



John Moore, P.E.
Environmental Supervisor
Gallup Refinery

Western Refining Southwest, Inc.

A subsidiary of Marathon Petroleum Corporation

I-40 Exit 39
Jamestown, NM 87347

February 26, 2021

Mr. Kevin Pierard, Chief
New Mexico Environmental Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505

**RE: Response to Comments Approval with Modifications
Response Action Report DGS 105 Additive Tank - Rail Car Loading Area —
Gasoline Release
Marathon Petroleum Company LP, Gallup Refinery
(dba Western Refining Southwest, Inc.)
EPA ID# NMD000333211
HWB-WRG-20-004**

Dear Mr. Pierard:

Marathon Petroleum Company LP (dba Western Refining Southwest, Inc.) Gallup Refinery is submitting this *Response to Comments Approval with Modifications, Response Action Report DGS 105 Additive Tank - Rail Car Loading Area — Gasoline Release*. If there are any questions, please call John Moore at (505) 879-7643.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Marathon Petroleum Company LP, Gallup Refinery

Released to Imaging: 3/2/2021 3:34:21 PM
Robert S. Hanks

Robert S. Hanks
Refinery General Manager

Enclosure

cc D. Cobrain, NMED HWB
M. Suzuki, NMED HWB
C. Chavez OCD
J. Moore, Marathon Gallup Refinery
G. McCartney, Marathon Petroleum Company
K. Luka, Marathon Petroleum Company
H. Jones, Trihydro Corporation

**New Mexico Environmental Department (NMED) Comments****New Mexico Environment Department (NMED) Comments:****NMED Comment 1:**

The Permittee's response to NMED's Comment 1 states, "[b]ased on laboratory data only 6% of the available pore space contained total petroleum hydrocarbon-gasoline range organics (TPH GRO) which was the released product." It is not clear how the gasoline saturation level (6%) was estimated from the laboratory data. In the response letter, provide referenced laboratory data and present the calculation used to estimate the gasoline saturation level.

Marathon Petroleum Company (MPC) Response 1:

The 6% TPH-GRO pore space value was calculated in three steps. The TPH-GRO, TPH-DRO, and TPH-MRO concentrations were averaged based on the data from the three samples collected for waste characterization (Attachment A). Next, the total TPH concentration was calculated by summing the average TPH-GRO, TPH-DRO, and TPH-MRO concentrations. Then, the average TPH-GRO value (698 mg/kg) was divided by the sum of TPH values (12,095 mg/kg). The resulting value is 6% TPH-GRO. This value assumes that the pore space is saturated and that the TPH values represent 100% of the hydrocarbon in the soil pore space. The majority of the released product in the excavated soil is TPH-DRO (80%). The following table presents the calculations.

Sample	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	Sum (mg/kg)	% TPH- GRO
1	1,800	25,000	4,500	31,300	6%
2	94	1,600	490	2,184	4%
3	200	2,400	200	2,800	7%
Average	698	9,667	1,730	12,095	6%
Average %	6%	80%	14%	100%	

NMED Comment 2:

The Permittee's response to NMED's Comment 2 states, "[t]he investigation Work Plan for the Rail Car Loading Area (IWP) will be submitted by December 31, 2020." The proposed submission date for the investigation work plan is hereby approved. The Permittee must submit the work plan no later than December 31, 2020, as stated.



Western Refining Southwest, Inc.

A subsidiary of Marathon Petroleum Corporation

New Mexico Environmental Department (NMED) Comments

MPC Response 2:

The Investigation Work Plan for the Rail Car Release Area will be submitted by December 31, 2020.

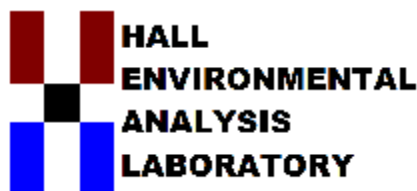
NMED Comment 3:

The Permittee's response to NMED's Comment 5 states, "[b]ecause access beneath the pipelines is limited, [the soil boring] locations may need to be located outside the pipe rack extents." If the soil borings need to be located outside the pipe rack, the locations must be selected downgradient of the pipe rack and/or in topographically low areas where released gasoline could potentially accumulate. Include the provision in the work plan required by Comment 2 above.

MPC Response 3:

Four of the seven proposed soil boring locations will be down gradient of the release area. The locations will be shown on Figure 2 of the Investigation Work Plan. MPC has also included a copy of the proposed locations attached to this letter (Attachment B).

Attachment A: Analytical Results



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

September 12, 2018

Janelle Vestal

Western Refining Southwest, Gallup

Rt. 3 Box 7

Gallup, NM 87301

TEL:

FAX

RE: Rail Pipe Soil Cleanup

OrderNo.: 1808D23

Dear Janelle Vestal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/22/2018 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued September 04, 2018.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. 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. All samples are reported as received unless otherwise indicated.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1808D23

Date Reported: 9/12/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Rail Pipe Excavated Soils

Project: Rail Pipe Soil Cleanup

Collection Date: 8/20/2018 10:30:00 AM

Lab ID: 1808D23-001

Matrix: SLUDGE

Received Date: 8/22/2018 9:05:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS								Analyst: irm
Diesel Range Organics (DRO)	25000	94	500		mg/Kg	50	8/27/2018 1:55:07 PM	39939
Motor Oil Range Organics (MRO)	4500	2500	2500		mg/Kg	50	8/27/2018 1:55:07 PM	39939
Surr: DNOP	0	0	50.6-138	S	%Rec	50	8/27/2018 1:55:07 PM	39939
EPA METHOD 8015D: GASOLINE RANGE								Analyst: NSB
Gasoline Range Organics (GRO)	1800	70	240		mg/Kg	50	8/23/2018 10:19:31 AM	39931
Surr: BFB	156	0	15-316		%Rec	50	8/23/2018 10:19:31 AM	39931
EPA METHOD 7471: MERCURY								Analyst: rde
Mercury	0.089	0.0064	0.032		mg/Kg	1	8/27/2018 4:04:33 PM	40008
MERCURY, TCLP								Analyst: rde
Mercury	ND	0.00050	0.020		mg/L	1	9/11/2018 4:43:30 PM	40278
EPA METHOD 6010B: SOIL METALS								Analyst: JLF
Arsenic	0.88	0.87	2.4	J	mg/Kg	1	8/28/2018 1:29:19 PM	39998
Barium	300	0.042	0.19		mg/Kg	2	8/28/2018 12:59:21 PM	39998
Cadmium	ND	0.030	0.097		mg/Kg	1	8/28/2018 12:34:58 PM	39998
Chromium	15	0.040	0.29		mg/Kg	1	8/28/2018 12:34:58 PM	39998
Lead	26	0.24	0.24		mg/Kg	1	8/28/2018 12:34:58 PM	39998
Selenium	ND	0.98	2.4		mg/Kg	1	8/28/2018 12:34:58 PM	39998
Silver	ND	0.032	0.24		mg/Kg	1	8/28/2018 12:34:58 PM	39998
EPA METHOD 6010B: TCLP METALS								Analyst: ELS
Barium	2.5	0.0011	100	J	mg/L	1	9/12/2018 6:35:23 AM	40277
Chromium	ND	0.00070	5.0		mg/L	1	9/12/2018 6:35:23 AM	40277
Lead	0.014	0.011	5.0	J	mg/L	1	9/12/2018 6:35:23 AM	40277
EPA METHOD 8270C: SEMIVOLATILES								Analyst: DAM
Acenaphthene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Acenaphthylene	ND	9.9	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Aniline	ND	9.5	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Anthracene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Azobenzene	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benz(a)anthracene	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzo(a)pyrene	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzo(b)fluoranthene	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzo(g,h,i)perylene	ND	16	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzo(k)fluoranthene	ND	16	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzoic acid	ND	14	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Benzyl alcohol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Bis(2-chloroethoxy)methane	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991

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 Quantitative 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

Page 1 of 18

Analytical Report

Lab Order 1808D23

Date Reported: 9/12/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Rail Pipe Excavated Soils

Project: Rail Pipe Soil Cleanup

Collection Date: 8/20/2018 10:30:00 AM

Lab ID: 1808D23-001

Matrix: SLUDGE

Received Date: 8/22/2018 9:05:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Bis(2-chloroisopropyl)ether	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Bis(2-ethylhexyl)phthalate	ND	27	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Bromophenyl phenyl ether	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Butyl benzyl phthalate	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Carbazole	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Chloro-3-methylphenol	ND	13	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Chloroaniline	ND	11	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Chloronaphthalene	ND	11	24	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Chlorophenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Chlorophenyl phenyl ether	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Chrysene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Di-n-butyl phthalate	ND	27	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Di-n-octyl phthalate	ND	11	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Dibenz(a,h)anthracene	ND	16	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Dibenzofuran	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
1,2-Dichlorobenzene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
1,3-Dichlorobenzene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
1,4-Dichlorobenzene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
3,3'-Dichlorobenzidine	ND	9.7	24	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Diethyl phthalate	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Dimethyl phthalate	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4-Dichlorophenol	ND	12	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4-Dimethylphenol	ND	9.2	29	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4,6-Dinitro-2-methylphenol	ND	9.0	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4-Dinitrophenol	ND	6.3	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4-Dinitrotoluene	ND	10	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,6-Dinitrotoluene	ND	12	49	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Fluoranthene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Fluorene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Hexachlorobenzene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Hexachlorobutadiene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Hexachlorocyclopentadiene	ND	9.7	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Hexachloroethane	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Indeno(1,2,3-cd)pyrene	ND	14	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Isophorone	ND	13	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
1-Methylnaphthalene	ND	14	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Methylnaphthalene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Methylphenol	ND	14	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991

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	Page 2 of 18
	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 Quantitative 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 1808D23

Date Reported: 9/12/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Rail Pipe Excavated Soils

Project: Rail Pipe Soil Cleanup

Collection Date: 8/20/2018 10:30:00 AM

Lab ID: 1808D23-001

Matrix: SLUDGE

Received Date: 8/22/2018 9:05:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
N-Nitrosodi-n-propylamine	ND	15	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
N-Nitrosodiphenylamine	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Naphthalene	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Nitroaniline	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
3-Nitroaniline	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Nitroaniline	ND	9.4	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Nitrobenzene	ND	11	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2-Nitrophenol	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
4-Nitrophenol	ND	15	24	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Pentachlorophenol	ND	9.9	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Phenanthrene	ND	10	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Phenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Pyrene	14	11	20	JD	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Pyridine	ND	12	39	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
1,2,4-Trichlorobenzene	ND	12	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4,5-Trichlorophenol	ND	11	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
2,4,6-Trichlorophenol	ND	13	20	D	mg/Kg	10	8/30/2018 2:53:08 PM	39991
Surr: 2-Fluorophenol	0		21.7-87.9	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
Surr: Phenol-d5	0		30.2-92.2	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
Surr: 2,4,6-Tribromophenol	0		47.1-103	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
Surr: Nitrobenzene-d5	0		23.9-102	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
Surr: 2-Fluorobiphenyl	0		32.6-101	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
Surr: 4-Terphenyl-d14	0		37.2-117	SD	%Rec	10	8/30/2018 2:53:08 PM	39991
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	11	0.095	0.48		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Toluene	72	0.078	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Ethylbenzene	19	0.068	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Methyl tert-butyl ether (MTBE)	ND	0.15	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2,4-Trimethylbenzene	23	0.084	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,3,5-Trimethylbenzene	7.9	0.061	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2-Dichloroethane (EDC)	ND	0.10	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2-Dibromoethane (EDB)	ND	0.12	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Naphthalene	0.94	0.098	1.9	J	mg/Kg	20	8/23/2018 11:56:07 AM	39931
1-Methylnaphthalene	0.87	0.068	3.9	J	mg/Kg	20	8/23/2018 11:56:07 AM	39931
2-Methylnaphthalene	1.1	0.078	3.9	J	mg/Kg	20	8/23/2018 11:56:07 AM	39931
Acetone	ND	1.0	14		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Bromobenzene	ND	0.071	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Bromodichloromethane	ND	0.13	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931

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	Page 3 of 18
	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 Quantitative 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 1808D23

Date Reported: 9/12/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Rail Pipe Excavated Soils

Project: Rail Pipe Soil Cleanup

Collection Date: 8/20/2018 10:30:00 AM

Lab ID: 1808D23-001

Matrix: SLUDGE

Received Date: 8/22/2018 9:05:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Bromoform	ND	0.24	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Bromomethane	ND	0.17	2.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
2-Butanone	ND	0.57	9.6		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Carbon disulfide	ND	0.11	9.6		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Carbon tetrachloride	ND	0.095	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Chlorobenzene	ND	0.057	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Chloroethane	ND	0.32	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Chloroform	ND	0.058	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Chloromethane	ND	0.20	2.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
2-Chlorotoluene	ND	0.075	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
4-Chlorotoluene	ND	0.087	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
cis-1,2-DCE	ND	0.12	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
cis-1,3-Dichloropropene	ND	0.073	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2-Dibromo-3-chloropropane	ND	0.13	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Dibromochloromethane	ND	0.081	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Dibromomethane	ND	0.047	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2-Dichlorobenzene	ND	0.049	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,3-Dichlorobenzene	ND	0.085	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,4-Dichlorobenzene	ND	0.11	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Dichlorodifluoromethane	ND	0.40	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1-Dichloroethane	ND	0.39	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1-Dichloroethene	ND	0.39	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2-Dichloropropane	ND	0.060	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,3-Dichloropropane	ND	0.24	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
2,2-Dichloropropane	ND	0.11	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1-Dichloropropene	ND	0.11	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Hexachlorobutadiene	ND	0.24	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
2-Hexanone	ND	0.19	9.6		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Isopropylbenzene	4.3	0.065	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
4-Isopropyltoluene	1.3	0.074	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
4-Methyl-2-pentanone	ND	0.21	9.6		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Methylene chloride	ND	0.39	2.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
n-Butylbenzene	1.5	0.086	2.9	J	mg/Kg	20	8/23/2018 11:56:07 AM	39931
n-Propylbenzene	6.1	0.060	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
sec-Butylbenzene	1.6	0.099	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Styrene	ND	0.17	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
tert-Butylbenzene	ND	0.078	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1,1,2-Tetrachloroethane	ND	0.11	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1,2,2-Tetrachloroethane	ND	0.28	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931

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	Page 4 of 18
	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 Quantitative 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 1808D23

Date Reported: 9/12/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Rail Pipe Excavated Soils

Project: Rail Pipe Soil Cleanup

Collection Date: 8/20/2018 10:30:00 AM

Lab ID: 1808D23-001

Matrix: SLUDGE

Received Date: 8/22/2018 9:05:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Tetrachloroethene (PCE)	ND	0.077	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
trans-1,2-DCE	ND	0.39	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
trans-1,3-Dichloropropene	ND	0.11	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2,3-Trichlorobenzene	ND	0.088	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2,4-Trichlorobenzene	ND	0.098	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1,1-Trichloroethane	ND	0.13	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,1,2-Trichloroethane	ND	0.10	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Trichloroethene (TCE)	ND	0.12	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Trichlorofluoromethane	ND	0.14	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
1,2,3-Trichloropropane	ND	0.48	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Vinyl chloride	ND	0.080	0.96		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Xylenes, Total	99	0.30	1.9		mg/Kg	20	8/23/2018 11:56:07 AM	39931
Surr: Dibromofluoromethane	104		70-130		%Rec	20	8/23/2018 11:56:07 AM	39931
Surr: 1,2-Dichloroethane-d4	112		70-130		%Rec	20	8/23/2018 11:56:07 AM	39931
Surr: Toluene-d8	103		70-130		%Rec	20	8/23/2018 11:56:07 AM	39931
Surr: 4-Bromofluorobenzene	110		70-130		%Rec	20	8/23/2018 11:56:07 AM	39931
VOLATILES BY 8260B/1311							Analyst: RAA	
Benzene	0.45	0.10	0.50	J	mg/L	1	8/28/2018 1:16:00 PM	39997
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	8/28/2018 1:16:00 PM	39997
Surr: 4-Bromofluorobenzene	101	0	57.3-148		%Rec	1	8/28/2018 1:16:00 PM	39997
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	8/28/2018 1:16:00 PM	39997
Surr: Toluene-d8	97.0	0	70-130		%Rec	1	8/28/2018 1:16:00 PM	39997

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	Page 5 of 18
	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 Quantitative 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#: **1808D23****12-Sep-18****Client:** Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID LCS-39939	SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch ID: 39939			RunNo: 53657						
Prep Date: 8/22/2018	Analysis Date: 8/23/2018			SeqNo: 1770197		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	91.0	70	130			
Surr: DNOP	4.9		5.000		98.5	50.6	138			

Sample ID MB-39939	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: PBS	Batch ID: 39939			RunNo: 53657						
Prep Date: 8/22/2018	Analysis Date: 8/23/2018			SeqNo: 1770198		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	9.8		10.00		97.5	50.6	138			

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 Quantitative 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

Page 6 of 18

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**WO#: **1808D23****12-Sep-18****Client:** Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID MB-39931	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 39931		RunNo: 53673							
Prep Date: 8/22/2018	Analysis Date: 8/23/2018		SeqNo: 1769982		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	880		1000		87.8	15	316			

Sample ID LCS-39931	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 39931		RunNo: 53673							
Prep Date: 8/22/2018	Analysis Date: 8/23/2018		SeqNo: 1769983		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.4	75.9	131			
Surr: BFB	1000		1000		101	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 Quantitative 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#: 1808D23

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	mb-39931		SampType:	MBLK		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	PBS		Batch ID:	39931		RunNo:	53662			
Prep Date:	8/22/2018		Analysis Date:	8/23/2018		SeqNo:	1770133		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								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	0.35	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

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 Quantitative 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

Page 8 of 18

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

WO#: 1808D23

12-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	mb-39931	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	39931	RunNo:	53662					
Prep Date:	8/22/2018	Analysis Date:	8/23/2018	SeqNo:	1770133	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.48		0.5000		95.0	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.0	70	130			
Surr: Toluene-d8	0.48		0.5000		97.0	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			

Sample ID	lcs-39931	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID:	39931	RunNo:	53662					
Prep Date:	8/22/2018	Analysis Date:	8/23/2018	SeqNo:	1770134	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	96.8	70	130			
Toluene	1.1	0.050	1.000	0	107	70	130			
Chlorobenzene	1.1	0.050	1.000	0	105	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 Quantitative 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

Page 9 of 18

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1808D23

12-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	Ics-39931		SampType: LCS			TestCode: EPA Method 8260B: Volatiles				
Client ID:	LCSS		Batch ID: 39931			RunNo: 53662				
Prep Date:	8/22/2018		Analysis Date: 8/23/2018			SeqNo: 1770134		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.92	0.050	1.000	0	92.2	70	130			
Trichloroethene (TCE)	0.97	0.050	1.000	0	96.5	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		100	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: Toluene-d8	0.52		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		103	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 Quantitative 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

Page 10 of 18

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**WO#: **1808D23****12-Sep-18****Client:** Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	lcs-39997		SampType: LCS			TestCode: Volatiles by 8260B/1311				
Client ID:	LCSS		Batch ID: 39997			RunNo: 53749				
Prep Date:	8/27/2018		Analysis Date: 8/28/2018			SeqNo: 1773361		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.44	0.10	0.4000	0	110	70	130			
Surr: 1,2-Dichloroethane-d4	0.22		0.2000		111	70	130			
Surr: 4-Bromofluorobenzene	0.20		0.2000		102	57.3	148			
Surr: Dibromofluoromethane	0.22		0.2000		112	70	130			
Surr: Toluene-d8	0.20		0.2000		97.7	70	130			

Sample ID	mb-39997		SampType: MBLK		TestCode: Volatiles by 8260B/1311					
Client ID:	PBS		Batch ID: 39997		RunNo: 53749					
Prep Date:	8/27/2018		Analysis Date: 8/28/2018		SeqNo: 1773362		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
Surr: 1,2-Dichloroethane-d4	0.22		0.2000		109	70	130			
Surr: 4-Bromofluorobenzene	0.20		0.2000		100	57.3	148			
Surr: Dibromofluoromethane	0.22		0.2000		111	70	130			
Surr: Toluene-d8	0.19		0.2000		96.4	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 Quantitative 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

Page 11 of 18

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

WO#: 1808D23

12-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	lcs-39991		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 39991		RunNo: 53825					
Prep Date:	8/27/2018		Analysis Date: 8/30/2018		SeqNo: 1776440		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.20	1.670	0	82.2	42	110			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.1	42.3	117			
2-Chlorophenol	2.1	0.20	3.330	0	62.7	27.6	117			
1,4-Dichlorobenzene	0.94	0.20	1.670	0	56.2	28.8	105			
2,4-Dinitrotoluene	1.5	0.50	1.670	0	88.1	42	98.7			
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.2	41.8	112			
4-Nitrophenol	3.4	0.25	3.330	0	102	54	113			
Pentachlorophenol	2.8	0.40	3.330	0	84.5	41.5	101			
Phenol	2.2	0.20	3.330	0	66.8	32.2	115			
Pyrene	1.6	0.20	1.670	0	93.5	48.5	121			
1,2,4-Trichlorobenzene	1.1	0.20	1.670	0	65.6	39.9	112			
Surr: 2-Fluorophenol	1.9		3.330		58.5	21.7	87.9			
Surr: Phenol-d5	2.3		3.330		70.1	30.2	92.2			
Surr: 2,4,6-Tribromophenol	3.1		3.330		93.8	47.1	103			
Surr: Nitrobenzene-d5	1.1		1.670		63.7	23.9	102			
Surr: 2-Fluorobiphenyl	1.3		1.670		76.2	32.6	101			
Surr: 4-Terphenyl-d14	1.8		1.670		108	37.2	117			

Sample ID	mb-39991		SampType: MBLK			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	PBS		Batch ID: 39991			RunNo: 53825				
Prep Date:	8/27/2018		Analysis Date: 8/30/2018			SeqNo: 1776441		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	0.31	0.50								J

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 Quantitative 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#: 1808D23

12-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	mb-39991	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	39991	RunNo:	53825					
Prep Date:	8/27/2018	Analysis Date:	8/30/2018	SeqNo:	1776441	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								

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 Quantitative 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

Page 13 of 18

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**WO#: **1808D23****12-Sep-18****Client:** Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	mb-39991	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	39991	RunNo:	53825					
Prep Date:	8/27/2018	Analysis Date:	8/30/2018	SeqNo:	1776441	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.9		3.330		55.8	21.7	87.9			
Surr: Phenol-d5	2.0		3.330		60.9	30.2	92.2			
Surr: 2,4,6-Tribromophenol	3.0		3.330		89.1	47.1	103			
Surr: Nitrobenzene-d5	1.0		1.670		61.9	23.9	102			
Surr: 2-Fluorobiphenyl	1.1		1.670		66.9	32.6	101			
Surr: 4-Terphenyl-d14	1.6		1.670		98.5	37.2	117			

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 Quantitative 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

Page 14 of 18

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**WO#: **1808D23****12-Sep-18****Client:** Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	MB-40008	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury					
Client ID:	PBS	Batch ID:	40008	RunNo:	53728					
Prep Date:	8/27/2018	Analysis Date:	8/27/2018	SeqNo:	1772448	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-40008	SampType:	LCS	TestCode:	EPA Method 7471: Mercury					
Client ID:	LCSS	Batch ID:	40008	RunNo:	53728					
Prep Date:	8/27/2018	Analysis Date:	8/27/2018	SeqNo:	1772449	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	104	80	120			

Sample ID	LLLLCS-40008	SampType:	LCSLL	TestCode:	EPA Method 7471: Mercury					
Client ID:	BatchQC	Batch ID:	40008	RunNo:	53728					
Prep Date:	8/27/2018	Analysis Date:	8/27/2018	SeqNo:	1772450	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0076	0.033	0.006660	0	114	70	130			J

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 Quantitative 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

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**WO#: **1808D23****12-Sep-18****Client:** Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID MB-40278	SampType: MBLK			TestCode: MERCURY, TCLP						
Client ID: PBW	Batch ID: 40278			RunNo: 54072						
Prep Date: 9/11/2018	Analysis Date: 9/11/2018			SeqNo: 1786579	Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID LCS-40278	SampType: LCS			TestCode: MERCURY, TCLP						
Client ID: LCSW	Batch ID: 40278			RunNo: 54072						
Prep Date: 9/11/2018	Analysis Date: 9/11/2018			SeqNo: 1786580	Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.020	0.005000	0	103	80	120			J

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 Quantitative 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

Page 16 of 18

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

WO#: 1808D23

12-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	MB-39998	SampType: MBLK			TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID: 39998			RunNo: 53746					
Prep Date:	8/27/2018	Analysis Date: 8/28/2018			SeqNo: 1773309		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.10								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Lead	ND	0.25								
Selenium	ND	2.5								
Silver	ND	0.25								

Sample ID	LCS-39998		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 39998		RunNo: 53746					
Prep Date:	8/27/2018		Analysis Date: 8/28/2018		SeqNo: 1773311		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	24	0.10	25.00	0	94.1	80	120			
Cadmium	23	0.10	25.00	0	92.7	80	120			
Chromium	23	0.30	25.00	0	92.9	80	120			
Lead	22	0.25	25.00	0	87.9	80	120			
Selenium	21	2.5	25.00	0	82.0	80	120			
Silver	4.8	0.25	5.000	0	96.7	80	120			

Sample ID	MB-39998		SampType: MBLK		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS		Batch ID: 39998		RunNo: 53746					
Prep Date:	8/27/2018		Analysis Date: 8/28/2018		SeqNo: 1773353		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								

Sample ID	LCS-39998		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 39998		RunNo: 53746					
Prep Date:	8/27/2018		Analysis Date: 8/28/2018		SeqNo: 1773355		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	22	2.5	25.00	0	89.1	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 Quantitative 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#: **1808D23****12-Sep-18****Client:** Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	MB-40277	SampType:	MBLK	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	PBW	Batch ID:	40277	RunNo:	54079					
Prep Date:	9/11/2018	Analysis Date:	9/12/2018	SeqNo:	1787012	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	100								
Chromium	0.00071	5.0								J

Sample ID	MB-40277	SampType:	MBLK	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	PBW	Batch ID:	40277	RunNo:	54079					
Prep Date:	9/11/2018	Analysis Date:	9/12/2018	SeqNo:	1787014	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	5.0								

Sample ID	LCS-40277	SampType:	LCS	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	LCSW	Batch ID:	40277	RunNo:	54079					
Prep Date:	9/11/2018	Analysis Date:	9/12/2018	SeqNo:	1787015	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	100	0.5000	0	101	80	120			J
Chromium	0.49	5.0	0.5000	0	98.7	80	120			J
Lead	0.47	5.0	0.5000	0	94.9	80	120			J

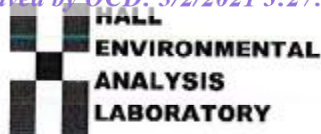
Sample ID	1808D23-001AMS	SampType:	MS	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	Rail Pipe Excavated	Batch ID:	40277	RunNo:	54079					
Prep Date:	9/11/2018	Analysis Date:	9/12/2018	SeqNo:	1787017	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	2.9	100	0.5000	2.494	83.6	75	125			J
Chromium	0.48	5.0	0.5000	0	96.9	75	125			J
Lead	0.50	5.0	0.5000	0.01432	96.2	75	125			J

Sample ID	1808D23-001AMSD	SampType:	MSD	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	Rail Pipe Excavated	Batch ID:	40277	RunNo:	54079					
Prep Date:	9/11/2018	Analysis Date:	9/12/2018	SeqNo:	1787018	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	2.9	100	0.5000	2.494	84.6	75	125	0.172	20	J
Chromium	0.49	5.0	0.5000	0	97.7	75	125	0.806	20	J
Lead	0.50	5.0	0.5000	0.01432	97.0	75	125	0.734	20	J

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 Quantitative 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

Page 18 of 18



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: Western Refining Gallup

Work Order Number: 1808D23

RcptNo: 1

Received By: Jazzmine Burkhead 8/22/2018 9:05:00 AM

Completed By: Ashley Gallegos 8/22/2018 10:27:29 AM

Reviewed By: *[Signature]* 08/22/18Labeled by: *[Signature]* JAB 08/22/18

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 $>0^{\circ}\text{C}$ 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? *[Signature]*

Checked by: *[Signature]*

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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

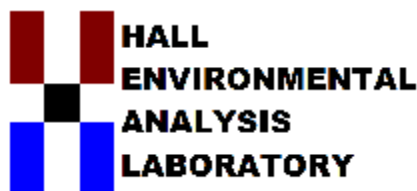
4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]

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: www.hallenvironmental.com

September 28, 2018

Janelle Vestal
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301
TEL:
FAX

RE: Rail Pipe Soil Cleanup

OrderNo.: 1809C86

Dear Janelle Vestal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/21/2018 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 www.hallenvironmental.com 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 #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a white background.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1809C86

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Rail Pipe Excavated Soils 2

Project: Rail Pipe Soil Cleanup

Collection Date: 9/19/2018 9:30:00 AM

Lab ID: 1809C86-001

Matrix: SOIL

Received Date: 9/21/2018 8:55:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: irm	
Diesel Range Organics (DRO)	1600	19	97	D	mg/Kg	10	9/26/2018 2:21:57 PM	40586
Motor Oil Range Organics (MRO)	ND	490	490	D	mg/Kg	10	9/26/2018 2:21:57 PM	40586
Surr: DNOP	0	0	50.6-138	SD	%Rec	10	9/26/2018 2:21:57 PM	40586
EPA METHOD 7471: MERCURY							Analyst: rde	
Mercury	0.047	0.0065	0.032		mg/Kg	1	9/27/2018 4:15:27 PM	40631
EPA METHOD 6010B: SOIL METALS							Analyst: pmf	
Arsenic	ND	4.5	12		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Barium	330	0.11	0.50		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Cadmium	ND	0.16	0.50		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Chromium	15	0.20	1.5		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Lead	16	1.2	1.2		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Selenium	ND	5.0	12		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Silver	ND	0.16	1.2		mg/Kg	5	9/24/2018 6:25:29 PM	40535
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	0.045	0.0098	0.050	JD	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Toluene	ND	0.0081	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Ethylbenzene	0.32	0.0070	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Methyl tert-butyl ether (MTBE)	0.12	0.015	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,4-Trimethylbenzene	1.2	0.0087	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,3,5-Trimethylbenzene	0.40	0.0063	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dichloroethane (EDC)	ND	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dibromoethane (EDB)	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Naphthalene	0.87	0.010	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1-Methylnaphthalene	2.1	0.0071	0.40	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Methylnaphthalene	2.3	0.0081	0.40	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Acetone	ND	0.11	1.5	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromobenzene	ND	0.0073	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromodichloromethane	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromoform	ND	0.024	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromomethane	ND	0.017	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Butanone	ND	0.059	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Carbon disulfide	ND	0.012	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Carbon tetrachloride	ND	0.0099	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chlorobenzene	ND	0.0059	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chloroethane	ND	0.033	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chloroform	ND	0.0060	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chloromethane	ND	0.021	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Chlorotoluene	ND	0.0078	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538

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	Page 1 of 11
	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 Quantitative 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 1809C86

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Rail Pipe Excavated Soils 2

Project: Rail Pipe Soil Cleanup

Collection Date: 9/19/2018 9:30:00 AM

Lab ID: 1809C86-001

Matrix: SOIL

Received Date: 9/21/2018 8:55:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
4-Chlorotoluene	ND	0.0090	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
cis-1,2-DCE	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
cis-1,3-Dichloropropene	ND	0.0076	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dibromo-3-chloropropane	ND	0.014	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Dibromochloromethane	ND	0.0084	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Dibromomethane	ND	0.0049	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dichlorobenzene	ND	0.0051	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,3-Dichlorobenzene	ND	0.0088	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,4-Dichlorobenzene	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Dichlorodifluoromethane	ND	0.041	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1-Dichloroethane	ND	0.040	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1-Dichloroethene	ND	0.040	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dichloropropane	ND	0.0062	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,3-Dichloropropane	ND	0.025	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2,2-Dichloropropane	ND	0.011	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1-Dichloropropene	ND	0.011	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Hexachlorobutadiene	ND	0.025	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Hexanone	ND	0.019	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Isopropylbenzene	0.055	0.0067	0.10	JD	mg/Kg	2	9/25/2018 7:18:36 PM	40538
4-Isopropyltoluene	0.20	0.0076	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
4-Methyl-2-pentanone	ND	0.021	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Methylene chloride	ND	0.040	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
n-Butylbenzene	0.30	0.0089	0.30	JD	mg/Kg	2	9/25/2018 7:18:36 PM	40538
n-Propylbenzene	0.17	0.0062	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
sec-Butylbenzene	0.16	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Styrene	ND	0.017	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
tert-Butylbenzene	ND	0.0081	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,1,2-Tetrachloroethane	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,2,2-Tetrachloroethane	ND	0.029	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Tetrachloroethene (PCE)	ND	0.0080	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
trans-1,2-DCE	ND	0.040	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
trans-1,3-Dichloropropene	ND	0.012	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,3-Trichlorobenzene	ND	0.0091	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,4-Trichlorobenzene	ND	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,1-Trichloroethane	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,2-Trichloroethane	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Trichloroethene (TCE)	ND	0.012	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Trichlorofluoromethane	ND	0.015	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,3-Trichloropropane	ND	0.050	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538

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	Page 2 of 11
	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 Quantitative 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 1809C86

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Rail Pipe Excavated Soils 2

Project: Rail Pipe Soil Cleanup

Collection Date: 9/19/2018 9:30:00 AM

Lab ID: 1809C86-001

Matrix: SOIL

Received Date: 9/21/2018 8:55:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Vinyl chloride	ND	0.0083	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Xylenes, Total	0.53	0.031	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Surr: Dibromofluoromethane	89.0		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
Surr: 1,2-Dichloroethane-d4	94.0		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
Surr: Toluene-d8	86.6		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
Surr: 4-Bromofluorobenzene	120		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
EPA METHOD 8260B: TCLP COMPOUNDS							Analyst: DJF	
Benzene	0.055	0.049	0.50	J	ppm	10	9/25/2018 12:59:39 PM	40538
Surr: 1,2-Dichloroethane-d4	88.2		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: 4-Bromofluorobenzene	104		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: Dibromofluoromethane	87.2		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: Toluene-d8	91.5		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	94	0.94	5.0		mg/Kg	1	9/25/2018 2:51:21 PM	40538
Surr: BFB	138	0	70-130	S	%Rec	1	9/25/2018 2:51:21 PM	40538

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	Page 3 of 11
	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 Quantitative 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#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	MB-40586	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	40586	RunNo:	54424					
Prep Date:	9/26/2018	Analysis Date:	9/26/2018	SeqNo:	1803489	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	11		10.00		110	50.6	138			

Sample ID	LCS-40586	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	40586	RunNo:	54424					
Prep Date:	9/26/2018	Analysis Date:	9/26/2018	SeqNo:	1803490	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	109	70	130			
Surr: DNOP	5.7		5.000		113	50.6	138			

Sample ID	LCS-40568	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	40568	RunNo:	54424					
Prep Date:	9/25/2018	Analysis Date:	9/26/2018	SeqNo:	1805098	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.1		5.000		101	50.6	138			

Sample ID	MB-40568	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	40568	RunNo:	54424					
Prep Date:	9/25/2018	Analysis Date:	9/26/2018	SeqNo:	1805099	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		106	50.6	138			

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 Quantitative 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

Page 4 of 11

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	mb-40538	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	40538	RunNo:	54394					
Prep Date:	9/24/2018	Analysis Date:	9/25/2018	SeqNo:	1801939	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								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.031	0.15								J
2-Butanone	0.081	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

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 Quantitative 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

Page 5 of 11

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

WO#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	mb-40538	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	40538	RunNo:	54394					
Prep Date:	9/24/2018	Analysis Date:	9/25/2018	SeqNo:	1801939	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	0.022	0.50								J
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.47		0.5000		94.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.4	70	130			
Surr: Toluene-d8	0.45		0.5000		91.0	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		89.9	70	130			

Sample ID	lcs-40538	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID:	40538	RunNo:	54394					
Prep Date:	9/24/2018	Analysis Date:	9/25/2018	SeqNo:	1801940	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.4	70	130			
Toluene	0.90	0.050	1.000	0	89.8	70	130			
Chlorobenzene	0.96	0.050	1.000	0	95.8	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 Quantitative 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#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	Ics-40538		SampType: LCS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS		Batch ID: 40538		RunNo: 54394					
Prep Date:	9/24/2018		Analysis Date: 9/25/2018		SeqNo: 1801940		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.99	0.050	1.000	0	99.0	70	130			
Trichloroethene (TCE)	0.87	0.050	1.000	0	86.8	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.45		0.5000		89.8	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.2	70	130			

Sample ID	1809c86-001ams		SampType: MS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	Rail Pipe Excavated		Batch ID: 40538		RunNo: 54394					
Prep Date:	9/24/2018		Analysis Date: 9/25/2018		SeqNo: 1801942		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0.04497	99.6	51.9	158			
Toluene	0.98	0.10	1.000	0	98.1	64.6	132			
Chlorobenzene	1.1	0.10	1.000	0	107	62.8	136			
1,1-Dichloroethene	1.0	0.10	1.000	0	101	42.4	170			
Trichloroethene (TCE)	0.91	0.10	1.000	0	91.5	70	130			
Surr: Dibromofluoromethane	0.89		1.000		88.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.95		1.000		95.2	70	130			
Surr: Toluene-d8	0.92		1.000		91.6	70	130			
Surr: 4-Bromofluorobenzene	1.2		1.000		125	70	130			

Sample ID	1809c86-001amsd		SampType: MSD		TestCode: EPA Method 8260B: Volatiles					
Client ID:	Rail Pipe Excavated		Batch ID: 40538		RunNo: 54394					
Prep Date:	9/24/2018		Analysis Date: 9/25/2018		SeqNo: 1801943		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	0.9960	0.04497	110	51.9	158	8.81	20	
Toluene	1.0	0.10	0.9960	0	100	64.6	132	1.77	20	
Chlorobenzene	1.1	0.10	0.9960	0	110	62.8	136	2.25	20	
1,1-Dichloroethene	1.1	0.10	0.9960	0	106	42.4	170	4.41	20	
Trichloroethene (TCE)	0.98	0.10	0.9960	0	98.8	70	130	7.29	20	
Surr: Dibromofluoromethane	0.92		0.9960		92.6	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.97		0.9960		97.0	70	130	0	0	
Surr: Toluene-d8	0.88		0.9960		88.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	1.3		0.9960		130	70	130	0	0	

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 Quantitative 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

Page 7 of 11

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

WO#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	mb-40538		SampType:	MBLK		TestCode:	EPA Method 8260B: TCLP Compounds			
Client ID:	PBS		Batch ID:	40538		RunNo:	54394			
Prep Date:	9/24/2018		Analysis Date:	9/25/2018		SeqNo:	1801953	Units:	ppm	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
2-Butanone	0.081	20								J
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	10								
Chloroform	ND	0.60								
1,4-Dichlorobenzene	ND	0.75								
1,1-Dichloroethene	ND	0.070								
Tetrachloroethene (PCE)	ND	0.070								
Trichloroethene (TCE)	ND	0.050								
Vinyl chloride	ND	0.020								
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.4	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		89.9	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		94.3	70	130			
Surr: Toluene-d8	0.45		0.5000		91.0	70	130			

Sample ID	lcs-40538		SampType:	LCS		TestCode:	EPA Method 8260B: TCLP Compounds			
Client ID:	LCSS		Batch ID:	40538		RunNo:	54394			
Prep Date:	9/24/2018		Analysis Date:	9/25/2018		SeqNo:	1801954	Units:	ppm	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.050	1.000	0	93.4	70	130			
Chlorobenzene	0.96	0.050	1.000	0	95.8	70	130			
1,1-Dichloroethene	0.99	0.050	1.000	0	99.0	70	130			
Trichloroethene (TCE)	0.87	0.050	1.000	0	86.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.2	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.3	70	130			
Surr: Toluene-d8	0.45		0.5000		89.8	70	130			

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 Quantitative 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

Page 8 of 11

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**WO#: **1809C86****28-Sep-18****Client:** Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID MB-40631	SampType: MBLK		TestCode: EPA Method 7471: Mercury							
Client ID: PBS	Batch ID: 40631		RunNo: 54464							
Prep Date: 9/27/2018	Analysis Date: 9/27/2018		SeqNo: 1805335	Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID LCS-40631	SampType: LCS		TestCode: EPA Method 7471: Mercury							
Client ID: LCSS	Batch ID: 40631		RunNo: 54464							
Prep Date: 9/27/2018	Analysis Date: 9/27/2018		SeqNo: 1805336	Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

Sample ID LLCS-40631	SampType: LCSLL		TestCode: EPA Method 7471: Mercury							
Client ID: BatchQC	Batch ID: 40631		RunNo: 54464							
Prep Date: 9/27/2018	Analysis Date: 9/27/2018		SeqNo: 1805337	Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0073	0.033	0.006660	0	110	70	130			J

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 Quantitative 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

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

WO#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	MB-40535	SampType: MBLK			TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID: 40535			RunNo: 54358					
Prep Date:	9/24/2018	Analysis Date: 9/24/2018			SeqNo: 1800807		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Chromium	0.052	0.30								J
Lead	ND	0.25								
Selenium	1.1	2.5								J
Silver	ND	0.25								

Sample ID	LCS-40535		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 40535		RunNo: 54358					
Prep Date:	9/24/2018		Analysis Date: 9/24/2018		SeqNo: 1800811		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	23	2.5	25.00	0	93.6	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Cadmium	25	0.10	25.00	0	98.8	80	120			
Chromium	25	0.30	25.00	0	98.8	80	120			
Lead	25	0.25	25.00	0	98.6	80	120			
Selenium	23	2.5	25.00	0	93.6	80	120			
Silver	5.3	0.25	5.000	0	106	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 Quantitative 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#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	lcs-40538		SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range				
Client ID:	LCSS		Batch ID: 40538			RunNo: 54391				
Prep Date:	9/24/2018		Analysis Date: 9/25/2018			SeqNo: 1802094	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	101	70	130			
Surr: BFB	460		500.0		91.6	70	130			

Sample ID	mb-40538		SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range				
Client ID:	PBS		Batch ID: 40538			RunNo: 54391				
Prep Date:	9/24/2018		Analysis Date: 9/25/2018			SeqNo: 1802095	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	500		500.0		100	70	130			

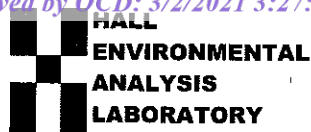
Sample ID	lcs-40548		SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range				
Client ID:	LCSS		Batch ID: 40548			RunNo: 54391				
Prep Date:	9/24/2018		Analysis Date: 9/25/2018			SeqNo: 1802097	Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	470		500.0		93.6	70	130			

Sample ID	mb-40548		SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range				
Client ID:	PBS		Batch ID: 40548			RunNo: 54391				
Prep Date:	9/24/2018		Analysis Date: 9/25/2018			SeqNo: 1802098	Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	490		500.0		97.0	70	130			

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 Quantitative 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



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87105
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1809C86

RcptNo: 1

Received By: Jazzmine Burkhead 9/21/2018 8:55:00 AM

Completed By: Ashley Gallegos 9/21/2018 10:45:18 AM

Reviewed By: *[Signature]* 09/21/18 Labeled by: JAB 09/21/18Chain 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 $>0^{\circ}\text{C}$ 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	3.1	Good	Yes			

Chain-of-Custody Record

Turn-Around Time:

Client: Western/Andeavor

☐ Standard☒ Rush

Project Name:

Gallup Refinery

Mailing Address: 92 GIANT CROSSING ROAD

Rail Pipe Soil Cleanup

Gallup NM 87301

Project #:

Phone #: 505 722 3721

email or Fax#: 505 863 0930

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)☐ Other☐ EDD (Type) _____

Project Manager:

Janelle Vestal

Alvin Dorsey

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 3

Date

Sample Request ID

Container Type and #

HEAL No.

1809 C86

Reactivity

RCRA 8 METALS

8310 PAH

8270 - Semi-VOCs

8260B - VOCs

R8015 D (DRO/GRO/MRO)

Benzene - TCLP

9/19/2018

9:30

Solid

Rail Pipe Excavated Soils #2

2 - 9oz

None

-001

X

X

X

X

Date:

9/20/18

Time:

8:00

Relinquished by:

Janelle Vestal

Received by:

Alvin Dorsey

Date

09/21/18

Time

08:55

Remarks:

Courier

Date:

9/20/18

Time:

8:00

Relinquished by:

Janelle Vestal

Received by:

Alvin Dorsey

Date

09/21/18

Time

08:55

Remarks:

Courier

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.

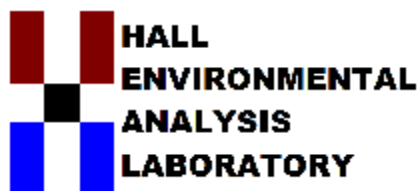

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request



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

September 28, 2018

Janelle Vestal
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301
TEL:
FAX

RE: Rail Pipe Soil Cleanup

OrderNo.: 1809C86

Dear Janelle Vestal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/21/2018 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 www.hallenvironmental.com 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 #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1809C86

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Rail Pipe Excavated Soils 2

Project: Rail Pipe Soil Cleanup

Collection Date: 9/19/2018 9:30:00 AM

Lab ID: 1809C86-001

Matrix: SOIL

Received Date: 9/21/2018 8:55:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS								Analyst: irm
Diesel Range Organics (DRO)	1600	19	97	D	mg/Kg	10	9/26/2018 2:21:57 PM	40586
Motor Oil Range Organics (MRO)	ND	490	490	D	mg/Kg	10	9/26/2018 2:21:57 PM	40586
Surr: DNOP	0	0	50.6-138	SD	%Rec	10	9/26/2018 2:21:57 PM	40586
EPA METHOD 7471: MERCURY								Analyst: rde
Mercury	0.047	0.0065	0.032		mg/Kg	1	9/27/2018 4:15:27 PM	40631
EPA METHOD 6010B: SOIL METALS								Analyst: pmf
Arsenic	ND	4.5	12		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Barium	330	0.11	0.50		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Cadmium	ND	0.16	0.50		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Chromium	15	0.20	1.5		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Lead	16	1.2	1.2		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Selenium	ND	5.0	12		mg/Kg	5	9/24/2018 6:25:29 PM	40535
Silver	ND	0.16	1.2		mg/Kg	5	9/24/2018 6:25:29 PM	40535
EPA METHOD 8260B: VOLATILES								Analyst: DJF
Benzene	0.045	0.0098	0.050	JD	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Toluene	ND	0.0081	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Ethylbenzene	0.32	0.0070	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Methyl tert-butyl ether (MTBE)	0.12	0.015	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,4-Trimethylbenzene	1.2	0.0087	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,3,5-Trimethylbenzene	0.40	0.0063	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dichloroethane (EDC)	ND	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dibromoethane (EDB)	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Naphthalene	0.87	0.010	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1-Methylnaphthalene	2.1	0.0071	0.40	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Methylnaphthalene	2.3	0.0081	0.40	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Acetone	ND	0.11	1.5	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromobenzene	ND	0.0073	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromodichloromethane	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromoform	ND	0.024	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Bromomethane	ND	0.017	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Butanone	ND	0.059	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Carbon disulfide	ND	0.012	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Carbon tetrachloride	ND	0.0099	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chlorobenzene	ND	0.0059	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chloroethane	ND	0.033	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chloroform	ND	0.0060	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Chloromethane	ND	0.021	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Chlorotoluene	ND	0.0078	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538

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	Page 1 of 11
	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 Quantitative 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 1809C86

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Rail Pipe Excavated Soils 2

Project: Rail Pipe Soil Cleanup

Collection Date: 9/19/2018 9:30:00 AM

Lab ID: 1809C86-001

Matrix: SOIL

Received Date: 9/21/2018 8:55:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
4-Chlorotoluene	ND	0.0090	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
cis-1,2-DCE	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
cis-1,3-Dichloropropene	ND	0.0076	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dibromo-3-chloropropane	ND	0.014	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Dibromochloromethane	ND	0.0084	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Dibromomethane	ND	0.0049	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dichlorobenzene	ND	0.0051	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,3-Dichlorobenzene	ND	0.0088	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,4-Dichlorobenzene	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Dichlorodifluoromethane	ND	0.041	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1-Dichloroethane	ND	0.040	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1-Dichloroethene	ND	0.040	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2-Dichloropropane	ND	0.0062	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,3-Dichloropropane	ND	0.025	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2,2-Dichloropropane	ND	0.011	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1-Dichloropropene	ND	0.011	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Hexachlorobutadiene	ND	0.025	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
2-Hexanone	ND	0.019	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Isopropylbenzene	0.055	0.0067	0.10	JD	mg/Kg	2	9/25/2018 7:18:36 PM	40538
4-Isopropyltoluene	0.20	0.0076	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
4-Methyl-2-pentanone	ND	0.021	1.0	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Methylene chloride	ND	0.040	0.30	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
n-Butylbenzene	0.30	0.0089	0.30	JD	mg/Kg	2	9/25/2018 7:18:36 PM	40538
n-Propylbenzene	0.17	0.0062	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
sec-Butylbenzene	0.16	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Styrene	ND	0.017	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
tert-Butylbenzene	ND	0.0081	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,1,2-Tetrachloroethane	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,2,2-Tetrachloroethane	ND	0.029	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Tetrachloroethene (PCE)	ND	0.0080	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
trans-1,2-DCE	ND	0.040	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
trans-1,3-Dichloropropene	ND	0.012	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,3-Trichlorobenzene	ND	0.0091	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,4-Trichlorobenzene	ND	0.010	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,1-Trichloroethane	ND	0.013	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,1,2-Trichloroethane	ND	0.011	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Trichloroethene (TCE)	ND	0.012	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Trichlorofluoromethane	ND	0.015	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
1,2,3-Trichloropropane	ND	0.050	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538

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	Page 2 of 11
	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 Quantitative 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 1809C86

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Rail Pipe Excavated Soils 2

Project: Rail Pipe Soil Cleanup

Collection Date: 9/19/2018 9:30:00 AM

Lab ID: 1809C86-001

Matrix: SOIL

Received Date: 9/21/2018 8:55:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Vinyl chloride	ND	0.0083	0.10	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Xylenes, Total	0.53	0.031	0.20	D	mg/Kg	2	9/25/2018 7:18:36 PM	40538
Surr: Dibromofluoromethane	89.0		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
Surr: 1,2-Dichloroethane-d4	94.0		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
Surr: Toluene-d8	86.6		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
Surr: 4-Bromofluorobenzene	120		70-130	D	%Rec	2	9/25/2018 7:18:36 PM	40538
EPA METHOD 8260B: TCLP COMPOUNDS							Analyst: DJF	
Benzene	0.055	0.049	0.50	J	ppm	10	9/25/2018 12:59:39 PM	40538
Surr: 1,2-Dichloroethane-d4	88.2		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: 4-Bromofluorobenzene	104		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: Dibromofluoromethane	87.2		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
Surr: Toluene-d8	91.5		70-130		%Rec	10	9/25/2018 12:59:39 PM	40538
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	94	0.94	5.0		mg/Kg	1	9/25/2018 2:51:21 PM	40538
Surr: BFB	138	0	70-130	S	%Rec	1	9/25/2018 2:51:21 PM	40538

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 Quantitative 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

Page 3 of 11

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

WO#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	MB-40586	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 40586			RunNo: 54424					
Prep Date:	9/26/2018	Analysis Date: 9/26/2018			SeqNo: 1803489		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	11		10.00		110	50.6	138			

Sample ID	LCS-40586		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 40586		RunNo: 54424					
Prep Date:	9/26/2018		Analysis Date: 9/26/2018		SeqNo: 1803490		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	109	70	130			
Surr: DNOP	5.7		5.000		113	50.6	138			

Sample ID	LCS-40568		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 40568		RunNo: 54424					
Prep Date:	9/25/2018		Analysis Date: 9/26/2018		SeqNo: 1805098		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.1		5.000		101	50.6	138			

Sample ID	MB-40568		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 40568		RunNo: 54424					
Prep Date:	9/25/2018		Analysis Date: 9/26/2018		SeqNo: 1805099		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		106	50.6	138			

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 Quantitative 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

Page 4 of 11

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	mb-40538		SampType:	MBLK		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	PBS		Batch ID:	40538		RunNo:	54394			
Prep Date:	9/24/2018		Analysis Date:	9/25/2018		SeqNo:	1801939		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								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.031	0.15								J
2-Butanone	0.081	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

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 Quantitative 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

Page 5 of 11

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup

Project: Rail Pipe Soil Cleanup

Sample ID	mb-40538		SampType:	MBLK		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	PBS		Batch ID:	40538		RunNo:	54394			
Prep Date:	9/24/2018		Analysis Date:	9/25/2018		SeqNo:	1801939		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	0.022	0.50								J
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.47		0.5000		94.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.4	70	130			
Surr: Toluene-d8	0.45		0.5000		91.0	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		89.9	70	130			

Sample ID	lcs-40538		SampType:	LCS		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	LCSS		Batch ID:	40538		RunNo:	54394			
Prep Date:	9/24/2018		Analysis Date:	9/25/2018		SeqNo:	1801940		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.4	70	130			
Toluene	0.90	0.050	1.000	0	89.8	70	130			
Chlorobenzene	0.96	0.050	1.000	0	95.8	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 Quantitative 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

Page 6 of 11

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

WO#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	Ics-40538		SampType: LCS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS		Batch ID: 40538		RunNo: 54394					
Prep Date:	9/24/2018		Analysis Date: 9/25/2018		SeqNo: 1801940		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.99	0.050	1.000	0	99.0	70	130			
Trichloroethene (TCE)	0.87	0.050	1.000	0	86.8	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.45		0.5000		89.8	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.2	70	130			

Sample ID	1809c86-001ams		SampType: MS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	Rail Pipe Excavated		Batch ID: 40538		RunNo: 54394					
Prep Date:	9/24/2018		Analysis Date: 9/25/2018		SeqNo: 1801942		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0.04497	99.6	51.9	158			
Toluene	0.98	0.10	1.000	0	98.1	64.6	132			
Chlorobenzene	1.1	0.10	1.000	0	107	62.8	136			
1,1-Dichloroethene	1.0	0.10	1.000	0	101	42.4	170			
Trichloroethene (TCE)	0.91	0.10	1.000	0	91.5	70	130			
Surr: Dibromofluoromethane	0.89		1.000		88.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.95		1.000		95.2	70	130			
Surr: Toluene-d8	0.92		1.000		91.6	70	130			
Surr: 4-Bromofluorobenzene	1.2		1.000		125	70	130			

Sample ID	1809c86-001amsd		SampType: MSD		TestCode: EPA Method 8260B: Volatiles					
Client ID:	Rail Pipe Excavated		Batch ID: 40538		RunNo: 54394					
Prep Date:	9/24/2018		Analysis Date: 9/25/2018		SeqNo: 1801943		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	0.9960	0.04497	110	51.9	158	8.81	20	
Toluene	1.0	0.10	0.9960	0	100	64.6	132	1.77	20	
Chlorobenzene	1.1	0.10	0.9960	0	110	62.8	136	2.25	20	
1,1-Dichloroethene	1.1	0.10	0.9960	0	106	42.4	170	4.41	20	
Trichloroethene (TCE)	0.98	0.10	0.9960	0	98.8	70	130	7.29	20	
Surr: Dibromofluoromethane	0.92		0.9960		92.6	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.97		0.9960		97.0	70	130	0	0	
Surr: Toluene-d8	0.88		0.9960		88.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	1.3		0.9960		130	70	130	0	0	

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 Quantitative 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

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

WO#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	mb-40538		SampType:	MBLK		TestCode:	EPA Method 8260B: TCLP Compounds			
Client ID:	PBS		Batch ID:	40538		RunNo:	54394			
Prep Date:	9/24/2018		Analysis Date:	9/25/2018		SeqNo:	1801953	Units:	ppm	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
2-Butanone	0.081	20								J
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	10								
Chloroform	ND	0.60								
1,4-Dichlorobenzene	ND	0.75								
1,1-Dichloroethene	ND	0.070								
Tetrachloroethene (PCE)	ND	0.070								
Trichloroethene (TCE)	ND	0.050								
Vinyl chloride	ND	0.020								
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.4	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		89.9	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		94.3	70	130			
Surr: Toluene-d8	0.45		0.5000		91.0	70	130			

Sample ID	lcs-40538		SampType:	LCS		TestCode:	EPA Method 8260B: TCLP Compounds			
Client ID:	LCSS		Batch ID:	40538		RunNo:	54394			
Prep Date:	9/24/2018		Analysis Date:	9/25/2018		SeqNo:	1801954	Units:	ppm	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.050	1.000	0	93.4	70	130			
Chlorobenzene	0.96	0.050	1.000	0	95.8	70	130			
1,1-Dichloroethene	0.99	0.050	1.000	0	99.0	70	130			
Trichloroethene (TCE)	0.87	0.050	1.000	0	86.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.2	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.3	70	130			
Surr: Toluene-d8	0.45		0.5000		89.8	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 Quantitative 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#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	MB-40631	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury					
Client ID:	PBS	Batch ID:	40631	RunNo:	54464					
Prep Date:	9/27/2018	Analysis Date:	9/27/2018	SeqNo:	1805335	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-40631	SampType:	LCS	TestCode:	EPA Method 7471: Mercury					
Client ID:	LCSS	Batch ID:	40631	RunNo:	54464					
Prep Date:	9/27/2018	Analysis Date:	9/27/2018	SeqNo:	1805336	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

Sample ID	LLCS-40631	SampType:	LCSLL	TestCode:	EPA Method 7471: Mercury					
Client ID:	BatchQC	Batch ID:	40631	RunNo:	54464					
Prep Date:	9/27/2018	Analysis Date:	9/27/2018	SeqNo:	1805337	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0073	0.033	0.006660	0	110	70	130			J

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 Quantitative 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

Page 9 of 11

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

WO#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	MB-40535	SampType: MBLK			TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID: 40535			RunNo: 54358					
Prep Date:	9/24/2018	Analysis Date: 9/24/2018			SeqNo: 1800807		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Chromium	0.052	0.30								J
Lead	ND	0.25								
Selenium	1.1	2.5								J
Silver	ND	0.25								

Sample ID	LCS-40535		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 40535		RunNo: 54358					
Prep Date:	9/24/2018		Analysis Date: 9/24/2018		SeqNo: 1800811		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	23	2.5	25.00	0	93.6	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Cadmium	25	0.10	25.00	0	98.8	80	120			
Chromium	25	0.30	25.00	0	98.8	80	120			
Lead	25	0.25	25.00	0	98.6	80	120			
Selenium	23	2.5	25.00	0	93.6	80	120			
Silver	5.3	0.25	5.000	0	106	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 Quantitative 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#: 1809C86

28-Sep-18

Client: Western Refining Southwest, Gallup**Project:** Rail Pipe Soil Cleanup

Sample ID	lcs-40538		SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range				
Client ID:	LCSS		Batch ID: 40538			RunNo: 54391				
Prep Date:	9/24/2018		Analysis Date: 9/25/2018			SeqNo: 1802094	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	101	70	130			
Surr: BFB	460		500.0		91.6	70	130			

Sample ID	mb-40538		SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range				
Client ID:	PBS		Batch ID: 40538			RunNo: 54391				
Prep Date:	9/24/2018		Analysis Date: 9/25/2018			SeqNo: 1802095	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	500		500.0		100	70	130			

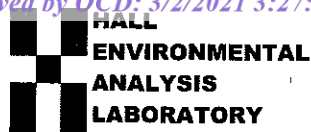
Sample ID	lcs-40548		SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range				
Client ID:	LCSS		Batch ID: 40548			RunNo: 54391				
Prep Date:	9/24/2018		Analysis Date: 9/25/2018			SeqNo: 1802097	Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	470		500.0		93.6	70	130			

Sample ID	mb-40548		SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range				
Client ID:	PBS		Batch ID: 40548			RunNo: 54391				
Prep Date:	9/24/2018		Analysis Date: 9/25/2018			SeqNo: 1802098	Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	490		500.0		97.0	70	130			

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 Quantitative 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



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87105
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1809C86

RcptNo: 1

Received By: Jazzmine Burkhead 9/21/2018 8:55:00 AM

Completed By: Ashley Gallegos 9/21/2018 10:45:18 AM

Reviewed By: *[Signature]* 09/21/18 Labeled by: JAB 09/21/18Chain 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 $>0^{\circ}\text{C}$ 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: JAB

Checked by: JAB

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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.1	Good	Yes			

Chain-of-Custody Record

Turn-Around Time:

Client: Western/Andeavor

☐ Standard☒ Rush

Project Name:

Gallup Refinery

Mailing Address: 92 GIANT CROSSING ROAD

Rail Pipe Soil Cleanup

Gallup NM 87301

Project #:

Phone #: 505 722 3721

email or Fax#: 505 863 0930

QA/QC Package:

☐ Level 4 (Full Validation)☐ Standard☐ Other☐ EDD (Type) _____

Project Manager:

Janelle Vestal

Alvin Dorsey

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 3

Date

Time

Matrix

Sample Request ID

Container Type and #

Preservative Type

HEAL No.

Reactivity

RCRA 8 METALS

8310 PAH

8270 - Semi-VOCs

8260B - VOCs

R8015 D (DRO/GRO/MRO)

Benzene - TCLP

Analysis Request

Date:

Time:

Relinquished by: Janelle Vestal

Received by:

Date

Remarks:

Date:

Time:

Relinquished by:

Received by:

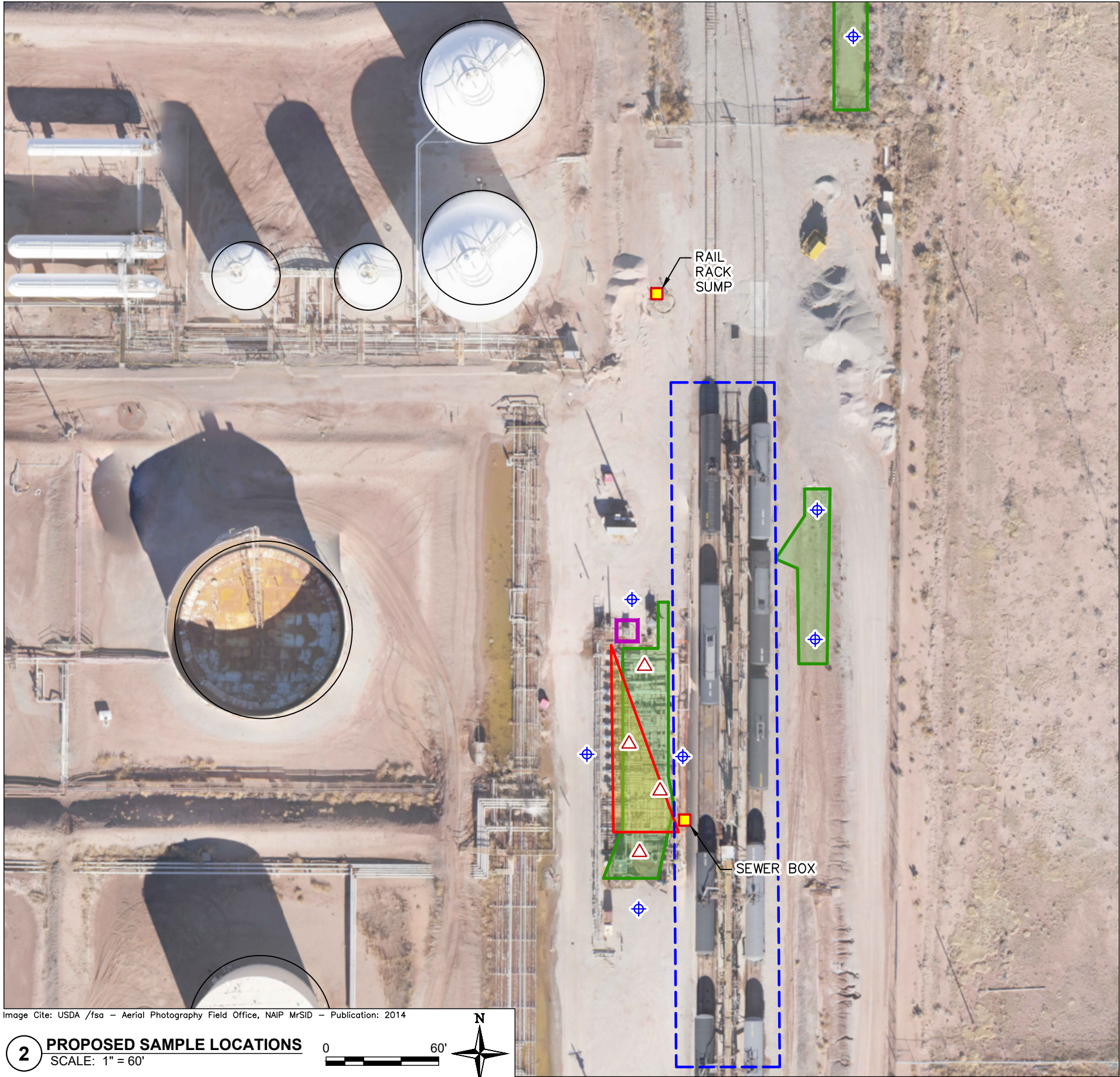
Date

Courier

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.

Attachment B: Proposed Boring Location Map

\\TRIHEDRO.COM\CLIENTS\TOM WARRATHON\CAOD\GALLUP\REPORTS\RELEASES\RAILCARLOADINGRACK\697-RAILCARLOADINGRACK-RELEASE-202012



2 PROPOSED SAMPLE LOCATIONS
SCALE: 1" = 60'

EXPLANATION

- PROPOSED SOIL BORING
- PROPOSED SOIL SAMPLE
- TANK
- RAIL CAR LOADING AREA
- DIESEL RELEASE EXTENT (MARCH 13, 2019)
- GASOLINE RELEASE EXTENT (MAY 7, 2017)
- DGS 105 ADDITIVE TANK
- RAIL RACK SUMP OR SEWER BOX



1 KEY MAP
SCALE: 1" = 800'

 1252 Commerce Drive Laramie, Wyoming 82070 www.trihydro.com (P) 307/745.7474 (F) 307/745.7729	FIGURE 2			
	PROPOSED SAMPLE LOCATIONS			
MARATHON PETROLEUM CORP. GALLUP REFINING DIVISION GALLUP, NEW MEXICO				
Drawn By: REP	Checked By: PH	Scale: AS SHOWN	Date: 12/9/20	File: 697-RAILCARLOADINGRACK-RELEASE-202012

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 19512

COMMENTS

Operator: WESTERN REFINING SOUTHWEST, IN 6700 Jefferson NE, Suite A-1 Albuquerque, NM87109			OGRID: 705791	Action Number: 19512	Action Type: DISCHARGE PERMIT
Created By cchavez	Comment Permittee 2021 RTC Rail Car Load Out Area			Comment Date 03/02/2021	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 19512

CONDITIONS OF APPROVAL

Operator: WESTERN REFINING SOUTHWEST, IN NM87109	6700 Jefferson NE, Suite A-1 Albuquerque,	OGRID: 705791	Action Number: 19512	Action Type: DISCHARGE PERMIT
OCD Reviewer cchavez	Condition None			