GW - ___001___

INSPECTIONS & DATA

2005 - Present

Western Refining

WNR LISTED NYSE

Carl J. Chavez, CHMM
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

RECEIVED OCD
2010 JUL -1 P 2:43

Certified Mail: #7007 0220 0004 0187 1401

June 29, 2010

RE: Western Refining Southwest, Inc. – Bloomfield Refinery
EPA ID# NMD089416416
GW - 001 & UICL-9

Dear Mr. Chavez,

Western Refining Southwest, Inc – Bloomfield Refinery has scheduled inspection of all water-draw sumps located in the Tank Farm to begin the week of July 5, 2010. Each sump will be cleaned out with a Vacuum Truck, visually inspected, and hydrostatically tested to insure integrity.

If any representatives from the OCD would like to participate, please contact me so that safety orientation training can be scheduled for incoming personnel.

If you need additional information, please contact me at (505) 632-4161.

Sincerely,

Cindy Hurtado

Cindy Hurtado
Environmental Coordinator
Bloomfield Refinery

Cc: Randy Schmaltz – Environmental Manager – Bloomfield Refinery

Chavez, Carl J, EMNRD

To: Chavez, Carl J, EMNRD
Subject: Bloomfield Refinery (GW-001) Note to File "Inspections"

Director announced that travel was being restricted for inspections with no overnights allowed until further notice.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/index.htm
(Pollution Prevention Guidance is under "Publications")

Carl Chavez
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Dr
Santa Fe, NM 87505

December 1, 2009

Certified Mail: 7007 0220 0004 0187 1234

Re: Bloomfield Refinery (GW-001) OCD Inspection Items Request from 8/10/2009 From Existing Discharge Permit (DP)
Western Refining Southwest, Inc. – Bloomfield Refinery

Dear Carl,

Please find enclosed Bloomfield Refinery's response to OCD's inspection item's listed from the Discharge Permit Inspection conducted August 10, 2009.

Item #1: Warehouse/Bone Yard/Storage Areas:
Labels on all containers are needed (Photos 10; 13-17; and 80-81). Note temporary storage areas must be approved by the OCD in advance (see Photos 10; and 15-16).

Response: Photo #10 will be discussed in Item #13; photos #13, #14, and #17 will be addressed in Item #3, and photos #15 and #16 will be addressed in Item #12.

Currently, Bloomfield Refinery operates under the conditions of the approved 2005 Discharge Permit GW-01 which does not state provisions for identifying temporary waste storage areas for OCD approval. To comply with the 2009 Draft Discharge Permit (GW-001), Bloomfield Refinery has located the primary temporary waste storage area in the bermed region east of Tanks #32 and #36. This area is identified in Attachment A – Area Plot Plan. Any material stored in this area will be placed on plastic within berms and will be properly disposed of within 180 days of placement.

Warehouse personnel have conducted an inventory of all containers stored in the warehouse yard and have updated proper labeling (Photos #2, #80, and #81).

Item #2: Secondary Containment
Secondary containment (minimum 1+1/3 volume containment) under all chemical totes in sheds, i.e., biocides shed near cooling towers (warehouse area and throughout refinery where present) is required.

Response: If operations are resumed at Bloomfield Refinery containment will be upgraded in the biocide sheds near the cooling towers. In the meantime, all remaining chemicals will be emptied and/or removed as part of the Refinery shutdown activities.

Item #3: Triple-Rinse Provisions
Need triple-rinse provision in discharge permit for container cleanout areas with storage and process (Photos 13-14; 17 and 71).

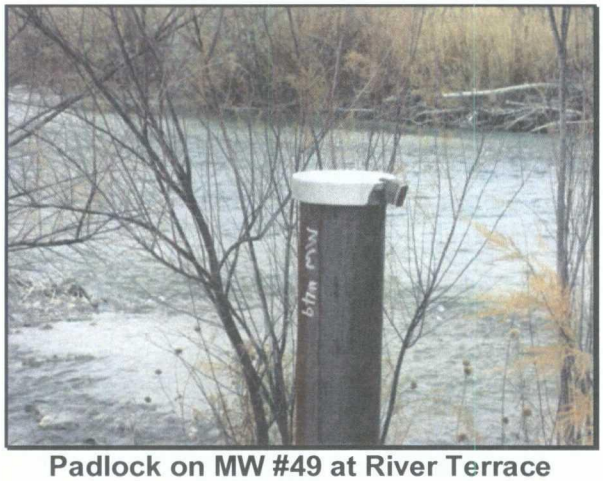
Response: If operations are resumed at Bloomfield Refinery a triple rinse and labeling procedure will be provided in the discharge permit.

Item #4: Reformer Pad
Reformer pad needs full perimeter containment curb (Photo 75).

Response: If operations are resumed at Bloomfield Refinery containment will be upgraded in the Reformer Unit. In the meantime, all remaining chemicals will be emptied and/or removed as part of the Refinery shutdown activities.

Item #5: Locks on Monitoring Wells
Locks on MWs to secure quality of monitor data (Photo 56).

Response: Padlocks were already mounted on monitoring wells outside of Bloomfield Refinery's fenced and gated perimeter. Padlocks have been ordered for monitoring wells within the facility.



Padlock on MW #49 at River Terrace

Item #6: Aeration Lagoons and Evaporation Ponds
Aeration Lagoons (Photos 65-68) and Evaporation Ponds (Photos 24-28). Leak-Detection Systems monitoring for confirmation of leakage problem and repair w/incorporation into permit. ***Aeration Lagoons:** OCD requested copies of analyticals from aeration lagoons as operator informed OCD liquid had been analyzed and was fresh water possibly suggesting residual fluids remained between liners after RCRA re-construction of aeration lagoon triple liner system (concrete base). OCD requested removal of suspected residual fluid detected between liners with monitoring that demonstrates system is not leaking. However, LDS between lower liner and concrete is dry. ***Evaporation Ponds:** TPH (418.1), BTEX (8021/8260); General Chemistry(cation/anion balance) analytical of fluid detected in LDS required followed by evacuation of fluid to verify that south pond is leaking and similar for the north pond to demonstrate integrity.

Response: Aeration Lagoons: Per OCD request, Bloomfield Refinery personnel attempted to remove liquid from between the liners of the #1 Aeration Lagoon by trying to pull water out of the detection ports using a vacuum truck on August 11 and 12, 2009. Liquid levels in the detection ports were monitored using an interface probe. Water levels remained essentially the same before and after evacuation which indicated a

potential liner leak. However, the lower detection system between the lower liner and the concrete has continuously remained dry indicating that a release has not occurred. As-built drawings of the Aeration Lagoons are included in Attachment C.

Water samples were taken from the 6" detection tube in the #1 Aeration Lagoon on August 11, 2009 per OCD request. Analytical laboratory reports of the initial liner samples after the clean out (11-19-2008) and the most current analysis (8-11-2009) can be found in Attachment B.

On October 1, 2009 the #1 Aeration Lagoon was taken out of service for leak investigation and repair. Several small punctures and one small seam leak were found. Repair is still in progress.

#1 Aeration Lagoon

Evaporation Ponds: Per OCD request, Bloomfield Refinery personnel attempted to evacuate liquid from the detection ports of the South Evaporation Pond using a vacuum truck on August 11 and 12, 2009. Liquid levels in the detection ports were monitored using an interface probe. Water levels remained essentially the same before and after evacuation.

Water samples were collected from the east and west leak detection tubes of the South Evaporation pond as well as from the south pond itself. Analytical laboratory reports of these samples are located in Attachment B. The North Evaporation Pond has not been in service and no samples were taken from there.

Historically, pond levels are higher in the winter and early spring months due to low evaporation rates. Attachment D contains the monitoring log and a graph that illustrates the water column height in the detection tubes fluctuates with the rise and fall of the pond levels. Drawdown between the primary and secondary liners occurred as the South Evaporation Pond emptied suggesting that the weight from the primary liner was decreasing and not forcing water up the detection tubes. This indicates that the top liner is leaking yet the liquid level on the secondary liner remained constant signifying that there is not a leak in the second liner. No release has occurred therefore no report is required.

As-built drawings of the Evaporation Ponds are included in Attachment D.

Bloomfield Refinery was in the process of emptying the ponds in order to repair the primary liners. Future use of the Evaporation Ponds is to be determined due to the recent refinery shut down announcement.

Item #7: Biovent Line

Leak in biovent blower line (Photo 57).

Response: The blower line was repaired (a coupler had loosened) and was back in service on August 11, 2009.

Item #8: Tank #29

Cleanup Tank #29 oil stains within berm area (Photos 32-33).

Response: Bloomfield Refinery contracted Envirotech to clean up the stained soil within the Tank #29 berm area. Clean up occurred during the week of August 17, 2009 (see photos below). Excavated soil was staged on plastic within berms in the primary temporary waste storage area identified in Attachment A while lab analysis (Attachment E) was completed. The non-hazardous material was shipped to Waste Management's Painted Desert Landfill at Joseph City, Arizona on October 14, 2009.

Clean up within Tank #29 Berm

Item #9: Containment

Cooling Tower #1 Shed w/biocides in need of secondary containment under chemical totes (Photo78)

Response: If operations are resumed at Bloomfield Refinery containment will be upgraded in the biocide shed near the #1 Cooling Tower. In the meantime, all remaining chemicals will be emptied and/or removed as part of the Refinery shutdown activities.

Item #10: New Tanks

Tanks 24-25 construction were not submitted to OCD for approval (Photo 48)

Response: Condition #8 of the approved 2005 Discharge Permit GW-01 was met in the construction of Tanks #20, #24, and #25. All three tanks were constructed to comply with API-652 standards (Lining of Above Ground Petroleum Storage Tanks) as illustrated below. All liners are composed of 60 ml HDPE with welded seams. Also below, please see the photo of the liner installation at Tank #20.

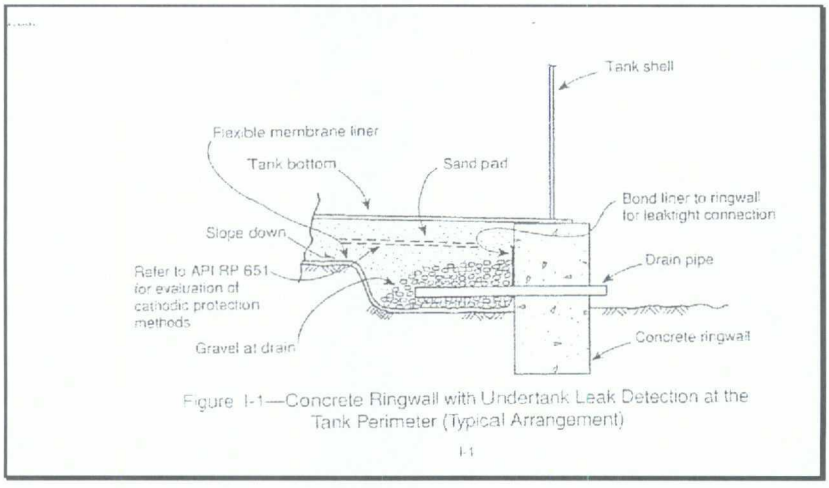


Figure I-1—Concrete Ringwall with Undertank Leak Detection at the Tank Perimeter (Typical Arrangement)

I-1

API-652

Liner Installation at Tank #20

Item #11: Chemical Labels on Tanks

Tanks lack chemical labels for LEPC firefighters, but are numbered (Photos 1; 3-7; 9; 11; 18; 32-35; 39-48; and 50-52).

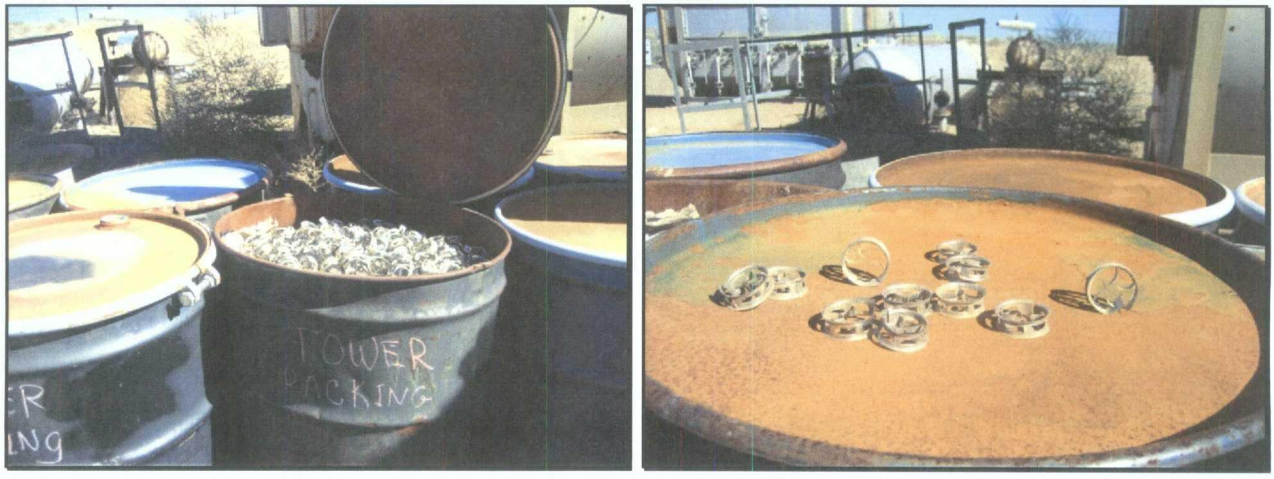
Response: Bloomfield Refinery complies with the OSHA Hazard Communications Standard (HCS) 29 CFR 191.1200(f)(6) which states that the employer may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required by paragraph (f)(5) of this section to be on a label. The written materials shall be readily accessible to the employees in their work area throughout each work shift.

Currently tanks are numbered and a list maintained by Operations (cross-ref to product, MSDS, etc). Emergency pre-plans have been developed and are available for each tank and its contents.

Notification of tank contents and locations is made to the LEPC through Tier II annual reporting requirements.

Item #12: Spent Tower Packing
Spent tower packing must be disposed of within 120 days and must be stored on a liner or impermeable pad (Photos 15-16).

Response: The material in the drums is labeled as "Tower Packing" not as "Spent Tower Packing". This material is recognized as "Spare Tower Packing" that has been cleaned, triple rinsed, and is ready to use as packing when needed. Containment is not necessary as there is no possibility of a spill causing groundwater contamination.



Spare Tower Packing Stored in the Bone Yard

Item #13: Drill Cuttings
Drill cuttings containerized and stored in unlined area similar to 12 above (Photo 10).

Response: Any future drill cuttings will be stored in the temporary storage area (identified in Item #1 – Attachment A) and will be placed on plastic within berms and properly disposed of within 180 days of placement.

Item #14: Active Landfill Area
Active Landfill Area bermed and unlined within 100 ft. from the river may constitute an illegal UIC Class V Storm Water Injection Well as the width is greater than the depth and is effectively considered an infiltration gallery for untreated storm water that may be discharging sulfates into the river? (Photo 8)

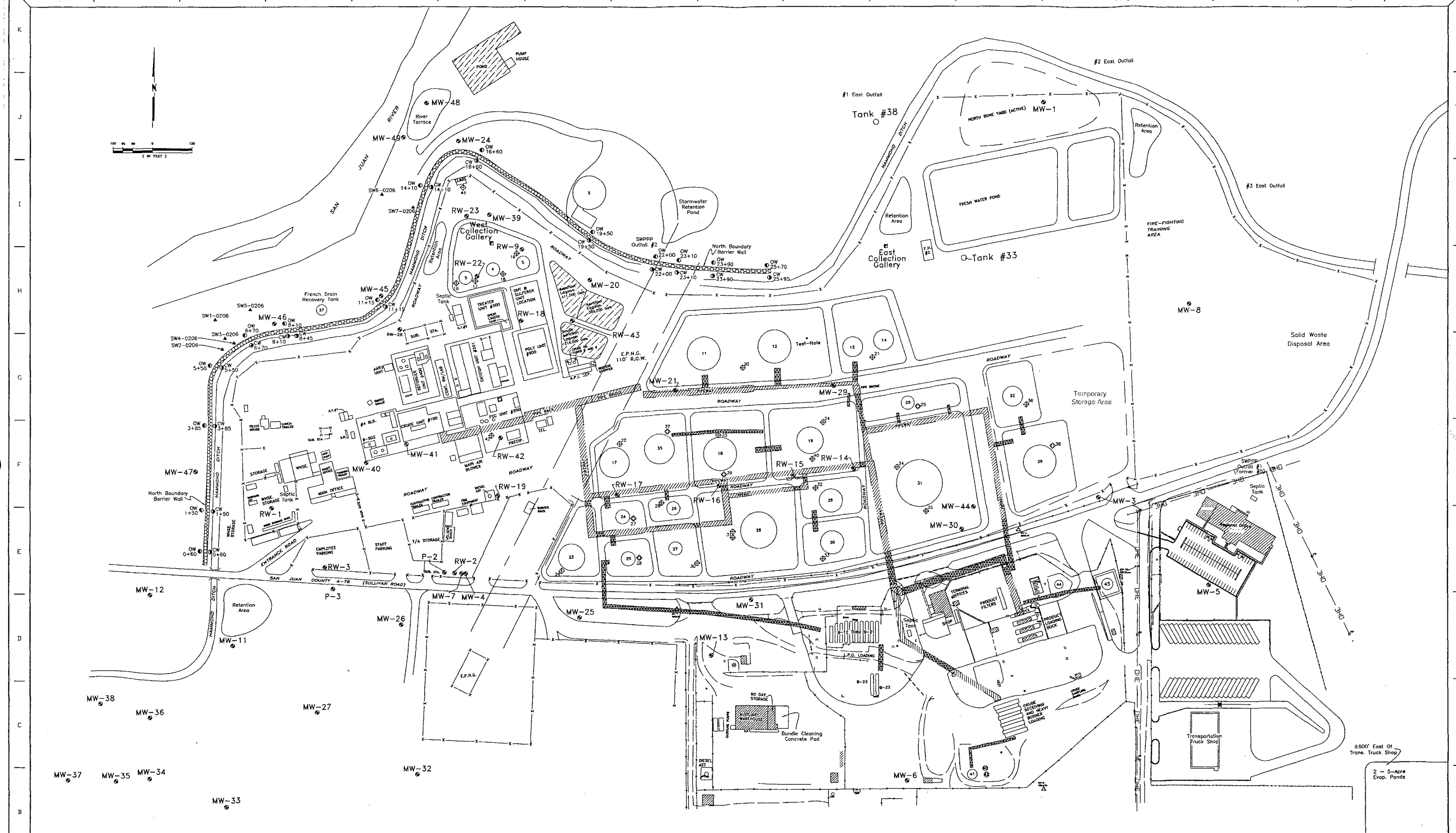
Response: Termination of refining operations at Bloomfield Refinery will effectively stop use of the Active Landfill Area. Investigation and closure activities will continue through NMED's Investigation of Group 4, SWMU #16.

If you have questions or would like to discuss any aspect of the submittal, please contact me at (505) 632-4171.

Sincerely,

James R. Schmaltz
Environmental Manager
Bloomfield Refinery

Cc: Carl Chavez – NMOCD Santa Fe
Brandon Powell - NMOCD Aztec District Office
Allen Hains – Western Refining – El Paso



NOTES
- ▩ – Denotes Under Ground Pipe–Way.
- ▨ – Denotes Above Ground Pipe–Way.
- ▭ – Denotes Slurry Barrier Wall
- ⊕ "MW–XX" – Monitoring Wells Location
- ⊕ "RW–XX" – Recovery Well Locations
- ⊕ "P" – Piezometer
- ◑ "CW" – Collection Well Location
- ◐ "OW" – Observation Well Location
- ▲ "SW" – Sump Well Locations
- ◈ – Steel–DW Water Draw Sump "DW denotes Double Wall Steel"
- ◈ – Concrete Water Draw Sump

REFERENCE DWGS.

NO.	REVISION	JOB No.	DRAWN	CHECKED	APPROVED
8	Revised To Indicate Tanks 24 & 25 Addition.		NHB 3/06		
7	Observation, & Collection Wells Added As Per Enviro. Dept. Mark–Ups.		NHB 12/05		
6	Updated To Indicate Changes As Per Enviro. Dept. Red–Line Mark–Ups.		NHB 7/05		
12	Updated To Include Water Draw Sump Location & Assigned Numbers.		NHB 2/09		
11	Drawing Revisions As Requested From Enviro. Dept. (Bob)		NHB 2/09		
10	Revised As Per Red–Line Mark–Ups From 'C. Hurtado' Enviro. Dept.		NHB 7/07		
9	Revised To Indicate "SW" or Sump Well Locations.		NHB 5/06		
1	Updated As Per Enviromental Dept. Mark Up		BY DATE	BY DATE	BY DATE

SCALE	As Noted
DATE	8/29/02
DRAWN BY	NHB
INITIAL CHK.	
FINAL CHK.	
ENGR.	
APPR. BY	
AFE/WO No.	NONE

Giant Bloomfield Refinery Area Plot Plan Recovery Well & Monitoring Well Locations

Western Refining

BLOOMFIELD REFINERY — BLOOMFIELD NEW MEXICO

DWG. NO. D–000–900–023 — REV. 12

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Tuesday, August 25, 2009

Cindy Hurtado
Western Refining Southwest, Inc.
#50 CR 4990
Bloomfield, NM 87413

TEL: (505) 632-4161
FAX (505) 632-3911

RE: Aeration Lagoons

Order No.: 0908182

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 8/12/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-09*

CLIENT:	Western Refining Southwest, Inc.	**Client Sample ID:**	#1 Aeration Lagoon
Lab Order:	0908182	**Collection Date:**	8/11/2009 1:40:00 PM
Project:	Aeration Lagoons	**Date Received:**	8/12/2009
Lab ID:	0908182-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	1.8	1.0		mg/L	1	8/13/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/13/2009
Surr: DNOP	112	58-140		%REC	1	8/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	0.29	0.25		mg/L	5	8/22/2009 7:48:14 PM
Surr: BFB	85.9	55.2-107		%REC	5	8/22/2009 7:48:14 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	31	5.0		µg/L	5	8/22/2009 7:48:14 PM
Toluene	ND	5.0		µg/L	5	8/22/2009 7:48:14 PM
Ethylbenzene	15	5.0		µg/L	5	8/22/2009 7:48:14 PM
Xylenes, Total	ND	10		µg/L	5	8/22/2009 7:48:14 PM
Surr: 4-Bromofluorobenzene	89.7	65.9-130		%REC	5	8/22/2009 7:48:14 PM
EPA METHOD 300.0: ANIONS						Analyst: **LJB**
Fluoride	ND	1.0		mg/L	10	8/12/2009 11:00:09 PM
Chloride	1100	10		mg/L	100	8/15/2009 12:51:38 AM
Bromide	2.0	1.0		mg/L	10	8/12/2009 11:00:09 PM
Nitrate (As N)+Nitrite (As N)	ND	4.0		mg/L	20	8/15/2009 1:09:02 AM
Phosphorus, Orthophosphate (As P)	7.7	5.0		mg/L	10	8/12/2009 11:00:09 PM
Sulfate	480	5.0		mg/L	10	8/12/2009 11:00:09 PM
EPA METHOD 6010B: DISSOLVED METALS						Analyst: **SNV**
Calcium	130	10		mg/L	10	8/18/2009 9:41:38 AM
Magnesium	26	1.0		mg/L	1	8/17/2009 4:07:52 PM
Potassium	17	1.0		mg/L	1	8/17/2009 4:07:52 PM
Sodium	780	10		mg/L	10	8/18/2009 9:41:38 AM
SM 2320B: ALKALINITY						Analyst: **DAM**
Alkalinity, Total (As CaCO3)	580	20		mg/L CaCO3	1	8/13/2009
Carbonate	ND	2.0		mg/L CaCO3	1	8/13/2009
Bicarbonate	580	20		mg/L CaCO3	1	8/13/2009
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: **DAM**
Specific Conductance	4500	0.010		µmhos/cm	1	8/13/2009
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **MMS**
Total Dissolved Solids	2640	40.0		mg/L	1	8/17/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-09*

CLIENT:	Western Refining Southwest, Inc.	**Client Sample ID:**	#2 Aeration Lagoon
Lab Order:	0908182	**Collection Date:**	8/11/2009 2:00:00 PM
Project:	Aeration Lagoons	**Date Received:**	8/12/2009
Lab ID:	0908182-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	1.9	1.0		mg/L	1	8/13/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/13/2009
Surr: DNOP	121	58-140		%REC	1	8/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.25		mg/L	5	8/22/2009 8:21:13 PM
Surr: BFB	84.6	55.2-107		%REC	5	8/22/2009 8:21:13 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	5.0		µg/L	5	8/22/2009 8:21:13 PM
Toluene	ND	5.0		µg/L	5	8/22/2009 8:21:13 PM
Ethylbenzene	ND	5.0		µg/L	5	8/22/2009 8:21:13 PM
Xylenes, Total	ND	10		µg/L	5	8/22/2009 8:21:13 PM
Surr: 4-Bromofluorobenzene	83.9	65.9-130		%REC	5	8/22/2009 8:21:13 PM
EPA METHOD 300.0: ANIONS						Analyst: **LJB**
Fluoride	4.1	1.0		mg/L	10	8/12/2009 11:17:34 PM
Chloride	1100	10		mg/L	100	8/17/2009 9:56:34 PM
Bromide	2.1	1.0		mg/L	10	8/12/2009 11:17:34 PM
Nitrate (As N)+Nitrite (As N)	ND	4.0		mg/L	20	8/17/2009 10:48:47 PM
Phosphorus, Orthophosphate (As P)	ND	5.0		mg/L	10	8/12/2009 11:17:34 PM
Sulfate	3600	50		mg/L	100	8/13/2009 9:38:56 PM
EPA METHOD 6010B: DISSOLVED METALS						Analyst: **SNV**
Calcium	580	20		mg/L	20	8/18/2009 9:47:40 AM
Magnesium	330	5.0		mg/L	5	8/18/2009 9:44:41 AM
Potassium	29	1.0		mg/L	1	8/17/2009 4:12:16 PM
Sodium	960	20		mg/L	20	8/18/2009 9:47:40 AM
SM 2320B: ALKALINITY						Analyst: **DAM**
Alkalinity, Total (As CaCO3)	87	20		mg/L CaCO3	1	8/13/2009
Carbonate	ND	2.0		mg/L CaCO3	1	8/13/2009
Bicarbonate	87	20		mg/L CaCO3	1	8/13/2009
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: **DAM**
Specific Conductance	6600	0.010		µmhos/cm	1	8/13/2009
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **MMS**
Total Dissolved Solids	7300	400		mg/L	1	8/17/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: Aeration Lagoons **Work Order:** 0908182

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions											
Sample ID: LCS		*LCS*				Batch ID:	**R34924**	Analysis Date:		8/14/2009 9:11:31 AM	
Fluoride	0.5038	mg/L	0.10	0.5	0	101	90	110			
Chloride	4.778	mg/L	0.10	5	0	95.6	90	110			
Bromide	2.487	mg/L	0.10	2.5	0	99.5	90	110			
Nitrate (As N)+Nitrite (As N)	3.353	mg/L	0.20	3.5	0	95.8	90	110			
Phosphorus, Orthophosphate (As P)	4.885	mg/L	0.50	5	0	97.7	90	110			
Sulfate	9.849	mg/L	0.50	10	0	98.5	90	110			
Sample ID: LCS		*LCS*				Batch ID:	**R34944**	Analysis Date:		8/17/2009 9:10:30 AM	
Fluoride	0.4744	mg/L	0.10	0.5	0	94.9	90	110			
Chloride	4.793	mg/L	0.10	5	0	95.9	90	110			
Bromide	2.508	mg/L	0.10	2.5	0	100	90	110			
Nitrate (As N)+Nitrite (As N)	3.355	mg/L	0.20	3.5	0	95.8	90	110			
Phosphorus, Orthophosphate (As P)	4.816	mg/L	0.50	5	0	96.3	90	110			
Sulfate	9.772	mg/L	0.50	10	0	97.7	90	110			
Method: SM 2320B: Alkalinity											
Sample ID: MB		*MBLK*				Batch ID:	**R34906**	Analysis Date:		8/13/2009	
Alkalinity, Total (As CaCO3)	ND	mg/L Ca	20								
Carbonate	ND	mg/L Ca	2.0								
Bicarbonate	ND	mg/L Ca	20								
Sample ID: LCS		*LCS*				Batch ID:	**R34906**	Analysis Date:		8/13/2009	
Alkalinity, Total (As CaCO3)	82.96	mg/L Ca	20	80	0	104	80	120			
Method: EPA Method 8015B: Diesel Range											
Sample ID: MB-19860		*MBLK*				Batch ID:	**19860**	Analysis Date:		8/13/2009	
Diesel Range Organics (DRO)	ND	mg/L	1.0								
Motor Oil Range Organics (MRO)	ND	mg/L	5.0								
Sample ID: LCS-19860		*LCS*				Batch ID:	**19860**	Analysis Date:		8/13/2009	
Diesel Range Organics (DRO)	5.182	mg/L	1.0	5	0	104	74	157			
Sample ID: LCSD-19860		*LCSD*				Batch ID:	**19860**	Analysis Date:		8/13/2009	
Diesel Range Organics (DRO)	4.775	mg/L	1.0	5	0	95.5	74	157	8.16	23	
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R34999**	Analysis Date:		8/22/2009 10:41:16 AM	
Gasoline Range Organics (GRO)	ND	mg/L	0.050								
Sample ID: 2.5UG GRO LCS		*LCS*				Batch ID:	**R34999**	Analysis Date:		8/22/2009 8:51:38 PM	
Gasoline Range Organics (GRO)	0.4364	mg/L	0.050	0.5	0	87.3	80	115			
Sample ID: 2.5UG GRO LCSD		*LCSD*				Batch ID:	**R34999**	Analysis Date:		8/22/2009 9:21:59 PM	
Gasoline Range Organics (GRO)	0.4482	mg/L	0.050	0.5	0	89.6	80	115	2.67	8.39	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: Aeration Lagoons **Work Order:** 0908182

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID: **R34999**		Analysis Date: 8/22/2009 10:41:16 AM			
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID: **R34999**		Analysis Date: 8/22/2009 9:52:19 PM			
Benzene	20.06	µg/L	1.0	20	0	100	85.9	113			
Toluene	20.62	µg/L	1.0	20	0	103	86.4	113			
Ethylbenzene	20.06	µg/L	1.0	20	0	100	83.5	118			
Xylenes, Total	58.83	µg/L	2.0	60	0	98.1	83.4	122			
Sample ID: 100NG BTEX LCSD		*LCSD*				Batch ID: **R34999**		Analysis Date: 8/22/2009 10:22:47 PM			
Benzene	19.19	µg/L	1.0	20	0	95.9	85.9	113	4.45	27	
Toluene	18.69	µg/L	1.0	20	0	93.4	86.4	113	9.84	19	
Ethylbenzene	17.84	µg/L	1.0	20	0	89.2	83.5	118	11.7	10	R
Xylenes, Total	52.19	µg/L	2.0	60	0	87.0	83.4	122	12.0	13	
Method: EPA Method 6010B: Dissolved Metals											
Sample ID: MB		*MBLK*				Batch ID: **R34935**		Analysis Date: 8/17/2009 3:19:12 PM			
Calcium	ND	mg/L	1.0								
Magnesium	ND	mg/L	1.0								
Potassium	ND	mg/L	1.0								
Sodium	ND	mg/L	1.0								
Sample ID: LCS		*LCS*				Batch ID: **R34935**		Analysis Date: 8/17/2009 3:22:13 PM			
Calcium	49.11	mg/L	1.0	50.5	0	97.3	80	120			
Magnesium	49.11	mg/L	1.0	50.5	0	97.3	80	120			
Potassium	52.25	mg/L	1.0	55	0	95.0	80	120			
Sodium	48.51	mg/L	1.0	50.5	0	96.1	80	120			
Method: SM2540C MOD: Total Dissolved Solids											
Sample ID: MB-19891		*MBLK*				Batch ID: **19891**		Analysis Date: 8/17/2009			
Total Dissolved Solids	ND	mg/L	20.0								
Sample ID: LCS-19891		*LCS*				Batch ID: **19891**		Analysis Date: 8/17/2009			
Total Dissolved Solids	1033	mg/L	20.0	1000	0	103	80	120			

Qualifiers:

- E Estimated value
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **WESTERN REFINING SOUT** Date Received: **8/12/2009**

Work Order Number **0908182** Received by: **TLS**

Checklist completed by: _____ 8/12/09 Sample ID labels checked by: _____

Signature Date Initials

Matrix: Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☑	No ☐	N/A ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	
Container/Temp Blank temperature?	3.2°	*<6° C Acceptable* If given sufficient time to cool.		

Number of preserved bottles checked for pH: _____

(<2 >12 *unless noted below.*

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

_____

_____

_____

_____

Corrective Action _____

_____

_____

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Aeration Lagoons

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.5

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1003182
8-11-09	10A	H2O	#1 Aeration Lagoon	3-VOA	HCl	1
				1-500ml		1
				1-125ml	H2SO4	1
				1-125ml	HNO3	1
8-11-09	2pm	H2O	#2 Aeration Lagoon	3-VOA	HCl	2
				1-500ml		2
				1-125ml	H2SO4	2
				1-125ml	HNO3	2

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

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Cation/Anion Balance				Air Bubbles (Y or N)
X		X													
											X				
											X				
											X				
X		X													
											X				
											X				
											X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-11-09	2:45p	Cindy Hurtado			
Date:	Time:	Relinquished by:	Received by:	8/12/09	1000

Remarks:

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

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Thursday, January 08, 2009

Cindy Hurtado
Western Refining Southwest, Inc.
#50 CR 4990
Bloomfield, NM 87413

TEL: (505) 632-4161
FAX: (505) 632-3911

RE: #1 AL Flush Water 11-19-08

Order No.: 0811321

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 11/20/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *08-Jan-09*

CLIENT: Western Refining Southwest, Inc.
Project: #1 AL Flush Water 11-19-08
Lab Order: 0811321

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0811321-01A	#1 AL Flush Water	R31308	EPA Method 8260B: VOLATILES	11/19/2008 8:40:00 AM
0811321-01A	#1 AL Flush Water	R31308	EPA Method 8260B: VOLATILES	11/19/2008 8:40:00 AM
0811321-01B	#1 AL Flush Water	17731	EPA Method 8270C: Semivolatiles	11/19/2008 8:40:00 AM

Hall Environmental Analysis Laboratory, Inc.

Date: *08-Jan-09*

CLIENT: Western Refining Southwest, Inc.
Lab Order: 0811321
Project: #1 AL Flush Water 11-19-08
Lab ID: 0811321-01

Client Sample ID: #1 AL Flush Water
Collection Date: 11/19/2008 8:40:00 AM
Date Received: 11/20/2008
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Acenaphthene	ND	50		µg/L	1	12/4/2008
Acenaphthylene	ND	50		µg/L	1	12/4/2008
Aniline	ND	50		µg/L	1	12/4/2008
Anthracene	ND	50		µg/L	1	12/4/2008
Azobenzene	ND	50		µg/L	1	12/4/2008
Benz(a)anthracene	ND	50		µg/L	1	12/4/2008
Benzo(a)pyrene	ND	50		µg/L	1	12/4/2008
Benzo(b)fluoranthene	ND	50		µg/L	1	12/4/2008
Benzo(g,h,i)perylene	ND	50		µg/L	1	12/4/2008
Benzo(k)fluoranthene	ND	50		µg/L	1	12/4/2008
Benzoic acid	120	100		µg/L	1	12/4/2008
Benzyl alcohol	ND	50		µg/L	1	12/4/2008
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	12/4/2008
Bis(2-chloroethyl)ether	ND	50		µg/L	1	12/4/2008
Bis(2-chloroisopropyl)ether	ND	50		µg/L	1	12/4/2008
Bis(2-ethylhexyl)phthalate	ND	50		µg/L	1	12/4/2008
4-Bromophenyl phenyl ether	ND	50		µg/L	1	12/4/2008
Butyl benzyl phthalate	ND	50		µg/L	1	12/4/2008
Carbazole	ND	50		µg/L	1	12/4/2008
4-Chloro-3-methylphenol	ND	50		µg/L	1	12/4/2008
4-Chloroaniline	ND	50		µg/L	1	12/4/2008
2-Chloronaphthalene	ND	50		µg/L	1	12/4/2008
2-Chlorophenol	ND	50		µg/L	1	12/4/2008
4-Chlorophenyl phenyl ether	ND	50		µg/L	1	12/4/2008
Chrysene	ND	50		µg/L	1	12/4/2008
Di-n-butyl phthalate	ND	50		µg/L	1	12/4/2008
Di-n-octyl phthalate	ND	50		µg/L	1	12/4/2008
Dibenz(a,h)anthracene	ND	50		µg/L	1	12/4/2008
Dibenzofuran	ND	50		µg/L	1	12/4/2008
1,2-Dichlorobenzene	ND	50		µg/L	1	12/4/2008
1,3-Dichlorobenzene	ND	50		µg/L	1	12/4/2008
1,4-Dichlorobenzene	ND	50		µg/L	1	12/4/2008
3,3'-Dichlorobenzidine	ND	50		µg/L	1	12/4/2008
Diethyl phthalate	ND	50		µg/L	1	12/4/2008
Dimethyl phthalate	ND	50		µg/L	1	12/4/2008
2,4-Dichlorophenol	ND	100		µg/L	1	12/4/2008
2,4-Dimethylphenol	54	50		µg/L	1	12/4/2008
4,6-Dinitro-2-methylphenol	ND	100		µg/L	1	12/4/2008
2,4-Dinitrophenol	ND	100		µg/L	1	12/4/2008
2,4-Dinitrotoluene	ND	50		µg/L	1	12/4/2008
2,6-Dinitrotoluene	ND	50		µg/L	1	12/4/2008
Fluoranthene	ND	50		µg/L	1	12/4/2008

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *08-Jan-09*

CLIENT:	Western Refining Southwest, Inc.	**Client Sample ID:**	#1 AL Flush Water
Lab Order:	0811321	**Collection Date:**	11/19/2008 8:40:00 AM
Project:	#1 AL Flush Water 11-19-08	**Date Received:**	11/20/2008
Lab ID:	0811321-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Fluorene	ND	50		µg/L	1	12/4/2008
Hexachlorobenzene	ND	50		µg/L	1	12/4/2008
Hexachlorobutadiene	ND	50		µg/L	1	12/4/2008
Hexachlorocyclopentadiene	ND	50		µg/L	1	12/4/2008
Hexachloroethane	ND	50		µg/L	1	12/4/2008
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	12/4/2008
Isophorone	ND	50		µg/L	1	12/4/2008
2-Methylnaphthalene	ND	50		µg/L	1	12/4/2008
2-Methylphenol	ND	50		µg/L	1	12/4/2008
3+4-Methylphenol	ND	50		µg/L	1	12/4/2008
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	12/4/2008
N-Nitrosodimethylamine	ND	50		µg/L	1	12/4/2008
N-Nitrosodiphenylamine	ND	50		µg/L	1	12/4/2008
Naphthalene	ND	50		µg/L	1	12/4/2008
2-Nitroaniline	ND	50		µg/L	1	12/4/2008
3-Nitroaniline	ND	50		µg/L	1	12/4/2008
4-Nitroaniline	ND	50		µg/L	1	12/4/2008
Nitrobenzene	ND	50		µg/L	1	12/4/2008
2-Nitrophenol	ND	50		µg/L	1	12/4/2008
4-Nitrophenol	ND	50		µg/L	1	12/4/2008
Pentachlorophenol	ND	100		µg/L	1	12/4/2008
Phenanthrene	ND	50		µg/L	1	12/4/2008
Phenol	ND	50		µg/L	1	12/4/2008
Pyrene	ND	50		µg/L	1	12/4/2008
Pyridine	ND	50		µg/L	1	12/4/2008
1,2,4-Trichlorobenzene	ND	50		µg/L	1	12/4/2008
2,4,5-Trichlorophenol	ND	50		µg/L	1	12/4/2008
2,4,6-Trichlorophenol	ND	50		µg/L	1	12/4/2008
Surr: 2,4,6-Tribromophenol	86.1	16.6-150		%REC	1	12/4/2008
Surr: 2-Fluorobiphenyl	80.3	19.6-134		%REC	1	12/4/2008
Surr: 2-Fluorophenol	56.4	9.54-113		%REC	1	12/4/2008
Surr: 4-Terphenyl-d14	73.1	22.7-145		%REC	1	12/4/2008
Surr: Nitrobenzene-d5	79.0	14.6-134		%REC	1	12/4/2008
Surr: Phenol-d5	58.5	10.7-80.3		%REC	1	12/4/2008
EPA METHOD 8260B: VOLATILES						Analyst: HL
Benzene	11	1.0		µg/L	1	11/21/2008 11:57:11 AM
Toluene	2.0	1.0		µg/L	1	11/21/2008 11:57:11 AM
Ethylbenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Methyl tert-butyl ether (MTBE)	120	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,3,5-Trimethylbenzene	2.3	1.0		µg/L	1	11/21/2008 11:57:11 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *08-Jan-09*

CLIENT:	Western Refining Southwest, Inc.	**Client Sample ID:**	#1 AL Flush Water
Lab Order:	0811321	**Collection Date:**	11/19/2008 8:40:00 AM
Project:	#1 AL Flush Water 11-19-08	**Date Received:**	11/20/2008
Lab ID:	0811321-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **HL**
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Naphthalene	ND	2.0		µg/L	1	11/21/2008 11:57:11 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	11/21/2008 11:57:11 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	11/21/2008 11:57:11 AM
Acetone	1100	100		µg/L	10	11/21/2008 2:25:47 PM
Bromobenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Bromodichloromethane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Bromoform	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Bromomethane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
2-Butanone	44	10		µg/L	1	11/21/2008 11:57:11 AM
Carbon disulfide	ND	10		µg/L	1	11/21/2008 11:57:11 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Chlorobenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Chloroethane	ND	2.0		µg/L	1	11/21/2008 11:57:11 AM
Chloroform	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Chloromethane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
2-Chlorotoluene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
4-Chlorotoluene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
cis-1,2-DCE	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/21/2008 11:57:11 AM
Dibromochloromethane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Dibromomethane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,2-Dichloropropane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,3-Dichloropropane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
2,2-Dichloropropane	ND	2.0		µg/L	1	11/21/2008 11:57:11 AM
1,1-Dichloropropene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Hexachlorobutadiene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
2-Hexanone	ND	10		µg/L	1	11/21/2008 11:57:11 AM
Isopropylbenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
4-Isopropyltoluene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	11/21/2008 11:57:11 AM
Methylene Chloride	ND	3.0		µg/L	1	11/21/2008 11:57:11 AM
n-Butylbenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
n-Propylbenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *08-Jan-09*

CLIENT:	Western Refining Southwest, Inc.	**Client Sample ID:**	#1 AL Flush Water
Lab Order:	0811321	**Collection Date:**	11/19/2008 8:40:00 AM
Project:	#1 AL Flush Water 11-19-08	**Date Received:**	11/20/2008
Lab ID:	0811321-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: HL
sec-Butylbenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Styrene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
tert-Butylbenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/21/2008 11:57:11 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
trans-1,2-DCE	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/21/2008 11:57:11 AM
Vinyl chloride	ND	1.0		µg/L	1	11/21/2008 11:57:11 AM
Xylenes, Total	30	1.5		µg/L	1	11/21/2008 11:57:11 AM
Surr: 1,2-Dichloroethane-d4	104	68.1-123		%REC	1	11/21/2008 11:57:11 AM
Surr: 4-Bromofluorobenzene	102	53.2-145		%REC	1	11/21/2008 11:57:11 AM
Surr: Dibromofluoromethane	115	68.5-119		%REC	1	11/21/2008 11:57:11 AM
Surr: Toluene-d8	103	64-131		%REC	1	11/21/2008 11:57:11 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Lab Order: 0811321
Client: Western Refining Southwest, Inc.
Project: #1 AL Flush Water 11-19-08

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Instrument Run ID	QC Batch ID	Prep Date	Analysis Date
0811321-01A	#1 AL Flush Water	11/19/2008 8:40:00 AM	Aqueous	EPA Method 8260B: VOLATILES	THOR_081121A	R31308		11/21/2008
				EPA Method 8260B: VOLATILES	THOR_081121A	R31308		11/21/2008
0811321-01B				EPA Method 8270C: Semivolatiles	ELMO_081204A	17731	11/26/2008	12/4/2008

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Tax I.D. 62-0814289

Est. 1970

Andy Freeman
Hall Environmental Analysis Laboratory
4901 Hawkins NE

Albuquerque, NM 87109

Report Summary

Thursday December 04, 2008

Report Number: L376079
Samples Received: 11/21/08
Client Project: 0811321

Description:

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Daphne R Richards
Daphne Richards, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Andy Freeman
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

December 04, 2008

Date Received : November 21, 2008
Description :

Sample ID : #1 AL FLOSH WATER

Collected By :
Collection Date : 11/19/08 08:40

ESC Sample # : L376079-01

Site ID :

Project # : 0811321

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	7.2			9040C	11/28/08	1
Flashpoint	See Footnote		deg F	D93/1010A	11/28/08	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/l	9012B	12/01/08	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/l	9034/9030B	12/01/08	1
Mercury	BDL	0.00020	mg/l	7470A	12/01/08	1
Arsenic	BDL	0.020	mg/l	6010B	12/03/08	1
Barium	0.046	0.0050	mg/l	6010B	12/03/08	1
Cadmium	BDL	0.0050	mg/l	6010B	12/03/08	1
Chromium	BDL	0.010	mg/l	6010B	12/03/08	1
Lead	BDL	0.0050	mg/l	6010B	12/03/08	1
Selenium	0.039	0.020	mg/l	6010B	12/03/08	1
Silver	BDL	0.010	mg/l	6010B	12/03/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 12/04/08 10:24 Printed: 12/04/08 10:24
L376079-01 (FLASHPOINT) - Did Not Flash @ 170f

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L376079-01	WG395671	SAMP	Corrosivity	R547430	T8

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
12/04/08 at 10:24:54

TSR Signing Reports: 288
R5 - Desired TAT

DO NOT USE Lab Id's as sample name. Use Client Sample ID names Dissolved metals are field filtered unless otherwise noted

Sample: L376079-01 Account: HALLENVANM Received: 11/21/08 09:00 Due Date: 12/01/08 00:00 RPT Date: 12/04/08 10:24

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Hall Environmental Analysis Laboratory
Andy Freeman
4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L376079

December 04, 2008

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Conductivity	7.10	umhos/cm			WG395671	11/28/08 10:11
Reactive Sulf.(SW846 7.3.4.1)	< 25	mg/l			WG396128	12/01/08 10:00
Mercury	< .0002	mg/l			WG395863	12/01/08 15:16
Arsenic	< .002	mg/l			WG395656	12/03/08 11:31
Barium	< .005	mg/l			WG395656	12/03/08 11:31
Cadmium	< .005	mg/l			WG395656	12/03/08 11:31
Chromium	< .01	mg/l			WG395656	12/03/08 11:31
Lead	< .005	mg/l			WG395656	12/03/08 11:31
Selenium	< .02	mg/l			WG395656	12/03/08 11:31
Silver	< .01	mg/l			WG395656	12/03/08 11:31

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Conductivity	umhos/cm	7.30	7.20	1.38	20	L376079-01	WG395671
Reactive Sulf.(SW846 7.3.4.1)	mg/l	0.00	0.00	0.00	20	L376079-01	WG396128
Mercury	mg/l	0.00	0.00	0.00	20	L376756-01	WG395863
Reactive CN (SW846 7.3.3.2)	mg/l	0.00	0.00	0.00	20	L376079-01	WG396129
Arsenic	mg/l	0.0496	0.0568	13.5	20	L376099-03	WG395656
Barium	mg/l	0.187	0.190	1.59	20	L376099-03	WG395656
Cadmium	mg/l	0.00	0.00	0.00	20	L376099-03	WG395656
Chromium	mg/l	0.00	0.00	0.00	20	L376099-03	WG395656
Lead	mg/l	0.00	0.00	0.00	20	L376099-03	WG395656
Selenium	mg/l	0.0562	0.0609	8.03	20	L376099-03	WG395656
Silver	mg/l	0.00	0.00120	NA*	20	L376099-03	WG395656

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Conductivity	umhos/cm	7012	7150	101	97.9-102	WG395671
Flashpoint	deg F	82	81.0	98.8	96-103	WG395916
Reactive Sulf.(SW846 7.3.4.1)	mg/l	100	91.0	91.0	70-130	WG396128
Mercury	mg/l	.003	0.00301	100	85-115	WG395863
Arsenic	mg/l	1.13	1.04	92.0	85-115	WG395656
Barium	mg/l	1.13	1.09	96.6	85-115	WG395656
Cadmium	mg/l	1.13	1.08	95.6	85-115	WG395656

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L376079

December 04, 2008

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chromium	mg/l	1.13	1.06	93.8	85-115	WG395656
Lead	mg/l	1.13	1.07	94.7	85-115	WG395656
Selenium	mg/l	1.13	0.997	88.2	85-115	WG395656
Silver	mg/l	1.13	1.05	92.9	85-115	WG395656

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Ignitability	deg F	80.0	80.0	100.	97-119	0.00	20	WG395671
Flashpoint	deg F	82.0	81.0	100.	96-103	1.23	7	WG395916
Reactive Sulf.(SW846 7.3.4.1)	mg/l	91.0	91.0	91.0	70-130	0.00	20	WG396128

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Mercury	mg/l	0.003	0.00	0.003	109	70-130	L376756-01	WG395863
Arsenic	mg/l	1.10	0.056	1.13	92.3	75-125	L376099-03	WG395656
Barium	mg/l	1.24	0.190	1.13	92.9	75-125	L376099-03	WG395656
Cadmium	mg/l	1.05	0.00	1.13	92.9	75-125	L376099-03	WG395656
Chromium	mg/l	1.04	0.00	1.13	92.0	75-125	L376099-03	WG395656
Lead	mg/l	1.03	0.00	1.13	91.2	75-125	L376099-03	WG395656
Selenium	mg/l	1.07	0.060	1.13	89.3	75-125	L376099-03	WG395656
Silver	mg/l	0.038	0.001	1.13	3.32*	75-125	L376099-03	WG395656

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Mercury	mg/l	0.003	0.00	96.0	70-130	12.7	20	L376756-01	WG395863
Arsenic	mg/l	1.10	1.10	92.3	75-125	0.00	20	L376099-03	WG395656
Barium	mg/l	1.27	1.24	95.6	75-125	2.89	20	L376099-03	WG395656
Cadmium	mg/l	1.07	1.05	94.7	75-125	1.89	20	L376099-03	WG395656
Chromium	mg/l	1.06	1.04	93.8	75-125	1.90	20	L376099-03	WG395656
Lead	mg/l	1.03	1.03	91.2	75-125	0.000	20	L376099-03	WG395656
Selenium	mg/l	1.08	1.07	90.2	75-125	0.93	20	L376099-03	WG395656
Silver	mg/l	0.03	0.03	3.381	75-125	1.79	20	L376099-03	WG395656

Batch number /Run number / Sample number cross reference

WG395671: R547430: L376079-01
WG395916: R547548: L376079-01
WG396128: R548738: L376079-01
WG395863: R549005: L376079-01
WG396129: R549105: L376079-01
WG395656: R551545: L376079-01

* * Calculations are performed prior to rounding of reported values .
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L376079

December 04, 2008

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Hall Environmental Analysis Laboratory, Inc.
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109-4372
TEL: *5053453975* FAX: *5053454107*

CHAIN-OF-CUSTODY RECORD

F004

Subcontractor:
ESC
12065 Lebanon Rd
Mt. Juliet, TN 37122

TEL: (800) 767-5859
FAX: (615) 758-5859
Acct #:

Project Name: 0811321

20-Nov-08

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0811321-01C	#1 AL Flush Water	Aqueous	11/19/2008 8:40:00 AM	VARIOUS	SEE BELOW

L576079-01

ANALYTICAL COMMENTS: RCI-LEVEL 4 QC

Received by lab: [signature]
Date 11/21/08 Time 0700
Temp 3.5 Bottles Received 4
pH Checked <2 >12 Condition
Custody Seal Intact Yes No N/A
(Fedex) UPS Courier Other

9632 6253 3260

Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

3.5 OK (NCF)

		Date/Time			Date/Time
Relinquished by:	[signature] 14:18	11/20/08	Received by:		
Relinquished by:			Received by:	[signature]	11/21/08 0900

ENVIRONMENTAL SCIENCE CORP.

SAMPLE NON-CONFORMANCE FORM

Login No.: L376079

Date: 11.21.08

Evaluated by: JASON P.

Client: HALLENVANM

Non-Conformance (check applicable items)

_____	Chain of Custody is missing	X	Login Clarification Needed
_____	Improper container type	_____	Improper preservation
_____	Chain of custody is incomplete	_____	Container lid not intact
_____	Parameter(s) past holding time	_____	Improper temperature
_____	Broken container(s) **see below**	_____	Broken container: sufficient sample volume remains for analysis requested
_____	Insufficient packing material around container		
_____	Insufficient packing material inside cooler		
_____	Improper handling by carrier (FedEx / UPS / Courier)		
_____	Sample was frozen		

Comments: Received containers for CN, Sulfide, Metals, and one unpres. container. Only analysis requested is RCI. Containers are plastic. please confirm & clarify analysis

Login Instructions: **TSR Initials:** DR

Client informed by (call) / email / fax / voice mail date: 11/24 time: 9:10

Client contact: _____

Run RCI + MRCRA8 per client

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: #1 AL Flush Water 11-19-08 **Work Order:** 0811321

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8260B: VOLATILES									
Sample ID: 5ml rb		*MBLK*			Batch ID: **R31308**		Analysis Date: 11/21/2008 9:31:51 AM		
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	1.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						
Carbon Tetrachloride	ND	µg/L	1.0						
Chlorobenzene	ND	µg/L	1.0						
Chloroethane	ND	µg/L	2.0						
Chloroform	ND	µg/L	1.0						
Chloromethane	ND	µg/L	1.0						
2-Chlorotoluene	ND	µg/L	1.0						
4-Chlorotoluene	ND	µg/L	1.0						
cis-1,2-DCE	ND	µg/L	1.0						
cis-1,3-Dichloropropene	ND	µg/L	1.0						
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0						
Dibromochloromethane	ND	µg/L	1.0						
Dibromomethane	ND	µg/L	1.0						
1,2-Dichlorobenzene	ND	µg/L	1.0						
1,3-Dichlorobenzene	ND	µg/L	1.0						
1,4-Dichlorobenzene	ND	µg/L	1.0						
Dichlorodifluoromethane	ND	µg/L	1.0						
1,1-Dichloroethane	ND	µg/L	1.0						
1,1-Dichloroethene	ND	µg/L	1.0						
1,2-Dichloropropane	ND	µg/L	1.0						
1,3-Dichloropropane	ND	µg/L	1.0						
2,2-Dichloropropane	ND	µg/L	2.0						
1,1-Dichloropropene	ND	µg/L	1.0						
Hexachlorobutadiene	ND	µg/L	1.0						
2-Hexanone	ND	µg/L	10						
Isopropylbenzene	ND	µg/L	1.0						
4-Isopropyltoluene	ND	µg/L	1.0						

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: #1 AL Flush Water 11-19-08 **Work Order:** 0811321

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8260B: VOLATILES									
Sample ID: 5ml rb		*MBLK*			Batch ID: R31308		Analysis Date: 11/21/2008 9:31:51 AM		
4-Methyl-2-pentanone	ND	µg/L	10						
Methylene Chloride	ND	µg/L	3.0						
n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	1.0						
Styrene	ND	µg/L	1.0						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
[illegible]hloride	ND	µg/L	1.0						
[illegible]es, Total	ND	µg/L	1.5						
[illegible]urr: 1,2-Dichloroethane-d4	11.27	µg/L	0	113	68.1	123			
Surr: 4-Bromofluorobenzene	10.75	µg/L	0	108	53.2	145			
Surr: Dibromofluoromethane	12.20	µg/L	0	122	68.5	119			S
Surr: Toluene-d8	10.40	µg/L	0	104	64	131			
Sample ID: b5		*MBLK*			Batch ID: R31308		Analysis Date: 11/22/2008 12:42:24 AM		
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	1.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						

Qualifiers:

	Estimated value	H	Holding times for preparation or analysis exceeded
	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: #1 AL Flush Water 11-19-08 **Work Order:** 0811321

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Method: EPA Method 8260B: VOLATILES
Sample ID: b5 *MBLK* Batch ID: **R31308** Analysis Date: 11/22/2008 12:42:24 AM

Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: #1 AL Flush Water 11-19-08 **Work Order:** 0811321

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8260B: VOLATILES									
Sample ID: b5		*MBLK*			Batch ID: **R31308**		Analysis Date: 11/22/2008 12:42:24 AM		
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	10.75	µg/L	0	108	68.1	123			
Surr: 4-Bromofluorobenzene	10.64	µg/L	0	106	53.2	145			
Surr: Dibromofluoromethane	11.88	µg/L	0	119	68.5	119			
Surr: Toluene-d8	9.928	µg/L	0	99.3	64	131			
Sample ID: 100ng lcs		*LCS*			Batch ID: **R31308**		Analysis Date: 11/21/2008 10:29:59 AM		
Benzene	22.06	µg/L	1.0	110	88	116			
Toluene	19.62	µg/L	1.0	98.1	82.9	112			
Chlorobenzene	18.73	µg/L	1.0	93.7	71.4	133			
1,1-Dichloroethene	21.88	µg/L	1.0	109	97.9	140			
Trichloroethene (TCE)	20.61	µg/L	1.0	103	90.5	112			
Surr: 1,2-Dichloroethane-d4	10.64	µg/L	0	106	68.1	123			
Surr: 4-Bromofluorobenzene	10.27	µg/L	0	103	53.2	145			
Surr: Dibromofluoromethane	11.02	µg/L	0	110	68.5	119			
Surr: Toluene-d8	10.16	µg/L	0	102	64	131			
Sample ID: 100ng lcs		*LCS*			Batch ID: **R31308**		Analysis Date: 11/21/2008 11:15:38 PM		
[illegible]ene	21.60	µg/L	1.0	108	88	116			
[illegible]ne	19.08	µg/L	1.0	95.4	82.9	112			
[illegible]robenzene	17.93	µg/L	1.0	89.7	71.4	133			
1,1-Dichloroethene	22.21	µg/L	1.0	111	97.9	140			
Trichloroethene (TCE)	20.52	µg/L	1.0	103	90.5	112			
Surr: 1,2-Dichloroethane-d4	10.58	µg/L	0	106	68.1	123			
Surr: 4-Bromofluorobenzene	11.00	µg/L	0	110	53.2	145			
Surr: Dibromofluoromethane	11.78	µg/L	0	118	68.5	119			
Surr: Toluene-d8	9.556	µg/L	0	95.6	64	131			

Qualifiers:

[illegible]	Estimated value	H	Holding times for preparation or analysis exceeded
[illegible]	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: #1 AL Flush Water 11-19-08 **Work Order:** 0811321

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8270C: Semivolatiles									
Sample ID: mb-17731		*MBLK*			Batch ID: **17731**		Analysis Date:		12/4/2008
Acenaphthene	ND	µg/L	10						
Acenaphthylene	ND	µg/L	10						
Aniline	ND	µg/L	10						
Anthracene	ND	µg/L	10						
Azobenzene	ND	µg/L	10						
Benz(a)anthracene	ND	µg/L	10						
Benzo(a)pyrene	ND	µg/L	10						
Benzo(b)fluoranthene	ND	µg/L	10						
Benzo(g,h,i)perylene	ND	µg/L	10						
Benzo(k)fluoranthene	ND	µg/L	10						
Benzoic acid	ND	µg/L	20						
Benzyl alcohol	ND	µg/L	10						
Bis(2-chloroethoxy)methane	ND	µg/L	10						
Bis(2-chloroethyl)ether	ND	µg/L	10						
Bis(2-chloroisopropyl)ether	ND	µg/L	10						
Bis(2-ethylhexyl)phthalate	ND	µg/L	10						
4-Bromophenyl phenyl ether	ND	µg/L	10						
Butyl benzyl phthalate	ND	µg/L	10						
Carbazole	ND	µg/L	10						
4-Chloro-3-methylphenol	ND	µg/L	10						
4-Chloroaniline	ND	µg/L	10						
2-Chloronaphthalene	ND	µg/L	10						
2-Chlorophenol	ND	µg/L	10						
4-Chlorophenyl phenyl ether	ND	µg/L	10						
Chrysene	ND	µg/L	10						
Di-n-butyl phthalate	ND	µg/L	10						
Di-n-octyl phthalate	ND	µg/L	10						
Dibenz(a,h)anthracene	ND	µg/L	10						
Dibenzofuran	ND	µg/L	10						
1,2-Dichlorobenzene	ND	µg/L	10						
1,3-Dichlorobenzene	ND	µg/L	10						
1,4-Dichlorobenzene	ND	µg/L	10						
3,3'-Dichlorobenzidine	ND	µg/L	10						
Diethyl phthalate	ND	µg/L	10						
Dimethyl phthalate	ND	µg/L	10						
2,4-Dichlorophenol	ND	µg/L	20						
2,4-Dimethylphenol	ND	µg/L	10						
4,6-Dinitro-2-methylphenol	ND	µg/L	20						
2,4-Dinitrophenol	ND	µg/L	20						
2,4-Dinitrotoluene	ND	µg/L	10						
2,6-Dinitrotoluene	ND	µg/L	10						
Fluoranthene	ND	µg/L	10						
Fluorene	ND	µg/L	10						
Hexachlorobenzene	ND	µg/L	10						

Qualifiers:

- E Estimated value
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: #1 AL Flush Water 11-19-08 **Work Order:** 0811321

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8270C: Semivolatiles									
Sample ID: mb-17731		*MBLK*			Batch ID: **17731**		Analysis Date:		12/4/2008
Hexachlorobutadiene	ND	µg/L	10						
Hexachlorocyclopentadiene	ND	µg/L	10						
Hexachloroethane	ND	µg/L	10						
Indeno(1,2,3-cd)pyrene	ND	µg/L	10						
Isophorone	ND	µg/L	10						
2-Methylnaphthalene	ND	µg/L	10						
2-Methylphenol	ND	µg/L	10						
3+4-Methylphenol	ND	µg/L	10						
N-Nitrosodi-n-propylamine	ND	µg/L	10						
N-Nitrosodimethylamine	ND	µg/L	10						
N-Nitrosodiphenylamine	ND	µg/L	10						
Naphthalene	ND	µg/L	10						
2-Nitroaniline	ND	µg/L	10						
3-Nitroaniline	ND	µg/L	10						
4-Nitroaniline	ND	µg/L	10						
Nitrobenzene	ND	µg/L	10						
2-Nitrophenol	ND	µg/L	10						
4-Nitrophenol	ND	µg/L	10						
Pentachlorophenol	ND	µg/L	20						
[illegible]anthrene	ND	µg/L	10						
[illegible]ol	ND	µg/L	10						
[illegible]ne	ND	µg/L	10						
Pyridine	ND	µg/L	10						
1,2,4-Trichlorobenzene	ND	µg/L	10						
2,4,5-Trichlorophenol	ND	µg/L	10						
2,4,6-Trichlorophenol	ND	µg/L	10						
Surr: 2,4,6-Tribromophenol	134.5	µg/L	0	67.2	16.6	150			
Surr: 2-Fluorobiphenyl	67.34	µg/L	0	67.3	19.6	134			
Surr: 2-Fluorophenol	82.02	µg/L	0	41.0	9.54	113			
Surr: 4-Terphenyl-d14	59.34	µg/L	0	59.3	22.7	145			
Surr: Nitrobenzene-d5	62.42	µg/L	0	62.4	14.6	134			
Surr: Phenol-d5	74.60	µg/L	0	37.3	10.7	80.3			
Sample ID: lcs-17731		*LCS*			Batch ID: **17731**		Analysis Date:		12/4/2008
Acenaphthene	69.82	µg/L	10	69.8	11	123			
4-Chloro-3-methylphenol	168.0	µg/L	10	84.0	15.4	119			
2-Chlorophenol	146.1	µg/L	10	73.0	12.2	122			
1,4-Dichlorobenzene	61.28	µg/L	10	61.3	16.9	100			
2,4-Dinitrotoluene	75.82	µg/L	10	75.8	13	138			
N-Nitrosodi-n-propylamine	76.10	µg/L	10	76.1	9.93	122			
4-Nitrophenol	111.4	µg/L	10	55.7	12.5	87.4			
Pentachlorophenol	160.5	µg/L	20	80.2	3.55	114			
Phenol	78.82	µg/L	10	39.4	7.53	73.1			
Pyrene	68.34	µg/L	10	68.3	12.6	140			
1,2,4-Trichlorobenzene	67.42	µg/L	10	67.4	17.4	98.7			

Qualifiers:

[illegible] Estimated value
[illegible] Analyte detected below quantitation limits
[illegible] RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: #1 AL Flush Water 11-19-08 **Work Order:** 0811321

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8270C: Semivolatiles									
Sample ID: lcs-17731		*LCS*			Batch ID:	17731	Analysis Date:		12/4/2008
Surr: 2,4,6-Tribromophenol	166.4	µg/L	0	83.2	16.6	150			
Surr: 2-Fluorobiphenyl	87.06	µg/L	0	87.1	19.6	134			
Surr: 2-Fluorophenol	112.3	µg/L	0	56.2	9.54	113			
Surr: 4-Terphenyl-d14	71.94	µg/L	0	71.9	22.7	145			
Surr: Nitrobenzene-d5	80.14	µg/L	0	80.1	14.6	134			
Surr: Phenol-d5	125.5	µg/L	0	62.7	10.7	80.3			
Sample ID: lcsd-17731		*LCSD*			Batch ID:	17731	Analysis Date:		12/4/2008
Acenaphthene	69.40	µg/L	10	69.4	11	123	0.603	30.5	
4-Chloro-3-methylphenol	165.0	µg/L	10	82.5	15.4	119	1.81	28.6	
2-Chlorophenol	146.5	µg/L	10	73.3	12.2	122	0.287	107	
1,4-Dichlorobenzene	61.30	µg/L	10	61.3	16.9	100	0.0326	62.1	
2,4-Dinitrotoluene	77.52	µg/L	10	77.5	13	138	2.22	14.7	
N-Nitrosodi-n-propylamine	82.56	µg/L	10	82.6	9.93	122	8.14	30.3	
4-Nitrophenol	113.1	µg/L	10	56.5	12.5	87.4	1.52	36.3	
Pentachlorophenol	160.7	µg/L	20	80.4	3.55	114	0.162	49	
Phenol	81.12	µg/L	10	40.6	7.53	73.1	2.88	52.4	
Pyrene	67.42	µg/L	10	67.4	12.6	140	1.36	16.3	
1,2,4-Trichlorobenzene	69.12	µg/L	10	69.1	17.4	98.7	2.49	36.4	
Surr: 2,4,6-Tribromophenol	161.4	µg/L	0	80.7	16.6	150	0	0	
Surr: 2-Fluorobiphenyl	84.98	µg/L	0	85.0	19.6	134	0	0	
Surr: 2-Fluorophenol	114.0	µg/L	0	57.0	9.54	113	0	0	
Surr: 4-Terphenyl-d14	73.66	µg/L	0	73.7	22.7	145	0	0	
Surr: Nitrobenzene-d5	79.54	µg/L	0	79.5	14.6	134	0	0	
Surr: Phenol-d5	127.5	µg/L	0	63.7	10.7	80.3	0	0	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING SOUT — Date Received: 11/20/2008

Work Order Number 0811321 — Received by: TLS

Checklist completed by: _____ 11/20/08 — Sample ID labels checked by: _____

Signature — Date — initials

Matrix: — Carrier name UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☑	No ☐	N/A ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	
Container/Temp Blank temperature?	3°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action. _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☑
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Western Refining (Blmfld)
Project Name: #1 AL flush water 11-19-08
Address: #50 CR 4990 Bloomfield, NM 87413
Project #:
Project Manager:
Phone #: 505-632-4161
Sampler: Cindy & Bob
Fax #: 505-632-3911
Sample Temperature: 3

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No. 0811321
11-19-08	8:40	H_2O	#1 AL flush water	3-VOA			HCl	1
				1 liter			Amber	1
				1 500 ml			NaOH	1
				1 500ml			Zn Acetate NaOH	1
				1 500ml			N/A	1
				1 500 ml		X		1

ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	RCI				Air Bubbles or Headspace (Y or N)
										X						
											X					
												X				
												X				
												X				
							X									

Date: 11-19-08 Time: 9:10 Relinquished By: (Signature) Robert Erickson
Received By: (Signature) 11/20/08 1125

Date: Time: Relinquished By: (Signature)
Received By: (Signature)

Remarks:

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Tuesday, August 25, 2009

Cindy Hurtado
Western Refining Southwest, Inc.
#50 CR 4990
Bloomfield, NM 87413

TEL: (505) 632-4161
FAX (505) 632-3911

RE: South Evaporation Pond

Order No.: 0908183

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 8/12/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-09*

CLIENT:	Western Refining Southwest, Inc.	**Client Sample ID:**	West Leak Detection
Lab Order:	0908183	**Collection Date:**	8/11/2009 8:20:00 AM
Project:	South Evaporation Pond	**Date Received:**	8/12/2009
Lab ID:	0908183-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/13/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/13/2009
Surr: DNOP	105	58-140		%REC	1	8/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/23/2009 12:55:16 AM
Surr: BFB	79.1	55.2-107		%REC	1	8/23/2009 12:55:16 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	8/23/2009 12:55:16 AM
Toluene	ND	1.0		µg/L	1	8/23/2009 12:55:16 AM
Ethylbenzene	ND	1.0		µg/L	1	8/23/2009 12:55:16 AM
Xylenes, Total	ND	2.0		µg/L	1	8/23/2009 12:55:16 AM
Surr: 4-Bromofluorobenzene	79.5	65.9-130		%REC	1	8/23/2009 12:55:16 AM
EPA METHOD 300.0: ANIONS						Analyst: **RAGS**
Fluoride	0.85	0.10		mg/L	1	8/13/2009 9:56:21 PM
Chloride	3600	20		mg/L	200	8/17/2009 11:23:37 PM
Bromide	6.8	0.10		mg/L	1	8/12/2009 8:40:53 PM
Nitrate (As N)+Nitrite (As N)	ND	10		mg/L	50	8/13/2009 7:02:15 PM
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/12/2009 8:58:18 PM
Sulfate	1900	100		mg/L	200	8/13/2009 10:13:45 PM
EPA METHOD 6010B: DISSOLVED METALS						Analyst: **SNV**
Calcium	270	5.0		mg/L	5	8/18/2009 9:52:25 AM
Magnesium	70	1.0		mg/L	1	8/17/2009 4:18:16 PM
Potassium	37	1.0		mg/L	1	8/17/2009 4:18:16 PM
Sodium	2500	50		mg/L	50	8/18/2009 9:57:02 AM
SM 2320B: ALKALINITY						Analyst: **DAM**
Alkalinity, Total (As CaCO3)	240	20		mg/L CaCO3	1	8/13/2009
Carbonate	ND	2.0		mg/L CaCO3	1	8/13/2009
Bicarbonate	240	20		mg/L CaCO3	1	8/13/2009
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: **DAM**
Specific Conductance	9700	0.010		µmhos/cm	1	8/13/2009
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **MMS**
Total Dissolved Solids	8510	40.0		mg/L	1	8/17/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-09*

CLIENT:	Western Refining Southwest, Inc.	**Client Sample ID:**	East Leak Detection
Lab Order:	0908183	**Collection Date:**	8/11/2009 8:45:00 AM
Project:	South Evaporation Pond	**Date Received:**	8/12/2009
Lab ID:	0908183-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/13/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/13/2009
Surr: DNOP	108	58-140		%REC	1	8/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/23/2009 1:25:34 AM
Surr: BFB	75.6	55.2-107		%REC	1	8/23/2009 1:25:34 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	8/23/2009 1:25:34 AM
Toluene	ND	1.0		µg/L	1	8/23/2009 1:25:34 AM
Ethylbenzene	ND	1.0		µg/L	1	8/23/2009 1:25:34 AM
Xylenes, Total	ND	2.0		µg/L	1	8/23/2009 1:25:34 AM
Surr: 4-Bromofluorobenzene	74.9	65.9-130		%REC	1	8/23/2009 1:25:34 AM
EPA METHOD 300.0: ANIONS						Analyst: **LJB**
Fluoride	1.1	0.10		mg/L	1	8/12/2009 9:15:42 PM
Chloride	4500	50		mg/L	500	8/17/2009 11:41:01 PM
Bromide	8.4	2.0		mg/L	20	8/12/2009 9:33:06 PM
Nitrate (As N)+Nitrite (As N)	ND	10		mg/L	50	8/13/2009 7:19:40 PM
Phosphorus, Orthophosphate (As P)	11	10		mg/L	20	8/12/2009 9:33:06 PM
Sulfate	2200	25		mg/L	50	8/13/2009 10:31:09 PM
EPA METHOD 6010B: DISSOLVED METALS						Analyst: **SNV**
Calcium	330	5.0		mg/L	5	8/18/2009 10:00:06 AM
Magnesium	83	1.0		mg/L	1	8/17/2009 4:22:34 PM
Potassium	48	1.0		mg/L	1	8/17/2009 4:22:34 PM
Sodium	2900	50		mg/L	50	8/18/2009 10:04:11 AM
SM 2320B: ALKALINITY						Analyst: **DAM**
Alkalinity, Total (As CaCO3)	290	20		mg/L CaCO3	1	8/13/2009
Carbonate	ND	2.0		mg/L CaCO3	1	8/13/2009
Bicarbonate	290	20		mg/L CaCO3	1	8/13/2009
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: **DAM**
Specific Conductance	16000	0.050		µmhos/cm	5	8/14/2009
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **MMS**
Total Dissolved Solids	9830	40.0		mg/L	1	8/17/2009

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Estimated value	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-09*

CLIENT:	Western Refining Southwest, Inc.	**Client Sample ID:**	South Evap Pond
Lab Order:	0908183	**Collection Date:**	8/11/2009 12:55:00 PM
Project:	South Evaporation Pond	**Date Received:**	8/12/2009
Lab ID:	0908183-03	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/13/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/13/2009
Surr: DNOP	98.3	58-140		%REC	1	8/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.50		mg/L	10	8/23/2009 1:56:03 AM
Surr: BFB	75.2	55.2-107		%REC	10	8/23/2009 1:56:03 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	10		µg/L	10	8/23/2009 1:56:03 AM
Toluene	ND	10		µg/L	10	8/23/2009 1:56:03 AM
Ethylbenzene	ND	10		µg/L	10	8/23/2009 1:56:03 AM
Xylenes, Total	ND	20		µg/L	10	8/23/2009 1:56:03 AM
Surr: 4-Bromofluorobenzene	73.6	65.9-130		%REC	10	8/23/2009 1:56:03 AM
EPA METHOD 300.0: ANIONS						Analyst: **LJB**
Fluoride	1.4	0.50		mg/L	5	8/12/2009 9:50:30 PM
Chloride	4000	50		mg/L	500	8/17/2009 11:58:26 PM
Bromide	5.2	0.50		mg/L	5	8/12/2009 9:50:30 PM
Nitrate (As N)+Nitrite (As N)	ND	10		mg/L	50	8/13/2009 8:11:53 PM
Phosphorus, Orthophosphate (As P)	3.0	2.5		mg/L	5	8/12/2009 9:50:30 PM
Sulfate	980	10		mg/L	20	8/12/2009 10:07:54 PM
EPA METHOD 6010B: DISSOLVED METALS						Analyst: **SNV**
Calcium	270	5.0		mg/L	5	8/18/2009 10:17:55 AM
Magnesium	72	1.0		mg/L	1	8/17/2009 4:26:50 PM
Potassium	48	1.0		mg/L	1	8/17/2009 4:26:50 PM
Sodium	2400	50		mg/L	50	8/18/2009 10:21:50 AM
SM 2320B: ALKALINITY						Analyst: **DAM**
Alkalinity, Total (As CaCO3)	330	20		mg/L CaCO3	1	8/13/2009
Carbonate	75	2.0		mg/L CaCO3	1	8/13/2009
Bicarbonate	260	20		mg/L CaCO3	1	8/13/2009
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: **DAM**
Specific Conductance	9800	0.010		µmhos/cm	1	8/13/2009
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **MMS**
Total Dissolved Solids	8630	200		mg/L	1	8/17/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

LL ENVIRONMENTAL ANALYSIS LABORATORY

CATION/ANION BALANCE SHEET FOR WATER ANALYSES

HEAL LAB NUMBER	West Leak Detection 0908183-1		East Leak Detection 0908183-2		South Evap. Pond 0908183-3							
CATIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
Sodium	2500	108.74	2900	126.14	2400	104.39						
Potassium	37	0.95	48	1.23	48	1.23						
Calcium	270	13.47	330	16.47	270	13.47						
Magnesium	70	5.76	83	6.83	72	5.93						
Total Cations		128.92		150.67		125.02						
ANIONS	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L	mg/L	meq/L
Sulfate	1900	39.56	2200	45.80	980	20.40						
Chloride	3600	101.55	4500	126.94	4000	112.83						
Bicarbonate (CaCO3)	240	4.80	290	5.80	260	5.20						
Carbonate (CaCO3)	ND	*	ND	*	75	1.50						
Phosphate (P)	ND	*	11	1.07	3.0	0.29						
Nitrite (N)	ND	*	ND	*	ND	*						
Nitrate (N)	ND	*	ND	*	ND	*						
Fluoride	0.85	0.04	1.1	0.06	1.4	0.07						
Bromide	6.8	0.09	8.4	0.11	5.2	0.07						
Total Anions		146.04		179.77		140.36						
Elect. Cond. (µMhos/cm)	9700		16000		9800							
CATION/ANION RATIO		0.88		0.84		0.89						
% Difference		6		9		6						
TOTAL DISSOLVED SOLIDS RATIOS												
TDS (measured)	8510		9830		8630							
TDS (calculated)	8529		10278		7987							
Ratio meas TDS:calc TDS		1.0		1.0		1.1						
Ratio Meas. TDS:EC		0.88		0.61		0.88						
Ratio Calc. TDS:EC		0.88		0.64		0.81						
Ratio of anion sum:EC		1.5		1.1		1.4						
Ratio of cation sum:EC		1.3		0.9		1.3						

* Analyte not detected (below method detection limit).

** Values below 0.55 can be obtained in waters containing appreciable concentrations of free acid or alkalinity, or not within pH 6 to 9. Values much higher than 0.7 are possible in highly saline waters.

GENERALLY ACCEPTED RANGES

Cation/Anion balance: 0-3 meq/L- 0.2 meq/L, 3-10 meq/L- 2%, >10 meq/L - 5%

Ratio measured TDS:calculated TDS – 1.0-1.2. Ratio Calculated TDS:EC – 0.55-0.7. Ratio Measured TDS:EC–0.55-0.7. Ratio of anion sum:EC – 0.9-1.1.

Ratio of cation sum:EC – 0.9-1.1

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: South Evaporation Pond **Work Order:** 0908183

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions											
Sample ID: MB		*MBLK*				Batch ID:	**R34895**	Analysis Date:	8/12/2009 10:10:37 AM		
Chloride	ND	mg/L	0.10								
Bromide	ND	mg/L	0.10								
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.20								
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50								
Sulfate	ND	mg/L	0.50								
Sample ID: MB		*MBLK*				Batch ID:	**R34902**	Analysis Date:	8/13/2009 9:45:10 AM		
Chloride	ND	mg/L	0.10								
Bromide	ND	mg/L	0.10								
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.20								
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50								
Sulfate	ND	mg/L	0.50								
Sample ID: MB		*MBLK*				Batch ID:	**R34924**	Analysis Date:	8/14/2009 8:54:06 AM		
Fluoride	ND	mg/L	0.10								
Chloride	ND	mg/L	0.10								
Bromide	ND	mg/L	0.10								
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.20								
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50								
Sulfate	ND	mg/L	0.50								
Sample ID: MB		*MBLK*				Batch ID:	**R34944**	Analysis Date:	8/17/2009 8:53:05 AM		
Fluoride	ND	mg/L	0.10								
Chloride	ND	mg/L	0.10								
Bromide	ND	mg/L	0.10								
Nitrate (As N)+Nitrite (As N)	ND	mg/L	0.20								
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50								
Sulfate	ND	mg/L	0.50								
Sample ID: LCS		*LCS*				Batch ID:	**R34895**	Analysis Date:	8/12/2009 10:28:02 AM		
Chloride	5.171	mg/L	0.10	5	0	103	90	110			
Bromide	2.635	mg/L	0.10	2.5	0	105	90	110			
Nitrate (As N)+Nitrite (As N)	3.638	mg/L	0.20	3.5	0	104	90	110			
Phosphorus, Orthophosphate (As P)	5.094	mg/L	0.50	5	0	102	90	110			
Sulfate	10.48	mg/L	0.50	10	0	105	90	110			
Sample ID: LCS-b		*LCS*				Batch ID:	**R34895**	Analysis Date:	8/12/2009 1:08:16 PM		
Fluoride	0.4877	mg/L	0.10	0.5	0	97.5	90	110			
Sample ID: LCS		*LCS*				Batch ID:	**R34902**	Analysis Date:	8/13/2009 10:02:34 AM		
Chloride	4.910	mg/L	0.10	5	0	98.2	90	110			
Bromide	2.470	mg/L	0.10	2.5	0	98.8	90	110			
Nitrate (As N)+Nitrite (As N)	3.424	mg/L	0.20	3.5	0	97.8	90	110			
Phosphorus, Orthophosphate (As P)	4.805	mg/L	0.50	5	0	96.1	90	110			
Sulfate	9.814	mg/L	0.50	10	0	98.1	90	110			
Sample ID: LCS-b		*LCS*				Batch ID:	**R34902**	Analysis Date:	8/13/2009 1:14:05 PM		
Fluoride	0.5170	mg/L	0.10	0.5	0	103	90	110			
Sample ID: LCS		*LCS*				Batch ID:	**R34924**	Analysis Date:	8/14/2009 9:11:31 AM		

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: South Evaporation Pond **Work Order:** 0908183

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions											
Sample ID: LCS		*LCS*				Batch ID:	**R34924**	Analysis Date:		8/14/2009 9:11:31 AM	
Fluoride	0.5038	mg/L	0.10	0.5	0	101	90	110			
Chloride	4.778	mg/L	0.10	5	0	95.6	90	110			
Bromide	2.487	mg/L	0.10	2.5	0	99.5	90	110			
Nitrate (As N)+Nitrite (As N)	3.353	mg/L	0.20	3.5	0	95.8	90	110			
Phosphorus, Orthophosphate (As P)	4.885	mg/L	0.50	5	0	97.7	90	110			
Sulfate	9.849	mg/L	0.50	10	0	98.5	90	110			
Sample ID: LCS		*LCS*				Batch ID:	**R34944**	Analysis Date:		8/17/2009 9:10:30 AM	
Fluoride	0.4744	mg/L	0.10	0.5	0	94.9	90	110			
Chloride	4.793	mg/L	0.10	5	0	95.9	90	110			
Bromide	2.508	mg/L	0.10	2.5	0	100	90	110			
Nitrate (As N)+Nitrite (As N)	3.355	mg/L	0.20	3.5	0	95.8	90	110			
Phosphorus, Orthophosphate (As P)	4.816	mg/L	0.50	5	0	96.3	90	110			
Sulfate	9.772	mg/L	0.50	10	0	97.7	90	110			
Method: SM 2320B: Alkalinity											
Sample ID: MB		*MBLK*				Batch ID:	**R34906**	Analysis Date:		8/13/2009	
Alkalinity, Total (As CaCO3)	ND	mg/L Ca	20								
Carbonate	ND	mg/L Ca	2.0								
Bicarbonate	ND	mg/L Ca	20								
Sample ID: MB		*MBLK*				Batch ID:	**R34915**	Analysis Date:		8/14/2009	
Alkalinity, Total (As CaCO3)	ND	mg/L Ca	20								
Carbonate	ND	mg/L Ca	2.0								
Bicarbonate	ND	mg/L Ca	20								
Sample ID: LCS		*LCS*				Batch ID:	**R34906**	Analysis Date:		8/13/2009	
Alkalinity, Total (As CaCO3)	82.96	mg/L Ca	20	80	0	104	80	120			
Sample ID: LCS		*LCS*				Batch ID:	**R34915**	Analysis Date:		8/14/2009	
Alkalinity, Total (As CaCO3)	80.56	mg/L Ca	20	80	0	101	80	120			
Method: EPA Method 8015B: Diesel Range											
Sample ID: MB-19860		*MBLK*				Batch ID:	**19860**	Analysis Date:		8/13/2009	
Diesel Range Organics (DRO)	ND	mg/L	1.0								
Motor Oil Range Organics (MRO)	ND	mg/L	5.0								
Sample ID: LCS-19860		*LCS*				Batch ID:	**19860**	Analysis Date:		8/13/2009	
Diesel Range Organics (DRO)	5.182	mg/L	1.0	5	0	104	74	157			
Sample ID: LCSD-19860		*LCSD*				Batch ID:	**19860**	Analysis Date:		8/13/2009	
Diesel Range Organics (DRO)	4.775	mg/L	1.0	5	0	95.5	74	157	8.16	23	

Qualifiers:

J	Estimated value	H	Holding times for preparation or analysis exceeded
B	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: South Evaporation Pond **Work Order:** 0908183

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R34999**	Analysis Date:		8/22/2009 10:41:16 AM	
Gasoline Range Organics (GRO)	ND	mg/L	0.050								
Sample ID: 2.5UG GRO LCS		*LCS*				Batch ID:	**R34999**	Analysis Date:		8/22/2009 8:51:38 PM	
Gasoline Range Organics (GRO)	0.4364	mg/L	0.050	0.5	0	87.3	80	115			
Sample ID: 2.5UG GRO LCSD		*LCSD*				Batch ID:	**R34999**	Analysis Date:		8/22/2009 9:21:59 PM	
Gasoline Range Organics (GRO)	0.4482	mg/L	0.050	0.5	0	89.6	80	115	2.67	8.39	
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R34999**	Analysis Date:		8/22/2009 10:41:16 AM	
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R34999**	Analysis Date:		8/22/2009 9:52:19 PM	
Benzene	20.06	µg/L	1.0	20	0	100	85.9	113			
Toluene	20.62	µg/L	1.0	20	0	103	86.4	113			
Ethylbenzene	20.06	µg/L	1.0	20	0	100	83.5	118			
Xylenes, Total	58.83	µg/L	2.0	60	0	98.1	83.4	122			
Sample ID: 100NG BTEX LCSD		*LCSD*				Batch ID:	**R34999**	Analysis Date:		8/22/2009 10:22:47 PM	
Benzene	19.19	µg/L	1.0	20	0	95.9	85.9	113	4.45	27	
Toluene	18.69	µg/L	1.0	20	0	93.4	86.4	113	9.84	19	
Ethylbenzene	17.84	µg/L	1.0	20	0	89.2	83.5	118	11.7	10	R
Xylenes, Total	52.19	µg/L	2.0	60	0	87.0	83.4	122	12.0	13	
Method: EPA Method 6010B: Dissolved Metals											
Sample ID: MB		*MBLK*				Batch ID:	**R34935**	Analysis Date:		8/17/2009 3:19:12 PM	
Calcium	ND	mg/L	1.0								
Magnesium	ND	mg/L	1.0								
Potassium	ND	mg/L	1.0								
Sodium	ND	mg/L	1.0								
Sample ID: LCS		*LCS*				Batch ID:	**R34935**	Analysis Date:		8/17/2009 3:22:13 PM	
Calcium	49.11	mg/L	1.0	50.5	0	97.3	80	120			
Magnesium	49.11	mg/L	1.0	50.5	0	97.3	80	120			
Potassium	52.25	mg/L	1.0	55	0	95.0	80	120			
Sodium	48.51	mg/L	1.0	50.5	0	96.1	80	120			
Method: SM2540C MOD: Total Dissolved Solids											
Sample ID: MB-19891		*MBLK*				Batch ID:	**19891**	Analysis Date:		8/17/2009	
Total Dissolved Solids	ND	mg/L	20.0								
Sample ID: LCS-19891		*LCS*				Batch ID:	**19891**	Analysis Date:		8/17/2009	
Total Dissolved Solids	1033	mg/L	20.0	1000	0	103	80	120			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **WESTERN REFINING SOUT** Date Received: **8/12/2009**

Work Order Number **0908183** Received by: **TLS**

Checklist completed by: _____ 8/12/09 Sample ID labels checked by: _____
Signature Date Initials

Matrix: Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☑	No ☐	N/A ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	

Number of preserved bottles checked for pH: 10

<2 >12 unless noted below.

Container/Temp Blank temperature? **3.2°** *<6° C Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413
Phone #: 505-632-4161
email or Fax#: 505-632-3911

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

Accreditation
☐ NELAP ☐ Other ________
☐ EDD (Type) ________

Turn-Around Time:
☒ Standard ☐ Rush ________

Project Name: South EVAPoration Pond

Project #:

Project Manager: Cindy / Bob

Sampler:
On Ice: ☒ Yes ☐ No
Sample Temperature: [illegible]

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908183	BTEX + ~~MTBE + TMB's~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Anion/Cation Balance				Air Bubbles (Y or N)
8/11/09	820A	H2O	West Leak Detection	3-VOA	HCL	1	X		+													
				1[illegible]ml		1												X				
				125ml	H2SO4	1												X				
				125ml	HNO3	1												X				
8/11/09	845A	H2O	East Leak Detection	3-VOA	HCL	2	X		X													
				1-500ml		2												X				
				1-125ml	H2SO4	2												X				
				1-125ml	HNO3	2												X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-11-09	247p	Cindy Hurtado	[signature]	8/12/09	1000
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

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

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name:
South Evaporation Pond

Project #:

Project Manager:

Sampler: Cindy/BOB

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904383	Analysis Request: BTEX + MTBE + TMBs (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Cation/Anion Balance				Air Bubbles (Y or N)
8-11-09	1250	H2O	South EVAP Pond	3-VOA	HCL	3	X		X													
"	"	"	"	1-500ml		3												X				
"	"	"	"	1-125ml	H2SO4	3												X				
"	"	"	"	1-125ml	HNO3	3												X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-11-09	2400	Cindy Hurtado			
				8/12/09	1000
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

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

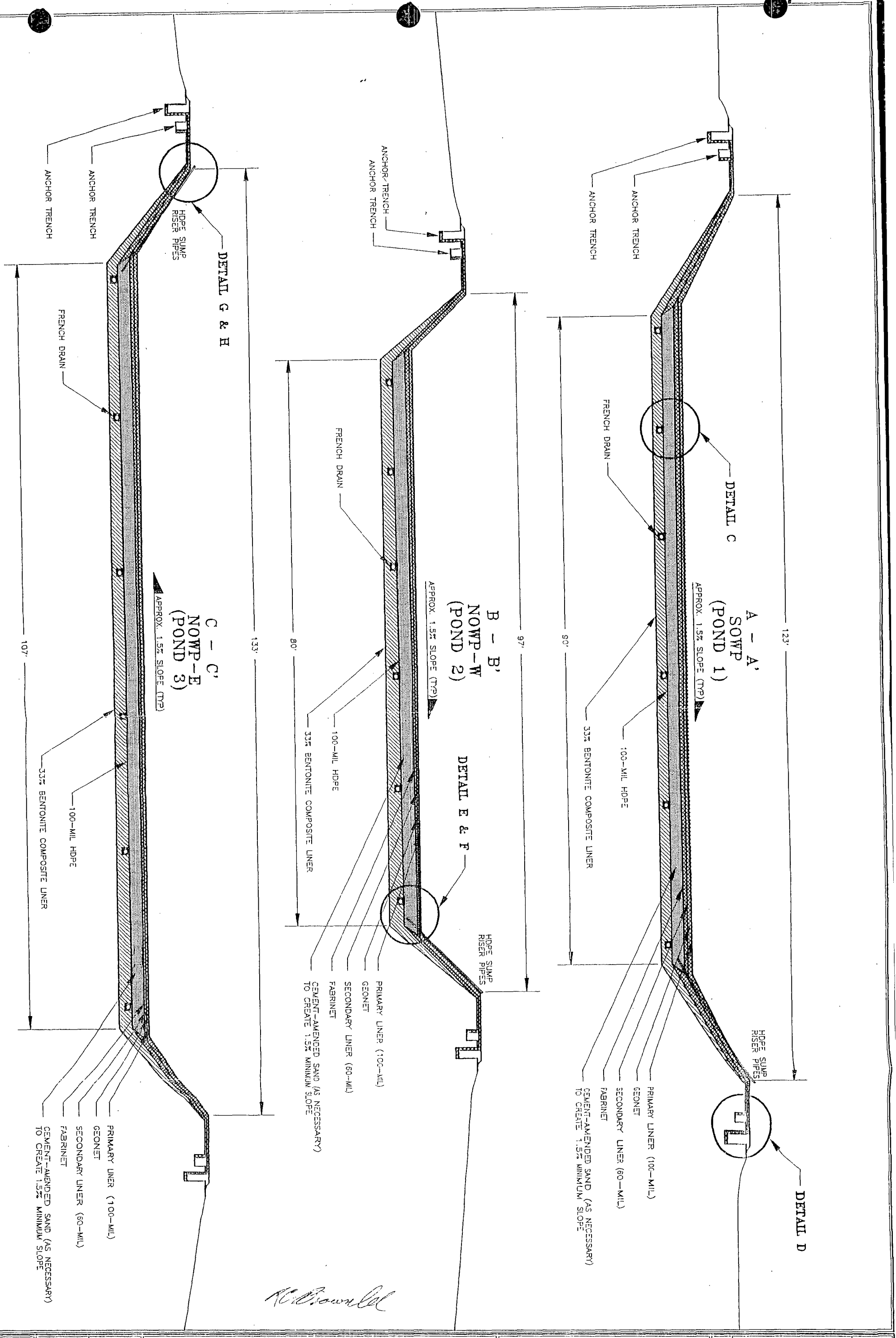


FIGURE 2

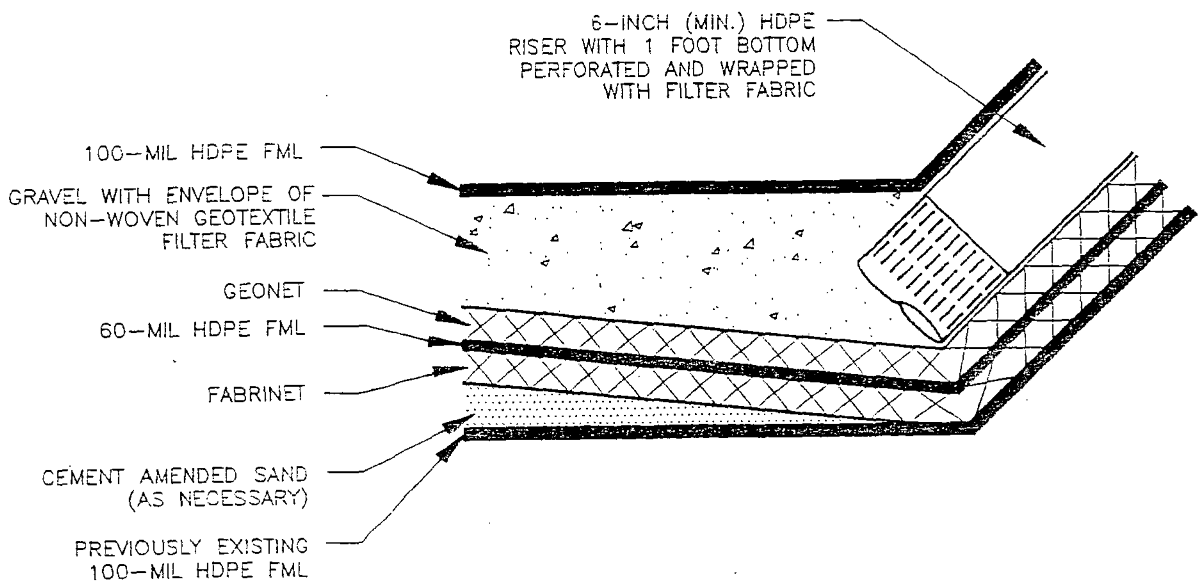
DESIGNED	BLOOMFIELD
DRAWN	SRL
CHECKED	
DATE	09/23/94
JOB NO.	93101L.0
FILENAME	FIG-2

BLOOMFIELD REFINING COMPANY
BLOOMFIELD, NEW MEXICO 87413

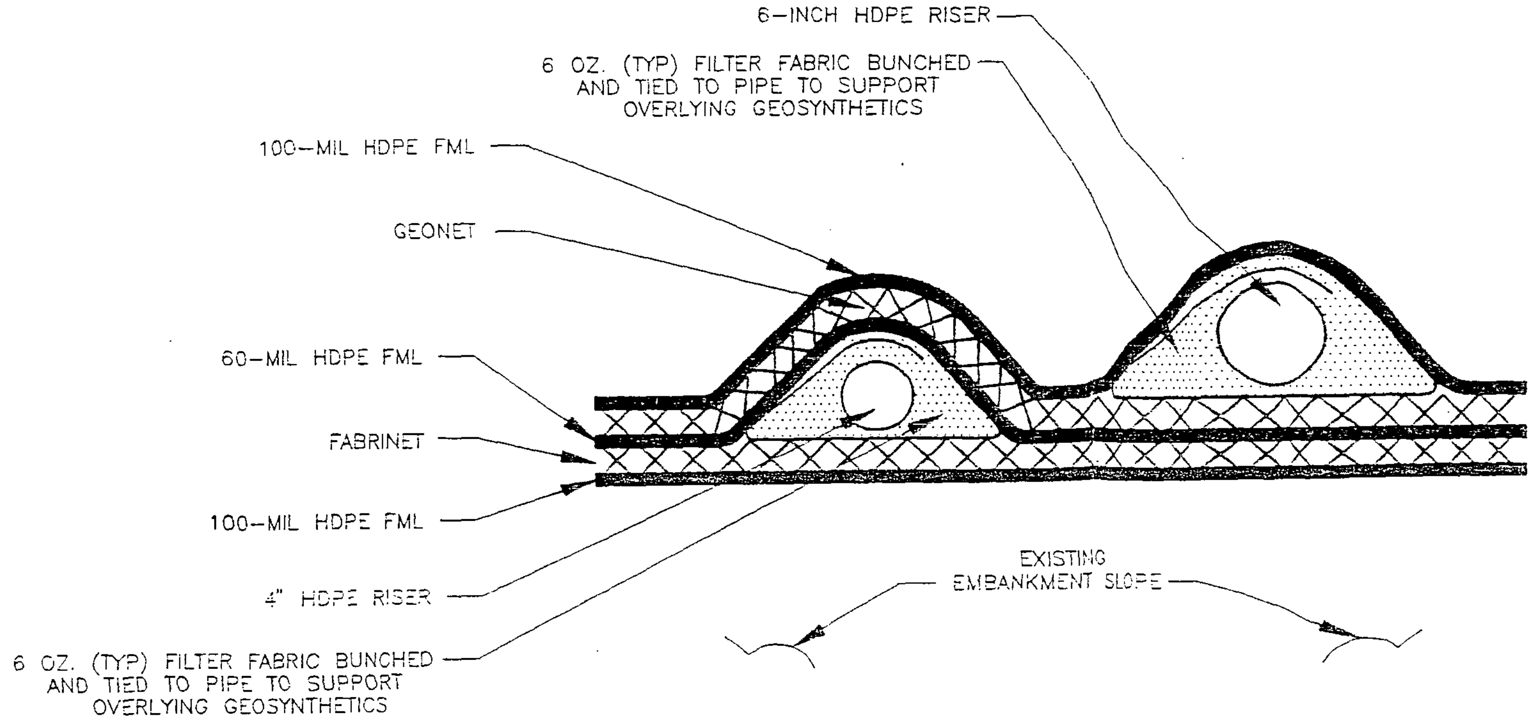
CROSS-SECTIONAL VIEW
RECORD DRAWING FOR COMPLETED SURFACE IMPOUNDMENT RETROFIT

ERM
ERM-Rocky Mountain, Inc.
5960 South Willow Drive
Suite 200
Greenwood Village, Colorado 80111-5144
(303) 741-8090

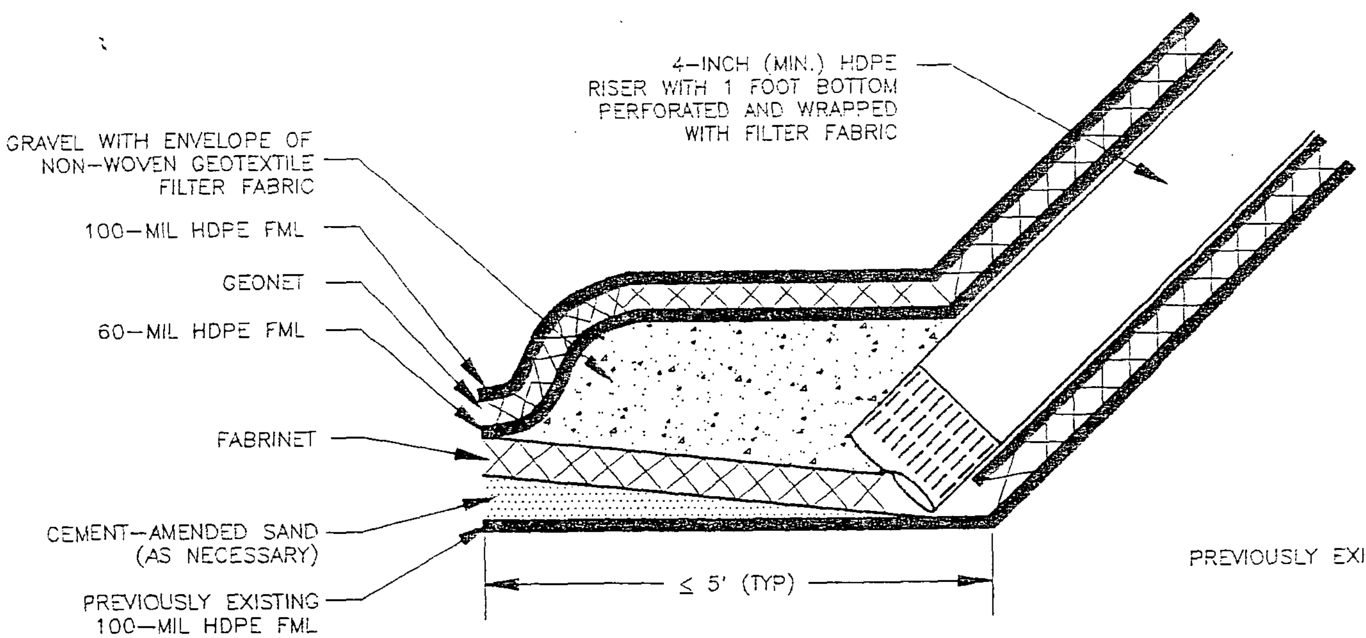
REV	REVISION DESCRIPTION	DATE



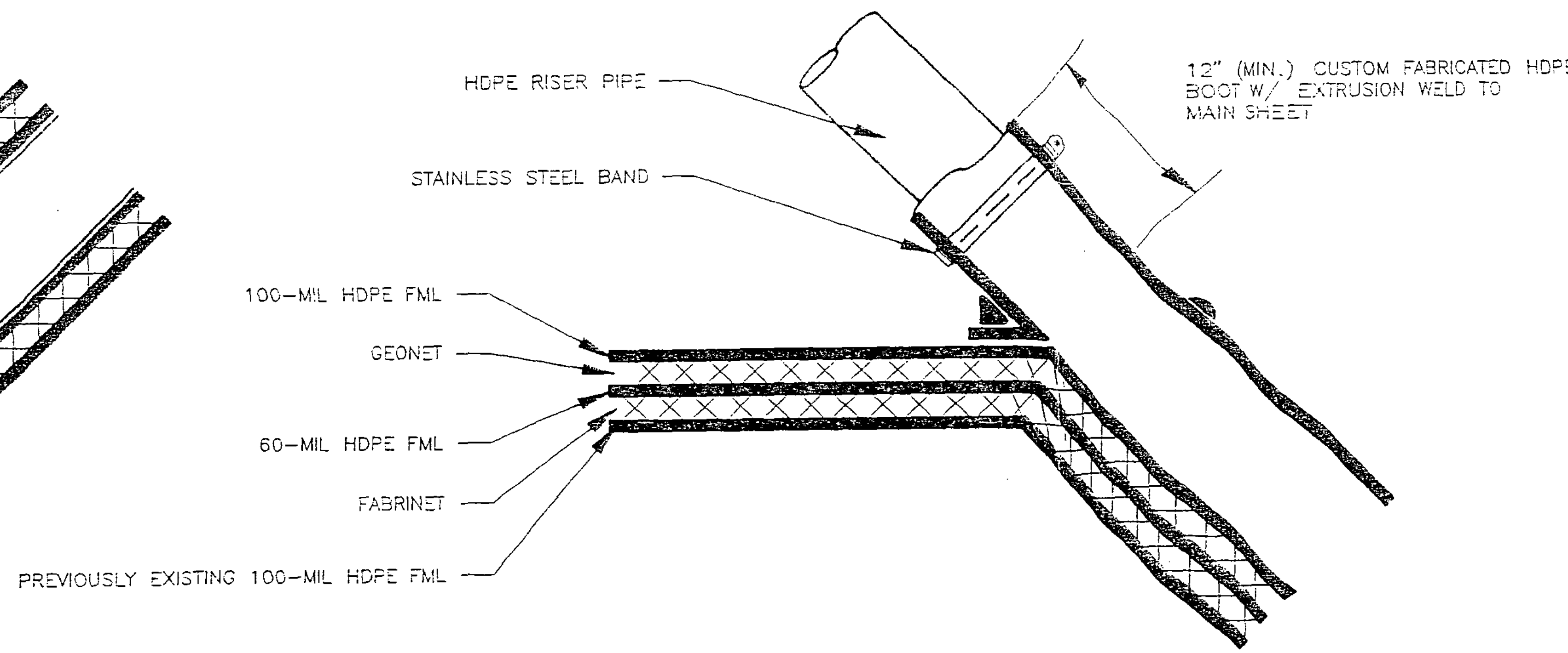
PRIMARY LEAK DETECTION SUMP DETAIL
DETAIL E (TYP)
(N.T.S.)



RISER PIPE CONFIGURATION
DETAIL G (TYP)
(N.T.S.)



SECONDARY LEAK DETECTION SUMP DETAIL
DETAIL F (TYP)
(N.T.S.)



RISER ~~PIPE~~ LINER BOOT
DETAIL H (TYP)
(N.T.S.)

[signature]

REV	REVISION DESCRIPTION	DATE

ERM
ERM-Rocky Mountain, Inc.
5950 South Willow Drive
Suite 200
Greenwood Village, Colorado 80111-5144
(303) 741-5050

BLOOMFIELD REFINING COMPANY
BLOOMFIELD, NEW MEXICO 87413

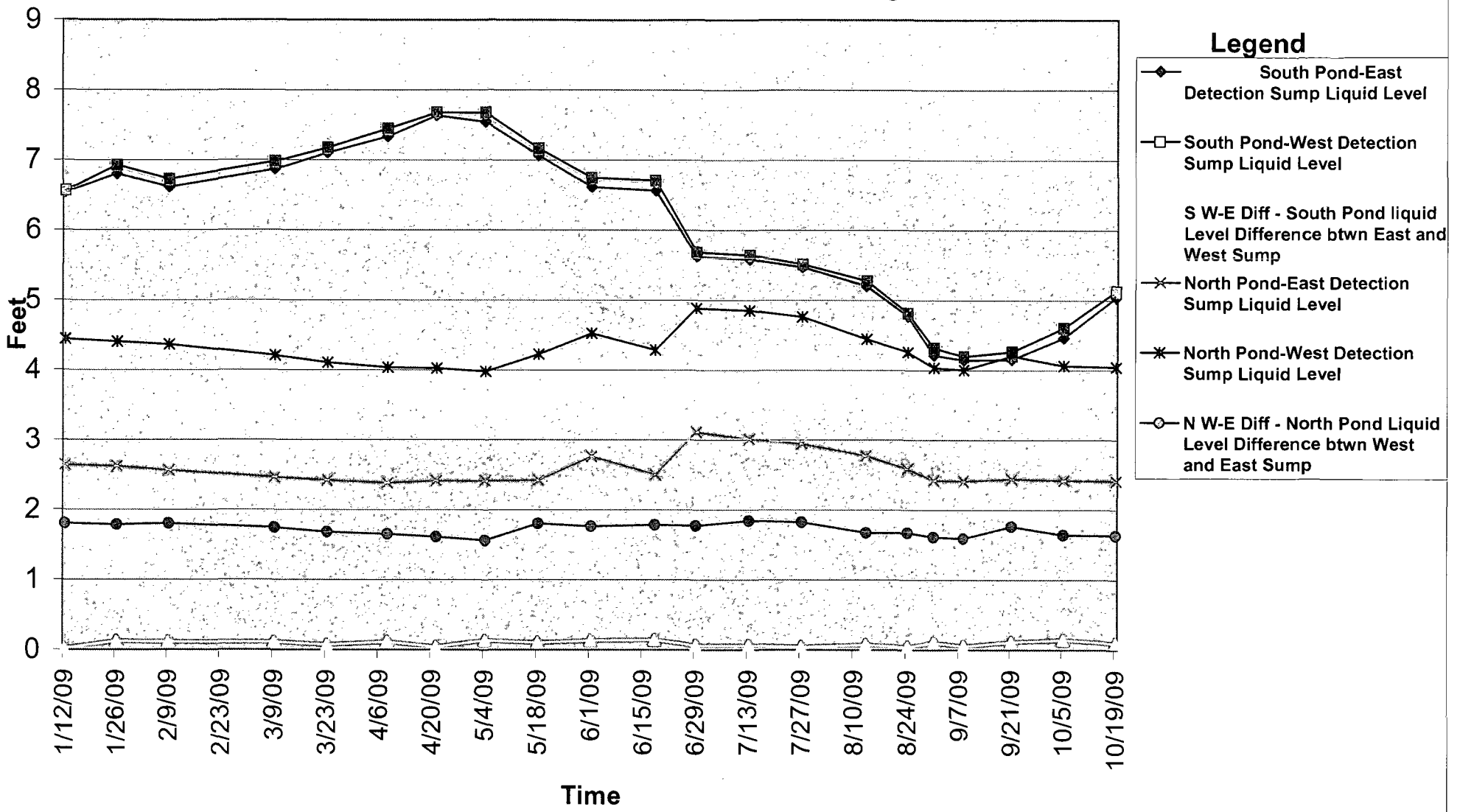
SYSTEM DETAILS
RECORD DRAWING FOR COMPLETED SURFACE IMPOUNDMENT RETROFIT

DESIGNED	BLOOMFIELD
DRAWN	SRL
CHECKED	
DATE	09/23/94
JOB NO.	9310440
FILENAME	FIG-4

FIGURE 4

Bloomfield Refinery Evaporation Ponds

Leak Detection Tubes - Water Column Height

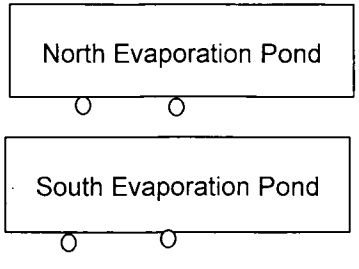


WESTERN REFINING SOUTHWEST, INC - BLOOMFIELD REFINERY

YEAR_ 2009_____

Bi-Weekly Evaporation Pond Inspection Log

DATE	SOUTH POND LEAK DETETION					NORTH POND LEAK DETETION					Comments	Initials
	East Detection Tube		West Detection Tube		Liquid Level Difference btwn East & West Sump	East Detection Tube		West Detection Tube		Liquid Level Difference btwn East & West Sump		
	Depth to Liquid (ft)	*Water Column Ht (ft)	Depth to Liquid (ft)	*Water Column Ht (ft)		Depth to Liquid (ft)	*Water Column Ht (ft)	Depth to Liquid (ft)	*Water Column Ht (ft)			
1/12/2009	6.22	6.54	5.68	6.56	0.02	9.25	2.64	9.83	4.44	1.80	no-odor	rmk
1/26/2009	5.96	6.80	5.32	6.92	0.12	9.27	2.62	9.87	4.40	1.78	no-odor	rmk
2/9/2009	6.15	6.61	5.52	6.72	0.11	9.33	2.56	9.91	4.36	1.80	no-odor	rmk
3/9/2009	5.90	6.86	5.27	6.97	0.11	9.43	2.46	10.07	4.20	1.74	no-odor	rmk
3/23/2009	5.66	7.10	5.07	7.17	0.07	9.47	2.42	10.17	4.10	1.68	no-odor	rmk
4/8/2009	5.43	7.33	4.80	7.44	0.11	9.51	2.38	10.24	4.03	1.65	no-odor	rmk
4/21/2009	5.13	7.63	4.57	7.67	0.04	9.48	2.41	10.25	4.02	1.61	no-odor	rmk
5/4/2009	5.22	7.54	4.57	7.67	0.13	9.48	2.41	10.30	3.97	1.56	no-odor	rmk
5/18/2009	5.70	7.06	5.08	7.16	0.10	9.47	2.42	10.05	4.22	1.80	no-odor	rmk
6/1/2009	6.15	6.61	5.50	6.74	0.13	9.13	2.76	9.75	4.52	1.76	no-odor	rmk
6/18/2009	6.20	6.56	5.54	6.70	0.14	9.39	2.50	9.99	4.28	1.78	no-odor	rmk
6/29/2009	7.14	5.62	6.56	5.68	0.06	8.78	3.11	9.39	4.88	1.77	some-odor	rmk
7/13/2009	7.18	5.58	6.60	5.64	0.06	8.88	3.01	9.42	4.85	1.84	some-odor	rmk
7/27/2009	7.29	5.47	6.73	5.51	0.04	8.95	2.94	9.51	4.76	1.82	some-odor	rmk
8/13/2009	7.56	5.20	6.97	5.27	0.07	9.12	2.77	9.83	4.44	1.67	some-odor	rmk
8/24/2009	7.99	4.77	7.43	4.81	0.04	9.31	2.58	10.02	4.25	1.67	some-odor	rmk
8/31/2009	8.55	4.21	7.93	4.31	0.10	9.47	2.42	10.24	4.03	1.61	some-odor	rmk
9/8/2009	8.62	4.14	8.05	4.19	0.05	9.48	2.41	10.27	4.00	1.59	some-odor	rmk
9/21/2009	8.61	4.15	7.98	4.26	0.11	9.45	2.44	10.07	4.20	1.76	some-odor	rmk
10/5/2009	8.30	4.46	7.64	4.60	0.14	9.47	2.42	10.21	4.06	1.64	no-odor	rmk
10/19/2009	7.72	5.04	7.11	5.13	0.09	9.48	2.41	10.23	4.04	1.63	some-odor	rmk



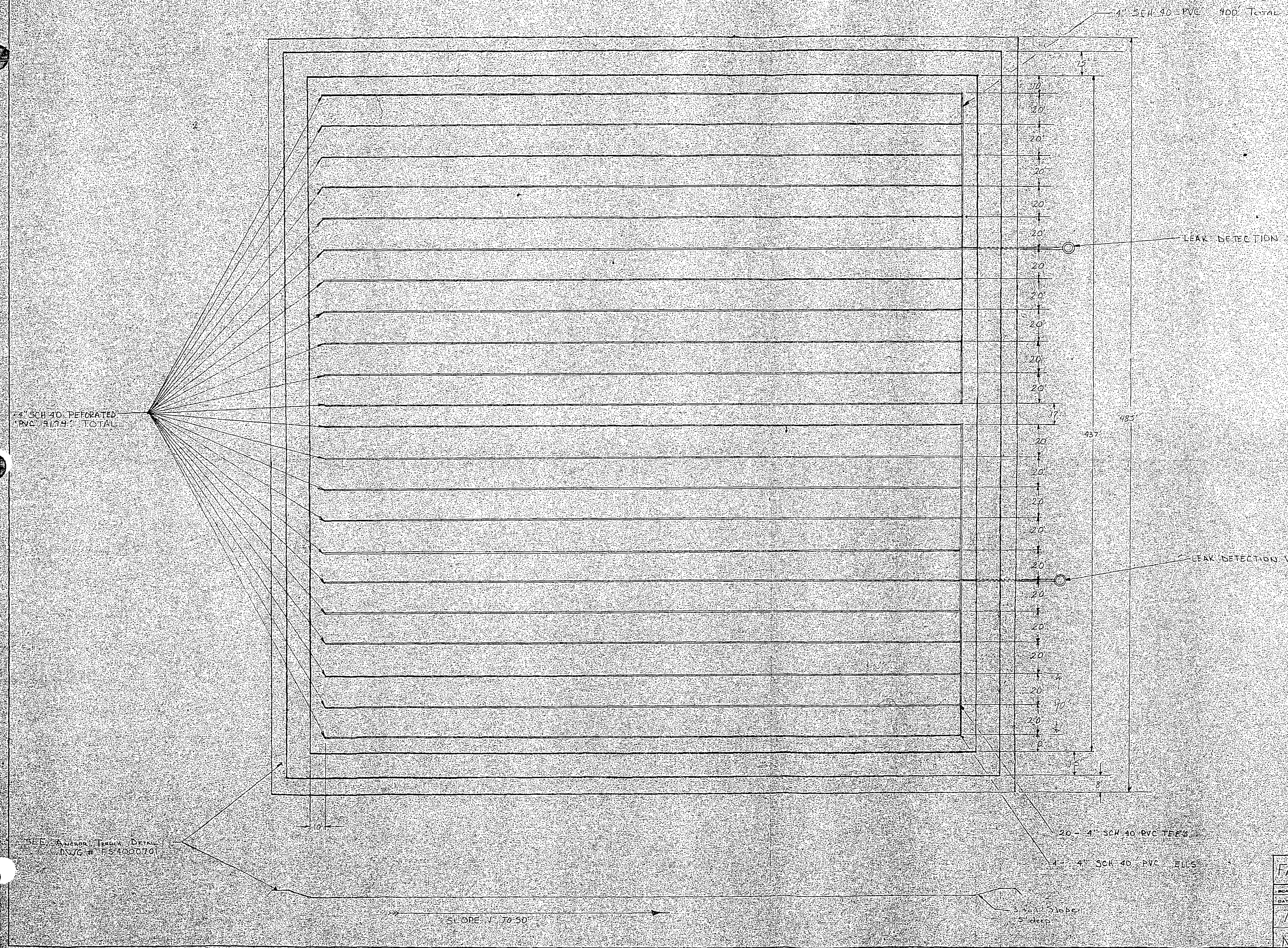
West Sump Total Depth = 11.89 ft

East Sump Total Depth = 14.27 ft

West Sump Total Depth = 12.76 ft

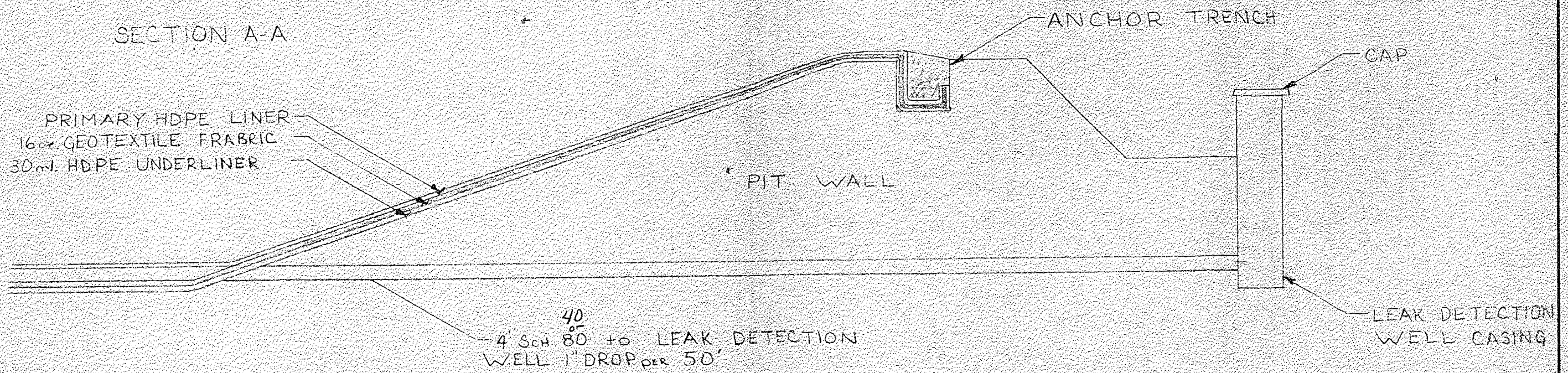
East Sump Total Depth = 12.24 ft

* Water Column Ht is calculated by subtracting the Depth to Water from the Sump Total Depth

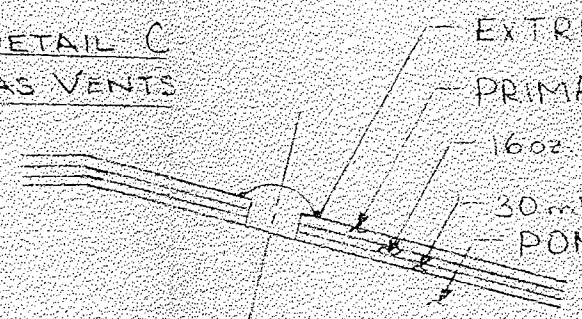


FALCON SALES & SERVICE CO., INC	
SCALE 1" = 30' / DATE 5-20-89	APPROVED BY	DRAWN BY KP
TYPICAL 5 ACRE POND WITH	
N.M. REG. LEAK DETECTION	DRAWING NUMBER FS-200040-L

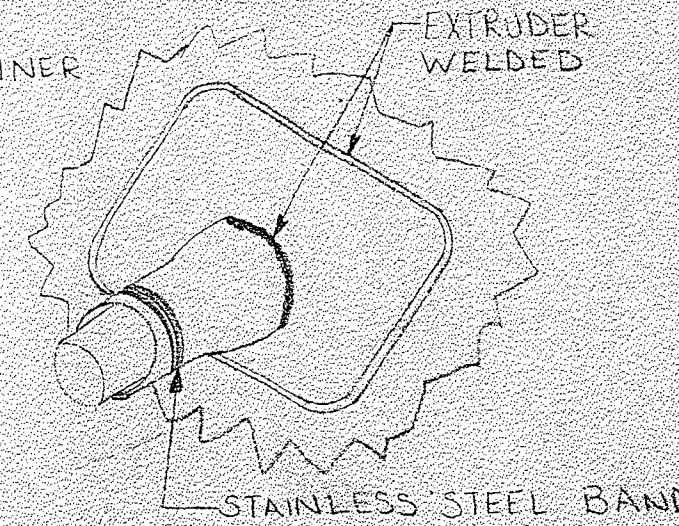
SECTION A-A

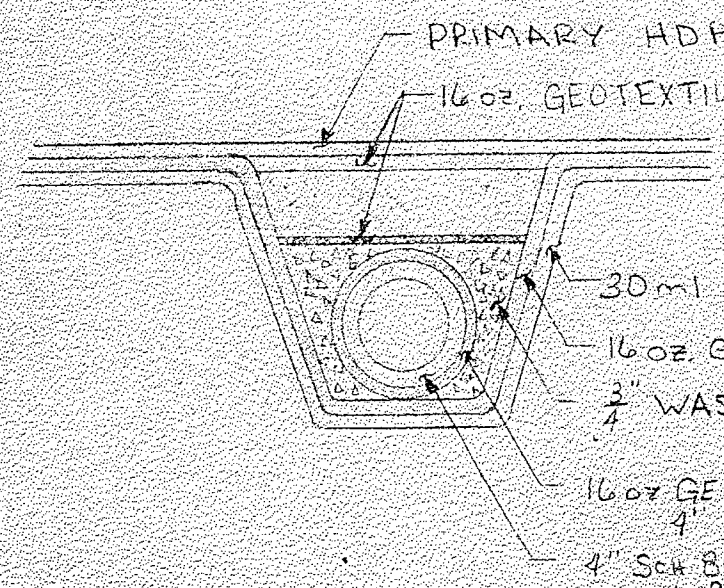


DETAIL C
GAS VENTS



DETAIL D: TYPICAL BOOT





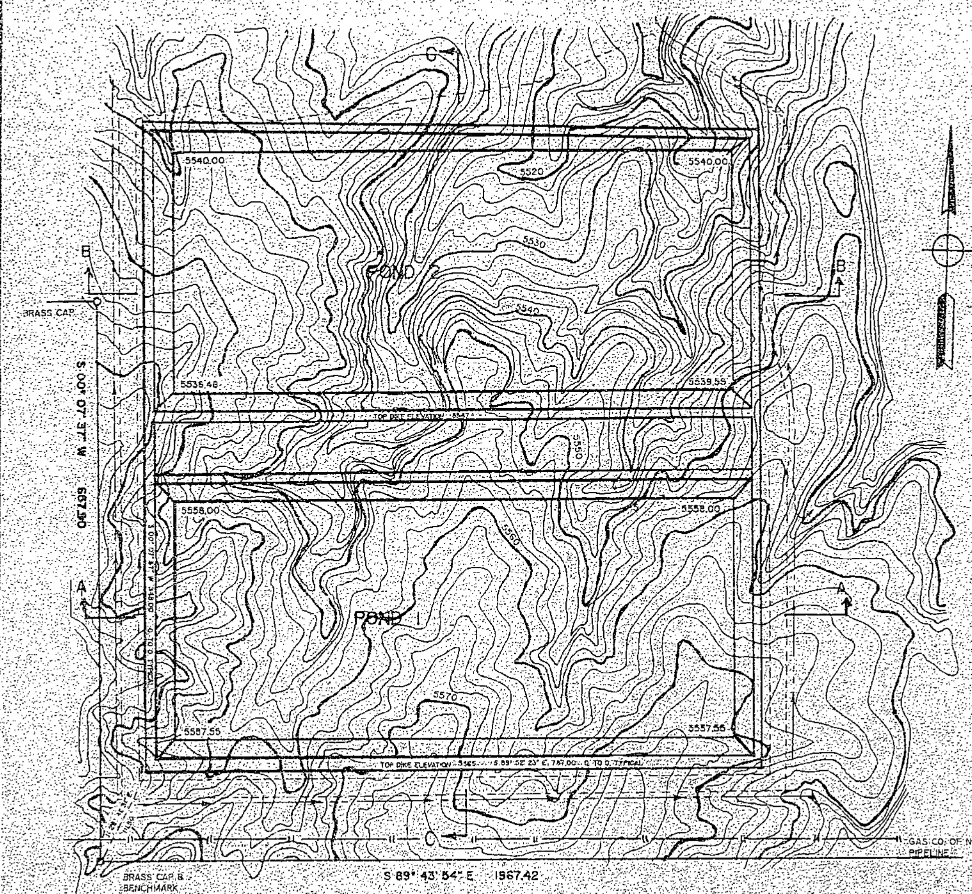
SECTION B-B
END VIEW OF LEAK DETECTION SYSTEM

FALCON SALES & SERVICE CO., INC.

SCALE: NONE	APPROVED BY	DRAWN BY KP
DATE: JAN 19, 1989		

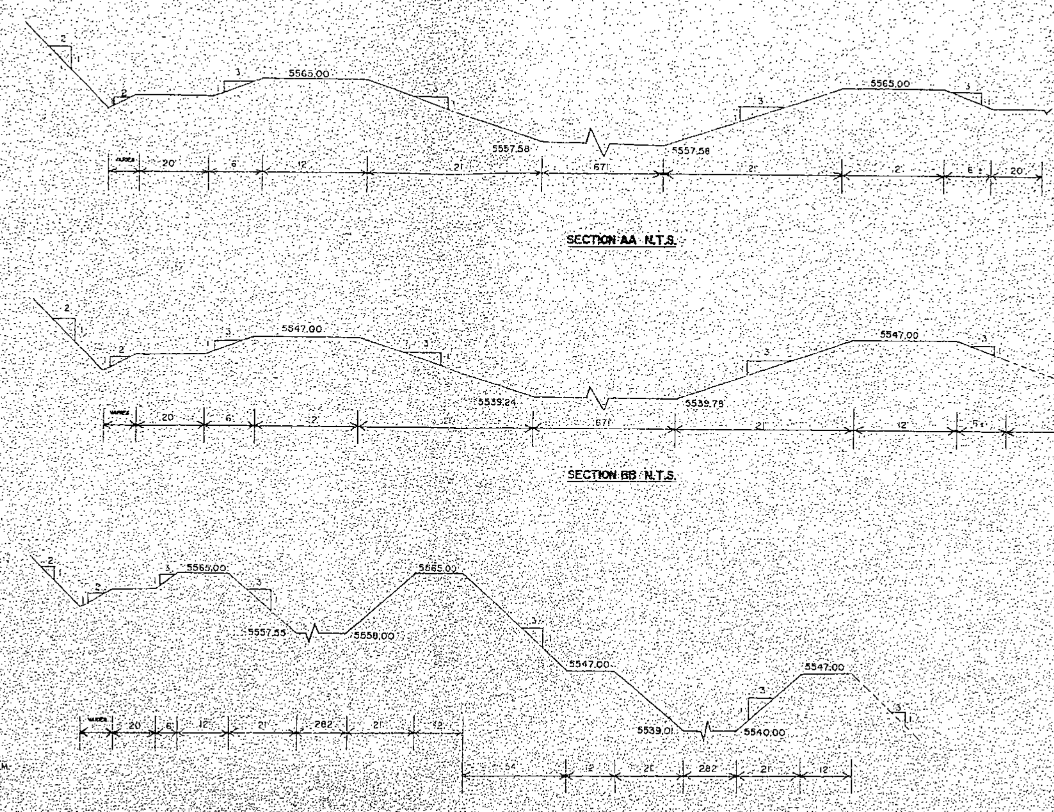
TYPICAL DOUBLELINED HIGH DENSITY POLYETHYLENE LINER

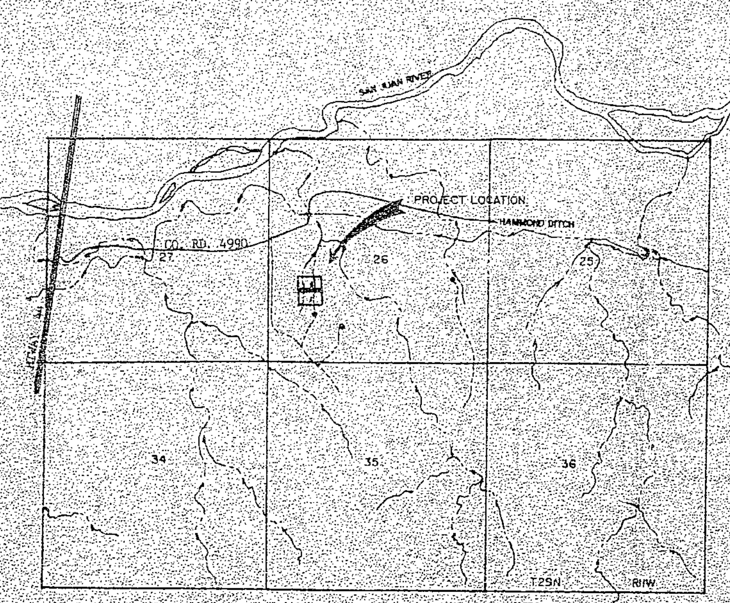
DRAWING NUMBER FS4000701M



SITE TOPOGRAPHY AND PLAN VIEW

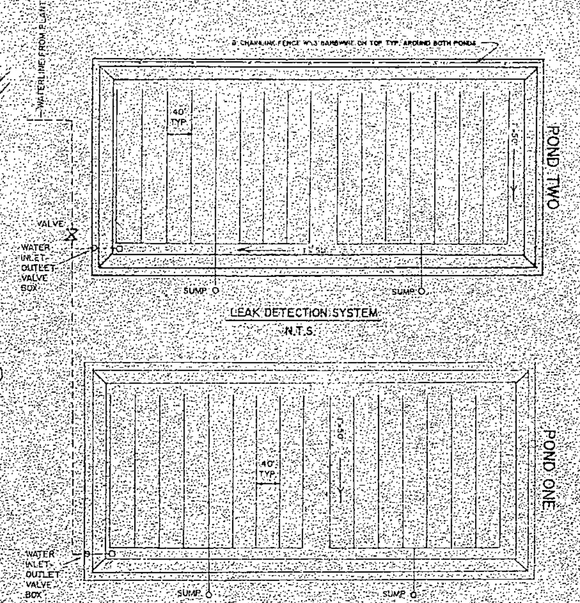
SCALE: 1" = 100'





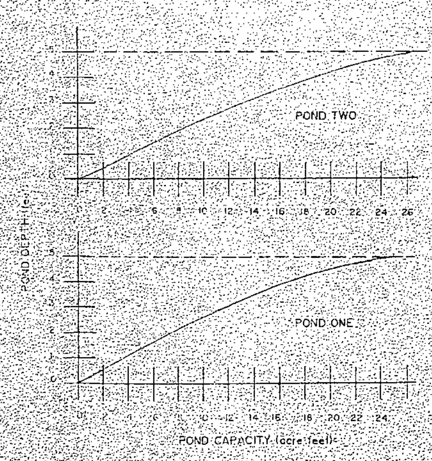
PROJECT LOCATION AND MAP OF DRAINAGE AREA

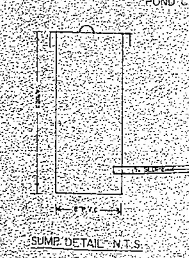
SCALE: 1" = 2000'



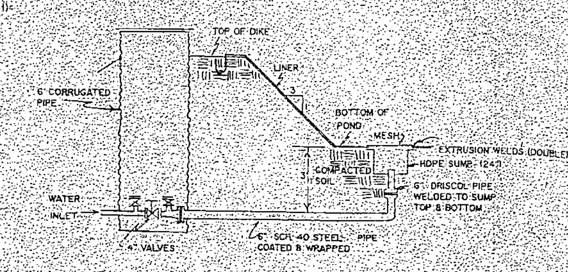
LEAK DETECTION SYSTEM

N.T.S.





SUMP DETAIL N.T.S.



WATER INLET & OUTLET DETAIL N.T.S.

Asbuilt map
of the
BLOOMFIELD REFINING CO. EVAPORATION PONDS

Bloomfield Refining, Applicant
located in San Juan County, New Mexico
Scale of map: 1 inch = 100 feet

The undersigned, Chris Hawley (agent for Bloomfield Refining Co.), claimant, whose post office address is P.O. Box 159 Bloomfield, New Mexico 87413, County of San Juan, State of New Mexico, has caused to be asbuilt by a qualified Registered Professional Land Surveyor, the Bloomfield Refining Evaporation Ponds as herein described and indicated, hereby makes these several statements relative thereto and offers this map and statements for acceptance and filing in compliance with the laws of the State of New Mexico.

The BLOOMFIELD REFINING EVAPORATION PONDS, consisting of (2) ponds, have the following properties:

POND ONE

Maximum height above base 15.0 feet; maximum length 723 feet; maximum width at base 311 feet; crest width 12 feet; slope of upstream face 3 feet horizontal to 1 foot vertical; slope of downstream face 3 feet horizontal to 1 foot vertical; top of dam elevation 5565 feet; bottom of pond elevation 5558 feet; high water line 5563 feet; freeboard distance 2 feet. The pond has (2) plastic liners, the upper and lower liner are 60 mil H.D.P.E. The pond is constructed of well compacted native materials. The surface area of the pond at high water line is 5.0 acres; the capacity of the pond at high water line is 28.3 acre feet.

POND TWO

Maximum height above base 37.5 feet; maximum length 721 feet; maximum width at base 460 feet; crest width 12 feet; slope of upstream face 3 feet horizontal to 1 foot vertical; slope of downstream face 3 feet horizontal to 1 foot vertical; top of dam elevation 5547 feet; bottom of pond elevation 5540 feet; high water line elevation 5545 feet; freeboard distance 2 feet. The pond has (2) plastic liners, the upper and lower liners are 60 mil H.D.P.E. The pond is constructed of well compacted native materials. The surface area of the pond at high water level is 5.0 acres; the capacity of the pond at high water line is 26.09 acre feet.

State of New Mexico)
)ss.
County of San Juan)

I, Chris Hawley, being first duly sworn, upon my oath, state that I have read and examined the accompanying map and statements consisting of (1) sheet, and know the contents thereof and representations thereon, and state that the same are true and correct to the best of my knowledge and belief.

Chris Hawley, Claimant

Subscribed and sworn before this 13th day of March 1991.

Notary Public

My commission expires May 23, 1993

WATER LEVEL MANAGEMENT

WATER IS PUMPED INTO THE WEST SIDES OF EITHER POND AND MAY BE GRAVITY FED FROM POND 1 TO POND 2. IN THE EVENT THAT BOTH PONDS REACH MAXIMUM HIGH WATER LEVEL BLOOMFIELD REFINING WILL CEASE PUMPING UNTIL SUCH A TIME THAT EVAPORATION (NATURAL AND / OR SPRAYER ENHANCED) LOWERS THE PONDS LEVELS.

CECIL B. TULLIS — NEW MEXICO — 9672 — REGISTERED PROFESSIONAL LAND SURVEYOR

State of California)
)ss.
County of Los Angeles)

I, Michael Daly, being first duly sworn, upon my oath state that I am a Registered Professional Engineer, qualified in Civil Engineering and the accompanying plat consisting of 1 sheet was prepared under my direct supervision and is true and correct to the best of my knowledge and belief.

Michael Daly N.M. Reg. #5992

License No. 5992

Subscribed and sworn before me this 5 day of Feb 1991.

Notary Public

My commission expires Feb 12, 1993

State of New Mexico)
)ss.
County of San Juan)

I, Cecil B. Tullis, being first duly sworn, upon my oath, state that I am the Registered Professional Surveyor who made the maps of the Bloomfield Refining Evaporation Ponds, and that such maps consisting of (1) sheet were prepared from field notes of actual surveys made by me or under my direction and that the same are true and correct to the best of my knowledge and belief.
This survey meets the amended minimum standards for land surveys in New Mexico.

Cecil B. Tullis

License No. 9672

Subscribed and sworn before me this ___ day of __________ 1991.

Notary Public

My commission expires __________

State of New Mexico)
)ss.
County of Santa Fe)

I hereby certify that the accompanying maps and statements have been examined by me and approved as to form and content, and were duly accepted for filing on the ___ day of __________ 1991.

State Engineer

CONSTRUCTION SPECIFICATIONS
Site Preparation and Earthwork

1. Strip all loose surface soils, vegetation, roots and debris from the pond and embankment area to a horizontal distance of 5 feet beyond the perimeter of the new construction. Removal should extend 1 foot below the bottom of the embankment or 1 foot below the existing grade, whichever is deeper.

2. Clean and widen depressions, swales, etc., to form level working areas to accommodate compaction equipment and fill placement.

3. No material should be placed which is frozen or where the in-place material is frozen.

4. Proof-roll the exposed subgrade in the embankment and pond areas to densify materials which may have been loosened during the stripping and excavation process. The proof-rolling may be accomplished by a minimum of 2 passes of a loaded scraper, or equivalent. All soft areas will be removed and replaced with compacted fill.

5. Place and compact all embankment fill in horizontal lifts to the finished grade levels. Lift thicknesses should be compatible with the compaction equipment used to achieve the required uniform densities. The maximum size of rock to be used for fill will be six inches.

6. All subgrade preparation, fill placement and compaction will be accomplished under observation and testing to assess compliance with the project specifications. All fill material will be at least 95% of the maximum dry density as determined by ASTM: D-698 methods and at a moisture content of optimum to 4% above optimum.

7. Postive drainage will be provided around the ponds during construction and maintained throughout the life of the ponds.

8. All phases of pond construction will be accomplished under the observation and testing directed by a soils engineer to assess compliance with construction specifications.

9. The State Engineer has full authority regarding inspection during construction and full power to act if specifications are not met.

10. No burrowing animals will be allowed to dig in the embankments or under the liners. No deep rooted trees will be allowed to grow in the embankments.

ASBUILT EVAPORATION PONDS for BLOOMFIELD REFINING	
LOCATED IN THE NW, SW, AND THE NE, SW SEC. 26, T29N, R11W, N.M.P.M., SAN JUAN COUNTY, NEW MEXICO	
DRAWN BY L.R.A.	CHECKED BY C.R.T.
SCALE AS NOTED	JANUARY 11, 1991

PREPARED BY: HIGH COUNTRY SURVEYS FARMINGTON, NEW MEXICO

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, September 14, 2009

Cindy Hurtado
Western Refining Southwest, Inc.
#50 CR 4990
Bloomfield, NM 87413

TEL: (505) 632-4161
FAX (505) 632-3911

RE: Cleanup at TK #29

Order No.: 0908430

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 8/25/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc. **Date:** *14-Sep-09*

CLIENT: Western Refining Southwest, Inc.
Project: Cleanup at TK #29
Lab Order: 0908430

CASE NARRATIVE

"S" flags denote that the surrogate was not recoverable, or low, due to sample dilution or matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Sep-09*

CLIENT:	Western Refining Southwest, Inc.	**Client Sample ID:**	Cleanup at TK #29
Lab Order:	0908430	**Collection Date:**	8/24/2009 11:30:00 AM
Project:	Cleanup at TK #29	**Date Received:**	8/25/2009
Lab ID:	0908430-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	9300	500		mg/Kg	50	9/1/2009 1:15:02 PM
Motor Oil Range Organics (MRO)	3200	2500		mg/Kg	50	9/1/2009 1:15:02 PM
Surr: DNOP	0	61.7-135	S	%REC	50	9/1/2009 1:15:02 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	100		mg/Kg	20	9/4/2009 2:23:00 AM
Surr: BFB	130	65.9-118	S	%REC	20	9/4/2009 2:23:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		mg/Kg	20	9/4/2009 2:23:00 AM
Toluene	ND	1.0		mg/Kg	20	9/4/2009 2:23:00 AM
Ethylbenzene	ND	1.0		mg/Kg	20	9/4/2009 2:23:00 AM
Xylenes, Total	2.6	2.0		mg/Kg	20	9/4/2009 2:23:00 AM
Surr: 4-Bromofluorobenzene	105	64.7-120		%REC	20	9/4/2009 2:23:00 AM
EPA METHOD 8310: PAHS						Analyst: **JAT**
Naphthalene	ND	5.0		mg/Kg	20	9/9/2009 12:07:27 AM
1-Methylnaphthalene	ND	5.0		mg/Kg	20	9/9/2009 12:07:27 AM
2-Methylnaphthalene	ND	5.0		mg/Kg	20	9/9/2009 12:07:27 AM
Acenaphthylene	ND	5.0		mg/Kg	20	9/9/2009 12:07:27 AM
Acenaphthene	ND	5.0		mg/Kg	20	9/9/2009 12:07:27 AM
Fluorene	ND	0.60		mg/Kg	20	9/9/2009 12:07:27 AM
Phenanthrene	ND	0.30		mg/Kg	20	9/9/2009 12:07:27 AM
Anthracene	ND	0.30		mg/Kg	20	9/9/2009 12:07:27 AM
Fluoranthene	ND	0.40		mg/Kg	20	9/9/2009 12:07:27 AM
Pyrene	ND	0.50		mg/Kg	20	9/9/2009 12:07:27 AM
Benz(a)anthracene	ND	0.20		mg/Kg	20	9/9/2009 12:07:27 AM
Chrysene	0.49	0.22		mg/Kg	20	9/9/2009 12:07:27 AM
Benzo(b)fluoranthene	ND	0.20		mg/Kg	20	9/9/2009 12:07:27 AM
Benzo(k)fluoranthene	ND	0.20		mg/Kg	20	9/9/2009 12:07:27 AM
Benzo(a)pyrene	ND	0.20		mg/Kg	20	9/9/2009 12:07:27 AM
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	20	9/9/2009 12:07:27 AM
Benzo(g,h,i)perylene	ND	0.20		mg/Kg	20	9/9/2009 12:07:27 AM
Indeno(1,2,3-cd)pyrene	ND	2.0		mg/Kg	20	9/9/2009 12:07:27 AM
Surr: Benzo(e)pyrene	0	25.6-129	S	%REC	20	9/9/2009 12:07:27 AM
MERCURY, TCLP						Analyst: **MMS**
Mercury	ND	0.020		mg/L	1	9/1/2009 4:59:38 PM
EPA METHOD 6010B: TCLP METALS						Analyst: **TES**
Arsenic	ND	5.0		mg/L	1	9/11/2009 2:11:03 PM
Barium	ND	100		mg/L	5	9/11/2009 2:20:41 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Sep-09*

CLIENT:	Western Refining Southwest, Inc.	**Client Sample ID:**	Cleanup at TK #29
Lab Order:	0908430	**Collection Date:**	8/24/2009 11:30:00 AM
Project:	Cleanup at TK #29	**Date Received:**	8/25/2009
Lab ID:	0908430-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 6010B: TCLP METALS						Analyst: TES
Cadmium	ND	1.0		mg/L	1	9/11/2009 2:11:03 PM
Chromium	ND	5.0		mg/L	1	9/11/2009 2:11:03 PM
Lead	ND	5.0		mg/L	1	9/11/2009 2:11:03 PM
Selenium	ND	1.0		mg/L	1	9/11/2009 2:11:03 PM
Silver	ND	5.0		mg/L	1	9/11/2009 2:11:03 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

ENERGY LABORATORIES, INC. • P.O. Box 30916 • 1120 South 27th Street • Billings, MT 59107-0916
800-735-4489 • 406-252-6325 • 406-252-6069 fax • eli@energylab.com

LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental	**Report Date:**	09/14/09
Project:	0908430	**Collection Date:**	08/24/09 11:30
Lab ID:	B09082574-001	**DateReceived:**	08/27/09
Client Sample ID:	0908430-01B, Cleanup at TK #29	**Matrix:**	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
IGNITABILITY							
Flash Point (Ignitability)	>200	°F		30.0		SW1010M	09/02/09 13:00 / mgs
CORROSIVITY							
pH of Soil and Waste	7.36	s.u.		0.10		SW9045D	09/10/09 14:00 / clr
REACTIVITY							
Cyanide, Reactive	ND	mg/kg		0.05	250	SW846 Ch 7	08/31/09 14:53 / klp
Sulfide, Reactive	ND	mg/kg		20	500	SW846 Ch 7	08/31/09 08:00 / pwc

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level.
QCL - Quality control limit. ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: Hall Environmental
Project: 0908430

Report Date: 09/14/09
Work Order: B09082574

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW846 Ch 7									Batch: 41086
Sample ID: MB-41086	Method Blank				Run: AUTOAN201-B_090831B				08/31/09 15:08
Cyanide, Reactive	ND	mg/kg	0.05						
Method: SW846 Ch 7									Batch: R135218
Sample ID: MB-R135218	Method Blank				Run: MISC-HZW_090831B				*08/31/09 08:00*
Sulfide, Reactive	ND	mg/kg	10						
Sample ID: LCS-R135218	Laboratory Control Sample				Run: MISC-HZW_090831B				08/31/09 08:00
Sulfide, Reactive	24	mg/kg	20	83	50	150			
Method: SW9045D									Analytical Run: PH METER_090910A
Sample ID: ICV	Initial Calibration Verification Standard								09/10/09 14:00
pH of Soil and Waste	4.01	s.u.	0.10	100	98	102			
Method: SW9045D									Batch: R135763
Sample ID: B09082574-001ADUP	Sample Duplicate				Run: PH METER_090910A				09/10/09 14:00
pH of Soil and Waste	7.38	s.u.	0.10				0.3	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC SUMMARY REPORT

nt: Western Refining Southwest, Inc.
ject: Cleanup at TK #29 **Work Order:** 0908430

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: MB-19963		*MBLK*				Batch ID:	**19963**	Analysis Date:		9/1/2009 9:06:46 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-19963		*LCS*				Batch ID:	**19963**	Analysis Date:		9/1/2009 9:42:27 AM	
Diesel Range Organics (DRO)	34.37	mg/Kg	10	50	0	68.7	64.6	116			
Sample ID: LCSD-19963		*LCSD*				Batch ID:	**19963**	Analysis Date:		9/1/2009 10:17:52 AM	
Diesel Range Organics (DRO)	34.54	mg/Kg	10	50	0	69.1	64.6	116	0.491	17.4	
Method: EPA Method 8015B: Gasoline Range											
Sample ID: MB-19968		*MBLK*				Batch ID:	**19968**	Analysis Date:		8/31/2009 8:28:23 PM	
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0								
Sample ID: LCS-19968		*LCS*				Batch ID:	**19968**	Analysis Date:		8/31/2009 7:57:59 PM	
Gasoline Range Organics (GRO)	29.58	mg/Kg	5.0	25	4.12	102	64.4	133			
Method: EPA Method 8021B: Volatiles											
Sample ID: MB-19968		*MBLK*				Batch ID:	**19968**	Analysis Date:		9/5/2009 3:30:02 PM	
Benzene	ND	mg/Kg	0.050								
Toluene	ND	mg/Kg	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
Xylenes, Total	ND	mg/Kg	0.10								
ple ID: LCS-19968		*LCS*				Batch ID:	**19968**	Analysis Date:		9/5/2009 2:30:01 PM	
zene	1.049	mg/Kg	0.050	1	0	105	78.8	132			
Toluene	1.103	mg/Kg	0.050	1	0	110	78.9	112			
Ethylbenzene	1.141	mg/Kg	0.050	1	0	114	69.3	125			
Xylenes, Total	3.399	mg/Kg	0.10	3	0	113	73	128			

Qualifiers:

	Estimated value	H	Holding times for preparation or analysis exceeded
	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: Cleanup at TK #29 **Work Order:** 0908430

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8310: PAHs											
Sample ID: MB-20046		*MBLK*				Batch ID:	**20046**	Analysis Date:		9/8/2009 10:46:36 PM	
Naphthalene	ND	mg/Kg	0.25								
1-Methylnaphthalene	ND	mg/Kg	0.25								
2-Methylnaphthalene	ND	mg/Kg	0.25								
Acenaphthylene	ND	mg/Kg	0.25								
Acenaphthene	ND	mg/Kg	0.25								
Fluorene	ND	mg/Kg	0.030								
Phenanthrene	ND	mg/Kg	0.015								
Anthracene	ND	mg/Kg	0.015								
Fluoranthene	ND	mg/Kg	0.020								
Pyrene	ND	mg/Kg	0.025								
Benz(a)anthracene	ND	mg/Kg	0.010								
Chrysene	ND	mg/Kg	0.011								
Benzo(b)fluoranthene	ND	mg/Kg	0.010								
Benzo(k)fluoranthene	ND	mg/Kg	0.010								
Benzo(a)pyrene	ND	mg/Kg	0.010								
Dibenz(a,h)anthracene	ND	mg/Kg	0.010								
Benzo(g,h,i)perylene	ND	mg/Kg	0.010								
Indeno(1,2,3-cd)pyrene	ND	mg/Kg	0.10								
Sample ID: LCS-20046		*LCS*				Batch ID:	**20046**	Analysis Date:		9/8/2009 11:06:47 PM	
Naphthalene	1.040	mg/Kg	0.25	2	0	52.0	35.4	86.1			
1-Methylnaphthalene	1.191	mg/Kg	0.25	2	0	59.5	38.4	90.1			
2-Methylnaphthalene	1.045	mg/Kg	0.25	2	0	52.2	36.2	91.9			
Acenaphthylene	0.9950	mg/Kg	0.25	2	0	49.8	39.6	88.1			
Acenaphthene	1.109	mg/Kg	0.25	2	0	55.4	38.8	91.6			
Fluorene	0.09650	mg/Kg	0.030	0.2	0	48.3	19.9	102			
Phenanthrene	0.05725	mg/Kg	0.015	0.101	0	56.9	26.2	103			
Anthracene	0.05525	mg/Kg	0.015	0.101	0	54.9	31	95.3			
Fluoranthene	0.1263	mg/Kg	0.020	0.201	0	62.9	37.2	90.5			
Pyrene	0.1023	mg/Kg	0.025	0.2	0	51.1	29.2	92.4			
Benz(a)anthracene	0.01075	mg/Kg	0.010	0.02	0	53.8	34.6	97.5			
Chrysene	0.05300	mg/Kg	0.011	0.101	0	52.7	35.6	94.3			
Benzo(b)fluoranthene	0.01250	mg/Kg	0.010	0.025	0	50.0	29.9	97.4			
Benzo(k)fluoranthene	ND	mg/Kg	0.010	0.013	0	54.0	36.9	95.7			
Benzo(a)pyrene	ND	mg/Kg	0.010	0.013	0	50.0	35.3	97			
Dibenz(a,h)anthracene	0.01275	mg/Kg	0.010	0.025	0	51.0	37.7	90.7			
Benzo(g,h,i)perylene	0.01300	mg/Kg	0.010	0.025	0	52.0	35.1	94.1			
Indeno(1,2,3-cd)pyrene	ND	mg/Kg	0.10	0.050	0	52.0	34.6	89.2			
Sample ID: LCSD-20046		*LCSD*				Batch ID:	**20046**	Analysis Date:		9/8/2009 11:27:02 PM	
Naphthalene	1.236	mg/Kg	0.25	2	0	61.8	35.4	86.1	17.2	26.2	
1-Methylnaphthalene	1.359	mg/Kg	0.25	2	0	67.9	38.4	90.1	13.2	23.5	
2-Methylnaphthalene	1.237	mg/Kg	0.25	2	0	61.9	36.2	91.9	16.9	22.7	
Acenaphthylene	1.207	mg/Kg	0.25	2	0	60.4	39.6	88.1	19.3	18.8	R
Acenaphthene	1.388	mg/Kg	0.25	2	0	69.4	38.8	91.6	22.3	19	R
Fluorene	0.08600	mg/Kg	0.030	0.2	0	43.0	19.9	102	11.5	21.4	

Qualifiers:

- E Estimated value
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: Cleanup at TK #29 **Work Order:** 0908430

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: **EPA Method 8310: PAHs**											
Sample ID: **LCSD-20046**		*LCSD*				Batch ID:	**20046**	Analysis Date:		9/8/2009 11:27:02 PM	
Phenanthrene	0.06425	mg/Kg	0.015	0.101	0	63.9	26.2	103	11.5	31.7	
Anthracene	0.06575	mg/Kg	0.015	0.101	0	65.4	31	95.3	17.4	18.3	
Fluoranthene	0.1480	mg/Kg	0.020	0.201	0	73.8	37.2	90.5	15.9	23.8	
Pyrene	0.1268	mg/Kg	0.025	0.2	0	63.4	29.2	92.4	21.4	18.9	R
Benz(a)anthracene	0.01275	mg/Kg	0.010	0.02	0	63.8	34.6	97.5	17.0	40	
Chrysene	0.06450	mg/Kg	0.011	0.101	0	64.1	35.6	94.3	19.6	33	
Benzo(b)fluoranthene	0.01525	mg/Kg	0.010	0.025	0	61.0	29.9	97.4	19.8	38.2	
Benzo(k)fluoranthene	ND	mg/Kg	0.010	0.013	0	66.0	36.9	95.7	0	26.2	
Benzo(a)pyrene	ND	mg/Kg	0.010	0.013	0	62.0	35.3	97	0	35.5	
Dibenz(a,h)anthracene	0.01550	mg/Kg	0.010	0.025	0	62.0	37.7	90.7	19.5	25.1	
Benzo(g,h,i)perylene	0.01575	mg/Kg	0.010	0.025	0	63.0	35.1	94.1	19.1	20.5	
Indeno(1,2,3-cd)pyrene	ND	mg/Kg	0.10	0.050	0	63.0	34.6	89.2	0	23.1	
Method: **MERCURY, TCLP**											
Sample ID: **MB-20006**		*MBLK*				Batch ID:	**20006**	Analysis Date:		9/1/2009 4:50:53 PM	
Mercury	ND	mg/L	0.020								
Sample ID: **LCS-20006**		*LCS*				Batch ID:	**20006**	Analysis Date:		9/1/2009 4:52:36 PM	
Mercury	ND	mg/L	0.020	0.005	0	101	80	120			
Sample ID: **LCS-20006**		*LCS*				Batch ID:	**20006**	Analysis Date:		9/1/2009 4:54:20 PM	
Mercury	ND	mg/L	0.020	0.005	0	101	80	120			

Qualifiers:

Estimated value
Analyte detected below quantitation limits
RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.
Project: Cleanup at TK #29 **Work Order:** 0908430

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 6010B: TCLP Metals											
Sample ID: 0908430-01AMSD		*MSD*				**Batch ID: 19993**		**Analysis Date:**		**9/11/2009 2:16:20 PM**	
Arsenic	ND	mg/L	5.0	0.5	0	107	75	125	0	20	
Cadmium	ND	mg/L	1.0	0.5	0	105	75	125	0	20	
Chromium	ND	mg/L	5.0	0.5	0	97.6	75	125	0	20	
Lead	ND	mg/L	5.0	0.5	0.0067	94.5	75	125	0	20	
Selenium	ND	mg/L	1.0	0.5	0	105	75	125	0	20	
Silver	ND	mg/L	5.0	0.5	0	110	75	125	0	20	
Sample ID: MB-Fluid2		*MBLK*				**Batch ID: 19993**		**Analysis Date:**		**9/4/2009 12:18:57 PM**	
Arsenic	ND	mg/L	5.0								
Barium	ND	mg/L	100								
Cadmium	ND	mg/L	1.0								
Chromium	ND	mg/L	5.0								
Lead	ND	mg/L	5.0								
Selenium	ND	mg/L	1.0								
Silver	ND	mg/L	5.0								
Sample ID: MB-19993		*MBLK*				**Batch ID: 19993**		**Analysis Date:**		**9/4/2009 12:23:16 PM**	
Arsenic	ND	mg/L	5.0								
Barium	ND	mg/L	100								
Cadmium	ND	mg/L	1.0								
Chromium	ND	mg/L	5.0								
Lead	ND	mg/L	5.0								
Selenium	ND	mg/L	1.0								
Silver	ND	mg/L	5.0								
Sample ID: LCS-19993		*LCS*				**Batch ID: 19993**		**Analysis Date:**		**9/4/2009 12:25:49 PM**	
Arsenic	ND	mg/L	5.0	0.5	0	114	80	120			
Barium	ND	mg/L	100	0.5	0.0015	98.8	80	120			
Cadmium	ND	mg/L	1.0	0.5	0	107	80	120			
Chromium	ND	mg/L	5.0	0.5	0	100	80	120			
Lead	ND	mg/L	5.0	0.5	0	99.5	80	120			
Selenium	ND	mg/L	1.0	0.5	0	113	80	120			
Silver	ND	mg/L	5.0	0.5	0	108	80	120			
Sample ID: 0908430-01AMS		*MS*				**Batch ID: 19993**		**Analysis Date:**		**9/11/2009 2:13:42 PM**	
Arsenic	ND	mg/L	5.0	0.5	0	108	75	125			
Cadmium	ND	mg/L	1.0	0.5	0	106	75	125			
Chromium	ND	mg/L	5.0	0.5	0	98.2	75	125			
Lead	ND	mg/L	5.0	0.5	0.0067	95.5	75	125			
Selenium	ND	mg/L	1.0	0.5	0	106	75	125			
Silver	ND	mg/L	5.0	0.5	0	112	75	125			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **WESTERN REFINING SOUT** Date Received: **8/25/2009**

Work Order Number **0908430** Received by: **ARS**

Checklist completed by: _____ 8/25/09 Sample ID labels checked by: _____
Signature Date Initials

Matrix: Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐		
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐	
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑		
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:	
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐		
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑		
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*	
Container/Temp Blank temperature?	**3.8°**	*<6° C Acceptable* If given sufficient time to cool.			

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name:
Clean up at Tc#29

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 5°

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908436	BTEX + ~~MTBE + TMB's (8021)~~	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals - TCLP	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Reactivity	Corrosivity	Ignitability		Air Bubbles (Y or N)
8-24-09	1130A	Soil	Clean up at Tc#29	2-8oz jars		1	X		X			X	X					X	X	X		

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
8-24-09	1417	Cindy Hurtado				
Date:	Time:	Relinquished by:	Received by:	10:35	8/25/09	

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