EllisEnvironmental
a division of thevisiongroup inc.

April 18, 2017

Mr. Walt Baker, Director
Division of Water Quality
P.O. Box 144870
Salt Lake City, UT 84114-4870

Re: Contaminant Investigation and Corrective Action Plan; Transwest Pick-A-Part, 3586 North 2000 West, Farr West, UT 84404

To Mr. Baker:

The following is submitted in compliance with R317-6-6.15.D, UAC

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

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 a hydraulic press, powered 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.

This report is to provide information on the spill with the information known at this time.

R317-6-6.15.D, UAC

1. a. Characterization of pollution description

(1) amount, form, concentration, toxicity, environmental fate and transport, and other significant characteristics of contaminant(s).

The investigated area has the dimensions of approximately 50 x 100 feet, to a saturated soil depth of 4 feet or a volume of 20,000 ft^3. The soil in which the groundwater is found in is a silt, clay and some sand. The average porosity of the soil is given at 0.35. Total volume of groundwater investigated is 7,000 ft^3 or 52,360 gallons.

The contaminant is described as diesel fuel, found in the groundwater to range from 2.02 to 603 mg/L.

There is no MCL for diesel fuel, but the clean up threshold for diesel fuel used by DEQ, through DERR ranges from 1 to 10 mg/L (Initial Screening Level to Tier 1 Screening Criteria). Concentrations of diesel fuel in excess of 10 mg/L are expected to have either toxic or damaging effects to human health or the environment. Note that aspirated diesel fuel is deadly. No free product diesel fuel was encountered on the site, so aspiration risk is not expected.

Diesel fuel is highly susceptible to biodegradation, especially in soil and/or groundwater with bio-essential nutrients. Sterile soils may also degrade soil through electron stripping by iron, manganese, sulfate and other chemicals. As the fuel travels the groundwater gradient, biological communities and hostile chemicals will degrade the diesel fuel, scavenging for energy or electrons. Unless there is a sufficient source of free product diesel fuel to overwhelm the contaminant, the diesel fuel is expected to degrade as it travels the groundwater gradient. Insufficient data points are available to reliable spatial degradation modeling.

(2) 3 dimensional extent of plume, distribution and chemical make-up of the plume.

The plume of diesel fuel contaminated groundwater has been investigated in an area approximately 50 x 100 feet and found in groundwater at about 6 feet below ground surface (bgs) to 10 feet bgs. The plume is known to extend down gradient to the west farther than the 50 feet of gradient direction already defined. This data gap will be addressed below. Diesel Range Organics (DRO) is the only component of the contaminant plume investigated to this time. See the data gap discussion below.

(3) Migration of plume, known and expected.

The DRO plume extends from the Crusher Pond, the former location of the crusher fuel tank and moves down gradient, westward. The DRO in the Crusher Pond was measured at 603 mg/L. The down gradient sample point GP5, about 35 feet down gradient of the pond shows DRO at 106 mg/L, a decrease of 82% in concentration. The plume is expected to fall below 10 mg/L within another 35 feet.

b. Characterization of the facility

(1) Contaminant mixtures present and media of occurrence.

Given the nature of the property use, it is expected that the contamination in the soil and groundwater will be a mixture of diesel fuel from the crusher tank and gasoline from wrecked vehicles. Refer to the data gaps below.

(2) Hydrogeologic conditions underlying, up and down gradient of the facility.

The geology of this area is generally described[1] as Qa: surficial alluvium and colluvium. The soil type is described as HLA - Harrisville-Leland complex, 0 to 1 percent slopes, see attached. All of this soil and the underlying alluvium and colluvium is covered with up to 2 feet of imported fill, which now includes automobile parts, bolts and pieces of plastic. Groundwater is expected to follow the topographical gradient, to the west.

(3) Surface waters in the area.

The Willard Canal is located west of the Subject Property, approximately 0.27 mile. An unnamed, piped ditch flows through the property and just west of the Crusher Pond, refer to Figure 4.

(4) Climatic and meteorologic conditions

The nearest climate monitoring station to the Transwest Pick-A-Part is the Ogden Sugar Factory, Utah. The record of climatic monitoring spans 1924 through 2009. At this monitoring station, the average maximum temperature is 63.8°F; the average minimum temperature is 38.2°F; Average annual total precipitation is 17.05 inches; average annual total snowfall is 26.5 inches. See attached record in Appendix B. The freeze free season is reported[2] at 140-160 days.

Physical conditions at the site are also described, contributing to the understanding of the climatic conditions. The elevation of the Crusher Pond is shown by GoogleEarth® at 4,258 feet, mean sea level. The local topography slopes to the west at 0.02 ft/ft.

(5) Type, location and description of possible sources of pollution

The contamination originates from the diesel AST and secondarily from small leakage from wrecked vehicles found on the Transwest Pick-A-Part property. Refer to figure 4 for the aerial view location of the crusher, where the AST was formerly located on the south end of the crusher

(6) Groundwater withdrawals, pumpage rates and usage within 2 mile radius

Groundwater contaminated with DRO is unconfined and is not being pumped.

c. Report of data used and data gaps (reported)

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[1] http://geology.utah.gov/apps/intgeomap/index.html#

[2] Ashcroft, Gaylen L. and E. Arlo Richardson, *Freeze Free Season, State of Utah*, Map produced jointly by Utah Agricultural Experiment Station, Utah State University, Logan, Utah 84321 and Department of Commerce, ESSA, Environmental Data Services.

(1) Data packages including quality assurance and quality control reports

The samples were analyzed by American West Analytical Laboratories, a Utah certified[3] analytical laboratory. The samples were analyzed under a standard QA/QC protocol with identified surrogates reported on the forms. Refer to the laboratory reports in Appendix C.

(2) Description of the data used in the report

Soil and groundwater were sampled at this site. The initial target for this investigation was DRO.

(3) Description of data gaps and how the gaps affect the analysis and plans to fill the gaps.

The plume is known to be larger than what has been investigated as of March 2017. This data gap is addressed by expanding the length of the investigation area with the use of monitor wells. Monitor wells will be installed from the Crusher Pond down gradient to the west wall.

The next data identified is the range of petroleum contamination to be evaluated. Subsequent evaluation of soil or groundwater will also look at Gasoline Range Organics (GRO) and representative gasoline subspecies including methyl tert-butyl ether, benzene, toluene, ethylbenzene, total xylenes and naphthalene (MBTEXN).

d. Endangerment assessment and risk evaluation as basis for cleanup standard proposal (R317-6-6.15.F.2, UAC).

There is an accepted threshold for DRO and other hydrocarbons for which there is no Maximum Contaminant Level (MCL). Water contaminated with DRO may be assessed clean up standards according to applicable structures that are perceived at risk. In the case of the crusher pond, there is a Tesoro refined gas line within 20 feet of the crusher pond. This causes the clean up target for DRO to be defined at 1 mg/L. More than 30 feet away from the buried utility, the target is relaxed to 10 mg/L for DRO. However, down gradient was found an unnamed ditch. It is presumed that the ditch is now piped. It shows on only 1 map of the several maps used to review this property. The clean up target for DRO around the piped ditch is also 1 mg/L DRO.

e. Other information required by the Director.

None has been received to date.

2. Proposed Corrective Action Plan

At this point, the use of excavations on this site is not realistic. Tesoro forbids the excavation within 5 feet of its gas line. The piped ditch is likely in the same condition, that the ditch would fail if undermined. We are now considering an in-situ remediation method, patented and used with great

[3] American West Analytical Laboratories is located at 3440 South 700 West, Salt Lake City, Utah. This facility is certified by the Utah Department of Heath under the Safe Drinking Water Act, the Clean Water Act and the Resource Conservation and Recovery Act. Certificate UT000312016-12 expires 5/31/2017.

success nationwide. Subsurface Metabolism Enhancement (SME, pat #6,464,005) was developed to clean petroleum hydrocarbons in the subsurface. This method uses low volume oxygen injection below the contaminant zone and extraction of biogenic CO_2 to the atmosphere. The natural biota are stimulated with both oxygen and nutrients. Case studies are available upon request. Given the nature of the contaminated area and the underground utilities in this area, this method is the least offensive to the buried utilities and will clean the contamination.

Sincerely,

Mark T. Ellis

Mark T. Ellis
Environmental Professional

David B. Johnson, P.E., PLS, MBA

Z:\EESI Server\EESI\PROJECTS\TranswestAuto\1983.Ogden\SIR\CI&CAP.Notes.wpd

Appendix A

Maps

Utah, United States, North America

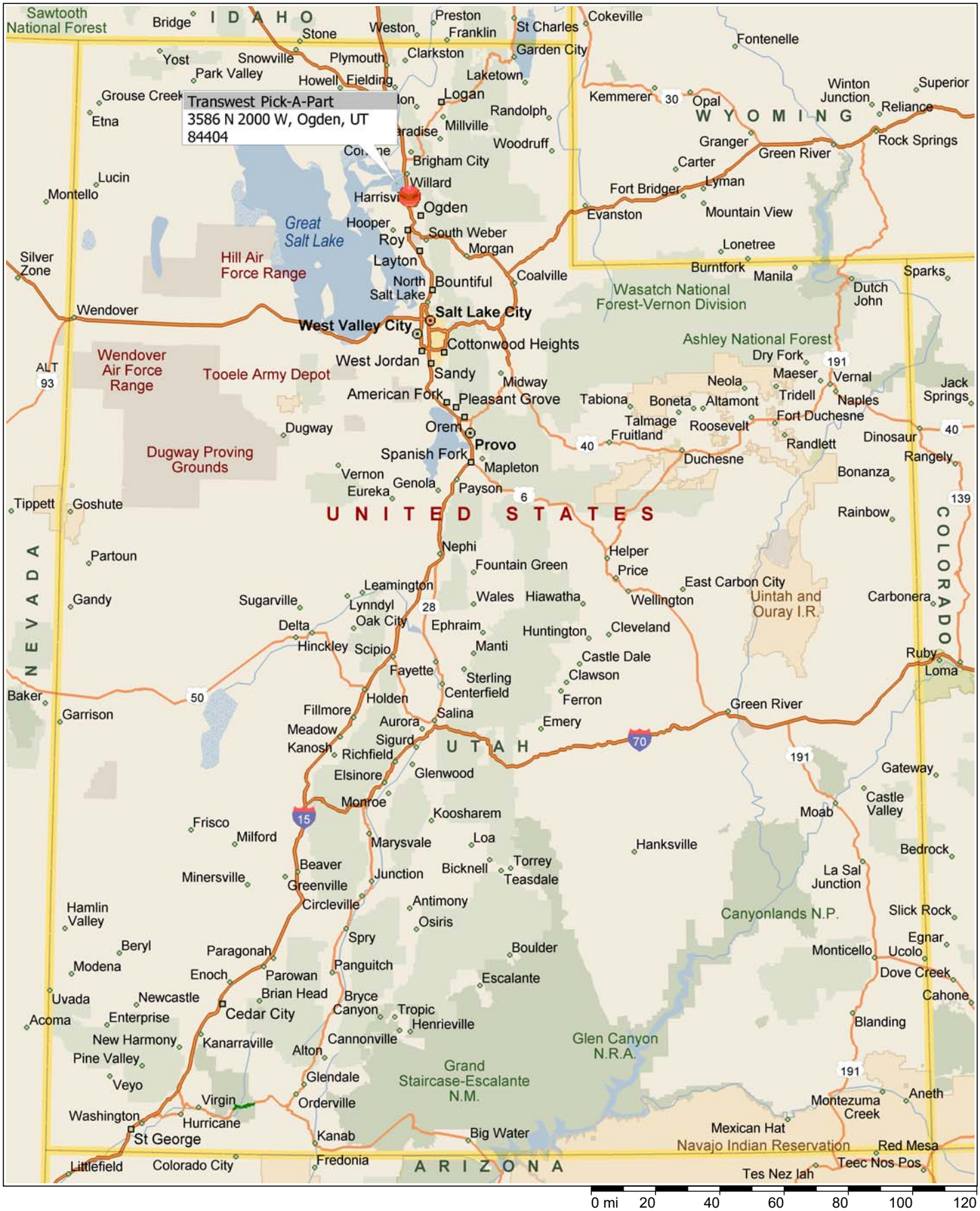


Figure 1. Map of Utah and relative location of Transwest Pick-A-Part

Figure 2. Aerial photo depiction of sampling locations, collected by Ellis Environmental on 3/16/2017; refer to Boring Logs and photos.

Ellis Environmental

dwg	TranswestPicAPrt
drawn by	mte
date	3/22/2017
PROJECT NAME	Transwest Pic-A-Part
PROJECT #	A17-1983
Fig #	3
REVISED BY	mte
REVISION # & DATE	1: 20170414

5 | 5 | 10 | 10 | N

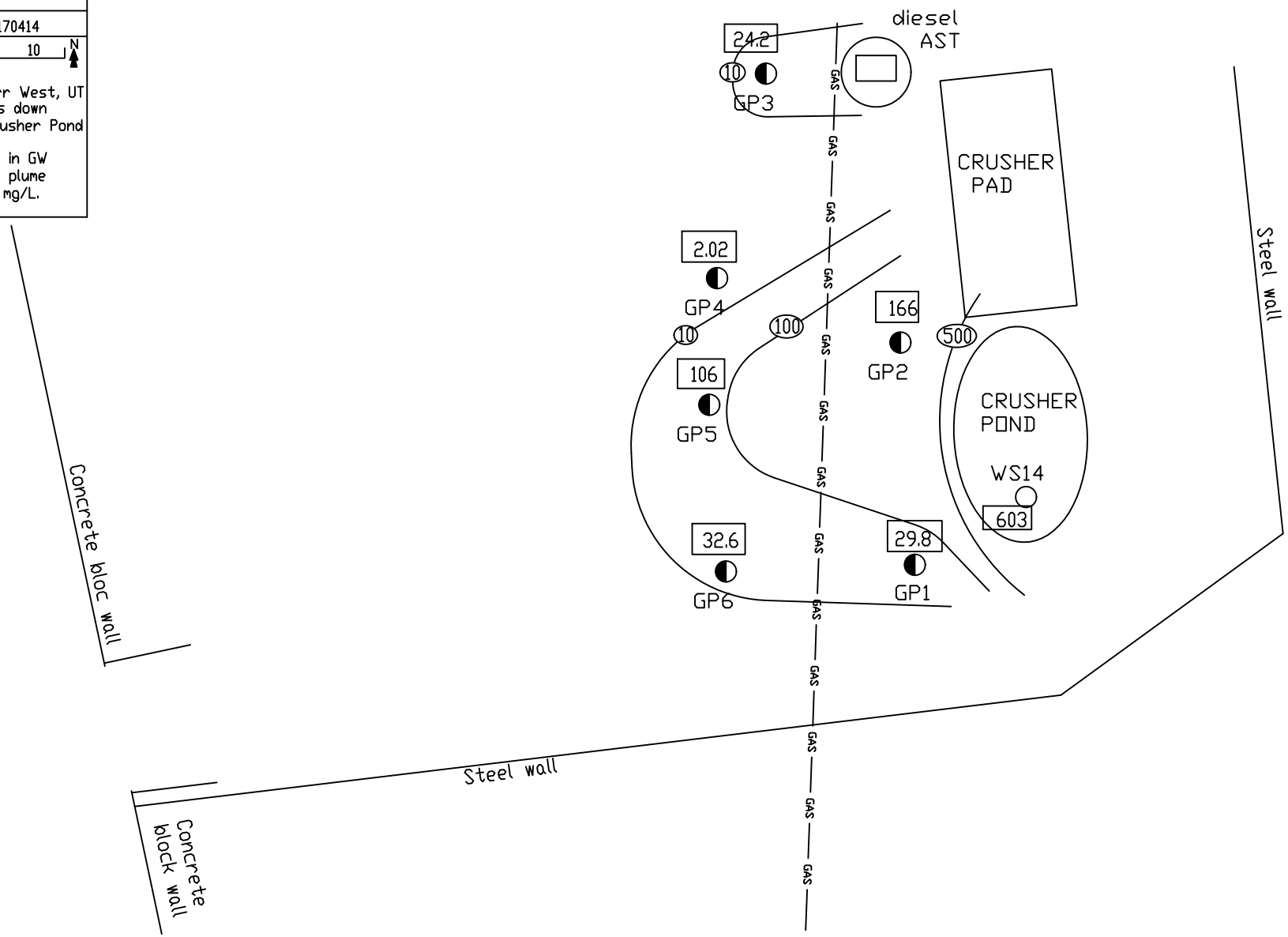
scale feet

NOTES

3586 N. 2000 W. Farr West, UT
Soil boring locations down gradient of the Crusher Pond & Pad
DRO concentrations in GW at each boring and plume model. All values in mg/L.

LEGEND

GPn - Geoprobe boring location
WSn - Water Sample location



Utah.gov Services Agencies

Figure 4, Transwest Pick-A-Part. Utilities buried near the Crusher Pond; utilities outside the west fence are not shown

Appendix B

Documents

Zimbra **markellis@ellisenviro.com**

UTAH EMLCFM 2017/04/11 #00762 A71010768-00A NORM NEW LREQ

From : noreply@bluestakes.org Tue, Apr 11, 2017 04:18 PM

Subject : UTAH EMLCFM 2017/04/11 #00762 A71010768-00A NORM NEW LREQ

To : MARKELLIS@ellisenviro.com

EMLCFM 00762 UTAHa 04/11/17 16:18:32 A71010768-00A 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 : A71010768 Rev:00A Taken: 04/11/17 16:07
Old Tkt: A71010768 Taken: 04/11/17 16:07 Oper: _STACIE
Submitted: 04/11/17 16:18 Oper: _STACIE Chan:ITE
Legal date: 04/13/17 16:07
Good Thru : 04/25/17 16:07 Update By: 04/21/17 16:07

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: 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

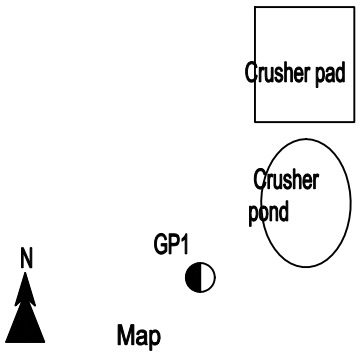
FARRW FARR WEST CITY SEWER & CULINARY WATER 801-731-4187
LEVL3 LEVEL 3 COMMUNICATIONS FIBER OPTICS 877-366-8344
PVWTR PINEVIEW WATER SYSTEMS CULINARY WATER 801-622-4350
PLEASA PLEASANT VIEW CITY CULINARY WATER 801-827-0453
QGCOCL QUESTAR GAS COMPANY GAS MARKED BY ELM LOCATING 406-728-9343
RMPOGD ROCKY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

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
Boring method: Push Probe, Geoprobe

Drill Machine: Geoprobe 7822DT
Boring: GP1
Location: SW of crusher pond
Date: 16 March 2017
Start time: 1000
Sampler: Joseph Ellis
Sampling method: Grab
Bore diameter: 2.25 inch



Map

Depth/ft	Symbol	Description	Sample data	Well configuration	Well Data	Remarks
0						
0		Gravel/Roadbase				Gravel/Roadbase wet with snowmelt water
1						
2		Clayey silt				
3		Brown Clay				
4						
5		Dark brown silt, moist				
6		SS1 @ 6-7'				
7						
8		Brown plastic clay				
9		WS2				
10						End of Boring
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

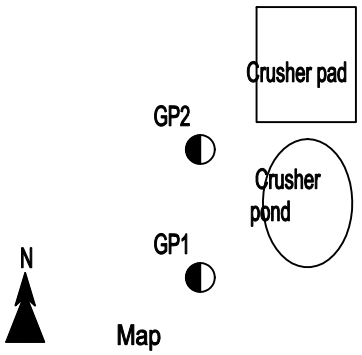
Ellis Environmental P.O. Box 215 Lehi, Utah 84043-0215 (801) 768-0675 Fax (801) 768-0677

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
Boring method: Push Probe, Geoprobe

Drill Machine: Geoprobe 7822DT
Boring: GP2
Location: NW of crusher pond
Date: 16 March 2017
Start time: 1034
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				Gravel/Roadbase wet with snowmelt water
1						
2		Dark brown clay HC odor SS3 @ 2-3'				
3						HC odor
4		Sand Lens				Narrow band of saturated soil
5		Gray silt				dry Saturated soil
6						
7		Silty clay, dark gray				
8		SS4 @ 7-9'				Slight HC odor
9		Clay, brown, plastic				
10		WS5				End of Boring
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

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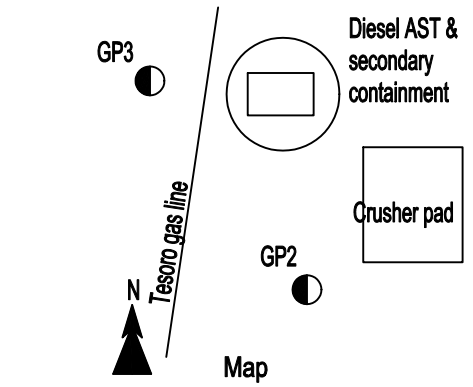
Soil Boring Log

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

Drill Machine: Geoprobe 7822DT
Boring: GP3
Location: W of Diesel AST
Date: 16 March 2017
Start time: 1058
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				Gravel/Roadbase wet with snowmelt water
1		SS6 @ 1-2'				
2		Clay, red brown				HC odor
3						
4						no HC odor
5						
6						
7						
8		Sand, coarse, yellow brown				
9		Clay, red brown				Stained, no odor
10		WS7				End of Boring
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

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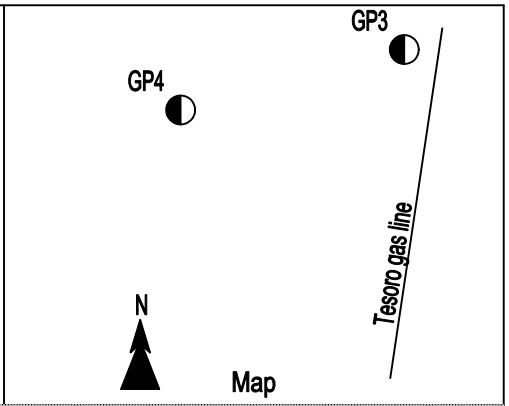
Soil Boring Log

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
Boring method: Push Probe, Geoprobe

Drill Machine: Geoprobe 7822DT
Boring: GP4
Location: North Sample Point, 2nd transect
Date: 16 March 2017
Start time: nr
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				Gravel/Roadbase wet with snowmelt water
1						
		Clay, light brown				
2						
3					▼	
4						
5					▲	soil dry 5-7'
6						
7					▼	
		SS8 @ 7-8'	▮			Black stain, slight HC odor
8		Silt, black				
9						
		GW9	●			End of Boring
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

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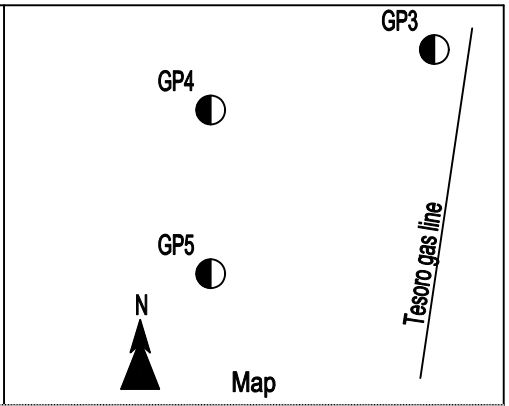
Soil Boring Log

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
Boring method: Push Probe, Geoprobe

Drill Machine: Geoprobe 7822DT
Boring: GP5
Location: Central Sample on 2nd transect
Date: 16 March 2017
Start time: 1158
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				Gravel/Roadbase wet with snowmelt water
1						
2		Clay, red				
3						
4		Clay, gray			▼	
5						
6		Silt, gray				No odors
7		SS10 @ 6-7'	■			
8						
9		Clay, red				
10		GW11	●			End of Boring
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

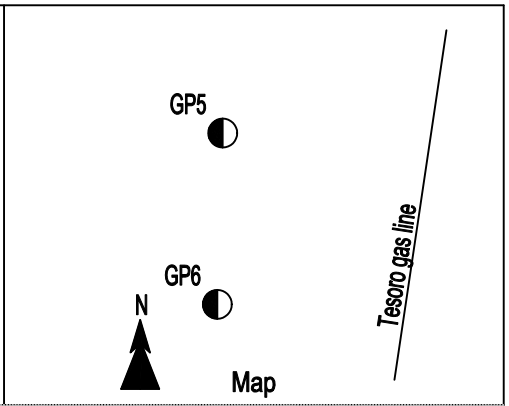
Ellis Environmental P.O. Box 215 Lehi, Utah 84043-0215 (801) 768-0675 Fax (801) 768-0677

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
Boring method: Push Probe, Geoprobe

Drill Machine: Geoprobe 7822DT
Boring: GP6
Location: 2nd transect, south sample point
Date: 16 March 2017
Start time: 1222
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				Gravel/Roadbase wet with snowmelt water
1						
2						
3		Clay, red				
4						No odors
5		SS12 @ 5-6'				
6						
7						
8						
9		GW13				
10						End of Boring
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

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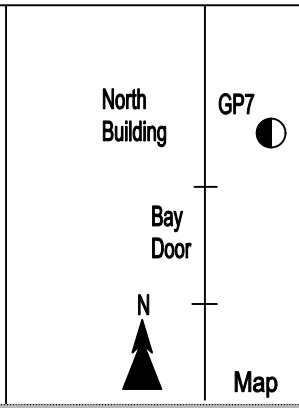
Ellis Environmental

Soil Boring Log

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

Drill Machine: Geoprobe 7822DT
Boring: GP7
Location: E side, N bldg, N of bay door
Date: 16 March 2017
Start time: nr
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				Gravel/Roadbase wet with snowmelt water
1						
2						
		Clay, gray				
3						
						moist 4-5', not saturated
4		SS15 @ 4-5'				
						SS15 discarded at Lab
5						
						moist 6-7', not saturated
6						
7						
		Clay, red				
8						
						No GW yeild for sampling
9						
						End of Boring
10						
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

Davis-Weber Area, Utah

HLA—Harrisville-Leland complex, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: j53c
Elevation: 4,250 to 4,500 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Harrisville and similar soils: 60 percent
Leland and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Harrisville

Setting

Landform: Lake terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium and/or lacustrine deposits

Typical profile

Ap - 0 to 8 inches: silt loam
B21t - 8 to 14 inches: silty clay loam
B22tca - 14 to 22 inches: silty clay loam
B3ca - 22 to 33 inches: silty clay loam
C1 - 33 to 45 inches: silty clay loam
C2 - 45 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 50.0
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: D
Ecological site: Semiwet Fresh Meadow (R028AY012UT)
Hydric soil rating: No

Description of Leland

Setting

Landform: Lake terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

A2 - 0 to 8 inches: silt loam
B2tca - 8 to 14 inches: clay loam
Bca - 14 to 19 inches: fine sandy loam
C1 - 19 to 31 inches: loamy very fine sand
C2 - 31 to 38 inches: silt loam
C3 - 38 to 60 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Strongly saline (16.0 to 32.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 80.0
Available water storage in profile: Moderate (about 6.3 inches)

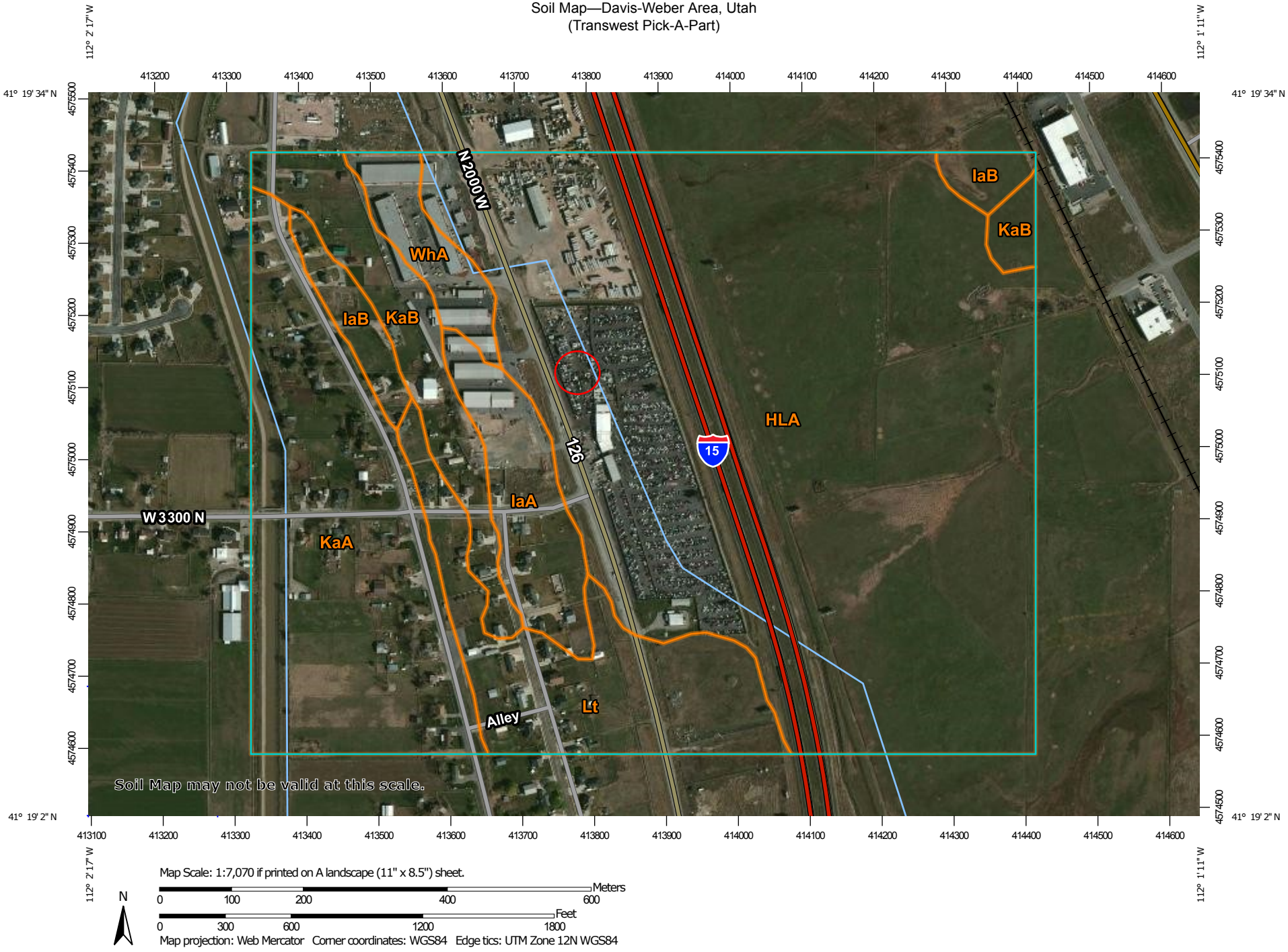
Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: D
Ecological site: Alkali Bottom (Alkali Sacaton) (R028AY001UT)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Davis-Weber Area, Utah
Survey Area Data: Version 10, Sep 9, 2016

Soil Map—Davis-Weber Area, Utah
(Transwest Pick-A-Part)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Davis-Weber Area, Utah
Survey Area Data: Version 10, Sep 9, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 29, 2012—Apr 16, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Davis-Weber Area, Utah (UT607)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
HLA	Harrisville-Leland complex, 0 to 1 percent slopes	130.6	57.8%
IaA	Ironton silt loam, 0 to 1 percent slopes	10.3	4.6%
IaB	Ironton silt loam, 1 to 3 percent slopes	5.7	2.5%
KaA	Kidman fine sandy loam, 0 to 1 percent slopes	39.1	17.3%
KaB	Kidman fine sandy loam, 1 to 3 percent slopes	13.9	6.2%
Lt	Logan silty clay loam, 0 to 3 percent slopes	20.6	9.1%
WhA	Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes, channeled	5.6	2.5%
Totals for Area of Interest		**225.8**	**100.0%**

OGDEN SUGAR FACTORY, UTAH (426414)

Period of Record Monthly Climate Summary

Period of Record : 09/01/1924 to 06/07/2009

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	36.3	42.7	52.3	62.5	72.6	82.4	92.1	89.9	79.6	66.6	49.6	39.0	63.8
Average Min. Temperature (F)	17.7	23.0	30.0	37.4	45.2	52.6	59.8	57.8	48.2	38.2	28.2	20.9	38.2
Average Total Precipitation (in.)	1.58	1.44	1.68	2.03	1.86	1.31	0.55	0.77	1.20	1.63	1.50	1.49	17.05
Average Total SnowFall (in.)	10.6	4.9	3.0	0.5	0.0	0.0	0.0	0.0	0.0	0.2	2.4	4.9	26.5
Average Snow Depth (in.)	2	1	0	0	0	0	0	0	0	0	0	1	0

Percent of possible observations for period of record.
Max. Temp.: 97% Min. Temp.: 97.8% Precipitation: 94.7% Snowfall: 85% Snow Depth: 73%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

Appendix C

Laboratory Reports

Summary of Sampling	
Client	Transwest Pick-A-Part
Location	3586 North 2000 West, Farr West, UT
Sampling Date	16 March 2017
Units	Soil, mg/kg

Sample Location	DRO
1- GP1 @ 6-7'	89.2
3- GP2 @ 2-3'	113
4- GP2 @ 7-9'	39.7
6- GP3 @ 1-2'	72.4
8- GP4 @ 7-8'	103
10- GP5 @ 6-7'	267
12- GP6 @ 5-6'	105

Summary of Sampling	
Client	Transwest Pick-A-Part
Location	3586 North 2000 West, Farr West, UT
Sampling Date	16 March 2017
Units	Groundwater, mg/L

Sample Location	DRO
2- GP1	29.8
5- GP2	166
7- GP3	24.2
9- GP4	2.02
11- GP5	106
13- GP6	32.6
14- Crusher Pond	603

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: 1703332

3440 South 700 West
Salt Lake City, UT 84119

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

American West Analytical Laboratories received sample(s) on 3/16/2017 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: Jose G. Rocha

Digitally signed by Jose G. Rocha
DN: cn=Jose G. Rocha, o=American West Analytical Laboratories, ou, email=jose@awal-labs.com, c=US
Date: 2017.03.28 17:02:36 -06'00'

Laboratory Director or designee

American West
ANALYTICAL LABORATORIES

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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: 1703332-001A
Client Sample ID: 1 - GP1 @ 6-7'
Collection Date: 3/16/2017 1005h
Received Date: 3/16/2017 1527h

Test Code: 8015-S-TPH-3546

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

Analyzed: 3/20/2017 1044h **Extracted:** 3/17/2017 734h
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	27.2	**89.2**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	24.2	45.33	53.5	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: 1703332-002A
Client Sample ID: 2 - GP1
Collection Date: 3/16/2017 1020h
Received Date: 3/16/2017 1527h

Test Code: 8015-W-TPH-3511

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

Analyzed: 3/28/2017 1250h **Extracted:** 3/28/2017 1000h
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	0.511	**29.8**	H

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	1.23	1.169	105	27-182	H

H - The initial preparation of this sample was completed within the hold time. Due to quality control issues the sample required repreparation and reanalysis outside the 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: 1703332-003A
Client Sample ID: 3 - GP2 @ 2-3'
Collection Date: 3/16/2017 1040h
Received Date: 3/16/2017 1527h

Test Code: 8015-S-TPH-3546

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

Analyzed: 3/20/2017 1144h **Extracted:** 3/17/2017 734h
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	**113**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	35.0	40.04	87.5	10-122	

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-A-Part / 1983
Lab Sample ID: 1703332-004A
Client Sample ID: 4 - GP2 @ 7-9'
Collection Date: 3/16/2017 1045h
Received Date: 3/16/2017 1527h

Test Code: 8015-S-TPH-3546

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

Analyzed: 3/20/2017 1403h **Extracted:** 3/17/2017 734h
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	26.3	**39.7**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	24.5	43.82	55.9	10-122	

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ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-A-Part / 1983
Lab Sample ID: 1703332-005A
Client Sample ID: 5 - GP2
Collection Date: 3/16/2017 1055h
Received Date: 3/16/2017 1527h

Test Code: 8015-W-TPH-3511

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

Analyzed: 3/28/2017 1310h **Extracted:** 3/28/2017 1000h
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	0.500	**166**	H

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	1.95	1.142	171	27-182	H

H - The initial preparation of this sample was completed within the hold time. Due to quality control issues the sample required repreparation and reanalysis outside the holding time.

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ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-A-Part / 1983
Lab Sample ID: 1703332-006A
Client Sample ID: 6 - GP3 @ 1-2'
Collection Date: 3/16/2017 1100h
Received Date: 3/16/2017 1527h

Test Code: 8015-S-TPH-3546

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

Analyzed: 3/20/2017 1204h **Extracted:** 3/17/2017 734h
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	24.1	**72.4**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	22.8	40.17	56.7	10-122	

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ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-A-Part / 1983
Lab Sample ID: 1703332-007A
Client Sample ID: 7 - GP3
Collection Date: 3/16/2017 1110h
Received Date: 3/16/2017 1527h

Test Code: 8015-W-TPH-3511

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

Analyzed: 3/28/2017 1329h **Extracted:** 3/28/2017 1000h
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	0.501	**24.2**	H

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	1.47	1.145	129	27-182	H

H - The initial preparation of this sample was completed within the hold time. Due to quality control issues the sample required repreparation and reanalysis outside the holding time.

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ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-A-Part / 1983
Lab Sample ID: 1703332-008A
Client Sample ID: 8 - GP4 @ 7-8'
Collection Date: 3/16/2017 1130h
Received Date: 3/16/2017 1527h

Test Code: 8015-S-TPH-3546

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

Analyzed: 3/20/2017 1423h **Extracted:** 3/17/2017 734h
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	28.9	**103**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	26.9	48.23	55.8	10-122	

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ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-A-Part / 1983
Lab Sample ID: 1703332-009A
Client Sample ID: 9 - GP4
Collection Date: 3/16/2017 1136h
Received Date: 3/16/2017 1527h

Test Code: 8015-W-TPH-3511

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

Analyzed: 3/28/2017 1230h **Extracted:** 3/28/2017 1000h
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	0.496	**2.02**	H

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	1.21	1.133	107	27-182	H

H - The initial preparation of this sample was completed within the hold time. Due to quality control issues the sample required repreparation and reanalysis outside the holding time.

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ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-A-Part / 1983
Lab Sample ID: 1703332-010A
Client Sample ID: 10 - GP5 @ 6-7'
Collection Date: 3/16/2017 1210h
Received Date: 3/16/2017 1527h

Test Code: 8015-S-TPH-3546

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

Analyzed: 3/20/2017 1224h **Extracted:** 3/17/2017 734h
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	27.7	**267**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	21.9	46.11	47.5	10-122	

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ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-A-Part / 1983
Lab Sample ID: 1703332-011A
Client Sample ID: 11 - GP5
Collection Date: 3/16/2017 1215h
Received Date: 3/16/2017 1527h

Test Code: 8015-W-TPH-3511

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

Analyzed: 3/28/2017 1250h **Extracted:** 3/28/2017 1000h
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	0.543	**106**	H

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	2.28	1.241	184	27-182	SH

H - The initial preparation of this sample was completed within the hold time. Due to quality control issues the sample required repreparation and reanalysis outside the holding time.
S - High surrogate recovery attributed to TPH interference. The method is in control as indicated by the method blank and LCS.

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ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-A-Part / 1983
Lab Sample ID: 1703332-012A
Client Sample ID: 12 - GP6 @ 5-6'
Collection Date: 3/16/2017 1235h
Received Date: 3/16/2017 1527h

Test Code: 8015-S-TPH-3546

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

Analyzed: 3/20/2017 1144h **Extracted:** 3/17/2017 734h
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	25.4	**105**	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	25.9	42.41	61.1	10-122	

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ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-A-Part / 1983
Lab Sample ID: 1703332-013A
Client Sample ID: 13 - GP6
Collection Date: 3/16/2017 1240h
Received Date: 3/16/2017 1527h

Test Code: 8015-W-TPH-3511

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

Analyzed: 3/28/2017 1310h **Extracted:** 3/28/2017 1000h
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	0.496	**32.6**	H

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	1.25	1.133	111	27-182	H

H - The initial preparation of this sample was completed within the hold time. Due to quality control issues the sample required repreparation and reanalysis outside the holding time.

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

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ANALYTICAL LABORATORIES

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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: 1703332-014A
Client Sample ID: 14 - Crusher Pond
Collection Date: 3/16/2017 1245h
Received Date: 3/16/2017 1527h

Test Code: 8015-W-TPH-3511

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

Analyzed: 3/20/2017 1324h **Extracted:** 3/17/2017 830h
Units: mg/L **Dilution Factor:** 100 **Method:** SW8015D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Diesel Range Organics (DRO) (C10-C28)	68476-34-6	49.7	**603**	[2]

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	0.606	0.5685	107	10-152	

[2] - Analyte concentration is too high for accurate matrix spike recovery.
The reporting limits were raised due to high analyte concentrations.

ORGANIC ANALYTICAL REPORT

Client: The Vision Group, Inc. **Contact:** Mark Ellis
Project: Transwest Pick-A-Part / 1983
Lab Sample ID: 1703332-015A
Client Sample ID: 15 - GP7 @ 4-5'
Collection Date: 3/16/2017 1310h
Received Date: 3/16/2017 1527h

Test Code: 8015-S-TPH-3546

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

Analyzed: 3/20/2017 1204h **Extracted:** 3/17/2017 734h
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	24.5	< 24.5	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	25.7	40.78	63.0	10-122	

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

American West Analytical Laboratories

REVISED 3-27-17 changed to a next Day Rush, per mark. el

Rpt Emailed: RUSH P2

WORK ORDER Summary

Work Order: **1703332** Page 1 of 2

Client: The Vision Group, Inc.
Due Date: 3/28/2017
Client ID: ELL110 **Contact:** Mark Ellis
Project: **Transwest Pick-A-Part / 1983** **QC Level:** I **WO Type:** Standard
Comments: 3-27-17 changed to a Next Day Rush, per Mark;

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1703332-001A	**1 - GP1 @ 6-7'**	3/16/2017 1005h	3/16/2017 1527h	**3546-TPH-PR**	Soil	☐	df - tph /pmoist	2
				8015-S-TPH-3546		☑	df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST		☐	df - tph /pmoist	
1703332-002A	**2 - GP1**	3/16/2017 1020h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous	☐	df - tph	3
				8015-W-TPH-3511		☑	df - tph	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1703332-003A	**3 - GP2 @ 2-3'**	3/16/2017 1040h	3/16/2017 1527h	**3546-TPH-PR**	Soil	☐	df - tph /pmoist	2
				8015-S-TPH-3546		☑	df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST		☐	df - tph /pmoist	
1703332-004A	**4 - GP2 @ 7-9'**	3/16/2017 1045h	3/16/2017 1527h	**3546-TPH-PR**	Soil	☐	df - tph /pmoist	2
				8015-S-TPH-3546		☑	df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST		☐	df - tph /pmoist	
1703332-005A	**5 - GP2**	3/16/2017 1055h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous	☐	df - tph	3
				8015-W-TPH-3511		☑	df - tph	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1703332-006A	**6 - GP3 @ 1-2'**	3/16/2017 1100h	3/16/2017 1527h	**3546-TPH-PR**	Soil	☐	df - tph /pmoist	2
				8015-S-TPH-3546		☑	df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST		☐	df - tph /pmoist	
1703332-007A	**7 - GP3**	3/16/2017 1110h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous	☐	df - tph	3
				8015-W-TPH-3511		☑	df - tph	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1703332-008A	**8 - GP4 @ 7-8'**	3/16/2017 1130h	3/16/2017 1527h	**3546-TPH-PR**	Soil	☐	df - tph /pmoist	2
				8015-S-TPH-3546		☑	df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				

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WORK ORDER Summary

Work Order: **1703332**

Client: The Vision Group, Inc. Due Date: 3/28/2017

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1703332-008A	**8 - GP4 @ 7-8'**	3/16/2017 1130h	3/16/2017 1527h	**PMOIST**	Soil	☐	df - tph /pmoist	2
1703332-009A	**9 - GP4**	3/16/2017 1136h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous	☐	df - tph	3
				8015-W-TPH-3511		☑	df - tph	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1703332-010A	**10 - GP5 @ 6-7'**	3/16/2017 1210h	3/16/2017 1527h	**3546-TPH-PR**	Soil	☐	df - tph /pmoist	2
				8015-S-TPH-3546		☑	df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST		☐	df - tph /pmoist	
1703332-011A	**11 - GP5**	3/16/2017 1215h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous	☐	df - tph	3
				8015-W-TPH-3511		☑	df - tph	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1703332-012A	**12 - GP6 @ 5-6'**	3/16/2017 1235h	3/16/2017 1527h	**3546-TPH-PR**	Soil	☐	df - tph /pmoist	2
				8015-S-TPH-3546		☑	df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST		☐	df - tph /pmoist	
1703332-013A	**13 - GP6**	3/16/2017 1240h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous	☐	df - tph	3
				8015-W-TPH-3511		☑	df - tph	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1703332-014A	**14 - Crusher Pond**	3/16/2017 1245h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous	☐	df - tph	3
				8015-W-TPH-3511		☑	df - tph	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1703332-015A	**15 - GP7 @ 4-5'**	3/16/2017 1310h	3/16/2017 1527h	**3546-TPH-PR**	Soil	☐	df - tph /pmoist	2
				8015-S-TPH-3546		☑	df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST		☐	df - tph /pmoist	

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Rpt Emailed: P2

WORK ORDER Summary

Work Order: **1703332**

Client: The Vision Group, Inc. Due Date: 3/30/2017

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

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

DB

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1703332-001A	**1 - GP1 @ 6-7'**	3/16/2017 1005h	3/16/2017 1527h	**3546-TPH-PR**	Soil		df - tph /pmoist	2
				8015-S-TPH-3546			df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST			df - tph /pmoist	
1703332-002A	**2 - GP1**	3/16/2017 1020h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous		df - tph	3
				8015-W-TPH-3511			df - tph	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1703332-003A	**3 - GP2 @ 2-3'**	3/16/2017 1040h	3/16/2017 1527h	**3546-TPH-PR**	Soil		df - tph /pmoist	2
				8015-S-TPH-3546			df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST			df - tph /pmoist	
1703332-004A	**4 - GP2 @ 7-9'**	3/16/2017 1045h	3/16/2017 1527h	**3546-TPH-PR**	Soil		df - tph /pmoist	2
				8015-S-TPH-3546			df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST			df - tph /pmoist	
1703332-005A	**5 - GP2**	3/16/2017 1055h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous		df - tph	3
				8015-W-TPH-3511			df - tph	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1703332-006A	**6 - GP3 @ 1-2'**	3/16/2017 1100h	3/16/2017 1527h	**3546-TPH-PR**	Soil		df - tph /pmoist	2
				8015-S-TPH-3546			df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				
				PMOIST			df - tph /pmoist	
1703332-007A	**7 - GP3**	3/16/2017 1110h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous		df - tph	3
				8015-W-TPH-3511			df - tph	
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1				
1703332-008A	**8 - GP4 @ 7-8'**	3/16/2017 1130h	3/16/2017 1527h	**3546-TPH-PR**	Soil		df - tph /pmoist	2
				8015-S-TPH-3546			df - tph /pmoist	
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1				

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WORK ORDER Summary

Work Order: **1703332**

Client: The Vision Group, Inc.

Due Date: 3/30/2017

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
1703332-008A	**8 - GP4 @ 7-8'**	3/16/2017 1130h	3/16/2017 1527h	**PMOIST**	Soil		df - tph /pmoist 2
1703332-009A	**9 - GP4**	3/16/2017 1136h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous		df - tph 3
				8015-W-TPH-3511			df - tph
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1			
1703332-010A	**10 - GP5 @ 6-7'**	3/16/2017 1210h	3/16/2017 1527h	**3546-TPH-PR**	Soil		df - tph /pmoist 2
				8015-S-TPH-3546			df - tph /pmoist
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1			
				PMOIST			df - tph /pmoist
1703332-011A	**11 - GP5**	3/16/2017 1215h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous		df - tph 3
				8015-W-TPH-3511			df - tph
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1			
1703332-012A	**12 - GP6 @ 5-6'**	3/16/2017 1235h	3/16/2017 1527h	**3546-TPH-PR**	Soil		df - tph /pmoist 2
				8015-S-TPH-3546			df - tph /pmoist
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1			
				PMOIST			df - tph /pmoist
1703332-013A	**13 - GP6**	3/16/2017 1240h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous		df - tph 3
				8015-W-TPH-3511			df - tph
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1			
1703332-014A	**14 - Crusher Pond**	3/16/2017 1245h	3/16/2017 1527h	**3511-TPH-PR**	Aqueous		df - tph 3
				8015-W-TPH-3511			df - tph
				Test Group: 8015-W-3511-TPH; # of Analytes: 1 / # of Surr: 1			
1703332-015A	**15 - GP7 @ 4-5'**	3/16/2017 1310h	3/16/2017 1527h	**3546-TPH-PR**	Soil		df - tph /pmoist 2
				8015-S-TPH-3546			df - tph /pmoist
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1			
				PMOIST			df - tph /pmoist

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CHAIN OF CUSTODY

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.

1703332
AWAL Lab Sample Set #

Page 1 of 2

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@EllisEnv.com
Project Name:	Transwest Pick A Path
Project #:	1983
PO #:	
Sampler Name:	Joseph Ellis

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: 3/30/17

- ☐ 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:

	Sample ID:	Date Sampled	Time Sampled	# of Containers	Sample Matrix	DRO										Known Hazards & Sample Comments
1	1-GP1@6-7'	3-16-17	1005	2	S	X										
2	2-GP1	3-16-17	1020	3	W	X										
3	3-GP2@2-3'	3-16-17	1040	2	S	X										
4	4-GP2@7-9'	3-16-17	1045	2	S	X										
5	5-GP2	3-16-17	1055	3	W	X										
6	6-GP3@1-2'	3-16-17	1100	2	S	X										
7	7-GP3	3-16-17	1110	3	W	X										
8	8-GP4@7-8'	3-16-17	1130	2	S	X										
9	9-GP4	3-16-17	11.36	3	W	X										
10	10-GP5@6-7'	3-16-17	1210	2	S	X										
11	11 GP5	3-16-17	1215	3	W	X										
12	12 GP6@5-6'	3-16-17	1235	2	S	X										
13	13 GP6@	3-16-17	1240	3	W	X										

Laboratory Use Only

Samples Were:
1. Shipped or hand delivered
2. Ambient or Chilled
3. Temperature 9.6 °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	Denise Brown
Print Name:	Joseph H. Ellis	Print Name:	Denise Brown
Date:	3-16-17	Date:	3/16/17
Time:	1527	Time:	1527
Relinquished by: Signature		Received by: Signature	
Print Name:		Print Name:	
Date:		Date:	
Time:		Time:	
Relinquished by: Signature		Received by: Signature	
Print Name:		Print Name:	
Date:		Date:	
Time:		Time:	
Relinquished by: Signature		Received by: Signature	
Print Name:		Print Name:	
Date:		Date:	
Time:		Time:	

Special Instructions:

3/27/17 changed to a Next Day Rush, per Mark. ej

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CHAIN OF CUSTODY

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.

1703332
AWAL Lab Sample Set #

Page 2 of 2

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: 3/30/17

Client: Ellis Environmental

Address:

City, State, Zip:

Contact:

Phone #: Cell #:

E-mail:

Project Name:

Project #:

PO #:

Sampler Name:

- ☐ 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:

	Sample ID:	Date Sampled	Time Sampled	# of Containers	Sample Matrix	D120	Known Hazards & Sample Comments
1	14 - Crusher Pond	3-16-17	1245	3	W	X	
2	15 - GW7 (4-5')	3-16-17	1310	2	S	X	← Cancel per Joseph Ellis DB 3/16/17 3/17/17 DB 3/17/17
3							
4							
5							
6							
7							
8							- Already run it will be reported out so do not cancel - DB 3/17/17
9							
10							
11							
12							
13							

Laboratory Use Only

Samples Were:
1. Shipped or hand delivered
2. Ambient or Chilled
3. Temperature 9.6 °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		Date: 3-16-17	Received by: Signature: Denise Brown
Print Name: Joseph H. Ellis		Time: 1527	Print Name: Denise Brown
Relinquished by: Signature		Date:	Received by: Signature
Print Name:		Time:	Print Name:
Relinquished by: Signature		Date:	Received by: Signature
Print Name:		Time:	Print Name:
Relinquished by: Signature		Date:	Received by: Signature
Print Name:		Time:	Print Name:

Received by: Signature: Denise Brown	Date: 3/16/17
Print Name: Denise Brown	Time: 1527
Received by: Signature	Date:
Print Name:	Time:
Received by: Signature	Date:
Print Name:	Time:
Received by: Signature	Date:
Print Name:	Time:

Special Instructions:

Appendix D

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; Ellis Environmental: Participant in numerous soil and groundwater remediation projects including: closing cleanup sites; environmental property audits; groundwater and soil sampling; installation and maintenance of corrective action sites; and project manager for various cleanup projects. Certified Groundwater and Soil Sampler, (certificate #GS1632), 40 hour HAZWOPER, trained in 2005 (29cfr1910.120), and environmental audit inspector and researcher.

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.

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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