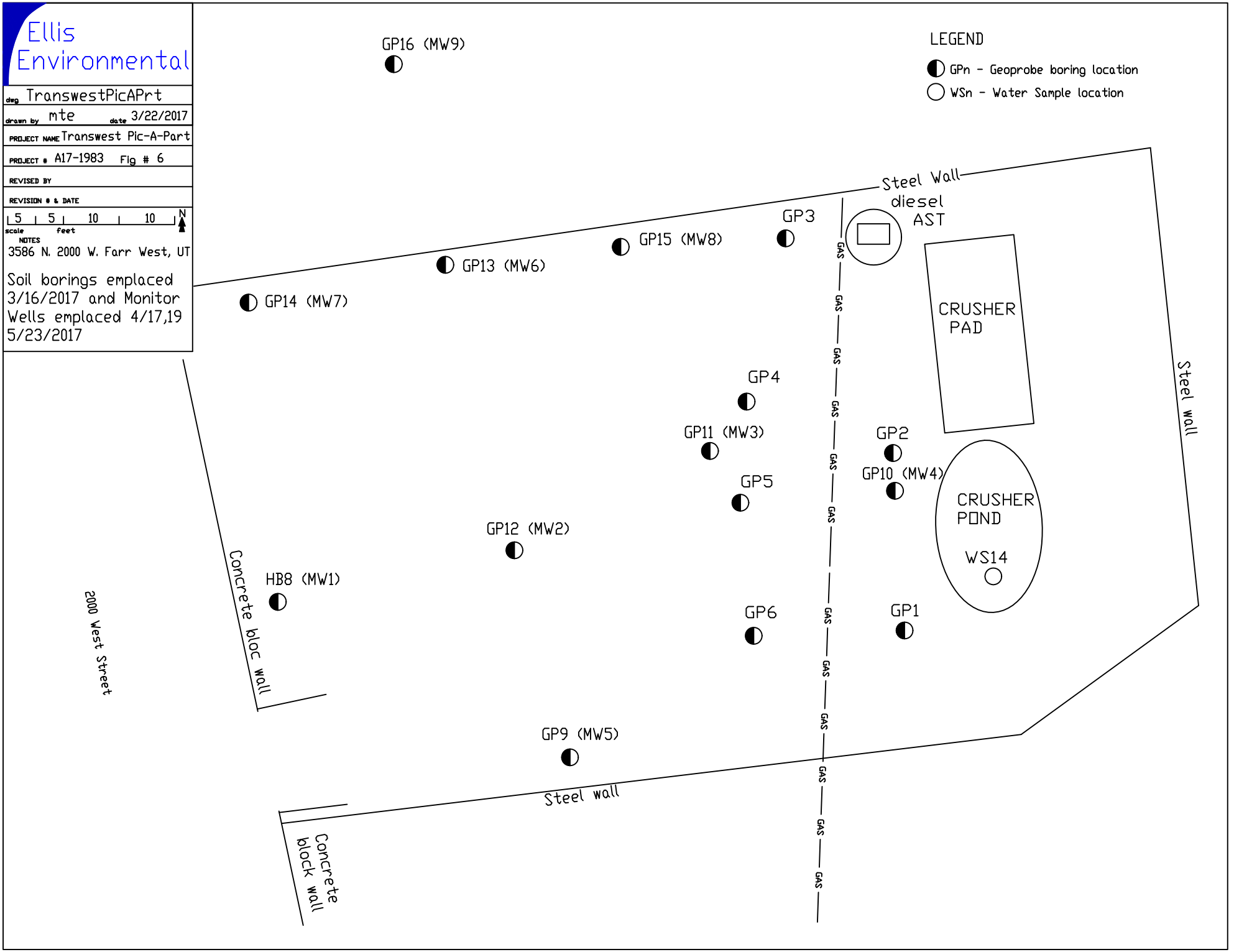
dwg	TranswestPicAPrt
drawn by	mte
date	3/22/2017
PROJECT NAME	Transwest Pic-A-Part
PROJECT #	A17-1983
Fig #	6
REVISED BY	
REVISION # & DATE	

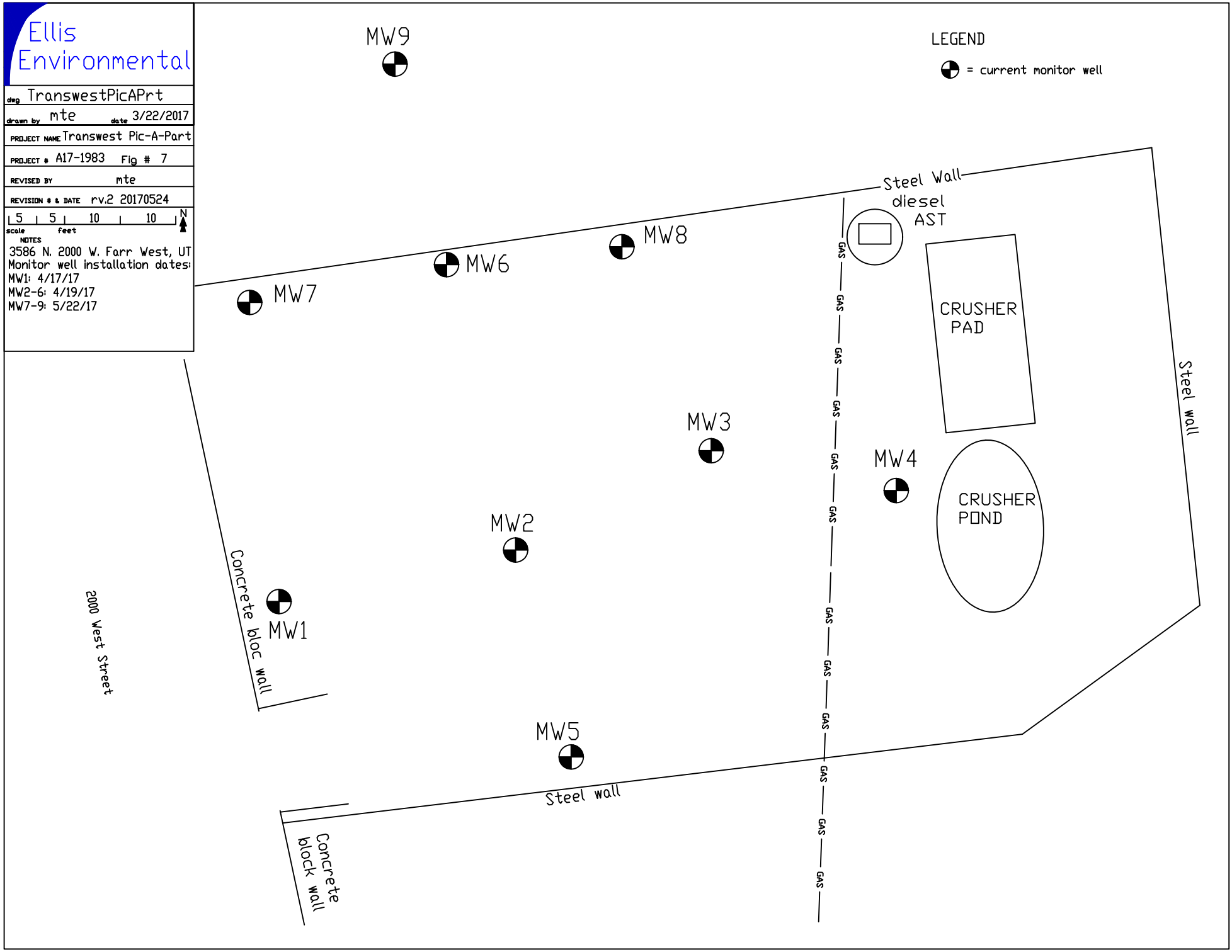
scale 5 | 5 | 10 | 10 feet N

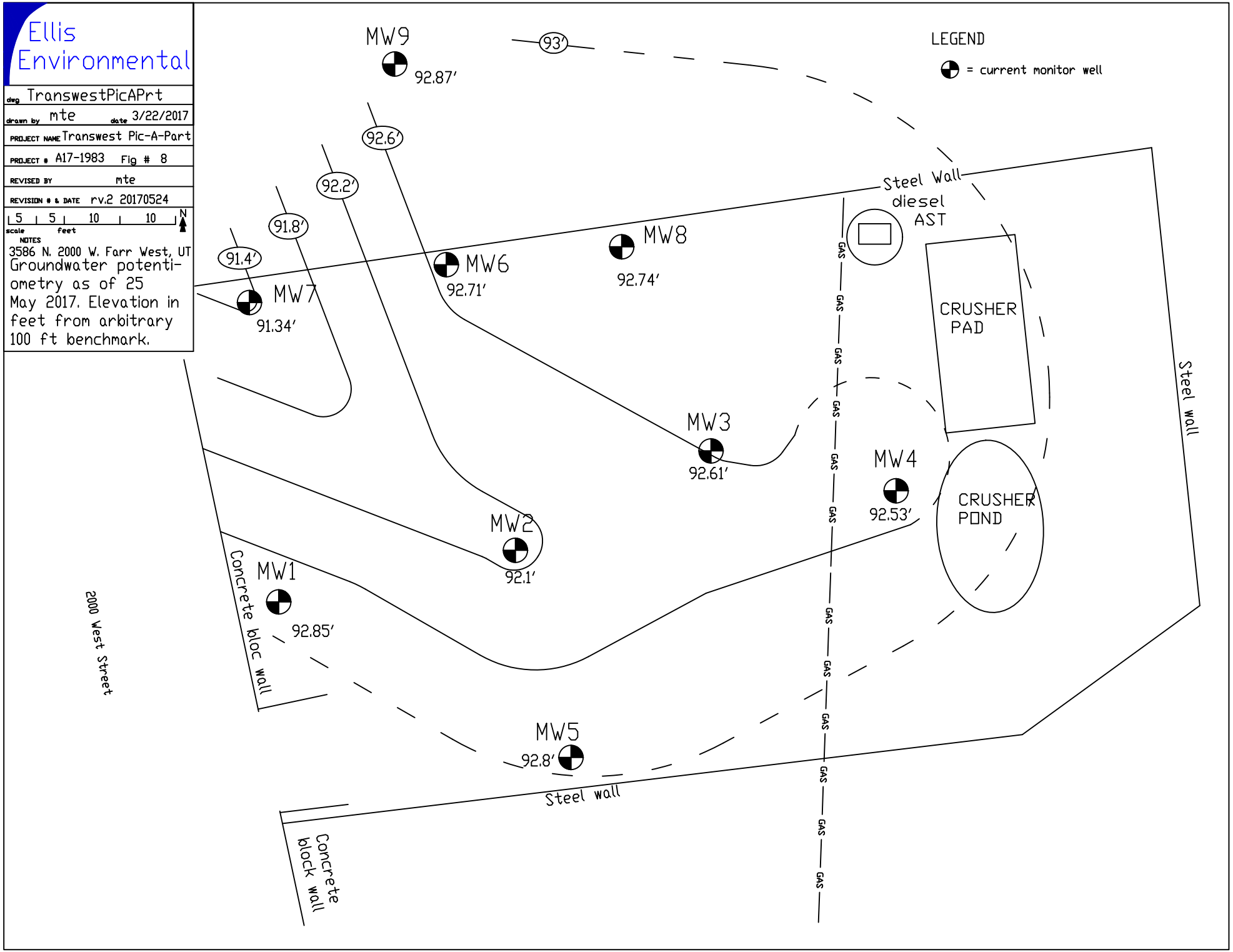
NOTES

3586 N. 2000 W. Farr West, UT

Soil borings emplaced 3/16/2017 and Monitor Wells emplaced 4/17,19 5/23/2017




Ellis Environmental
dwg TranswestPicAPrt
drawn by mte date 3/22/2017
PROJECT NAME Transwest Pic-A-Part
PROJECT # A17-1983 Fig # 7
REVISED BY mte
REVISION # & DATE rv.2 20170524
5 5 10 10 N
scale feet
NOTES
3586 N. 2000 W. Farr West, UT
Monitor well installation dates:
MW1: 4/17/17
MW2-6: 4/19/17
MW7-9: 5/22/17
LEGEND
= current monitor well
MW9
MW8
MW6
MW7
MW3
MW4
MW2
MW1
MW5
Steel Wall
diesel AST
CRUSHER PAD
CRUSHER POND
Steel wall
Steel wall
Concrete bloc wall
Concrete block wall
2000 West Street
GAS


Ellis Environmental
dwg TranswestPicAPrt
drawn by mte date 3/22/2017
PROJECT NAME Transwest Pic-A-Part
PROJECT # A17-1983 Fig # 8
REVISED BY mte
REVISION # & DATE rv.2 20170524
5 5 10 10
scale feet
N
NOTES
3586 N. 2000 W. Farr West, UT
Groundwater potentiometry as of 25 May 2017. Elevation in feet from arbitrary 100 ft benchmark.
LEGEND
= current monitor well
MW9
92.87'
93'
92.6'
92.2'
91.8'
91.4'
MW7
91.34'
MW6
92.71'
MW8
92.74'
MW3
92.61'
MW4
92.53'
MW2
92.1'
MW1
92.85'
MW5
92.8'
Steel Wall
diesel AST
CRUSHER PAD
CRUSHER POND
Steel wall
Steel wall
Concrete bloc wall
Concrete block wall
2000 West Street
GAS

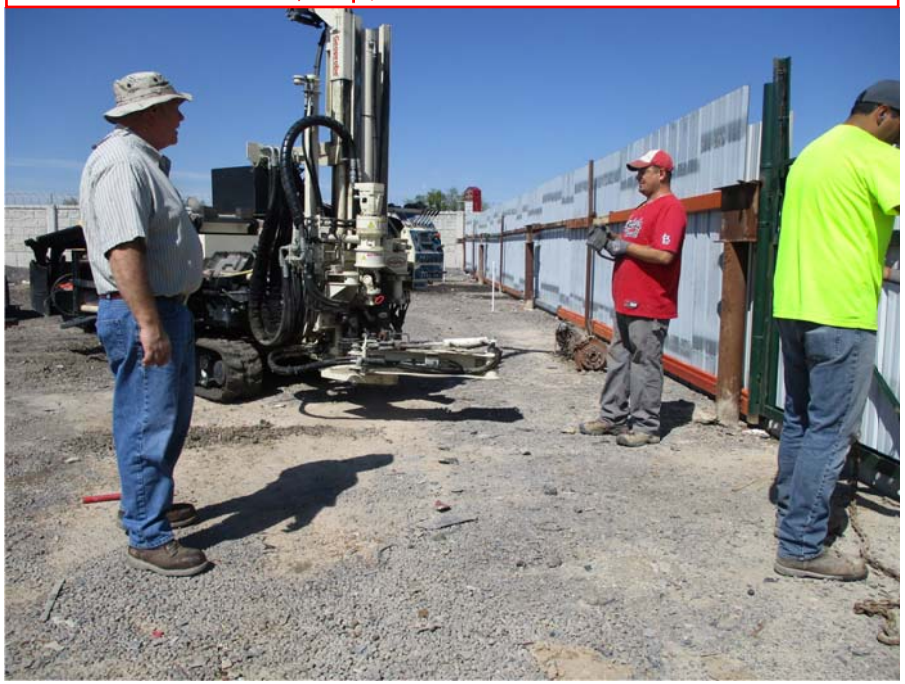
Transwest Pick-A-Part property with area of concern in red circle; aerial above is dated 1963 from Utah Geological Survey; Aerial below is from Weber Wiki dated 1966 .

Appendix B

Photographs

Bottom: GP14/MW7; Top: Crusher pond on east side

Bottom: GP15/MW8; Top, GP16/MW9



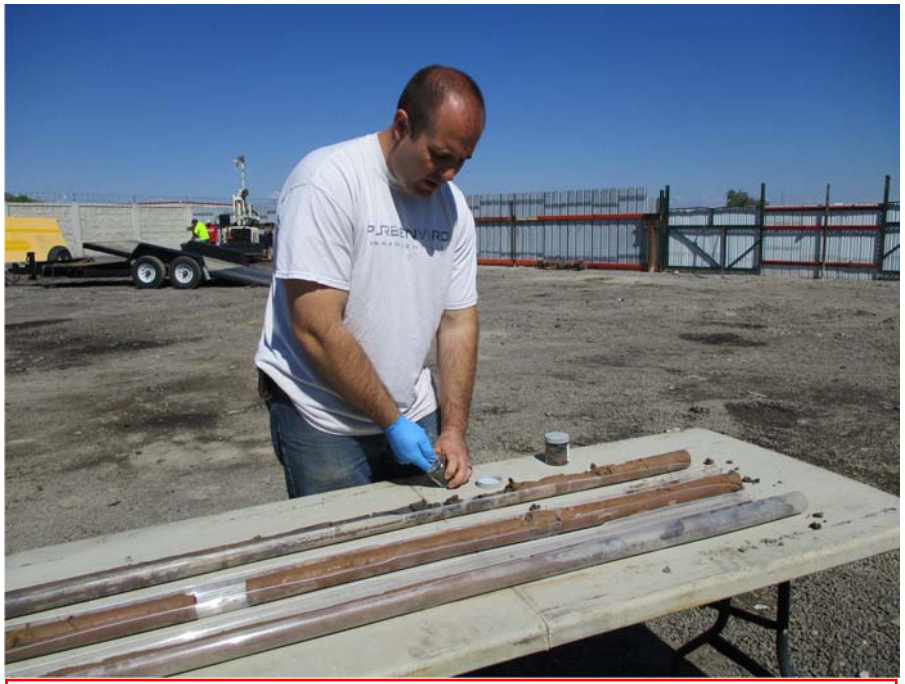
Damaged well vaults; Bottom, MW2; Top: MW3

Bottom, Damaged well vault MW4; Top, Resurvey of all wells

Bottom: Soil core GP14@0-5'; Top: Soil Core GP14@5-10'

Bottom: GP14@10-15'; Top, GP15@ 0-5'

Bottom: Soil core GP15@5-10'; Top: GP16@0-5'



Bottom: GP16@5-10'; Top, Joseph moves soil into sample container for chemical analysis

Appendix C

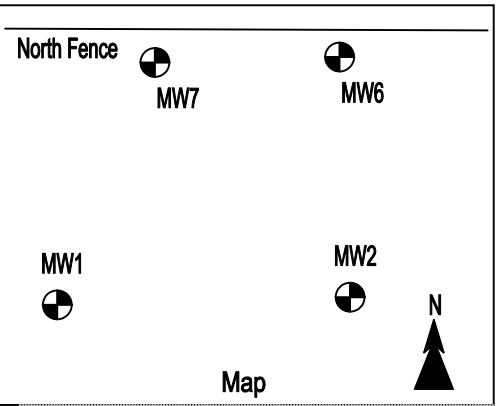
Logs of Boring

Soil Boring Log

Ellis Environmental

Project: Transwest Pick-A-Part
Location: 3586 N 2000 W, Farr West, UT
Project No: A17-1983
Client: Transwest Auto
Drilling Co: Direct Push Services
Boring method: Push Probe

Drill Machine: Geoprobe 7822 DT
Boring: GP14, MW7
Location: W of MW6 next to N fence
Date: 22 May 2017
Start time: 1018
Sampler: Joseph Ellis
Sampling method: Grab
Bore diameter: 2.25 Inch



Map

Depth/ft	Symbol	Description	Sample data	Well configuration	Well Data	Remarks
0		Gravel/Roadbase				
2		Red Silty Clay, non plastic		1 Inch blank	Bentonite seal	
3		Red Clay, plastic				Moist, not GW
10		Red Clay			Driller Sand	
11		Coarse Gravel				Stained, no odor
12		SS31@12-13'		0.01 Screen		
13		Gray Clay				Stain ends
17						End of Boring
20						

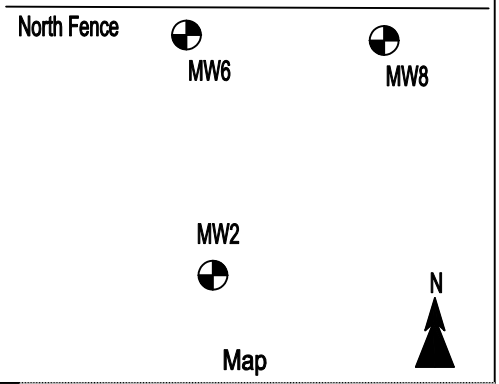
Ellis Environmental P.O. Box 215 Lehi, Utah 84043-0215 (801) 768-0675 Fax (801) 768-0677

Soil Boring Log

Ellis Environmental

Project: Transwest Pick-A-Part
Location: 3586 N 2000 W, Farr West, UT
Project No: A17-1983
Client: Transwest Auto
Drilling Co: Direct Push Services
Boring method: Push Probe

Drill Machine: Geoprobe 7822 DT
Boring: GP15, MW8
Location: E of MW6 next to N fence
Date: 22 May 2017
Start time: 1040
Sampler: Joseph Ellis
Sampling method: Grab
Bore diameter: 2.25 Inch



Depth/ft	Symbol	Description	Sample data	Well configuration	Well Data	Remarks
0		Gravel/Roadbase & Wood				
1						
2				1 Inch blank	Bentonite seal	
3		Red Silty Clay, crumbly				
		Red Clay, plastic				
4		Gray Clay				Stained at 4-5', no odor
5						
6						
7		Red Clay	SS32 @ 7-8'	0.01 Screen	Driller Sand	
8		Gray Sand				Saturated Sand Stained 8-9', no odor
9						
10		Gray Clay				End of Boring
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

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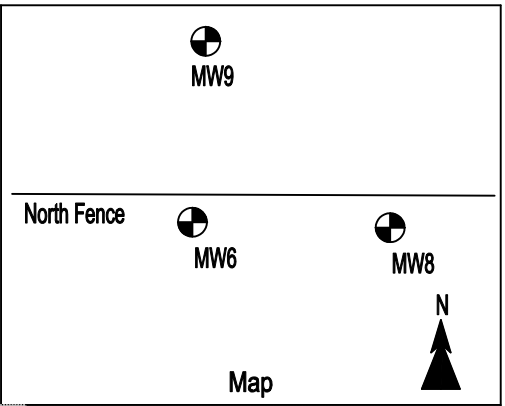
Soil Boring Log

Ellis Environmental

Project: Transwest Pick-A-Part
Location: 3586 N 2000 W, Farr West, UT
Project No: A17-1983
Client: Transwest Auto
Drilling Co: Direct Push Services
Boring method: Push Probe

Drill Machine: Geoprobe 7822 DT
Boring: GP16, MW9
Location: N of MW6 on adjoining lot
Date: 22 May 2017
Start time: 1115
Sampler: Joseph Ellis
Sampling method: Grab
Bore diameter: 2.25 Inch



Depth/ft	Symbol	Description	Sample data	Well configuration	Well Data	Remarks
0		Gravel/Roadbase		Well Vault	Concrete	
1						
2		Metal parts		1 Inch blank	Bentonite seal	
3						
4		Gray Clay				
5						
6		No retrieval			Driller Sand	
7		Red Clay		0.01 Screen		Saturated
		Fine Sand SS33 @ 7-8'				
8		Red Clay				
9						
10		Gray Clay				End of Boring
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Ellis Environmental P.O. Box 215 Lehi, Utah 84043-0215 (801) 768-0675 Fax (801) 768-0677

Zimbra **markellis@ellisenviro.com**

UTAH EMLCFM 2017/05/18 #00330 A71380346-00A NORM NEW LREQ

From : noreply@bluestakes.org Thu, May 18, 2017 09:25 AM

Subject : UTAH EMLCFM 2017/05/18 #00330 A71380346-00A NORM NEW LREQ

To : MARKELLIS@ellisenviro.com

EMLCFM 00330 UTAHa 05/18/17 09:25:30 A71380346-00A NORM NEW GRID

VISIT http://www.bluestakes.org/locate-requests-new BEFORE YOUR NEXT PROJECT!
DO IT YOURSELF ONLINE! – EXISTING TICKETS CAN BE UPDATED AND NEW TICKETS CAN
BE CREATED ONLINE QUICKLY AND EASILY, 24 HOURS PER DAY. NO NEED TO WAIT ON HOLD!

Thank you for contacting Blue Stakes of Utah Utility Notification Center, Inc.
regarding your upcoming digging project. Please review your locate request
ticket (below) and save it for your records.

If any of the information is incorrect, please contact Blue Stakes ASAP by
dialing 811 or 800-662-4111 and reference your ticket number. Agents are
available Monday - Friday, 7 AM - 5 PM, except on Holidays.

For information about the next steps in the process or other pertinent
details, please visit the Frequently Asked Questions section of our website:
http://www.bluestakes.org/faqs. Dig Safely!

Ticket : A71380346 Rev:00A Taken: 05/18/17 09:23
Old Tkt: A71380346 Taken: 05/18/17 09:23 Oper: _JODI
Submitted: 05/18/17 09:25 Oper: _JODI Chan:123
Legal date: 05/22/17 09:23
Good Thru : 06/01/17 09:23 Update By: 05/30/17 09:23

State: UT Cnty: WEBER Place: FARR WEST
Subdivision: TRANSWEST PICK-A-PART

Address : 3586
Street : N 2000 W

Side of St: Side of Lot: Digging in Rd: N
Svc Side of St: Depth:
Location: FROM THE STARTING POINT PLS STK 150 FT NORTH ALONG THE FENCE THAT
RUNS ALONG THE WEST SIDE OF THE PROPERTY WHILE STKG APPROX 170 FT EAST TO
ANOTHER FENCE FOR THIS STRETCH STKG EVERYTHING WITHIN.
:
Remarks : **THERE IS A MAP AVAILABLE UPON REQUEST.
FROM THE NORTHWEST CORNER OF THE MORE NORTHERN BUILDING AT THE GVN ADDRESS
TRAVEL WEST ALONG THE FENCE PASSING THE GATE THE FENCE ON THE WEST SIDE OF THE
PROPERTY THAT RUNS NORTH AND SOUTH. THEN TRAVEL NORTH ALONG THIS FENCE FOR
APPROX 150 FT TO ANOTHER FENCE THAT RUNS EAST AND WEST. WHERE THESE FENCES MEET
ON THE NORTH SIDE OF THE EAST TO WEST FENCE AND THE EAST SIDE OF THE NORTH TO
SOUTH FENCE IS THE STARTING POINT.
THERE IS OPEN ACCESS - AT THE MORE NORTHERN OFFICE THERE WILL SOMEONE THERE TO
OPEN THE GATE IF NEEDED.
:
Grids : 4119C11201A 4119C11201B 4119D11201A 4119D11201B

P&D: N Work type: SOIL SAMPLING
Ug/Oh/Both: U Expl/Blast: N Boring: N Railroad: U Emergency: N
Meet: N

Company : ELLIS ENVIRONMENTAL Phone: 801-768-0675
Co addr : PO BOX 215
City : LEHI State: UT Zip: 84043
Caller : MARK ELLIS Phone: 801-768-0675 Type: E
Contact : MARK ELLIS Phone: 801-360-8382
BestTime:
Email : MARKELLIS@ellisenviro.com

Members:

Code	Company Phone	Description
BVWTR	BONA VISTA WATER IMPROVEMENT DISTRICT 801-621-0474	CULINARY WATER
CWBRSW	CENTRAL WEBER SEWER 801-731-3011	SEWER
CTLUT01	CENTURYLINK STAKE CENTER 801-364-1063	FBR & PHN MRKD BY

FARRW	FARR WEST CITY 801-731-4187	SEWER & CULINARY WATER
LEVL3	LEVEL 3 COMMUNICATIONS 877-366-8344	FIBER OPTICS
PVWTR	PINEVIEW WATER SYSTEMS 801-622-4350	CULINARY WATER
PLEASA	PLEASANT VIEW CITY 801-827-0453	CULINARY WATER
QGCOCL	QUESTAR GAS COMPANY 406-728-9343	GAS MARKED BY ELM LOCATING
RMPOGD	ROCKY MOUNTAIN POWER - OGDEN 801-364-1063	ELECTRIC MRKD BY STAKE CENTER
SYRINGA	SYRINGA NETWORKS 801-637-4078	FIBER OPTICS & TELEPHONE
TESORO3	TESORO LOGISTICS PIPELINES LLC 801-556-2167	GAS & OIL TESORO
UDOTR1	UDOT REGION I 801-528-2540	FIBER OPTICS & TRAFFIC SIGNALS
UTOPIA	UTOPIA 801-364-1063	FIBER MARKED BY STAKE CENTER

Appendix D

Sampling Documents

Summary of Sampling									
Client	Transwest Pick-A-Part								
Location	3586 North 2000 West, Farr West, UT								
Units	Groundwater or Surface Water, mg/L								
Sample Location	Date	DRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	MtBE	GRO
2- GP1	3/16/2017	**29.8**	ns	ns	ns	ns	ns	ns	ns
5- GP2	3/16/2017	**166**	ns	ns	ns	ns	ns	ns	ns
7- GP3	3/16/2017	**24.2**	ns	ns	ns	ns	ns	ns	ns
9- GP4	3/16/2017	**2.02**	ns	ns	ns	ns	ns	ns	ns
11- GP5	3/16/2017	**106**	ns	ns	ns	ns	ns	ns	ns
13- GP6	3/16/2017	**32.6**	ns	ns	ns	ns	ns	ns	ns
14- Crusher Pond	3/16/2017	**603**	Surface Water		ns	ns	ns	ns	ns
MW1	4/25/2017	<0.477	<0.001	<0.002	<0.002	<0.002	<0.002	0.00231	<0.02
MW2	4/25/2017	**4.87**	0.00153	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02
MW3	4/25/2017	**1.03**	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02
MW4	4/25/2017	**8.74**	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02
MW5	4/25/2017	**2.71**	0.00249	0.0291	0.00398	0.0284	<0.002	<0.002	0.0679
MW6	4/25/2017	**99.2**	0.00126	0.00241	<0.002	0.00693	<0.002	<0.002	<0.02
MW7	5/23/2017	0.83	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	ns
MW8	5/23/2017	0.812	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	ns
MW9	5/23/2017	**1.02**	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	ns
Tier 1		**10**	**0.3**	**3**	**4**	**10**	**0.7**	**0.2**	**10**
ISL		**1**	**0.005**	**1**	**0.7**	**10**	**0.7**	**0.2**	**1**

NOTES: Unless specifically noted, the sample results are from groundwater monitor wells

Summary of Sampling										
Client	Transwest Pick-A-Part									
Location	3586 North 2000 West, Farr West, UT									
Units	Soil, mg/kg									
Sample Location	Date	Depth, ft bgs	DRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Napthalene	MtBE	GRO
1- GP1	3/16/2017	6-7	89.2	ns	ns	ns	ns	ns	ns	ns
3- GP2	3/16/2017	2-3	113	ns	ns	ns	ns	ns	ns	ns
4- GP2	3/16/2017	7-9	39.7	ns	ns	ns	ns	ns	ns	ns
6- GP3	3/16/2017	1-2	72.4	ns	ns	ns	ns	ns	ns	ns
8- GP4	3/16/2017	7-8	103	ns	ns	ns	ns	ns	ns	ns
10- GP5	3/16/2017	6-7	267	ns	ns	ns	ns	ns	ns	ns
12- GP6	3/16/2017	5-6	105	ns	ns	ns	ns	ns	ns	ns
1-HB8 (MW1)	4/17/2017	10	<25.7	<0.00312	<0.00624	<0.00624	<0.00624	<0.00624	<0.00624	<0.0624
1-GP9 (MW 5)	4/19/2017	7-8	123	<0.00317	0.0109	<0.00635	0.0229	<0.00635	<0.00635	<0.0635
2-GP10 (MW 4)	4/19/2017	7-8	<26.1	<0.00335	<0.00671	<0.00671	<0.00671	<0.00671	<0.00671	<0.00671
3-GP11 (MW 3)	4/19/2017	8-10	<25.0	<0.00306	<0.00612	<0.00612	<0.00612	<0.00612	<0.00612	<0.00612
4-GP12 (MW 2)	4/19/2017	7-9	<25.8	<0.00314	<0.00629	<0.00629	<0.00629	<0.00629	0.0195	<0.00629
5-GP13 (MW 6)	4/19/2017	9-10	<24.6	<0.00309	<0.00618	<0.00618	<0.00618	<0.00618	<0.00618	<0.00618
31-GP14 (MW7)	5/23/2017	12-13	34.5	<0.00292	<0.00584	<0.00584	<0.00584	<0.00584	<0.00584	ns
32-GP15 (MW8)	5/23/2017	7-8	30.6	<0.00316	<0.00632	<0.00632	<0.00632	<0.00632	<0.00632	ns
33-GP16 (MW9)	5/23/2017	7-8	<26.4	<0.00337	<0.00673	<0.00673	<0.00673	<0.00673	<0.00673	ns
Tier 1			**5000**	**0.9**	**25**	**23**	**142**	**51**	**0.3**	**1500**
ISL			**500**	**0.2**	**9**	**5**	**142**	**51**	**0.3**	**150**

American West
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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Mark Ellis
The Vision Group, Inc.
P.O. Box 215
Lehi, UT 84043
TEL: (801) 768-0675

RE: Transwest Pick-a-Part / 1983

Dear Mark Ellis: Lab Set ID: 1705487

American West Analytical Laboratories received sample(s) on 5/22/2017 for the analyses presented in the following report.

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, Wyoming, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

Approved by: Kyle F. Gross Digitally signed by Kyle F. Gross Date: 2017.05.24 11:55:44 -06'00'
Laboratory Director or designee

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705487-001B
Client Sample ID: #31 GP14 @ 12-13'
Collection Date: 5/22/2017 1035h
Received Date: 5/22/2017 1423h

Test Code: 8015-S-TPH-3546

Analytical Results TPH-DRO (C10-C28) by Method 8015D/3546

Analyzed: 5/23/2017 1347h **Extracted:** 5/23/2017 844h
Units: mg/kg-dry **Dilution Factor:** 1 **Method:** SW8015D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics (DRO) (C10-C28)	68476-34-6	24.0	**34.5**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	17.4	40.05	43.5	10-122	

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web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705487-002B
Client Sample ID: #32 GP15 @ 7-8'
Collection Date: 5/22/2017 1055h
Received Date: 5/22/2017 1423h

Test Code: 8015-S-TPH-3546

Analytical Results TPH-DRO (C10-C28) by Method 8015D/3546

Analyzed: 5/23/2017 1641h **Extracted:** 5/23/2017 844h
Units: mg/kg-dry **Dilution Factor:** 1 **Method:** SW8015D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics (DRO) (C10-C28)	68476-34-6	25.0	**30.6**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	20.2	41.67	48.6	10-122	

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705487-003B
Client Sample ID: #33 GP16 @ 7-8'
Collection Date: 5/22/2017 1125h
Received Date: 5/22/2017 1423h

Test Code: 8015-S-TPH-3546

Analytical Results TPH-DRO (C10-C28) by Method 8015D/3546

Analyzed: 5/23/2017 1701h **Extracted:** 5/23/2017 844h
Units: mg/kg-dry **Dilution Factor:** 1 **Method:** SW8015D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics (DRO) (C10-C28)	68476-34-6	26.4	< 26.4	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	23.4	43.99	53.3	10-122	

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705487-001A
Client Sample ID: #31 GP14 @ 12-13'
Collection Date: 5/22/2017 1035h
Received Date: 5/22/2017 1423h

Test Code: 8260-S-PPM

Analytical Results VOAs MBTEXN List by GC/MS Method 8260C

Analyzed: 5/23/2017 1425h
Units: mg/kg-dry **Dilution Factor:** 2.38 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00292	< 0.00292	
Ethylbenzene	100-41-4	0.00584	< 0.00584	
Methyl tert-butyl ether	1634-04-4	0.00584	< 0.00584	
Naphthalene	91-20-3	0.00584	< 0.00584	
Toluene	108-88-3	0.00584	< 0.00584	
Xylenes, Total	1330-20-7	0.00584	< 0.00584	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	0.162	0.1461	111	51-170	
Surr: 4-Bromofluorobenzene	460-00-4	0.142	0.1461	96.9	60-144	
Surr: Dibromofluoromethane	1868-53-7	0.135	0.1461	92.4	50-135	
Surr: Toluene-d8	2037-26-5	0.138	0.1461	94.8	50-138	

Sampling and analytical preparation performed by method 5030C modified for analysis of soil samples collected in 2 or 4 oz jars.

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705487-002A
Client Sample ID: #32 GP15 @ 7-8'
Collection Date: 5/22/2017 1055h
Received Date: 5/22/2017 1423h

Test Code: 8260-S-PPM

Analytical Results VOAs MBTEXN List by GC/MS Method 8260C

Analyzed: 5/23/2017 1445h
Units: mg/kg-dry **Dilution Factor:** 2.48 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00316	< 0.00316	
Ethylbenzene	100-41-4	0.00632	< 0.00632	
Methyl tert-butyl ether	1634-04-4	0.00632	< 0.00632	
Naphthalene	91-20-3	0.00632	< 0.00632	
Toluene	108-88-3	0.00632	< 0.00632	
Xylenes, Total	1330-20-7	0.00632	< 0.00632	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	0.184	0.1580	116	51-170	
Surr: 4-Bromofluorobenzene	460-00-4	0.160	0.1580	101	60-144	
Surr: Dibromofluoromethane	1868-53-7	0.151	0.1580	95.6	50-135	
Surr: Toluene-d8	2037-26-5	0.149	0.1580	94.1	50-138	

Sampling and analytical preparation performed by method 5030C modified for analysis of soil samples collected in 2 or 4 oz jars.

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705487-003A
Client Sample ID: #33 GP16 @ 7-8'
Collection Date: 5/22/2017 1125h
Received Date: 5/22/2017 1423h

Test Code: 8260-S-PPM

Analytical Results VOAs MBTEXN List by GC/MS Method 8260C

Analyzed: 5/23/2017 1506h
Units: mg/kg-dry **Dilution Factor:** 2.5 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00337	< 0.00337	
Ethylbenzene	100-41-4	0.00673	< 0.00673	
Methyl tert-butyl ether	1634-04-4	0.00673	< 0.00673	
Naphthalene	91-20-3	0.00673	< 0.00673	
Toluene	108-88-3	0.00673	< 0.00673	
Xylenes, Total	1330-20-7	0.00673	< 0.00673	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	0.192	0.1683	114	51-170	
Surr: 4-Bromofluorobenzene	460-00-4	0.179	0.1683	106	60-144	
Surr: Dibromofluoromethane	1868-53-7	0.164	0.1683	97.2	50-135	
Surr: Toluene-d8	2037-26-5	0.164	0.1683	97.2	50-138	

Sampling and analytical preparation performed by method 5030C modified for analysis of soil samples collected in 2 or 4 oz jars.

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

American West Analytical Laboratories

2 Day Rush

Rpt Emailed: P2

WORK ORDER Summary

Work Order: **1705487** Page 1 of 1

Client: The Vision Group, Inc. Due Date: 5/24/2017

Client ID: ELL110 **Contact:** Mark Ellis

Project: **Transwest Pick-a-Part / 1983** **QC Level:** I WO Type: Standard

Comments: 2 Day Rush;

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1705487-001A	**#31 GP14 @ 12-13'**	5/22/2017 1035h	5/22/2017 1423h	**8260-S-PPM**	Soil		Purge	1
				Test Group: 8260-S-MBTEXN; # of Analytes: 6 / # of Surr: 4				
1705487-001B				**3546-TPH-PR**			walkin-tPH -share	
				8015-S-TPH-3546			walkin-tPH -share	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST			walkin-tPH -share	
1705487-002A	**#32 GP15 @ 7-8'**	5/22/2017 1055h	5/22/2017 1423h	**8260-S-PPM**	Soil		Purge	1
				Test Group: 8260-S-MBTEXN; # of Analytes: 6 / # of Surr: 4				
1705487-002B				**3546-TPH-PR**			walkin-tPH -share	
				8015-S-TPH-3546			walkin-tPH -share	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST			walkin-tPH -share	
1705487-003A	**#33 GP16 @ 7-8'**	5/22/2017 1125h	5/22/2017 1423h	**8260-S-PPM**	Soil		Purge	1
				Test Group: 8260-S-MBTEXN; # of Analytes: 6 / # of Surr: 4				
1705487-003B				**3546-TPH-PR**			walkin-tPH -share	
				8015-S-TPH-3546			walkin-tPH -share	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST			walkin-tPH -share	

Printed: 5/23/2017 FOR LABORATORY USE ONLY [fill out on page 1]: %M ☐ RT ☐ CN ☐ TAT ☐ QC ☐ HOK_____ HOK_____ HOK_____ COC Emailed_____

American West Analytical Laboratories

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CHAIN OF CUSTODY

1705487

AWAL Lab Sample Set #

Page ____ of ____

All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

QC Level: (1) 2 2+ 3 3+

Turn Around Time: 1 (2) 3 4 5 Stnd

Unless other arrangements have been made, signed reports will be emailed by **5:00 pm** on the day they are due.

Due Date: 5/24

Client: Ellis Environmental

Address: 2610 W. 300 N.

City, State, Zip: Lehi, UT 84043

Contact: Mark Ellis

Phone #: 801-768-0675 Cell #:

E-mail: MarkEllis@EllisEnviro.com

Project Name: Transwest Pick-a-part

Project #: ~~7008.04~~ 1983

PO #: per Joseph

Sampler Name: Joseph Ellis

☐ Report down to the MDL
☐ Include EDD:
☐ Lab Filter for:
☐ Field Filtered For:

For Compliance With:
☐ NELAP
☐ RCRA
☐ CWA
☐ SDWA
☐ BLAP / A2LA
☐ NLLAP
☐ Non-Compliance
☐ Other:

	Sample ID:	Date Sampled	Time Sampled	# of Containers	Sample Matrix	DI20	MBTEXN	Known Hazards & Sample Comments
#31 1	~~#1~~ GP14 @ 12-13'	5-22-17	1035	2	S	X	X	
#32 2	~~#2~~ GP15 @ 7-8'	5-22-17	1055	2	S	X	X	
#33 3	~~#3~~ GP16 @ 7-8'	5-22-17	1125	2	S	X	X	
4	VNS 5/22/17							
5								
6								
7								
8								
9								
10								
11								
12								
13								

Laboratory Use Only

Samples Were:
1 Shipped or hand delivered
2 Ambient or Chilled on ice
3 Temperature 10.6 °C
4 Received Broken/Leaking (Improperly Sealed) Y (N)
5 Properly Preserved (Y) N Checked at bench
6 Received Within Holding Times (Y) N

COC Tape Was:
1 Present on Outer Package Y N (NA)
2 Unbroken on Outer Package Y N (NA)
3 Present on Sample Y N (NA)
4 Unbroken on Sample Y N (NA)

Discrepancies Between Sample Labels and COC Record? Y (N)

Relinquished by: Signature		Received by: Signature	
Print Name: Joseph H. Ellis	Date: 5-22-17 Time: 1423	Print Name: Elena Hayes	Date: 5/22/17 Time: 1423
Relinquished by: Signature		Received by: Signature	
Print Name:	Date: Time:	Print Name:	Date: Time:
Relinquished by: Signature		Received by: Signature	
Print Name:	Date: Time:	Print Name:	Date: Time:
Relinquished by: Signature		Received by: Signature	
Print Name:	Date: Time:	Print Name:	Date: Time:

Special Instructions:

changed names of samples per Mark Ellis. -VNS 5/22/17

American West
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Kyle F. Gross
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Jose Rocha
QA Officer

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P.O. Box 215
Lehi, UT 84043
TEL: (801) 768-0675

RE: Transwest Pick-a-Part / 1983

Dear Mark Ellis: Lab Set ID: 1705527

American West Analytical Laboratories received sample(s) on 5/23/2017 for the analyses presented in the following report.

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, Wyoming, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

Approved by: Kyle F. Gross Digitally signed by Kyle F. Gross Date: 2017.05.24 11:55:19 -06'00'

Laboratory Director or designee

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705527-001B
Client Sample ID: #34 MW7
Collection Date: 5/23/2017 1315h
Received Date: 5/23/2017 1505h

Test Code: 8015-W-TPH-3511

Analytical Results TPH-DRO (C10-C28) by GC/FID Method 8015D/3511

Analyzed: 5/23/2017 1818h **Extracted:** 5/23/2017 1537h
Units: mg/L **Dilution Factor:** 1 **Method:** SW8015D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics (DRO) (C10-C28)	68476-34-6	0.479	**0.830**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	0.537	1.096	49.0	27-182	

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web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705527-002B
Client Sample ID: #35 MW8
Collection Date: 5/23/2017 1320h
Received Date: 5/23/2017 1505h

Test Code: 8015-W-TPH-3511

Analytical Results TPH-DRO (C10-C28) by GC/FID Method 8015D/3511

Analyzed: 5/23/2017 1837h **Extracted:** 5/23/2017 1537h
Units: mg/L **Dilution Factor:** 1 **Method:** SW8015D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics (DRO) (C10-C28)	68476-34-6	0.483	**0.812**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	1.07	1.103	96.7	27-182	

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web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705527-003B
Client Sample ID: #36 MW9
Collection Date: 5/23/2017 1330h
Received Date: 5/23/2017 1505h

Test Code: 8015-W-TPH-3511

Analytical Results TPH-DRO (C10-C28) by GC/FID Method 8015D/3511

Analyzed: 5/23/2017 1857h **Extracted:** 5/23/2017 1537h
Units: mg/L **Dilution Factor:** 1 **Method:** SW8015D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics (DRO) (C10-C28)	68476-34-6	0.473	**1.02**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	0.966	1.082	89.3	27-182	

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705527-001A
Client Sample ID: #34 MW7
Collection Date: 5/23/2017 1315h
Received Date: 5/23/2017 1505h

Test Code: 8260-W-PPM

Analytical Results VOAs MBTEXN List by GC/MS Method 8260C/5030C

Analyzed: 5/23/2017 1830h
Units: mg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00100	< 0.00100	
Ethylbenzene	100-41-4	0.00200	< 0.00200	
Methyl tert-butyl ether	1634-04-4	0.00200	< 0.00200	
Naphthalene	91-20-3	0.00200	< 0.00200	
Toluene	108-88-3	0.00200	< 0.00200	
Xylenes, Total	1330-20-7	0.00200	< 0.00200	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	0.0519	0.05000	104	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	0.0487	0.05000	97.4	80-152	
Surr: Dibromofluoromethane	1868-53-7	0.0499	0.05000	99.8	70-130	
Surr: Toluene-d8	2037-26-5	0.0486	0.05000	97.3	60-115	

The pH of the sample was >2. Analysis was performed within the 7 day holding time.

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705527-002A
Client Sample ID: #35 MW8
Collection Date: 5/23/2017 1320h
Received Date: 5/23/2017 1505h

Test Code: 8260-W-PPM

Analytical Results VOAs MBTEXN List by GC/MS Method 8260C/5030C

Analyzed: 5/23/2017 1850h
Units: mg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00100	< 0.00100	
Ethylbenzene	100-41-4	0.00200	< 0.00200	
Methyl tert-butyl ether	1634-04-4	0.00200	< 0.00200	
Naphthalene	91-20-3	0.00200	< 0.00200	
Toluene	108-88-3	0.00200	< 0.00200	
Xylenes, Total	1330-20-7	0.00200	< 0.00200	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	0.0511	0.05000	102	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	0.0479	0.05000	95.9	80-152	
Surr: Dibromofluoromethane	1868-53-7	0.0499	0.05000	99.8	70-130	
Surr: Toluene-d8	2037-26-5	0.0481	0.05000	96.2	60-115	

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-a-Part / 1983
Lab Sample ID: 1705527-003A
Client Sample ID: #36 MW9
Collection Date: 5/23/2017 1330h
Received Date: 5/23/2017 1505h

Test Code: 8260-W-PPM

Analytical Results VOAs MBTEXN List by GC/MS Method 8260C/5030C

Analyzed: 5/23/2017 1910h
Units: mg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00100	< 0.00100	
Ethylbenzene	100-41-4	0.00200	< 0.00200	
Methyl tert-butyl ether	1634-04-4	0.00200	< 0.00200	
Naphthalene	91-20-3	0.00200	< 0.00200	
Toluene	108-88-3	0.00200	< 0.00200	
Xylenes, Total	1330-20-7	0.00200	< 0.00200	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	0.0512	0.05000	102	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	0.0484	0.05000	96.8	80-152	
Surr: Dibromofluoromethane	1868-53-7	0.0502	0.05000	100	70-130	
Surr: Toluene-d8	2037-26-5	0.0489	0.05000	97.9	60-115	

The pH of the sample was >2. Analysis was performed within the 7 day holding time.

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Jose Rocha
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American West Analytical Laboratories

Next Day Rush

Rpt Emailed:

P2

WORK ORDER Summary

Work Order: **1705527** Page 1 of 1

Client: The Vision Group, Inc.

Due Date: 5/24/2017

Client ID: ELL110 **Contact:** Mark Ellis

Project: **Transwest Pick-a-Part / 1983** **QC Level:** I WO Type: Standard

Comments: Next Day Rush;

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1705527-001A	**#34 MW7**	5/23/2017 1315h	5/23/2017 1505h	**8260-W-PPM**	Aqueous		Purge	2
				Test Group: 8260-W-MBTEXN; # of Analytes: 6 / # of Surr: 4				
1705527-001B				**3511-TPH-PR**			Walkin-TPH (Vials)	1
				8015-W-TPH-3511			Walkin-TPH (Vials)	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1705527-002A	**#35 MW8**	5/23/2017 1320h	5/23/2017 1505h	**8260-W-PPM**	Aqueous		Purge	2
				Test Group: 8260-W-MBTEXN; # of Analytes: 6 / # of Surr: 4				
1705527-002B				**3511-TPH-PR**			Walkin-TPH (Vials)	1
				8015-W-TPH-3511			Walkin-TPH (Vials)	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1705527-003A	**#36 MW9**	5/23/2017 1330h	5/23/2017 1505h	**8260-W-PPM**	Aqueous		Purge	2
				Test Group: 8260-W-MBTEXN; # of Analytes: 6 / # of Surr: 4				
1705527-003B				**3511-TPH-PR**			Walkin-TPH (Vials)	1
				8015-W-TPH-3511			Walkin-TPH (Vials)	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				

Printed: 5/23/2017 FOR LABORATORY USE ONLY [fill out on page 1]: %M ☐ RT ☐ CN ☐ TAT ☐ QC ☐ HOK_____ HOK_____ HOK_____ COC Emailed_____

American West
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CHAIN OF CUSTODY

1705527
AWAL Lab Sample Set #

Page ____ of ____

All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

QC Level: 1 2 2+ 3 3+

Turn Around Time: (1) 2 3 4 5 Stnd

Unless other arrangements have been made, signed reports will be emailed by **5:00 pm** on the day they are due.

Due Date: 5/24

Client: Ellis Environmental
Address: 2610 W. 300 N.
City, State, Zip: Lehi, UT 84043
Contact: Mark Ellis
Phone #: 801-768-0675 Cell #:
E-mail: MarkEllis@EllisEnviro.com
Project Name: Transwest Pick-a-part
Project #: 1983
PO #:
Sampler Name: Joseph Ellis

	Sample ID:	Date Sampled	Time Sampled	# of Containers	Sample Matrix	DRO	MBTEX									Known Hazards & Sample Comments
1	#34 MW 7	5-23-17	1315	3	W	X	X									
2	#35 MW 8	5-23-17	1320	3	W	X	X									
3	#36 MW 9	5-23-17	1330	3	W	X	X									
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																

- ☐ Report down to the MDL
- ☐ Include EDD:
- ☐ Lab Filter for:
- ☐ Field Filtered For:

For Compliance With:
- ☐ NELAP
- ☐ RCRA
- ☐ CWA
- ☐ SDWA
- ☐ ELAP / A2LA
- ☐ NLLAP
- ☐ Non-Compliance
- ☐ Other:

Laboratory Use Only

Samples Were:
1 Shipped or hand delivered
2 Ambient or Chilled
3 Temperature 14.3 °C
4 Received Broken/Leaking (Improperly Sealed) Y (N)
5 Properly Preserved (Y) N Checked at bench
6 Received Within Holding Times (Y) N

COC Tape Was:
1 Present on Outer Package Y N (NA)
2 Unbroken on Outer Package Y N (NA)
3 Present on Sample Y N (NA)
4 Unbroken on Sample Y N (NA)

Discrepancies Between Sample Labels and COC Record? Y (N)

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Signature:	5-23-17		Signature:		
Print Name: Joseph H. Ellis		1505	Print Name: Elaine Hayes	5/23/17	1505
Relinquished by: Signature	Date:	Time:	Received by: Signature	Date:	Time:
Print Name:			Print Name:		
Relinquished by: Signature	Date:	Time:	Received by: Signature	Date:	Time:
Print Name:			Print Name:		
Relinquished by: Signature	Date:	Time:	Received by: Signature	Date:	Time:
Print Name:			Print Name:		

Special Instructions:

Static Water Level				
Client	Transwest Pick-A-Part			
Address	3586 N 2000 W, Farr West, UT 84404			
Benchmark	Arbitrary 100'			
Project #	A17-1983			
Well	Top of Casing	Depth to Water, ft	Head, ft	Date
MW1	3.14	3.73	93.13	5/5/2017
MW2	5.57	0.5	93.93	5/5/2017
MW3	5.25	2	92.75	5/5/2017
MW4	4.67	2.33	93	5/5/2017
MW5	2.27	3.17	94.56	5/5/2017
MW6	2.19	3.15	94.66	5/5/2017
MW7	2.96	6.71	90.33	5/22/2017
MW8	2.71	4.49	92.8	5/22/2017
MW9	5.59	2.22	92.19	5/22/2017
Resurvey following well vault damage to MW2,3&4				
Well	Top of Casing	Depth to Water, ft	Head, ft	Date
MW1	3.47	3.68	92.85	5/25/2017
MW2	5.9	2	92.1	5/25/2017
MW3	5.57	1.82	92.61	5/25/2017
MW4	4.99	2.48	92.53	5/25/2017
MW5	2.51	4.69	92.8	5/25/2017
MW6	2.5	4.79	92.71	5/25/2017
MW7	3.27	5.39	91.34	5/25/2017
MW8	3.03	4.23	92.74	5/25/2017
MW9	5.91	1.22	92.87	5/25/2017

ELLIS ENVIRONMENTAL

WELL SAMPLING RECORD

Site Name Transwest pick a part

Date/Time of sampling 4-25-17

Sampler(s) Joseph Ellis

Well number/id	MW 1	MW5	MW6
Lock condition	None	None	None
VOC measurement in casing			
O_2 in casing			
Water measurement device	Heron	Heron	Heron
Depth to static water level	3.73'	3.17'	3.15'
Depth to well bottom	11.61	12.68'	12.60'
Apparent siltation	minimal	minimal	minimal
Free product/thickness	None	None	None
Method of measurement			
Sampling of product			
Dissolved Oxygen, mg/L			
pH			
Eh, mv			
Temperature, °C			
Purging procedure	peristaltic	Peristaltic	Peristaltic
Disposal of purged water	on-site	on-site	on-site
Water sampling equipment	Peristaltic	Peristaltic	Peristaltic
Type of analyses			
Dedicated or decontaminated	Dedicated	Dedicated	Dedicated

Comments MW1 & MW5 are very fast rechargers

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ELLIS ENVIRONMENTAL

WELL SAMPLING RECORD

Site Name Transwest Pick-a-part

Date/Time of sampling 4-25-17

Sampler(s) Joseph Ellis

Well number/id	MW 4	MW 3	MW 2
Lock condition	None	None	None
VOC measurement in casing			
O_2 in casing			
Water measurement device	Heron	Heron	Heron
Depth to static water level	2.33'	2.00'	6"
Depth to well bottom	9.60'	9.65'	9.17'
Apparent siltation	Minimal	Minimal	Minimal
Free product/thickness	None	None	None
Method of measurement			
Sampling of product			
Dissolved Oxygen, mg/L			
pH			
Eh, mv			
Temperature, °C			
Conductivity, µmhos/cm^3			
Purging procedure	Peristaltic	Peristaltic	Peristaltic
Conductivity Stabilized?			
Disposal of purged water	On-site	On-site	On-site
Water sampling equipment	Peristaltic	Peristaltic	Peristaltic
Type of analyses			
Dedicated or decontaminated	Dedicated	Dedicated	Dedicated

Comments MW 2 - Very slow recharger MW 2 & MW 3 - water in well cover. Recharged quickly after drying out. Put a coupler on MW 3 to put above water recharge line.

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ELLIS ENVIRONMENTAL

WELL SAMPLING RECORD

Site Name Transwest Pick-a-part

Date/Time of sampling 5-23-17

Sampler(s) Joseph Ellis

Well number/id	MW7	MW8	MW9
Lock condition	None	None	None
VOC measurement in casing			
O_2 in casing			
Water measurement device	Heron	Heron	Heron
Depth to static water level	6.71'	4.49'	2.22'
Depth to well bottom	18.90'	12.62'	9.48'
Apparent siltation	Yes	Minimal	Minimal
Free product/thickness	None	None	None
Method of measurement			
Sampling of product			
Dissolved Oxygen, mg/L			
pH			
Eh, mv			
Temperature, °C			
Conductivity, µmhos/cm^3			
Purging procedure	Peristaltic	Peristaltic	Peristaltic
Conductivity Stabilized?			
Disposal of purged water	On-site	On-site	On-site
Water sampling equipment	Peristaltic	Peristaltic	Peristaltic
Type of analyses			
Dedicated or decontaminated	Dedicated	Dedicated	Dedicated

Comments

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Appendix E

Standard Operating Procedures

ELLIS ENVIRONMENTAL
SAMPLING METHODOLOGIES

Reference Guide

1 Sampling Objectives

1.1 Sampling methodologies are a guideline to certified and/or trained samplers. The guidelines are to promote the consistency of collecting samples and to improve the accuracy and reliability of sample results. No methodology is intended to replace professional judgement, especially in field conditions which are not standard conditions or where circumstances arise which are not anticipated by the methodology. In cases where the methodology has not been followed, a written explanation of the method used and the rationale for using non standard methodologies will be made.

2 Soil Sampling Methodology

2.1 Identify the appropriate sampling locations. Secure all of the appropriate site access permission, either through a site access agreement, a contract with the property owner or through a court order.

2.2 Carry the certification card if sampling is done by a program requiring certification. Carry business cards for identification. In remote or secured locations, notify local health department or public safety officials of the sampling exercise.

2.3 Sampling of soils must include the objective of maintaining the accuracy and reliability of the collected sample. Each sample container is clearly marked with an indelible ink pen prior to filling the container with soil. Samples are placed into sterilized, glass containers and sealed with either aluminum or Teflon® lid seals. Soil is placed into the container by hand, protected with a disposable latex, nitrile or vinyl glove. The soil is packed into the container and leveled at the neck of the container. No headspace is permitted at the mouth of the container if samples are to be analyzed for volatile chemicals. Voids within the container are to be minimized. Avoid including large gravels, rocks or other media which cannot be chemically analyzed. Clean off the threads of the container to prevent air leakage into or out of the sample container.

2.4 Identification of the project samples is written on the chain of custody form and on the sample containers. The identification information between the chain of custody and the sample container label needs to be identical.

2.4.1 Date and time of the collected sample.

2.4.2 The chronological order of the collected samples.

2.4.3 Description of the sampling location.

2.4.4 A map showing the location of each sample must be included with the report that documents the sampling event.

2.5 Each collected sample is placed on ice in a cooler and maintained at 4ºC or less. Do not let the soil samples freeze or they may burst the container. According to proper chain-of-custody procedures, the samples are to be kept either in sight or in the possession of the sampler. The cooler may be kept in a locked, secured location, such as a locked vehicle until the samples are surrendered

to the laboratory. Collect a copy of the chain-of-custody form from the laboratory for a reference document until the laboratory reports are received.

3 Drilling for samples

3.1 Subsurface samples can be collected through excavating or drilling. Notify the local buried utility marking service at least two full working days in advance of any drilling or excavating to mark the buried utilities. In the event that the local buried utility marking service will not mark all of the requested utilities, private utility locators may be subcontracted to find and mark buried utilities.

3.2 Hollow Stem Auger

3.2.1 When drilling with a hollow stem auger, auger flights are to be clean, unbroken portions which can be connected in five foot segments. When augering into the ground, a project geologist or logging technician compiles a log of the soil types, as soils are brought to the surface by the auger. The geologic, or drilling log should record all relevant data for the documentation of the soil types, drilling conditions, vapor concentrations encountered during drilling and sampling depths.

3.2.2 Subsurface samples collected through drilling are preferably collected with a split tube sampler. If samples must be collected from the auger flights, notation of how the samples were collected are to be included on the drill log. When using a hollow stem auger, a split tube sampler is sent down the center of the auger to the desired sampling depth at the bottom of the auger. A 130 pound hammer, operated by a catshead is used to drive the sampler into the ground. The hammer blows are counted as the sampler is driven into the soil. Hammer blows are recorded on the drilling log. The split tube is driven 18 to 24 inches into the soil and then extracted from the auger stem.

3.2.3 Two methods are used to retrieve the soil sample from the split tube sampler. In the first, the sample is recovered from the split tube sampler with a gloved hand and transferred to a collection jar. The soil transfer must take place as rapidly as possible to avoid the loss of volatile organic chemicals which may be in the soil. The soil is packed into the sample container and leveled at the mouth of the container. No headspace is permitted at the mouth of the container when volatile chemicals are to analyzed. Voids within the container are minimized.

3.2.3.1 For the second method, which further minimizes the atmospheric exposure of soil samples, brass liners may be placed inside the split tube sampler. The liners vary in length, but each liner should contain sufficient sample material to be capped for analysis. Unfilled liners may be decontaminated and reused. The end of each liner should be covered with either aluminum foil or Teflon sheeting, then capped with a plastic end cap. The plastic end caps may be secured to the liner with tape.

3.2.4 No headspace is permitted at the mouth of the container intended for volatile chemical analysis. Voids within the container are to be minimized. Each sample container should be labeled and marked for the following information on each container.

3.2.5 Identification of the project samples is written on the chain of custody form and on the

sample containers. The identification information between the chain of custody and the sample container label needs to be identical, including the following.

3.2.5.1 Date and time of the collected sample.

3.2.5.2 The chronological order of the collected samples.

3.2.5.3 Description of the sampling location.

3.2.6 A map showing the location of each sample must be included with the report that documents the sampling event.

3.2.7 Each collected sample is placed on ice in a cooler and maintained at 4ºC or less. Do not let the soil samples freeze or they may burst the container. According to proper chain-of-custody procedures, the samples are to be kept either in sight or in the possession of the sampler. The cooler may be kept in a locked, secured location, such as a locked vehicle until the samples are surrendered to the laboratory. Collect a copy of the chain-of-custody form from the laboratory for a reference document until the laboratory reports are received.

3.3 ODEX

3.3.1 In particularly rocky or cobbly soils, an ODEX drill is used in place of the hollow stem auger. The ODEX is a modified air rotary drilling method, which uses compressed air to blow drill cuttings out of the borehole. Since compressed air is laden with lubricating oils, care is taken with the collection of the sample from the split tube sampler, to avoid collecting soil which may have become contaminated by the lubricants. Teflon® lubricants are available which seem to eliminate the bias introduced from petroleum based lubricants in compressed air streams. The ODEX uses a percussion shoe to break apart the earth, while the compressed air blows the soil out of the borehole. This method of drilling makes logging the well for soil types more difficult, but the record is still maintained for documentation purposes.

3.3.2 When sampling depth has been reached, the split tube sampler is sent down the ODEX casing to the sampling depth and the hammer blows are counted as the sampler is driven into the soil. Hammer blows are recorded on the drilling log. The split tube is driven 18-24 inches into the soil and then extracted from the casing. In the event that the split tube sampler refuses due to the hardness of the soil, cuttings may be collected for analysis. The use of cuttings in sample analysis must be clearly identified as to depth of the drilling shoe, air flow of the compressor and the amount of lubricating oil being consumed by the compressor.

3.3.3 Two methods are used to retrieve the soil sample from the split tube sampler. In the first, the sample is recovered from the split tube sampler with a gloved hand and transferred to a collection jar. The soil transfer must take place as rapidly as possible to avoid the loss of volatile organic chemicals which may be in the soil. The soil is packed into the sample container and leveled at the mouth of the container. No headspace is permitted at the mouth of the container when volatile chemicals are to be analyzed. Voids within the container are to be minimized.

3.3.3.1 For the second method, which further minimizes the atmospheric exposure of soil samples, brass liners may be placed inside the split tube sampler. The liners vary in length, but each liner should contain sufficient sample material to be capped for analysis. Unfilled liners may be decontaminated and reused. The end of each liner should be covered with either aluminum foil or Teflon sheeting, then capped with a plastic end cap. The plastic end caps may be secured to the liner with tape.

3.3.4 No headspace is permitted at the mouth of the container when volatile chemicals are to be analyzed. Voids within the container are to be minimized. Each liner should be labeled and marked for the following information on each container.

3.3.5 Identification of the project samples is written on the chain of custody form and on the sample containers. The identification information between the chain of custody and the sample container label needs to be identical, including the following.

3.3.5.1 Date and time of the collected sample.

3.3.5.2 The chronological order of the collected samples.

3.3.5.3 Description of the sampling location.

3.3.6 A map showing the location of each sample must be included with the report that documents the sampling event.

3.3.7 Each collected sample is placed on ice in a cooler and maintained at 4^{o}C or less. Do not let the soil samples freeze or they may burst the container. According to proper chain-of-custody procedures, the samples are to be kept either in sight or in the possession of the sampler. The cooler may be kept in a locked, secured location, such as a locked vehicle until the samples are surrendered to the laboratory. Collect a copy of the chain-of-custody form from the laboratory for a reference document until the laboratory reports are received.

3.4 Push Probe

3.4.1 Soil samples may be collected with push probes. Using this method, a hollow tube is pushed into the soil with a hydraulic ram/hammer drill. The soil is collected inside a Teflon sampling tube.

3.4.2 Two methods are used to retrieve the soil sample from the sampling tube. In the first, the soil may be extruded from the sampling tube or the sampling tube can be cut to remove unfilled liner. The sample is recovered from the sampling tube with a gloved hand and transferred to a collection jar. The soil transfer must take place as rapidly as possible to avoid the loss of volatile organic chemicals which may be in the soil. The soil is packed into the sample container and leveled at the mouth of the container. No headspace is permitted at the mouth of the container when volatile chemicals are to be analyzed. Voids within the container are to be minimized.

3.4.3 For the second method, which further minimizes the atmospheric exposure of soil samples, the sampling tubes may be cut to length that assures that there is no head space in the sampling tube. The end of each sampling tube should be covered with either aluminum foil or Teflon sheeting, then sealed with a plastic end cap. The plastic end caps may be secured to the sampling tube with tape.

3.4.4 No headspace is permitted at the mouth of the container when volatile chemicals are to be analyzed. Voids within the container are to be minimized. Each sampling tube should be labeled and marked for the following information on each container.

3.4.5 Identification of the project samples is written on the chain of custody form and on the sample containers. The identification information between the chain of custody and the sample container label needs to be identical, including the following.

3.4.5.1 Date and time of the collected sample.

3.4.5.2 The chronological order of the collected samples.

3.4.5.3 Description of the sampling location.

3.4.6 A map showing the location of each sample must be included with the report that documents the sampling event.

3.4.7 Each collected sample is placed on ice in a cooler and maintained at 4°C or less. Do not let the soil samples freeze or they may burst the container. According to proper chain-of-custody procedures, the samples are to be kept either in sight or in the possession of the sampler. The cooler may be kept in a locked, secured location, such as a locked vehicle until the samples are surrendered to the laboratory. Collect a copy of the chain-of-custody form from the laboratory for a reference document until the laboratory reports are received.

3.5 Hand Auger

3.5.1 Soil samples may be collected by using a hand auger. Limitations of the hand auger include the lack of depth which can be achieved with the hand auger and the types of soils which can be successfully sampled with the hand auger; gravels and cobbles are not successfully advanced with a hand auger. Grab samples or composite samples can be collected with a hand auger.

3.5.2 The auger is equipped with three basic parts: the auger can, the extension stem(s) and the drive handle. In order to collect a soil sample, the auger is placed on the spot where the sample is to be located. The auger handle is turned in a clockwise direction. Moderate pressure may need to be applied, downward on the handle, while simultaneously turning the handle. When the auger can is filled with soil, the auger is extracted from the boring and the soil is removed from the auger can. The auger is replaced into the boring and the turning of the handle continues until the auger can is again filled with soil. This process is continued until the auger can reaches the desired depth for collecting a sample.

3.5.3 Samples collected from the hand auger must be removed from the auger can with a clean spade or a gloved hand. The soil must be placed within a sample collection container as quickly as possible and the lid must be placed upon the container and sealed tightly. The cuttings from the boring must be replaced into the boring and the site restored as it was before the sample was collected.

3.5.4 No headspace is permitted at the mouth of the container when volatile chemicals are to be analyzed. Voids within the container are to be minimized. Each sample container should be labeled and marked with identifying information on each container.

3.5.5 Identification of the project samples is written on the chain of custody form and on the sample containers. The identification information between the chain of custody and the sample container label needs to be identical, including the following.

3.5.5.1 Date and time of the collected sample.

3.5.5.2 The chronological order of the collected samples.

3.5.5.3 Description of the sampling location.

3.5.6 A map showing the location of each sample must be included with the report that documents the sampling event.

3.5.7 Each collected sample is placed on ice in a cooler and maintained at 4^{o}C or less. Do not let the soil samples freeze or they may burst the container. According to proper chain-of-custody procedures, the samples are to be kept either in sight or in the possession of the sampler. The cooler may be kept in a locked, secured location, such as a locked vehicle until the samples are surrendered to the laboratory. Collect a copy of the chain-of-custody form from the laboratory for a reference document until the laboratory reports are received.

4 Drill Cuttings

4.1 Drill cuttings which have been identified as hazardous waste must be contained on site with an impermeable liner beneath the cuttings. The cuttings must be barreled and marked for disposal within 90 days. Cuttings that are not hazardous waste may be left on site. Cuttings may be aerated and disposed when the cuttings are pronounced safe. Cuttings may be sampled for the contamination found in samples, to identify the level of contamination remaining in the cuttings, or the cuttings may be screened with a field vapor detector or a field chemistry test. Cuttings from soil borings may be backfilled.

4.2 Cuttings from hazardous waste sites or cuttings which exhibit characteristics of hazardous waste, such as, ignitibility (D001), corrosivity (D002), reactivity (D003) or toxicity(various waste codes) must be disposed as a hazardous waste, unless otherwise exempted by the Administrator.

5 Groundwater sampling methodology

5.1 Identify groundwater wells which have been tasked to be sampled. Obtain legal authorization to sample the wells, using a site access agreement form, a contract from a property owner or a court order. Include the sampling schedule with the authorization so that the property owner remains informed as to sampling activities.

5.2 Verify that samples can be picked up by laboratory personnel or that the laboratory will be open to receive the collected samples.

5.3 Review the equipment list needed to collect samples, preserve samples and deliver the samples in an acceptable condition to the laboratory. Include all equipment needed for chain of custody procedures. If locked containers are needed, provide such containers or obtain them from the laboratory.

5.4 Carry the certification card if sampling is done by a state or task requiring certification. Carry business cards for identification. In remote or secured locations, notify local health department or public safety officials of the sampling exercise.

5.5 Use only clean or decontaminated sampling equipment. Refer to decontamination procedures in "Groundwater Sampling Manual for Underground Storage Tank Sites"[1].

5.6 Have all sampling equipment on the equipment list close at hand for each well to be sampled. Complete all of the information requested on the Well Sampling Record.

5.7 Groundwater sampling wells must be developed shortly after being constructed to prevent deposition of solids inside the well casing. Use of a pump is preferred for most effective development. The well should be developed until the water clears and the conductivity becomes stable. In lieu of conductivity measurements, greater than three volumes of water must be removed. If the well de-waters during development, conclude the development.

5.8 Wells which have screen lower than the static water level (SWL), may be purged by removing a minimum of three volumes of water from the well before collecting the sample. Wells with screen extending above the level of SWL need not be purged, at the sampler's option.

5.9 Water to be sampled may be removed from the monitor well either using a bailer or a peristaltic pump. The samples removed from the monitor wells must be placed into the sample containers with a minimum of turbulence for any samples to be analyzed for volatile compounds.

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[1] "Groundwater Sampling Manual for Underground Storage Tank Sites", State of Maine, Department of Environmental Protection, Bureau of Oil and Hazardous Materials Control, prepared by Peter Garrett, Ph.D. and Thomas L. Potter, C.P.S.S., September 1989.

5.10 Purged water may be disposed back into the area of influence of the well[2], provided that free product is not present which could provide a danger to the environment due to toxicity. Otherwise, purged water must be removed and disposed of through discharge to the local sanitary water treatment district (prior approval required) or through a hazardous material handler.

5.11 Wells with free product will not be sampled, but the sampling record will note that free product was found in the well.

5.12 Samples collected for analysis of Volatile or Semi-Volatile Organics should have no head space. The sample container is clearly labeled with indelible ink with the following information:

5.12.1 Identification of the project samples is written on the chain of custody form and on the sample containers. The identification information between the chain of custody and the sample container label needs to be identical, including the following.

5.12.1.1 Date and time of the collected sample.

5.12.1.2 The chronological order of the collected samples.

5.12.1.3 Description of the sampling location.

5.12.2 A map showing the location of each sample must be included with the report that documents the sampling event.

5.12.3 Each collected sample is placed on ice in a cooler and maintained at 4°F or less. Do not let the water samples freeze or they may burst the container. According to proper chain-of-custody procedures, the samples are to be kept either in sight or in the possession of the sampler. The cooler may be kept in a locked, secured location, such as a locked vehicle until the samples are surrendered to the laboratory. Collect a copy of the chain-of-custody form from the laboratory for a reference document until the laboratory reports are received.

5.13 Once the well has been purged and allowed to recharge, water samples may be collected from a clean bailer. The bailer may either be tipped so that water runs out the top of the bailer, or a sampling drain may be installed into the bottom of the bailer. Care is taken with samples which are analyzed for volatile chemicals, to minimize the amount of turbulence during the collection of the sample. Samples to be analyzed for volatile chemicals may not have any headspace or bubbles in the sampling containers. For volatile chemical analysis samples, at least two 40 ml VOA containers should be collected for each sample. At least three 40 ml VOA containers should be collected for every sampling round or for every 10 samples collected. The additional sample containers are for the QA/QC procedures of the laboratory. Samples collected for non volatile chemical analysis are not restricted against headspace or bubbles in the collection container.

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[2]ibid.

5.13.1 Once the well has been purged and allowed to recharge, water samples may be pumped directly from the well using a peristaltic pump. Allow the pump to remove a small volume of water, then place the pump tubing within the mouth of the sample containers in order to minimize the turbulence of the sample water. Flow rate into the samples must be controlled to avoid overfilling the sample container and splashing the sample. Sample tubing from the well may be dedicated for that well, but sample tubing is not generally cost effective for decontamination and re-use. If sample tubing is not dedicated to a well, empty the tubing back into the well and dispose of the tubing as a solid waste.

6 Surface water sampling methodology

6.1 Identify the appropriate sampling location. Sampling sites may be a part of the STORET system, for which additional sampling data will be available, including background data. Check for background data through STORET with the Utah Division of Water Quality or U.S. Geological Survey.

6.2 Carry the certification card if sampling is done by a state or task requiring certification. Carry business cards for identification. In remote or secured locations, notify local health department or public safety officials of the sampling exercise.

6.3 Samples collected from surface water must be collected in clean containers. Each sample container is clearly marked with an indelible ink pen prior to filling the container with water. The samples are collected in such a manner that material floating on the surface of the water is not collected into the sampling container. This is accomplished by pushing the sampling container into the water column, with the mouth of the container held below the surface of the water. Water is allowed to fill the container until the container is completely full. The container is hauled to the surface and is capped with either an aluminum or a Teflon® seal.

6.4 Samples collected from a pipe or a tap should use drinking water sampling methods. Water is allowed to run from the open pipe for 10 seconds or from an open tap for five minutes. A clean sample container is used to collect the sample without causing turbulence in the sample. The sample must be capped with an aluminum or Teflon® seal.

6.5 Samples collected for analysis of volatile chemicals may have no headspace or air bubbles in the container. Analysis of Inorganic samples is indifferent to headspace, so headspace is irrelevant in the Inorganic sampling container. Inorganic samples which require a preservative as when sampling for Nutrients, Metals, Radiologics and some Bacteriological samples are collected so that the preservative is not washed from the sample container. It is permissible to transfer water from a clean container into a container with preservative in order to keep the preservative from being washed out, if circumstances warrant. The laboratory will advise on the type of preservative to be used for each type of sample analysis.

6.6 Samples to be analyzed for Volatile or Semi Volatile Organics must have no head space.

6.6.1 Identification of the project samples is written on the chain of custody form and on the sample containers. The identification information between the chain of custody and the sample container label needs to be identical, including the following.

6.6.1.1 Date and time of the collected sample.

6.6.1.2 The chronological order of the collected samples.

6.6.1.3 Description of the sampling location.

6.6.2 A map showing the location of each sample must be included with the report that documents the sampling event.

6.6.3 Each collected sample is placed on ice in a cooler and maintained at 4ºF or less. Do not let the water samples freeze or they may burst the container. According to proper chain-of-custody procedures, the samples are to be kept either in sight or in the possession of the sampler. The cooler may be kept in a locked, secured location, such as a locked vehicle until the samples are surrendered to the laboratory. Collect a copy of the chain-of-custody form from the laboratory for a reference document until the laboratory reports are received.

7 Chain of custody

7.1 Environmental samples of air, soil or water may be used in court for a variety of reasons. Samples must be preserved, held, transported and surrendered under chain of custody in order to be acceptable to the court. This means that the samples or the sample containers must be:

- in the physical possession of the sampler, or
- in sight of the sampler at all times, or
- in a secure location, or
- locked in a container in a secure location.

7.2 Samples are not to be tampered with once they have been placed into the container. The lid of the container may not be removed for any reason once the lid has been placed upon the container of a chain of custody sample until the sample has been surrendered to the analytical laboratory. The samples are not to be in the possession of unauthorized persons or anyone not listed on the chain of custody record. Samples that are not held under proper chain of custody should be so noted on the chain of custody form. In some circumstances, chain of custody seals must be placed over the lid of the container to prove that the samples have not been tampered with until they are surrendered to the analytical laboratory.

7.2.1 Identification of the project samples is written on the chain of custody form and on the sample containers. The identification information between the chain of custody and the sample container label needs to be identical, including the following.

7.2.1.1 Date and time of the collected sample.

7.2.1.2 The chronological order of the collected samples.

7.2.1.3 Description of the sampling location.

7.2.2 A map showing the location of each sample must be included with the report that documents the sampling event.

7.2.3 Each collected sample is placed on ice in a cooler and maintained at 4ºF or less. Do not let the samples freeze or they may burst the container. According to proper chain-of-custody procedures, the samples are to be kept either in sight or in the possession of the sampler. The cooler may be kept in a locked, secured location, such as a locked vehicle until the samples are surrendered to the laboratory. Collect a copy of the chain-of-custody form from the laboratory for a reference document until the laboratory reports are received.

7.3 Samples that must be shipped should be in a secured, cooled container. The chain of custody form must be taped to the container in a plastic bag to the container. The chain of custody form must be signed by the shipper accepting the container for shipment. The samples must be manifested as environmental samples that must be delivered directly to laboratory personnel as addressed. A clearly addressed shipping label must taped to the container in a locking plastic bag to prevent smearing from moisture.

8 Sample Documentation

8.1 Each sample must be identified on a sampling map to show plan view location. The map should either be to scale or else the distance from significant structures should be shown. Use of X and Y coordinates will assist in mapping of the sampling locations. Indicate the depth of the sample. Field measurements may include streams, structures, roads, utilities, wells, fence or property lines, excavations, corrective action features and sample points. Do not junk up the map with too many features or characteristics; use additional maps to show additional features.

8.2 A map is created to show the sampling project. The map will be to sufficient scale to allow identification of the map features. The scaled map will be stored in the computer as the base drawing. Other tasks such as groundwater potentiometry or corrective action design will be an additional layer or map type off the base drawing. If construction changes on the property change the base drawing, revise the base drawing on another layer, keeping the original map layout and any subsequent base changes.

9 QA/QC for Sample Collection

9.1 Quality control and quality assurance is provided by appropriate sampling planning, collection, preservation, transportation and analysis procedures. A copy of the QA/QC procedures should be obtained from every laboratory used for sample analysis. The same types of procedures need to be followed by the collector and transporter of the environmental samples. The following samples may be collected to assure accurate and reliable water samples. Soil is not as conducive to splitting and QA/QC procedures. Soil sample QA/QC is dependent upon the technique of the sampler in collection, preservation and transport and is not normally included in this protocol.

9.2 Trip blank This is a blank sample collected prior to going into the field. The trip blank is to be kept with the other sample collected for the sampling excursion. The trip blank serves as an indicator if the transportation and container of the samples is causing contamination of collected samples. Some laboratories will analyze the trip blank, but not report the results unless there has been contamination found in the trip blank.

9.3 Equipment blank This is a sample to check on the decontamination procedures used for equipment which will come in contact with the environmental samples. Equipment blanks may be collected for a range of tools including bailers, spades, buckets, shovels or any other equipment which contacts the medium being sampled. The equipment blank may also be used on personal protective equipment to assure that the PPE is not breaking down and subjecting the sampler to contamination. The equipment blank is feedback to the sampler on the effectiveness of the decontamination procedures being used.

9.4 Field blank This sample is to be collected of uncontaminated media in the field where the site environmental samples are collected. This blank demonstrates any environmental contaminants in the ambient air. This sample may be used to adjust the readings of the environmental samples, if a methodology is provided that will quantify the exposure of the environmental samples to the contaminating ambient conditions.

9.5 Duplicate A duplicate sample of the same sample location and time is collected to assure that the required precision of the sampling is maintained. The duplicate is marked in such a way that the laboratory has no reason to suspect that the duplicate represents the same sample as the original. However, the duplicate sample must be conspicuously reported, showing any variation obtained between the original and the duplicate sample.

9.6 Split A split sample is to provide information on the precision of the samples between two different laboratories. This type of sampling is normally done between two contesting entities such as the owner of the sampled medium and a regulating agency. In this case, it is assumed that the laboratories for each entity is certified for accuracy and reliability of sample analysis. This split is to assure each entity that the samples will not be spiked or inappropriately handled.

9.6.1 A split may be used for quality control purposes by the sampler. However, this is not usually viewed as necessary if the laboratory being used is certified and if appropriate QA/QC measures are being followed by the laboratory. The difficulty with split samples is that there is no valid way to assure which laboratory is in error and which is maintaining the proper standard of precision.

9.7 Spiked samples or field blanks will be transported in the same container as the samples are kept.

10 Air monitoring, grab samples only

10.1 Identify air stream to be sampled. Obtain legal authorization to sample the air stream using a site access agreement form, a contract from a property owner or a court order. Include the

sampling schedule with the authorization so that the property owner remains informed as to sampling activities. Verify that samples can be picked up by laboratory personnel or that the laboratory will be open to receive the collected samples.

10.2 Review the equipment list needed to collect, preserve and deliver the samples in an acceptable condition to the laboratory. Include all equipment needed for chain of custody procedures. If locked containers are needed, provide such containers or obtain them from the laboratory.

10.3 Carry the certification card if sampling is done by a state or task requiring certification. Carry business cards for identification. In remote or secured locations, notify local health department or public safety officials of the sampling exercise.

10.4 Use only clean or decontaminated sampling equipment. Have all sampling equipment on the equipment list close at hand.

10.5 PID and metal catalyst meters are calibrated to hexane in parts per million and zeroed against an assumed clean ambient atmosphere or hydrocarbon free nitrogen. Readings from these meters should be read as "units, as hexane in parts per million."

10.6 Vapor Detection Meter, in line grab air sampling

10.7 The following procedures are normally used in sampling air streams. Assure that the vapor detection meter is properly charged, zeroed and calibrated. Most vapor detection meters require a warm up period before they are as accurate as designed. Place the probe of the meter into the air stream, preferably at a monitoring port that is at least six stack diameters away from any joint or emission point. The monitoring port should be closed off around the probe to avoid allowing ambient air into the air stream, contaminating the sample. Allow the meter to stabilize, then record the reading. Remove the probe from the gas stream and replace the monitoring port plug. Allow the meter to purge before turning the meter off.

10.8 If the gas stream being sampled exceeds the detection limit of the meter, quickly remove the probe from the gas stream. Oversaturation of the sensor can lead to blinding of the sensor and ruin the meter.

10.9 Headspace analysis

10.9.1 When performing headspace analyses, fill a clean container with 10-50% of its capacity with the soil to be tested. The container may be a glass container of at least 1 quart volume or a locking plastic bag of at least 2 quarts volume. Permit the soil to warm up to about 25°C. Sample the container air by minimizing the hole through which the probe is inserted. Sample only the air in the container, recording the highest reading obtained. For further information refer to *Field Measurements, Dependable Data When You Need It*, U.S. Environmental Protection Agency, Solid Waste and Emergency Response (OS-420), Office of Underground Storage Tanks, Washington, D.C. 20460, EPA/530/UST-90-003, September 1990.

10.10 Soil screening

10.10.1 Soil screening can be done with any newly exposed soils that are suspected of having volatile hydrocarbon contamination. This is not a qualitative test, but an indicator that is useful in finding the highest concentrations of contamination.

10.10.2 Expose soil with a gloved hand or a soil probe. Do not pack the soil or prevent volatility of soil into the atmosphere. Place the prepared vapor meter probe within ½ inch of the soil and wait for the needle to stabilize. Take the highest reading. Allow the meter to purge in ambient air before taking another reading.

10.11 Carbon Tube Sample Collection

10.11.1 Sampling an air emission point for the detection of TPH/BTEX can be accomplished with a carbon tube. Activated carbon is contained in a glass tube. Gases passing over the carbon are absorbed by the carbon and can be analyzed using EPA analytical methods. Needed equipment will include several carbon tubes, Tygon® tubing, a calibrated air pump and material to close the sampling port around the probe. All materials must be clean or properly decontaminated.

10.11.2 Consult with the analytical laboratory about the absorption capacity of the tubes they provide. Assure that the sampling period will not produce breakthrough in the carbon tube. Measure the air emissions with a vapor meter to obtain a rough estimate of the VOC concentration in the emission stream. Calculate the length of exposure time of the carbon tube. Figure on using one tube for the calculated length of time and a second tube for half the calculated exposure time if you fear that breakthrough of the first sampling section of the carbon tube may occur.

10.11.3 Connect a probe or a length of clean glass tubing into the end of the Tygon® tubing. Connect the air pump to a short length of Tygon® tubing. Break open both ends of the glass carbon tube and attach the Tygon® tubing to each end of the carbon tube. Immediately insert the probe into the air stream and pack material around the probe in the mouth of the port. Run the pump for the time period calculated earlier. At exactly the end of the time period, turn off the pump and note the volume of air that was moved through the glass tube. Disconnect the glass tube and seal the ends of the glass tube. Place the exposed tube in a secured ice chest and redo the procedure as needed for an alternative time period (optional).

10.11.4 Label each tube for the location and time of sampling exposure. Information from each of the tubes is transcribed onto the chain-of-custody form that documents each sampling exercise. Each collected tube is placed on ice in a cooler. According to proper chain-of-custody procedures, the samples are to be kept either in sight or in the possession of the sampler, or the cooler is kept in a locked, secured location, such as a locked vehicle until the samples are surrendered to the laboratory. Collect a copy of the chain-of-custody form from the laboratory for a reference document.

10.11.5 The laboratory results are not time weighted and must be converted to µg/L or ppb, then be further converted to a daily loading rate in lbs/day. The conversion formula follows:

$$\frac{\mu g / tube}{Flow\ L / tube\ x\ Sample\ Duration \min} = Concentration\ \mu g / L$$

then:

$$Concentration\ \mu g / L\ x\ flow\ L / \min\ x \frac{1\,lbs}{454{,}000{,}000\,\mu g}\ x\ 1440 \min / day = VOC\ lbs / day$$

11 Numbering of borings, wells and samples except from borings/wells

11.1 All soil borings are to be numbered in the order they are emplaced. Soil borings that are developed into any type of well will be numbered according to the consecutive order the wells are completed. The description and number of borings and the number of wells may differ. Initially, reports should show the boring number parenthetically following the well number or the reverse, so that the drilled point is fully disclosed, e.g., MW4 (B5), B6 (MW3).

11.2 Push probe borings can be used to collect soil or groundwater, and are denoted as "GPn", e.g., GP1, GP2

11.3 Piezometers are temporary wells that are normally used to measure static water level, denoted as "Pn", e.g., P1, P2

11.4 Temporary wells are hand installed or are one inch diameter wells that are not expected to have a long life, denoted as "Wn", e.g., W1, W2

11.5 Permanent wells are two inch diameter or larger wells for monitoring purposes, designated as MWn, e.g., MW1, MW2

11.6 Soil samples that are not advanced with a drilling mechanism may be collected on the surface, with a shovel or from an excavator. These samples are denoted as "SSn", e.g., SS3

11.7 Water samples not collected from a subsurface access structure like a well or piezometer are usually collected from surface water and are denoted as "WSn", e.g., WS4.

11.8 There are requirements from some agencies to sample for soil type. Using the Uniform Soil Classification method of classification, these soil samples are denoted as "USCn", e.g., USC5.

Description	Designation	Examples
Soil borings, except push probe	Bn	B1, B2, B3, etc.
push probe borings, soil/gw	GPn	GP1, GP2, GP3, etc.
Monitor wells	MWn	MW1, MW2, MW3, etc.

Description	Designation	Examples
Piezometers	Pn	P1, P2, P3, etc.
Temporary wells	Wn	W1, W2, W3, etc.
Soil samples	SSn	SS1, SS2, etc.
Water samples	WSn	WS1, WS2, etc.
Soil type samples	USCn	USC1, USC2, etc.

Appendix F

Statements of Qualifications

DAVID B. JOHNSON, PE, PLS, MBA

(801)-787-4569 / djohnson@johnsonenginc.com / 4436 S 1025 E Salt Lake City, Utah 84124

Education

MS
Brigham Young University — Provo, Utah
- April 2005-Treatment Wetland Design for the Salton Sea, California

MBA
University of Utah — SLC, Utah
- December 2010

BS
Brigham Young University — Provo, Utah
- April 2004-Civil Engineering

Land Surveying
Salt Lake Community College — SLC, Utah
- Satisfied the Utah PLS education requirements

Employment History

Johnson Engineering, Inc. — Salt Lake City, Utah (2014-Present)
Owner and Founder of Johnson Engineering, Inc. (**www.johnsonengineeringinc.com**)
- Responsible for grading and drainage design for residential and commercial land development projects.
- Responsible for the design of lead shot traps and lead dust suppression for national gun ranges.
- Responsible for construction staking, conducting topo surveys, boundary surveys, and HD scanning.
- Certified Underground Storage Tank Consultant with Utah Department of Environmental Response and Remediation (DERR).

Anderson Engineering Company, Inc. — Salt Lake City, Utah (2005-2014)
Professional Engineer and Land Surveyor
- Responsible for project design and the preparation of construction documents.
- Responsible for project management, including: the allocation of resources; the development and training of personnel; and, quality assurance.
- Responsible for construction staking, conducting topo surveys, boundary surveys, and HD scanning.

Agrarian Research and Management Co., Ltd. — Provo, Utah (2004-2005)
Project Engineer and Land Surveyor
- Responsible for project design, land surveying, and construction management for environmental projects throughout California.

Spanish Fork City Engineering Department — Spanish Fork City, Utah (2002-2004)
Geographic Information Systems (GIS) Intern
- Responsible for collecting and managing GIS data for city utilities.

BYU Materials Research Department — Provo, Utah. (2003)
Research Assistant
- Responsible for soil sample analysis of local road base material for frost heave research.

Skills and Certifications

Computer Skills:
AutoCAD Civil 3D
ArcGIS Suite
Microsoft Office
Leica Cyclone
Microsoft Project

Survey Equipment:
Trimble S6 Total Station
Trimble GPS Systems
Leica C10 HD Scanner

Additional Skills:
Fluent in writing and speaking Spanish.

Certifications:
Civil Engineer
- UT # 5338869-2203
- CA # 77583
- WY# 14049

MSHA Training
- 24 hr

Certifications Continued:
OSHA Hazwoper
- 40 hr

Professional Land Surveyor
- UT # 5338869-2201
- CA # 8876

Heavy Construction Contractor
- UT # 8940121-5551

Utah UST Consultant (DERR)

Personal

Brigham Young University Football Letterman (2002) — Provo, Utah (2000-2002)
BYU Student-Athlete Business Mentor — Provo, Utah (2011 to Present)

STATEMENT OF QUALIFICATIONS
Joseph H. Ellis

Education

BS, Utah Valley University, 2010
Psychology

The Vision Group, Inc. - 2005 to present; VP, Ellis Environmental: Participant in numerous soil and groundwater remediation projects including: installation; maintenance; groundwater and soil sampling; closing cleanup sites; and project manager for various cleanup projects.
Certified Groundwater and Soil Sampler, (certificate #GS1632) and 40 hour HAZWOPER, trained in 2005 (29cfr1910.120).
Environmental assessment inspector and researcher on hundreds of sites covering Utah, Colorado, Idaho, and Wyoming.
Installation, maintenance, and closing of numerous remediation projects in Utah, South Carolina, and Wyoming.

Licensed Real Estate Agent in Utah (8703725-SA00).

IntelliSolve**:** Product evaluation, testing, assembly, quality control, shipping, customer service and appreciation, marketing, warehousing, and research and development assistance for multiple products. Distributor relations and product manager for FotoDialer with thousands sold worldwide.

Barco Steel Building Construction- June to November 2002; constructed steel buildings on Open Court (now Younique) in Lehi, Granite Seed in Lehi, Mity Lite in Orem, and JBP in Ogden. Did concrete work, insulation, metal sheeting on side and roof, and steel work.

Appleseed Pond- 1992-2000; Former owner and operator of catch out pond for customers catching Brook and Rainbow Trout. Assisted patrons in using angling equipment, cleaning fish, and accounting for purchase of caught fish.

Community and Volunteer Experience-
July 2003-July 2005: Missionary and Church representative in the Phoenix Valley in Arizona for The Church of Jesus Christ of Latter-day Saints. Oversaw large groups of missionaries, coordinated daily activities, and managed weekly meetings.
July 2005-present: Was a Youth Sunday School Instructor, oversaw missionary and service opportunities, oversaw records and meetings over a Church congregation, and aid in leadership over Church congregations; done in two areas in Lehi and Saratoga Springs, Utah.

EllisEnvironmental
a division of thevisiongroup inc.

STATEMENT OF QUALIFICATIONS

Mark T. Ellis- President, The Vision Group, Inc.; including divisions Ellis Environmental and IntelliSolve (1991- present); Certified, Utah Solid and Hazardous Waste Control Board as Consultant (CC19) and Groundwater and Soil Sampler (GS-0081). Certified as Environmental Manager in Nevada, #EM-1191. Qualified, Arizona Consultant. Certified Contractor, South Carolina (UCC-0373). 40 hour hazardous materials management (29 CFR 1910.120). Trained in land appraisal principles with Basic Principles of Land Appraisal and USPAP classes. B.S. Zoology (emphasis on Limnology & Water Chemistry) from BYU in 1978.

Chief Science Officer, Pure Environmental Management, LLC, (2009 to 2015).

Inventor:
- Subsurface Metabolism Enhancement (SME) hydrocarbon bioremediation system, Patent # 6,464,005; Winner of Stoel-Rives Utah Innovator 2010 for Clean Technology and Energy.
- Fuel Vault™, Patent #5,037,239, interest sold to Olsen-Beal Associates.
- Release Detection and Remediation Response (RDR^2), Patent #8,235,627.
- SME Sensor, Patent #7,705,312; Infrared sensor for hydrocarbons, oxygen, CO_2 and methane.
- Identity Theft Protection, pat. pending.
- SMECℓ, Aerobic, chlorinated solvent bioremediation system, pat. pending.

Vice-President of Environmental Services for Olsen-Beal Associates, Orem, Utah. Directed development of Fuel Vault™. Provided environmental services for the petroleum, real estate industries (1990-1991).

Director of Environmental Services, Westech Fuel Equipment, Murray, Utah. Provided environmental assessment and tank closure services to owners of underground storage tanks (1989-1990).

Utah Division of Environmental Quality:
- Manager of the Utah Underground Storage Tank Program, ST/LUST program (1987- 1989).
- Member of UST/LUST Task Force with ASTWMO, (1988- 1989).
- Acid Rain Coordinator for the State of Utah; chair of Utah ADTAC; member, WESTAR and WAD Task Force (1984-1987).
- Air Quality Compliance Officer for the Utah Bureau of Air Quality, (1980-1981, 1984-1987).
- Water Quality Specialist with the Utah Bureau of Water Pollution Control, (1981-1984).

Environmental experience and management includes:
- Citations from Utah Governor (1) and Utah Division of Environmental Health (2) for excellence
- UST closures, including the required site assessments for 347 tanks
- Phase I and II environmental audits/assessments, AAI, TSA at over 1,272 properties since 1989
- LUST abatement and remediation projects at over 130 projects
- Installation/design of Fuel Vault™ facilities at 6 sites
- Research and installation of closed and open loop fisheries at 4 projects
- Hazardous waste compliance at 55 sites
- Air Quality compliance at 15 sites
- Water quality projects at many sites including LUST projects and stormwater plans
- Projects in 16 States (AK, AZ, CA, CO, ID, IN, MT, NV, PA, RI, SC, TN, UT, WA, WI, WY)
- Qualified as Expert Witness in Utah and Arizona courts, 15 projects

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