District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: BP	Contact: Steve Moskal
Address: 380 Airport Rd., Durango, CO 81303	Telephone No.: 505-330-9179
Facility Name: Tapp LS 003 A	Facility Type: Natural gas well

Surface Owner: Federal	Mineral Owner: Federal	API No. 300452369500

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County: San Juan
I	15	28N	08W	1,620	South	820	East	

Latitude 36.65831° **Longitude** -107.66217°

NATURE OF RELEASE

Type of Release: Unknown - hydrocarbon	Volume of Release: unknown	Volume Recovered: none
Source of Release: Unknown – suspect earthen pit; 95 bbl BGT	Date and Hour of Occurrence: unknown	Date and Hour of Discovery: November 30, 2017
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* During the closure of a below grade tank sampling indicated what appears to be hydrocarbon impacts to the soil, likely associated with an earthen pit.

Describe Area Affected and Cleanup Action Taken.* BP proposes to employ soil shredding to remediate hydrocarbon impacted soils at the location. The areas of concern was excavated, treated and backfilled according to the approved remediation plan. Attached is the final activities report including laboratory analysis for closure of the excavation, treated soil sampling and vadose zone sampling. BP request no further action.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Steve Moskal	Approved by Environmental Specialist:	
Title: Field Environmental Coordinator	Approval Date: 2/28/18	Expiration Date:
E-mail Address: steven.moskal@bp.com	Conditions of Approval:	Attached ☐
Date: February 20, 2017 Phone: 505-330-9179		

* Attach Additional Sheets If Necessary #NCS1800255653

OIL CONS. DIV DIST. 3
FEB 20 2018

41

BP America
Tapp LS 3A
(I) Sec 15 – T28N – R8W
San Juan County, New Mexico
API: 30-045-23695

Summary Record of Impact Remediation

November 30, 2017 Soils impacted with hydrocarbons encountered during closure of a 95 barrel below grade tank. Subsequent laboratory analytical report of impacted soils reported total petroleum hydrocarbons (TPH) in excess of 5,000 ppm. Well shut-in pending development of a remediation plan.

Site closure standard determined at 5,000 ppm TPH based on:

Horizontal Distance to Water Course > 1,000 feet (0 points)
Distance to Nearest Water Well > 1,000 feet (0 points)
Depth to Groundwater >100 feet (0 points)

January 2, 2018 Begin remediation via excavation of impacts with trackhoe and on-site soil shredding for treatment of removed soils.

January 3, 2018 Excavation size approximately 36' x 18' x 17' deep. Conduct witnessed composite sampling of sidewalls and base for closure. Excavation base comprised of dense sandstone.

Excavation Closure Sampling Test Results
January 3, 2018

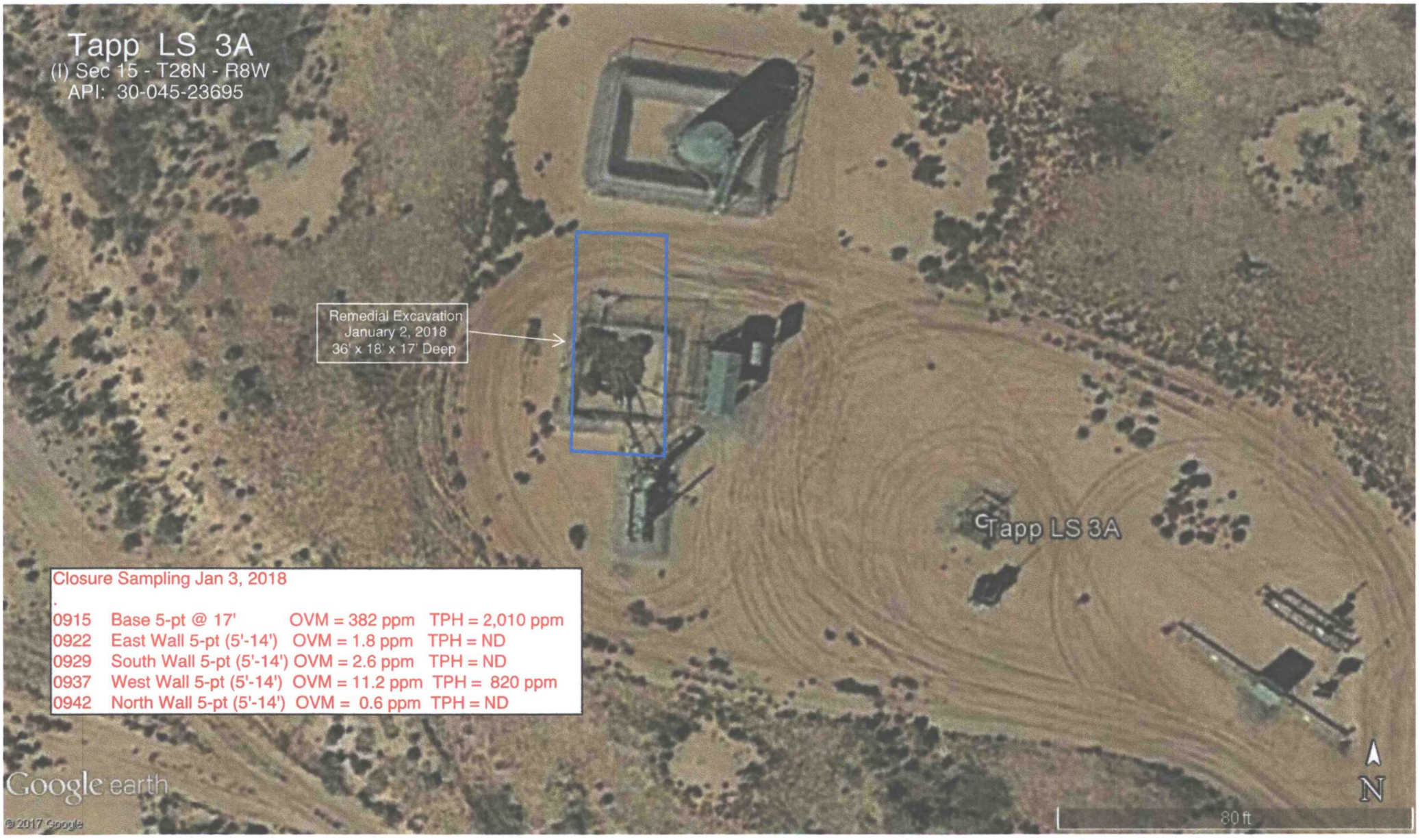
Sample ID	Date/Time	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
Base 5-pt @ 17'	01/03/2018 @ 09:15	382	2,010	0.42	75
East Wall 5-pt @ (5'-14')	01/03/2018 @ 09:22	1.8	ND	ND	130
South Wall 5-pt @ (5'-14')	01/03/2018 @ 09:29	2.6	ND	ND	170
West Wall 5-pt @ (5'-14')	01/03/2018 @ 09:37	11.2	820	ND	120
North Wall 5-pt @ (5'-14')	01/03/2018 @ 09:42	0.6	ND	ND	93
Site Closure Standard:			5,000	50	600

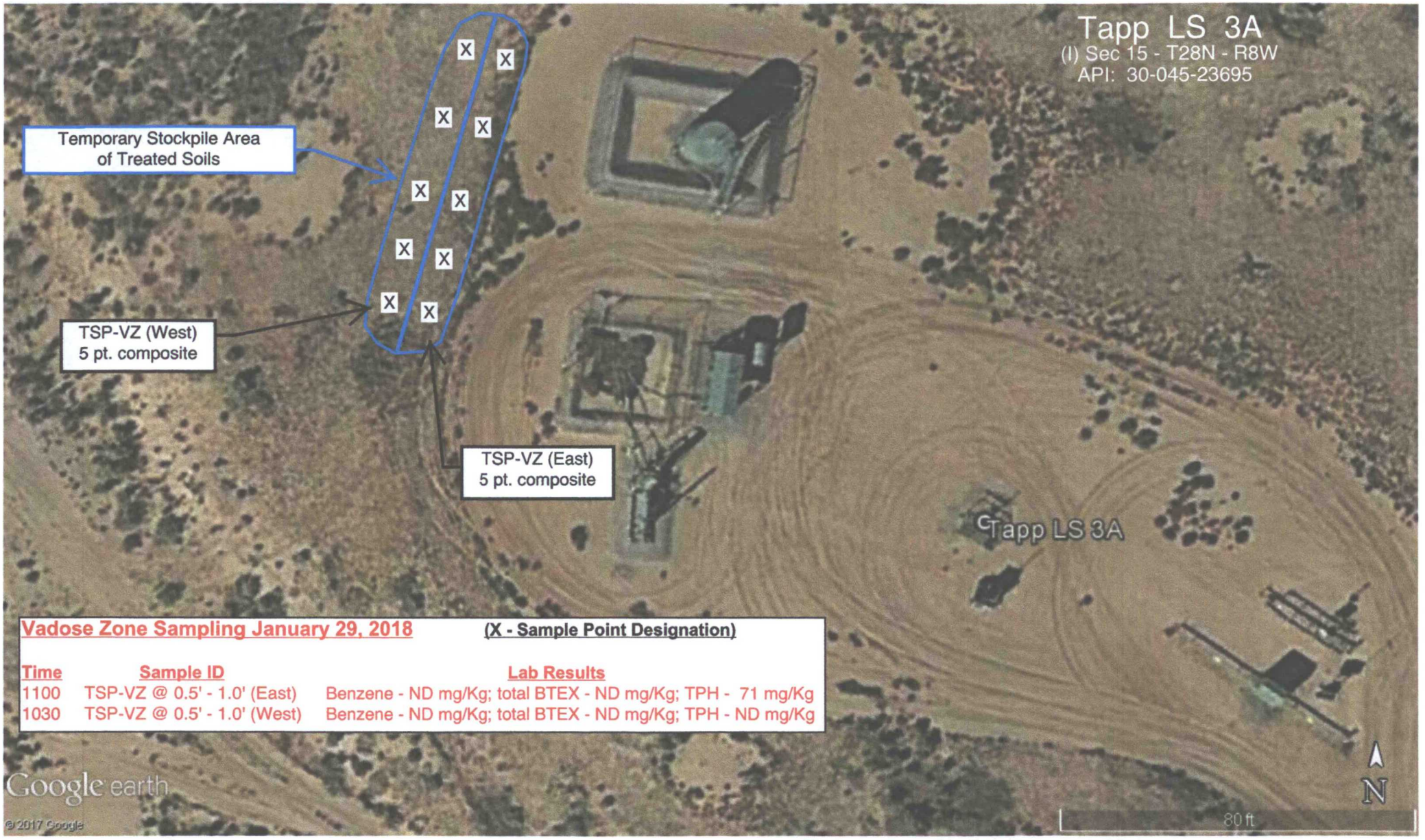
January 5, 2018 Conduct witnessed closure sampling of treated soils.

Treated Soil Pile Test Results
January 5, 2018

Pile ID	Volume (CY)	Date Created	Date Sampled	Field OVM (ppm)	BTEX (mg/Kg)	TPH GRO (mg/Kg)	TPH DRO (mg/Kg)	TPH MRO (mg/Kg)	TPH Total (mg/Kg)	Chloride (mg/Kg)
TSP-1	100	1/3/2018	1/5/2018	10.8	0.96	74	790	340	1,204	56
TSP-2	100	1/3/2018	1/5/2018	14.7	1.1	75	640	280	995	52
TSP-3	100	1/4/2018	1/5/2018	25.4	3.45	160	1,100	450	1,710	53
TSP-4	100	1/4/2018	1/5/2018	33.6	4.61	220	1,800	770	2,790	59
TSP-5	100	1/4/2018	1/5/2018	26.0	3.45	170	1,300	510	1,980	69
TSP-6	100	1/4/2018	1/5/2018	26.2	4.53	220	1,500	570	2,290	66
Site		Closure	Standard:		50				5,000	600

January 10, 2018 Remediation crew completes backfilling operations.


Tapp LS 3A
(I) Sec 15 - T28N - R8W
API: 30-045-23695
Remedial Excavation
January 2, 2018
36' x 18' x 17' Deep
Tapp LS 3A
Closure Sampling Jan 3, 2018
0915 Base 5-pt @ 17' OVM = 382 ppm TPH = 2,010 ppm
0922 East Wall 5-pt (5'-14') OVM = 1.8 ppm TPH = ND
0929 South Wall 5-pt (5'-14') OVM = 2.6 ppm TPH = ND
0937 West Wall 5-pt (5'-14') OVM = 11.2 ppm TPH = 820 ppm
0942 North Wall 5-pt (5'-14') OVM = 0.6 ppm TPH = ND
Google earth
© 2017 Google
N
80 ft


Tapp LS 3A
(I) Sec 15 - T28N - R8W
API: 30-045-23695
Temporary Stockpile Area of Treated Soils
TSP-VZ (West) 5 pt. composite
TSP-VZ (East) 5 pt. composite
Tapp LS 3A
Vadose Zone Sampling January 29, 2018
(X - Sample Point Designation)
Time | Sample ID | Lab Results
1100 | TSP-VZ @ 0.5' - 1.0' (East) | Benzene - ND mg/Kg; total BTEX - ND mg/Kg; TPH - 71 mg/Kg
1030 | TSP-VZ @ 0.5' - 1.0' (West) | Benzene - ND mg/Kg; total BTEX - ND mg/Kg; TPH - ND mg/Kg
Google earth
© 2017 Google
N
80 ft

REMEDIATION

CLOSURE

LABORATORY

RESULTS

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Analytical Report
Lab Order **1801162**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: TAPP LS 3A
Lab ID: 1801162-001 **Matrix:** SOIL

Client Sample ID: Base 5-pt @ 17'
Collection Date: 1/3/2018 9:15:00 AM
Received Date: 1/4/2018 7:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	75	30		mg/Kg	20	1/4/2018 11:32:37 AM	35839
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	290	20		mg/Kg	5	1/4/2018 10:14:17 AM	R48180
Surr: BFB	124	70-130		%Rec	5	1/4/2018 10:14:17 AM	R48180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1400	20		mg/Kg	2	1/4/2018 12:39:01 PM	35831
Motor Oil Range Organics (MRO)	320	99		mg/Kg	2	1/4/2018 12:39:01 PM	35831
Surr: DNOP	105	70-130		%Rec	2	1/4/2018 12:39:01 PM	35831
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.10		mg/Kg	5	1/4/2018 10:14:17 AM	B48180
Toluene	ND	0.20		mg/Kg	5	1/4/2018 10:14:17 AM	B48180
Ethylbenzene	ND	0.20		mg/Kg	5	1/4/2018 10:14:17 AM	B48180
Xylenes, Total	0.42	0.40		mg/Kg	5	1/4/2018 10:14:17 AM	B48180
Surr: 4-Bromofluorobenzene	122	70-130		%Rec	5	1/4/2018 10:14:17 AM	B48180
Surr: Toluene-d8	107	70-130		%Rec	5	1/4/2018 10:14:17 AM	B48180

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1801162**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: TAPP LS 3A
Lab ID: 1801162-002 **Matrix:** SOIL

Client Sample ID: East Wall 5-pt (5'-14')
Collection Date: 1/3/2018 9:22:00 AM
Received Date: 1/4/2018 7:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	130	30		mg/Kg	20	1/4/2018 11:45:01 AM	35839
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	1/4/2018 10:37:10 AM	R48180
Surr: BFB	105	70-130		%Rec	1	1/4/2018 10:37:10 AM	R48180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/4/2018 11:11:15 AM	35831
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/4/2018 11:11:15 AM	35831
Surr: DNOP	88.9	70-130		%Rec	1	1/4/2018 11:11:15 AM	35831
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.018		mg/Kg	1	1/4/2018 10:37:10 AM	B48180
Toluene	ND	0.036		mg/Kg	1	1/4/2018 10:37:10 AM	B48180
Ethylbenzene	ND	0.036		mg/Kg	1	1/4/2018 10:37:10 AM	B48180
Xylenes, Total	ND	0.073		mg/Kg	1	1/4/2018 10:37:10 AM	B48180
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	1/4/2018 10:37:10 AM	B48180
Surr: Toluene-d8	103	70-130		%Rec	1	1/4/2018 10:37:10 AM	B48180

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1801162**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: TAPP LS 3A
Lab ID: 1801162-003 **Matrix:** SOIL

Client Sample ID: South Wall 5-pt (5'-14')
Collection Date: 1/3/2018 9:29:00 AM
Received Date: 1/4/2018 7:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	170	30		mg/Kg	20	1/4/2018 11:57:25 AM	35839
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	1/4/2018 11:00:10 AM	R48180
Surr: BFB	111	70-130		%Rec	1	1/4/2018 11:00:10 AM	R48180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/4/2018 11:33:05 AM	35831
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/4/2018 11:33:05 AM	35831
Surr: DNOP	91.1	70-130		%Rec	1	1/4/2018 11:33:05 AM	35831
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.020		mg/Kg	1	1/4/2018 11:00:10 AM	B48180
Toluene	ND	0.040		mg/Kg	1	1/4/2018 11:00:10 AM	B48180
Ethylbenzene	ND	0.040		mg/Kg	1	1/4/2018 11:00:10 AM	B48180
Xylenes, Total	ND	0.080		mg/Kg	1	1/4/2018 11:00:10 AM	B48180
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	1/4/2018 11:00:10 AM	B48180
Surr: Toluene-d8	102	70-130		%Rec	1	1/4/2018 11:00:10 AM	B48180

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1801162**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: TAPP LS 3A
Lab ID: 1801162-004 **Matrix:** SOIL

Client Sample ID: West Wall 5-pt (5'-14')
Collection Date: 1/3/2018 9:37:00 AM
Received Date: 1/4/2018 7:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	120	30		mg/Kg	20	1/4/2018 12:09:49 PM	35839
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	1/4/2018 11:23:07 AM	R48180
Surr: BFB	109	70-130		%Rec	5	1/4/2018 11:23:07 AM	R48180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	650	9.5		mg/Kg	1	1/4/2018 11:55:10 AM	35831
Motor Oil Range Organics (MRO)	170	48		mg/Kg	1	1/4/2018 11:55:10 AM	35831
Surr: DNOP	96.7	70-130		%Rec	1	1/4/2018 11:55:10 AM	35831
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.10		mg/Kg	5	1/4/2018 11:23:07 AM	B48180
Toluene	ND	0.21		mg/Kg	5	1/4/2018 11:23:07 AM	B48180
Ethylbenzene	ND	0.21		mg/Kg	5	1/4/2018 11:23:07 AM	B48180
Xylenes, Total	ND	0.42		mg/Kg	5	1/4/2018 11:23:07 AM	B48180
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	5	1/4/2018 11:23:07 AM	B48180
Surr: Toluene-d8	107	70-130		%Rec	5	1/4/2018 11:23:07 AM	B48180

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1801162**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: TAPP LS 3A
Lab ID: 1801162-005 **Matrix:** SOIL

Client Sample ID: North Wall 5-pt (5'-14')
Collection Date: 1/3/2018 9:42:00 AM
Received Date: 1/4/2018 7:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	93	30		mg/Kg	20	1/4/2018 12:22:14 PM	35839
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	1/4/2018 11:46:09 AM	R48180
Surr: BFB	109	70-130		%Rec	1	1/4/2018 11:46:09 AM	R48180
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/4/2018 12:17:01 PM	35831
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/4/2018 12:17:01 PM	35831
Surr: DNOP	93.3	70-130		%Rec	1	1/4/2018 12:17:01 PM	35831
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.025		mg/Kg	1	1/4/2018 11:46:09 AM	B48180
Toluene	ND	0.050		mg/Kg	1	1/4/2018 11:46:09 AM	B48180
Ethylbenzene	ND	0.050		mg/Kg	1	1/4/2018 11:46:09 AM	B48180
Xylenes, Total	ND	0.10		mg/Kg	1	1/4/2018 11:46:09 AM	B48180
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	1/4/2018 11:46:09 AM	B48180
Surr: Toluene-d8	105	70-130		%Rec	1	1/4/2018 11:46:09 AM	B48180

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Chain-of-Custody Record

Client: BP AMERICA
BLAGG ENGINEERING INC.
Mailing Address:
Phone #: (505) 320-1193
email or Fax#:
QA/QC Package:
[X] Standard [ ] Level 4 (Full Validation)
Accreditation
[ ] NELAP [ ] Other
[ ] EDD (Type)

Turn-Around Time:
[ ] Standard [X] Rush SAME DAY
Project Name: TAPP LS 3A
Project #:
Project Manager: STEVE MOSKAL
Sampler: JEFF BLAGG
On Ice: [X] Yes [ ] No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE	Air Bubbles (Y or N)
1/3/2018	0915	SOIL	BASE 5-pt @ 17'	4oz x 1	COOL	001	X		X									X	
	0922		EAST wall 5-pt (5'-14')			002													
	0929		SOUTH wall 5-pt (5'-14')			003													
	0937		WEST wall 5-pt (5'-14')			004													
	0942		NORTH wall 5-pt (5'-14')			005													

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/3/2018	1540	Jeff Blagg	Grant Watt	1/3/18	1540
1/3/18	1910	Christine Walker		01/04/18	0710

Remarks: BILL BP
CONTACT: STEVE MOSKAL
VID: VHIXONEVRM

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

STOCKPILE

LABORATORY

RESULTS

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Analytical Report
Lab Order **1801301**
Date Reported: **1/10/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: TAPP LS 3A
Lab ID: 1801301-001 **Matrix:** SOIL

Client Sample ID: TSP-1
Collection Date: 1/5/2018 9:10:00 AM
Received Date: 1/6/2018 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	56	30		mg/Kg	20	1/8/2018 11:41:50 AM	35904
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	74	18		mg/Kg	5	1/8/2018 9:13:52 AM	G48269
Surr: BFB	102	70-130		%Rec	5	1/8/2018 9:13:52 AM	G48269
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	790	9.6		mg/Kg	1	1/8/2018 10:18:46 AM	35897
Motor Oil Range Organics (MRO)	340	48		mg/Kg	1	1/8/2018 10:18:46 AM	35897
Surr: DNOP	119	70-130		%Rec	1	1/8/2018 10:18:46 AM	35897
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.088		mg/Kg	5	1/8/2018 9:13:52 AM	R48269
Toluene	ND	0.18		mg/Kg	5	1/8/2018 9:13:52 AM	R48269
Ethylbenzene	ND	0.18		mg/Kg	5	1/8/2018 9:13:52 AM	R48269
Xylenes, Total	0.96	0.35		mg/Kg	5	1/8/2018 9:13:52 AM	R48269
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	5	1/8/2018 9:13:52 AM	R48269
Surr: Toluene-d8	106	70-130		%Rec	5	1/8/2018 9:13:52 AM	R48269

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1801301**
Date Reported: **1/10/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: TAPP LS 3A
Lab ID: 1801301-002 **Matrix:** SOIL

Client Sample ID: TSP-2
Collection Date: 1/5/2018 9:13:00 AM
Received Date: 1/6/2018 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	52	30		mg/Kg	20	1/8/2018 11:54:15 AM	35904
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	75	17		mg/Kg	5	1/8/2018 9:36:47 AM	G48269
Surr: BFB	105	70-130		%Rec	5	1/8/2018 9:36:47 AM	G48269
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	640	10		mg/Kg	1	1/8/2018 11:02:41 AM	35897
Motor Oil Range Organics (MRO)	280	50		mg/Kg	1	1/8/2018 11:02:41 AM	35897
Surr: DNOP	117	70-130		%Rec	1	1/8/2018 11:02:41 AM	35897
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.085		mg/Kg	5	1/8/2018 9:36:47 AM	R48269
Toluene	ND	0.17		mg/Kg	5	1/8/2018 9:36:47 AM	R48269
Ethylbenzene	ND	0.17		mg/Kg	5	1/8/2018 9:36:47 AM	R48269
Xylenes, Total	1.1	0.34		mg/Kg	5	1/8/2018 9:36:47 AM	R48269
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	5	1/8/2018 9:36:47 AM	R48269
Surr: Toluene-d8	106	70-130		%Rec	5	1/8/2018 9:36:47 AM	R48269

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1801301**
Date Reported: **1/10/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: TSP-3
Project: TAPP LS 3A
Collection Date: 1/5/2018 9:16:00 AM
Lab ID: 1801301-003
Matrix: SOIL
Received Date: 1/6/2018 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	53	30		mg/Kg	20	1/8/2018 12:06:39 PM	35904
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	160	16		mg/Kg	5	1/8/2018 9:59:46 AM	G48269
Surr: BFB	96.1	70-130		%Rec	5	1/8/2018 9:59:46 AM	G48269
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1100	19		mg/Kg	2	1/8/2018 2:48:47 PM	35897
Motor Oil Range Organics (MRO)	450	95		mg/Kg	2	1/8/2018 2:48:47 PM	35897
Surr: DNOP	121	70-130		%Rec	2	1/8/2018 2:48:47 PM	35897
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.078		mg/Kg	5	1/8/2018 9:59:46 AM	R48269
Toluene	ND	0.16		mg/Kg	5	1/8/2018 9:59:46 AM	R48269
Ethylbenzene	0.25	0.16		mg/Kg	5	1/8/2018 9:59:46 AM	R48269
Xylenes, Total	3.2	0.31		mg/Kg	5	1/8/2018 9:59:46 AM	R48269
Surr: 4-Bromofluorobenzene	96.9	70-130		%Rec	5	1/8/2018 9:59:46 AM	R48269
Surr: Toluene-d8	107	70-130		%Rec	5	1/8/2018 9:59:46 AM	R48269

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1801301**
Date Reported: **1/10/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: TAPP LS 3A
Lab ID: 1801301-004 **Matrix:** SOIL

Client Sample ID: TSP-4
Collection Date: 1/5/2018 9:20:00 AM
Received Date: 1/6/2018 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	58	30		mg/Kg	20	1/8/2018 12:19:04 PM	35904
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	220	15		mg/Kg	5	1/8/2018 10:22:44 AM	G48269
Surr: BFB	104	70-130		%Rec	5	1/8/2018 10:22:44 AM	G48269
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1800	38		mg/Kg	4	1/8/2018 12:36:32 PM	35897
Motor Oil Range Organics (MRO)	770	190		mg/Kg	4	1/8/2018 12:36:32 PM	35897
Surr: DNOP	126	70-130		%Rec	4	1/8/2018 12:36:32 PM	35897
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.076		mg/Kg	5	1/8/2018 10:22:44 AM	R48269
Toluene	ND	0.15		mg/Kg	5	1/8/2018 10:22:44 AM	R48269
Ethylbenzene	0.31	0.15		mg/Kg	5	1/8/2018 10:22:44 AM	R48269
Xylenes, Total	4.3	0.30		mg/Kg	5	1/8/2018 10:22:44 AM	R48269
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	5	1/8/2018 10:22:44 AM	R48269
Surr: Toluene-d8	108	70-130		%Rec	5	1/8/2018 10:22:44 AM	R48269

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1801301**
Date Reported: **1/10/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: TSP-5
Project: TAPP LS 3A
Collection Date: 1/5/2018 9:23:00 AM
Lab ID: 1801301-005 **Matrix:** SOIL **Received Date:** 1/6/2018 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	69	30		mg/Kg	20	1/8/2018 12:31:28 PM	35904
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	170	15		mg/Kg	5	1/8/2018 10:45:44 AM	G48269
Surr: BFB	98.1	70-130		%Rec	5	1/8/2018 10:45:44 AM	G48269
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1300	19		mg/Kg	2	1/8/2018 1:20:34 PM	35897
Motor Oil Range Organics (MRO)	510	95		mg/Kg	2	1/8/2018 1:20:34 PM	35897
Surr: DNOP	114	70-130		%Rec	2	1/8/2018 1:20:34 PM	35897
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.076		mg/Kg	5	1/8/2018 10:45:44 AM	R48269
Toluene	ND	0.15		mg/Kg	5	1/8/2018 10:45:44 AM	R48269
Ethylbenzene	0.25	0.15		mg/Kg	5	1/8/2018 10:45:44 AM	R48269
Xylenes, Total	3.3	0.30		mg/Kg	5	1/8/2018 10:45:44 AM	R48269
Surr: 4-Bromofluorobenzene	97.1	70-130		%Rec	5	1/8/2018 10:45:44 AM	R48269
Surr: Toluene-d8	107	70-130		%Rec	5	1/8/2018 10:45:44 AM	R48269

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1801301**
Date Reported: **1/10/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: TAPP LS 3A
Lab ID: 1801301-006 **Matrix:** SOIL

Client Sample ID: TSP-6
Collection Date: 1/5/2018 9:27:00 AM
Received Date: 1/6/2018 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	66	30		mg/Kg	20	1/8/2018 12:43:53 PM	35904
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	220	16		mg/Kg	5	1/8/2018 11:08:44 AM	G48269
Surr: BFB	107	70-130		%Rec	5	1/8/2018 11:08:44 AM	G48269
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1500	18		mg/Kg	2	1/8/2018 2:04:46 PM	35897
Motor Oil Range Organics (MRO)	570	92		mg/Kg	2	1/8/2018 2:04:46 PM	35897
Surr: DNOP	109	70-130		%Rec	2	1/8/2018 2:04:46 PM	35897
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.079		mg/Kg	5	1/8/2018 11:08:44 AM	R48269
Toluene	ND	0.16		mg/Kg	5	1/8/2018 11:08:44 AM	R48269
Ethylbenzene	0.33	0.16		mg/Kg	5	1/8/2018 11:08:44 AM	R48269
Xylenes, Total	4.2	0.32		mg/Kg	5	1/8/2018 11:08:44 AM	R48269
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	5	1/8/2018 11:08:44 AM	R48269
Surr: Toluene-d8	108	70-130		%Rec	5	1/8/2018 11:08:44 AM	R48269

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Chain-of-Custody Record

Client: BP AMERICA

BLAGG ENGINEERING

Mailing Address:

Phone #: (505) 320-1183

email or Fax#:

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☐ Standard ☒ Rush SAME DAY

Project Name: TAPP LS 3A

Project #:

Project Manager: STEVE MOSKAL

Sampler: JEFF BLAGG

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE				Air Bubbles (Y or N)
5/2018	0910	SOIL	TSP-1	4oz x1	COOL	-001	X		X									X				
	0913		TSP-2			002																
	0916		TSP-3			003																
	0920		TSP-4			004																
	0923		TSP-5			005																
	0927		TSP-6			006																

Date	Time	Relinquished by:	Received by:	Date	Time
5/2018	1400	Jeff Blagg		01/06/18	1030
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: BILL BP
CONTACT: STEVE MOSKAL
VID: VHKONEVRM

Samples Treated with H_2O_2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

VADOSE ZONE

LABORATORY

RESULTS

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Analytical Report
Lab Order **1801D96**
Date Reported: **2/12/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: TAPP LS 3A
Lab ID: 1801D96-001 **Matrix:** SOIL

Client Sample ID: TSP-VZ@0.5'-1.0' (east)
Collection Date: 1/29/2018 11:00:00 AM
Received Date: 1/31/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	30		mg/Kg	20	2/8/2018 5:41:00 PM	36420
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	71	10		mg/Kg	1	2/5/2018 8:32:23 PM	36308
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/5/2018 8:32:23 PM	36308
Surr: DNOP	83.7	70-130		%Rec	1	2/5/2018 8:32:23 PM	36308
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/2/2018 12:25:02 PM	36301
Surr: BFB	101	15-316		%Rec	1	2/2/2018 12:25:02 PM	36301
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	2/2/2018 12:25:02 PM	36301
Toluene	ND	0.049		mg/Kg	1	2/2/2018 12:25:02 PM	36301
Ethylbenzene	ND	0.049		mg/Kg	1	2/2/2018 12:25:02 PM	36301
Xylenes, Total	ND	0.097		mg/Kg	1	2/2/2018 12:25:02 PM	36301
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	2/2/2018 12:25:02 PM	36301

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1801D96**
Date Reported: **2/12/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: TAPP LS 3A
Lab ID: 1801D96-002 **Matrix:** SOIL

Client Sample ID: TSP-VZ@0.5'-1.0' (west)
Collection Date: 1/29/2018 10:30:00 AM
Received Date: 1/31/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	30		mg/Kg	20	2/8/2018 5:53:24 PM	36420
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/5/2018 8:59:53 PM	36308
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/5/2018 8:59:53 PM	36308
Surr: DNOP	82.3	70-130		%Rec	1	2/5/2018 8:59:53 PM	36308
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/2/2018 1:35:28 PM	36301
Surr: BFB	92.1	15-316		%Rec	1	2/2/2018 1:35:28 PM	36301
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	2/2/2018 1:35:28 PM	36301
Toluene	ND	0.049		mg/Kg	1	2/2/2018 1:35:28 PM	36301
Ethylbenzene	ND	0.049		mg/Kg	1	2/2/2018 1:35:28 PM	36301
Xylenes, Total	ND	0.098		mg/Kg	1	2/2/2018 1:35:28 PM	36301
Surr: 4-Bromofluorobenzene	99.6	80-120		%Rec	1	2/2/2018 1:35:28 PM	36301

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name:
TAPP LS # 3A

Project #:

Project Manager:
STEVE MOSKAL

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No NV

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1801D96	BTEX + ~~MTBE + TMB's~~ (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride (soil - 300.0 / water - 300.1)		Grab sample	# pt. composite sample
1/29/18	1100	SOIL	TSP - VZ @ 0.5' - 1.0' (east)	4 oz. - 1	Cool	001	✓		✓									✓			5
1/29/18	1030	SOIL	TSP - VZ @ 0.5' - 1.0' (west)	4 oz. - 1	Cool	002	✓		✓									✓			5

1/30/18

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/29/18	1535			1/30/18	1535
1/30/18	1544			01/31/18	0700

Remarks: BILL DIRECTLY TO BP USING THE CONTACT WITH CORRESPONDING & REFERENCE # WHEN APPLICABLE:

CONTACT: STEVE MOSKAL
VID: VHIXONEVRM

Reference # P - 881

LABORATORY

QUALITY ASSURANCE

QUALITY CONTROL

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801162**

05-Jan-18

Client: Blagg Engineering
Project: TAPP LS 3A

Sample ID	MB-35839	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	35839	RunNo:	48193					
Prep Date:	1/4/2018	Analysis Date:	1/4/2018	SeqNo:	1547549	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-35839	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	35839	RunNo:	48193					
Prep Date:	1/4/2018	Analysis Date:	1/4/2018	SeqNo:	1547550	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801162**

05-Jan-18

Client: Blagg Engineering
Project: TAPP LS 3A

Sample ID	LCS-35831	SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS	Batch ID:	35831		RunNo:	48177				
Prep Date:	1/4/2018	Analysis Date:	1/4/2018		SeqNo:	1546000	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.4	73.2	114			
Surr: DNOP	4.2		5.000		84.0	70	130			

Sample ID	MB-35831	SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS	Batch ID:	35831		RunNo:	48177				
Prep Date:	1/4/2018	Analysis Date:	1/4/2018		SeqNo:	1546001	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.1		10.00		91.4	70	130			

Sample ID	LCS-35811	SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS	Batch ID:	35811		RunNo:	48177				
Prep Date:	1/3/2018	Analysis Date:	1/4/2018		SeqNo:	1546989	Units:	%Rec		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		87.6	70	130			

Sample ID	MB-35811	SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS	Batch ID:	35811		RunNo:	48177				
Prep Date:	1/3/2018	Analysis Date:	1/4/2018		SeqNo:	1546990	Units:	%Rec		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.8		10.00		88.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801162**

05-Jan-18

Client: Blagg Engineering
Project: TAPP LS 3A

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **B48180**	RunNo: **48180**
Prep Date:	Analysis Date: **1/4/2018**	SeqNo: **1546551** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0		0.5000		0	70	130			S
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			
Surr: Dibromofluoromethane	0		0.5000		0	70	130			S
Surr: Toluene-d8	0.55		0.5000		110	70	130			

Sample ID **1801162-002ams**	SampType: **MS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **East Wall 5-pt (5'-14**	Batch ID: **B48180**	RunNo: **48180**
Prep Date:	Analysis Date: **1/4/2018**	SeqNo: **1547527** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.018	0.7278	0	110	80	120			
Toluene	0.74	0.036	0.7278	0.004854	100	80	120			
Ethylbenzene	0.72	0.036	0.7278	0.007191	98.6	80	120			
Xylenes, Total	2.2	0.073	2.183	0.01485	98.2	80	120			
Surr: 4-Bromofluorobenzene	0.34		0.3639		92.9	70	130			
Surr: Toluene-d8	0.38		0.3639		105	70	130			

Sample ID **1801162-002amsd**	SampType: **MSD4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **East Wall 5-pt (5'-14**	Batch ID: **R48180**	RunNo: **48180**
Prep Date:	Analysis Date: **1/4/2018**	SeqNo: **1547529** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.34		0.3639		94.4	70	130			
Surr: Toluene-d8	0.39		0.3639		107	70	130			

Sample ID **100ng btex lcs**	SampType: **LCS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **B48180**	RunNo: **48180**
Prep Date:	Analysis Date: **1/4/2018**	SeqNo: **1547530** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	114	80	120			
Toluene	1.1	0.050	1.000	0	109	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.1	80	120			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.9	70	130			
Surr: Toluene-d8	0.53		0.5000		106	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801162**

05-Jan-18

Client: Blagg Engineering
Project: TAPP LS 3A

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R48180**	RunNo: **48180**
Prep Date:	Analysis Date: **1/4/2018**	SeqNo: **1546515** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	540		500.0		108	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R48180**	RunNo: **48180**
Prep Date:	Analysis Date: **1/4/2018**	SeqNo: **1547531** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	107	70	130			
Surr: BFB	500		500.0		99.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: BLAGG | Work Order Number: 1801162 | RcptNo: 1

Received By: Anne Thorne 1/4/2018 7:10:00 AM

Completed By: Anne Thorne 1/4/2018 7:21:38 AM

Reviewed By: ENM 1/4/18

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801301**

10-Jan-18

Client: Blagg Engineering
Project: TAPP LS 3A

Sample ID	MB-35904	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	35904	RunNo:	48276					
Prep Date:	1/8/2018	Analysis Date:	1/8/2018	SeqNo:	1551900	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-35904	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	35904	RunNo:	48276					
Prep Date:	1/8/2018	Analysis Date:	1/8/2018	SeqNo:	1551901	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.0	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801301**

10-Jan-18

Client: Blagg Engineering
Project: TAPP LS 3A

Sample ID	LCS-35897	SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS	Batch ID:	35897		RunNo:	48267				
Prep Date:	1/8/2018	Analysis Date:	1/8/2018		SeqNo:	1549932	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.4	73.2	114			
Surr: DNOP	4.6		5.000		92.2	70	130			

Sample ID	MB-35897	SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS	Batch ID:	35897		RunNo:	48267				
Prep Date:	1/8/2018	Analysis Date:	1/8/2018		SeqNo:	1549933	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801301**

10-Jan-18

Client: Blagg Engineering
Project: TAPP LS 3A

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **R48269**	RunNo: **48269**
Prep Date:	Analysis Date: **1/8/2018**	SeqNo: **1549941** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.53		0.5000		107	70	130			

Sample ID **100ng btex lcs**	SampType: **LCS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **R48269**	RunNo: **48269**
Prep Date:	Analysis Date: **1/8/2018**	SeqNo: **1550748** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	118	80	120			
Toluene	1.1	0.050	1.000	0	110	80	120			
Ethylbenzene	1.1	0.050	1.000	0	105	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.0	70	130			
Surr: Toluene-d8	0.53		0.5000		106	70	130			

Sample ID **1801301-002ams**	SampType: **MS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **TSP-2**	Batch ID: **R48269**	RunNo: **48269**
Prep Date:	Analysis Date: **1/8/2018**	SeqNo: **1550768** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.6	0.085	3.383	0	105	80	120			
Toluene	3.5	0.17	3.383	0.02287	102	80	120			
Ethylbenzene	3.5	0.17	3.383	0.08897	99.6	80	120			
Xylenes, Total	11	0.34	10.15	1.093	98.7	80	120			
Surr: 4-Bromofluorobenzene	1.7		1.692		98.8	70	130			
Surr: Toluene-d8	1.8		1.692		104	70	130			

Sample ID **1801301-002amsd**	SampType: **MSD4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **TSP-2**	Batch ID: **R48269**	RunNo: **48269**
Prep Date:	Analysis Date: **1/8/2018**	SeqNo: **1550770** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.4	0.085	3.383	0	101	80	120	3.93	0	
Toluene	3.3	0.17	3.383	0.02287	95.9	80	120	5.76	0	
Ethylbenzene	3.3	0.17	3.383	0.08897	93.6	80	120	5.98	0	
Xylenes, Total	11	0.34	10.15	1.093	97.6	80	120	1.00	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801301**

10-Jan-18

Client: Blagg Engineering

Project: TAPP LS 3A

Sample ID **1801301-002amsd**	SampType: **MSD4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **TSP-2**	Batch ID: **R48269**	RunNo: **48269**
Prep Date:	Analysis Date: **1/8/2018**	SeqNo: **1550770** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.6		1.692		95.7	70	130	0	0	
Surr: Toluene-d8	1.8		1.692		105	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801301**

10-Jan-18

Client: Blagg Engineering

Project: TAPP LS 3A

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **G48269**	RunNo: **48269**
Prep Date:	Analysis Date: **1/8/2018**	SeqNo: **1549949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	530		500.0		105	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G48269**	RunNo: **48269**
Prep Date:	Analysis Date: **1/8/2018**	SeqNo: **1550740** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	112	70	130			
Surr: BFB	480		500.0		96.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: BLAGG | Work Order Number: 1801301 | RcptNo: 1

Received By: Anne Thorne 1/8/2018 10:30:00 AM

Completed By: Anne Thorne 1/8/2018 7:24:18 AM

Reviewed By: ENM 1/8/18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Yes			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801D96**

12-Feb-18

Client: Blagg Engineering

Project: TAPP LS 3A

Sample ID	MB-36420	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	36420	RunNo:	48990					
Prep Date:	2/8/2018	Analysis Date:	2/8/2018	SeqNo:	1577567	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-36420	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	36420	RunNo:	48990					
Prep Date:	2/8/2018	Analysis Date:	2/8/2018	SeqNo:	1577568	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.0	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801D96**

12-Feb-18

Client: Blagg Engineering

Project: TAPP LS 3A

Sample ID	LCS-36308	SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS	Batch ID:	36308		RunNo:	48888				
Prep Date:	2/1/2018	Analysis Date:	2/5/2018		SeqNo:	1573758	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	82.1	70	130			
Surr: DNOP	4.3		5.000		85.3	70	130			

Sample ID	MB-36308	SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS	Batch ID:	36308		RunNo:	48888				
Prep Date:	2/1/2018	Analysis Date:	2/5/2018		SeqNo:	1573759	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.1		10.00		90.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801D96**

12-Feb-18

Client: Blagg Engineering

Project: TAPP LS 3A

Sample ID	1801D96-002AMS	SampType:	MS		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	TSP-VZ@0.5'-1.0' (w	Batch ID:	36301		RunNo:	48867				
Prep Date:	2/1/2018	Analysis Date:	2/2/2018		SeqNo:	1572832	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.7	23.50	0	113	77.8	128			
Surr: BFB	1000		939.8		109	15	316			

Sample ID	1801D96-002AMSD	SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	TSP-VZ@0.5'-1.0' (w	Batch ID:	36301		RunNo:	48867				
Prep Date:	2/1/2018	Analysis Date:	2/2/2018		SeqNo:	1572833	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	24.95	0	109	77.8	128	2.40	20	
Surr: BFB	1100		998.0		108	15	316	0	0	

Sample ID	LCS-36301	SampType:	LCS		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	LCSS	Batch ID:	36301		RunNo:	48867				
Prep Date:	2/1/2018	Analysis Date:	2/2/2018		SeqNo:	1572842	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.2	75.9	131			
Surr: BFB	1000		1000		104	15	316			

Sample ID	MB-36301	SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS	Batch ID:	36301		RunNo:	48867				
Prep Date:	2/1/2018	Analysis Date:	2/2/2018		SeqNo:	1572843	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	960		1000		95.8	15	316			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1801D96**

12-Feb-18

Client: Blagg Engineering

Project: TAPP LS 3A

Sample ID **1801D96-001AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **TSP-VZ@0.5'-1.0' (e** Batch ID: **36301** RunNo: **48867**

Prep Date: **2/1/2018** Analysis Date: **2/2/2018** SeqNo: **1572850** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.023	0.9217	0	112	80.9	132			
Toluene	1.1	0.046	0.9217	0.01089	113	79.8	136			
Ethylbenzene	1.1	0.046	0.9217	0	114	79.4	140			
Xylenes, Total	3.2	0.092	2.765	0.02617	117	78.5	142			
Surr: 4-Bromofluorobenzene	0.98		0.9217		107	80	120			

Sample ID **1801D96-001AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **TSP-VZ@0.5'-1.0' (e** Batch ID: **36301** RunNo: **48867**

Prep Date: **2/1/2018** Analysis Date: **2/2/2018** SeqNo: **1572851** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9950	0	111	80.9	132	7.00	20	
Toluene	1.1	0.050	0.9950	0.01089	110	79.8	136	5.23	20	
Ethylbenzene	1.1	0.050	0.9950	0	110	79.4	140	4.04	20	
Xylenes, Total	3.4	0.10	2.985	0.02617	112	78.5	142	3.35	20	
Surr: 4-Bromofluorobenzene	1.0		0.9950		104	80	120	0	0	

Sample ID **LCS-36301** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **36301** RunNo: **48867**

Prep Date: **2/1/2018** Analysis Date: **2/2/2018** SeqNo: **1572861** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.2	77.3	128			
Toluene	0.96	0.050	1.000	0	96.3	79.2	125			
Ethylbenzene	0.95	0.050	1.000	0	94.8	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	97.5	81.6	129			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID **MB-36301** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **36301** RunNo: **48867**

Prep Date: **2/1/2018** Analysis Date: **2/2/2018** SeqNo: **1572862** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: BLAGG | Work Order Number: 1801D96 | RcptNo: 1

Received By: Anne Thorne 1/31/2018 7:00:00 AM

Completed By: Donnie Suazo 1/31/2018 9:33:47 AM

Reviewed By: IMO 1/31/18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks: Labeled by SRA 01/31/18

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			