Larson & Associates, Inc.
Environmental Consultants

APPROVED; Conditionally Approved
By OCD District 1 at 3:37 pm, May 20, 2015

Conditions of approval:
1. **Drop two additional soil borings**
2. **Show location of soil boring and composite samples on map**
3. **Take a ground water sample**

May 13, 2015

VIA EMAIL: Tomas.Oberding@state.nm.us

Dr. Tomas Oberding, Hydrologist
Environmental Bureau
New Mexico Oil Conservation Division
1220 So. St. Francis Drive
Santa Fe, New Mexico 87505

Re: 1RP-3594 – Paladin Energy Corp. State BT "D" Well No. 003 Spill Investigation and Remediation Report, Unit P (SE/4, SE/4), Section 35, Township 11 South, Range 33 East, Lea County, New Mexico

Dear Dr. Oberding:

Larson & Associates, Inc. (LAI), on behalf of Paladin Energy Corp. (Paladin), submits this report to the New Mexico Oil Conservation Division (OCD) to present the investigation and remediation of a produced water spill at the State BT "D" Well No. 003 (Site). The vertical extent of release was determined and remediation was performed. Paladin proposes to fill the excavation with clean soil and seed the remediation area. Paladin respectfully requests your approval. Please contact Mickey Horn with Paladin at (432) 522-2162 or me at (432) 687-0901.
Sincerely,

Larson & Associates, Inc.

Mark J. Larson, P.G.

President/Sr. Project Manager

mark@laenvironmental.com

cc: Kellie Jones – OCD District 1
Mickey Horn – Paladin Energy Corp.

Encl.

1RP-3594
SPILL INVESTIGATION REPORT
STATE BT "D" WELL N0. 003
LEA COUNTY, NEW MEXICO

LAI Project No. 15-0130-02

May 11, 2015

Prepared for:

Paladin Energy Corp.

10290 Monroe Drive, Suite 301

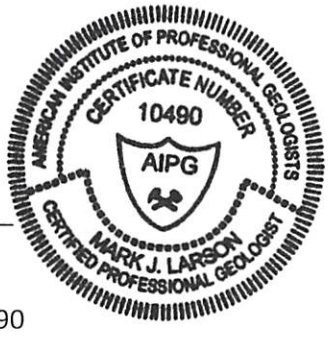
Fort Worth, Texas 75229

Prepared by:

Larson & Associates, Inc.

507 North Marienfeld Street, Suite 205

Midland, TX 79701



Mark J. Larson

Certified Professional Geologist No. 10490

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1.0 EXECUTIVE SUMMARY

This report is submitted to the New Mexico Oil Conservation Division (OCD) District 1, in Hobbs, New Mexico, on behalf of Paladin Energy Corp (Paladin) to present the investigation and remediation of a produced water spill at the State BT "D" Well No. 003 (Site) located in Lea County, New Mexico. The legal description is Unit P (SE/4, SE/4), Section 35, Township 11 South and Range 33 East. The geodetic position is 32° 19' 00.340" north and 103° 34' 41.390" west.

The release was discovered by an OCD inspector, on March 31, 2015. On April 1, 2015, OCD issued a letter to Paladin that required corrective action to be completed by May 29, 2015. On April 2, 2015, Paladin initiated corrective action that included excavating soil south and east of the well for disposal at the Gandy Marley land fill located west of Tatum, New Mexico. OCD issued remediation project (RP) number 1RP-3594 for the release. Groundwater occurs at about 42 feet bgs.

On April 7, 2015, personnel from Larson & Associates, Inc. (LAI) collected a 5-part composite sample (Comp A) from the bottom of the excavations. Permian Basin Environmental Lab (PBELAB), located in Midland, Texas, analyzed the sample for benzene, toluene, ethylbenzene, xylene (BTEX), total petroleum hydrocarbons (TPH) and chloride by methods SW-846-8021B, SW-846-8015 and 300, respectively. Benzene was below the method reporting limit of o.oo109 milligrams per kilogram (mg/Kg). TPH was 2,729.68 mg/Kg and exceeded the OCD recommended remediation action level (RRAL) of 100 mg/Kg. Chloride was 10,200 mg/Kg.

On April 21, 2015, Scarborough Drilling Co., located in Lamesa, Texas, drilled an air rotary boring (SB-1) near the center of the excavation. Soil samples were collected every 5 feet to about 35 feet bgs using a jam tube sampler.

Benzene and BTEX were below the method reporting limits in the sample from 15 feet bgs which exhibited a headspace reading of 119.4 parts per million (ppm). TPH was below the RRAL (100 mg/Kg) in all samples. Chloride was reported at 3,270 mg/Kg at 1 foot bgs and 169 mg/Kg at 5 feet bgs.

Due to caliche at about 1 foot bgs which prevented further excavation with a backhoe Paladin respectfully requests approval from OCD to fill the excavation with clean soil. A report will be submitted to the OCD after remediation that will include photographs and final C-141.

2.0 INTRODUCTION

Larson & Associates, Inc. (LAI) submits this report to the New Mexico Oil Conservation Division (OCD) on behalf of Paladin Energy Corp (Paladin) to present the investigation and remediation of a produced water spill at the State BT "D" Well No. 003 (Site). The Site is located in Unit P (SE/4, SE/4), Section 35, Township 11 South, Range 33 east, in Lea County, New Mexico. The geodetic position is north 33° 19' 00.340" and west 103° 34' 41.390". Figure 1 presents a location and topographic map. Figure 2 presents an aerial map.

2.1 Background and Initial Response

On March 31, 2015, an inspector with OCD District 1, in Hobbs, New Mexico, discovered the spill. On April 1, 2015, OCD issued a letter of violation to Paladin requiring, among other things, filing form C-141 and performing corrective action by May 29, 2015.

The spill occurred from failure of a stuffing box that release about 4 barrels (bbl) of oil and 2 bbl of water. The spill followed the surface topography and flowed about 40 feet south and east of the well. No fluid was recovered. On April 2, 2015, Paladin initiated corrective actions that included excavating visually contaminated soil. The contaminated soil was hauled to the Gandy Marley landfill (NM1-19-0) located west of Tatum, New Mexico. The initial C-141 was submitted to the OCD on April 6, 2015. OCD issued remediation project (RP) number 1RP-3594. Appendix A presents the OCD correspondence.

2.2 Setting

The Site is located about 17 miles west of Tatum, New Mexico. The surface elevation is approximately 4,237 feet above mean sea level (MSL) and slopes gently to the southeast. The soil is designated "Kimbrough-Lea" complex, 0 to 3 percent slopes (KU). The typical profile consists of "A" horizon consisting of about 6 inches of gravelly loam and "Bkm" horizon consisting of about 10 inches of cemented material of broken to indurated caliche. The main uses are livestock grazing and wildlife habitat. No surface water features are located within 1,000 horizontal feet of the Site.

According to the *Geologic Map of New Mexico* and the *Geologic Atlas of Texas, Hobbs Sheet* the surface geology is the Tertiary-age Ogallala formation. The Ogallala formation is comprised of fluvial sand, silt, clay and localized gravel, with indistinct to massive crossbeds. The Ogallala formation consists mainly of unconsolidated to poorly consolidated, very fine to medium-grained quartz sand and gravel, with minor amount of silt and clay. The caliche comprising the lower part of the Portales-Stegall loams forms a hard, erosion resistant, pedogenic calcrete that is between about 9 and 21 feet thick. The Ogallala formation is underlain by clay, silty clay, shale and sandstone of the Chile formation (Triassic) and is about 300 feet thick.

Groundwater occurs in the Ogallala formation. The Chinle formation is the lower confining boundary for groundwater in the Ogallala formation. The regional groundwater flow direction is from northwest to southeast. The nearest fresh water well (No. L01327) is located in Unit M (SW/4), SW/4), Section 35, Township 11 South and Range 33 East. The well is located about 3,400 feet southwest of the Site. According to the New Mexico Office of the State Engineer (OSE) the well was drilled to about 115 feet

below ground surface (bgs) and used for livestock. LAI personnel recorded groundwater in this well at about 42 feet bgs.

3.0 INVESTIGATION

3.1 Soil Samples

On April 7, 2015, LAI personnel collected a 5-spot composite sample (Comp A) from the area located south and east of the well where soil was excavated to about 1 foot bgs. The sample was collected using a stainless steel hand trowel and placed in a clean 4-ounce glass jar. The sample was hand delivered under preservation and chain of custody to Permian Basin Environmental Lab (PBELAB), a National Environmental Laboratory Accreditation Programs (NELAP) accredited laboratory, located in Midland, Texas. The laboratory analyzed the samples for benzene, toluene, ethyl benzene, xylenes (BTEX) by method SW-846-8021B, total petroleum hydrocarbon (TPH) including gasoline (C6 – C12), diesel (>C12 – C28) and oil (>C28 – C35) range hydrocarbons by method SW-846-8015 and chloride by method 300. Table 1 presents an analytical data summary. Appendix B presents the laboratory report.

3.2 Soil Borings

On April 21, 2015, LAI contracted Scarborough Drilling Company (SDC), Lamesa, Texas, to collect soil samples from an air rotary drilled boring (SB-1) near the center of the excavation. The boring was drilled to about 35 feet bgs and soil samples were collected every 5 feet (0, 5, 10, 15, 20, etc.) with a jam tube sampler. The samples were collected in 4 ounce glass jars and submitted under preservation and chain of custody to PBELAB, in Midland, Texas. The boring was plugged with bentonite chips. A duplicate sample was collected for headspace analysis using 8 ounce glass jars that were filled about 2/3rds full and sealed with a layer of aluminum foil. A calibrated photoionization detector (PID) was used to measure the concentration of organic vapor in the sample headspace. The highest PID reading was 119.4 ppm at 15 feet bgs. This sample was analyzed by the laboratory for BTEX by method SW-846-8021B. This and samples from 1, 5, 10 and 20 feet analyzed for TPH, including gasoline (C6 – C12), diesel (>C12 – C28) and oil (>C28 – C35) range hydrocarbons by method SW-846-8015. All samples were analyzed for chloride by method 300. Table 2 presents an analytical data summary. Appendix B presents the laboratory report. Appendix C presents the boring logs. Appendix D presents photographs.

Remediation action levels were calculated for benzene, BTEX and TPH based on the following criteria established by the OCD (*Guidelines for Remediation of Leaks, Spills and Releases, August 13,* 1993):

Criteria	***Result***	***Score***
Depth-to-Groundwater	<50 feet	20
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Horizontal Feet	0
	Total Score:	**20**

The recommended remediation action level (RRAL) for benzene, BTEX and TPH is 10, 50 and 100 mg/kg, respectively. Benzene and BTEX were below the method reporting limit in the sample from 15 feet bgs. All samples were below the method reporting limit for TPH. Chloride was less than 250 mg/Kg below

about 2 feet bgs. Appendix E presents the initial C-141.

4.0 CONCLUSIONS

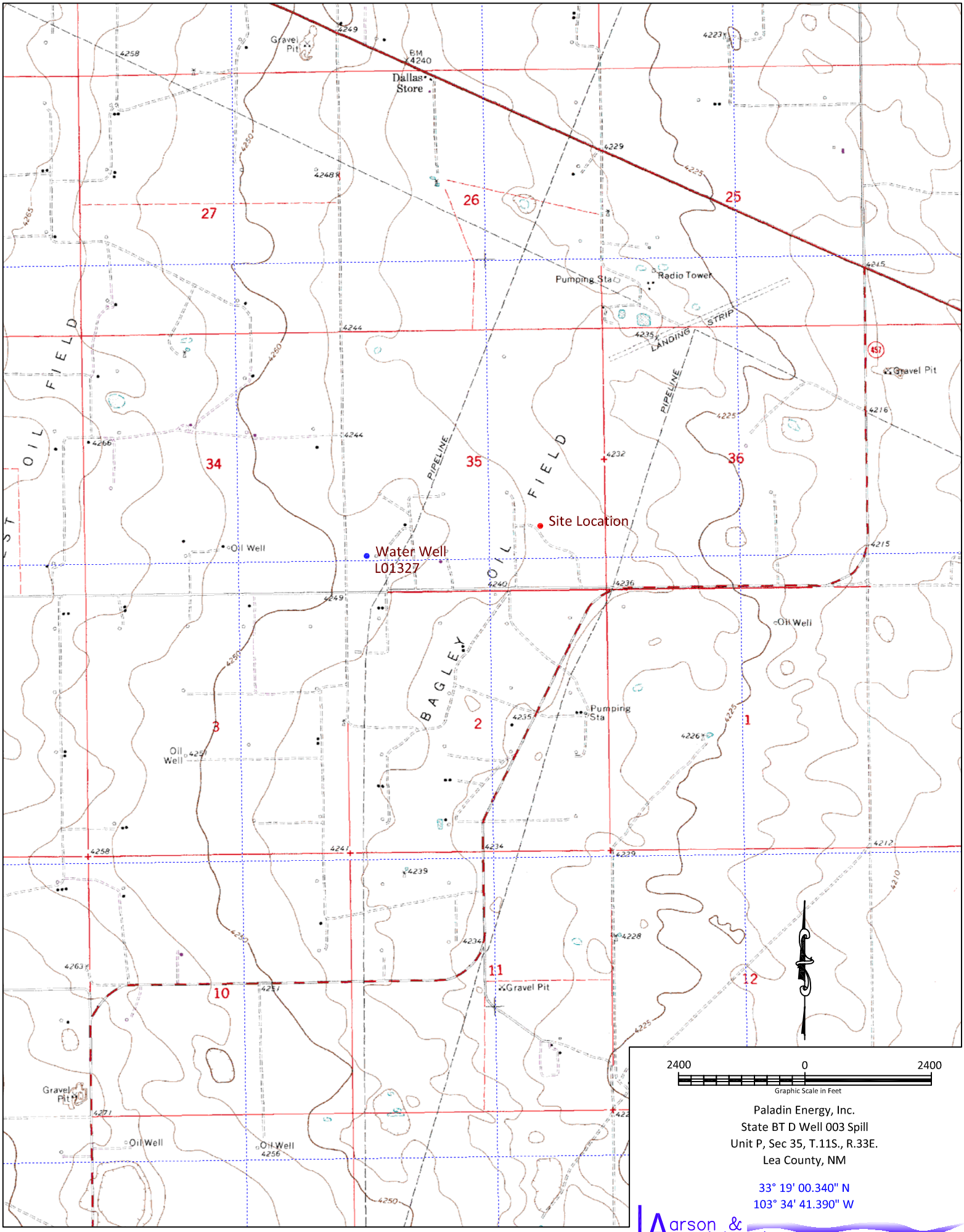
The following conclusions are based on the investigation results:

- Benzene and BTEX were less than the method reporting limit in the soil sample with the highest headspace concentration greater than 100 ppm in the sample from 15 feet bgs;
- TPH was less than the method reporting limit in all samples from boring SB-1;
- Chloride decreased below 250 mg/Kg in soil from boring SB-1 at about 2 feet bgs;

5.0 RECDOMMENDATION

Paladin excavated soil from the spill area to the extent feasible using a backhoe. Caliche is present at about 1 foot bgs and prevented excavating soil below about 1 foot bgs. Paladin respectfully requests approval to backfill the excavation with clean soil. A report will be submitted to the OCD after remediation that will include photographs and final C-141.

FIGURES



Paladin Energy, Inc.
State BT D Well 003 Spill
Unit P, Sec 35, T.11S., R.33E.
Lea County, NM

33° 19' 00.340" N
103° 34' 41.390" W

Larson & Associates, Inc.
Environmental Consultants

Figure 1 - Topographic Map

Figure 2 - Aerial Map

TABLES

Table 1
Soil Sample Analytical Data Summary
Paladin Energy Corp., State BT "D" Well No. 003
Lea County, New Mexico
1RP-3594

Sample	Depth (Feet)	Type	Collection Date	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	>C12 - C28 (mg/Kg)	>C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
OCD RRAL:				**10**	**50**				**100**	
Comp A	1.5	Composite	4/7/2015	<0.00109	0.1597	445	2,132	152.68	**2,729.68**	10,200

Notes: Laboratory analysis performed by Permian Basin Environmental Lab, Midland, Texas.

BTEX performed by laboratory method SW-8021B

TPH performed by laboratory method SW-846-8015

Chloride performed by laboratory method 300.0

Depth in feet below ground surface (bgs)

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

Bold and highlighted indicates that analyte was detected above the OCD recommended remediation action level (RRAL)

Table 2
Soil Boring Analytical Data Summary
Paladin Energy Corp., State BT "D" Well No. 003
Lea County, New Mexico
1RP-3594

Sample	Depth (Feet)	Collection Date	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	>C12 - C28 (mg/Kg)	>C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
OCD RRAL:				**10**	**50**				**100**	
SB-1	1	4/20/2015	0.0	--	--	<36.8	<36.8	<36.8	<36.8	3,270
	5	4/20/2015	0.0	--	--	<35.2	<35.2	<35.2	<35.2	169
	10	4/20/2015	0.0	--	--	<30.9	<30.9	<30.9	<30.9	18
	15	4/20/2015	119.4	<0.00122	<0.0414.8	<30.5	<30.5	<30.5	<30.5	107
	20	4/20/2015	38.0	--	--	<26.9	<26.9	<26.9	<26.9	22.4
	25	4/20/2015	6.0	--	--	--	--	--	--	<1.37
	30	4/20/2015	2.4	--	--	--	--	--	--	1.54
	35	4/20/2015	0.8	--	--	--	--	--	--	67.9

Notes: Laboratory analysis performed by Permian Basin Environmental Lab, Midland, Texas.
BTEX performed by laboratory method SW-8021B
TPH performed by laboratory method SW-846-8015
Chloride performed by laboratory method 300.0
Depth in feet below ground surface (bgs)
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)
Bold indicates that analyte was detected above the method concentration limit

APPENDIX A

OCD Correspondence

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

David Catanach, Director
Oil Conservation Division

Response Required - Deadline Enclosed

Field Inspection Program
"Preserving the Integrity of Our Environment"

01-Apr-15

PALADIN ENERGY CORP
10290 MONROE DRIVE SUITE 301
DALLAS TX 75229

LETTER OF VIOLATION - Inspection

Dear Operator:

The following inspection(s) indicate that the well, equipment, location or operational status of the well(s) failed to meet standards of the New Mexico Oil Conservation Division as described in the detail section below. To comply with standards imposed by Rules and Regulations of the Division, corrective action must be taken immediately and the situation brought into compliance. The detail section indicates preliminary findings and/or probable nature of the violation. This determination is based on an inspection of your well or facility by an inspector employed by the Oil Conservation Division on the date(s) indicated.

Please notify the proper district office of the Division, in writing, of the date corrective actions are scheduled to be made so that arrangements can be made to reinspect the well and/or facility.

INSPECTION DETAIL SECTION

STATE BT C No.003 L-35-11S-33E **30-025-01017-00-00**

Inspection Date	Type Inspection	Inspector	Violation?	*Significant Non-Compliance?	Corrective Action Due By:	Inspection No.
03/31/2015	Routine/Periodic	Mark Whitaker	Yes	No	6/5/2015	iMAW1509048809

Violations
Absent Well Identification Signs (Rule 103)
Surface Leaks/Spills

Comments on Inspection: No well sign at wellhead (Rule 19.15.46.8). Spill has occurred at tank battery. NEED TO INSTALL WELL SIGN AT WELLHEAD. NEED TO FILE C141 TO REPORT SPILL, WITH REMEDIATION PLAN ATTACHED. FILE WITH TOMAS OBERDING IN THE SANTA FE OFFICE. SEE ATTACHED PHOTO.

STATE BT D No.003 P-35-11S-33E **30-025-01021-00-00**

Inspection Date	Type Inspection	Inspector	Violation?	*Significant Non-Compliance?	Corrective Action Due By:	Inspection No.
03/31/2015	Routine/Periodic	Mark Whitaker	Yes	No	5/29/2015	iMAW1509049587

Comments on Inspection: Leak at stuffing box. NEED TO FILE C141 TO REPORT SPILL WITH REMEDIATION PLAN ATTACHED. FILE WITH TOMAS OBERDING IN THE SANTA FE OFFICE. SEE ATTACHED PHOTO.

STATE BT I No.001 D-2-12S-33E **30-025-01028-00-00**

Inspection Date	Type Inspection	Inspector	Violation?	*Significant Non-Compliance?	Corrective Action Due By:	Inspection No.
03/31/2015	Routine/Periodic	Mark Whitaker	Yes	No	5/8/2015	iMAW1509048450

Violations

Absent Well Identification Signs (Rule 103)

Comments on Inspection: No well sign (Rule 19.15.16.8). NEED TO INSTALL WELL SIGN.

In the event that a satisfactory response is not received to this letter of direction by the "Corrective Action Due By:" date shown above, further enforcement will occur. Such enforcement may include this office applying to the Division for an order summoning you to a hearing before a Divison Examiner in Santa Fe to show cause why you should not be ordered to permanently plug and abandon this well.

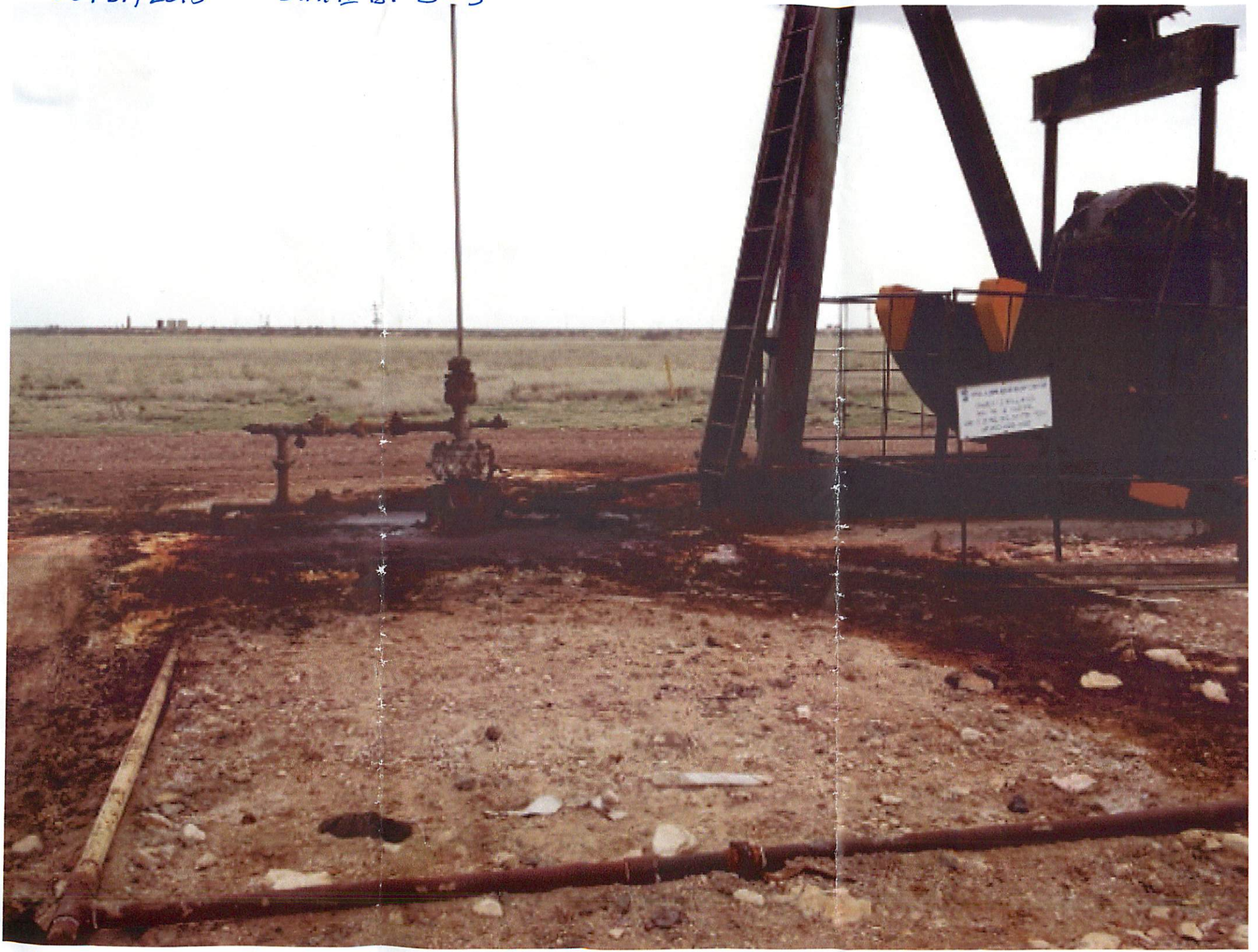
Sincerely,

Mark Whitaker
Compliance Officer

Hobbs OCD District Office

Note: Information in Detail Section comes directly from field inspector data entries - not all blanks will contain data.
*Significant Non-Compliance events are reported directly to the EPA, Region VI, Dallas, Texas.

03/31/2015 STATE BT D#3



APPENDIX B

Laboratory Reports

PERMIAN BASIN
ENVIRONMENTAL LAB, LP
10014 SCR 1213
Midland, TX 79706

PBELAB

Analytical Report

Prepared for:

Mark Larson

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: Paladin Well Leak

Project Number: 15-0130-02

Location: New Mexico

Lab Order Number: 5D08014

NELAP ACCREDITED TNI LABORATORY

NELAP/TCEQ # T104704156-13-3

Report Date: 04/10/15

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladin Well Leak
Project Number: 15-0130-02
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
COMP-A	5D08014-01	Soil	04/07/15 13:40	04-08-2015 09:25

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladin Well Leak
Project Number: 15-0130-02
Project Manager: Mark Larson

Fax: (432) 687-0456

COMP-A

5D08014-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
Organics by GC									
Benzene	ND	0.00109	mg/kg dry	1	P5D1002	04/09/15	04/09/15	EPA 8021B	
Toluene	**0.00561**	0.00217	mg/kg dry	1	P5D1002	04/09/15	04/09/15	EPA 8021B	
Ethylbenzene	**0.0166**	0.00109	mg/kg dry	1	P5D1002	04/09/15	04/09/15	EPA 8021B	
Xylene (p/m)	**0.101**	0.00217	mg/kg dry	1	P5D1002	04/09/15	04/09/15	EPA 8021B	
Xylene (o)	**0.0365**	0.00109	mg/kg dry	1	P5D1002	04/09/15	04/09/15	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*97.7 %*	*75-125*		*P5D1002*	*04/09/15*	*04/09/15*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*87.1 %*	*75-125*		*P5D1002*	*04/09/15*	*04/09/15*	*EPA 8021B*	
C6-C12	**445.00**	27.174	mg/kg dry	1	P5D0905	04/09/15	04/09/15	TX 1005	
>C12-C28	**2132.0**	27.174	mg/kg dry	1	P5D0905	04/09/15	04/09/15	TX 1005	
>C28-C35	**152.68**	27.174	mg/kg dry	1	P5D0905	04/09/15	04/09/15	TX 1005	
Surrogate: 1-Chlorooctane		*127 %*	*70-130*		*P5D0905*	*04/09/15*	*04/09/15*	*TX 1005*	
Surrogate: o-Terphenyl		*129 %*	*70-130*		*P5D0905*	*04/09/15*	*04/09/15*	*TX 1005*	
Total Hydrocarbon nC6-nC35	**2729.7**	27.174	mg/kg dry	1	[CALC]	04/09/15	04/09/15	[CALC]	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**10200**	27.2	mg/kg dry	25	P5D1006	04/10/15	04/10/15	EPA 300.0	
% Moisture	**8.0**	0.1	%	1	P5D0901	04/09/15	04/09/15	% calculation	

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladin Well Leak
Project Number: 15-0130-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D0905 - TX 1005										
Blank (P5D0905-BLK1)				Prepared & Analyzed: 04/09/15						
C6-C12	ND	25.000	mg/kg wet							
>C12-C28	ND	25.000	"							
>C28-C35	ND	25.000	"							
Surrogate: 1-Chlorooctane	*115*		*"*	*100*		*115*	*70-130*			
Surrogate: o-Terphenyl	*66.0*		*"*	*50.0*		*132*	*70-130*			*S-GC*
LCS (P5D0905-BS1)				Prepared & Analyzed: 04/09/15						
C6-C12	956	25.000	mg/kg wet	1000		95.6	75-125			
>C12-C28	1060	25.000	"	1000		106	75-125			
Surrogate: 1-Chlorooctane	*129*		*"*	*100*		*129*	*70-130*			
Surrogate: o-Terphenyl	*57.8*		*"*	*50.0*		*116*	*70-130*			
LCS Dup (P5D0905-BSD1)				Prepared & Analyzed: 04/09/15						
C6-C12	918	25.000	mg/kg wet	1000		91.8	75-125	4.07	20	
>C12-C28	1020	25.000	"	1000		102	75-125	3.73	20	
Surrogate: 1-Chlorooctane	*125*		*"*	*100*		*125*	*70-130*			
Surrogate: o-Terphenyl	*55.5*		*"*	*50.0*		*111*	*70-130*			
Duplicate (P5D0905-DUP1)		**Source: 5D08017-03**		Prepared: 04/09/15 Analyzed: 04/10/15						
C6-C12	ND	25.253	mg/kg dry		ND				20	
>C12-C28	ND	25.253	"		ND				20	
>C28-C35	ND	25.253	"		ND				20	
Surrogate: 1-Chlorooctane	*116*		*"*	*101*		*115*	*70-130*			
Surrogate: o-Terphenyl	*67.8*		*"*	*50.5*		*134*	*70-130*			*S-GC*
Batch P5D1002 - General Preparation (GC)										
Blank (P5D1002-BLK1)				Prepared & Analyzed: 04/09/15						
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	*0.0604*		*"*	*0.0600*		*101*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0560*		*"*	*0.0600*		*93.3*	*75-125*			

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D1002 - General Preparation (GC)										
LCS (P5D1002-BS1)				Prepared & Analyzed: 04/09/15						
Benzene	0.0965	0.00100	mg/kg wet	0.100		96.5	70-130			
Toluene	0.102	0.00200	"	0.100		102	70-130			
Ethylbenzene	0.116	0.00100	"	0.100		116	70-130			
Xylene (p/m)	0.231	0.00200	"	0.200		116	70-130			
Xylene (o)	0.115	0.00100	"	0.100		115	70-130			
Surrogate: 1,4-Difluorobenzene	*0.0557*		*"*	*0.0600*		*92.8*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0646*		*"*	*0.0600*		*108*	*75-125*			
LCS Dup (P5D1002-BSD1)				Prepared & Analyzed: 04/09/15						
Benzene	0.105	0.00100	mg/kg wet	0.100		105	70-130	8.05	20	
Toluene	0.111	0.00200	"	0.100		111	70-130	8.75	20	
Ethylbenzene	0.109	0.00100	"	0.100		109	70-130	5.98	20	
Xylene (p/m)	0.239	0.00200	"	0.200		120	70-130	3.40	20	
Xylene (o)	0.115	0.00100	"	0.100		115	70-130	0.461	20	
Surrogate: 1,4-Difluorobenzene	*0.0589*		*"*	*0.0600*		*98.1*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0648*		*"*	*0.0600*		*108*	*75-125*			
Duplicate (P5D1002-DUP1)	**Source: 5D02001-03**			Prepared & Analyzed: 04/09/15						
Benzene	7.03	0.115	mg/kg dry		6.90			2.00	20	
Toluene	35.5	0.230	"		34.0			4.42	20	
Ethylbenzene	23.5	0.115	"		23.4			0.402	20	
Xylene (p/m)	43.5	0.230	"		44.1			1.38	20	
Xylene (o)	16.4	0.115	"		16.6			1.18	20	
Surrogate: 1,4-Difluorobenzene	*0.0751*		*"*	*0.0690*		*109*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0695*		*"*	*0.0690*		*101*	*75-125*			

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladin Well Leak
Project Number: 15-0130-02
Project Manager: Mark Larson

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D0901 - * DEFAULT PREP *** **										
Blank (P5D0901-BLK1)				Prepared & Analyzed: 04/09/15						
% Moisture	ND	0.1	%							
Duplicate (P5D0901-DUP1)		**Source: 5D07008-01**		Prepared & Analyzed: 04/09/15						
% Moisture	5.0	0.1	%		6.0			18.2	20	
Duplicate (P5D0901-DUP2)		**Source: 5D08012-04**		Prepared & Analyzed: 04/09/15						
% Moisture	8.0	0.1	%		8.0			0.00	20	
Duplicate (P5D0901-DUP3)		**Source: 5D08017-03**		Prepared & Analyzed: 04/09/15						
% Moisture	1.0	0.1	%		1.0			0.00	20	
Batch P5D1006 - * DEFAULT PREP *** **										
Blank (P5D1006-BLK1)				Prepared & Analyzed: 04/10/15						
Chloride	ND	1.00	mg/kg wet							
LCS (P5D1006-BS1)				Prepared & Analyzed: 04/10/15						
Chloride	102	1.00	mg/kg wet	100		102	80-120			
LCS Dup (P5D1006-BSD1)				Prepared & Analyzed: 04/10/15						
Chloride	98.2	1.00	mg/kg wet	100		98.2	80-120	3.54	20	
Duplicate (P5D1006-DUP1)		**Source: 5D08013-01**		Prepared & Analyzed: 04/10/15						
Chloride	396	5.68	mg/kg dry		350			12.3	20	
Matrix Spike (P5D1006-MS1)		**Source: 5D08013-01**		Prepared & Analyzed: 04/10/15						
Chloride	932	5.68	mg/kg dry	568	350	102	80-120			

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Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Brent Barron Date: 4/10/2015

Brent Barron, Laboratory Director/Technical Director

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4/8/2015 PAGE 1 OF 1
PO #: _____ LAB WORK ORDER #: SD08014
PROJECT LOCATION OR NAME: Paladin Well Leak
LAI PROJECT #: 15-0130-02 COLLECTOR: Sarah Shiffler

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

SD08014

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☒ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
Comp-A	01	4/7/15	1:40	S	1				X		X	X																X		
TOTAL																														

RELINQUISHED BY:(Signature) Sarah Shiffler DATE/TIME 4/8/15 9:25 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 5.0 NCR THERM #: LAI
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

PERMIAN BASIN
ENVIRONMENTAL LAB, LP
10014 SCR 1213
Midland, TX 79706

PBELAB

Analytical Report

Prepared for:

Mark Larson

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: Paladin/State BT "D" Well #003 Battery

Project Number: 15-0130-02

Location:

Lab Order Number: 5D22007

NELAP ACCREDITED TNI LABORATORY

NELAP/TCEQ # T104704156-13-3

Report Date: 05/08/15

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladin/State BT "D" Well #003 Battery
Project Number: 15-0130-02
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-1 1'	5D22007-01	Soil	04/21/15 13:35	04-22-2015 10:21
SB-1 5'	5D22007-02	Soil	04/21/15 13:50	04-22-2015 10:21
SB-1 10'	5D22007-03	Soil	04/21/15 13:58	04-22-2015 10:21
SB-1 15'	5D22007-04	Soil	04/21/15 14:05	04-22-2015 10:21
SB-1 20'	5D22007-05	Soil	04/21/15 14:10	04-22-2015 10:21
SB-1 25'	5D22007-06	Soil	04/21/15 14:25	04-22-2015 10:21
SB-1 30'	5D22007-07	Soil	04/21/15 14:35	04-22-2015 10:21
SB-1 35'	5D22007-08	Soil	04/21/15 14:43	04-22-2015 10:21

Larson & Associates, Inc.	Project: Paladin/State BT "D" Well #003 Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-02	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 1'

5D22007-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**3270**	14.7	mg/kg dry	10	P5E0502	04/30/15	05/05/15	EPA 300.0	
% Moisture	**32.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	36.8	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C12-C28	ND	36.8	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C28-C35	ND	36.8	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*76.6 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*89.8 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	36.8	mg/kg dry	1	[CALC]	04/27/15	04/27/15	calc	

Larson & Associates, Inc.	Project: Paladin/State BT "D" Well #003 Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-02	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 5'

5D22007-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**169**	1.41	mg/kg dry	1	P5E0502	04/30/15	05/05/15	EPA 300.0	
% Moisture	**29.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	35.2	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C12-C28	ND	35.2	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C28-C35	ND	35.2	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*68.0 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	*S-GC*
Surrogate: o-Terphenyl		*79.8 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	35.2	mg/kg dry	1	[CALC]	04/27/15	04/27/15	calc	

Larson & Associates, Inc.	Project: Paladin/State BT "D" Well #003 Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-02	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 10'

5D22007-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**18.0**	1.23	mg/kg dry	1	P5E0502	04/30/15	05/05/15	EPA 300.0	
% Moisture	**19.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	30.9	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C12-C28	ND	30.9	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C28-C35	ND	30.9	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*67.0 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	*S-GC*
Surrogate: o-Terphenyl		*78.8 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	30.9	mg/kg dry	1	[CALC]	04/27/15	04/27/15	calc	

Larson & Associates, Inc.	Project: Paladin/State BT "D" Well #003 Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-02	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 15'

5D22007-04 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00122	mg/kg dry	1	P5D3008	04/27/15	04/27/15	EPA 8021B	
Toluene	ND	0.00244	mg/kg dry	1	P5D3008	04/27/15	04/27/15	EPA 8021B	
Ethylbenzene	ND	0.00122	mg/kg dry	1	P5D3008	04/27/15	04/27/15	EPA 8021B	
Xylene (p/m)	ND	0.00244	mg/kg dry	1	P5D3008	04/27/15	04/27/15	EPA 8021B	
Xylene (o)	ND	0.00122	mg/kg dry	1	P5D3008	04/27/15	04/27/15	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*79.0 %*	*75-125*		*P5D3008*	*04/27/15*	*04/27/15*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*125 %*	*75-125*		*P5D3008*	*04/27/15*	*04/27/15*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**107**	1.22	mg/kg dry	1	P5E0502	04/30/15	05/05/15	EPA 300.0	
% Moisture	**18.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	30.5	mg/kg dry	1	P5E0513	04/28/15	05/07/15	TPH 8015M	
>C12-C28	ND	30.5	mg/kg dry	1	P5E0513	04/28/15	05/07/15	TPH 8015M	
>C28-C35	ND	30.5	mg/kg dry	1	P5E0513	04/28/15	05/07/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*86.3 %*	*70-130*		*P5E0513*	*04/28/15*	*05/07/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*105 %*	*70-130*		*P5E0513*	*04/28/15*	*05/07/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	30.5	mg/kg dry	1	[CALC]	04/28/15	05/07/15	calc	

Larson & Associates, Inc.	Project: Paladin/State BT "D" Well #003 Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-02	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 20'

5D22007-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**22.4**	1.08	mg/kg dry	1	P5E0502	04/30/15	05/05/15	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.9	mg/kg dry	1	P5D3003	04/27/15	04/28/15	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P5D3003	04/27/15	04/28/15	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P5D3003	04/27/15	04/28/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*77.8 %*	*70-130*		*P5D3003*	*04/27/15*	*04/28/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*88.4 %*	*70-130*		*P5D3003*	*04/27/15*	*04/28/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	04/27/15	04/28/15	calc	

Larson & Associates, Inc.	Project: Paladin/State BT "D" Well #003 Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-02	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 25'

5D22007-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.37	mg/kg dry	1	P5E0502	04/30/15	05/05/15	EPA 300.0	
% Moisture	**27.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	

Larson & Associates, Inc.	Project: Paladin/State BT "D" Well #003 Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-02	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 30'

5D22007-07 (Soil)

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**1.54**	1.35	mg/kg dry	1	P5E0502	04/30/15	05/05/15	EPA 300.0	
% Moisture	**26.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	

Larson & Associates, Inc.	Project: Paladin/State BT "D" Well #003 Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-02	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 35'

5D22007-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**67.9**	1.06	mg/kg dry	1	P5E0502	04/30/15	05/05/15	EPA 300.0	
% Moisture	**6.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.6	mg/kg dry	1	P5D3003	04/27/15	04/28/15	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P5D3003	04/27/15	04/28/15	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P5D3003	04/27/15	04/28/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*77.6 %*	*70-130*		*P5D3003*	*04/27/15*	*04/28/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*90.0 %*	*70-130*		*P5D3003*	*04/27/15*	*04/28/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	04/27/15	04/28/15	calc	

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladin/State BT "D" Well #003 Battery
Project Number: 15-0130-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D3008 - General Preparation (GC)										
Blank (P5D3008-BLK1)				Prepared & Analyzed: 04/27/15						
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	*0.0713*		*"*	*0.0600*		*119*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0513*		*"*	*0.0600*		*85.5*	*75-125*			
LCS (P5D3008-BS1)				Prepared & Analyzed: 04/27/15						
Benzene	0.0935	0.00100	mg/kg wet	0.100		93.5	70-130			
Toluene	0.103	0.00200	"	0.100		103	70-130			
Ethylbenzene	0.112	0.00100	"	0.100		112	70-130			
Xylene (p/m)	0.227	0.00200	"	0.200		113	70-130			
Xylene (o)	0.119	0.00100	"	0.100		119	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0723*		*"*	*0.0600*		*120*	*75-125*			
Surrogate: 1,4-Difluorobenzene	*0.0476*		*"*	*0.0600*		*79.4*	*75-125*			
LCS Dup (P5D3008-BSD1)				Prepared & Analyzed: 04/27/15						
Benzene	0.0938	0.00100	mg/kg wet	0.100		93.8	70-130	0.320	20	
Toluene	0.104	0.00200	"	0.100		104	70-130	0.397	20	
Ethylbenzene	0.117	0.00100	"	0.100		117	70-130	4.43	20	
Xylene (p/m)	0.233	0.00200	"	0.200		117	70-130	2.83	20	
Xylene (o)	0.114	0.00100	"	0.100		114	70-130	3.96	20	
Surrogate: 1,4-Difluorobenzene	*0.0524*		*"*	*0.0600*		*87.3*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0707*		*"*	*0.0600*		*118*	*75-125*			

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladin/State BT "D" Well #003 Battery
Project Number: 15-0130-02
Project Manager: Mark Larson

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D2705 - * DEFAULT PREP *** **										
Blank (P5D2705-BLK1)				Prepared & Analyzed: 04/27/15						
% Moisture	ND	0.1	%							
Duplicate (P5D2705-DUP1)		**Source: 5D24002-01**		Prepared & Analyzed: 04/27/15						
% Moisture	10.0	0.1	%		11.0			9.52	20	
Duplicate (P5D2705-DUP2)		**Source: 5D24003-01**		Prepared & Analyzed: 04/27/15						
% Moisture	2.0	0.1	%		2.0			0.00	20	
Batch P5E0502 - * DEFAULT PREP *** **										
Blank (P5E0502-BLK1)				Prepared: 04/30/15 Analyzed: 05/05/15						
Chloride	ND	1.00	mg/kg wet							
LCS (P5E0502-BS1)				Prepared: 04/30/15 Analyzed: 05/05/15						
Chloride	105	1.00	mg/kg wet	100		105	80-120			
LCS Dup (P5E0502-BSD1)				Prepared: 04/30/15 Analyzed: 05/05/15						
Chloride	106	1.00	mg/kg wet	100		106	80-120	1.20	20	
Duplicate (P5E0502-DUP1)		**Source: 5D22007-01**		Prepared: 04/30/15 Analyzed: 05/05/15						
Chloride	3320	14.7	mg/kg dry		3270			1.72	20	
Duplicate (P5E0502-DUP2)		**Source: 5D27006-03**		Prepared: 04/30/15 Analyzed: 05/05/15						
Chloride	36.9	1.06	mg/kg dry		41.2			11.0	20	
Matrix Spike (P5E0502-MS1)		**Source: 5D22007-01**		Prepared: 04/30/15 Analyzed: 05/05/15						
Chloride	4200	14.7	mg/kg dry	1100	3270	84.4	80-120			

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladin/State BT "D" Well #003 Battery
Project Number: 15-0130-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D3003 - TX 1005										
Blank (P5D3003-BLK1)				Prepared & Analyzed: 04/27/15						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	*65.6*		*"*	*100*		*65.6*	*70-130*			*S-GC*
Surrogate: o-Terphenyl	*38.6*		*"*	*50.0*		*77.2*	*70-130*			
LCS (P5D3003-BS1)				Prepared & Analyzed: 04/27/15						
C6-C12	894	25.0	mg/kg wet	1000		89.4	75-125			
>C12-C28	1080	25.0	"	1000		108	75-125			
Surrogate: 1-Chlorooctane	*88.6*		*"*	*100*		*88.6*	*70-130*			
Surrogate: o-Terphenyl	*43.8*		*"*	*50.0*		*87.6*	*70-130*			
LCS Dup (P5D3003-BSD1)				Prepared & Analyzed: 04/27/15						
C6-C12	986	25.0	mg/kg wet	1000		98.6	75-125	9.85	20	
>C12-C28	1150	25.0	"	1000		115	75-125	6.17	20	
Surrogate: 1-Chlorooctane	*87.7*		*"*	*100*		*87.7*	*70-130*			
Surrogate: o-Terphenyl	*40.7*		*"*	*50.0*		*81.5*	*70-130*			
Duplicate (P5D3003-DUP1)	**Source: 5D27003-01**			Prepared: 04/27/15 Analyzed: 04/28/15						
C6-C12	2740	439	mg/kg dry		2900			5.86	20	
>C12-C28	22400	439	"		23700			5.82	20	
Surrogate: 1-Chlorooctane	*147*		*"*	*175*		*83.7*	*70-130*			
Surrogate: o-Terphenyl	*91.1*		*"*	*87.7*		*104*	*70-130*			

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Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Brent Barron Date: 5/8/2015

Brent Barron, Laboratory Director/Technical Director

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4-20-2015 PAGE 1 OF 1

PO #: _____ LAB WORK ORDER #: 5D22007

PROJECT LOCATION OR NAME: Paladin/State BT "D" Well #3

LAI PROJECT #: 15-0130-02 COLLECTOR: ML

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: Mtn/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

5D22007

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☑ MTBE ☐ | TRPH 418.1 ☐ | TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☑ | DIESEL - MOD 8015 ☑ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☑	TRPH 418.1 ☐	GASOLINE MOD 8015 ☑	DIESEL - MOD 8015 ☑	pH ☐ HEXAVALENT CHROMIUM ☐	FIELD NOTES
SB-1, 1'	01	4/20/15	13:35	S	1				✓				✓	✓	✓	
SB-1, 5'	02		13:50	S	1				✓				✓	✓	✓	
SB-1, 10'	03		13:58	S	1				✓				✓	✓	✓	
SB-1, 15'	04		14:05	S	1				✓		✓		✓	✓	✓	
SB-1, 20'	05		14:10	S	1				✓				✓	✓	✓	
SB-1, 25'	06		14:25	S	1				✓						✓	
SB-1, 30'	07		14:35	S	1				✓						✓	
SB-1, 35'	08		14:43	S	1				✓				✓	✓	✓	
~~SB-1~~		~~4/21/15~~														

TOTAL

RELINQUISHED BY:(Signature) DATE/TIME 4/22/10:21 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

Permian Basin Env. Lab
Midland, TX

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐
_____

LABORATORY USE ONLY:
RECEIVING TEMP: 1.6 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

APPENDIX C

Boring Logs

BORING RECORD

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING (PPM X 10)	SAMPLE NUMBER	SAMPLE PID READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS BACKGROUND PID READING	
	1	Excavated soil, Excavated to 1' logs							1	0.0 PPM	13:35
	5	Caliche, 7.5YR7/1, Pink, Sandy, Very fine grained, Quartz sand, Indurated, Hard, Moist, @ 5' and dry below	Caliche						5	0.0 PPM	13:50
	10								10	0.0 PPM	13:58
	15								15	119.4 PPM	14:05
	20	Sand, 5YR5/6, Yellowish red, Very fine grained quartz sand, Poorly sorted, Dry	SP						20	38.0 PPM	14:10
	25								25	6.0 PPM	14:25

PID READING scale: 2 4 6 8 10 12 14 16 18

SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
\+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

Larson & Associates, Inc.
Environmental Consultants

DRILL DATE : 4 - 20 - 2015

BORING NUMBER : SB - 1

JOB NUMBER : Paladin/15-0130-02
HOLE DIAMETER : 5"
LOCATION : South of Well 003
LAI GEOLOGIST : MJL
DRILLING CONTRACTOR : SDI
DRILLING METHOD : DR

BORING RECORD

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING (PPM X 20)	SAMPLE NUMBER	SAMPLE PID READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS BACKGROUND PID READING	
	26	Start : 13:32									
		Stop : 14:20									
			SP						30	2.6 PPM	14:35
	33	Sandstone, 5YR4/6, Yellowish red, Very fine grained, Quartz sand, Poorly sorted, Moderately cemented	Sand Stone						35	0.8 PPM	14:43
	35	TP: 35'									
	40										
	45										
	50										

PID READING scale: 2 4 6 8 10 12 14 16 18

SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
\+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

Larson & Associates, Inc.
Environmental Consultants

DRILL DATE : 4 - 20 - 2015

BORING NUMBER : SB - 1

JOB NUMBER : Paladin/15-0130-02
HOLE DIAMETER : 5"
LOCATION : South of Well 003
LAI GEOLOGIST : MJL
DRILLING CONTRACTOR : SDI
DRILLING METHOD : DR

APPENDIX D

Photographs

Well Sign

Excavation South of Well Viewing North, April 7, 2015

Excavation South of Well Viewing Northeast, April 7, 2015

Excavation South of Well Viewing West, April 21, 2015

APPENDIX E

Initial C-141

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Paladin Energy Corp	Contact: Mickey Horn
Address: 10290 Monroe Dr., Ste. 301, Fort Worth, TX 75229	Telephone No. (214) 352-7273
Facility Name: State BT "D" No. 003	Facility Type: Well (Producer)

Surface Owner: State of New Mexico	Mineral Owner: State of New Mexico	API No. 30-025-01021-00-00

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	35	11S	33E	660	South	660	West	Lea

Latitude 33° 19' 14"0 **Longitude** 103° 35' 03"

NATURE OF RELEASE

Type of Release: Crude oil/produced water	Volume of Release 4 bbl oil and 2 bbl water	Volume Recovered 0 bbl
Source of Release: Stuffing box leak	Date and Hour of Occurrence 03/15/2015	Date and Hour of Discovery 03/16/2015
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED
By OCD; Dr. Oberding at 1:19 pm, Apr 07, 2015

Describe Cause of Problem and Remedial Action Taken.* Leak at stuffing box flowed around and away from wellhead. Backhoe and roust-a-bout crew to pick up oily soil for disposal at OCD approved facility.

Describe Area Affected and Cleanup Action Taken.* Area affected by spill is around and south of wellhead. ~~Composite~~ soil sample will be collected and analyzed after oily soil is removed and results will be reported to OCD to determine if further remediation is required.
Note: Composite samples are not accepted.

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

OIL CONSERVATION DIVISION

Signature: Mickey Horn

Printed Name: Mickey Horn

Title: Operations Manager

E-mail Address: paladinroid@suddenlink.net

Date: April 6, 2015 Phone: (432) 522-2162

Hydrologist
Approved by ~~Environmental Specialist~~:

Approval Date: 04/07/2015 Expiration Date: 07/07/2015

Conditions of Approval:

Site samples required. Delineate and remediate area as per NMOCD guides.

Attached ☐

1RP-3594 164070

nTO1509748369

pTO1509748502

* Attach Additional Sheets If Necessary