State of New Mexico Energy Minerals and Natural Resources

Revised April 3, 2017 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Form C-141

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

Release Notification and Corrective Action OPERATOR Initial Report Final Report Name of Company BP America Production Company Contact Erin Garifalos Address 200 Energy Court, Farmington, NM 87401 Telephone No. (832) 609-7048 Facility Name HARDIE LS 001A Facility Type: Natural Gas Well Surface Owner: Federal Mineral Owner: Federal API No. 3004522415 LOCATION OF RELEASE Feet from the North/South Line East/West Line County Unit Letter Range Feet from the Section Township San Juan 2629N 08W 1.600 1.800 East J South Longitude -107.64371 Latitude 36.69403 NAD83 NATURE OF RELEASE Type of Release: : Unknown - hydrocarbon Volume of Release: : unknown Volume Recovered: : none Source of Release: Unknown - suspect 95 bbl BGT Date and Hour of Occurrence: Date and Hour of Discovery: December 5, 2017 unknown If YES, To Whom? Was Immediate Notice Given? Yes No V Not Required By Whom? Date and Hour If YES, Volume Impacting the Watercourse. Was a Watercourse Reached? Yes 🗹 No NMOCD If a Watercourse was Impacted, Describe Fully.* FEB 2 6 2018 DISTRICT III 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 fully delineated the impacts via excavation with soils treated onsite using soil-shreding. The treated soil was used to backfill the BGT location. Attached is a narrative of the activities and accompanying laboratory data. BP requests 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 OIL CONSERVATION DIVISION garifalos Signature: Approved by Environmental Specialist: Printed Name: Erin Garifalos Title: Field Environmental Coordinator Expiration Date: Approval Date: E-mail Address: erin.garifalos@bp.com Conditions of Approval: Attached Date: February 22, 2018 Phone: (832) 609-7048 * Attach Additional Sheets If Necessary NG 180 1657373

BP America Hardie LS 1A (J) Sec 26 – T29N – R8W San Juan County, New Mexico API: 30-045-22415

Summary Record of Impact Remediation

<u>December 5, 2017</u> Soils impacted with hydrocarbons were encountered during closure of a 95 barrel below grade tank. Analytical laboratory testing of impacted soils immediately below the BGT at the 5' depth reported total petroleum hydrocarbons (TPH) at 1,720 ppm, total BTEX at non-detect (ND) and chlorides at ND. A sample collected at the 11' depth on dense sandstone reported TPH at 1,730 ppm.

Site closure standard determined at 1,000 ppm TPH and 50 ppm total BTEX (with 10 ppm benzene) based on:

Horizontal Distance to Water Course < 1,000 feet (10 points) Distance to Nearest Water Well > 1,000 feet (0 points) Depth to Groundwater >100 feet (0 points)

<u>December 8, 2017</u> Additional removal of impacts completed. Excavation size 21' x 18' x 13' deep. Closure sampling conducted on sidewalls and base, with analytical results as follows:

Sample ID	Date/Time	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
North Sidewall 3-pt @ (4'-11')	12/8/2017 @ 8:28	0.7	ND	ND	ND	ND
West Sidewall 3-pt @ (4'-11')	12/8/2017 @ 8:40	0.3	ND	ND	ND	ND
South Sidewall 3-pt @ (4'-11')	12/8/2017 @ 8:50	0.8	ND	ND	ND	ND
East Sidewall 3-pt @ (4'-11')	12/8/2017 @ 8:57	125	3,210	0.6	ND	ND
Base 5-pt @ 13'	12/8/2017 @ 9:10	304	1,801	2.2	ND	ND
Site	Closure	Standard:	1,000	50	10	600

Initial Closure Sampling Test Results December 8, 2017

Additional actions suspended pending development of a remediation plan for east sidewall and base.

January 16 - 17, 2018 Conduct remediation via excavation of impacts with a trackhoe. Site lithology (dense bedrock sandstone) was encountered at the 8' depth. Completed excavation 24' x 21' x 17' deep. Excavated soils stored on-site for subsequent treatment via soil shredding process.

January 17, 2018 Conduct closure sampling on sidewalls and base.

Sample ID	Date/Time	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
N-W-S Wall 3-pt @ (14'-16')	01/17/2018 @ 11:35	191	204	ND	ND	ND
East Sidewall 5-pt @ (6'-16')	01/17/2018 @ 11:42	28	890	ND	ND	ND
Base 5-pt @ 17'	01/17/2018 @ 11:49	88	790	3.5	ND	ND
Site	Closure	Standard:	1,000	50	10	600

Excavation Closure Sampling Test Results January 17, 2017

January 17, 2018 Treat excavated soils on-site via soil shredding.

January 19, 2018 Sample treated soils (3 x 100 cubic yard piles) for closure.

Treated Soil Sampling Test Results January 19, 2017

Sample ID	Date/Time	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
TSP-1	01/19/2018 @ 11:12	77.1	536	0.78	ND	ND
TSP-2	01/19/2018 @ 11:17	85.7	538	0.96	ND	ND
TSP-3	01/19/2018 @ 11:22	54.4	437	0.4	ND	ND
Site	Closure	Standard:	1,000	50	10	600

<u>February 9, 2018</u> Conduct composite sampling of soil shredding surface area vadose zone (TSP-VZ @ 0.5'-1.0'). Laboratory analytical test results report non-detect for all constituents (TPH, BTEX and Chlorides).

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

December 12, 2017

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Erin Garifalos Blagg Engineering P. O. Box 87 Bloomfield, NM 87413 TEL: (505) 632-1199 FAX (505) 632-3903

RE: HARDIE LS 1A

OrderNo.: 1712528

Dear Erin Garifalos:

Hall Environmental Analysis Laboratory received 5 sample(s) on 12/9/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Er	vironmental Analy	sis Laborat	ory, Inc			Lab Order 1712528 Date Reported: 12/12/2	017
CLIENT: Project: Lab ID:	Blagg Engineering HARDIE LS 1A 1712528-001	Matrix: S	OIL	Collection I	ate: 12/	Wall 3-pt (4'-11') 8/2017 8:28:00 AM 9/2017 9:30:00 AM	
Analyses		Result	PQL Q	Qual Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analyst	MRA
Chloride		ND	30	mg/Kg	20	12/11/2017 10:08:37 AM	1 35435
EPA MET	HOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analyst	TOM
Diesel Ra	ange Organics (DRO)	ND	9.8	mg/Kg	1	12/11/2017 10:41:28 AM	1 35427
Motor Oil	Range Organics (MRO)	ND	49	mg/Kg	1	12/11/2017 10:41:28 AM	1 35427
Surr: D	NOP	102	70-130	%Rec	1	12/11/2017 10:41:28 AM	1 35427
EPA MET	HOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline	Range Organics (GRO)	ND	4.1	mg/Kg	1	12/11/2017 9:36:43 AM	G47673
Surr: E	BFB	93.0	15-316	%Rec	1	12/11/2017 9:36:43 AM	G47673
EPA MET	HOD 8021B: VOLATILES					Analyst	NSB
Benzene		ND	0.020	mg/Kg	1	12/11/2017 9:36:43 AM	B47673
Toluene		ND	0.041	mg/Kg	1	12/11/2017 9:36:43 AM	B47673
Ethylbenz	zene	ND	0.041	mg/Kg	1	12/11/2017 9:36:43 AM	B47673
Xylenes,	Total	ND	0.082	mg/Kg	1	12/11/2017 9:36:43 AM	B47673
Surr: 4	-Bromofluorobenzene	115	80-120	%Rec	1	12/11/2017 9:36:43 AM	B47673

Analytical Report

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Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 9
	ND	Not Detected at the Reporting Limit	Р	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 1712528	

Date Reported: 12/12/2017

Hall Environmental Analysis Laboratory, Inc.

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CLIENT: Blagg Engineering		(-	e ID: W Wall		
Project: HARDIE LS 1A			Collection	Date: 12/8/201	7 8:40:00 AM	
Lab ID: 1712528-002	Matrix:	SOIL	Received 1	Date: 12/9/201	7 9:30:00 AM	
Analyses	Result	PQL Qual	Units	DF Date	Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	st: MRA
Chloride	ND	30	mg/Kg	20 12/11	1/2017 10:21:01 A	M 35435
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS	6			Analys	st: TOM
Diesel Range Organics (DRO)	ND	10	mg/Kg	1 12/11	1/2017 11:05:45 A	M 35427
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1 12/11	1/2017 11:05:45 A	M 35427
Surr: DNOP	101	70-130	%Rec	1 12/11	1/2017 11:05:45 A	M 35427
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.2	mg/Kg	1 12/11	1/2017 10:00:10 A	M G47673
Surr: BFB	97.9	15-316	%Rec	1 12/11	1/2017 10:00:10 A	M G47673
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.021	mg/Kg	1 12/11	1/2017 10:00:10 A	M B47673
Toluene	ND	0.042	mg/Kg	1 12/11	1/2017 10:00:10 A	M B47673
Ethylbenzene	ND	0.042	mg/Kg	1 12/11	1/2017 10:00:10 A	M B47673
Xylenes, Total	ND	0.083	mg/Kg	1 12/11	1/2017 10:00:10 A	M B47673
Surr: 4-Bromofluorobenzene	119	80-120	%Rec	1 12/11	1/2017 10:00:10 A	M B47673

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 9
	ND	Not Detected at the Reporting Limit	Р	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 1712528	

Date Reported: 12/12/2017

Hall Environmental Analysis Laboratory, Inc.

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 CLIENT: Blagg Engineering
 Client Sample ID: S Wall 3-pt (4'-11')

 Project:
 HARDIE LS 1A
 Collection Date: 12/8/2017 8:50:00 AM

 Lab ID:
 1712528-003
 Matrix: SOIL
 Received Date: 12/9/2017 9:30:00 AM

 Analyses
 Result
 PQL
 Qual
 Units
 DF Date Analyzed
 Batch

EPA METHOD 300.0: ANIONS					Analyst: MRA
Chloride	ND	30	mg/Kg	20	12/11/2017 10:33:25 AM 35435
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS	6			Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	12/11/2017 11:30:10 AM 35427
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	12/11/2017 11:30:10 AM 35427
Surr: DNOP	103	70-130	%Rec	1	12/11/2017 11:30:10 AM 35427
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.3	mg/Kg	1	12/11/2017 10:23:56 AM G47673
Surr: BFB	96.2	15-316	%Rec	1	12/11/2017 10:23:56 AM G47673
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.027	mg/Kg	1	12/11/2017 10:23:56 AM B47673
Toluene	ND	0.053	mg/Kg	1	12/11/2017 10:23:56 AM B47673
Ethylbenzene	ND	0.053	mg/Kg	1	12/11/2017 10:23:56 AM B47673
Xylenes, Total	ND	0.11	mg/Kg	1	12/11/2017 10:23:56 AM B47673
Surr: 4-Bromofluorobenzene	118	80-120	%Rec	1	12/11/2017 10:23:56 AM B47673

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 9
	ND	Not Detected at the Reporting Limit	Р	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

Analytica	l Report
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Lab Order 1712528

Date Reported: 12/12/2017

12/11/2017 10:47:42 AM B47673

12/11/2017 10:47:42 AM B47673

Hall Environmental Analysis Laboratory, Inc.

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Xylenes, Total

Surr: 4-Bromofluorobenzene

CLIENT: Blagg Engineering			C	lient Samp	le ID: E	Wall 3-pt (4'-11')						
Project: HARDIE LS 1A				Collection	Date: 12	/8/2017 8:57:00 AM						
Lab ID: 1712528-004	Matrix: S	OIL		Received Date: 12/9/2017 9:30:00 AM								
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch					
EPA METHOD 300.0: ANIONS						Analyst	MRA					
Chloride	ND	30		mg/Kg	20	12/11/2017 10:45:49 A	M 35435					
EPA METHOD 8015M/D: DIESEL RANG	BE ORGANICS					Analyst	TOM					
Diesel Range Organics (DRO)	2000	93		mg/Kg	10	12/11/2017 11:54:33 A	M 35427					
Motor Oil Range Organics (MRO)	1100	470		mg/Kg	10	12/11/2017 11:54:33 A	M 35427					
Surr: DNOP	0	70-130	S	%Rec	10	12/11/2017 11:54:33 A	M 35427					
EPA METHOD 8015D: GASOLINE RAN	GE					Analyst	NSB					
Gasoline Range Organics (GRO)	110	4.0		mg/Kg	1	12/11/2017 10:47:42 Al	M G47673					
Surr: BFB	841	15-316	S	%Rec	1	12/11/2017 10:47:42 Al	M G47673					
EPA METHOD 8021B: VOLATILES						Analyst	NSB					
Benzene	ND	0.020		mg/Kg	1	12/11/2017 10:47:42 AI	M B47673					
Toluene	ND	0.040		mg/Kg	1	12/11/2017 10:47:42 AI	M B47673					
Ethylbenzene	ND	0.040		mg/Kg	1	12/11/2017 10:47:42 AI	M B47673					

0.079

80-120

S

mg/Kg

%Rec

1

1

0.60

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Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 o
	ND	Not Detected at the Reporting Limit	Р	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 specifie

Analytical Report
Lab Order 1712528

Date Reported: 12/12/2017

Hall Environmental Analysis Laboratory, Inc.

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CLIENT, Place Engineering			-	liont Commi	D. D.	ao 5 mt @ 12!	
CLIENT: Blagg Engineering				-		se 5-pt @ 13'	
Project: HARDIE LS 1A				Collection I	Date: 12/	/8/2017 9:10:00 AM	
Lab ID: 1712528-005	Matrix: S	SOIL		Received I			
Analyses	Result	PQL (Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analys	st: MRA
Chloride	ND	30		mg/Kg	20	12/11/2017 10:58:14	AM 35435
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS					Analys	st: TOM
Diesel Range Organics (DRO)	1200	99		mg/Kg	10	12/11/2017 12:27:30 F	PM 35427
Motor Oil Range Organics (MRO)	530	490		mg/Kg	10	12/11/2017 12:27:30 F	PM 35427
Surr: DNOP	0	70-130	S	%Rec	10	12/11/2017 12:27:30 F	PM 35427
EPA METHOD 8015D: GASOLINE RAN	IGE					Analys	st: NSB
Gasoline Range Organics (GRO)	71	20		mg/Kg	5	12/11/2017 11:11:32	AM G47673
Surr: BFB	161	15-316		%Rec	5	12/11/2017 11:11:32	M G47673
EPA METHOD 8021B: VOLATILES						Analys	st: NSB
Benzene	ND	0.098		mg/Kg	5	12/11/2017 11:11:32	M B47673
Toluene	ND	0.20		mg/Kg	5	12/11/2017 11:11:32	M B47673
Ethylbenzene	ND	0.20		mg/Kg	5	12/11/2017 11:11:32 #	M B47673
Xylenes, Total	2.2	0.39		mg/Kg	5	12/11/2017 11:11:32 /	M B47673
Surr: 4-Bromofluorobenzene	122	80-120	S	%Rec	5	12/11/2017 11:11:32	M B47673

*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of
ND	Not Detected at the Reporting Limit	Р	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
	H ND	 D Sample Diluted Due to Matrix H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit 	DSample Diluted Due to MatrixEHHolding times for preparation or analysis exceededJNDNot Detected at the Reporting LimitPPQLPractical Quanitative LimitRL

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Blagg Engineering

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Project: HARDIE LS 1A

Sample ID MB-35435	SampType: mblk	300.0: Anions		
Client ID: PBS	Batch ID: 35435	RunNo: 47666		
Prep Date: 12/11/2017	Analysis Date: 12/11/2017	SeqNo: 1524960	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Chloride	ND 1.5			
Sample ID LCS-35435	SampType: Ics	TestCode: EPA Method	300.0: Anions	
Sample ID LCS-35435 Client ID: LCSS	SampType: Ics Batch ID: 35435	TestCode: EPA Method RunNo: 47666	300.0: Anions	
	1 21		300.0: Anions Units: mg/Kg	
Client ID: LCSS	Batch ID: 35435 Analysis Date: 12/11/2017	RunNo: 47666		RPDLimit Qual

Qualifiers:

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

WO#: 1712528 12-Dec-17

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Blagg Engineering **Project:** HARDIE LS 1A

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Sample ID LCS-35427	SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics									
Client ID: LCSS	Batch ID: 35427 RunNo: 47662									
Prep Date: 12/11/2017	Analysis Date: 12/11/2017 SeqNo: 1523103 Ut							(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.7	73.2	114			
Surr: DNOP	4.6		5.000		92.4	70	130			
Sample ID MB-35427	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID: PBS	Batch	ID: 35	427	F	RunNo: 4	7662				
Prep Date: 12/11/2017	Analysis D	ate: 12	2/11/2017	S	SeqNo: 1	523104	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Dieser Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								

Qualifiers:

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

WO#: 1712528

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12-Dec-17

Hall Environmental Analysis Laboratory, Inc.

Client: Blagg Engineering **Project:** HARDIE LS 1A

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Sample ID RB	SampType: MBLK TestCode: EPA Method 8							line Rang	e	
Client ID: PBS	Batch ID: G47673 RunNo: 47673									
Prep Date:	Analysis Date: 12/11/2017 SeqNo: 1523817 Un					Units: mg/k	g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
0					00.4	4.5	0.40			
Surr: BFB	980		1000		98.1	15	316			
Sample ID 2.5UG GRO LCS		ype: LC		Tes			316 8015D: Gaso	line Rang	e	
	SampT	ype: LC	S			PA Method		oline Rang	e	
Sample ID 2.5UG GRO LCS	SampT	n ID: G4	S	F	tCode: El	PA Method 7673			e	
Sample ID 2.5UG GRO LCS Client ID: LCSS	SampT Batch	n ID: G4	S 7673 2/11/2017	F	tCode: El RunNo: 4	PA Method 7673	8015D: Gaso		e RPDLimit	Qual
Sample ID 2.5UG GRO LCS Client ID: LCSS Prep Date:	SampT Batch Analysis D	a ID: G4 ate: 12	S 7673 2/11/2017	F	tCode: El RunNo: 4 SeqNo: 1	PA Method 7673 523818	8015D: Gaso Units: mg/K	íg		Qual

Qualifiers:

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

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WO#: 1712528

	Hall	Envir	onmental	Analysis	La	bora	tory,	Inc.
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Client: Blagg Engineering **Project:** HARDIE LS 1A

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Sample ID RB	SampType: MBLK TestCode: EPA Method 80							tiles							
Client ID: PBS	Batcl	Batch ID: B47673 RunNo: 47673													
Prep Date:	Analysis D	Date: 12	2/11/2017	017 SeqNo: 1523831 U				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	1.2		1.000		118	80	120								
Sample ID 100NG BTEX LCS	Samp1	ype: LC	S	Tes	tCode: El	PA Method	8021B: Volat	tiles							
Client ID: LCSS		Type: LC			tCode: El		8021B: Volat	tiles							
		n ID: B4	7673	R		7673	8021B: Volat								
Client ID: LCSS	Batch	n ID: B4	7673 2/11/2017	R	aunNo: 4	7673			RPDLimit	Qual					
Client ID: LCSS Prep Date:	Batch Analysis D	n ID: B4 Date: 1 2	7673 2/11/2017	F	aunNo: 4 GeqNo: 1	7673 523832	Units: mg/K	(g	RPDLimit	Qual					
Client ID: LCSS Prep Date: Analyte	Batch Analysis D Result	Date: 12 PQL	7673 2/11/2017 SPK value	R SPK Ref Val	RunNo: 4 SeqNo: 1 %REC	7673 523832 LowLimit	Units: mg/K HighLimit	(g	RPDLimit	Qual					
Client ID: LCSS Prep Date: Analyte Benzene	Batch Analysis D Result 0.95	Date: 12 PQL 0.025	7673 2/11/2017 SPK value 1.000	R SPK Ref Val 0	RunNo: 4 GeqNo: 1 %REC 94.8	7673 523832 LowLimit 77.3	Units: mg/K HighLimit 128	(g	RPDLimit	Qual					
Client ID: LCSS Prep Date: Analyte Benzene Toluene	Batch Analysis D Result 0.95 0.96	Date: 12 PQL 0.025 0.050	7673 2/11/2017 SPK value 1.000 1.000	F S SPK Ref Val 0 0	RunNo: 4 SeqNo: 1 %REC 94.8 95.9	7673 523832 LowLimit 77.3 79.2	Units: mg/K HighLimit 128 125	(g	RPDLimit	Qual					
Client ID: LCSS Prep Date: Analyte Benzene Toluene Ethylbenzene	Batch Analysis D Result 0.95 0.96 0.96	PQL 0.025 0.050 0.050	7673 2/11/2017 SPK value 1.000 1.000 1.000	F S SPK Ref Val 0 0 0	RunNo: 4 SeqNo: 1 <u>%REC</u> 94.8 95.9 95.7	7673 523832 LowLimit 77.3 79.2 80.7	Units: mg/K HighLimit 128 125 127	(g	RPDLimit	Qual					

Qualifiers:

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

WO#:

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1712528 12-Dec-17

Client Name: BLAGG Received By: Sophia Campuzano Completed By: Anne Thorne Reviewed By: DS Chain of Custody 1. Custody seals intact on sample bottles? 2. Is Chain of Custody complete? 3. How was the sample delivered?	Work Order Numbe 12/9/2017 12/11/2017 7:28:43 / 12/11/17		Sophie Comp Anne Arm No - No -	Not Present	1
Completed By: Anne Thorne Reviewed By: DS Chain of Custody 1. Custody seals intact on sample bottles? 2. Is Chain of Custody complete?	12/11/2017 7:28:43 /	Yes □ Yes ✔	No 🗌	Not Present	
Reviewed By: DS <u>Chain of Custody</u> 1. Custody seals intact on sample bottles? 2. Is Chain of Custody complete?		Yes □ Yes ✔	No 🗌	Not Present	
Chain of Custody 1. Custody seals intact on sample bottles? 2. Is Chain of Custody complete?	12/11/17	Yes 🗹	No 🗌	Not Present	
1. Custody seals intact on sample bottles? 2. Is Chain of Custody complete?		Yes 🗹			
2. Is Chain of Custody complete?		Yes 🗹			
			No 🗌		
3. How was the sample delivered?		Courier		Not Present	·
Log In					
4. Was an attempt made to cool the samples?		Yes 🗹	No		
5. Were all samples received at a temperature	of >0° C to 6.0°C	Yes 🗹	No 🗌		
6. Sample(s) in proper container(s)?		Yes 🗹	No 🗌		
7. Sufficient sample volume for indicated test(s	12	Yes 🔽	No 🗆	•	
8. Are samples (except VOA and ONG) proper		Yes 🗹	No 🗆		· . ·
9. Was preservative added to bottles?	,, processes	Yes	No 🗹	NA 🗆	
		Yes	No 🗖	No VOA Vials 🗹	
0. VOA vials have zero headspace?	-2	- Yes	No 🗹	NO VOA VIAIS	
J. Were any sample containers received bloke		105		# of preserved bottles checked	
2. Does paperwork match bottle labels?		Yes 🗹	No 🗌	for pH:	· · · · ·
(Note discrepancies on chain of custody)					>12 unless noted)
3. Are matrices correctly identified on Chain of	Custody?	Yes 🗹	No 🗌	Adjusted?	
4. Is it clear what analyses were requested?		Yes ⊻ Yes ✓	No 🛄	Checked by:	
5. Were all holding times able to be met? (If no, notify customer for authorization.)		res 💌			
pecial Handling (if applicable)					
6. Was client notified of all discrepancies with t	his order?	Yes	No 🗌	NA 🗹	
Person Notified:	Date	1	And all a static framework and a static		
By Whom:	. Via:	eMail	Phone 🗌 Fax	In Person	
Regarding:				R.C.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.M.	
Client Instructions:					
7. Additional remarks:					
	al Intact Seal No	Seal Date	Signed By		
1 2.1 Good Yes					

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Client: Mailing	Chain-of-Custody Record Client: BP AMERICA BLACK ENGINEERING Mailing Address: Phone #: 505 - 320 - 1183 email or Fax#:				Time: 文Rush a: ほこ 上ら					A	N/ www ns N	AL' hall E - 75	envi Albi	ironn uque	nent erque	AE al.co e, Ni 345-	BO om M 87	R /		
email o QA/QC Star Accred	r Fax#: Package: idard itation		Level 4 (Full Validation)	Sampler: J Onilce:	EFF BLA		3E + TME S (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	d 418.1)	d 504.1)	8270 SIMS)	-	Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄)	PCB's					(Y or N)
Date	Time	Matrix	Sample Request ID	A 12111/17 Container Type and # Mco44c/s	Preservative Type	-(c=) HEAL N5 171/2/5 2/8	BTEX + MTBE	BTEX + MTI	TPH 8015B	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310	RCRA 8 Metals	Anions (F,C	8081 Pesticides / 8082	8260B (VOA)	8270 (Semi-VOA)			Air Bubbles (Y or N)
	0928 0840 0850 0857 0910		North Wall 3-pt (4-11') WEST WALL 3-pt (4'-11') SOUTH WALL 3-pt (4'-11') EAST WALL 3-pt (4'-11') EAST WALL 3-pt (4'-11') BAGE 5-pt @ 13'	402×1		-700 -702 -703 -704 -705	X											X		
																-				
Date: Date: Date:	Time: 1807 Time: 1947	Relinquish Relinguish	11 Blogg edby:	Received by:	War C- 1	Date Time Date Time Date Time 2/09/17 0930		nark	s: [BUL	Art	· · ·	/Hr	XO-	NE	EVI	RIF	ALO	5	

ie.

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.



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

January 22, 2018

Steve Moskal Blagg Engineering P. O. Box 87 Bloomfield, NM 87413 TEL: (505) 632-1199 FAX (505) 632-3903

RE: HARDIE LS 1A

OrderNo.: 1801890

Dear Steve Moskal:

Hall Environmental Analysis Laboratory received 3 sample(s) on 1/18/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environmental Analys	sis Laborat	tory, Inc.			Lab Order 1801890 Date Reported: 1/22/201	18		
CLIENT: Blagg Engineering Project: HARDIE LS 1A Lab ID: 1801890-001	Matrix: S	SOIL	Collection I	Client Sample ID: N-W-S Walls 3-pt @ (14'-16') Collection Date: 1/17/2018 11:35:00 AM Received Date: 1/18/2018 7:00:00 AM				
Analyses	Result	PQL Q	ual Units	DF	Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS					Analyst:	CJS		
Chloride	ND	30	mg/Kg	20	1/18/2018 10:42:28 AM	36090		
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst:	том		
Diesel Range Organics (DRO)	150	9.7	mg/Kg	1	1/18/2018 10:38:29 AM	36086		
Motor Oil Range Organics (MRO)	54	48	mg/Kg	1	1/18/2018 10:38:29 AM	36086		
Surr: DNOP	94.9	70-130	%Rec	1	1/18/2018 10:38:29 AM	36086		
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst:	NSB		
Gasoline Range Organics (GRO)	ND	19	mg/Kg	5	1/18/2018 9:43:08 AM	36077		
Surr: BFB	85.9	15-316	%Rec	5	1/18/2018 9:43:08 AM	36077		
EPA METHOD 8021B: VOLATILES					Analyst:	NSB		
Benzene	ND	0.095	mg/Kg	5	1/18/2018 9:43:08 AM	36077		
Toluene	ND	0.19	mg/Kg	5	1/18/2018 9:43:08 AM	36077		
Ethylbenzene	ND	0.19	mg/Kg	5	1/18/2018 9:43:08 AM	36077		
Xylenes, Total	ND	0.38	mg/Kg	5	1/18/2018 9:43:08 AM	36077		
Surr: 4-Bromofluorobenzene	93.7	80-120	%Rec	5	1/18/2018 9:43:08 AM	36077		

Analytical Report

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Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 7
	ND	Not Detected at the Reporting Limit	Р	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 Analysi	s Labora	tory, Inc.			Lab Order 1801890 Date Reported: 1/22/201	8		
CLIENT: Blagg Engineering Project: HARDIE LS 1A Lab ID: 1801890-002	Matrix:	SOIL	Collection I	Client Sample ID: EastWall 5-pt @ (6'-16') Collection Date: 1/17/2018 11:42:00 AM Received Date: 1/18/2018 7:00:00 AM				
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS					Analyst:	CJS		
Chloride	ND	30	mg/Kg	20	1/18/2018 10:54:53 AM	36090		
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst:	том		
Diesel Range Organics (DRO)	620	9.9	mg/Kg	1	1/18/2018 11:03:33 AM	36086		
Motor Oil Range Organics (MRO)	270	50	mg/Kg	1	1/18/2018 11:03:33 AM	36086		
Surr: DNOP	102	70-130	%Rec	1	1/18/2018 11:03:33 AM	36086		
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst:	NSB		
Gasoline Range Organics (GRO)	ND	18	mg/Kg	5	1/18/2018 10:53:15 AM	36077		
Surr: BFB	92.8	15-316	%Rec	5	1/18/2018 10:53:15 AM	36077		
EPA METHOD 8021B: VOLATILES					Analyst:	NSB		
Benzene	ND	0.089	mg/Kg	5	1/18/2018 10:53:15 AM	36077		
Toluene	ND	0.18	mg/Kg	5	1/18/2018 10:53:15 AM	36077		
Ethylbenzene	ND	0.18	mg/Kg	5	1/18/2018 10:53:15 AM	36077		
Xylenes, Total	ND	0.35	mg/Kg	5	1/18/2018 10:53:15 AM	36077		
Surr: 4-Bromofluorobenzene	92.1	80-120	%Rec	5	1/18/2018 10:53:15 AM	36077		

Analytical Report

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Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of
	ND	Not Detected at the Reporting Limit	Р	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

Lab Order 1801890

Date Reported: 1/22/2018

1/18/2018 11:16:39 AM 36077

1/18/2018 11:16:39 AM 36077

Hall Environmental Analysis Laboratory, Inc.

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Xylenes, Total

Surr: 4-Bromofluorobenzene

CLIENT: Blagg Engineering			Client Samp	le ID: Ba	se 5-pt @ 17'			
Project: HARDIE LS 1A			Collection	Date: 1/1	7/2018 11:49:00 AM			
Lab ID: 1801890-003	Matrix:	SOIL	Received	Date: 1/18/2018 7:00:00 AM				
Analyses	Result	PQL Qua	al Units	DF	Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS					Analyst	CJS		
Chloride	ND	30	mg/Kg	20	1/18/2018 11:07:17 AM	36090		
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS				Analyst:	TOM		
Diesel Range Organics (DRO)	540	9.6	mg/Kg	1	1/18/2018 11:28:04 AM	36086		
Motor Oil Range Organics (MRO)	190	48	mg/Kg	1	1/18/2018 11:28:04 AM	36086		
Surr: DNOP	98.3	70-130	%Rec	1	1/18/2018 11:28:04 AM	36086		
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst:	NSB		
Gasoline Range Organics (GRO)	60	18	mg/Kg	5	1/18/2018 11:16:39 AM	36077		
Surr: BFB	143	15-316	%Rec	5	1/18/2018 11:16:39 AM	36077		
EPA METHOD 8021B: VOLATILES					Analyst:	NSB		
Benzene	ND	0.089	mg/Kg	5	1/18/2018 11:16:39 AM	36077		
Toluene	0.20	0.18	mg/Kg	5	1/18/2018 11:16:39 AM	36077		
Ethylbenzene	ND	0.18	mg/Kg	5	1/18/2018 11:16:39 AM	36077		

0.36

80-120

mg/Kg

%Rec

5

5

3.3

97.4

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 7
	ND	Not Detected at the Reporting Limit	Р	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.

Client: Blagg Engineering **Project:**

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HARDIE LS 1A

Sample ID MB-36090	SampType: mblk	300.0: Anions		
Client ID: PBS	Batch ID: 36090	RunNo: 48535		
Prep Date: 1/18/2018	Analysis Date: 1/18/2018	SeqNo: 1561668	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Chloride	ND 1.5			
onionao	110 1.5			
Sample ID LCS-36090	SampType: Ics	TestCode: EPA Method	300.0: Anions	
		TestCode: EPA Method RunNo: 48535	300.0: Anions	
Sample ID LCS-36090	SampType: Ics		300.0: Anions Units: mg/Kg	
Sample ID LCS-36090 Client ID: LCSS	SampType: Ics Batch ID: 36090 Analysis Date: 1/18/2018	RunNo: 48535		RPDLimit Qual

Qualifiers:

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

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WO#:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Blagg Engineering Project: HARDIE LS 1A

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Sample ID LCS-36086	SampT	ype: LC	S	Test	TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch	1D: 36	086	R	RunNo: 48527						
Prep Date: 1/18/2018	Analysis D	ate: 1/	/18/2018	S	eqNo: 1	560409	Units: mg/k	٢g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	44	10	50.00	0	88.1	70	130				
Surr: DNOP	4.3		5.000		85.3	70	130				
Sample ID MB-36086	SampT	уре: М	BLK	Test	Code: E	PA Method	8015M/D: Di	esel Range	e Organics		
Sample ID MB-36086 Client ID: PBS		ype: MI 1D: 36			Code: E		8015M/D: Di	esel Range	e Organics		
		n ID: 36	086	R		8527	8015M/D: Die Units: mg/K	Ū	e Organics		
Client ID: PBS	Batch	n ID: 36	086 /18/2018	R	unNo: 4	8527		Ū	e Organics	Qual	
Client ID: PBS Prep Date: 1/18/2018	Batch Analysis D	n ID: 36 Pate: 1/	086 /18/2018	R	tunNo: 4 eqNo: 1	8527 560410	Units: mg/K	(g		Qual	
Client ID: PBS Prep Date: 1/18/2018 Analyte	Batch Analysis D Result	n ID: 36 Pate: 1/	086 /18/2018	R	tunNo: 4 eqNo: 1	8527 560410	Units: mg/K	(g		Qual	

Qualifiers:

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

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* 1 **QC SUMMARY REPORT** Hall Environmental Analysis Laboratory, Inc.

Client: Blagg Engineering **Project:** HARDIE LS 1A

Sample ID MB-36077	SampType: MBL	ĸ	Test	TestCode: EPA Method 8015D: Gasoline Range					
Client ID: PBS	Batch ID: 3607	7	RunNo: 48542						
Prep Date: 1/17/2018	Analysis Date: 1/18	Analysis Date: 1/18/2018 SeqNo: 1561107 U			Units: mg/K	Jnits: mg/Kg			
Analyte	Result PQL S	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND 5.0								
Surr: BFB	880	1000		88.4	15	316			
Sample ID LCS-36077	SampType: LCS		Test	Code: EF	PA Method	8015D: Gaso	line Rang	9	
	Batch ID: 36077 RunNo: 48542								
Client ID: LCSS	Batch ID: 3607	7	R	unNo: 48	8542				
Client ID: LCSS Prep Date: 1/17/2018	Batch ID: 3607 Analysis Date: 1/18			unNo: 48 eqNo: 1		Units: mg/K	g		
	Analysis Date: 1/18	8/2018				Units: mg/K HighLimit	g %RPD	RPDLimit	Qual
Prep Date: 1/17/2018	Analysis Date: 1/18	8/2018	S	eqNo: 1	561108	0	0	RPDLimit	Qual
Prep Date: 1/17/2018 Analyte	Analysis Date: 1/18 Result PQL S	8/2018 SPK value	SPK Ref Val	eqNo: 1	561108 LowLimit	HighLimit	0	RPDLimit	Qual

Qualifiers:

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

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- Sample pH Not In Range
- RL **Reporting Detection Limit**

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Bla Project: HA

Blagg Engineering HARDIE LS 1A

Sample ID MB-36077	SampT	SampType: MBLK TestCode: EPA Method 8021E						tiles		
Client ID: PBS	Batch	Batch ID: 36077 RunNo: 48542								
Prep Date: 1/17/2018	Analysis D	ate: 1/	18/2018	S	SeqNo: 1	561128	Units: mg/k	٢g		
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	0.98		1.000		97.6	80	120		3 	
Sample ID LCS-36077	SampT	ype: LC	S	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batch	ID: 36	077	F	RunNo: 4	8542				
Prep Date: 1/17/2018	Analysis D	ate: 1/	18/2018	S	SeqNo: 1	561129	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.0	77.3	128			
Toluene	0.94	0.050	1.000	0	93.5	79.2	125			
Ethylbenzene	0.91	0.050	1.000	0	91.5	80.7	127			
Kylenes, Total	2.8	0.10	3.000	0	93.4	81.6	129			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.2	80	120			

Qualifiers:

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

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1801890

WO#:

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental A Albu TEL: 505-345-3975 I Website: www.hal	490 querq FAX:	l Hawkins ue, NM 87 505- <mark>345-</mark> 4	NE 109 107	San	nple Log-In Check List
Client Name: BLAGG	Work Order Number:	1801	890			RcptNo: 1
Received By: Anne Thome	1/18/2018 7:00:00 AM			Am	u Ha	~
Completed By: Anne Thome Reviewed By: MA 1	1/18/2018 7:09:24 AM			Am	u Ha	
Chain of Custody					_	
1. Is Chain of Custody complete?		Yes	\checkmark	No		Not Present
2. How was the sample delivered?		Cour	ier			
Log In 3. Was an attempt made to cool the samples?		Yes		No		NA 🗆
4. Were all samples received at a temperature of	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)	7	Yes	\checkmark	No		
7. Are samples (except VOA and ONG) properly	preserved?	Yes		No		
8. Was preservative added to bottles?	,	Yes		No	\checkmark	NA 🗌
9. VOA vials have zero headspace?		Yes		No		No VOA Vials
10. Were any sample containers received broken	?	Yes		No		# of preserved
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes	\checkmark	No		bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of C	ustody?	res	✓	No		Adjusted?
13. Is it clear what analyses were requested?	1	res	\checkmark	No		
14. Were all holding times able to be met? (If no, notify customer for authorization.)	۱ ۱	res	\checkmark	No		Checked by:
Special Handling (if applicable)						
15. Was client notified of all discrepancies with th	is order?	Yes		No		NA 🗹
Person Notified:	Date	C.C.C.C.C.C.				
By Whom:	Via:	eMa	il 🗌 Ph	ione [] Fax	in Person
Regarding:						
Client Instructions:						
16. Additional remarks:						
17. <u>Cooler Information</u> Cooler No. Temp °C Condition Sea 1 1.7 Good Yes	Il Intact Seal No Se	al Da	te S	Signed	By	

Page 1 of 1

Date: Time: Relinquished by: Date: Time: Relinquished by: Date: Time: Relinquished by:)(VIV2018 1135 SOIL N.	Date Time Matrix	EDD (Type)	Accreditation	Standard	email or Fax#:	Phone #: (505) 320 ~		Mailing Address:	BLAGG ENGINEERING INC	Client: BP AMERICA	Chain-of-Custody Record
"Blogg							EAST Wall 5-Pt @ (6'-16'	N-W-S Walls	Request ID			Level 4 (Full Validation)		1183			RWG INC.		tody Record
Received by Received by:						10	ι(402×1	Acoit 18/18 Type and #	Sample Temperature 2	Sampler:	STEVE	Project Manager:		Project #:	HARDIE	Project Name:	Standard	Tum-Around Time:
m D)(ч	Cecl.	Preservative Type	+	JEFF BLAG	VE MOSKAL	Jer:			57		Rush	lime:
Date Time //T/18 //S4/O Date Time 2/1/8//8						203	762	102		-CF-10=1.7	U No.	7				TH		SAME DAN	
Rem					2	×	\times	×	BTEX + ME	BE	± TMB	6 (80 2	21)						
Remarks:			_						BTEX + MT					-	Tel	490	2		
		_	_		ľ	×	\times	×	TPH 8015B	-		RO/N	IRO)	Tel. 505-345-3975	4901 Hawkins NE			
CONT BILL	 \vdash	-	-			-			TPH (Metho						-345	wkin	5		2
		_	-	_		_			EDB (Metho		-				-397	IS NE	WW.		
		+	+-	-	-	-			PAH's (8310			SIMS)		Ana	01	1	halle		
STEVE- VHIXD,		-	-			-			RCRA 8 Me Anions (F,C			PO. S	50.0	Analysis Request	Fax	lbud	www.hallenvironmental.com	ANALYSIS	
X A		+	-			_			8081 Pestic	-				s Re	50	uero			5
m z		+			-				8260B (VOA		1 0002	108	9	que	5-34	ue,	ntal.		2
STEVE MOSKAL VHLXDAJEVRM	\vdash	-	-		-	+			8270 (Semi-		A)			st	Fax 505-345-4107	Albuquerque, NM 87109	com	BC	
24					>	×	×	×	CHLORIJ	_			_		70	710		R	
		-			ľ	-	_		Critici	6						9		YSIS LABORATORY	
													_					0,	
													_					NY F	-
									Air Bubbles	(Y (or N)								



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

January 24, 2018 Steve Moskal

Blagg Engineering P. O. Box 87 Bloomfield, NM 87413 TEL: (505) 632-1199 FAX (505) 632-3903

RE: HARDIE LS 1A

OrderNo.: 1801A13

Dear Steve Moskal:

Hall Environmental Analysis Laboratory received 3 sample(s) on 1/20/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report	
Lab Order 1801A13	

Date Reported: 1/24/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering	Client Sample ID: TSP-1									
Project: HARDIE LS 1A	Collection Date: 1/19/2018 11:12:00 AM									
Lab ID: 1801A13-001	Matrix:	SOIL	Received I	Date: 1/2	0/2018 9:25:00 AM					
Analyses	Result	PQL Qua	al Units	DF	Date Analyzed	Batch				
EPA METHOD 300.0: ANIONS					Analyst	CJS				
Chloride	ND	30	mg/Kg	20	1/22/2018 2:42:11 PM	36137				
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst	TOM				
Diesel Range Organics (DRO)	350	9.5	mg/Kg	1	1/22/2018 10:21:16 AM	36124				
Motor Oil Range Organics (MRO)	150	48	mg/Kg	1	1/22/2018 10:21:16 AM	36124				
Surr: DNOP	109	70-130	%Rec	1	1/22/2018 10:21:16 AM	36124				
EPA METHOD 8015D: GASOLINE RANG	θE				Analyst	NSB				
Gasoline Range Organics (GRO)	36	18	mg/Kg	5	1/22/2018 9:44:44 AM	36117				
Surr: BFB	141	15-316	%Rec	5	1/22/2018 9:44:44 AM	36117				
EPA METHOD 8021B: VOLATILES					Analyst	NSB				
Benzene	ND	0.088	mg/Kg	5	1/22/2018 9:44:44 AM	36117				
Toluene	ND	0.18	mg/Kg	5	1/22/2018 9:44:44 AM	36117				
Ethylbenzene	ND	0.18	mg/Kg	5	1/22/2018 9:44:44 AM	36117				
Xylenes, Total	0.78	0.35	mg/Kg	5	1/22/2018 9:44:44 AM	36117				
Surr: 4-Bromofluorobenzene	105	80-120	%Rec	5	1/22/2018 9:44:44 AM	36117				

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 7
	ND	Not Detected at the Reporting Limit	Р	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
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Lab Order 1801A13

Date Reported: 1/24/2018

1/22/2018 10:31:30 AM 36117

Analyst: NSB

Hall Environmental Analysis Laboratory, Inc.

Surr: BFB

Benzene

Toluene

Ethylbenzene

Xylenes, Total

EPA METHOD 8021B: VOLATILES

Surr: 4-Bromofluorobenzene

CLIENT: Blagg Engineering **Client Sample ID: TSP-2 Project:** HARDIE LS 1A Collection Date: 1/19/2018 11:17:00 AM Lab ID: 1801A13-002 Matrix: SOIL Received Date: 1/20/2018 9:25:00 AM Analyses **PQL** Qual Units Result **DF** Date Analyzed Batch **EPA METHOD 300.0: ANIONS** Analyst: CJS Chloride 1/22/2018 2:54:36 PM 36137 ND 30 mg/Kg 20 EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: TOM **Diesel Range Organics (DRO)** 9.7 1/22/2018 11:05:12 AM 36124 350 mg/Kg 1 Motor Oil Range Organics (MRO) 1/22/2018 11:05:12 AM 36124 150 48 mg/Kg 1 Surr: DNOP 113 70-130 %Rec 1 1/22/2018 11:05:12 AM 36124 EPA METHOD 8015D: GASOLINE RANGE Analyst: NSB Gasoline Range Organics (GRO)

18

15-316

0.091

0.18

0.18

0.37

80-120

mg/Kg

%Rec

mg/Kg

mg/Kg

mg/Kg

mg/Kg

%Rec

5

5

5

5

5

5

5

38

139

ND

ND

ND

0.96

105

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 7
	ND	Not Detected at the Reporting Limit	Р	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 1801A13
Date Reported: 1/24/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Project: HARDIE LS 1A

Client Sample ID: TSP-3 Collection Date: 1/19/2018 11:22:00 AM Received Date: 1/20/2018 9:25:00 AM

Lab ID: 1801A13-003	Matrix:	SOIL	Received	Received Date: 1/20/2018 9:25:00 AM						
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch				
EPA METHOD 300.0: ANIONS					Analyst	CJS				
Chloride	ND	30	mg/Kg	20	1/22/2018 3:07:01 PM	36137				
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	6			Analyst	TOM				
Diesel Range Organics (DRO)	280	9.5	mg/Kg	1	1/22/2018 11:49:20 AM	36124				
Motor Oil Range Organics (MRO)	130	47	mg/Kg	1	1/22/2018 11:49:20 AM	36124				
Surr: DNOP	105	70-130	%Rec	1	1/22/2018 11:49:20 AM	36124				
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	NSB				
Gasoline Range Organics (GRO)	27	18	mg/Kg	5	1/22/2018 11:18:40 AM	36117				
Surr: BFB	128	15-316	%Rec	5	1/22/2018 11:18:40 AM	36117				
EPA METHOD 8021B: VOLATILES					Analyst	NSB				
Benzene	ND	0.091	mg/Kg	5	1/22/2018 11:18:40 AM	36117				
Toluene	ND	0.18	mg/Kg	5	1/22/2018 11:18:40 AM	36117				
Ethylbenzene	ND	0.18	mg/Kg	5	1/22/2018 11:18:40 AM	36117				
Xylenes, Total	0.40	0.36	mg/Kg	5	1/22/2018 11:18:40 AM	36117				
Surr: 4-Bromofluorobenzene	106	80-120	%Rec	5	1/22/2018 11:18:40 AM	36117				

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank				
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range				
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 7				
	ND	Not Detected at the Reporting Limit	Р	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, Inc.

Client: Blagg Engineering **Project:** HARDIE LS 1A

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Sample ID MB-36137	SampType: mblk	TestCode: EPA Method 300.0: Anions						
Client ID: PBS	Batch ID: 36137	RunNo: 48603						
Prep Date: 1/22/2018	Analysis Date: 1/22/2018	SeqNo: 1564123	Units: mg/Kg					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual				
Chloride	ND 1.5							
Sample ID LCS-36137	SampType: Ics	TestCode: EPA Method 300.0: Anions						
Client ID: LCSS	Batch ID: 36137	RunNo: 48603						
Prep Date: 1/22/2018	Analysis Date: 1/22/2018	SeqNo: 1564124	Units: mg/Kg					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual				
Chloride	14 1.5 15.00	0 90.6 90	110					

Qualifiers:

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

24-Jan-18

WO#: 1801A13

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Blagg Engineering

Project: HARDIE LS 1A

Sample ID LCS-36124	SampT	ype: LC	S	Tes	TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch	ID: 36	124	RunNo: 48589								
Prep Date: 1/22/2018	Analysis Date: 1/22/2018			S	SeqNo: 1562829 Uni				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	94.6	70	130					
Surr: DNOP	4.6		5.000		91.7	70	130					
	SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics											
Sample ID MB-36124	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8015M/D: Di	esel Range	e Organics			
Sample ID MB-36124 Client ID: PBS		ype: ME			tCode: El RunNo: 4		8015M/D: Di	esel Range	e Organics			
		ID: 36	124	F		8589	8015M/D: Die Units: mg/K	Ū	e Organics			
Client ID: PBS	Batch	ID: 36	124 22/2018	F	RunNo: 4	8589		Ū	e Organics RPDLimit	Qual		
Client ID: PBS Prep Date: 1/22/2018 Analyte	Batch Analysis D	ID: 36 ate: 1/	124 22/2018	F	RunNo: 4 SeqNo: 1	8589 562830	Units: mg/K	(g		Qual		
Client ID: PBS Prep Date: 1/22/2018	Batch Analysis D Result	ID: 36 ate: 1 / PQL	124 22/2018	F	RunNo: 4 SeqNo: 1	8589 562830	Units: mg/K	(g		Qual		
Client ID: PBS Prep Date: 1/22/2018 Analyte lesel Range Organics (DRO)	Batch Analysis D Result ND	ID: 36 ate: 1/ PQL 10	124 22/2018	F	RunNo: 4 SeqNo: 1	8589 562830	Units: mg/K	(g		Qual		

Qualifiers:

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

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WO#: 1801A13

24-Jan-18

Hall Environmental Analysis Laboratory, Inc.

Client: Blagg Engineering Project: HARDIE LS 1A

.

Sample ID MB-36117	SampT	ype: ME	BLK	Tes	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch	ID: 36	117	RunNo: 48595							
Prep Date: 1/19/2018	Analysis Date: 1/22/2018			SeqNo: 1563288			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	940		1000		93.9	15	316				
Sample ID LCS-36117	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e		
Client ID: LCSS	Batch	ID: 36	117	F	RunNo: 4	8595					
Prep Date: 1/19/2018	Analysis D	ate: 1/	22/2018	S	SeqNo: 1	563289	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.6	75.9	131				
Surr: BFB	1000		1000		102	15	316				

Qualifiers:

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

WO#: 1801A13 24-Jan-18

ange antitation limits

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Hall Environmental Analysis Laboratory, Inc.

Client: Blagg E Project: HARDI

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Blagg Engineering HARDIE LS 1A

Sample ID MB-36117	SampT	SampType: MBLK TestCode: EPA Metho						tiles				
Client ID: PBS	Batch	h ID: 36	117	F	RunNo: 4	8595						
Prep Date: 1/19/2018	Analysis D	Date: 1/	ate: 1/22/2018 SeqNo: 1563305					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	1.1		1.000		107	80	120					
Sample ID LCS-36117	SampT	ype: LC	S	Tes	tCode: E	PA Method	8021B: Volat	tiles				
Client ID: LCSS	Batch	n ID: 36	117	F	RunNo: 4	8595						
Prep Date: 1/19/2018	Analysis D	Date: 1/	22/2018	S	eqNo: 1	563306	Units: mg/K	g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	0.91	0.025	1.000	0	90.8	77.3	128					
Toluene	0.91	0.050	1.000	0	91.3	79.2	125					
Ethylbenzene	0.89	0.050	1.000	0	89.1	80.7	127					
Xylenes, Total	2.7	0.10	3.000	0	91.2	81.6	129					
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120					

Qualifiers:

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

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1801A13 24-Jan-18

WO#:

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental Albu TEL: 505-345-3975 Website: www.ha	490 uquerg FAX:	1 Hawkins NE ue, NM 87109 505-345-4107		nple Log-In Check List
Client Name: BLAGG	Work Order Number:	180	IA13		RcptNo: 1
Received By: Andy Freeman Completed By: Anne Thorne Reviewed By: Anne Thorne	1/20/2018 9:25:00 AM 1/22/2018 7:11:56 AM		2	Ame A.	
 <u>Chain of Custody</u> 1. Is Chain of Custody complete? 2. How was the sample delivered? 		Yes Cour		No 🗌	Not Present
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	V	No 🗌	
5. Sample(s) in proper container(s)?		Yes		No 🗌	
6. Sufficient sample volume for indicated test(s)7. Are samples (except VOA and ONG) properly				No 🗌	
8. Was preservative added to bottles?		Yes		No 🗹	NA 🗌
 9. VOA vials have zero headspace? 10. Were any sample containers received broker 	1?	Yes Yes		No 🗌 No 🗹	No VOA Vials 🗹 # of preserved bottles checked
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes		No 🗌	for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of C13. Is it clear what analyses were requested?14. Were all holding times able to be met?		Yes Yes Yes		No 🗌 No 🗌 No 🗌	Adjusted? Checked by:
(If no, notify customer for authorization.) Special Handling (if applicable) 15. Was client notified of all discrepancies with the	nis order?	Yes		No 🗌	NA 🗹
Person Notified: By Whom: Regarding: Client Instructions:	Date J Via:] eMa	il 🗌 Phone	E 🗌 Fax	
16. Additional remarks: 17. <u>Cooler Information</u>	al Intact Seal No Se	eal Da	te Sign	ed By	

Page 1 of 1

С	hain	of-Cu	stody Record	Turn-Around	Time:		٦,						-								1
Client:	BP	Amer	la	□ Standard	Rush	SAME DAY		2412	H												
	RL	· E	alapaula	Project Name):						www										
Mailing	Address	y in	gineerry	HARD	NE LS	14		49	01 H									7109			
				Project #:			1														
Phone #	#: 5	05-3	20-1183	· ·				Tel. 505-345-3975 Fax 505-345-4107 Analysis Request													
email or				Project Manager:				(Alu	00					04)					T	Т	
	Package:			Steve Moskal			M 8021)	as of	DRO / MRO)			ŝ		4,S(PCB's						
Stan	dard		Level 4 (Full Validation)				Ns (8	(C)	ß			SIM		PO,	2 PC						
Accredi			-	Sampler: Jeff Blagg Omrices Byses El Mo				+ TPH (Gas only)		÷.	÷.	PAH's (8310 or 8270 SIMS)		Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄)	8081 Pesticides / 8082						Î
			r	Qinkice:	× Yes	2°C	进		(GRO	(Method 418.1)	504	or 8	s	NO3	es /		(VO)	i			(or N)
	(Type)			A OIL2248				+ MTBE	BB (pou	thod	310	Meta	C,	ticid	(YO)	V-in	CHLORIDE			es ()
Date	Time	Matrix	Sample Request ID	Container	Preservative	STATE ALL ALL AND THE ALL AND THE ALL ALL ALL ALL ALL ALL ALL ALL ALL AL	siar +	+	8015B	Met	(Met	3 (8)	181	s (F	Pes	S	(Sel	107			hddi
Duto	1	Mana	Campie Request in	Type and #	Туре	10	BTEX	BTEX -	TPH 8	TPH	EDB (Method 504.1)	AH's	RCRA 8 Metals	nion	081	8260B (VOA)	8270 (Semi-VOA)	3			Air Bubbles (Y
19/2018	11.0	SOIL	TSP-1	Month	1001	1001713		-		F	ш		£,	A	00	80	80	Y	+	+	4
1(11	TSP-2	402×1	COOL	-00			X			-					_		+		+
16	1117	ų	TSP-3		1/	702		-	X X				_					XX	-	+	+
	1122		131-3	(1	4	-10	<u>s x</u>	-	^										+	+	
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Date:	Time:	Relinguish	ad hv:	Received by:		Date Time	Po	mark	0.	DI		20		_	_						
1/19/ 00	1303	1 1 4	Black	ho	ihn	1/19/2018 1303		mark	5.	Bil		DF FI	<	+.		M	~	Lu			
Date:	Time:	Relinquish	ed by:	Received by:	5 WWO	Date Time	4			lon	Tay	L.	2	1-2	re	1-1	USI	STC			
1/19/18 1816 White by						Contact: Steve MoskAc VID: VHIXONEVRM Samples Treated with H2.02.															
1	10.0	4 n		0110	m c		10	MAN!	218.5	Y	Cat	PUL	wi	14	-M	z.()	2.				

τ.

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.



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

February 21, 2018

Steve Moskal Blagg Engineering P. O. Box 87 Bloomfield, NM 87413 TEL: (505) 632-1199 FAX (505) 632-3903

RE: HARDIE LS 1A

OrderNo.: 1802691

Dear Steve Moskal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 2/10/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical	Report
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Lab Order 1802691

Date Reported: 2/21/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Project: HARDIE LS 1A

Lab ID: 1802691-001

Client Sample ID: TSP-VZ @ 0.5'-1.0' Collection Date: 2/9/2018 10:15:00 AM Received Date: 2/10/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst:	CJS
Chloride	ND	30	mg/Kg	20	2/19/2018 9:39:58 AM	36580
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst:	том
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	2/14/2018 12:22:52 PM	36497
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/14/2018 12:22:52 PM	36497
Surr: DNOP	92.3	70-130	%Rec	1	2/14/2018 12:22:52 PM	36497
EPA METHOD 8015D: GASOLINE RAM	IGE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	2/14/2018 10:59:37 AM	36507
Surr: BFB	96.8	15-316	%Rec	1	2/14/2018 10:59:37 AM	36507
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Benzene	ND	0.025	mg/Kg	1	2/14/2018 10:59:37 AM	36507
Toluene	ND	0.050	mg/Kg	1	2/14/2018 10:59:37 AM	36507
Ethylbenzene	ND	0.050	mg/Kg	1	2/14/2018 10:59:37 AM	36507
Xylenes, Total	ND	0.099	mg/Kg	1	2/14/2018 10:59:37 AM	36507
Surr: 4-Bromofluorobenzene	87.3	80-120	%Rec	1	2/14/2018 10:59:37 AM	36507

Matrix: SOIL

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 3
	ND	Not Detected at the Reporting Limit	Р	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, Inc.

Client: Blagg Engineering Project: HARDIE LS 1A

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Sample ID MB-36580	SampType: mblk	TestCode: EPA Method	300.0: Anions	
Client ID: PBS	Batch ID: 36580	RunNo: 49213		
Prep Date: 2/18/2018	Analysis Date: 2/18/2018	SeqNo: 1587706	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Chloride	ND 1.5			
Sample ID LCS-36580	SampType: Ics	TestCode: EPA Method	300.0: Anions	
Sample ID LCS-36580 Client ID: LCSS	SampType: Ics Batch ID: 36580	TestCode: EPA Method RunNo: 49213	300.0: Anions	
			300.0: Anions Units: mg/Kg	
Client ID: LCSS	Batch ID: 36580 Analysis Date: 2/18/2018	RunNo: 49213		RPDLimit Qual

Qualifiers:

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

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WO#:

Hall Environmental Analysis Laboratory, Inc.

Client:Blagg EngineeringProject:HARDIE LS 1A

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Sample ID LCS-36497	SampTy	SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics																	
Client ID: LCSS	Batch	ID: 36	497	F	RunNo: 4	9120													
Prep Date: 2/13/2018	Analysis Da	Analysis Date: 2/14/2018 SeqNo: 1583411 Units: mg/Kg																	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual									
Diesel Range Organics (DRO)	40	10	50.00	0	80.8	70	130												
Surr: DNOP	4.3		5.000		86.9	70	130												
Sample ID MB-36497	SampTy	pe: ME	BLK	Test	tCode: El	PA Method	8015M/D: Die	esel Range	e Organics	Sample ID MB-36497 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics									
	Batch ID: 36497 RunNo: 49120																		
Client ID: PBS	Batch	ID: 364	497	R	RunNo: 4	9120													
Client ID: PBS Prep Date: 2/13/2018	Batch Analysis Da				RunNo: 4 SeqNo: 1		Units: mg/K	g											
			14/2018				Units: mg/K HighLimit	g %RPD	RPDLimit	Qual									
Prep Date: 2/13/2018 Analyte	Analysis Da	ate: 2/	14/2018	S	SeqNo: 1	583412	0		RPDLimit	Qual									
Prep Date: 2/13/2018	Analysis Da Result	ate: 2/ PQL	14/2018	S	SeqNo: 1	583412	0		RPDLimit	Qual									

Qualifiers:

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

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Hall Environmenta	l Analysis	Laborat	tory,	Inc.
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Client: Blagg Engineering Project: HARDIE LS 1A

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Sample ID MB-36507	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015D: Gaso	oline Rang	le	
Client ID: PBS	Batch	ID: 36	507	F	RunNo: 4	9135				
Prep Date: 2/13/2018	Analysis D	ate: 2/	14/2018	S	583903	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	920		1000		92.0	15	316			
	010		1000		52.0	10	010			
Sample ID LCS-36507		ype: LC		Tes			8015D: Gase	oline Rang	e	
	SampT	ype: LC	s			PA Method		oline Rang	e	
Sample ID LCS-36507	SampT	1D: 36	:S 507	F	tCode: El	PA Method 9135			e	
Sample ID LCS-36507 Client ID: LCSS	SampT Batch	1D: 36	S 507 14/2018	F	tCode: El	PA Method 9135	8015D: Gaso		e RPDLimit	Qual
Sample ID LCS-36507 Client ID: LCSS Prep Date: 2/13/2018	SampT Batch Analysis D	i ID: 36 ate: 2/	S 507 14/2018	F	tCode: El RunNo: 49 SeqNo: 19	PA Method 9135 583904	8015D: Gaso Units: mg/F	(g		Qual

Qualifiers:

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

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:

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Blagg Engineering HARDIE LS 1A

Sample ID MB-36507	SampT	SampType: MBLK TestCode: EPA Method						tiles		
Client ID: PBS	Batcl	h ID: 36	507	F	unNo: 4	9135				
Prep Date: 2/13/2018	Analysis E	Date: 2/	14/2018	S	583927	Units: mg/K	g			
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	0.88		1.000		88.0	80	120			
Sample ID LCS-36507	SampT	ype: LC	S	Tes	Code: El	PA Method	8021B: Volat	iles		
Client ID: LCSS	Batcl	n ID: 36	507	F	unNo: 4	9135				
Prep Date: 2/13/2018	Analysis D)ate: 2/	14/2018	S	eqNo: 1	583928	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.025	1.000	0	82.8	77.3	128			
Toluene	0.90	0.050	1.000	0	89.6	79.2	125			
European and a second s	0.06	0.050	1.000	0	96.5	80.7	127			
Ethylbenzene	0.96	0.000	1.000	0	30.5	00.7	121			
Ethylbenzene Xylenes, Total	2.9	0.10	3.000	0	95.5	81.6	129			
				-						

Qualifiers:

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

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HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental Albu TEL: 505-345-3975 Website: www.ha	490 iquero FAX:	01 Hawkins I que, NM 871 505-345-41	NE 09 07	Sam	nple Log-In C	heck List
Client Name: BLAGG	Work Order Number:	180	2691			RcptNo:	1
Received By: Sophia Campuzano	2/10/2018 9:00:00 AM			Figure	Je-	.	
Completed By: Anne Thorne Reviewed By: SVLL 02/13/18	2/13/2018 7:38:29 AM			Anne	An	~	
Ucheled By PDS							
Chain of Custody							
1. Is Chain of Custody complete?		Yes		No		Not Present	
2. How was the sample delivered?		Cou					
Z, How was the sample delivered?		000					
Log In			_				
3. Was an attempt made to cool the samples?		Yes	\checkmark	No		NA	
4. Were all samples received at a temperature of	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)?	7	Yes	\checkmark	No			
7. Are samples (except VOA and ONG) properly	preserved?	Yes	\checkmark	No			
8. Was preservative added to bottles?		Yes		No	\checkmark	NA 🗆	
9. VOA vials have zero headspace?		Yes		No		No VOA Vials 🗹	
10. Were any sample containers received broken		Yes		No			
						# of preserved bottles checked	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes	\checkmark	No			>12 unless noted)
12. Are matrices correctly identified on Chain of C	ustody?	Yes		No		Adjusted?	
13. Is it clear what analyses were requested?				No		Objective differen	
 Were all holding times able to be met? (If no, notify customer for authorization.) 		Yes	\checkmark	No		Checked by:	
Special Handling (if applicable)							
15. Was client notified of all discrepancies with the	is order?	Yes		No		NA 🗹	
Person Notified:	Date				idiaitherer		
By Whom:	Via:] eMa	ail 🗌 Pho	one	Fax	In Person	
Regarding:	NY ANG DIA KANG AMINA ANG ANG ANG ANG ANG ANG ANG ANG ANG A	No. of Address of				CARDING STOLEN	
Client Instructions:					and the second second		
16. Additional remarks:							
17. <u>Cooler Information</u> Cooler No Temp °C Condition Sea	al Intact Seal No Se	eal Da	ate I c	igned &	av I		
1 3.1 Good Yes	annaor Searno S	ear Di		igned t	- y		
6							

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2/a/18/175/	18	Date: Time:											2/9/18 /015	Date Time	EDD (Type)	O NELAP	Accreditation:	Standard	email or Fax#:	Phone #:		Mailing Address:		Client: B		
-	0	20											N					2				1.25		LAGG	D-O	
Mindushed by:	2	Relinquished by:											SOIL	Matrix		Other				(505) 632-1199	BLOOM	P.O. BOX 87		ENGR.	F-Cus	
He Wheele	In UI	dow .											TSP - VZ @ 0.5' - 1.0'	Sample Request ID				Level 4 (Full Validation)		2-1199	BLOOMFIELD, NM 87413	X 87		BLAGG ENGR. / BP AMERICA	Chain-of-Custody Record	
Spl C	Chrust 1	Received by:											4 oz 1	Container Type and #	Sample Temp	On Ice:	Sampler:		Project Manager:		Project #:	T	Project Name:	X Standard	Turn-Around Time:	
Courier Date	Jasten												Cool	Preservative Type	Sample Temperature: 3, lo- 0, SLCF)	X Yes	NELSON VELEZ	STEVE MOSKAL	Jer:			HARDIE LS #	.,	Rush	lime:	
	8	Date Time											62	HEAL No. 1802 (9)	0.5(cf) =3.1	I NO MY		KAL				# 1A				
Refe	8	Remarks:								-			<			-	-		_		2				1	
Reference #	CONTACT:	irks:	_	BTEX + MTBE + TPH (Gas only)								-		Tel. 505-345-3975	4901	1										
ce # P-875		8	-	-	_	-	-	-	-				-	TPH 8015B	-					505-	Haw					
	& REFERENCE # WH STEVE MOSKAL	LDIR	-		-		-								Method 504.1)						345	/kins	W	A E		
P - 875	MOS	ECTLY	-		-								-	PAH (8310 or 8270SIMS)							3975	NE	ww.h	IALL ENV		
S S	KAL	TO BP	-	-		-							-	RCRA 8 M						Ana	0	- Al	halle	7	m	
	ENAP	VISIN										\vdash		Anions (F,			NO ₂ ,	PO4,SC	04,SO4)		Fax	pudr	nviro	SI		
	8. REFERENCE # WHEN APPLICABLE; STEVE MOSKAL	GTHE				1							14	8081 Pest	icide	es / 8082 PCB's			Re	505	uerque, N	www.hallenvironmental.com	IIS			
	BLE;	BILL DIRECTLY TO BP USING THE CONTACT WITH CORRESPONDING												8260B (VC	DA)				Analysis Request	-345			ENVIRONMENTAL YSIS LABORATORY			
3		ACTV												8270 (Sen	ni-V()A)				ž	Fax 505-345-4107	4901 Hawkins NE - Albuquerque, NM 87109	l.com	80	Z	
the ap		VITHO											<	Chloride (so	oil - 3	0.00	/ wa	ter - 300	00.1)					R	N M	
alution		ORRE																		9		F	Z			
100710		SPON												Grab sam	-									R	N	
		DING	_										U U	# pt. comp	posit	e sa	amp	le						~		