

Annual Report

Date 2014



2014 Annual Report

Bisti Landfarm Western Refining Centralized Surface Waste

Management Facility NM-02-0010

San Juan County, New Mexico

March 2015

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District Copy For Scanning Only Has NOT been processed.



LOGISTICS

March 4, 2015

Mr. Brad Jones New Mexico Energy, Minerals, & Natural Resources Department Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Certified Mailer#: 7012 3050 0002 4180 3033 (Santa Fe Office) Certified Mailer#: 7012 3050 0002 4180 3156 (Aztec Office)

Re: 2014 Annual Sampling Report Western Refining Centralized Surface Waste Management Facility Permit #: NM-02-0010 San Juan County, New Mexico

Dear Mr. Jones,

Please find enclosed the 2014 Annual Sampling Report for the Western Refining Centralized Surface Waste Management Facility located in San Juan County, New Mexico. This report summarizes the sampling activities performed in 2014.

NYSE

If you have any questions or require additional information, please do not hesitate to contact myself at 505-632-4169 or Kelly Robinson at 505-632-4166.

Sincerely,

Mart u/lan

Matt Krakow Environmental Coordinator Western Logistics, LLC

cc: J. Kelly – OCD/EMNRD R. Schmaltz – WNL K. Robinson – WNL A. Hains - WNR

2014 ANNUAL REPORT

BISTI LANDFARM WESTERN REFINING CENTRALIZED SURFACE WASTE MANAGEMENT FACILITY NM-02-0010

SAN JUAN COUNTY, NEW MEXICO



MARCH 2015



WESTERN REFINING SOUTHWEST, INC. 111 County Road 4990 Bloomfield, New Mexico 87413

2014 ANNUAL REPORT

BISTI LANDFARM WESTERN REFINING CENTRALIZED SURFACE WASTE MANAGEMENT FACILITY NM-02-0010

SAN JUAN COUNTY, NEW MEXICO

MARCH 2015

Prepared for:

WESTERN REFINING SOUTHWEST, INC. 111 COUNTY ROAD 4990 BLOOMFIELD, NEW MEXICO 87413

Prepared by:

LT ENVIRONMENTAL, INC. 2243 Main Avenue, Suite 3 Durango, Colorado 81301 (970) 385-1096



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EXECUTIVE SUMMARY

LT Environmental, Inc. (LTE), on behalf of Western Refining Southwest, Inc. (Western), has prepared this report detailing soil monitoring activities completed between January 2014 through December 2014 at the Bisti Landfarm (Site), permit number NM-02-0010, in San Juan County, New Mexico.

The Site is located in the northwest quarter of the southeast quarter of Section 16, Township 25 North, Range 12 West in San Juan County, New Mexico. The Bisti Landfarm was permitted in February 1998 under 711 Permit NM-02-0010 to Giant Industries, Arizona (Giant). Giant disposed of impacted soil at the Bisti Landfarm resulting in three cells: API Cell, Crude Cell (containing material originating from Pettigrew, East Line, Bisti, and West Line), and Cell 1. Cell 1 is inactive and no longer monitored or maintained. Western acquired the Bisti Landfarm from Giant in June 2007.

The scope of work for this project consisted of soil sampling including semi-annual treatment zone sampling and vadose zone sampling as required by New Mexico Administrative Code 19.15.36.15 (Rule 36) and quarterly vadose zone sampling as required by the original 711 permit. Soil sampling was conducted to monitor the natural attenuation of contaminates of concern in the treatment zone and to monitor potential migration of contaminates of concern into the vadose zone.

Soil sampling results are presented in the report and vadose zone soil analytical results are compared to the laboratory physical quantitation limit and background sample results, when available. Concentrations of total petroleum hydrocarbons (TPH) and chloride in the treatment zone are within the range of impacted soil undergoing treatment at the Site and do not exceed Treatment Zone Closure Performance Standards identified in Rule 36. Laboratory analytical results for vadose zone sampling were consistent with historical monitoring results.

Since treatment zone monitoring results do not exceed Treatment Zone Closure Performance Standards identified in Rule 36, Western will consider pursuing closure of the landfarm in 2015.

1.0 INTRODUCTION

LT Environmental, Inc. (LTE), on behalf of Western Refining Southwest, Inc. (Western), has prepared this report detailing work completed from January 2014 through December 2014 to monitor soil remediation at the Bisti Landfarm (Site), permit number NM-02-0010 in San Juan County, New Mexico.

1.1 SITE DESCRIPTION AND HISTORY

The Site occupies approximately 28 acres in the northwest quarter of the southeast quarter of Section 16, Township 25 North, Range 12 West in San Juan County, New Mexico (Figure 1). In 1998, Giant Industries, Arizona (Giant) permitted the Site as a surface waste management facility under the New Mexico Oil Conservation Division (NMOCD) Rule 711. Giant disposed of impacted soil at the Bisti Landfarm resulting in three cells: API Cell, Crude Cell (containing material originating from Pettigrew, East Line, Bisti, and West Line) and Cell 1, which is currently inactive (Figure 2). In 2007, the NMOCD passed new rules (19.15.36 of the New Mexico Administrative Code [NMAC] [Rule 36]) pertaining to surface waste management facilities and required compliance with the transitional provisions of Rule 36. Western acquired the Bisti Landfarm from Giant in June 2007 and disposed of soil at the Site until 2010. Western continues to monitor and maintain the API Cell and the Crude Cell using the provisional requirements of Rule 711 and Rule 36 as a guide. Cell 1 is no longer tilled based on a letter dated March 8, 2004, from the NMOCD to Giant stating Cell 1 was approved for discontinued maintenance.

1.2 SCOPE OF WORK

The scope of work for this project consisted of soil sampling including semi-annual treatment zone sampling and vadose zone sampling as required by Rule 36 and quarterly vadose zone sampling as required by the original 711 permit. Soil sampling was conducted to monitor the natural attenuation of contaminates of concern in the treatment zone and to monitor potential migration of contaminates of concern into the vadose zone. A summary of field activities, laboratory analytical soil sampling results, and conclusions are presented in the subsequent sections of this report.

2.0 METHODOLOGY

2.1 SEMI-ANNUAL TREATMENT ZONE MONITORING

Treatment zones in the API and Crude cells were composite sampled semi-annually on March 6, 2014, and September 29, 2014, by placing discrete samples collected from approximately 6 inches below the ground surface into a 1-gallon plastic bag. The soil within the bag was thoroughly mixed before filling glass sampling jars provided by the laboratory. The Crude Cell treatment zone samples included four discrete samples one each from the Pettigrew, Bisti, West Line, and East Line source areas. The API Cell treatment zone samples included four discrete samples one each from the Pettigrew, Bisti, West Line, and East Line source areas. The API Cell treatment zone samples included four discrete samples from the API Cell. Figure 3 depicts treatment zone soil sample locations. Treatment zone samples were analyzed for total petroleum hydrocarbons (TPH)-gasoline range organics (GRO), diesel range organics (DRO), and motor oil range organics (MRO) by United States Environmental Protection Agency (USEPA) Method 8015B, and chloride by USEPA Method 300.0. In a letter dated April 8, 2014, the NMOCD requested Western included analysis of treatment zone soil samples for TPH according to USEPA Method 418.1. Western collected additional treatment zone composite samples from the API and Crude cells on June 17, 2014, for TPH analysis and added the additional analytical method to all future treatment zone sampling events.

2.2 QUARTERLY VADOSE ZONE MONITORING

Discrete vadose zone samples were collected quarterly on March 6, 2014, June 17, 2014, September 29 2014, and December 22 2014, from the two active cells (API and Crude cells) and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by USEPA Method 8021B, TPH-GRO, DRO, and MRO by USEPA Method 8015, and chloride by USEPA Method 300.0. To address annual sampling requirements in the original 711 permit in March 2014, soil samples were analyzed for sulfate by USEPA Method 300.0, metals (arsenic, barium, cadmium, calcium, chromium, lead, magnesium, potassium, selenium, silver, and sodium) by USEPA Method 6010B, mercury by USEPA Method 7471, and alkalinity by ASA10-3. As requested by the NMOCD in a letter dated April 8, 2014, all vadose zone samples collected in June, September, and December were also analyzed by USEPA Method 418.1 as required in Rule 36. All future vadose zone samples will be analyzed for TPH by USEPA Method 418.1. The number of vadose zone samples collected within each cell was dependent on the size of the cell. For each sampling event, four soil samples were collected from the Crude Cell: one beneath the East Line source area, one beneath the West Line source area, one beneath the Pettigrew source area, and one beneath the Bisti source area. One sample was collected from beneath the API Cell. Figure 4 depicts quarterly vadose zone soil sample locations. All vadose zone soil samples were collected from 3 feet to 4 feet below natural ground surface and boreholes were filled with hydrated bentonite from total depth to ground surface upon completion.

All samples collected were placed on ice and sealed in a cooler for delivery to Hall Environmental Analysis Laboratory, Inc. in Albuquerque, New Mexico, for analysis. Soil samples were labeled with the date and time of collection, sample name, sampler's name, and parameters to be analyzed. Strict chain-of-custody procedures were documented including the date and time sampled, sample number, type of sample, sampler's name and signature, preservative used, and analyses required.

3.0 ANALYTICAL RESULTS

3.1 SEMI-ANNUAL TREATMENT ZONE ANALYTICAL RESULTS

Table 1 presents the analytical results from the treatment zone monitoring events in March, June, and September 2014, which are compared to the Treatment Zone Closure Performance Standards defined in Rule 36. The complete laboratory reports are presented in Appendix A.

3.2 QUARTERLY VADOSE ZONE ANALYTICAL RESULTS

The laboratory analytical results from quarterly vadose zone soil samples compared to the laboratory physical quantitation limit (PQL) and background sample results, when available, are presented in Table 2. The complete laboratory analytical reports are presented in Appendix A.

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4.0 CONCLUSIONS

Concentrations of TPH and chloride in the treatment zone have been remediated to below Treatment Zone Closure Performance Standards identified in Rule 36.

Western conducted vadose zone soil sampling in accordance with the original 711 permit and Rule 36, and results were compared to laboratory PQLs and background concentrations for review. Laboratory analytical results were consistent with historical monitoring results. Based on previous vadose zone sampling results, Western submitted a Release Response Plan to the NMOCD on December 31, 2009. Upon approval from the NMOCD, Western initiated the Release Response Plan, and results were reported to the NMOCD on June 3, 2010.

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5.0 RECOMMENDATIONS

Since Western is no longer accepting impacted soil at the Site and treatment zone monitoring results do not exceed Treatment Zone Closure Performance Standards identified in Rule 36, Western will be pursing closure of the landfarm under a separate submittal. Western will continue monitoring the Bisti Landfarm until a closure request is approved.

FIGURES



P:\Western Refining\GIS\MXD\WR1005\WR1005_BISTI_LANDFARM_FIG01_SL.mxd



P:\Western Refining\GIS\MXD\WR1005\WR1005_BISTI_LANDFARM_FIG02_SITEMAP.mxd





TABLES

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TABLE 1

2014 TREATMENT ZONE SOIL ANALYTICAL RESULTS BISTI LANDFARM WESTERN REFINING SOUTHWEST, INC.

Cell	Sample ID	Sample Date	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	TPH 418.1 (mg/kg)	Chloride (mg/kg)	
19.15.36.15 Treatment Zone Closure Performance Standards		formance	GRO + DR	XO = 500	NE	2,500	1,000	
	Crude Cell Treatment Zone	6-Mar-14	<4.7	66	88	NA	150	
Crude Cell	Crude Treatment Zone	17-Jun-14	NA	NA	NA	400	NA	
	Crude Cell Treatment Zone	29-Sep-14	<4.8	40	82	94	110	
	API Cell Treatment Zone	6-Mar-14	<5.0	<10	<50	NA	12	
API Cell	API Treatment Zone	17-Jun-14	NA	NA	NA	110	NA	
	API Cell Treatment Zone	29-Sep-14	<4.7	12	<50	42	500	

Notes:

DRO - Diesel Range Organics

GRO - Gasoline Range Organics

MRO - Motor Oil Range Organics

mg/kg - milligrams per kiliograms

NA-Not Analyzed NE - Not Established

The Prot Established

TPH- Total petroleum hydrocarbons

< indicates result is less than the stated method reporting limit

TABLE 2

2014 QUARTERLY VADOSE ZONE SOIL ANALYTICAL RESULTS BISTI LANDFARM WESTERN REFINING SOUTHWEST, INC.

Cell	Source Area	Sample ID	Sample Date	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	TPH 418.1 (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Chloride (mg/kg)	Sulfate (mg/kg)	Alkalinity (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Mercury (mg/kg)
253		Westline Vadose Zone	6-Mar-14	<4.6	<9.9	<50	NA	< 0.046	< 0.046	< 0.046	< 0.092	1.5	47	128	<2.4	61	<0.095	2,600	1.7	1.6	920	530	<2.4	<0.24	150	< 0.033
1. 1. 1.	West Line	West Line Vadose	17-Jun-14	<4.8	<10	<50	<20	< 0.048	< 0.048	<0.048	< 0.097	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cartes I.	I TOT LAR	West Line Vadose Zone	29-Sep-14	<4.6	<10	<50	<20	< 0.046	< 0.046	< 0.046	< 0.093	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1. 2 10		Westline	22-Dec-14	<4.9	24	<50	52	< 0.049	< 0.049	< 0.049	< 0.098	3.8	NA	NA -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-20 March 19	Eastline Vadose Zone	6-Mar-14	<4.8	<9.9	<50	NA	< 0.048	< 0.048	< 0.048	< 0.095	2.6	93	105	<2.4	97	< 0.096	3,500	3.9	2.1	1,700	1,300	<2.4	< 0.24	100	< 0.034
	Fact Line	East Line Vadose	17-Jun-14	<5.0	<10	<50	<20	< 0.050	< 0.050	< 0.050	< 0.099	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1.430	Last Line	East Line Vadose Zone	29-Sep-14	<4.8	25	<49	96	< 0.048	< 0.048	< 0.048	< 0.096	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Crude Cell		Eastline	22-Dec-14	<4.6	<10	<50	<20	< 0.046	< 0.046	< 0.046	< 0.093	3.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Bisti Vadose Zone	6-Mar-14	<4.7	<10	<51	NA	< 0.047	< 0.047	< 0.047	< 0.094	4.3	27	112	<2.5	110	< 0.10	5,000	3.6	2.0	1,500	950	<2.5	<0.25	55	< 0.034
1	Bisti	Bisti Vadose Zone	17-Jun-14	<4.9	<10	<50	<20	< 0.049	< 0.049	< 0.049	< 0.098	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1.1	Distr	Bisti Vadose Zone	29-Sep-14	<4.9	<9.9	<50	<20	< 0.049	< 0.049	< 0.049	< 0.098	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1024		Bisti	22-Dec-14	<4.6	<9.9	<50	<20	< 0.046	< 0.046	< 0.046	< 0.092	6.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Pettigrew Vadose Zone	6-Mar-14	<4.7	<10	<50	NA	< 0.047	< 0.047	< 0.047	< 0.094	2,200	180	61	<2.4	92	< 0.097	2,500	2.3	1.5	1,000	740	<2.4	<0.24	1200	< 0.033
1.5	Pettigrew	Pettigrew Vadose Zone	17-Jun-14	<4.7	<10	<50	21	< 0.047	< 0.047	< 0.047	< 0.093	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	retugien	Pettigrew Vadose Zone	29-Sep-14	<4.8	<9.9	<49	<20	< 0.048	< 0.048	< 0.048	< 0.096	780	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Pettigrew	22-Dec-14	<4.7	<10	<50	<20	< 0.047	< 0.047	< 0.047	< 0.095	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2	API Vadose Zone	6-Mar-14	<4.7	<10	<50	NA	< 0.047	< 0.047	< 0.047	<0.094	59	150	91	<2.5	130	<0.10	2,400	2.1	1.5	1,000	580	<2.5	<0.25	250	< 0.033
API Cell	API	API Vadose Zone	17-Jun-14	<4.6	<10	<50	<20	< 0.046	< 0.046	< 0.046	< 0.093	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		API Vadose Zone	29-Sep-14	<4.8	<10	<50	<20	< 0.048	< 0.048	< 0.048	< 0.097	2,300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		API Cell	22-Dec-14	<4.7	<10	<50	<20	< 0.047	< 0.047	< 0.047	< 0.094	<1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Backgroun	d Sample	27-Mar-98	NA	<50	NA	NA	< 0.05	< 0.05	< 0.05	< 0.05	<50	180	NA	2.8	180	<1.3	NA	<5.0	6.8	NA	NA	<2.5	<1.3	NA	<0.50
	R	Reporting Limit*		4.6	9.9	49	<20	0.046	0.046	0.046	0.092	1.5	1.5	4	2.4	0.10	0.95	25	0.30	0.25	25	50	2.4	0.24	25	0.033

Notes: DRO - Diesel Range Organics GRO - Gasoline Range Organics MRO - Motor Oil Range Organics mg/kg - milligrams per kilograms NA - Not Analyzed TPH- Total Petroleum Hydrocarbons < indicates result is less than the stated method reporting limit * LTE used Reporting Limit as the Physical Quantitation Limit. If different Reporting Limits are listed for different samples, the lowest Reporting Limit is provided.

APPENDIX A LABORATORY ANALYTICAL REPORTS

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

April 10, 2014

Ashley Ager Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (970) 946-1093 FAX

RE: Bisti Landfarm Vadose Zone Sampling

OrderNo.: 1403280

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 5 sample(s) on 3/7/2014 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued March 31, 2014.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. 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,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109



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

Case Narrative

WO#: 1403280 Date: 4/10/2014

CLIENT:Western Refining Southwest, Inc.Project:Bisti Landfarm Vadose Zone Sampling

Analytical Notes Regarding Alkalinity in soil:

The "L" flag is used to denote the lowest available reporting limit for the analytical method used.

Lab Order 1403280

Date Reported: 4/10/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.Project: Bisti Landfarm Vadose Zone SamplingLab ID: 1403280-001Matrix: SOIL

Client Sample ID: Westline Vadose Zone Collection Date: 3/6/2014 1:15:00 PM Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	SE ORGANICS		S. A. garadi / 1	r en	Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	3/12/2014 2:57:05 PM	12115
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	3/12/2014 2:57:05 PM	12115
Surr: DNOP	122	66-1 <mark>3</mark> 1	%REC	1	3/12/2014 2:57:05 PM	12115
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst	JMP
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	3/12/2014 1:01:38 PM	12124
Surr: BFB	84.2	74.5-129	%REC	1	3/12/2014 1:01:38 PM	12124
EPA METHOD 8021B: VOLATILES					Analyst	JMP
Benzene	ND	0.046	mg/Kg	1	3/12/2014 1:01:38 PM	12124
Toluene	ND	0.046	mg/Kg	1	3/12/2014 1:01:38 PM	12124
Ethylbenzene	ND	0.046	mg/Kg	1	3/12/2014 1:01:38 PM	12124
Xylenes, Total	ND	0.092	mg/Kg	1	3/12/2014 1:01:38 PM	12124
Surr: 4-Bromofluorobenzene	102	80-120	%REC	1	3/12/2014 1:01:38 PM	12124
EPA METHOD 300.0: ANIONS					Analyst:	JRR
Chloride	1.5	1.5	mg/Kg	1	3/11/2014 2:40:31 PM	12116
Sulfate	47	1.5	mg/Kg	1	3/11/2014 2:40:31 PM	12116
EPA METHOD 7471: MERCURY					Analyst:	JML
Mercury	ND	0.033	mg/Kg	1	3/13/2014 8:19:19 PM	12137
EPA METHOD 6010B: SOIL METALS	;				Analyst:	ELS
Arsenic	ND	2.4	mg/Kg	1	3/12/2014 11:01:48 AM	12121
Barium	61	0.095	mg/Kg	1	3/12/2014 11:01:48 AM	12121
Cadmium	ND	0.095	mg/Kg	1	3/12/2014 11:01:48 AM	12121
Calcium	2600	24	mg/Kg	1	3/12/2014 11:01:48 AM	12121
Chromium	1.7	0.29	mg/Kg	1	3/12/2014 11:01:48 AM	12121
Lead	1.6	0.24	mg/Kg	1	3/12/2014 11:01:48 AM	12121
Magnesium	920	24	mg/Kg	1	3/12/2014 11:01:48 AM	12121
Potassium	530	48	mg/Kg	1	3/12/2014 11:01:48 AM	12121
Selenium	ND	2.4	mg/Kg	1	3/12/2014 11:01:48 AM	12121
Silver	ND	0.24	mg/Kg	1	3/12/2014 11:01:48 AM	12121
Sodium	150	24	mg/Kg	1	3/13/2014 10:34:36 AM	12121

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	nod Blank			
	Е	Value above quantitation range	Н	is exceeded				
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 2 of 12			
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.				
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit				
	S	Spike Recovery outside accepted recovery limits						

Lab Order 1403280

Date Reported: 4/10/2014

of 12

Hall Environmental Analysis Laboratory, Inc.

CLIENT:Western Refining Southwest, Inc.Project:Bisti Landfarm Vadose Zone SamplingLab ID:1403280-002Matrix: SOIL

Client Sample ID: Eastline Vadose Zone Collection Date: 3/6/2014 1:45:00 PM Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	3/12/2014 3:19:16 PM	12115
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	3/12/2014 3:19:16 PM	12115
Surr: DNOP	127	66-131	%REC	1	3/12/2014 3:19:16 PM	12115
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	JMP
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	3/12/2014 2:55:48 PM	12124
Surr: BFB	86.2	74.5-129	%REC	1	3/12/2014 2:55:48 PM	12124
EPA METHOD 8021B: VOLATILES					Analyst	JMP
Benzene	ND	0.048	mg/Kg	1	3/12/2014 2:55:48 PM	12124
Toluene	ND	0.048	mg/Kg	1	3/12/2014 2:55:48 PM	12124
Ethylbenzene	ND	0.048	mg/Kg	1	3/12/2014 2:55:48 PM	12124
Xylenes, Total	ND	0.095	mg/Kg	1	3/12/2014 2:55:48 PM	12124
Surr: 4-Bromofluorobenzene	106	80-120	%REC	1	3/12/2014 2:55:48 PM	12124
EPA METHOD 300.0: ANIONS					Analyst	JRR
Chloride	2.6	1.5	mg/Kg	1	3/11/2014 3:30:10 PM	12116
Sulfate	93	1.5	mg/Kg	1	3/11/2014 3:30:10 PM	12116
EPA METHOD 7471: MERCURY					Analyst	JML
Mercury	ND	0.034	mg/Kg	1	3/13/2014 8:21:08 PM	12137
EPA METHOD 6010B: SOIL METALS					Analyst	ELS
Arsenic	ND	2.4	mg/Kg	1	3/12/2014 11:04:38 AM	12121
Barium	97	0.096	mg/Kg	1	3/12/2014 11:04:38 AM	12121
Cadmium	ND	0.096	mg/Kg	1	3/12/2014 11:04:38 AM	12121
Calcium	3500	24	mg/Kg	1	3/12/2014 11:04:38 AM	12121
Chromium	3.9	0.29	mg/Kg	1	3/12/2014 11:04:38 AM	12121
Lead	2.1	0.24	mg/Kg	1	3/12/2014 11:04:38 AM	12121
Magnesium	1700	24	mg/Kg	1	3/12/2014 11:04:38 AM	12121
Potassium	1300	48	mg/Kg	1	3/12/2014 11:04:38 AM	12121
Selenium	ND	2.4	mg/Kg	1	3/12/2014 11:04:38 AM	12121
Silver	ND	0.24	mg/Kg	1	3/12/2014 11:04:38 AM	12121
Sodium	100	24	mg/Kg	1	3/13/2014 10:35:57 AM	12121

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	ethod Blank		
	E	Value above quantitation range	Н	Holding times for preparation or analysis exceeded			
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 3		
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	I age J		
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit			
	S	Spike Recovery outside accepted recovery limits					

Lab Order 1403280

Date Reported: 4/10/2014

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: Bisti Vadose Zone CLIENT: Western Refining Southwest, Inc. **Project:** Bisti Landfarm Vadose Zone Sampling Lab ID: 1403280-003 Matrix: SOIL

Collection Date: 3/6/2014 2:11:00 PM Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGI	ORGANICS		and the second	de la	Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	3/13/2014 11:10:20 AM	12115
Motor Oil Range Organics (MRO)	ND	51	mg/Kg	1	3/13/2014 11:10:20 AM	12115
Surr: DNOP	110	66-131	%REC	1	3/13/2014 11:10:20 AM	12115
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	JMP
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	3/12/2014 5:18:41 PM	12124
Surr: BFB	84.3	74.5-129	%REC	1	3/12/2014 5:18:41 PM	12124
EPA METHOD 8021B: VOLATILES					Analyst	JMP
Benzene	ND	0.047	mg/Kg	1	3/12/2014 5:18:41 PM	12124
Toluene	ND	0.047	mg/Kg	1	3/12/2014 5:18:41 PM	12124
Ethylbenzene	ND	0.047	mg/Kg	1	3/12/2014 5:18:41 PM	12124
Xylenes, Total	ND	0.094	mg/Kg	1	3/12/2014 5:18:41 PM	12124
Surr: 4-Bromofluorobenzene	101	80-120	%REC	1	3/12/2014 5:18:41 PM	12124
EPA METHOD 300.0: ANIONS					Analyst	JRR
Chloride	4.3	1.5	mg/Kg	1	3/11/2014 4:19:48 PM	12116
Sulfate	27	1.5	mg/Kg	1	3/11/2014 4:19:48 PM	12116
EPA METHOD 7471: MERCURY					Analyst	JML
Mercury	ND	0.034	mg/Kg	1	3/13/2014 8:22:59 PM	12137
EPA METHOD 6010B: SOIL METALS					Analyst	ELS
Arsenic	ND	2.5	mg/Kg	1	3/12/2014 11:07:18 AM	12121
Barium	110	0.10	mg/Kg	1	3/12/2014 11:07:18 AM	12121
Cadmium	ND	0.10	mg/Kg	1	3/12/2014 11:07:18 AM	12121
Calcium	5000	25	mg/Kg	1	3/12/2014 11:07:18 AM	12121
Chromium	3.6	0.30	mg/Kg	1	3/12/2014 11:07:18 AM	12121
Lead	2.0	0.25	mg/Kg	1	3/12/2014 11:07:18 AM	12121
Magnesium	1500	25	mg/Kg	1	3/12/2014 11:07:18 AM	12121
Potassium	950	50	mg/Kg	1	3/12/2014 11:07:18 AM	12121
Selenium	ND	2.5	mg/Kg	1	3/12/2014 11:07:18 AM	12121
Silver	ND	0.25	mg/Kg	1	3/12/2014 11:07:18 AM	12121
Sodium	55	25	mg/Kg	1	3/13/2014 10:37:20 AM	12121

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blan				
	E Value above quantitation range		Н	H Holding times for preparation or analy				
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 4 of 1'			
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 age + 01 12			
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit				
	S	Spike Recovery outside accepted recovery limits						

Hall Environmental Analysis Laboratory, Inc.

CLIENT:Western Refining Southwest, Inc.Project:Bisti Landfarm Vadose Zone SamplingLab ID:1403280-004Matrix: SOIL

Analytical Report Lab Order 1403280 Date Reported: 4/10/2014

Client Sample ID: Pettigrew Vadose Zone Collection Date: 3/6/2014 2:36:00 PM Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL Q	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RAN	IGE ORGANICS				Analys	t: BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	3/12/2014 4:29:20 PM	12115
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	3/12/2014 4:29:20 PM	12115
Surr: DNOP	104	66-131	%REC	1	3/12/2014 4:29:20 PM	12115
EPA METHOD 8015D: GASOLINE F	RANGE				Analys	t: JMP
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	3/12/2014 5:47:13 PM	12124
Surr: BFB	83.8	74.5-129	%REC	1	3/12/2014 5:47:13 PM	12124
EPA METHOD 8021B: VOLATILES					Analys	t: JMP
Benzene	ND	0.047	mg/Kg	1	3/12/2014 5:47:13 PM	12124
Toluene	ND	0.047	mg/Kg	1	3/12/2014 5:47:13 PM	12124
Ethylbenzene	ND	0.047	mg/Kg	1	3/12/2014 5:47:13 PM	12124
Xylenes, Total	ND	0.094	mg/Kg	1	3/12/2014 5:47:13 PM	12124
Surr: 4-Bromofluorobenzene	99.3	80-120	%REC	1	3/12/2014 5:47:13 PM	12124
EPA METHOD 300.0: ANIONS					Analys	t: JRR
Chloride	2200	75	mg/Kg	50	3/14/2014 3:34:44 PM	12116
Sulfate	180	30	mg/Kg	20	3/11/2014 4:57:02 PM	12116
EPA METHOD 7471: MERCURY					Analys	t: JML
Mercury	ND	0.033	mg/Kg	1	3/13/2014 8:24:51 PM	12137
EPA METHOD 6010B: SOIL METAL	.S				Analys	t: ELS
Arsenic	ND	2.4	mg/Kg	1	3/12/2014 11:10:10 AM	1 12121
Barium	92	0.097	mg/Kg	1	3/12/2014 11:10:10 AM	1 12121
Cadmium	ND	0.097	mg/Kg	1	3/12/2014 11:10:10 AM	1 12121
Calcium	2500	24	mg/Kg	1	3/12/2014 11:10:10 AM	1 12121
Chromium	2.3	0.29	mg/Kg	1	3/12/2014 11:10:10 AM	12121
Lead	1.5	0.24	mg/Kg	1	3/12/2014 11:10:10 AM	1 12121
Magnesium	1000	24	mg/Kg	1	3/12/2014 11:10:10 AM	1 12121
Potassium	740	49	mg/Kg	1	3/12/2014 11:10:10 AM	1 12121
Selenium	ND	2.4	mg/Kg	1	3/12/2014 11:10:10 AM	12121
Silver	ND	0.24	mg/Kg	1	3/12/2014 11:10:10 AM	12121
Sodium	1200	24	mg/Kg	1	3/13/2014 10:38:42 AM	12121

Qualifiers:	alifiers: * Value exceeds Maximum Contaminant Level.		В	Analyte detected in the associated Meth	od Blank
	E	Value above quantitation range	Н	Holding times for preparation or analys	is exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 5 of 12
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 age 5 01 12
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Lab Order 1403280

Date Reported: 4/10/2014

Page 6 of 12

Hall Environmental Analysis Laboratory, Inc.

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CLIENT: Western Refining Southwest, Inc. Client Sample ID: API Vadose Zone Bisti Landfarm Vadose Zone Sampling Collection Date: 3/6/2014 2:50:00 PM **Project:** 1403280-005 Received Date: 3/7/2014 10:00:00 AM Lab ID: Matrix: SOIL

Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS		a la ra		Analys	t: BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	3/12/2014 4:51:32 PM	12115
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	3/12/2014 4:51:32 PM	12115
Surr: DNOP	97.3	66-131	%REC	1	3/12/2014 4:51:32 PM	12115
EPA METHOD 8015D: GASOLINE R	ANGE				Analys	t: JMP
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	3/12/2014 6:15:44 PM	12124
Surr: BFB	86.4	74.5-129	%REC	1	3/12/2014 6:15:44 PM	12124
EPA METHOD 8021B: VOLATILES					Analys	t: JMP
Benzene	ND	0.047	mg/Kg	1	3/12/2014 6:15:44 PM	12124
Toluene	ND	0.047	mg/Kg	1	3/12/2014 6:15:44 PM	12124
Ethylbenzene	ND	0.047	mg/Kg	1	3/12/2014 6:15:44 PM	12124
Xylenes, Total	ND	0.094	mg/Kg	1	3/12/2014 6:15:44 PM	12124
Surr: 4-Bromofluorobenzene	104	80-120	%REC	1	3/12/2014 6:15:44 PM	12124
EPA METHOD 300.0: ANIONS					Analys	t: JRR
Chloride	59	30	mg/Kg	20	3/11/2014 5:21:51 PM	12116
Sulfate	150	30	mg/Kg	20	3/11/2014 5:21:51 PM	12116
EPA METHOD 7471: MERCURY					Analys	t: JML
Mercury	ND	0.033	mg/Kg	1	3/13/2014 8:26:42 PM	12137
EPA METHOD 6010B: SOIL METALS	6				Analys	t: ELS
Arsenic	ND	2.5	mg/Kg	1	3/12/2014 11:12:52 AM	1 12121
Barium	130	0.10	mg/Kg	1	3/12/2014 11:12:52 AM	/ 12121
Cadmium	ND	0.10	mg/Kg	1	3/12/2014 11:12:52 AM	1 12121
Calcium	2400	25	mg/Kg	1	3/12/2014 11:12:52 AM	1 12121
Chromium	2.1	0.30	mg/Kg	1	3/12/2014 11:12:52 AM	12121
Lead	1.5	0.25	mg/Kg	1	3/12/2014 11:12:52 AM	/ 12121
Magnesium	1000	25	mg/Kg	1	3/12/2014 11:12:52 AM	1 12121
Potassium	580	50	mg/Kg	1	3/12/2014 11:12:52 AM	1 12121
Selenium	ND	2.5	mg/Kg	1	3/12/2014 11:12:52 AM	1 12121
Silver	ND	0.25	mg/Kg	1	3/12/2014 11:12:52 AM	1 12121
Sodium	250	25	mg/Kg	1	3/13/2014 10:40:03 AM	/ 12121

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	od Blank		
	Е	Value above quantitation range	Н	Holding times for preparation or analys	alysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Dage 6	
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	I age 0	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		
	S	Spike Recovery outside accepted recovery limits				



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client:Hall EnvironmentalProject:Not IndicatedLab ID:B14031926-001Client Sample ID:1403280-001D Westline Vadose Zone

 Revised Date:
 04/01/14

 Report Date:
 03/28/14

 Collection Date:
 03/06/14 13:15

 DateReceived:
 03/26/14

 Matrix:
 Soil

					MCL/		
Analyses	Result	Units	Qualifiers	RL	QCL	Method	Analysis Date / By
CHEMICAL CHARACTERISTICS							
Total Alkalinity	. 128	mg/kg	L	4		ASA10-3	03/27/14 12:43 / jwc
Carbonate	. 5	mg/kg	L	4		ASA10-3	03/27/14 12:43 / jwc
Bicarbonate	146	mg/kg	L	4		ASA10-3	03/27/14 12:43 / jwc
Hydroxide	ND	mg/kg	L	4		ASA10-3	03/27/14 12:43 / jwc

Report Definitions: RL - Analyte reporting limit.QCL - Quality control limit.L - Lowest available reporting limit for the analytical method used.



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client:Hall EnvironmentalProject:Not IndicatedLab ID:B14031926-002Client Sample ID:1403280-002D Eastline Vadose Zone

 Revised Date:
 04/01/14

 Report Date:
 03/28/14

 Collection Date:
 03/06/14 13:45

 DateReceived:
 03/26/14

 Matrix:
 Soil

				MCL/		
Analyses	Result Units	Qualifiers	RL	QCL	Method	Analysis Date / By
CHEMICAL CHARACTERISTICS						
Total Alkalinity	105 mg/kg	L	4		ASA10-3	03/27/14 13:09 / jwc
Carbonate	ND mg/kg	L	4		ASA10-3	03/27/14 13:09 / jwc
Bicarbonate	128 mg/kg	L	4		ASA10-3	03/27/14 13:09 / jwc
Hydroxide	ND mg/kg	L	4		ASA10-3	03/27/14 13:09 / jwc

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. L - Lowest available reporting limit for the analytical method used.



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client:Hall EnvironmentalProject:Not IndicatedLab ID:B14031926-003Client Sample ID:1403280-003D Bistl Vadose Zone

 Revised Date:
 04/01/14

 Report Date:
 03/28/14

 Collection Date:
 03/06/14 14:11

 DateReceived:
 03/26/14

 Matrix:
 Soil

				MCL/	
Analyses	Result Uni	ts Qualifiers	RL	QCL Method	Analysis Date / By
CHEMICAL CHARACTERISTICS					승규는 그렇다? 날
Total Alkalinity	112 mg/	íkg L	4	ASA10-3	03/27/14 13:31 / jwc
Carbonate	ND mg/	kg L	4	ASA10-3	03/27/14 13:31 / jwc:
Bicarbonate	137 mg/	kg L	4	ASA10-3	03/27/14 13:31 / jwc
Hydroxide	ND mg/	kg L	4	ASA10-3	03/27/14 13:31 / jwc

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. L - Lowest available reporting limit for the analytical method used.



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client:Hall EnvironmentalProject:Not IndicatedLab ID:B14031926-004Client Sample ID:1403280-004D Pettigrew Vadose Zone

 Revised Date:
 04/01/14

 Report Date:
 03/28/14

 Collection Date:
 03/06/14 14:36

 DateReceived:
 03/26/14

 Matrix:
 Soil

				Alde		MCL/		
Analyses		Result	Units	Qualifiers	RL	QCL	Method	Analysis Date / By
CHEMICAL CHARA	CTERISTICS							
Total Alkalinity		61	mg/kg	L	4		ASA10-3	03/27/14 13:43 / jwc
Carbonate	1.4	5	mg/kg	L	4		ASA10-3	03/27/14 13:43 / jwc
Bicarbonate		65	mg/kg	L	4		ASA10-3	03/27/14 13:43 / jwc
Hydroxide		ND	mg/kg	L	4		ASA10-3	03/27/14 13:43 / jwc

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit.

L - Lowest available reporting limit for the analytical method used.



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client:Hall EnvironmentalProject:Not IndicatedLab ID:B14031926-005Client Sample ID:1403280-005D API Vadose Zone

 Revised Date:
 04/01/14

 Report Date:
 03/28/14

 Collection Date:
 03/06/14 14:50

 DateReceived:
 03/26/14

 Matrix:
 Soil

				MCL/			
Result	Units	Qualiflers	RL	QCL	Method	Analysis Date / By	
91	mg/kg	L (4		ASA10-3	03/27/14 14:09 / iwc	
5	mg/kg	Li	4		ASA10-3	03/27/14 14:09 / jwc	
100	mg/kg	L	4		ASA10-3	03/27/14 14:09 / jwc	
ND	mg/kg	L	4		ASA10-3	03/27/14 14:09 / jwc	
	91 5 100 ND	ResultUnits91mg/kg5mg/kg100mg/kgNDmg/kg	Result Units Qualifiers 91 mg/kg L 5 mg/kg L 100 mg/kg L ND mg/kg L	Result UnitsQualifiersRL91 mg/kgL45 mg/kgL4100 mg/kgL4ND mg/kgL4	Result Units Qualifiers RL MCL/ QCL 91 mg/kg L 4 5 mg/kg L 4 100 mg/kg L 4 ND mg/kg L 4	Result UnitsQualifiersRLMCL/ QCLMethod91 mg/kgL4ASA10-35 mg/kgL4ASA10-3100 mg/kgL4ASA10-3ND mg/kgL4ASA10-3	MCL/ QCL MCL/ QCL MCL/ Method Analysis Date / By 91 mg/kg L 4 ASA10-3 03/27/14 14:09 / jwc 5 mg/kg L 4 ASA10-3 03/27/14 14:09 / jwc 100 mg/kg L 4 ASA10-3 03/27/14 14:09 / jwc ND mg/kg L 4 ASA10-3 03/27/14 14:09 / jwc

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. L - Lowest available reporting limit for the analytical method used.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental

Report Date: 03/27/14 Work Order: B14031926

Project:	Not Indicated						Work Order: B14031926				
Analyte	14 - A - A - A - A - A - A - A - A - A -	Count	Result	Units	RL	%REC	Low Limit	High Llmit	RPD	RPDLimit	Qual
Method:	ASA10-3					-	1	1.12		Ba	tch: 78547
Lab ID:	LCS-78547	Lab	oratory Co	ntrol Sample			Run: ORIO	N555A_140327A		03/27	7/14 12:33
Total Alka	alinity		116	mg/kg	4.0	81	50	150			
Lab ID:	B14031926-002A DU	P 4 Sar	nple Duplic	ate			Run: ORIO	N555A_140327A		03/27	/14 13:26
Total Alka	alinity		106	mg/kg	4.0				1.3	30	
Carbonate	θ		ND	mg/kg	4.0		12.0			: 30	
Bicarbona	ate		129	mg/kg	4.0				1.4	30	
Hydroxide	a		ND	mg/kg	4.0						

Qualifiers: RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#: 1403280

10-Apr-14

Client: Project:	Western Bisti La	Refining S ndfarm Vac	outhwe lose Zo	est, Inc. ne Samplin	g						
Sample ID	MB-12116	SampT	ype: MI	BLK	Tes	stCode: E	PA Method	300.0: Anior	IS		
Client ID:	PBS	Batch	n ID: 12	116		RunNo: 1	7243				
Prep Date:	3/11/2014	Analysis D	Date: 3	/11/2014	:	SeqNo: 4	96465	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride Sulfate		ND ND	1.5 1.5								
Sample ID	LCS-12116	SampT	ype: LC	s	Tes	tCode: E	PA Method	300.0: Anion	IS		
Client ID:	LCSS	Batch	n ID: 12	116	F	RunNo: 1	7243				
Prep Date:	3/11/2014	Analysis D	ate: 3/	/11/2014		SeqNo: 4	96466	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
hloride	and the second second	14	1.5	15.00	0	92.3	90	110			
Sulfate	1000	28	1.5	30.00	0	94.2	90	110			
Sample ID	1403280-001BMS	SampT	ype: MS	S	Tes	tCode: El	PA Method	300.0: Anion	IS		
Client ID:	Westline Vadose	Zo Batch	n ID: 12	116	F	RunNo: 1	7243				
Prep Date:	3/11/2014	Analysis D	ate: 3/	11/2014	5	SeqNo: 4	96481	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
hloride		15	1.5	15.00	1.537	91.6	71.3	115	1		
ulfate		67	1.5	30.00	46.79	67.1	32.2	146		1573.0	80.00
Sample ID	1403280-001BMS	D SampT	ype: MS	SD	Tes	tCode: El	PA Method	300.0: Anion	IS		÷
Client ID:	Westline Vadose	Zo Batch	1 ID: 12	116	F	RunNo: 1	7243				
Prep Date:	3/11/2014	Analysis D	ate: 3/	11/2014	\$	SeqNo: 4	96482	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
hloride		15	1.5	15.00	1.537	92.7	71.3	115	1.09	20	
ulfate		73	15	30.00	46 79	87.4	32.2	146	8.72	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 7 of 12
Hall Environmental Analysis Laboratory, Inc.

WO#: 1403280 10-Apr-14

Client: Westerr Project: Bisti La	n Refining S Indfarm Vac	outhwe lose Zoi	st, Inc. ne Samplin	g						
Sample ID MB-12115 Client ID: PBS Prep Date: 3/11/2014	SampT Batc Analysis D	Type: MI h ID: 12 Date: 3/	3LK 115 12/2014	Tes F	tCode: E RunNo: 1 SeqNo: 4	PA Method 7240 96883	8015D: Dies Units: mg/F	el Range ((g	Organics	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10		4	11				- 16 A - 16 H	A Maria
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11	Sec.	10.00	and they	108	66	131			and the
Sample ID LCS-12115	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015D: Dies	el Range (Organics	19 A
Client ID: LCSS	Batcl	h ID: 12	115	F	RunNo: 1	7240				
Prep Date: 3/11/2014	Analysis D	Date: 3/	12/2014	5	SeqNo: 4	96884	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	114	60.8	145	4		a she
Surr: DNOP	5.8		5.000		116	66	131			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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1 Think and a start

Hall Environmental Analysis Laboratory, Inc.

WO#: 1403280

10-Apr-14

Client: Project:	Western Bisti Lan	Refining S dfarm Vao	Southwe	est, Inc. ne Samplin	g						
Sample ID	MB-12124	Samp	Гуре: М	BLK	Tes	tCode: E	PA Method	8015D: Gase	oline Rang	je	
Client ID:	PBS	Batc	h ID: 12	124	F	RunNo: 1	7249				
Prep Date:	3/11/2014	Analysis [Date: 3	/12/2014	S	SeqNo: 4	97263	Units: mg/l	Kg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	ge Organics (GRO)	ND 850	5.0	1000		85.4	74.5	129			
Sample ID	LCS-12124	Samp	Type: LC	s	Tes	tCode: E	PA Method	8015D: Gase	oline Rang	je	
Client ID:	LCSS	Batc	h ID: 12	124	F	RunNo: 1	7249				
Prep Date:	3/11/2014	Analysis [Date: 3	/12/2014	S	SeqNo: 4	97264	Units: mg/k	٨g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	29	5.0	25.00	0	115	71.7	134			C
Surr: BFB		920	1.22	1000		91.9	74.5	129			
Sample ID	1403280-002AMS	Samp	Гуре: М	S	Tes	tCode: E	PA Method	8015D: Gase	oline Rang	le	
Client ID:	Eastline Vadose 2	Zo Batc	h ID: 12	124	F	RunNo: 1	7249				
Prep Date:	3/11/2014	Analysis [Date: 3	/12/2014	S	SeqNo: 4	97269	Units: mg/k	۲g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	34	4.7	23.50	0	145	69.5	145			S
Surr: BFB		880		939.8		93.8	74.5	129			
Sample ID	1403280-002AMS	D Samp	Гуре: М	SD	Tes	tCode: El	PA Method	8015D: Gase	oline Rang	le	- 5
Client ID:	Eastline Vadose 2	Zo Batc	h ID: 12	124	F	RunNo: 1	7249				
Prep Date:	3/11/2014	Analysis [Date: 3	12/2014	S	SeqNo: 4	97270	Units: mg/k	۲g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	35	4.7	23.52	0	148	69.5	145	2.09	20	S
Surr: BFB		890		940.7		94.9	74.5	129	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - P Sample pH greater than 2.
 - RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory, Inc.

WO#: 1403280

10-Apr-14

Project:	Bisti La	ndfarm Vac	lose Zoi	ne Sampling	g						
Sample ID	MB-12124	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID:	PBS	Batc	h ID: 12	124	R	RunNo: 1	7249				
Pren Date:	3/11/2014	Analysis [)ate: 3/	12/2014	c c	SeaNo: 4	97293	Units: ma/k	(a		
Thep Date.	5/11/2014	Analysis	Jate. J	12/2014		cqivo. +	51255	ormo. mg/r	v9		
Analyte	i There in a	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		ND	0.050								
loluene		ND	0.050								
Ethylbenzene		ND	0.050								
Xylenes, I otal		ND	0.10	4 000		100	00	100			
Surr: 4-Brom	ofluorobenzene	1.1		1.000	11	106	80	120			1.1
Sample ID	1403280-001AMS	S Samp	Гуре: МЗ	3	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID:	t ID: Westline Vadose Zo Batch ID: 12124			RunNo: 17249							
Prep Date:	3/11/2014	Analysis [Date: 3/	12/2014	S	SeqNo: 4	97296	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qua
Benzene	Sec. Son Sec.	1.3	0.046	0.9268	0	136	67.4	135	1.11		S
Toluene		1.3	0.046	0.9268	0	141	72.6	135			S
		1.3	0.046	0.9268	0	142	69.4	143			
Ethylbenzene			0.0.10								
Ethylbenzene Xylenes, Total		4.0	0.093	2.780	0	143	70.8	144			
Ethylbenzene Xylenes, Total Surr: 4-Brom	ofluorobenzene	4.0 1.0	0.093	2.780 0.9268	0	143 110	70.8 80	144 120			
Ethylbenzene Xylenes, Total Surr: 4-Brom	ofluorobenzene	4.0 1.0 SD Samp	0.093	2.780 0.9268	0 Tesi	143 110 tCode: El	70.8 80 PA Method	144 120 8021B: Volat	tiles		
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID:	ofluorobenzene 1403280-001AMS Westline Vadose	4.0 1.0 SD Samp ^T	0.093	2.780 0.9268	0 Tesi	143 110 tCode: El	70.8 80 PA Method	144 120 8021B: Volat	tiles		
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date:	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014	4.0 1.0 SD Samp a Zo Batcl Analysis E	0.093 Type: MS h ID: 12 Date: 3/	2.780 0.9268 5D 124 12/2014	0 Tesi R S	143 110 tCode: El RunNo: 1 SeqNo: 4	70.8 80 PA Method 7249 97297	144 120 8021B: Volat Units: mg/K	tiles		
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014	4.0 1.0 SD SampT a Zo Batc Analysis E Result	0.093 Type: MS h ID: 12 Date: 3/	2.780 0.9268 5D 124 12/2014 SPK value	0 Tesi R SPK Ref Val	143 110 tCode: El RunNo: 1 SeqNo: 4 %REC	70.8 80 PA Method 7249 97297	144 120 8021B: Volat Units: mg/k	tiles (g %RPD	RPDI imit	Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014	4.0 1.0 SD SampT a Zo Batcl Analysis I Result 1.2	0.093 Type: MS h ID: 12 Date: 3/ PQL 0.046	2.780 0.9268 5D 124 12/2014 SPK value 0.9268	0 Tesi R S SPK Ref Val 0	143 110 tCode: El RunNo: 1' SeqNo: 4: %REC 130	70.8 80 PA Method 7249 97297 LowLimit 67.4	144 120 8021B: Volat Units: mg/M HighLimit 135	tiles (g %RPD 4.48	RPDLimit 20	Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014	4.0 1.0 SD SampT a Zo Batcl Analysis I Result 1.2 1.2	0.093 Type: MS h ID: 12 Date: 3/ PQL 0.046 0.046	2.780 0.9268 5D 124 12/2014 SPK value 0.9268 0.9268	0 Test S SPK Ref Val 0 0	143 110 tCode: El RunNo: 1' SeqNo: 4 %REC 130 134	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6	144 120 8021B: Volat Units: mg/k HighLimit 135 135	tiles (g %RPD 4.48 5.26	RPDLimit 20 20	Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014	4.0 1.0 SD SampT 20 Batcl Analysis I Result 1.2 1.2 1.2	0.093 Type: MS h ID: 12 Date: 3/ PQL 0.046 0.046 0.046	2.780 0.9268 5D 124 12/2014 SPK value 0.9268 0.9268 0.9268	0 Test S SPK Ref Val 0 0 0	143 110 tCode: El RunNo: 1 GeqNo: 4 %REC 130 134 133	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6 69.4	144 120 8021B: Volat Units: mg/k HighLimit 135 135 143	tiles (g %RPD 4.48 5.26 6.25	RPDLimit 20 20 20	Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes Total	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014	4.0 1.0 SD Samp ZO Batcl Analysis E <u>Result</u> 1.2 1.2 1.2 3.7	0.093 Fype: MS h ID: 12: Date: 3/ PQL 0.046 0.046 0.046 0.046	2.780 0.9268 5D 124 12/2014 SPK value 0.9268 0.9268 0.9268 0.9268 2.780	0 Test S SPK Ref Val 0 0 0 0 0	143 110 tCode: El RunNo: 1 SeqNo: 4: %REC 130 134 133 134	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6 69.4 70.8	144 120 8021B: Volar Units: mg/k HighLimit 135 135 143 144	tiles (g %RPD 4.48 5.26 6.25 6.63	RPDLimit 20 20 20 20 20	Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Foluene Ethylbenzene (ylenes, Total Surr: 4-Brom	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014	4.0 1.0 SD SampT a Zo Batcl Analysis E Result 1.2 1.2 1.2 3.7 1.0	0.093 Type: MS h ID: 12: Date: 3/ PQL 0.046 0.046 0.046 0.093	2.780 0.9268 5D 124 12/2014 SPK value 0.9268 0.9268 0.9268 2.780 0.9268	0 Tesi S SPK Ref Val 0 0 0 0 0	143 110 tCode: El RunNo: 1' SeqNo: 4: %REC 130 134 133 134 109	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6 69.4 70.8 80	144 120 8021B: Volat Units: mg/k HighLimit 135 135 143 143 144 120	tiles (g %RPD 4.48 5.26 6.25 6.63 0	RPDLimit 20 20 20 20 20 0	Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014 ofluorobenzene	4.0 1.0 SD SampT a Zo Batcl Analysis D Result 1.2 1.2 1.2 1.2 1.2 1.2 1.2 3.7 1.0	0.093 Type: MS h ID: 12 Date: 3/ PQL 0.046 0.046 0.046 0.046 0.093 Type: LC	2.780 0.9268 5D 124 12/2014 SPK value 0.9268 0.9268 0.9268 2.780 0.9268 2.780 0.9268	0 Tesi SPK Ref Val 0 0 0 0 0 0 0 0	143 110 tCode: El RunNo: 1 SeqNo: 4 %REC 130 134 133 134 109	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6 69.4 70.8 80 PA Method	144 120 8021B: Volat Units: mg/K HighLimit 135 135 143 144 120 8021B: Volat	tiles (g %RPD 4.48 5.26 6.25 6.63 0	RPDLimit 20 20 20 20 20 0	Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID:	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014 ofluorobenzene LCS-12124	4.0 1.0 SD SampT a Zo Batcl Analysis D Result 1.2 1.2 1.2 1.2 3.7 1.0 SampT Batcl	0.093 Fype: MS h ID: 12 Date: 3/ PQL 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.093 Fype: LC	2.780 0.9268 5D 124 12/2014 SPK value 0.9268 0.9268 0.9268 2.780 0.9268 2.780 0.9268	0 Tesi SPK Ref Val 0 0 0 0 0 0 0 0	143 110 tCode: El RunNo: 1' SeqNo: 4' %REC 130 134 133 134 109 tCode: El	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6 69.4 70.8 80 PA Method 7249	144 120 8021B: Volat Units: mg/k HighLimit 135 135 143 144 120 8021B: Volat	tiles (g %RPD 4.48 5.26 6.25 6.63 0 tiles	RPDLimit 20 20 20 20 0	Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date:	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014 ofluorobenzene LCS-12124 LCSS 3/11/2014	4.0 1.0 SD Samp ZO Batcl Analysis I Result 1.2 1.2 1.2 3.7 1.0 Samp Batcl Analysis I	0.093 Fype: MS h ID: 12 Date: 3/ PQL 0.046 0.046 0.046 0.046 0.046 0.046 0.093 Fype: LC h ID: 12 Date: 3/	2.780 0.9268 124 12/2014 SPK value 0.9268 0.9268 0.9268 2.780 0.9268 2.780 0.9268 S 124	0 Tesi SPK Ref Val 0 0 0 0 0 0 Tesi R S	143 110 tCode: El RunNo: 1 SeqNo: 4 %REC 130 134 133 134 133 134 109 tCode: El RunNo: 1 SeqNo: 4	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6 69.4 70.8 80 PA Method 7249 97379	144 120 8021B: Volar Units: mg/k HighLimit 135 135 143 144 120 8021B: Volat	tiles (g %RPD 4.48 5.26 6.25 6.63 0 tiles	RPDLimit 20 20 20 20 0	Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014 ofluorobenzene LCS-12124 LCSS 3/11/2014	4.0 1.0 SD SampT a Zo Batcl Analysis I Result 1.2 1.2 1.2 3.7 1.0 SampT Batcl Analysis I Result	0.093 Fype: MS h ID: 12: Date: 3/ PQL 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.093 Fype: LC h ID: 12: Date: 3/ PQL 0.046 0.046 0.093	2.780 0.9268 5D 124 12/2014 SPK value 0.9268 0.9268 0.9268 2.780 0.9268 2.780 0.9268 S 124 12/2014	0 Tesi SPK Ref Val 0 0 0 0 0 Tesi R SPK Ref Val	143 110 tCode: El RunNo: 1' SeqNo: 4: %REC 130 134 133 134 109 tCode: El RunNo: 1' SeqNo: 4: %REC	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6 69.4 70.8 80 PA Method 7249 97379	144 120 8021B: Volat Units: mg/k HighLimit 135 135 143 143 144 120 8021B: Volat Units: mg/k	tiles (g %RPD 4.48 5.26 6.25 6.63 0 tiles (g	RPDLimit 20 20 20 20 0	Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014 ofluorobenzene LCS-12124 LCSS 3/11/2014	4.0 1.0 SD SampT a Zo Batcl Analysis D Result 1.2 1.2 1.2 1.2 3.7 1.0 SampT Batcl Analysis D Result 1.2	0.093 Fype: MS h ID: 12: Date: 3/ PQL 0.046 0.046 0.046 0.046 0.046 0.093 Fype: LC h ID: 12: Date: 3/ PQL 0.046 0.093	2.780 0.9268 5D 124 12/2014 SPK value 0.9268 0.9268 0.9268 2.780 0.9268 2.780 0.9268 S 124 12/2014 SPK value 1.000	0 Test SPK Ref Val 0 0 0 0 0 Test R SPK Ref Val 0	143 110 tCode: El RunNo: 1' SeqNo: 4: %REC 130 134 133 134 109 tCode: El RunNo: 1' SeqNo: 4: %REC 120	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6 69.4 70.8 80 PA Method 7249 97379 LowLimit 80	144 120 8021B: Volat Units: mg/k HighLimit 135 135 143 144 120 8021B: Volat Units: mg/k HighLimit 120	tiles (g 4.48 5.26 6.25 6.63 0 tiles (g %RPD	RPDLimit 20 20 20 20 0	Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014 ofluorobenzene LCS-12124 LCSS 3/11/2014	4.0 1.0 SD SampT a Zo Batcl Analysis E Result 1.2 1.2 1.2 1.2 3.7 1.0 SampT Batcl Analysis E Result 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2	0.093 Fype: MS h ID: 12: Date: 3/ PQL 0.046 0.046 0.046 0.046 0.046 0.093 Fype: LC h ID: 12: Date: 3/ PQL 0.050 0.050	2.780 0.9268 124 12/2014 SPK value 0.9268 0.9268 0.9268 2.780 0.9268 2.780 0.9268 S 124 12/2014 SPK value 1.000 1.000 1.000	0 Tesi SPK Ref Val 0 0 0 0 0 Tesi R SPK Ref Val 0 0	143 110 tCode: El kunNo: 1 GeqNo: 4 %REC 130 134 133 134 109 tCode: El kunNo: 1 GeqNo: 4 kunNo: 1 SeqNo: 4 KunNo: 1 GeqNo: 4 KunNo: 1 GeqNo: 4 KunNo: 1 SeqNo: 4 SeqNo: 4 SeqN	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6 69.4 70.8 80 PA Method 7249 97379 LowLimit 80 80	144 120 8021B: Volat Units: mg/k HighLimit 135 135 143 144 120 8021B: Volat Units: mg/k HighLimit 120 120	tiles (g 4.48 5.26 6.25 6.63 0 tiles (g %RPD	RPDLimit 20 20 20 0	Qual Qual Qual
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014 ofluorobenzene LCS-12124 LCSS 3/11/2014	4.0 1.0 SD Samp ZO Batcl Analysis I Result 1.2 1.2 1.2 1.2 3.7 1.0 Samp Batcl Analysis I Result 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2	0.093 Fype: MS h ID: 12: Date: 3/ PQL 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.046 0.053 Fype: LC PQL 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050	2.780 0.9268 124 12/2014 SPK value 0.9268 0.9268 0.9268 0.9268 2.780 0.9268 2.780 0.9268 S 124 12/2014 SPK value 1.000 1.000 1.000	0 Tesi SPK Ref Val 0 0 0 0 0 0 Tesi R SPK Ref Val 0 0 0	143 110 tCode: El kunNo: 1 SeqNo: 4 %REC 130 134 133 134 109 tCode: El kunNo: 1 SeqNo: 4 %REC 120 120 117	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6 69.4 70.8 80 PA Method 7249 97379 LowLimit 80 80 80	144 120 8021B: Volat Units: mg/k HighLimit 135 135 143 144 120 8021B: Volat Units: mg/k HighLimit 120 120	tiles (g 4.48 5.26 6.25 6.63 0 tiles (g %RPD	RPDLimit 20 20 20 0 8 RPDLimit	Qual Qual S
Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total	ofluorobenzene 1403280-001AMS Westline Vadose 3/11/2014 ofluorobenzene LCS-12124 LCSS 3/11/2014	4.0 1.0 5D SampT a Zo Batcl Analysis I Result 1.2 1.2 1.2 1.2 3.7 1.0 SampT Batcl Analysis I Result 1.2 1.2 1.2 1.2 3.7 1.0 SampT Batcl Analysis I 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2	0.093 Fype: MS h ID: 12 Date: 3/ PQL 0.046 0.046 0.046 0.046 0.046 0.093 Fype: LC h ID: 12 Date: 3/ PQL 0.050 0.050 0.050 0.050 0.050 0.050	2.780 0.9268 124 12/2014 SPK value 0.9268 0.9268 0.9268 0.9268 2.780 0.9268 2.780 0.9268 S 124 12/2014 SPK value 1.000 1.000 1.000 3.000	0 Tesi SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	143 110 tCode: El RunNo: 1 SeqNo: 4 %REC 130 134 133 134 109 tCode: El RunNo: 1 SeqNo: 4 %REC 120 120 120 117 119	70.8 80 PA Method 7249 97297 LowLimit 67.4 72.6 69.4 70.8 80 PA Method 7249 97379 LowLimit 80 80 80 80	144 120 8021B: Volat Units: mg/k HighLimit 135 135 143 144 120 8021B: Volat Units: mg/k HighLimit 120 120 120	tiles % % % % % % % % % % % % %	RPDLimit 20 20 20 0	Qual Qual S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 10 of 12

WO#: 1403280

10-Apr-14

Client: Project:	Wester Bisti L	m Refining Southwest, andfarm Vadose Zone	, Inc. Sampling				
Sample ID	MB-12137	SampType: MBL	K Te	stCode: EPA Method	7471: Mercury		
Client ID:	PBS	Batch ID: 1213	57	Runno: 17318			
Prep Date:	3/11/2014	Analysis Date: 3/13	3/2014	SeqNo: 498736	Units: mg/Kg		
Analyte		Result PQL S	SPK value SPK Ref Val	%REC LowLimit	HighLimit %RF	PD RPDLimit	Qual
Mercury	and the second	ND 0.033			in the first	e all al	10
Sample ID	LCS-12137	SampType: LCS	Те	stCode: EPA Method	7471: Mercury		314
Client ID:	LCSS	Batch ID: 1213	7	RunNo: 17318			
Prep Date:	3/11/2014	Analysis Date: 3/13	3/2014	SeqNo: 498737	Units: mg/Kg		
Analyte		Result PQL S	SPK value SPK Ref Val	%REC LowLimit	HighLimit %RF	PD RPDLimit	Qual
Mercury		0.17 0.033	0.1667 0	99.9 80	120		

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 11 of 12

Hall Environmental Analysis Laboratory, Inc.

Western Refining Southwest, Inc. **Client: Project:** Bisti Landfarm Vadose Zone Sampling TestCode: EPA Method 6010B: Soil Metals Sample ID MB-12121 SampType: MBLK Client ID: PBS Batch ID: 12121 RunNo: 17248 Analysis Date: 3/12/2014 SeqNo: 496724 Units: mg/Kg Prep Date: 3/11/2014 %RPD **RPDLimit** Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit Qual Arsenic ND 2.5 Barium ND 0.10 ND 0.10 Cadmium Calcium ND 25 ND 0.30 Chromium 0.25 Lead ND ND 25 Magnesium ND 50 Potassium 2.5 Selenium ND ND Silver 0.25 Sample ID LCS-12121 SampType: LCS TestCode: EPA Method 6010B: Soil Metals Client ID: LCSS Batch ID: 12121 RunNo: 17248 Prep Date: 3/11/2014 Analysis Date: 3/12/2014 SeqNo: 496725 Units: mg/Kg SPK value SPK Ref Val %RPD Analyte Result PQL %REC LowLimit HighLimit **RPDLimit** Qual 24 2.5 25.00 0 94.3 80 120 Arsenic Barium 25 0.10 25.00 0 100 80 120 Cadmium 25 0.10 25.00 0 100 80 120 Calcium 2500 25 2500 0 98.0 80 120 Chromium 25 0.30 25.00 0 98.4 80 120 Lead 24 0.25 25.00 0 94.4 80 120 97.9 Magnesium 2400 25 2500 0 80 120 80 Potassium 2400 50 2500 0 96.4 120 24 2.5 25.00 0 96.8 80 120 Selenium Silver 5.0 0.25 5.000 0 99.1 80 120 Sample ID MB-12121 SampType: MBLK TestCode: EPA Method 6010B: Soil Metals Client ID: PBS Batch ID: 12121 RunNo: 17278 Prep Date: 3/11/2014 Analysis Date: 3/13/2014 SeqNo: 497626 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** LowLimit Qual ND 25 Sodium Sample ID LCS-12121 SampType: LCS TestCode: EPA Method 6010B: Soil Metals Client ID: LCSS Batch ID: 12121 RunNo: 17278 Prep Date: 3/11/2014 Analysis Date: 3/13/2014 SeqNo: 497627 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC %RPD **RPDLimit** LowLimit HighLimit Qual Sodium 2500 25 2500 0 98.8 80 120

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits S
- В Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded

Page 12 of 12

- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- Reporting Detection Limit RL

WO#:

1403280 10-Apr-14

HALL Hall Environmental ENVIRONMENTAL All ANALYSIS LABORATORY TEL: 505-345-397 Website: vvvv.h	al Analysi 4901 buquerqu 5 FAX: 5 allenviro	s Laborator Hawkins N e, NM 8710 05-345-410 nmental.co.	ry TE 09 S 07 m	am	ple Log-In Check List
Client Name: Western Refining Southw Work Order Numbe	r: 14032	280			RcptNo: 1
Received by/date: Y / / W / U / / ·)			1		
Logged By: Ashley Gallegos 3/7/2014 10:00:00 AN	1		A	Ť	
Completed By: Ashley Gallegos 3/7/2014 10:50:39 AN Reviewed By: Image: State	1		A	ŕ	
Chain of Custody					
1. Custody seals intact on sample bottles?	Yes	17	No	<u> </u>	Not Present
2. Is Chain of Custody complete?	Yes	~	No	1	Not Present
3. How was the sample delivered?	UPS				
Log In					
4. Was an attempt made to cool the samples?	Yes		No		
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes		No		
6. Sample(s) in proper container(s)?	Yes	V	No	<u>[]]</u>	
7. Sufficient sample volume for indicated test(s)?	Yes	2	No	1	
8. Are samples (except VOA and ONG) properly preserved?	Yes	2	No	Ē	
9. Was preservative added to bottles?	Yes		No	\checkmark	NA
10.VOA vials have zero headspace?	Yes		No		No VOA Vials 🗹
11. Were any sample containers received broken?	Yes		No		
					# of preserved bottles checked
12. Does paperwork match bottle labels?	Yes	\checkmark	No		for pH: (<2 or >12 unless pot
13 Are matrices correctly identified on Chain of Custody?	Yes	×	No	.;	Adjusted?
14, Is it clear what analyses were requested?	Yes	N	No	[]	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes		No	<u>[]</u>]	Checked by:
Special Handling (If applicable)					
16. Was client notified of all discrepancies with this order?	Yes	[]]	No	[]]	NA 🗹
Person Notified: Date:					
By Whom: Via:	eMa	il Pho	ne	Fax	In Person
Regarding:			W TAX SPECIAL STREET, ST.		TRANSING CONTROL OF BUILDING AND A DATA DATA DATA DATA DATA DATA DAT
Client Instructions:	NUT ANALYSIS ANALYSIS ANALYSIS		ner ebischiedens		Contractions and a second a second
17. Additional remarks:					

Chain-of-Custody Record Client: Western REFINING Kelly Robinson Mailing Address: 111 CR 4990 BloomField, NM 87413 Phone #: 595-632-8013	Turn-Around Time: VStandard Rush Project Name: PISTI JANDFAKA VADOSE ZONE Some Project #: UR 1005	HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request							
email or Fax#: QA/QC Package: X Standard	Project Manager: Ashley Agee Sampler: D, Hencmann & D, Neuman On Ice: XYes INO Sample Temperature: S Container Preservative HEAL No.	(+ MTBE + TMB's (8021) (+ MTBE + TPH (Gas only) 8015B (GRO / DRO / MRO) (Method 504.1) (Method 504.1) s (8310 or 8270 SIMS) A 8 Metals A 8 Metals A 8 Metals (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄) is (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄) is (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄) (s (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄) (Semi-VOA) (Semi-VOA) (Semi-VOA) (Dbles (Y or N)							
3/6/14 1315 Soil WESTLINE VADOSE TONE 3/6/14 1315 Soil EASTLINE VADOSE TONE 3/6/14 1345 Soil EASTLINE VADOSE TONE 3/6/14 1411 Soil Bisti VADOSE TONE 3/6/14 143/0 Soil Bisti VADOSE TONE 3/6/14 143/0 Soil Pettigrew VADOSE TONE 3/6/14 1450 Soil API Vadose Tone	Type and # Type Type Type $402/4$ $CooL$ -001 $402/4$ $Cool$ -002 $402/4$ $Cool$ -003 $402/4$ $Cool$ -004 $402/4$ $Cool$ -004 $402/4$ $Cool$ -004	BTEX SCC Ahin BTEX Anion BTEX BTEX BTEX Anion BTEX BTEX BTEX BTEX BTEX Anion BTEX BTEX </th							
Date: July 1017 Dáte: July 1017 Dáte: July 1754 Dáte: July 1755 Dáte: July 17555 Dáte: July 17555 Dáte: July 17555 Dáte: Ju	Received by: Christian Wheth 3/4/14 /16/7 Received by: Date Time 3/4/14 /16/7 Date Time Date Time	Remarks: Please copy results to aager@ltenv.com							

Contraction of the

CRO	
GRO	will -
(mg/kg)	
(mg/kg)	
(Ing/kg)	
(mg/kg)	
(ing/kg)	
(ma/ka)	
(IIIg/Kg)	
Totuene	
(mg/kg)	
Ethylbenzene	
(mg/kg)	
Total Xylenes	
(mg/kg)	I
Chlorida	
(ma/ka)	Sec. 40
(mg/kg)	
Sunate	
(mg/kg)	
Alkalinity	
(mg/kg)	
Auroute	
Arsenic	1.5
(mg/kg)	-
Barium	1.
(mg/kg)	
Cadmium	
(mg/kg)	
Calairen	
(mallea)	
(mg/kg)	
Chromium	
(mg/kg)	
Load	
(ma/ka)	- C -
(ing/ng)	
Magnesium	
(mg/kg)	
Potassium	1.1
(mg/kg)	1
Selenium	
(mg/kg)	
Silver	
(mg/kg)	
Sodium	
(mg/kg)	
(B)	
3.6	
Mercury	



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

March 17, 2014

Ashley Ager Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (970) 946-1093 FAX

RE: Bisti Landfarm Treatment Zone Sampling

OrderNo.: 1403284

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/7/2014 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report Lab Order 1403284

Date Reported: 3/17/2014

CLIENT:Western Refining Southwest, Inc.Project:Bisti Landfarm Treatment Zone SamplingLab ID:1403284-001Matrix: SOIL

Client Sample ID: Crude Cell Treatment Zone Collection Date: 3/6/2014 2:31:00 PM Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RA	NGE ORGANICS			a har	Analyst	BCN
Diesel Range Organics (DRO)	66	10	mg/Kg	1	3/13/2014 11:32:18 AM	12115
Motor Oil Range Organics (MRO)	88	50	mg/Kg	1	3/13/2014 11:32:18 AM	12115
Surr: DNOP	114	66-131	%REC	1	3/13/2014 11:32:18 AM	12115
EPA METHOD 8015D: GASOLINE	RANGE				Analyst	JMP
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	3/12/2014 4:21:32 PM	12124
Surr: BFB	87.5	74.5-129	%REC	1	3/12/2014 4:21:32 PM	12124
EPA METHOD 300.0: ANIONS					Analyst	JRR
Chloride	150	30	mg/Kg	20	3/13/2014 7:01:26 AM	12145

Qualifiers: *		Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank				
E Value above quantitation		Value above quantitation range	Н	Holding times for preparation or analysis	s exceeded			
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 1 of 5			
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 age 1 01 5			
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit				
	S	Spike Recovery outside accepted recovery limits						

Analytical Report

Lab Order 1403284

Date Reported: 3/17/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT:Western Refining Southwest, Inc.Project:Bisti Landfarm Treatment Zone SamplingLab ID:1403284-002Matrix: SOIL

Client Sample ID: API Cell Treatment Zone Collection Date: 3/6/2014 3:01:00 PM Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE OF	RGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	3/13/2014 11:54:29 AM	12115
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	3/13/2014 11:54:29 AM	12115
Surr: DNOP	109	66-131	%REC	1	3/13/2014 11:54:29 AM	12115
EPA METHOD 8015D: GASOLINE RANGE	No in				Analyst	JMP
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	3/12/2014 4:50:06 PM	12124
Surr: BFB	85.5	74.5-129	%REC	1	3/12/2014 4:50:06 PM	12124
EPA METHOD 300.0: ANIONS					Analyst	JRR
Chloride	12	1.5	mg/Kg	1	3/13/2014 7:13:51 AM	12145

Qualifiers: *	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank		
	Е	Value above quantitation range	Н	Holding times for preparation or analysi	s exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 2 of 5	
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 age 2 01 5	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		
	S	Spike Recovery outside accepted recovery limits				

WO#: 1403284 17-Mar-14

Client: Project:	Western Bisti La	Refining South	west, Inc. ent Zone Samp	ling				
Sample ID Client ID:	MB-12145 PBS	SampType: Batch ID:	MBLK 12145	Tes	tCode: EPA Method	300.0: Anions		15 A.S.
Prep Date:	3/12/2014	Analysis Date:	3/12/2014	S	SeqNo: 497582	Units: mg/Kg		
Analyte	an adda	Result PC	L SPK value	SPK Ref Val	%REC LowLimit	HighLimit %RF	PD RPDLimit	Qual
Chloride	the second	ND	1.5			and the second second		
Sample ID	LCS-12145	SampType:	LCS	Tes	Code: EPA Method	300.0: Anions		
Client ID:	LCSS	Batch ID:	12145	R	RunNo: 17276			
Prep Date:	3/12/2014	Analysis Date:	3/12/2014	S	eqNo: 497583	Units: mg/Kg		
Analyte		Result PC	L SPK value	SPK Ref Val	%REC LowLimit	HighLimit %RF	PD RPDLimit	Qual
Chloride		14	1.5 15.00	0	95.1 90	110		

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- E Value above quantitation range
- J Analyte detected below quantitation limits
- RSD is greater than RSDlimit 0
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits S
- В Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND
- Р Sample pH greater than 2.
- **Reporting Detection Limit** RL

Page 3 of 5

Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: 1403284

17-Mar-14

Sample ID	MB-12115	SampTy	ype: ME	BLK	Tes	tCode: E	PA Method	8015D: Dies	el Range (Organics	
Client ID:	PBS	Batch	ID: 12	115	F	RunNo: 1	7240				
Prep Date:	3/11/2014	Analysis Da	ate: 3/	12/2014	5	SeqNo: 4	96883	Units: mg/M	(g		
Analyte	Prosenter.	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (Organics (DRO)	ND	10						1. 1. 1. 1.		de mo
Motor Oil Rang	e Organics (MRO)	ND	50								
Surr: DNOP		11		10.00	1	108	66	131		Fight Street	NAC -
Sample ID	LCS-12115	SampTy	ype: LC	S	Tes	tCode: E	PA Method	8015D: Dies	el Range (Organics	ales?
Client ID:	LCSS	Batch	ID: 12	115	F	RunNo: 1	7240				
Prep Date:	3/11/2014	Analysis Da	ate: 3/	12/2014	5	SeqNo: 4	96884	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (Organics (DRO)	57	10	50.00	0	114	60.8	145		3.1 223	
Surr: DNOP		5.8		5.000	Ser Prairie	116	66	131	a faither a		a de la
Sample ID	MB-12127	SampTy	pe: ME	BLK	Tes	tCode: E	PA Method	8015D: Diese	el Range (Organics	P.A.
Client ID:	PBS	Batch	ID: 12	127	F	RunNo: 1	7275				
Prep Date:	3/11/2014	Analysis Da	ate: 3/	13/2014	\$	SeqNo: 4	98023	Units: %RE	с		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		9.1		10.00	2 dere	91.2	66	131	· · · · · ·		14
Sample ID	LCS-12127	SampTy	/pe: LC	S	Tes	tCode: E	PA Method	8015D: Diese	el Range (Organics	-
Client ID:	LCSS	Batch	ID: 12	127	F	RunNo: 1	7275				
Prep Date:	3/11/2014	Analysis Da	ate: 3/	13/2014	5	SegNo: 4	98432	Units: %RE	с		
Analida	ALK OF AL	Desult	DOI			NDEC	Land In 1	Ullach Line 14	01000	DDDI I	
Analyte	11 states - and	Result	PUL	SPK value	SPK Ret Val	%REC	LOWLIMIT	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 4 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: 1403284

17-Mar-14

Client: Project:	Western Bisti Lai	Refining S ndfarm Trea	outhwes atment Z	t, Inc. Cone Samp	ling						
Sample ID MB	3-12124	SampT	уре: МВ	LK	Tes	tCode: E	PA Method	8015D: Gase	oline Rang	e	
Client ID: PB	s	Batch	n ID: 121	24	F	RunNo: 1	7249				
Prep Date: 3/	/11/2014	Analysis D	ate: 3/1	2/2014	\$	SeqNo: 4	97263	Units: mg/k	٢ġ		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Org Surr: BFB	rganics (GRO)	ND 850	5.0	1000		85.4	74.5	129		7	
Sample ID LC	S-12124	SampT	ype: LCS	3	Tes	tCode: E	PA Method	8015D: Gase	oline Rang	e	
Client ID: LC:	SS	Batch	n ID: 121	24	F	RunNo: 1	7249				
Prep Date: 3/	/11/2014	Analysis D	ate: 3/1	2/2014	Ş	SeqNo: 4	97264	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Org	ganics (GRO)	29	5.0	25.00	0	115	71.7	134			
Surr: BFB	11k	920		1000	11.1.1	91.9	74.5	129		2.112	and the second
Sample ID MB	3-12124 MK	SampT	уре: МВ	LK	Tes	tCode: E	PA Method	8015D: Gaso	oline Rang	e	
Client ID: PB:	S	Batch	D: R17	249	F	RunNo: 1	7249				
Prep Date:		Analysis D	ate: 3/1	2/2014	5	SeqNo: 4	97276	Units: %RE	C		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	. G	850	2.10	1000		85.4	74.5	129	a farm	1	7 :
Sample ID LC:	S-12124 MK	SampT	ype: LCS	6	Tes	tCode: E	PA Method	8015D: Gaso	oline Rang	e	
Client ID: LC	SS	Batch	1D: R17	249	F	RunNo: 1	7249				
Prep Date:		Analysis D	ate: 3/1	2/2014	S	SeqNo: 4	97277	Units: %RE	C		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1. A.	920		1000		91.9	74.5	129	111		

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Е Value above quantitation range
- Analyte detected below quantitation limits J
- RSD is greater than RSDlimit 0
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.

Page 5 of 5

Reporting Detection Limit RL

HALL Hall Environment ENVIRONMENTAL ANALYSIS LABORATORY TEL: 505-345-397 Website: www.	al Analysis Labora 4901 Hawkin buquerque, NM 8 75 FAX: 505-345 hallenvironmental	atory s NE 7109 Sam 4107 .com	ple Log-In Check List
Client Name: Western Refining Southw Work Order Number	er: 1403284		RcptNo: 1
Received by/date AM 03 D7 14			
Logged By: Ashley Gallegos 3/7/2014 10:00:00 Al	M	AF	
Completed By: Ashley Gallegos , 3/7/2014 11:12:07 A	M	A	
Reviewed By: 1/110 Stulin		. 0	
Chain of Custody			
4 Custody soals intact on sample bottles?	Ves	No	Not Present
2 Is Chain of Custody complete?	Yes V	No L.	Not Present
3 How was the sample delivered?	Courier		
	Sec.	1. A.	
Log In			
4. Was an attempt made to cool the samples?	Yes 🖌	No 🗔	NA
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🖌	No	NA : T
6. Sample(s) in proper container(s)?	Yes 🔽	No 🗐	
7. Sufficient sample volume for indicated test(s)?	Yes 🖌	No 🗔	
8. Are samples (except VOA and ONG) properly preserved?	Yes 🗹	No 🗌	
9. Was preservative added to bottles?	Yes 🗌	No 🗹	NA 🗌
10.VOA vials have zero headspace?	Yes 🗔	No 🗔	No VOA Vials
11. Were any sample containers received broken?	Yes 🖸	No V	4 - f - u - a - a - a - a - a - a - a - a - a
			bottles checked
12. Does paperwork match bottle labels?	Yes M	No 1.1	(<2 or >12 unless note
13 Are matrices correctly identified on Chain of Custody?	Yes 🔽	No 🗔	Adjusted?
14. Is it clear what analyses were requested?	Yes 🔽	No 🗔	
15. Were all holding times able to be met?	Yes 🗹	No 🗔	Checked by:
(If no, notify customer for authorization.)			
Constal Mandling (if applicable)			and the same
AC Mas align adding (if applicable)	Yes [7]	No	NA V
16. Was client notified of all discrepancies with this order?	res	NO	
Person Notified: Date: By Whom: Via:	eMail	Phone []] Fax	In Person
Regarding: Client Instructions:			
17. Additional remarks:			
Cooler No Temp °C Condition Seal Intact Seal No	Seal Date	Signed By	
1 1.3 Good Yes			1

Client:	West	ern R	efining	Standard		h					IAL	YS	515	S L	AE	30	RAT	
K	ely	Kobi	nson	Bisti LAN	dfarm		www.hallenvironmental.com											
Mailing	Address	III CI	R4990	Treatm	ent Zone	Sampling	4901 Hawkins NE - Albuquerque, NM 87109											
(K	loon	tield	1 NM 87413	Project #:	210-5			Te	1. 505	-345-3	3975	F	=ax	505-	345-	4107	,	
Phone #	# 50	5-63	2-8013	WELCOS					le.		A	naly	ysis	Req	uest			
email or	Fax#:			Project Mana	ager:		() () () () () () () () () () () () () (
QA/QC F	Package: dard		Level 4 (Full Validation)	Hohley Ager				(Gas ol	SO / MF		(SMIS)		PO4,S(PCB's			2	
Accredi	tation			Sampler: D. Henrmann & D. Newmenn				H	/DF	= =	70 5		VO2,	3082	1	Ì	3	
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Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL-NO	3TEX + M	STEX + M ^T	IPH 8015E	EDB (Meth	PAH's (831	RCRA 8 M	Anions (F,(3081 Pesti	3260B (VO	3270 (Sem	Chlania	Share and
6.4	1431	Sil	Code Cell Treatment To	907/1	Cool	-001	-	-	X	+-	-					-	Ĭ	
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	necessary	amoles sub	mitted to Hall Environmental may be sub	contracted to other a	And itad inhorator	ing This service as potion of this	Doscil	billio /	how out	contract	nd data	will be	aloor	lu noto	tod on	the er	obdies] re	ned



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

June 18, 2014

Ashley Ager Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (970) 946-1093 FAX (505) 632-3911

RE: Bisti Landfarm

OrderNo.: 1406814

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/18/2014 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Eı	nvironmental Analys	is Laborat	ory, Ir	Lab Order 1406814 Date Reported: 6/18/2014						
CLIENT: Western Refining Southwest, Inc.Client Sample ID: Crude The Collection Date: 6/17/201Project: Bisti LandfarmCollection Date: 6/17/201Lab ID: 1406814-001Matrix: SOILReceived Date: 6/18/201								[
Analyses		Result	RL	Qual	Units	DF	Date Analyzed	Batch		
EPA MET Petroleur	HOD 418.1: TPH m Hydrocarbons, TR	400	20		mg/Kg	1	Analys 6/18/2014 12:00:00 Pl	st: JME M 13756		

Analytical Report

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

*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method	od Blank				
E	Value above quantitation range	Н	Holding times for preparation or analysis exceeded					
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 1 of				
0	RSD is greater than RSDlimit	P	Sample pH greater than 2.	1 uge 1 of				
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit					
S	Spike Recovery outside accepted recovery limits							
	* E J O R S	 * Value exceeds Maximum Contaminant Level. E Value above quantitation range J Analyte detected below quantitation limits O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits 	 * Value exceeds Maximum Contaminant Level. B E Value above quantitation range H J Analyte detected below quantitation limits ND O RSD is greater than RSDlimit P RPD outside accepted recovery limits RL S pike Recovery outside accepted recovery limits 	 * Value exceeds Maximum Contaminant Level. B Analyte detected in the associated Meth E Value above quantitation range J Analyte detected below quantitation limits O RSD is greater than RSDlimit P Sample pH greater than 2. R RPD outside accepted recovery limits R Spike Recovery outside accepted recovery limits 				

f 3

Hall Er	nvironmental Analys	is Labora	ıc.	Lab Order 1406814 • Date Reported: 6/18/2014								
CLIENT:	Western Refining Southwest,	Inc.		C	Client Sample ID: API Treatment Zone							
Project:	Bisti Landfarm				Collection	Date: 6/1	7/2014 10:52:00 AM	1				
Lab ID:	1406814-002	SOIL		Received	Date: 6/1	18/2014 7:40:00 AM						
Analyses		Result	RL	Qual	Units	DF	Date Analyzed	Batch				
EPA MET	HOD 418.1: TPH						Analy	st: JME				
Petroleur	m Hydrocarbons, TR	110	20		mg/Kg	1	6/18/2014 12:00:00 P	M 13756				

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

Itert	1 10 11	te Qe Summary report and sample log
Qualifiers:	*	Value exceeds Maximum Contaminant Level
	Е	Value above quantitation range
	J	Analyte detected below quantitation limits
	0	RSD is greater than RSDlimit

RPD outside accepted recovery limits R

S Spike Recovery outside accepted recovery limits

- В Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit ND

P Sample pH greater than 2. Page 2 of 3

RL Reporting Detection Limit

Analytical Report

WO#: 1406814

18-Jun-14

Client: Project:	Wester Bisti L	n Refining Sc andfarm	outhwe	st, Inc.							
Sample ID	MB-13756	SampTy	/pe: ME	BLK	Tes	tCode: E	PA Method	418.1: TPH			
Client ID:	PBS	Batch	ID: 13	756	F	RunNo: 1	9338				
Prep Date:	6/18/2014	Analysis Da	ate: 6/	18/2014	ę	SeqNo: 5	59119	Units: mg/l	٨g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hyd	Irocarbons, TR	ND	20							and the second	
Sample ID	LCS-13756	SampTy	/pe: LC	s	Tes	tCode: E	PA Method	418.1: TPH			1. 1946 A
Client ID:	LCSS	Batch	ID: 13	756	F	RunNo: 1	9338				
Prep Date:	6/18/2014	Analysis Da	ate: 6/	18/2014	S	SeqNo: 5	59120	Units: mg/k	۲g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hyd	rocarbons, TR	81	20	100.0	0	81.1	80	120		1.12.1.11	14. S. 1
Sample ID	LCSD-13756	SampTy	/pe: LC	SD	Tes	tCode: E	PA Method	418.1: TPH		100	E. Jacob
Client ID:	LCSS02	Batch	ID: 13	756	F	RunNo: 1	9338				
Prep Date:	6/18/2014	Analysis Da	ate: 6/	18/2014	5	SeqNo: 5	59121	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hyd	rocarbons, TR	87	20	100.0	0	86.6	80	120	6.58	20	

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- Value above quantitation range E
- Analyte detected below quantitation limits J
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits S
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P
- RL Reporting Detection Limit

Page 3 of 3

Sample pH greater than 2.

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 Southw Work Order, Number	: 1406814		RcptNo: 1
Received by/date KM DU 18/14			
Logged By: Ashley Gallegos 6/18/2014 7:40:00 AM	1	AJ	
Completed By: Ashley Gallegos 6/18/2014 8:04:02 AM	1	AF	
Reviewed By: TO 0/0/18/2014		ų	
Chain of Custody			and a second second second second
1 Custody seals intact on sample bottles?	Yes 📋	No	Not Present 🖌
2. Is Chain of Custody complete?	Yes 🖌	No	Not Present
3. How was the sample delivered?	Courier		
login			
A West as attempt mode to cool the complex?	Von M	No	NA
+. vvas an attempt made to cool the samples?	Tes IV.	10.	
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🔽	Noi	NA
6. Sample(s) in proper container(s)?	Yes 🔽	No L.	
7. Sufficient sample volume for indicated test(s)?	Yes 🖌	No	
8. Are samples (except VOA and ONG) properly preserved?	Yes 🖌	No	
9. Was preservative added to bottles?	Yes	No 🗸	NA
10.VOA vials have zero headspace?	Yes	No	No VOA Vials 🖌
11. Were any sample containers received broken?	Yes	No 🗸	# of procession
	1110		bottles checked
12. Does paperwork match bottle labels?	Yes 🖌	No	tor pH: (<2 or >12 unless note
13 Are matrices correctly identified on Chain of Custody?	Yes 🖌	No	Adjusted?
14. Is it clear what analyses were requested?	Yes i	No	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes 🖌	No .	Checked by:
Special Handling (if applicable)			
16. Was client notified of all discrepancies with this order?	Yes	No	NA 🗸
Person Notified: Date:			
By Whom: Via:	eMail	Phone Fax	In Person
Regarding:	and a local definition of the state of the s		
Client Instructions:	and a set of	oper men andren vere en er en	
17. Additional remarks:			
18. Cooler Information			
Cooler No Temp °C Condition Seal Intact Seal No	Seal Date	Signed By	

Vailing	Hain Weg Kell Address	ern fern fern fiel DS b	Refibing binson CR-4990 S.NM 874/3 32-8013	Iurn-Around IIme: □ Standard & Rush <u>48-hr</u> Project Name: Bighi LawaHarm Project #: WR10D5				HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request												
amail o A/QC I Stan Accredi □ NEL □ EDD	amail or Fax#: QA/QC Package: Standard Correditation NELAP Other				Project Manager: AGULLY AGUT Sampler: Brooke HUT On Ice: Ves No Sample Temperature: Z			SE + TPH (Gas only)	(GRO / DRO / MRO)	1418.1)	1504.1)	or 8270 SIMS)	NO ₃ , NO ₂ , PO ₄ , SO ₄)	des / 8082 PCB's		(OA)				Y or N)
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1406814	BTEX + MTE	BTEX + MTE	TPH 8015B	TPH (Method	EDB (Method	PAH'S (8310	Anions (F,CI,	8081 Pesticic	8260B (VOA	8270 (Semi-\				Air Bubbles (
-17-14 -17-14 -17-14	1052	Soil	API Treatment En	407/1 e 402/1	cool	-001 -002				V Z										
						•														
Date:	Time:	Relinguish	ad by:	Received by:		Date Time	Rem	narks	: ,			11	F							
	1410 Time: 1725 necessary,	Rélinquishe Auto samples subr	the Waller nitted to Hall Environmental may be subco	Received by	Valt A O poredited laboratorie	UITIN 1410 Date Time UINILL 0740 es: This serves as notice of this	possib	ehn illity. A		P-contra	s W	Iata will	to De clear		IG ted on	UN the an		fens report.	10	er



July 14, 2014

Ashley Ager Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (970) 946-1093 FAX (505) 632-3911

RE: Bisti Landfarm

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

OrderNo.: 1406816

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/18/2014 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 23, 2014.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. 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,

John Collard

John Caldwell Supervisor 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1406816 Date Reported: 7/14/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. Project: Bisti Landfarm

1406816-001

Lab ID:

Client Sample ID: API Vadose Zone Collection Date: 6/17/2014 11:40:00 AM Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	SE ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/20/2014 9:14:15 PM	13782
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/20/2014 9:14:15 PM	13782
Surr: DNOP	93.5	57.9-140	%REC	1	6/20/2014 9:14:15 PM	13782
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	6/19/2014 12:46:45 PM	13763
Surr: BFB	87.7	80-120	%REC	1	6/19/2014 12:46:45 PM	13763
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.046	mg/Kg	1	6/19/2014 12:46:45 PM	13763
Toluene	ND	0.046	mg/Kg	1	6/19/2014 12:46:45 PM	13763
Ethylbenzene	ND	0.046	mg/Kg	1	6/19/2014 12:46:45 PM	13763
Xylenes, Total	ND	0.093	mg/Kg	1	6/19/2014 12:46:45 PM	13763
Surr: 4-Bromofluorobenzene	99.0	80-120	%REC	1	6/19/2014 12:46:45 PM	13763
EPA METHOD 300.0: ANIONS					Analyst	JRR
Chloride	ND	30	mg/Kg	20	6/19/2014 12:10:28 PM	13786
EPA METHOD 418.1: TPH					Analyst:	JME
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	6/18/2014 12:00:00 PM	13756

Matrix: SOIL

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	od Blank
	E	Value above quantitation range	Н	Holding times for preparation or analys	is exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 1 of 11
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 age 1 01 11
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Analytical Report

Lab Order 1406816

Date Reported: 7/14/2014

Hall Environmental Analysis Laboratory, Inc.

.

 CLIENT:
 Western Refining Southwest, Inc.
 Client Sample ID: East Line Vadose

 Project:
 Bisti Landfarm
 Collection Date: 6/17/2014 11:01:00 AM

 Lab ID:
 1406816-002
 Matrix: SOIL
 Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS		1.4	4	Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/20/2014 9:44:19 PM	13782
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/20/2014 9:44:19 PM	13782
Surr: DNOP	115	57.9-140	%REC	1	6/20/2014 9:44:19 PM	13782
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	6/19/2014 2:17:12 PM	13763
Surr: BFB	86.9	80-120	%REC	1	6/19/2014 2:17:12 PM	13763
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Benzene	ND	0.050	mg/Kg	1	6/19/2014 2:17:12 PM	13763
Toluene	ND	0.050	mg/Kg	1	6/19/2014 2:17:12 PM	13763
Ethylbenzene	ND	0.050	mg/Kg	1	6/19/2014 2:17:12 PM	13763
Xylenes, Total	ND	0.099	mg/Kg	1	6/19/2014 2:17:12 PM	13763
Surr: 4-Bromofluorobenzene	99.6	80-120	%REC	1	6/19/2014 2:17:12 PM	13763
EPA METHOD 300.0: ANIONS					Analyst:	JRR
Chloride	ND	30	mg/Kg	20	6/19/2014 12:47:42 PM	13786
EPA METHOD 418.1: TPH					Analyst:	JME
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	6/18/2014 12:00:00 PM	13756

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	nod Blank		
	Е	Value above quantitation range	Н	Holding times for preparation or analys	is exceeded		
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Dage 2 of 11		
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.			
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit			
	S	Spike Recovery outside accepted recovery limits					

Analytical Report Lab Order 1406816

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/14/2014
Client Sample ID: West Line Vadose

CLIENT: Western Refining Southwest, Inc. **Project:** Bisti Landfarm

1406816-003

Lab ID:

Client Sample ID: West Line Vadose Collection Date: 6/17/2014 10:37:00 AM Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RAN	GE ORGANICS		a she a		Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/20/2014 10:14:16 PM	13782
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/20/2014 10:14:16 PM	13782
Surr: DNOP	92.8	57.9-140	%REC	1	6/20/2014 10:14:16 PM	13782
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	6/19/2014 3:47:47 PM	13763
Surr: BFB	97.3	80-120	%REC	1	6/19/2014 3:47:47 PM	13763
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Benzene	ND	0.048	mg/Kg	1	6/19/2014 3:47:47 PM	13763
Toluene	ND	0.048	mg/Kg	1	6/19/2014 3:47:47 PM	13763
Ethylbenzene	ND	0.048	mg/Kg	1	6/19/2014 3:47:47 PM	13763
Xylenes, Total	ND	0.097	mg/Kg	1	6/19/2014 3:47:47 PM	13763
Surr: 4-Bromofluorobenzene	114	80-120	%REC	1	6/19/2014 3:47:47 PM	13763
EPA METHOD 300.0: ANIONS					Analyst:	JRR
Chloride	ND	30	mg/Kg	20	6/19/2014 1:00:07 PM	13786
EPA METHOD 418.1: TPH					Analyst:	JME
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	6/18/2014 12:00:00 PM	13756

Matrix: SOIL

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	nod Blank
	E	Value above quantitation range	Н	Holding times for preparation or analys	is exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 3 of 11
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 age 5 01 11
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Analy	vtical	Report	
211661	y urcar	INCOULD	

Lab Order 1406816

Date Reported: 7/14/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. Project: Bisti Landfarm

1406816-004

-

-

Lab ID:

Client Sample ID: Bisti Vadose Zone Collection Date: 6/17/2014 11:22:00 AM Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS		1.5		Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/20/2014 10:44:00 PM	13782
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/20/2014 10:44:00 PM	13782
Surr: DNOP	97.4	57.9-140	%REC	1	6/20/2014 10:44:00 PM	13782
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/19/2014 4:17:55 PM	13763
Surr: BFB	87.0	80-120	%REC	1	6/19/2014 4:17:55 PM	13763
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.049	mg/Kg	1	6/19/2014 4:17:55 PM	13763
Toluene	ND	0.049	mg/Kg	1	6/19/2014 4:17:55 PM	13763
Ethylbenzene	ND	0.049	mg/Kg	1	6/19/2014 4:17:55 PM	13763
Xylenes, Total	ND	0.098	mg/Kg	1	6/19/2014 4:17:55 PM	13763
Surr: 4-Bromofluorobenzene	99.6	80-120	%REC	1	6/19/2014 4:17:55 PM	13763
EPA METHOD 300.0: ANIONS					Analyst	JRR
Chloride	ND	30	mg/Kg	20	6/19/2014 1:12:31 PM	13786
EPA METHOD 418.1: TPH					Analyst	JME
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	6/18/2014 12:00:00 PM	13756

Matrix: SOIL

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	od Blank
	Е	Value above quantitation range	H	Holding times for preparation or analys	is exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 4 of 1
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 age 4 01 11
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Analytical Report Lab Order 1406816

Date Reported: 7/14/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. Project: Bisti Landfarm

1406816-005

Lab ID:

Client Sample ID: Pettigrew Vadose Zone Collection Date: 6/17/2014 11:50:00 AM Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RAN	GE ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/20/2014 11:14:02 PM	13782
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/20/2014 11:14:02 PM	13782
Surr: DNOP	95.6	57.9-140	%REC	1	6/20/2014 11:14:02 PM	13782
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	6/19/2014 4:47:59 PM	13763
Surr: BFB	96.2	80-120	%REC	1	6/19/2014 4:47:59 PM	13763
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.047	mg/Kg	1	6/19/2014 4:47:59 PM	13763
Toluene	ND	0.047	mg/Kg	1	6/19/2014 4:47:59 PM	13763
Ethylbenzene	ND	0.047	mg/Kg	1	6/19/2014 4:47:59 PM	13763
Xylenes, Total	ND	0.093	mg/Kg	1	6/19/2014 4:47:59 PM	13763
Surr: 4-Bromofluorobenzene	112	80-120	%REC	1	6/19/2014 4:47:59 PM	13763
EPA METHOD 300.0: ANIONS					Analyst	JRR
Chloride	120	30	mg/Kg	20	6/19/2014 1:24:55 PM	13786
EPA METHOD 418.1: TPH					Analyst	JME
Petroleum Hydrocarbons, TR	21	20	mg/Kg	1	6/18/2014 12:00:00 PM	13756

Matrix: SOIL

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	od Blank
	E	Value above quantitation range	Н	Holding times for preparation or analys	is exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 5 of 11
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 420 5 01 11
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

WO#: 1406816 14-Jul-14

Client: Project:	Weste Bisti I	ern Refining Southwest, Inc. Landfarm				
Sample ID	MB-13786	SampType: MBLK	TestCode: EPA Method	300.0: Anions		-
Client ID:	PBS	Batch ID: 13786	RunNo: 19409			
Prep Date:	6/19/2014	Analysis Date: 6/19/2014	SeqNo: 561447	Units: mg/Kg		
Analyte		Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit	Qual
Chloride	Actes .	ND 1.5			Sec. Sec. 1	104
Sample ID	LCS-13786	SampType: LCS	TestCode: EPA Method	300.0: Anions	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
Client ID:	LCSS	Batch ID: 13786	RunNo: 19409			
Prep Date:	6/19/2014	Analysis Date: 6/19/2014	SeqNo: 561448	Units: mg/Kg		
Analyte		Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit	Qual
Chloride	Contraction of the	14 1.5 15.00	0 92.9 90	110	N 1 1 1 1 1 1	1 TOWN CON

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 6 of 11

WO#: 1406816

14-Jul-14

Client: Wester Project: Bisti La	n Refining Southwest, Inc. andfarm
Sample ID MB-13756	SampType: MBLK TestCode: EPA Method 418.1: TPH
Client ID: PBS	Batch ID: 13756 RunNo: 19338
Prep Date: 6/18/2014	Analysis Date: 6/18/2014 SeqNo: 559119 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Petroleum Hydrocarbons, TR	ND 20
Sample ID LCS-13756	SampType: LCS TestCode: EPA Method 418.1: TPH
Client ID: LCSS	Batch ID: 13756 RunNo: 19338
Prep Date: 6/18/2014	Analysis Date: 6/18/2014 SeqNo: 559120 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Petroleum Hydrocarbons, TR	81 20 100.0 0 81.1 80 120
Sample ID LCSD-13756	SampType: LCSD TestCode: EPA Method 418.1: TPH
Client ID: LCSS02	Batch ID: 13756 RunNo: 19338
Prep Date: 6/18/2014	Analysis Date: 6/18/2014 SeqNo: 559121 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Petroleum Hydrocarbons, TR	87 20 100.0 0 86.6 80 120 6.58 20

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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WO#: 1406816 14-Jul-14

Client: Western Project: Bisti La	n Refining S andfarm	outhwe	st, Inc.								
Sample ID MB-13782	ype: MI	BLK	Tes	tCode: E	PA Method	8015D: Dies	el Range (Organics			
Prep Date: 6/19/2014	Analysis Date: 6/19/2014			SeqNo: 560583			Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10						1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	1000	115	
Motor Oil Range Organics (MRO)	ND	50									
Surr: DNOP	8.0	14	10.00		80.0	57.9	140			and and	
Sample ID LCS-13782	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015D: Dies	el Range (Organics	6 23	
Client ID: LCSS	Batcl	n ID: 13	782	F	RunNo: 1	9372					
Prep Date: 6/19/2014	014 Analysis Date: 6/19/2014		SeqNo: 560584			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	49	10	50.00	0	97.1	60.8	145	14.240			
Surr: DNOP	4.0		5.000		80.7	57.9	140				

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 8 of 11

and the

WO#:	140681

14-Jul-14

Client: Project:	Western Bisti Lan	Refining S dfarm	Southwe	est, Inc.									
Sample ID	MB-13763	Samp	Гуре: М	BLK	Tes	tCode: E	PA Method	8015D: Gas	oline Rang	je			
Client ID:	PBS	Batc	h ID: 13	763	F	RunNo: 1	9378						
Prep Date:	6/18/2014	Analysis [Date: 6	/19/2014	5	SeqNo: 5	61044	Units: mg/l	Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Rang Surr: BFB	ge Organics (GRO)	ND 940	5.0	1000		94.0	80	120					
Sample ID	LCS-13763	Samp	Type: LC	cs	Tes	tCode: E	PA Method	8015D: Gas	oline Rang	je			
Client ID:	LCSS	Batc	h ID: 13	763	RunNo: 19378								
Prep Date:	6/18/2014	Analysis D	Date: 6	/19/2014	5	SeqNo: 5	61045	Units: mg/l	Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Rang	ge Organics (GRO)	26	5.0	25.00	0	102	71.7	134	-				
Surr: BFB		980		1000		98.0	80	120			1.10		
Sample ID	1406816-001AMS	Samp	Гуре: М	S	Tes	tCode: E	PA Method	8015D: Gas	oline Rang	je	Sec. Sugar		
Client ID:	API Vadose Zone	Batc	h ID: 13	763	F	RunNo: 1	9378						
Prep Date:	6/18/2014	Analysis D	Date: 6	/19/2014	5	SeqNo: 5	61049	Units: mg/l	Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Rang	e Organics (GRO)	26	4.6	23.15	0	114	71.8	132					
Surr: BFB		940		925.9		101	80	120					
Sample ID	1406816-001AMS	Samp1	Гуре: М	SD	Tes	tCode: E	PA Method	8015D: Gas	oline Rang	le			
Client ID:	API Vadose Zone	Batcl	h ID: 13	763	F	RunNo: 1	9378						
Prep Date:	6/18/2014	Analysis E	Date: 6	/19/2014	5	SeqNo: 5	61050	Units: mg/l	Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Rang	e Organics (GRO)	26	4.6	23.13	0	111	71.8	132	2.58	20			
Surr: BFB		970		925.1		105	80	120	0	0			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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WO#: 1406816 14-Jul-14

Client: Project:	Western H Bisti Lano	Refining S dfarm	outhwe	st, Inc.										
Sample ID	MB-13763	SampT	ype: MI	BLK	TestCode: EPA Method 8021B: Volatiles									
Client ID:	t ID: PBS Batch ID: 13763					RunNo: 1	9378							
Prep Date:	6/18/2014	Analysis D	Date: 6	/19/2014	:	SeqNo: 5	61065	Units: mg/k	(g					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Methyl tert-buty	l ether (MTBE)	ND	0.10				183 C 183		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		e aller			
Benzene		ND	0.050											
Toluene		ND	0.050											
thylbenzene		ND	0.050											
(ylenes, Total		ND	0.10											
Surr: 4-Brom	ofluorobenzene	1.1	.8.	1.000		111	80	120	. Artal	C. A. S. A.				
Sample ID	LCS-13763	SampT	ype: LC	s	Tes	stCode: E	PA Method	8021B: Vola	tiles		1820			
Client ID:	LCSS	Batch	h ID: 13	763	F	RunNo: 1	9378							
Prep Date:	6/18/2014	Analysis D	Date: 6	/19/2014	5	SeqNo: 5	61066	Units: mg/k	(g					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Methyl tert-butyl	l ether (MTBE)	1.1	0.10	1.000	0	107	80	120	AL PUM	Charles Carl				
Benzene		0.99	0.050	1.000	0	98.6	80	120						
Toluene		0.96	0.050	1.000	0	95.5	80	120						
Ethylbenzene		0.95	0.050	1.000	0	95.2	80	120						
kylenes, Total		3.0	0.10	3.000	0	99.9	80	120						
Surr: 4-Brome	ofluorobenzene	1.0		1.000		102	80	120						
Sample ID	1406816-002AMS	SampT	уре: М	S	Tes	tCode: E	PA Method	8021B: Vola	tiles	1.257				
Client ID:	East Line Vadose	Batch	n ID: 13	763	F									
Prep Date:	6/18/2014	Analysis D	Date: 6/	/19/2014	SeqNo: 561070			Units: mg/k	٢g					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
lethyl tert-butyl	l ether (MTBE)	1.1	0.099	0.9891	0	108	73.2	146		A Stan	A BAR			
Benzene		1.0	0.049	0.9891	0	101	77.4	142						
oluene		0.98	0.049	0.9891	0.02314	96.9	77	132						
Ethylbenzene		1.0	0.049	0.9891	0	102	77.6	134						
Kylenes, Total		3.2	0.099	2.967	0.05204	105	77.4	132						
Surr: 4-Bromo	ofluorobenzene	0.90		0.9891		90.9	80	120		States &	1			
Sample ID	1406816-002AMSE	SampT	ype: MS	SD	Tes	tCode: E	PA Method	8021B: Vola	tiles	1 12- 201				
Client ID:	East Line Vadose	Batch	n ID: 13	763	F	RunNo: 1	9378							
Pren Date	6/18/2014	Analysis D	ate: 6/	19/2014	5	SeqNo: 561071 Units: mg/Kg								
ricp Date.		Dequilt	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Analyte		Result	1 44					1.10						
Analyte Nethyl tert-butyl	ether (MTBE)	1.1	0.099	0.9911	0	107	73.2	146	1.29	21				
Analyte Methyl tert-butyl Benzene	ether (MTBE)	1.1 1.0	0.099	0.9911 0.9911	0 0	107 102	73.2 77.4	146 142	1.29 1.54	21 20				
Analyte Methyl tert-butyl Benzene Foluene	ether (MTBE)	1.1 1.0 0.99	0.099 0.050 0.050	0.9911 0.9911 0.9911	0 0 0.02314	107 102 98.0	73.2 77.4 77	146 142 132	1.29 1.54 1.28	21 20 20				

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Page 10 of 11

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: 1406816

14-Jul-14

Client: Project:	Western F Bisti Lanc	Refining S Ifarm	outhwe	est, Inc.							
Sample ID	1406816-002AMSD	Samp1	ype: M	SD	Tes	tCode: E	PA Method	8021B: Vola	tiles		Sarah
Client ID:	East Line Vadose	Batcl	n ID: 13	763	F	RunNo: 1	9378				
Prep Date: 6/18/2014		Analysis Date: 6/19/2014			S	SeqNo: 5	61071	Units: mg/h	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Kylenes, Total		3.2	0.099	2.973	0.05204	104	77.4	132	0.341	20	
Surr 4-Brom	ofluorobenzene	10		0 9911		106	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory 4901 Hawkins NE Sample Log-In Check List Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com Western Refining Southw Work Order Number: 1406816 RcptNo: 1 Client Name: 8 Received by/date: 6/18/2014 7:40:00 AM Ashley Gallegos Logged By: Completed By: Ashley Gallegos 6/18/2014 8:08:36 AM Reviewed By: 201 TO Chain of Custody Not Present V Yes No 1 Custody seals intact on sample bottles? Yes V No Not Present 2. Is Chain of Custody complete? 3. How was the sample delivered? Courier Log In No NA 4. Was an attempt made to cool the samples? Yes 🖌 NA No 5. Were all samples received at a temperature of >0° C to 6.0°C Yes V Yes V No 6. Sample(s) in proper container(s)? No 7. Sufficient sample volume for indicated test(s)? Yes No 8. Are samples (except VOA and ONG) properly preserved? Yes V Yes No NA V 9. Was preservative added to bottles? 10.VOA vials have zero headspace? Yes No 1 No VOA Vials . 1_1 11. Were any sample containers received broken? Yes No # of preserved bottles checked for pH: Yes V 12. Does paperwork match bottle labels? No (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? 13. Are matrices correctly identified on Chain of Custody? Yes V No 14. Is it clear what analyses were requested? No V Yes Checked by: No 15. Were all holding times able to be met? Yes ~ (If no, notify customer for authorization.) Special Handling (if applicable) Yes 6. Was client notified of all discrepancies with this order? No NA V Person Notified: Date: By Whom: Phone In Person Via: eMail Fax Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information Cooler No Temp C Condition Seal Intact Seal No Seal Date Signed By 2.1 Good Yes Page 1 of 1

lient: Western Refining				Standard	🗆 Rush	48-hr turn		ANALYSIS LABORATORY									
	Kelly Ro	binson		Project Name: www.hallenvironmental.com													
tailing Ad	dress:		111 CR 4990	Bisti Landfar	4901 Hawkins NE - Albuquerque NM 87109												
	Bloomfi	eld, NM 8	7413	Project #:		Aut direction of the second	Tel 505-345-3975 Eex 505-345-4107										
hone #: 505-632-8013			-8013	WR1005			Analysis Request										
mail or Fa	ax#:	kelly.robi	inson@wnr.com	Project Mana	iger:	Tet 2 and 2		3	12					1			
AVQC Pac Standar	kage: d		Level 4 (Full Validation)	Ashley Ager													
CCreditation	on:	Other		Sampler:	Brooke Herb							121			or N)		
1 EDD (T	ype)				ati di Serbahan Serbah						1.20				E		
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservativ e Type		TPH - 8015								Air Bubbles		
/17/2014	1140	soil	API Vadose Zone	4 oz/2	cool	-001	~										
/17/2014	IOI	1	East Line Vadose Zone	4 oz/2	cool	-002	1										
/17/2014	1037		West Line Vadose Zone	4 07/2	cool		1				++						
/17/2014	1122		Bisti Vadose Zone	4 oz/2	cool	-004	1				++				1 2		
/17/2014	1150	V	Pettigrew Vadose Zone	4 oz/2	cool	-005	17				+						
											++						
		Sec.							Res Prof								
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				19.19.11	6.00				1.1					5.			
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ate: Time: Belinquished by:			ed hy:	Received by: Date Time				Remarks:									
ate:	Time: 1725	Relinquish	the fi) aller	Received by:	the o	Date Time	piea	se copy		େ ଘଣ୍ଡାମ	eneriv						
♥ lfr	ecessary,	samples subm	litted to Hall Environmental may be sub	contracted to other a	ccredited laborator	les. This serves as notice of	this poss	sibility. Any	sub-contrac	ted data wi	il be clear	ly notated on	the analyti	cal report			
lient:	lient: Western Refining			Standard					ANALYSIS LABORATORY								
-------------------------	-------------------------------------------------	----------------	-----------------------------------------	------------------------------------------------------------------------------------------	-----------------------	-------------------------------------------------	------------------------------------------------------	----------------	---------------------------------------------------------------------------	--	--	--	--	--			
	Kelly R	obinson		Project Name	e:		www.hallenvironmental.com										
lailing Ad	dress:	and the second	111 CR 4990	Bisti Landfar	m		4901 Hawkins NE - Albuquerque, NM 87109										
	Bloomfi	eld, NM 8	7413	Project #: WR1005				Te	el. 505-345-3975 Fax 505-345-4107								
hone #:	1992 34-	505-632-	8013						Analysis Request								
mail or Fa	x#:	kelly.robi	nson@wnr.com	Project Mana	ager:												
A/QC Pac	VQC Package: Standard			Ashley Ager			E)										
ccreditati				Sampler:	Brooke Herb	Levies a super-	MTB		\hat{z}								
I NELAP	(00)	□ Other_					l ou)	6									
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservativ e Type		BTEX - 8021	Chloride (300.	Air Bubbles (Y								
/17/2014	1140	soil	API Vadose Zone	4 oz/2	cool	-001	V										
/17/2014	101	1	East Line Vadose Zone	4 oz/2	cool	-002	V	V									
/17/2014	10:37		West Line Vadose Zone	4 oz/2	cool	-003	N										
/17/2014	1122		Bisti Vadose Zone	4 oz/2	cool	-014	V	V									
/17/2014	1150	V	Pettigrew Vadose Zone	4 oz/2	cool	-015	~	1									
7/14	TEH-																
ator	Time:	Dolinguigh	huil of		Sat 1			1									
17/14 ate: [17]14	17/14/4/10 AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA			Received by: Date Time <u>Annt Laux</u> <u>4/17/14/14/0</u> Received by: Date Time			Remarks: — please copy results to aager@ltenv.com										
lf n	ecessary, s	samples subm	itted to Hall Environmental may be subo	contracted to other a	ccredited laborator	HOLIG O' 190 ies. This serves as notice of t	L this pos	sibility.	Any sub-contracted data will be clearly notated on the analytical report.								

and panel sense frages house being

lient:	Western	Refining		□ Standard	Standard X Rush 48-hr turn							SIS LABORATORY						
	Kelly Ro	binson		Project Name	9:			www.hallenvironmental.com										
lailing Add	iress:	Sec. Mar	111 CR 4990	Bisti Landfarm Project #: WR1005				4901 Hawkins NE - Albuquerque, NM 87109										
8. 10	Bloomfie	eld, NM 87	/413					Tel.	505-34	5-3975	Fax	c 505-	345-410	7				
hone #:		505-632-	8013					Analysis Request										
mail or Fa	x#:	kelly.robi	nson@wnr.com	Project Mana	ger:					Sale Sale								
A/QC Pack (Standard	/QC Package: Standard			Ashley Ager	e Marine instanti													
ccreditatio	on:	Other_		Sampler: Brooke Herb												or N)		
EDD (T)	/pe)			San Lines	ik 14. Marina da Caral I - 440					N.					2	3		
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservativ e Type		TPH - 418.									Air Bubbles		
/17/2014	1140	soil	API Vadose Zone	4 oz/2	cool	-001	X											
/17/2014	101		East Line Vadose Zone	4 oz/2	cool	-002	X											
/17/2014	1037	10.001	West Line Vadose Zone	4 oz/2	cool	-003	X											
/17/2014	1122		Bisti Vadose Zone	4 oz/2	cool	-004	X								20			
/17/2014	1150		Pettigrew Vadose Zone	4 oz/2	cool	-005	X											
		1																
		1997 (1997) 1979 (1997)		State State														
ate: 17114 ate:	Time: 14/0 Time:	Relinquish Relinquish	ADY:	Received by:	Last	Date Time <u>4/17/14)410</u> Date Time	Rer plea	narks:	y resul	ts to aa	ger@lt	env.co	i i m	<u> </u>				



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

October 06, 2014

Kelly Robinson Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (505) 632-4166 FAX (505) 632-3911

RE: Bisti Landfarm Vadose Zone Sampling

OrderNo.: 1409F04

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/30/2014 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1409F04 Date Reported: 10/6/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT:Western Refining Southwest, Inc.Project:Bisti Landfarm Vadose Zone SamplingLab ID:1409F04-001Matrix: SOIL

Client Sample ID: West line Vadose Zone Collection Date: 9/29/2014 12:46:00 PM Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL Q	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	10/1/2014 11:51:59 PM	15586
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	10/1/2014 11:51:59 PM	15586
Surr: DNOP	98.2	57.9-140	%REC	1	10/1/2014 11:51:59 PM	15586
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	10/1/2014 11:30:36 PM	15622
Surr: BFB	91.2	80-120	%REC	1	10/1/2014 11:30:36 PM	15622
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.046	mg/Kg	1	10/1/2014 11:30:36 PM	15622
Toluene	ND	0.046	mg/Kg	1	10/1/2014 11:30:36 PM	15622
Ethylbenzene	ND	0.046	mg/Kg	1	10/1/2014 11:30:36 PM	15622
Xylenes, Total	ND	0.093	mg/Kg	1	10/1/2014 11:30:36 PM	15622
Surr: 4-Bromofluorobenzene	95.2	80-120	%REC	1	10/1/2014 11:30:36 PM	15622
EPA METHOD 300.0: ANIONS					Analyst	LGP
Chloride	ND	30	mg/Kg	20	10/2/2014 8:00:47 PM	15687
EPA METHOD 418.1: TPH					Analyst	BCN
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	10/2/2014 5:00:00 PM	15615

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	od Blank		
	Е	Value above quantitation range	Н	Holding times for preparation or analysis exceeded			
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 1 of 10		
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	I age I OI IO		
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit			
	S	Spike Recovery outside accepted recovery limits					

Analytical Report Lab Order 1409F04

Date Reported: 10/6/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT:Western Refining Southwest, Inc.Project:Bisti Landfarm Vadose Zone SamplingLab ID:1409F04-002Matrix: SOIL

Client Sample ID: East line Vadose Zone Collection Date: 9/29/2014 2:05:00 PM Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE O	RGANICS				Analyst:	BCN
Diesel Range Organics (DRO)	25	9.9	mg/Kg	1	10/2/2014 12:13:15 AM	15586
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	10/2/2014 12:13:15 AM	15586
Surr: DNOP	111	57.9-140	%REC	1	10/2/2014 12:13:15 AM	15586
EPA METHOD 8015D: GASOLINE RANG	E				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	10/1/2014 11:59:07 PM	15622
Surr: BFB	91.7	80-120	%REC	1	10/1/2014 11:59:07 PM	15622
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Benzene	ND	0.048	mg/Kg	1	10/1/2014 11:59:07 PM	15622
Toluene	ND	0.048	mg/Kg	1	10/1/2014 11:59:07 PM	15622
Ethylbenzene	ND	0.048	mg/Kg	1	10/1/2014 11:59:07 PM	15622
Xylenes, Total	ND	0.096	mg/Kg	1	10/1/2014 11:59:07 PM	15622
Surr: 4-Bromofluorobenzene	95.5	80-120	%REC	1	10/1/2014 11:59:07 PM	15622
EPA METHOD 300.0: ANIONS					Analyst:	LGP
Chloride	ND	30	mg/Kg	20	10/2/2014 9:02:50 PM	15687
EPA METHOD 418.1: TPH					Analyst:	BCN
Petroleum Hydrocarbons, TR	96	20	mg/Kg	1	10/2/2014 5:00:00 PM	15615

	1000						
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	iated Method Blank		
	Е	Value above quantitation range	Н	Holding times for preparation or analys	is exceeded		
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 2 of 10		
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 age 2 01 10		
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit			
	S	Spike Recovery outside accepted recovery limits					

Analytical Report Lab Order 1409F04

Date Reported: 10/6/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT:Western Refining Southwest, Inc.Project:Bisti Landfarm Vadose Zone SamplingLab ID:1409F04-003Matrix: SOIL

Client Sample ID: Bisti Vadose Zone Collection Date: 9/29/2014 1:01:00 PM Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGI	ORGANICS			and a second and a s	Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	10/2/2014 12:34:45 AM	15586
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	10/2/2014 12:34:45 AM	15586
Surr: DNOP	98.9	57.9-140	%REC	1	10/2/2014 12:34:45 AM	15586
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	10/2/2014 12:27:49 AM	15622
Surr: BFB	91.7	80-120	%REC	1	10/2/2014 12:27:49 AM	15622
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.049	mg/Kg	1	10/2/2014 12:27:49 AM	15622
Toluene	ND	0.049	mg/Kg	1	10/2/2014 12:27:49 AM	15622
Ethylbenzene	ND	0.049	mg/Kg	1	10/2/2014 12:27:49 AM	15622
Xylenes, Total	ND	0.098	mg/Kg	1	10/2/2014 12:27:49 AM	15622
Surr: 4-Bromofluorobenzene	95.0	80-120	%REC	1	10/2/2014 12:27:49 AM	15622
EPA METHOD 300.0: ANIONS					Analyst	LGP
Chloride	ND	30	mg/Kg	20	10/2/2014 9:15:15 PM	15687
EPA METHOD 418.1: TPH					Analyst	BCN
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	10/2/2014 5:00:00 PM	15615

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	od Blank
	E	Value above quantitation range	Н	Holding times for preparation or analys	is exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 3 of 10
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 age 5 01 10
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Analytical Report

Lab Order 1409F04

Date Reported: 10/6/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.Project:Bisti Landfarm Vadose Zone SamplingLab ID:1409F04-004Matrix: SOIL

Client Sample ID: Pettigrew Vadose Zone Collection Date: 9/29/2014 1:50:00 PM Received Date: 9/30/2014 7:00:00 AM

Result	RL (Qual Units	DF	Date Analyzed	Batch
ORGANICS		and the second	1. er sje	Analyst	BCN
ND	9.9	mg/Kg	1	10/2/2014 12:56:03 AM	15586
ND	49	mg/Kg	1	10/2/2014 12:56:03 AM	15586
95.3	57.9-140	%REC	1	10/2/2014 12:56:03 AM	15586
GE				Analyst	NSB
ND	4.8	mg/Kg	1	10/2/2014 12:56:29 AM	15622
90.7	80-120	%REC	1	10/2/2014 12:56:29 AM	15622
				Analyst	NSB
ND	0.048	mg/Kg	1	10/2/2014 12:56:29 AM	15622
ND	0.048	mg/Kg	1	10/2/2014 12:56:29 AM	15622
ND	0.048	mg/Kg	1	10/2/2014 12:56:29 AM	15622
ND	0.096	mg/Kg	1	10/2/2014 12:56:29 AM	15622
93.4	80-120	%REC	1	10/2/2014 12:56:29 AM	15622
				Analyst	LGP
780	30	mg/Kg	20	10/2/2014 9:27:40 PM	15687
				Analyst	BCN
ND	20	mg/Kg	1	10/2/2014 5:00:00 PM	15615
	Result ORGANICS ND 95.3 GE ND 90.7 ND ND ND ND 93.4 780 ND	Result RL Q ORGANICS ND 9.9 ND 49 95.3 95.3 57.9-140 GE MD 4.8 90.7 GE ND 4.8 ND 4.8 90.7 ND 0.048 ND ND 30 30 ND 20 30	Result RL Qual Units ORGANICS	Result RL Qual Units DF ORGANICS 9.9 mg/Kg 1 ND 49 mg/Kg 1 95.3 57.9-140 %REC 1 GE ND 4.8 mg/Kg 1 90.7 80-120 %REC 1 ND 0.048 mg/Kg 1 ND 0.096 mg/Kg 1 ND 0.096 mg/Kg 1 93.4 80-120 %REC 1 780 30 mg/Kg 1 ND 20 mg/Kg 1	Result RL Qual Units DF Date Analyzed ORGANICS Analyst Analyst Analyst ND 9.9 mg/Kg 1 10/2/2014 12:56:03 AM ND 49 mg/Kg 1 10/2/2014 12:56:03 AM 95.3 57.9-140 %REC 1 10/2/2014 12:56:03 AM 95.3 57.9-140 %REC 1 10/2/2014 12:56:03 AM GE Analyst Analyst ND 4.8 mg/Kg 1 10/2/2014 12:56:29 AM 90.7 80-120 %REC 1 10/2/2014 12:56:29 AM ND 0.048 mg/Kg 1 10/2/2014 12:56:29 AM 93.4 80-120 %REC 1

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank		
	E	Value above quantitation range	Н	is exceeded		
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 1 of 10	
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.		
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		
	S	Spike Recovery outside accepted recovery limits				

Analytical Report Lab Order 1409F04

Hall Environmental Analysis Laboratory, Inc.

Bisti Landfarm Vadose Zone Sampling

CLIENT: Western Refining Southwest, Inc.

1409F04-005

Project:

Lab ID:

Date Reported: 10/6/2014 Client Sample ID: API Vadose Zone Collection Date: 9/29/2014 1:20:00 PM

Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS		and the second	Cole of State	Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	10/2/2014 1:17:31 AM	15586
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	10/2/2014 1:17:31 AM	15586
Surr: DNOP	97.9	57.9-140	%REC	1	10/2/2014 1:17:31 AM	15586
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	10/2/2014 1:25:06 AM	15622
Surr: BFB	91.1	80-120	%REC	1	10/2/2014 1:25:06 AM	15622
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.048	mg/Kg	1	10/2/2014 1:25:06 AM	15622
Toluene	ND	0.048	mg/Kg	1	10/2/2014 1:25:06 AM	15622
Ethylbenzene	ND	0.048	mg/Kg	1	10/2/2014 1:25:06 AM	15622
Xylenes, Total	ND	0.097	mg/Kg	1	10/2/2014 1:25:06 AM	15622
Surr: 4-Bromofluorobenzene	94.1	80-120	%REC	1	10/2/2014 1:25:06 AM	15622
EPA METHOD 300.0: ANIONS					Analyst	LGP
Chloride	2300	75	mg/Kg	50	10/3/2014 11:14:14 PM	15687
EPA METHOD 418.1: TPH					Analyst	BCN
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	10/2/2014 5:00:00 PM	15615

Matrix: SOIL

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	nod Blank
	E	Value above quantitation range	Н	Holding times for preparation or analys	is exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 5 of 10
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 450 5 01 10
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

WO#: 1409F04 06-Oct-14

Hall Environmental Analysis Laboratory, Inc.

Client: Wester Project: Bisti I	ern Refining Southwest, Inc. Landfarm Vadose Zone Sampling
Sample ID MB-15687 Client ID: PBS Prep Date: 10/2/2014	SampType: MBLK TestCode: EPA Method 300.0: Anions Batch ID: 15687 RunNo: 21637 Analysis Date: 10/2/2014 SegNo: 634672 Units: mg/Kg
Analyte Chloride	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual ND 1.5
Sample ID LCS-15687 Client ID: LCSS	SampType: LCS TestCode: EPA Method 300.0: Anions Batch ID: 15687 RunNo: 21637
Prep Date: 10/2/2014 Analyte	Analysis Date: 10/2/2014 SeqNo: 634673 Units: mg/Kg Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14 1.5 15.00 0 94.4 90 110

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#:	1409F04

06-Oct-14

Client:WesterProject:Bisti L	m Refining Southwest, Inc. andfarm Vadose Zone Sampling	9		
Sample ID MB-15615	SampType: MBLK	TestCode: EPA Method	I 418.1: TPH	
Client ID: PBS	Batch ID: 15615	RunNo: 21611		
Prep Date: 9/30/2014	Analysis Date: 10/2/2014	SeqNo: 634865	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Petroleum Hydrocarbons, TR	ND 20			
Sample ID LCS-15615	SampType: LCS	TestCode: EPA Method	I 418.1: TPH	She the
Client ID: LCSS	Batch ID: 15615	RunNo: 21611		
Prep Date: 9/30/2014	Analysis Date: 10/2/2014	SeqNo: 634866	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Petroleum Hydrocarbons, TR	110 20 100.0	0 112 80	120	
Sample ID LCSD-15615	SampType: LCSD	TestCode: EPA Method	418.1: TPH	
Client ID: LCSS02	Batch ID: 15615	RunNo: 21611		
Prep Date: 9/30/2014	Analysis Date: 10/2/2014	SeqNo: 634867	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Petroleum Hydrocarbons, TR	120 20 100.0	0 117 80	120 3.86	20

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory, Inc.

WO#: 1409F04

06-Oct-14

Client:WesternProject:Bisti La	n Refining Southwest, Inc. Indfarm Vadose Zone Sampling	7		
Sample ID MB-15586	SampType: MBLK	TestCode: EPA Method	8015D: Diesel Range Organics	
Client ID: PBS Prep Date: 9/29/2014	Batch ID: 15586 Analysis Date: 10/1/2014	RunNo: 21573 SeqNo: 633322	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit	Qual
Diesel Range Organics (DRO)	ND 10			
Notor Oil Range Organics (MRO)	ND 50			
Surr: DNOP	9.1 10.00	91.4 57.9	140	Con St.
Sample ID LCS-15586	SampType: LCS	TestCode: EPA Method	8015D: Diesel Range Organics	1. 1. N. 1.
Client ID: LCSS	Batch ID: 15586	RunNo: 21573		
Prep Date: 9/29/2014	Analysis Date: 10/1/2014	SeqNo: 633323	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit	Qual
Diesel Range Organics (DRO)	51 10 50.00	0 103 68.6	130	Mar In
Surr: DNOP	4.7 5.000	94.3 57.9	140	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#: 1409F04

06-Oct-14

Client:	Western	Refining South	nwest, Inc.							
Project:	Bisti Lan	dfarm Vadose	Zone Samplin	g		1.00	No. Sta			
Sample ID	MB-15622	SampType:	MBLK	Tes	tCode: EPA	Method	8015D: Gaso	line Rang	le	45
Client ID:	PBS	Batch ID:	15622	F	RunNo: 2158	87				
Prep Date:	9/30/2014	Analysis Date:	10/1/2014	5	SeqNo: 6320	616	Units: mg/K	g		
Analyte		Result PO	QL SPK value	SPK Ref Val	%REC L	owLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	e Organics (GRO)	ND 900	5.0 1000		89.8	80	120			
Sample ID	LCS-15622	SampType:	LCS	Tes	tCode: EPA	Method	8015D: Gaso	line Rang	e	123
Client ID:	LCSS	Batch ID:	15622	F	RunNo: 2158	87				
Prep Date:	9/30/2014	Analysis Date:	10/1/2014	S	SeqNo: 6326	617	Units: mg/K	g		
Analyte	in the second	Result PC	QL SPK value	SPK Ref Val	%REC L	owLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	28	5.0 25.00	0	111	65.8	139			199
Surr: BFB	the states in	970	1000		97.2	80	120			1 2
Sample ID	5ML RB	SampType:	MBLK	Tes	tCode: EPA	Method	8015D: Gaso	line Rang	е	15 10
Client ID:	PBS	Batch ID:	R21610	F	RunNo: 2161	10				
Prep Date:		Analysis Date:	10/2/2014	S	eqNo: 6344	458	Units: %RE	С		
Analyte		Result PC	L SPK value	SPK Ref Val	%REC L	owLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	870	1000		87.3	80	120			
Sample ID	2.5UG GRO LCS	SampType:	LCS	Tes	tCode: EPA	Method	8015D: Gaso	line Rang	e	1
Client ID:	LCSS	Batch ID:	R21610	F	aunNo: 2161	10				
Prep Date:		Analysis Date:	10/2/2014	S	eqNo: 6344	459	Units: %RE	С		
Analyte		Result PC	L SPK value	SPK Ref Val	%REC L	owLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		970	1000		97.1	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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on Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: 1409F04

06-Oct-14

Sample ID MB-15622	Samp	Гуре: МІ	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batc	h ID: 15	622	F	RunNo: 2	1587				
Prep Date: 9/30/2014	Analysis [Date: 1	0/1/2014	5	SeqNo: 6	32648	Units: mg/k	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050		5. A	Course of	Sec. 1				and and
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Kylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000	1. SEX 10	94.7	80	120		and the state	a profil
Sample ID LCS-15622	Samp	Type: LC	s	Tes	tCode: E	PA Method	8021B: Volat	tiles	Markey.	3 5.4
Client ID: LCSS	Batc	h ID: 15	622	F	RunNo: 2	1587				
Prep Date: 9/30/2014	Analysis [Date: 1	0/1/2014	5	SeqNo: 6	32649	Units: mg/k	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.050	1.000	0	95.5	80	120	A MARY H	and the second	
oluene	0.95	0.050	1.000	0	94.8	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.6	80	120			
Kylenes, Total	2.9	0.10	3.000	0	96.2	80	120			
			ID NOTE OF							

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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HALL Hall Environment ENVIRONMENTAL ANALYSIS LABORATORY TEL: 505-345-39 Website: www	ual Analysis Labora 4901 Hawkins Albuquerque, NM 87 975 FAX: 505-345-4 .hallenvironmental.	NE NE 7105 Sam 107 com	ple Log-In Check Li	st
Client Name: Western Refining Southw Work Order Numb	er: 1409F04	1.1.1.1	RcptNo: 1	
Received by/date: A galzo 12				
Logged By: Lindsay Mangin 9/30/2014 7:00:00 A	M	And Hand		
Completed By: Lindeny Mangin 0/20/2014 7:57:52 A		Alla		
Completed by. Lindsay Mangin 9/30/2014 7.57.55 A		Omymapo		
Reviewed By: 10 09/30/14				4
Chain of Custody				
1. Custody seals intact on sample bottles?	Yes	No 🗌	Not Present	
2. Is Chain of Custody complete?	Yes 🗹	No 🗌	Not Present	
3. How was the sample delivered?	Courier			
login				
	Ver II			
vvas an altempt made to cool the samples?	Tes IV⊄]			
5. Were all samples received at a temperature of >0° C to 6 0°C	Yes V	No 🗍		
6. Sample(s) in proper container(s)?	Yes 🗹	No 🗔		
7 Sufficient complexisting for indicated toot/o)2	Vac M	No 🗍		
7. Sufficient sample volume for indicated test(s)?	Yes V			
8. Are samples (except voA and ong) property preserved?	Yes 🔽			
3. was preservative added to bottles?				
10.VOA vials have zero headspace?	Yes	No 🗌	No VOA Vials	
11. Were any sample containers received broken?	Yes 🗌	No 🗹		
			bottles checked	
12.Does paperwork match bottle labels?	Yes 🗹	No 🗌	for pH:	note
(Note discrepancies on chain of custody)	Yes 🖌	No 🗔	Adjusted?	11010
14 Is it clear what analyses were requested?	Yes 🗹	No 🗌		
15. Were all holding times able to be met?	Yes 🖌	No 🗌	Checked by:	
(If no, notify customer for authorization.)		l		
Special Handling (if applicable)	1	1.0		
16. Was client notified of all discrepancies with this order?	Yes	No 🗌	NA 🗹	
Person Notified: Date:			L.	
By Whom: Via:	eMail P	hone 🗌 Fax	In Person	
Regarding:	and the second second		n - a dam man a Fan - a dam bashabita a se anna 2 (2 - 1)	
Client Instructions:	the second of a second second second		*	
17. Additional remarks:				
19. Cooler Information				
Cooler No Temp C Condition Seal Intact Seal No	Seal Date	Signed By		
1 3.1 Good Not Present	if 4.			

Page 1 of 1

Chain-of-Custody Record Client: Western Refining Kelly Robinson Mailing Address: III CR 4990 Bloomfield NM 97413 Phone #: 505-632-8013 email or Fax#: Kelly Robinson Curr.com QA/QC Package: X Standard Level 4 (Full Validation) Accreditation				Iurn-Around Ime: XStandard Rush Project Name: Bisti And Farm Vadose Zone Sampling Project #: WRLOOS Project Manager: Ashley Ager Sampler: Dieuman (BHerb			HALL ENVIRONMENT ANALYSIS LABORATO www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request (1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,									RY				
	AP (Type)_ Time	□ Othe Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL NO	STEX FINTBE + Th	3TEX + MTBE + TP	PH 8015B (GRO /	PH (Method 418.1	EDB (Method 504.1	AH's (8310 or 827	RCRA 8 Metals	Anions (F,CI,NO ₃ ,N	081 Pesticides / 80	(260B (VOA)	(Semi-VOA)	Chloride		
	(2446 1405 1301 1350 1320	Boil Soil Soil Soil Soil	Westline Vadose Zone Eastline Vadose Zone Bisti Vadose Zone Pettigrew Vadose Zone API Vadose Zone	402/2 402/2 402/2 402/2 402/2		-001 -007_ -003 -004 -005	XXXXX		XXXXX	XXXXX								XXXXX	-	
Date: 120 Date: 29/14	Time: 1605 Time: 1724	Relinquish Relinquish Mag	ed by	Received by: Moth Received by:	dilaction	Date Time 9/29/14 1405 Date Time	Rei	mark	s: eas	se	La ca	p	j r a	res 1 te	su		s to	0		



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

October 07, 2014

Kelly Robinson Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (505) 632-4166 FAX (505) 632-3911

RE: Bisti Landfarm Treatment Zone Sampling

OrderNo.: 1409F06

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/30/2014 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1409F06 Date Reported: 10/7/2014

Hall Environmental Analysis Laboratory, Inc.

Bisti Landfarm Treatment Zone Sampling

CLIENT: Western Refining Southwest, Inc.

1409F06-001

Project:

Lab ID:

Client Sample ID: Crude Cell Treatment Zone Collection Date: 9/29/2014 2:10:00 PM Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch			
EPA METHOD 8015D: DIESEL RANGE ORGANICS Analyst:									
Diesel Range Organics (DRO)	40	9.9	mg/Kg	1	10/2/2014 1:38:43 AM	15586			
Motor Oil Range Organics (MRO)	82	50	mg/Kg	1	10/2/2014 1:38:43 AM	15586			
Surr: DNOP	92.6	57.9-140	%REC	1	10/2/2014 1:38:43 AM	15586			
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	NSB			
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	10/2/2014 1:53:40 AM	15622			
Surr: BFB	91.8	80-120	%REC	1	10/2/2014 1:53:40 AM	15622			
EPA METHOD 300.0: ANIONS					Analyst	LGP			
Chloride	110	30	mg/Kg	20	10/3/2014 12:28:58 PM	15699			

Matrix: SOIL

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

Qı	alifiers:	

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation rangeJ Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.RL Reporting Detection Limit

Page 1 of 5

Analytical Report Lab Order 1409F06

Date Reported: 10/7/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT:Western Refining Southwest, Inc.Project:Bisti Landfarm Treatment Zone SamplingLab ID:1409F06-002Matrix: SOIL

Client Sample ID: API Cell Treatment Zone Collection Date: 9/29/2014 1:25:00 PM Received Date: 9/30/2014 7:00:00 AM

Result	RL Qu	al Units	DF	Date Analyzed	Batch
RGANICS	and the second			Analyst	BCN
12	9.9	mg/Kg	1	10/2/2014 2:21:32 AM	15586
ND	50	mg/Kg	1	10/2/2014 2:21:32 AM	15586
94.4	57.9-140	%REC	1	10/2/2014 2:21:32 AM	15586
E				Analyst	NSB
ND	4.7	mg/Kg	1	10/2/2014 2:22:12 AM	15622
90.8	80-120	%REC	1	10/2/2014 2:22:12 AM	15622
				Analyst	LGP
500	30	mg/Kg	20	10/3/2014 12:41:22 PM	15699
	Result RGANICS 12 ND 94.4 E ND 90.8 500	Result RL Qu RGANICS 12 9.9 ND 50 94.4 57.9-140 E ND 4.7 90.8 80-120 500	Result RL Qual Units RGANICS 12 9.9 mg/Kg ND 50 mg/Kg 94.4 57.9-140 %REC E ND 4.7 mg/Kg 90.8 80-120 %REC 500 30 mg/Kg	Result RL Qual Units DF RGANICS 12 9.9 mg/Kg 1 ND 50 mg/Kg 1 94.4 57.9-140 %REC 1 E ND 4.7 mg/Kg 1 90.8 80-120 %REC 1 500 30 mg/Kg 20	Result RL Qual Units DF Date Analyzed RGANICS Analyst 12 9.9 mg/Kg 1 10/2/2014 2:21:32 AM ND 50 mg/Kg 1 10/2/2014 2:21:32 AM 94.4 57.9-140 %REC 1 10/2/2014 2:21:32 AM E Analyst ND 4.7 mg/Kg 1 10/2/2014 2:22:12 AM 90.8 80-120 %REC 1 10/2/2014 2:22:12 AM Analyst 500 30 mg/Kg 20 10/3/2014 12:41:22 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method	od Blank			
	Е	Value above quantitation range	Н	Holding times for preparation or analysi	s exceeded			
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Dage 2 of 5			
(0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.				
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit				
	S	Spike Recovery outside accepted recovery limits						

Hall Environmental Analysis Laboratory, Inc.

WO#: 1409F06

07-Oct-14

Client: Project:	West Bisti	ern Refining Southwest, Inc. Landfarm Treatment Zone Sam	pling	
Sample ID Client ID: Prep Date:	MB-15699 PBS 10/3/2014	SampType: MBLK Batch ID: 15699 Analysis Date: 10/3/2014	TestCode: EPA Method 300.0: Anions RunNo: 21676 SeqNo: 636273 Units: mg/Kg	
Analyte Chloride		Result PQL SPK value ND 1.5	e SPK Ref Val %REC LowLimit HighLimit	%RPD RPDLimit Qual
Sample ID Client ID: Prep Date:	LCS-15699 LCSS 10/3/2014	SampType: LCS Batch ID: 15699 Analysis Date: 10/3/2014	TestCode: EPA Method 300.0: Anions RunNo: 21676 SeqNo: 636274 Units: mg/Kg	
Analyte Chloride		Result PQL SPK value 14 1.5 15.00	e SPK Ref Val %REC LowLimit HighLimit 9 0 0 95.9 90 110	%RPD RPDLimit Qual

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- Value above quantitation range Е
- Analyte detected below quantitation limits J
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 3 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: 1409F06

07-Oct-14

Client: Western Project: Bisti La	n Refining S andfarm Tre	outhwe	st, Inc. Zone Samp	ling			Ь							
Sample ID MB-15586	ble ID MB-15586 SampType: MBLK					TestCode: EPA Method 8015D: Diesel Range Organics								
Prep Date: 9/29/2014	Analysis E	Date: 1	0/1/2014	5	SeqNo: 6	33322	Units: mg/k	٢g						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Diesel Range Organics (DRO)	ND	10			the states			1.0	and the second	Jacob C.				
Motor Oil Range Organics (MRO)	ND	50												
Surr: DNOP	9.1	Sec. m.	10.00	and the second	91.4	57.9	140	144-50	102779	a fresh				
Sample ID LCS-15586	Samp	Type: LC	s	Tes	tCode: El	PA Method	8015D: Dies	el Range (Organics	845				
Client ID: LCSS	Batc	h ID: 15	586	F	RunNo: 2	1573								
Prep Date: 9/29/2014	Analysis E	Date: 1	0/1/2014	5	SeqNo: 6	33323	Units: mg/k	٢g						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Diesel Range Organics (DRO)	51	10	50.00	0	103	68.6	130	er sales	2.10					
Surr: DNOP	4.7		5.000		94.3	57.9	140							

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 4 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: 1409F06

07-Oct-14

Client: Western Project: Bisti La	n Refining Southwest, Inc. Indfarm Treatment Zone Sampling
Sample ID MB-15622	SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range
Client ID: PBS	Batch ID: 15622 RunNo: 21587
Prep Date: 9/30/2014	Analysis Date: 10/1/2014 SeqNo: 632616 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 900 1000 89.8 80 120
Sample ID LCS-15622	SampType: LCS TestCode: EPA Method 8015D: Gasoline Range
Client ID: LCSS	Batch ID: 15622 RunNo: 21587
Prep Date: 9/30/2014	Analysis Date: 10/1/2014 SeqNo: 632617 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Gasoline Range Organics (GRO)	28 5.0 25.00 0 111 65.8 139
Surr: BFB	970 1000 97.2 80 120
Sample ID MB-15674 MK	SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range
Client ID: PBS	Batch ID: R21650 RunNo: 21650
Prep Date:	Analysis Date: 10/3/2014 SeqNo: 635786 Units: %REC
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Surr: BFB	900 1000 90.0 80 120
Sample ID LCS-15674 MK	SampType: LCS TestCode: EPA Method 8015D: Gasoline Range
Client ID: LCSS	Batch ID: R21650 RunNo: 21650
Prep Date:	Analysis Date: 10/3/2014 SeqNo: 635787 Units: %REC
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Surr: BFB	1000 1000 100 80 120

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.

Page 5 of 5

RL Reporting Detection Limit

Client Name: Western Refining Southw Work Order Number	: 1409F06		RcptNo: 1
Received by/date: 09/30/14			an and
Logged By: Lindsay Mangin 9/30/2014 7:00:00 AM		Julythego	
Completed By: Lindsay Mangin 9/30/2014 8:07:28 AM		Andightago	
Reviewed By: TO 09/30/14	1.1.1		
Chain of Custody	6 13 2		
1. Custody seals intact on sample bottles?	Yes 🗌	No 🗌	Not Present
2. Is Chain of Custody complete?	Yes 🗹	No 🗌	Not Present
3. How was the sample delivered?	Courier		
Loa in			
4. Was an attempt made to cool the samples?	Yes 🗹	No 🗌	
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🗹	No 🗌	
6. Sample(s) in proper container(s)?	Yes 🗹	No 🗌	
7. Sufficient sample volume for indicated test(s)?	Yes 🗹	No 🗆	
8. Are samples (except VOA and ONG) properly preserved?	Yes 🗹	No 🗌	
9. Was preservative added to bottles?	Yes 🗌	No 🗹	NA 🗌
10.VOA vials have zero headspace?	Yes 🗌	No 🗌	No VOA Vials 🗹
11, Were any sample containers received broken?	Yes	No 🗹 🛛	
			# of preserved bottles checked
12. Does paperwork match bottle labels?	Yes 🗹	No 🗌	for pH: (<2 or >12 unless not
13 Are matrices correctly identified on Chain of Custody?	Yes V	No 🗌	Adjusted?
14 Is it clear what analyses were requested?	Yes 🗹	No 🗆	12 12 12 12 12 12 12 12 12 12 12 12 12 1
15. Were all holding times able to be met?	Yes 🗹	No 🗆	Checked by:
(If no, notify customer for authorization.)			
16 Was cliant political of all discremencies with this order?	Voc 🗌		NA M
Person Notified: Date:		Dhone Den	
By whom: Via:		Phone Fax	
regarding:	and the Product States	eteres and an and a day and a day	at the state of th

Page 1 of 1

Client:	Chain-of-Custody Record			Turn-Around	Time:					F	A	LL	E	NV	IF	20	NP	1EF	IAT	<u>_</u>
	West	ern T	Refining	Standard	🗆 Rush	۱ <u> </u>				A	N	AL	YS	SIS	5 L	AE	30	RA	TOR	Y
K	ell r	Robins	on	Project Name	Gam		www.hallenvironmental.com													
Mailing	Address	¹ 111	CR 4990	Disti Lan	ent 7 m	e Samalina		4901 Hawkins NE - Albuquerque NM 87109												
BI	- (2.2	NM OTILIS	Project #:				To	1 50	5 24	5 20	075	E	aque	505	245	1107	,		
Compred 101 81415			00002	INRIDOS				Tel. 505-345-3975 Fax 505-345-4107												
Phone	#: <u>50</u>	55-63	2-0015					2	2	A			litery	313	Neq	ucsi	T			
email or Fax#: Kelly, Kobinson Swnr. com							luo	ARG			1.E		SO4	S						
QA/QC	QA/QC Package: Standard Level 4 (Full Validation)			Ashley Ager			802	as	2			(SV		04,5	CB			2		
X Stan							3's (0	RO			SIN		2,P(2 P		k	3		
Accred	Accreditation			Sampler: D	vewman	BHerb	IME	십		=	=	570		8	808					Î
NELAP Other			On Ice: X Yes INO			+	+	SRO	418	504	r 8,	s	[®] O ³	Se	14	(YO	S		P	
	(Type)	-		Sample Temp	perature:		TBE	TBE	00	po	por	10 0	leta	CiA	cide	(YC	>-ic	D		SS
	1			Container	Procorvative	The second se	× ×	W +	151	leth	Aeth	(83	8 N	F,	est	Z	Sen	5		ple
Date	Time	Matrix	Sample Request ID	Type and #	Type	HEALNO	X	X	18(E T	E B	T's	RA	ons	1 P	SOB	0 (3		But
		1. 19.11				HAGFOLE	BT	BTE	E	TP	Ē	PA	RC	Ani	808	826	827	U		Air
29/14	1410	Soil	Crude Cell TreatmentZa	e HozA	Cool	-001		4	X									X		
29/14	1325	Soil	AP/ Cell Treatment Zone	002	Cooi	-007-		5.1	X								ľ	×		
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	-	-							1.2.8				-							
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	1.00																			
									2.3					alian 11	12					
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Date:	Time:	Relinquis	hed by:	Received by:		Date Time	Rei	mark	s:	100	1	1					1	. de	1.2.2	
Jel. 1	11.55	n	1.111 -	MM.t.	1.1.110	9/20/14 1/05	17	neo	se	. C	opi	4	Re	sul	ts	+6				
Date:	Time:	Refinquis	hed by:	Received by:	Maeron	Date Time		~	100	-6	ml	He	NV.	CON	m	den fi				
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129/14	1124	1/ Mie	the Waltere	I	14	091301×1 0700			10	1			-	8	1	-	1			
I	If necessary	, samples su	bmitted to Hall Environmental may be subo	contracted to other a	coredited laborator	nes. This serves as notice of the	ns poss	ibility.	Any su	noo-al	tracte	a data	WIII De	e clear	iy nota	ated of	n the a	nalytical	report.	



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

January 02, 2015

Ashley Ager Western Refining Southwest, Inc. #50 CR 4990 Bloomfield, NM 87413 TEL: (970) 946-1093 FAX

OrderNo.: 1412B01

Dear Ashley Ager:

RE: Bisti Quarterly

Hall Environmental Analysis Laboratory received 5 sample(s) on 12/24/2014 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1412B01

Date Reported: 1/2/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. Project: Bisti Quarterly

1412B01-001

Lab ID:

Client Sample ID: Westline Collection Date: 12/22/2014 11:18:00 AM Received Date: 12/24/2014 7:30:00 AM

Analyses	Result	RL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS			1.	Analys	BCN
Diesel Range Organics (DRO)	24	9.9	mg/Kg	1	12/30/2014 2:05:35 PM	16977
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	12/30/2014 2:05:35 PM	16977
Surr: DNOP	95.0	63.5-128	%REC	1	12/30/2014 2:05:35 PN	16977
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	12/29/2014 12:57:35 P	M 16995
Surr: BFB	97.0	80-120	%REC	1	12/29/2014 12:57:35 P	M 16995
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.049	mg/Kg	1	12/29/2014 12:57:35 P	M 16995
Toluene	ND	0.049	mg/Kg	1	12/29/2014 12:57:35 P	M 16995
Ethylbenzene	ND	0.049	mg/Kg	1	12/29/2014 12:57:35 P	M 16995
Xylenes, Total	ND	0.098	mg/Kg	1	12/29/2014 12:57:35 P	M 16995
Surr: 4-Bromofluorobenzene	105	80-120	%REC	1	12/29/2014 12:57:35 P	M 16995
EPA METHOD 300.0: ANIONS					Analyst	: Igp
Chloride	3.8	1.5	mg/Kg	1	12/29/2014 12:37:50 P	M 17012
EPA METHOD 418.1: TPH					Analyst	WL
Petroleum Hydrocarbons, TR	52	20	mg/Kg	1	12/30/2014 12:00:00 P	M 16976

Matrix: SOIL

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

			00	
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyt
	E	Value above quantitation range	Н	Holdin
	J	Analyte detected below quantitation limits	ND	Not De
	0	RSD is greater than RSDlimit	Р	Sample
	R	RPD outside accepted recovery limits	RL	Report

Spike Recovery outside accepted recovery limits S

- e detected in the associated Method Blank
- g times for preparation or analysis exceeded
- etected at the Reporting Limit e pH greater than 2.
- Page 1 of 10
- ing Detection Limit

Analytical Report

Lab Order 1412B01

Date Reported: 1/2/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.Client Sample ID: EastlineProject: Bisti QuarterlyCollection Date: 12/22/2014 11:35:00 AMLab ID: 1412B01-002Matrix: SOILReceived Date: 12/24/2014 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE O	RGANICS	and See St			Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	12/30/2014 2:35:20 PM	16977
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	12/30/2014 2:35:20 PM	16977
Surr: DNOP	83.1	63.5-128	%REC	1	12/30/2014 2:35:20 PM	16977
EPA METHOD 8015D: GASOLINE RANG	E				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	12/29/2014 2:23:48 PM	16995
Surr: BFB	98.6	80-120	%REC	1	12/29/2014 2:23:48 PM	16995
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.046	mg/Kg	1	12/29/2014 2:23:48 PM	16995
Toluene	ND	0.046	mg/Kg	1	12/29/2014 2:23:48 PM	16995
Ethylbenzene	ND	0.046	mg/Kg	1	12/29/2014 2:23:48 PM	16995
Xylenes, Total	ND	0.093	mg/Kg	1	12/29/2014 2:23:48 PM	16995
Surr: 4-Bromofluorobenzene	107	80-120	%REC	1	12/29/2014 2:23:48 PM	16995
EPA METHOD 300.0: ANIONS					Analyst	Igp
Chloride	3.2	1.5	mg/Kg	1	12/29/2014 1:52:20 PM	17012
EPA METHOD 418.1: TPH					Analyst	WL
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	12/30/2014 12:00:00 PM	A 16976

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank			
	Е	Value above quantitation range	H	Holding times for preparation or analys	is exceeded		
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 2 of 10		
	0	O RSD is greater than RSDlimit		Sample pH greater than 2.	1 age 2 01 10		
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit			
	S	Spike Recovery outside accepted recovery limits					

Analytical Report Lab Order 1412B01

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/2/2015

CLIENT: Western Refining Southwest, Inc. Project: Bisti Quarterly

1412B01-003

Lab ID:

Client Sample ID: API Cell Collection Date: 12/22/2014 1:00:00 PM Received Date: 12/24/2014 7:30:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE C	RGANICS			1	Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	12/30/2014 3:05:24 PM	16977
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	12/30/2014 3:05:24 PM	16977
Surr: DNOP	76.0	63.5-128	%REC	1	12/30/2014 3:05:24 PM	16977
EPA METHOD 8015D: GASOLINE RANG	Ε				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	12/29/2014 3:49:51 PM	16995
Surr: BFB	99.4	80-120	%REC	1	12/29/2014 3:49:51 PM	16995
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.047	mg/Kg	1	12/29/2014 3:49:51 PM	16995
Toluene	ND	0.047	mg/Kg	1	12/29/2014 3:49:51 PM	16995
Ethylbenzene	ND	0.047	mg/Kg	1	12/29/2014 3:49:51 PM	16995
Xylenes, Total	ND	0.094	mg/Kg	1	12/29/2014 3:49:51 PM	16995
Surr: 4-Bromofluorobenzene	107	80-120	%REC	1	12/29/2014 3:49:51 PM	16995
EPA METHOD 300.0: ANIONS					Analyst	Igp
Chloride	ND	1.5	mg/Kg	1	12/29/2014 2:17:08 PM	17012
EPA METHOD 418.1: TPH					Analyst	WL
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	12/30/2014 12:00:00 PM	1 16976

Matrix: SOIL

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	thod Blank	
	E	Value above quantitation range	Н	Holding times for preparation or analysi	s exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 3	
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	I age 5	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit		
	S	Spike Recovery outside accepted recovery limits				

e 3 of 10

Analytical Report Lab Order 1412B01

Date Reported: 1/2/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. Client Sample ID: Bisti Project: Bisti Quarterly Collection Date: 12/22/2014 2:30:00 PM Lab ID: 1412B01-004 Matrix: SOIL Received Date: 12/24/2014 7:30:00 AM 14 Ilmite J . .

Result	RL Q	qual Units	DF	Date Analyzed	Batch
E ORGANICS	1	a di sala t	2. 10 1	Analyst:	BCN
ND	9.9	mg/Kg	1	12/30/2014 3:35:22 PM	16977
ND	50	mg/Kg	1	12/30/2014 3:35:22 PM	16977
86.4	63.5-128	%REC	1	12/30/2014 3:35:22 PM	16977
NGE				Analyst:	NSB
ND	4.6	mg/Kg	1	12/29/2014 4:18:38 PM	16995
100	80-120	%REC	1	12/29/2014 4:18:38 PM	16995
				Analyst:	NSB
ND	0.046	mg/Kg	1	12/29/2014 4:18:38 PM	16995
ND	0.046	mg/Kg	1	12/29/2014 4:18:38 PM	16995
ND	0.046	mg/Kg	1	12/29/2014 4:18:38 PM	16995
ND	0.092	mg/Kg	1	12/29/2014 4:18:38 PM	16995
108	80-120	%REC	1	12/29/2014 4:18:38 PM	16995
				Analyst:	lgp
6.3	1.5	mg/Kg	1	12/29/2014 2:41:58 PM	17012
				Analyst:	WL
ND	20	mg/Kg	1	12/30/2014 12:00:00 PM	1 16976
	Result E ORGANICS ND 86.4 NGE ND 100 ND ND ND ND 108 6.3 ND	Result RL Q E ORGANICS ND 9.9 ND 50 86.4 63.5-128 NGE ND 4.6 100 80-120 ND 0.046 ND 0.046 ND 0.046 ND 0.092 108 80-120 6.3 1.5 ND 20	Kesuit KL Quar Units E ORGANICS ND 9.9 mg/Kg ND 50 mg/Kg 86.4 63.5-128 %REC NGE ND 4.6 mg/Kg ND 0.046 mg/Kg ND 0.092 mg/Kg 108 80-120 %REC 6.3 1.5 mg/Kg ND 20 mg/Kg	Kesurt KL Qual Onts DF E ORGANICS ND 9.9 mg/Kg 1 ND 50 mg/Kg 1 ND 50 mg/Kg 1 86.4 63.5-128 %REC 1 NGE ND 4.6 mg/Kg 1 ND 0.046 mg/Kg 1 ND 0.092 mg/Kg 1 108 80-120 %REC 1 6.3 1.5 mg/Kg 1 ND 20 mg/Kg 1	Kesuit RL Qual Units DF Date Analyzed E ORGANICS Analyst: ND 9.9 mg/Kg 1 12/30/2014 3:35:22 PM ND 50 mg/Kg 1 12/30/2014 3:35:22 PM 86.4 63.5-128 %REC 1 12/30/2014 3:35:22 PM NGE Analyst: Analyst: ND 4.6 mg/Kg 1 12/29/2014 4:18:38 PM 100 80-120 %REC 1 12/29/2014 4:18:38 PM ND 0.046 mg/Kg 1 12/29/2014 4:18:38 PM ND 0.092 mg/Kg 1 12/29/2014 4:18:38 PM ND 0.092 mg/Kg 1 12/29/2014 4:18:38 PM ND 0.092 mg/Kg 1 12/29/2014 4:18:38 PM Analyst: 6.3

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Meth	nod Blank
	Е	Value above quantitation range	Н	Holding times for preparation or analys	is exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 1 of 10
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 age 4 01 10
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Analytical Report

Lab Order 1412B01

Date Reported: 1/2/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. Project: Bisti Quarterly

1412B01-005

Lab ID:

Client Sample ID: Petigrew Collection Date: 12/22/2014 3:30:00 PM Received Date: 12/24/2014 7:30:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	12/30/2014 4:05:04 PM	16977
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	12/30/2014 4:05:04 PM	16977
Surr: DNOP	85.7	63.5-128	%REC	1	12/30/2014 4:05:04 PM	16977
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	12/29/2014 4:47:23 PM	16995
Surr: BFB	101	80-120	%REC	1	12/29/2014 4:47:23 PM	16995
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.047	mg/Kg	1	12/29/2014 4:47:23 PM	16995
Toluene	ND	0.047	mg/Kg	1	12/29/2014 4:47:23 PM	16995
Ethylbenzene	ND	0.047	mg/Kg	1	12/29/2014 4:47:23 PM	16995
Xylenes, Total	ND	0.095	mg/Kg	1	12/29/2014 4:47:23 PM	16995
Surr: 4-Bromofluorobenzene	108	80-120	%REC	1	12/29/2014 4:47:23 PM	16995
EPA METHOD 300.0: ANIONS					Analyst	: Igp
Chloride	350	30	mg/Kg	20	12/29/2014 3:19:12 PM	17012
EPA METHOD 418.1: TPH					Analyst	WL
Petroleum Hydrocarbons, TR	ND	20	mg/Kg	1	12/30/2014 12:00:00 PM	M 16976

Matrix: SOIL

Qualifiars	*	Value exceeds Maximum Contaminant Level	в	Analyte detected in the associated Meth	od Blank					
Quanners.	F	Value cheese quantitation range	U U	Holding times for proportion or apply	ic avaadad					
	E	value above quantitation range	п	notuning times for preparation of analysis exceeded						
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	Page 5 of 10					
	0	RSD is greater than RSDlimit	Р	Sample pH greater than 2.	1 450 5 01 10					
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit						
	S	Spike Recovery outside accepted recovery limits								

WO#: 1412B01 02-Jan-15

Hall Environment	al Analysis	Laboratory,	Inc.
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Client: Project:	Western I Bisti Qua	Refining S rterly	outhwe	est, Inc.										
Sample ID	MB-17012	SampT	Гуре: М	MBLK TestCode: EPA Method 300.0: Anions										
Client ID:	PBS	Batcl	h ID: 17	012	F	RunNo: 2	3405							
Prep Date:	12/29/2014	Analysis D	Date: 1	2/29/2014	the second	SeqNo: 6	91517	Units: mg/k	٢g					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Chloride	Service Common	ND	1.5	Sec. Sec.			and the	los.						
Sample ID	LCS-17012	SampT	Type: LC	s	Tes	stCode: E	PA Method	300.0: Anion	IS	a state of the sta	Rei P			
Client ID:	LCSS	Batch	h ID: 17	012	F	RunNo: 2	3405							
Prep Date:	12/29/2014	Analysis D	Date: 1	2/29/2014		SeqNo: 6	91518	Units: mg/k	٢g					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Chloride	S. Massile	14	1.5	15.00	0	93.6	90	110						
Sample ID	1412B01-001AMS	SampT	Гуре: М	S	Tes	stCode: E	PA Method	300.0: Anion	IS		al prato			
Client ID:	Westline	Batcl	h ID: 17	012	RunNo: 23405									
Prep Date:	12/29/2014	Analysis D	Date: 1	2/29/2014	:	SeqNo: 6	91529	Units: mg/h	(g					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Chloride		17	1.5	15.00	3.806	90.9	71.6	122						
Sample ID	1412B01-001AMS	D SampT	ype: M	/pe: MSD TestCode: EPA Method 300.0: Anions										
Client ID:	Westline	Batch	h ID: 17	012	F	RunNo: 2	3405							
Prep Date:	12/29/2014	Analysis D	Date: 1	2/29/2014	5	SeqNo: 6	91530	Units: mg/k	(g					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Chloride	West Contraction	19	1.5	15.00	3,806	101	71.6	122	8.08	20	Line of the			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#: 1412B01

02-Jan-15

Client: West Project: Bisti	ern Refining Southwest, Inc. Quarterly	
Sample ID MB-16976	SampType: MBLK TestCode: EPA Method 418.1: TPH	
Client ID: PBS	Batch ID: 16976 RunNo: 23342	
Prep Date: 12/23/2014	Analysis Date: 12/24/2014 SeqNo: 689793 Units: mg/Kg	
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual	
Petroleum Hydrocarbons, TR	ND 20	
Sample ID LCS-16976	SampType: LCS TestCode: EPA Method 418.1: TPH	-
Client ID: LCSS	Batch ID: 16976 RunNo: 23342	
Prep Date: 12/23/2014	Analysis Date: 12/24/2014 SeqNo: 689952 Units: mg/Kg	
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual	
Petroleum Hydrocarbons, TR	110 20 100.0 0 107 80 120	
Sample ID LCSD-16976	SampType: LCSD TestCode: EPA Method 418.1: TPH	- 5
Client ID: LCSS02	Batch ID: 16976 RunNo: 23342	
Prep Date: 12/23/2014	Analysis Date: 12/24/2014 SeqNo: 689953 Units: mg/Kg	
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual	
Petroleum Hydrocarbons, TR	110 20 100.0 0 113 80 120 5.49 20	100

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 7 of 10

WO#: 1412B01 02-Jan-15

Hall Environmental Analysis Laboratory, Inc.

Sample ID MP 16077	SampTupo: MPLK	TostCodo: EDA Method 2015D: Discol Pango Organico	
		Testode. EPA Method 6015D. Dieser Range Organics	
Client ID: PBS	Batch ID: 169/7	Runno: 23339	
Prep Date: 12/23/2014	Analysis Date: 12/24/2014	SeqNo: 689714 Units: mg/Kg	
Analyte	Result PQL SPK value	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Diesel Range Organics (DRO)	ND 10		+- 2-2.p
Motor Oil Range Organics (MRO)	ND 50		
Surr: DNOP	6.6 10.00	D 65.9 63.5 128	in the second
Sample ID LCS-16977	SampType: LCS	TestCode: EPA Method 8015D: Diesel Range Organics	8. S.S.
Client ID: LCSS	Batch ID: 16977	RunNo: 23339	
Prep Date: 12/23/2014	Analysis Date: 12/24/2014	SeaNo: 689827 Units: ma/Ka	
			and and
Analyte	Result PQL SPK value	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Diesel Range Organics (DRO)	39 10 50.00	0 78.2 67.8 130	
Suff: DNOP	3.6 5.000	J 72.6 63.5 128	1 11
Sample ID MB-17041	SampType: MBLK	TestCode: EPA Method 8015D: Diesel Range Organics	
Client ID: PBS	Batch ID: 17041	RunNo: 23412	
Prep Date: 12/31/2014	Analysis Date: 12/31/2014	SeqNo: 692482 Units: %REC	
Analyte	Result POL SPK value	SPK Ref Val %REC Low imit High imit %RPD RPD imit	Qual
Surr: DNOP	8.0 10.00	O 79.9 63.5 128	Qua
Sample ID CS-17041	SampType: LCS	TestCode: EPA Method 8015D: Diesel Range Organics	1. 6. 1
Client ID: LCCC	Botoh ID: 47044	Durble: 02440	
		ruilluo: 23412	
Prep Date: 12/31/2014	Analysis Date: 12/31/2014	SeqNo: 692503 Units: %REC	
Analyte	Result PQL SPK value	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Surr: DNOP	4.1 5.000	81.8 63.5 128	Marshall and

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#: 1412B01

02-Jan-15

Client: Project:	Western I Bisti Qua	Refining Sou rterly	thwest, I	nc.							
Sample ID	MB-16995	SampTyp	e: MBLK		Tes	tCode: E	PA Method	8015D: Gase	oline Rang	je	the fi
Client ID:	PBS	Batch II	D: 16995		F	RunNo: 2	3399				
Prep Date:	12/24/2014	Analysis Date	e: 12/29	/2014	S	SeqNo: 6	91302	Units: mg/l	٨g		
Analyte		Result I	PQL SP	K value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	e Organics (GRO)	ND 970	5.0	1000		97.3	80	120			
Sample ID	LCS-16995	SampTyp	e: LCS		Tes	tCode: E	PA Method	8015D: Gase	oline Rang	le	142
Client ID:	LCSS	Batch II	D: 16995		F	RunNo: 2	3399				
Prep Date:	12/24/2014	Analysis Date	e: 12/29	/2014	5	SeqNo: 6	91304	Units: mg/l	٨g		
Analyte		Result I	PQL SP	K value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	22	5.0	25.00	0	89.4	65.8	139	Phil and		n sa sa sa
Surr: BFB	Contraction of the second	1000	C. B.C.	1000	i Carl	105	80	120	1	de Sed	
Sample ID	1412B01-001AMS	SampTyp	e: MS		Tes	tCode: E	PA Method	8015D: Gase	oline Rang	le	100
Client ID:	Westline	Batch II	D: 16995		F	RunNo: 2	3399				
Prep Date:	12/24/2014	Analysis Date	e: 12/29/	2014	5	SeqNo: 6	91313	Units: mg/H	۲g		
Analyte		Result I	PQL SP	K value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	20	4.9	24.37	0	82.0	47.9	144			
Surr: BFB		1000		974.7		106	80	120			
Sample ID	1412B01-001AMS	SampTyp	e: MSD		Tes	tCode: E	PA Method	8015D: Gase	oline Rang	le	
Client ID:	Westline	Batch II	D: 16995		F	RunNo: 2	3399				
Prep Date:	12/24/2014	Analysis Date	e: 12/29/	2014	5	SeqNo: 6	91314	Units: mg/k	۲g		
Analyte		Result I	PQL SP	K value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	19	4.9	24.32	0	78.2	47.9	144	4.99	29.9	
Surr: BFB		1000		972.8		107	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory, Inc.

WO#: 1412B01 02-Jan-15

Client: Project:	Western I Bisti Qua	Refining S rterly	Southwe	st, Inc.							
Sample ID	MB-16995	Samp	Туре: МІ	BLK	Tes						
Client ID:	PBS	Batc	h ID: 16	995	F						
Prep Date:	12/24/2014	Analysis [Date: 1	2/29/2014	5	SeqNo: 6	91332	Units: mg/k	٢g		
Analyte	and the second	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		ND	0.050			No. No.				and the second	Alt is
Toluene		ND	0.050								
Ethylbenzene		ND	0.050								
Xylenes, Total		ND	0.10								
Surr: 4-Brom	ofluorobenzene	1.1		1.000	300	106	80	120	ter.	Sec. 2	
Sample ID	LCS-16995	Samp	Type: LC	s	Tes	stCode: E	PA Method	8021B: Vola	tiles		d at the
Client ID:	LCSS	Batc	h ID: 16	995	F	RunNo: 2	3399				
Prep Date:	12/24/2014	Analysis [Date: 1	2/29/2014	5	SeqNo: 6	91333	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.94	0.050	1.000	0	93.7	80	120	1 m	""这是1.3%	Chi Sher
Toluene		0.93	0.050	1.000	0	92.9	80	120			
Ethylbenzene		0.95	0.050	1.000	0	94.5	80	120			
Xylenes, Total		2.7	0.10	3.000	0	91.4	80	120			
Surr: 4-Brom	ofluorobenzene	1.1		1.000	1.1.4	111	80	120	1	a head and	Action
Sample ID	1412B01-002AMS	Samp	Туре: М	S	Tes	tCode: E	PA Method	8021B: Vola	tiles	n spingt fille	
Client ID:	Eastline	Batc	h ID: 16	995	F	RunNo: 2	3399			1 44 96 9	
Prep Date:	12/24/2014	Analysis [Date: 1	2/29/2014	S	SeqNo: 6	91339	Units: mg/k	٢g		
Analyte	1 Capital	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ADIA NUM	0.88	0.047	0.9302	0	94.5	69.2	126		and the second	
Toluene		0.85	0.047	0.9302	0.01253	89.7	65.6	128			
Ethylbenzene		0.88	0.047	0.9302	0.009071	93.7	65.5	138			
Xylenes, Total		2.6	0.093	2.791	0.01637	91.9	63	139			
Surr: 4-Brom	ofluorobenzene	1.0		0.9302		112	80	120	1 mart	a set a set	Products
Sample ID	1412B01-002AMSI	D Samp	Туре: М	SD	Tes	tCode: E	PA Method	8021B: Vola	tiles		14
Client ID:	Eastline	Batc	h ID: 16	995	F	RunNo: 2	3399				
Prep Date:	12/24/2014	Analysis [Date: 12	2/29/2014	5	SeqNo: 6	91340	Units: mg/h	(g		
Analyte	Section Section	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.83	0.047	0.9302	0	89.7	69.2	126	5.28	18.5	
Toluene		0.81	0.047	0.9302	0.01253	85.7	65.6	128	4.40	20.6	
Ethylbenzene		0.85	0.047	0.9302	0.009071	90.0	65.5	138	4.01	20.1	
Xylenes, Total		2.5	0.093	2.791	0.01637	87.9	63	139	4.43	21.1	
Surr 4-Brom	ofluorobenzene	1.1		0.9302		113	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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HALL Hall Environments ENVIRONMENTAL ANALYSIS LABORATORY TEL: 505-345-397 Website: www.b	al Analysis Laborato 4901 Hawkins buquerque, NM 871 5 FAX: 505-345-41 pallenvironmental.c	ory NE 109 Sam 107 om	Sample Log-In Check Lis							
Client Name: Western Refining Southw Work Order Number	r: 1412B01		RcptNo: 1							
Received by/date: 12/24/14	£ 1									
.ogged By: Lindsay Mangin 12/24/2014 7:30:00 A	M	Strendy Harris								
Completed By: Lindsay Mangin 12/24/2014 8:23:50 A Reviewed By: CS 12/24/12	M	Jundy Hago								
bein of Custody										
	Ves []	No 🗌	Not Present							
Custody seals intact on sample bottles?	Vec 🗖		Not Present							
3. How was the sample delivered?	Courier									
og In										
4. Was an attempt made to cool the samples?	Yes 🛃	No 🗌								
. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🖈	No 🗌								
3. Sample(s) in proper container(s)?	Yes 🛃	No 🗌								
7. Sufficient sample volume for indicated test(s)?	Yes 🛃	No 🗌								
Are samples (except VOA and ONG) properly preserved?	Yes 🛃	No 🗌								
Has preservative added to bottles?	Yes 🗋	No 🛃	NA 🗌							
	_									
0.VOA vials have zero headspace?	Yes 🗌	No 🗌	No VOA Vials 🜌							
1. Were any sample containers received broken?	Yes 🖵	No 💌	# of preserved bottles checked							
2. Does paperwork match bottle labels?	Yes 💌	No 🗆	for pH: (<2 or >12 unless note							
3 Are matrices correctly identified on Chain of Custody?	Yes 💌	No 🗌	Adjusted?							
4. Is it clear what analyses were requested?	Yes 🛃	No 🗆								
5. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes 🛃	No 🗌	Checked by:							
pecial Handling (if applicable)										
6. Was client notified of all discrepancies with this order?	Yes	No 🗌	NA 🛃							
Person Notified: Date:										
By Whom: Via:	eMail P	hone 🗌 Fax	In Person							
Regarding:										
Client Instructions:										
7. Additional remarks:			a							
		-								
8. Cooler Information Cooler No. Temp ℃ Condition Seal Infact Seal No.	Seal Date	Signed By								
1 1.5 Good Yes		<u>, , , , , , , , , , , , , , , , , , , </u>								

Page 1 of 1

Client: Western Refining Melly Robinson Mailing Address: 111 CR 4990	Standard Rush Project Name: Bistinguarterity				4901 Hawkins NE - Albuquerque, NM 87109											Y	
Bloomfield, NM 87413 Phone #: 5195-632-8013	Project #: WR	1005			Te	I. 505	-345	3975	l Analy	Fax ysis	505- Req	345- uest	4107	7			
email or Fax#: <i>Keily · PobinSoy & WWR. com</i> QA/QC Package: Standard	Project Manager: Ashley Ager CC: a a ger Gitenu, com Sampler: Alex Crooks				PH (Gas only)	/ DRO / MRO)	()	70 SIMS)		VO2, PO4, SO4)	3082 PCB's						
NELAP Other EDD (Type) Date Time Matrix Sample Request ID	On Ice: Sample Temp Container Type and #	Yes perature	■ NO 5 HEAL NO 1412801	BTEX + MTBE + T	BTEX + MTBE + T	TPH 8015B (GRO	TPH (Method 418.	-AH's (8310 or 82	RCRA 8 Metals	Anions (F,Cl,NO ₃ ,	3081 Pesticides / 8	3260B (VOA)	3270 (Semi-VOA)	8015	BTEX	monde	
2/22 1119 Soil Mestine 1135 lastine 1360 Apice 11 1430 Bisti	2-402	6001	-001 -002 -003			2								X	X 	X	
V 1530 V Petignun		V	-005												V	V	
																	/
Date: Time: Relinquished by: 213 1445 AD AMA Date: Time: Relinquished by:	Received by:	hete	Date Time 12/23/14/14/45 Date Time	Ren	nark	3:					(#						