Larson & Associates, Inc.
Environmental Consultants

APPROVED
By Olivia Yu at 9:45 am, Jun 22, 2017

1RP-4666
Initial Groundwater Assessment Summary
Paladin Energy Corp., East Caprock SWD/Posey A5 Battery
Lea County, New Mexico
June 20, 2017

Introduction

Larson & Associates, Inc. (LAI) submits this summary to the New Mexico Oil Conservation Division (OCD) on behalf of Paladin Energy Corp. (Paladin) for initial assessment of groundwater for impact from the East Caprock Salt Water Disposal (SWD) and Posey A5 Battery (Site). Two (2) temporary monitoring wells (TMW-1 and TMW-2) were installed at the request of the OCD to assess potential impacts to groundwater following laboratory analysis of soil samples that indicated spills may have impacted groundwater. The installation of the monitoring wells was approved by the OCD on June 5, 2017. The Site is located west of Tatum, Lea County, New Mexico. The legal description is Unit O (SW/4, SE/4), Section 11, Township 12 South and Range 32 East. The geodetic position is 33° 17' 22.811" North and 103° 41' 03.547". Figure 1 presents a topographic map. Figure 2 presents an aerial map. Attachment A presents the OCD approval.

Physical Setting

The physical setting is as follows:

- Elevation is approximately 4,330 feet above mean sea level (MSL);
- Topography slopes toward the east;
- The nearest surface water feature is a depression (playa) located about 3,100 feet east of the Site;
- The soils are designated as "Kimbrough Gravelly Loam" and "Kimbrough-Lea complex", consisting of calcareous alluvium derived from reworking the Blackwater Draw (Pleistocene) and Ogallala (Pliocene) formations, in descending order;
- The soil developed over cemented material (caliche);
- The upper geological unit is the Tertiary-age Blackwater Draw and Ogallala formations, in descending order, comprised of very fine to medium-grained quartz sand and gravel, with minor amount of silt and clay with indistinct to massive crossbeds;
- The Ogallala formation is underlain by clay, silty clay, shale and sandstone of the Chinle formation (Triassic) and is about 300 feet thick;
- The nearest fresh water well is located in Unit L (NW/4, SW/4), Section 1, Township 11 South, Range 32 East about 3,200 feet west - northwest (up gradient) of the Site;
- The well is used for livestock watering and has a reported depth to groundwater of approximately 30 feet below ground surface (bgs).

Temporary Monitoring Wells

On June 6, 2017, Scarborough Drilling, Inc. (SDI), under supervision from LAI, used an air rotary rig to drill two (2) borings for installing temporary monitoring wells TMW-1 and TMW-2. The borings were drilled to approximately 47 feet below ground surface (bgs). The temporary monitoring wells were constructed with 2-inch schedule 40 PVC threaded casing and about 20 feet of 0.010 inch factory slotted screen. The well screen was positioned above and below the groundwater level observed during drilling. Graded silica sand was placed around the screen to approximately 2 feet above the screen. A layer of bentonite chips approximately 2 feet thick was placed over the sand. The annulus was sealed at the surface to prevent soil, etc., from entering the well. A locking compressor cap was placed over the

PVC casing at the surface. Table 1 presents the well drilling and completion details. Figure 3 presents the temporary monitoring well locations.

On June 7, 2017, LAI personnel developed the wells by pumping with an electric submersible pump and dedicated polyethylene tubing. The wells were pumped to remove approximately 3 casing volumes of groundwater and until the groundwater was clear to slightly turbid. The pump and electric lead was decontaminated before installing in the wells. The purged groundwater was contained on site in a 55 gallon drum until disposal is arranged. Groundwater samples were collected with dedicated bailers. The groundwater samples were submitted under preservation and chain of custody to DHL Analytical, a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory, located in Round Rock, Texas. The laboratory analyzed the samples for benzene, toluene, ethylbenzene, xylenes (BTEX), cations (calcium, magnesium, potassium, sodium), anions (chloride, sulfate, alkalinity) and total dissolved solids (TDS). Attachment B presents the laboratory report.

Benzene was reported in the groundwater samples from temporary monitoring wells TMW-1 and TMW-2 at 0.00231 milligrams per liter (mg/L) and 0.000954 mg/L, respectively, and below the New Mexico Water Quality Control Commission (WQCC) human health standard of 0.01 mg/L. Toluene, ethylbenzene and xylenes were below the analytical method reporting limits (RL) and WQCC human health standards. Table 2 presents the groundwater sample organic (BTEX) analytical data summary.

Chloride was reported at 7,670 mg/L and 9,130 mg/L in groundwater samples from TMW-1 and TMW-2, respectively, and above the WQCC domestic water quality standard of 250 mg/L. TDS was reported at 23,100 mg/L and 27,000 mg/L in groundwater samples from TMW-1 and TMW-2, respectively, and above the WQCC domestic water quality standard of 1,000 mg/L. Table 3 presents the groundwater samples inorganic (cation, anion and TDS) analytical data summary.

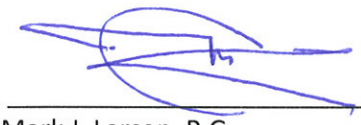
Additional Groundwater Investigations

Paladin proposes the following additional groundwater investigations:

- Install a background (up gradient) monitoring well (TMW-3) about 275 feet west – northwest of the East Caprock SWD/Posey A5 Battery (Figure 4);
- The well will be drilled and completed in a similar manner as TMW-1 and TMW-2;
- The wells (TMW-1, TMW-2 and TMW-3) will be surveyed by a State of New Mexico registered profession land surveyor (PLS) for ground and top of casing;
- Depth to groundwater will be measured in all three (3) wells for constructing a groundwater potentiometric map;
- Well TMW-3 will be developed by pumping with an electric submersible pump with dedicated tubing;
- The purged groundwater will be contained in the 55 gallon drum until disposal is arranged;
- Groundwater samples will be collected with a dedicated polyethylene bailer and analyzed by DHL Analytical for BTEX, cations, anions and TDS;
- Perform electromagnetic (EM-34) terrain conductivity survey to qualitatively assess the lateral extent of the chloride and TDS down gradient of the East Caprock SWD/Posey A5 Battery should the laboratory report BTEX, cation, anion and TDS concentrations at or

below the WQCC human health (BTEX) and domestic water quality standards (chloride and TDS) in temporary monitoring well TMW-3.

Paladin will submit the laboratory results of the groundwater sample from TMW-3 and the results of the EM-34 conductivity survey, if performed, to the OCD with recommendations for additional monitoring wells to delineate the groundwater plume.



Mark J. Larson, P.G.
Certified Professional Geologist #10490

Tables

Table 1
Temporary Monitoring Well Drilling and Completion Summary
Paladin Energy Corp., East Caprock SWD/Posey A5 Battery
Unit O (SW/4, SE/4), Section 11, Township 12 South, Range 32 East
Lea County, New Mexico
1RP-4666

Well Information										Groundwater Data		
Well	Location	Date Installed	Drilled Depth (bgs)	Well Depth from TOC	Well Diameter (inches)	Surface Elevation	Screen Interval (bgs)	Casing Stickup	TOC Elevation	Date Gauged	Depth to Water (TOC)	Depth to Water (BGS)
TMW-1	N33° 17' 22.31756"/W103° 41' 01.00157"	06/06/2017	46.82	50.75	2	--	26.65 -	3.93	--	06/07/201	33.75	29.82
TMW-2	N33° 17' 20.81657"/W103° 41' 02.11078"	06/06/2017	47.15	50.63	2	--	26.98 -	3.48	--	05/11/201	31.28	27.80

Note: Well drilled and completed by Scarborough Drilling, Inc., Lamesa, Texas.
BGS: Feet below top of ground surface
TOC: Feet below top of PVC well casing

Table 2
Groundwater Sample Organic Analytical Data Summary
Paladin Energy Corporation, East Caprock SWD/Posey A5 Battery
Lea County, New Mexico
1RP-4666

Sample	Date	Benzene	Toluene	Ethylbenzene	Xylenes
WQCC Human Health Standard:		**0.01**	**0.75**	**0.75**	**0.62**
TMW-1	06/07/17	**0.00231**	<0.00200	<0.00200	<0.00200
TMW-2	06/07/17	**0.000954**	<0.00200	<0.00200	<0.00200

Notes: analysis performed by DHL Analytical, Round Rock, Texas by EPA SW-846 Method 8021B
All results reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)
<: Denotes concentration below method reporting limit (RL)

Table 3
Groundwater Sample Inorganic Analytical Data Summary
Paladin Energy Corporation, East Caprock SWD/Posey A5 Battery
Lea County, New Mexico
1RP-4666

		Cations				Anions			
Sample	**Date**	**Calcium**	**Magnesium**	**Potassium**	**Sodium**	**Chloride**	**Sulfate**	**Alkalinity**	**TDS**
WQCC Standard						**250**	**600**		**1,000**
TMW-1	06/07/17	1,890	**322**	**20.2**	**1,660**	**7,670**	**247**	**261**	**23,100**
TMW-2	06/07/17	2,590	**416**	**16.8**	**1,420**	**9,130**	**329**	**139**	**27,000**

Notes: analysis performed by DHL Analytical, Round Rock, Texas by EPA SW-846 Methods 6020A (cations), E300 (chloride and sulfate), M2320B (alkalinity) and M2540C (TDS)
All results reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)
Bold and highlighted indicates compound exceeds WQCC Domestic Water Quality Standard

Figures

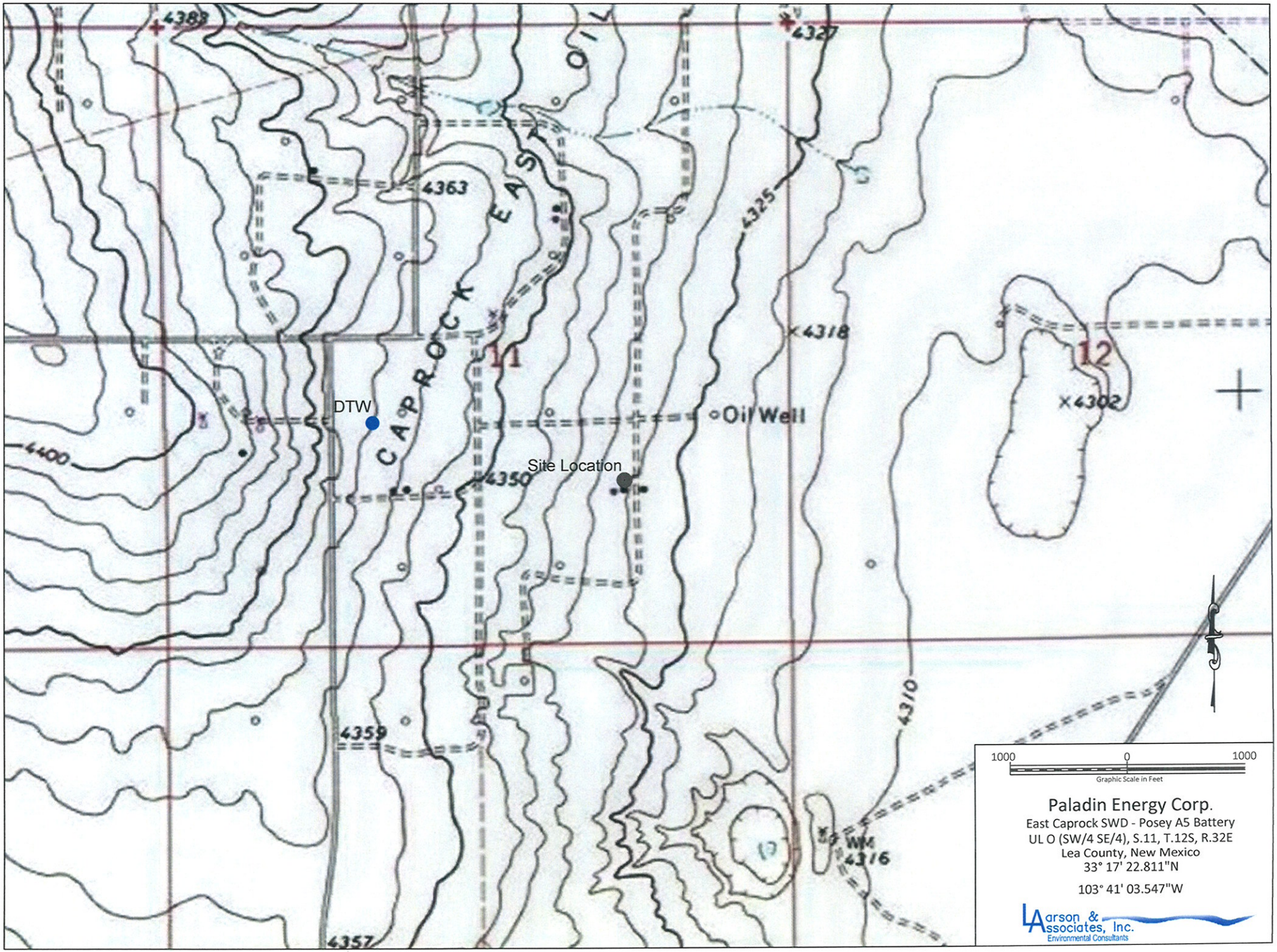


Figure 1 - Topographic Map

Figure 2 - Detailed Aerial Map

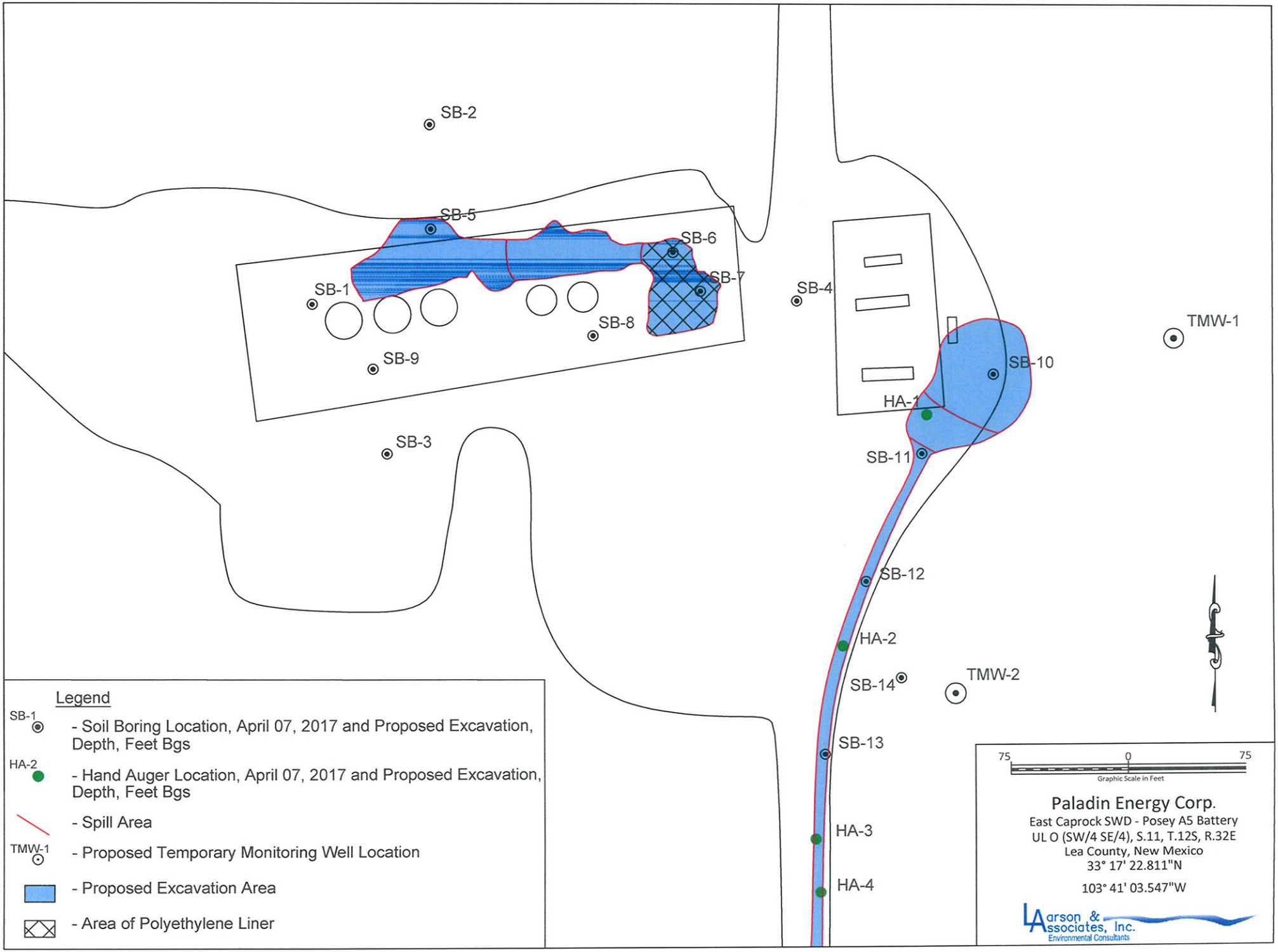
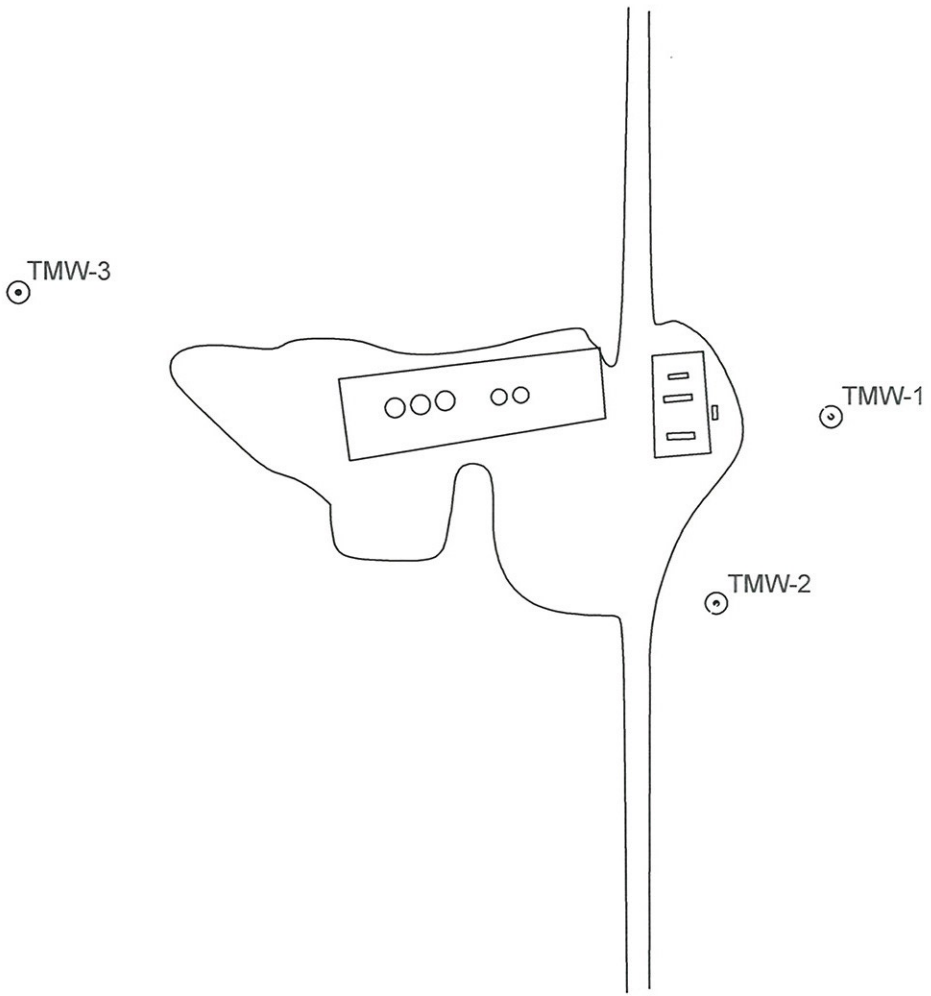


Figure 3 - Site Map Showing Soil Boring Locations, April 07, 2017 and Temporary Monitoring Wells



100 0 100

Graphic Scale in Feet

Paladin Energy Corp.
East Caprock SWD - Posey A5 Battery
UL O (SW/4 SE/4), S.11, T.12S, R.32E
Lea County, New Mexico
33° 17' 22.811"N
103° 41' 03.547"W

Larson & Associates, Inc.
Environmental Consultants

Legend

TMW-1 - Temporary Monitoring Well Location

Figure 4 - Site Map Showing Temporary Monitoring Well Locations

Attachment A

NMOCD Approval

Mark Larson

From: Yu, Olivia, EMNRD [Olivia.Yu@state.nm.us]
Sent: Monday, June 05, 2017 6:47 PM
To: Mark Larson
Cc: 'paladinmid@suddenlink.net'; 'ggfenton@aol.com'; 'dplaisance@paladinenergy.com'
Subject: RE: 1RP-4666, Paladin Energy Corp., East Caprock SWD/Posey A5 Battery Investigation Report, May 5, 2017

Dear Mr. Larson:

Thank you for your responses regarding corrective actions for 1RP-4666. NMOCD approves of the proposed delineation and remediation actions in the document from May 31, 2017 with a few additional details.

1. Confirmation TPH samples at SB-8 in addition to chlorides at 2 ft. bgs.
2. Laboratory tests of chloride at HA1-HA4 at 5 and 10 ft. bgs in addition to TPH.

Please confirm.

Thanks,
Olivia

From: Mark Larson [mailto:Mark@laenvironmental.com]
Sent: Thursday, June 1, 2017 5:27 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: 'paladinmid@suddenlink.net' <paladinmid@suddenlink.net>; 'ggfenton@aol.com' <ggfenton@aol.com>; 'dplaisance@paladinenergy.com' <dplaisance@paladinenergy.com>
Subject: RE: 1RP-4666, Paladin Energy Corp., East Caprock SWD/Posey A5 Battery Investigation Report, May 5, 2017

Olivia,
Please find attached responses to your questions and concerns following review of the Remediation Plan for 1RP-4666. This response letter is submitted on behalf of Paladin Energy Corp. Please contact Mickey Horn with Paladin at (432) 63406599 or paladinmidland@suddenlink.net or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Project Manager
507 N. Marienfeld St., Suite 205
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

From: Yu, Olivia, EMNRD [mailto:Olivia.Yu@state.nm.us]
Sent: Wednesday, May 31, 2017 3:27 PM
To: Mark Larson
Cc: 'paladinmid@suddenlink.net'; 'ggfenton@aol.com'; 'dplaisance@paladinenergy.com'
Subject: RE: 1RP-4666, Paladin Energy Corp., East Caprock SWD/Posey A5 Battery Investigation Report, May 5, 2017

Dear Mr. Larson:

Please address these concerns regarding the proposed remediation activities for 1RP-4666.

1. SB2, SB3, and SB8 are supposedly background sample locations, yet the surfaces are above permissible levels for chlorides, with SB8 also having high TPH at 5 ft. bgs. Is there a plan to address these spots?
2. The proposed excavation depths for SB10- SB13 and HA1-4 does not completely remediate the soil to permissible TPH and chloride levels. Please provide a rationale for not setting a liner to encapsulate the impacted soil below.
3. Please provide a rationale of the locations of the temporary monitoring wells in relation to groundwater hydrology in this area.
4. Bottom confirmation samples are requested for the proposed excavation depths around SB5-7. Please confirm.

Thanks,
Olivia

From: Mark Larson [mailto:Mark@laenvironmental.com]
Sent: Wednesday, May 24, 2017 7:15 AM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: 'paladinmid@suddenlink.net' <paladinmid@suddenlink.net>; 'ggfenton@aol.com' <ggfenton@aol.com>; 'dplaisance@paladinenergy.com' <dplaisance@paladinenergy.com>
Subject: RE: 1RP-4666, Paladin Energy Corp., East Caprock SWD/Posey A5 Battery Investigation Report, May 5, 2017

Olivia,
Please find attached plan for remediating TPH in soil and installing two (2) temporary monitoring wells for 1RP-4666. This plan is submitted to the OCD on behalf of Paladin Energy Corp. Please contact Mickey Horn with Paladin at (432) 63406599 or paladinmidland@suddenlink.net or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Project Manager

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Midland, Texas 79701
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Fax – 432-687-0456
mark@laenvironmental.com

"Serving the Permian Basin Since 2000"

From: Yu, Olivia, EMNRD [mailto:Olivia.Yu@state.nm.us]
Sent: Friday, May 19, 2017 2:02 PM
To: Mark Larson
Cc: 'ggfenton@aol.com'; 'dplaisance@paladinenergy.com'; 'paladinmid@suddenlink.net'; Oberding, Tomas, EMNRD
Subject: RE: 1RP-4666, Paladin Energy Corp., East Caprock SWD/Posey A5 Battery Investigation Report, May 5, 2017

Dear Mr. Larson:

Please address these concerns for 1RP-4666.

- What is the proposed remediation plan for the areas around the soil bores demonstrating high TPH values? Indicate on a map with the areas demarcated and a table with the proposed depths if excavation and/or liner is the preferred option.
- As most of the bore holes do not appear to be vertically delineated for chlorides, NMOCD requests that at least 2 temporary monitoring wells be established to determine whether groundwater has been impacted.

Please confirm.

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

From: Mark Larson [mailto:Mark@laenvironmental.com]
Sent: Thursday, May 18, 2017 3:00 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: 'ggfenton@aol.com' <ggfenton@aol.com>; 'dplaisance@paladinenergy.com' <dplaisance@paladinenergy.com>; 'paladinmid@suddenlink.net' <paladinmid@suddenlink.net>
Subject: FW: 1RP-4666, Paladin Energy Corp., East Caprock SWD/Posey A5 Battery Investigation Report, May 5, 2017

Hello Olivia,
Just checking with you to see if you received the link for the referenced report and if you have reviewed. Paladin would like to move ahead with remediation of the TPH contaminated soil with your approval. Please contact Mickey Horn with Paladin at (432) 63406599 or paladinmidland@suddenlink.net or me if you have questions.

Link to Report: https://files.acrobat.com/a/preview/c72b0b70-e81d-45a2-8cd1-007f86401b63

Respectfully,

Mark J. Larson, P.G.
President/Sr. Project Manager
507 N. Marienfeld St., Suite 205
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

"Serving the Permian Basin Since 2000"

From: Mark Larson
Sent: Monday, May 08, 2017 8:48 AM
To: 'Yu, Olivia, EMNRD'
Cc: 'ggfenton@aol.com'; 'dplaisance@paladinenergy.com'; 'paladinmid@suddenlink.net'
Subject: Re: 1RP-4666, Paladin Energy Corp., East Caprock SWD/Posey A5 Battery Investigation Report, May 5, 2017

Olivia,

On behalf of Paladin Energy Corp. (Paladin) please use the link below to download the investigation report for 1RP-4666 (East Caprock SWD/Posey A5 battery). Please contact Mickey Horn with Paladin at (432) 63406599 or paladinmidland@suddenlink.net or me if you have questions.

Link to Report: https://files.acrobat.com/a/preview/c72b0b70-e81d-45a2-8cd1-007f86401b63

Respectfully,

Mark J. Larson, P.G.
President/Sr. Project Manager
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Office – 432-687-0901
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Fax – 432-687-0456
mark@laenvironmental.com

"Serving the Permian Basin Since 2000"

Attachment B

Laboratory Report

June 14, 2017

Mark Larson
Larson & Associates
507 N. Marienfeld #205
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1706099

RE: Paladin/Lea Co. NM

Dear Mark Larson:

DHL Analytical, Inc. received 2 sample(s) on 6/9/2017 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative and all estimated uncertainties of results are within method specifications.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-17-19

Table of Contents

CHAIN-OF-CUSTODY

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

Data Reported to: MARK LARSON - BLAIR SULLIVAN

DATE: 6-8-17 PAGE 1 OF 1

PO #: _____ LAB WORK ORDER #: 17061099

PROJECT LOCATION OR NAME: PALADIN / LEA CO, NM

LAI PROJECT #: 17-0135-01 COLLECTOR: MC/BS

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: NM

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

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 ☐ PERCHLORATE ☐ | CHLORIDE ☑ ANIONS ☑ ALKALINITY ☑ | CATIONS - K, Na, Mg, Ca | FIELD NOTES

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 NaOH	ICE	UNPRESERVED	BTEX	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 PERCHLORATE	CHLORIDE ANIONS	CATIONS - K, Na, Mg, Ca	FIELD NOTES
TMW-1	01	6/7/17	13:00	W	4	✓			✓		✓												✓					✓	✓		
TMW-2	02	6/7/17	13:30	W	4	✓			✓		✓												✓					✓	✓		
TOTAL																														

RELINQUISHED BY:(Signature) Blair Sullivan DATE/TIME 6/8/17/15:00 RECEIVED BY: (Signature) LSO

RELINQUISHED BY:(Signature) LSO DATE/TIME 6/9/17 8:30 RECEIVED BY: (Signature) Amanda

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

DHL

3

TURN AROUND TIME
NORMAL ☐
1 DAY ☐
2 DAY ☐
OTHER ☑
3-DAY

LABORATORY USE ONLY:
RECEIVING TEMP: 2.2 THERM #: 78
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☒ CARRIER BILL # _____
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Questions? Call 800-800-8984

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50036404

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1. To: Print Name (Person) [illegible] Phone (Important) [illegible]

Company Name [illegible]

Street Address (No P.O. Box or P.O. Box Zip Code*Deliveries) [illegible]

Suite / Floor

City [illegible] State TX Zip [illegible]

2. From: Print Name (Person) Phone (Important) 432-687-0901

Company Name LARSON & ASSOCIATES

Street Address 507 NORTH MARIENFELD

Suite / Floor 205

City MIDLAND State TX Zip 79701

3. Service: Visit www.lso.com for availability of services to your destination and enjoy added features by creating your shipping label online.

- [x] LSO Priority Overnight* By 10:30 a.m. to most cities
- [ ] LSO Early Overnight* By 8:30 a.m. select cities
- [ ] LSO Economy Next Day* By 3 p.m. to most cities
- [ ] LSO 2nd Day*
- [ ] LSO Ground
- [ ] LSO Saturday*
- [ ] Other

*Check commitment times and availability at www.lso.com

Assumed LSO Priority Overnight service unless otherwise noted.

- [ ] Deliver Without Delivery Signature (See Limits of Liability below)

Release Signature

L_____ x W_____ x H_____

4. Package: Weight: 20

Your Company's Billing Reference Information

Ship Date: (mm/dd/yy) 06 / 08 / 17

5. Payment:

FOR DRIVER USE ONLY

Driver Number: 1057

- [ ] Check here if LSO Supplies are used with LSO Ground Service.

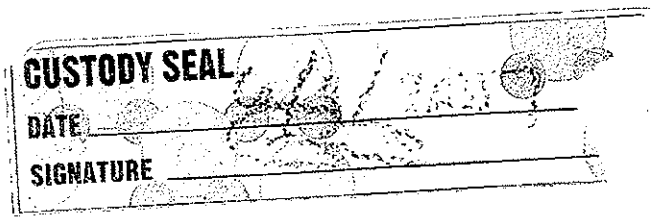
Pick-up Location: DC

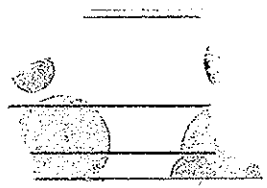
Date: 6/8/17

Time: 1123

City Code: AUS

LIMIT OF LIABILITY: We are not responsible for claims in excess of $100 for any reason unless you: 1) declare a greater value (not to exceed $25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR LSO EARLY OVERNIGHT SERVICE. PACKAGING PROVIDED BY LSO IS NOT INTENDED FOR USE ON LSO GROUND SERVICE. OVERSIZE RATES MAY APPLY. DELIVERY COMMITMENTS MAY VARY. ADDITIONAL FEES MAY APPLY.





DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Larson & Associates

Date Received: 6/9/2017

Work Order Number 1706099

Received by JT

Checklist completed by: [signature] 6/9/2017 (Signature / Date)

Reviewed by SS 6/9/2017 (Initials / Date)

Carrier name LoneStar

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
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 ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	3.2 °C	
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐	
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐	LOT # 8086
	Adjusted? Yes		Checked by CB	
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑	LOT #
	Adjusted?		Checked by	

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: Samples were sub-sampled in login for metals analysis and HNO3 (Lot # 114716) was added to lower pH below 2.

Corrective Action _____

Page 1 of 1

DHL Analytical, Inc. **Date:** *14-Jun-17*

CLIENT: Larson & Associates
Project: Paladin/Lea Co. NM
Lab Order: 1706099

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, E300 and Standard Methods.

All method blanks, sample duplicates, laboratory spikes, and/or matrix spikes met quality assurance objectives except where noted in the following. For Metals analysis by method SW6020A the matrix spike and matrix spike duplicate recoveries were below control limits for three analytes. These are flagged accordingly in the enclosed QC summary report. The "S" flag denotes spike recovery was outside control limits. The LCS was within control limits for these analytes. No further corrective actions were taken.

For Metals analysis by method SW6020A the PDS recovery was below control limits for Magnesium. This is flagged accordingly. The serial dilution was within control limits for this analyte. No further corrective actions were taken.

DHL Analytical, Inc.

Date: *14-Jun-17*

CLIENT:	Larson & Associates	**Client Sample ID:**	TMW-1
Project:	Paladin/Lea Co. NM	**Lab ID:**	1706099-01
Project No:	17-0135-01	**Collection Date:**	06/07/17 01:00 PM
Lab Order:	1706099	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE AROMATICS BY GC/MS		**SW8260C**					Analyst: **BTJ**
Benzene	0.00231	0.000800	0.00200		mg/L	1	06/12/17 12:44 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	06/12/17 12:44 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	06/12/17 12:44 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	06/12/17 12:44 PM
Surr: 1,2-Dichloroethane-d4	105	0	72-119		%REC	1	06/12/17 12:44 PM
Surr: 4-Bromofluorobenzene	101	0	76-119		%REC	1	06/12/17 12:44 PM
Surr: Dibromofluoromethane	103	0	85-115		%REC	1	06/12/17 12:44 PM
Surr: Toluene-d8	102	0	81-120		%REC	1	06/12/17 12:44 PM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **SP**
Calcium	1890	10.0	30.0		mg/L	100	06/13/17 12:28 PM
Magnesium	322	10.0	30.0		mg/L	100	06/13/17 12:28 PM
Potassium	20.2	1.00	3.00		mg/L	10	06/13/17 11:48 AM
Sodium	1660	10.0	30.0		mg/L	100	06/13/17 12:28 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **JL**
Chloride	7670	300	1000		mg/L	1000	06/09/17 02:23 PM
Sulfate	247	10.0	30.0		mg/L	10	06/09/17 12:54 PM
ALKALINITY		**M2320 B**					Analyst: **BTJ**
Alkalinity, Bicarbonate (As CaCO3)	261	10.0	20.0		mg/L @ pH 4.53	1	06/12/17 12:51 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.53	1	06/12/17 12:51 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.53	1	06/12/17 12:51 PM
Alkalinity, Total (As CaCO3)	261	20.0	20.0		mg/L @ pH 4.53	1	06/12/17 12:51 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **PT**
Total Dissolved Solids (Residue, Filterable)	23100	200	200		mg/L	1	06/12/17 08:30 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *14-Jun-17*

CLIENT:	Larson & Associates	**Client Sample ID:**	TMW-2
Project:	Paladin/Lea Co. NM	**Lab ID:**	1706099-02
Project No:	17-0135-01	**Collection Date:**	06/07/17 01:30 PM
Lab Order:	1706099	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE AROMATICS BY GC/MS		**SW8260C**					Analyst: **BTJ**
Benzene	0.000954	0.000800	0.00200	J	mg/L	1	06/12/17 01:09 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	06/12/17 01:09 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	06/12/17 01:09 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	06/12/17 01:09 PM
Surr: 1,2-Dichloroethane-d4	104	0	72-119		%REC	1	06/12/17 01:09 PM
Surr: 4-Bromofluorobenzene	100	0	76-119		%REC	1	06/12/17 01:09 PM
Surr: Dibromofluoromethane	103	0	85-115		%REC	1	06/12/17 01:09 PM
Surr: Toluene-d8	103	0	81-120		%REC	1	06/12/17 01:09 PM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **SP**
Calcium	2590	20.0	60.0		mg/L	200	06/13/17 12:30 PM
Magnesium	416	20.0	60.0		mg/L	200	06/13/17 12:30 PM
Potassium	16.8	1.00	3.00		mg/L	10	06/13/17 11:50 AM
Sodium	1420	20.0	60.0		mg/L	200	06/13/17 12:30 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **JL**
Chloride	9130	300	1000		mg/L	1000	06/09/17 02:37 PM
Sulfate	329	10.0	30.0		mg/L	10	06/09/17 01:08 PM
ALKALINITY		**M2320 B**					Analyst: **BTJ**
Alkalinity, Bicarbonate (As CaCO3)	139	10.0	20.0		mg/L @ pH 4.52	1	06/12/17 12:56 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.52	1	06/12/17 12:56 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.52	1	06/12/17 12:56 PM
Alkalinity, Total (As CaCO3)	139	20.0	20.0		mg/L @ pH 4.52	1	06/12/17 12:56 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **PT**
Total Dissolved Solids (Residue, Filterable)	27000	200	200		mg/L	1	06/12/17 08:30 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc. **Date:** *14-Jun-17*

CLIENT: Larson & Associates
Work Order: 1706099
Project: Paladin/Lea Co. NM

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_170612A

The QC data in batch 80869 applies to the following samples: 1706099-01A, 1706099-02A

Sample ID **LCS-80869**	Batch ID: **80869**	TestNo: **SW8260C**	Units: **mg/L**
SampType: **LCS**	Run ID: **GCMS3_170612A**	Analysis Date: **6/12/2017 11:53:00 AM**	Prep Date: **6/12/2017**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0421	0.00200	0.0464	0	90.7	81	122			
Ethylbenzene	0.0440	0.00600	0.0464	0	94.8	73	127			
Toluene	0.0427	0.00600	0.0464	0	92.0	77	122			
Total Xylenes	0.131	0.00600	0.139	0	94.5	80	121			
Surr: 1,2-Dichloroethane-d4	50.2		50.00		100	72	119			
Surr: 4-Bromofluorobenzene	50.7		50.00		101	76	119			
Surr: Dibromofluoromethane	51.0		50.00		102	85	115			
Surr: Toluene-d8	51.3		50.00		103	81	120			

Sample ID **MB-80869**	Batch ID: **80869**	TestNo: **SW8260C**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GCMS3_170612A**	Analysis Date: **6/12/2017 12:18:00 PM**	Prep Date: **6/12/2017**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	<0.000800	0.00200								
Ethylbenzene	<0.00200	0.00600								
Toluene	<0.00200	0.00600								
Total Xylenes	<0.00200	0.00600								
Surr: 1,2-Dichloroethane-d4	50.8		50.00		102	72	119			
Surr: 4-Bromofluorobenzene	50.0		50.00		100	76	119			
Surr: Dibromofluoromethane	51.4		50.00		103	85	115			
Surr: Toluene-d8	50.5		50.00		101	81	120			

Sample ID **1706090-02AMS**	Batch ID: **80869**	TestNo: **SW8260C**	Units: **mg/L**
SampType: **MS**	Run ID: **GCMS3_170612A**	Analysis Date: **6/12/2017 2:50:00 PM**	Prep Date: **6/12/2017**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0413	0.00200	0.0464	0	89.1	81	122			
Ethylbenzene	0.0422	0.00600	0.0464	0	91.0	73	127			
Toluene	0.0422	0.00600	0.0464	0	90.9	77	122			
Total Xylenes	0.127	0.00600	0.139	0	91.6	80	121			
Surr: 1,2-Dichloroethane-d4	51.4		50.00		103	72	119			
Surr: 4-Bromofluorobenzene	50.0		50.00		100	76	119			
Surr: Dibromofluoromethane	51.3		50.00		103	85	115			
Surr: Toluene-d8	51.8		50.00		104	81	120			

Sample ID **1706090-02AMSD**	Batch ID: **80869**	TestNo: **SW8260C**	Units: **mg/L**
SampType: **MSD**	Run ID: **GCMS3_170612A**	Analysis Date: **6/12/2017 3:16:00 PM**	Prep Date: **6/12/2017**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1706099
Project: Paladin/Lea Co. NM

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_170612A

Sample ID **1706090-02AMSD**	Batch ID: **80869**	TestNo: **SW8260C**	Units: **mg/L**
SampType: **MSD**	Run ID: **GCMS3_170612A**	Analysis Date: **6/12/2017 3:16:00 PM**	Prep Date: **6/12/2017**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0420	0.00200	0.0464	0	90.5	81	122	1.52	20	
Ethylbenzene	0.0433	0.00600	0.0464	0	93.3	73	127	2.49	20	
Toluene	0.0429	0.00600	0.0464	0	92.6	77	122	1.86	20	
Total Xylenes	0.129	0.00600	0.139	0	93.0	80	121	1.52	20	
Surr: 1,2-Dichloroethane-d4	51.3		50.00		103	72	119	0	0	
Surr: 4-Bromofluorobenzene	50.5		50.00		101	76	119	0	0	
Surr: Dibromofluoromethane	51.3		50.00		103	85	115	0	0	
Surr: Toluene-d8	51.5		50.00		103	81	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1706099
Project: Paladin/Lea Co. NM

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170613A

The QC data in batch 80842 applies to the following samples: 1706099-01B, 1706099-02B

Sample ID	MB-80842	Batch ID:	80842	TestNo:	SW6020A	Units:	mg/L
SampType:	MBLK	Run ID:	ICP-MS4_170613A	Analysis Date:	6/13/2017 11:34:00 AM	Prep Date:	6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	<0.100	0.300								
Magnesium	<0.100	0.300								
Potassium	<0.100	0.300								
Sodium	<0.100	0.300								

Sample ID	LCS-80842	Batch ID:	80842	TestNo:	SW6020A	Units:	mg/L
SampType:	LCS	Run ID:	ICP-MS4_170613A	Analysis Date:	6/13/2017 11:36:00 AM	Prep Date:	6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.85	0.300	5.00	0	96.9	80	120			
Magnesium	5.10	0.300	5.00	0	102	80	120			
Potassium	5.04	0.300	5.00	0	101	80	120			
Sodium	5.09	0.300	5.00	0	102	80	120			

Sample ID	LCSD-80842	Batch ID:	80842	TestNo:	SW6020A	Units:	mg/L
SampType:	LCSD	Run ID:	ICP-MS4_170613A	Analysis Date:	6/13/2017 11:38:00 AM	Prep Date:	6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.84	0.300	5.00	0	96.8	80	120	0.190	15	
Magnesium	5.07	0.300	5.00	0	101	80	120	0.619	15	
Potassium	5.00	0.300	5.00	0	100	80	120	0.752	15	
Sodium	5.02	0.300	5.00	0	100	80	120	1.51	15	

Sample ID	1706089-03A SD	Batch ID:	80842	TestNo:	SW6020A	Units:	mg/L
SampType:	SD	Run ID:	ICP-MS4_170613A	Analysis Date:	6/13/2017 11:44:00 AM	Prep Date:	6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	90.7	15.0	0	90.7				0.059	10	
Sodium	109	15.0	0	108				1.05	10	

Sample ID	1706089-03A PDS	Batch ID:	80842	TestNo:	SW6020A	Units:	mg/L
SampType:	PDS	Run ID:	ICP-MS4_170613A	Analysis Date:	6/13/2017 12:04:00 PM	Prep Date:	6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	135	3.00	50.0	90.7	88.4	80	120			
Sodium	155	3.00	50.0	108	93.4	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1706099
Project: Paladin/Lea Co. NM

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170613A

Sample ID 1706089-03A MS	Batch ID: 80842	TestNo: SW6020A	Units: mg/L
SampType: MS	Run ID: ICP-MS4_170613A	Analysis Date: 6/13/2017 12:06:00 PM	Prep Date: 6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	92.1	3.00	5.00	90.7	28.2	80	120			S
Sodium	109	3.00	5.00	108	19.4	80	120			S

Sample ID 1706089-03A MSD	Batch ID: 80842	TestNo: SW6020A	Units: mg/L
SampType: MSD	Run ID: ICP-MS4_170613A	Analysis Date: 6/13/2017 12:08:00 PM	Prep Date: 6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	92.1	3.00	5.00	90.7	28.3	80	120	0.001	15	S
Sodium	111	3.00	5.00	108	58.6	80	120	1.78	15	S

Sample ID 1706089-03A SD	Batch ID: 80842	TestNo: SW6020A	Units: mg/L
SampType: SD	Run ID: ICP-MS4_170613A	Analysis Date: 6/13/2017 12:50:00 PM	Prep Date: 6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	17.8	1.50	0	17.0				4.26	10	
Potassium	1.45	1.50	0	1.39				4.33	10	

Sample ID 1706089-03A PDS	Batch ID: 80842	TestNo: SW6020A	Units: mg/L
SampType: PDS	Run ID: ICP-MS4_170613A	Analysis Date: 6/13/2017 1:10:00 PM	Prep Date: 6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	20.2	0.300	5.00	17.0	64.1	80	120			S
Potassium	5.91	0.300	5.00	1.39	90.3	80	120			

Sample ID 1706089-03A MS	Batch ID: 80842	TestNo: SW6020A	Units: mg/L
SampType: MS	Run ID: ICP-MS4_170613A	Analysis Date: 6/13/2017 1:12:00 PM	Prep Date: 6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	20.9	0.300	5.00	17.0	78.4	80	120			S
Potassium	6.12	0.300	5.00	1.39	94.6	80	120			

Sample ID 1706089-03A MSD	Batch ID: 80842	TestNo: SW6020A	Units: mg/L
SampType: MSD	Run ID: ICP-MS4_170613A	Analysis Date: 6/13/2017 1:14:00 PM	Prep Date: 6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	20.7	0.300	5.00	17.0	74.1	80	120	1.05	15	S
Potassium	6.04	0.300	5.00	1.39	93.0	80	120	1.33	15	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1706099
Project: Paladin/Lea Co. NM

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_170609A

The QC data in batch 80841 applies to the following samples: 1706099-01C, 1706099-02C

Sample ID	MB-80841	Batch ID:	80841	TestNo:	E300	Units:	mg/L
SampType:	MBLK	Run ID:	IC2_170609A	Analysis Date:	6/9/2017 10:30:25 AM	Prep Date:	6/9/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Sulfate	<1.00	3.00								

Sample ID	LCS-80841	Batch ID:	80841	TestNo:	E300	Units:	mg/L
SampType:	LCS	Run ID:	IC2_170609A	Analysis Date:	6/9/2017 10:45:02 AM	Prep Date:	6/9/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.59	1.00	10.00	0	95.9	90	110			
Sulfate	29.1	3.00	30.00	0	96.9	90	110			

Sample ID	LCSD-80841	Batch ID:	80841	TestNo:	E300	Units:	mg/L
SampType:	LCSD	Run ID:	IC2_170609A	Analysis Date:	6/9/2017 10:59:38 AM	Prep Date:	6/9/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.57	1.00	10.00	0	95.7	90	110	0.277	20	
Sulfate	28.9	3.00	30.00	0	96.4	90	110	0.455	20	

Sample ID	1706099-01CMS	Batch ID:	80841	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC2_170609A	Analysis Date:	6/9/2017 2:53:38 PM	Prep Date:	6/9/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	28400	1000	20000	7665	104	90	110			
Sulfate	19900	3000	20000	0	99.7	90	110			

Sample ID	1706099-01CMSD	Batch ID:	80841	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC2_170609A	Analysis Date:	6/9/2017 3:08:15 PM	Prep Date:	6/9/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	28300	1000	20000	7665	103	90	110	0.505	20	
Sulfate	19800	3000	20000	0	98.9	90	110	0.848	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1706099
Project: Paladin/Lea Co. NM

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170612A

The QC data in batch 80864 applies to the following samples: 1706099-01C, 1706099-02C

Sample ID	MB-80864	Batch ID:	80864	TestNo:	M2320 B	Units:	mg/L @ pH 4.17
SampType:	MBLK	Run ID:	TITRATOR_170612A	Analysis Date:	6/12/2017 11:15:00 AM	Prep Date:	6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	<10.0	20.0								
Alkalinity, Carbonate (As CaCO3)	<10.0	20.0								
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0								
Alkalinity, Total (As CaCO3)	<20.0	20.0								

Sample ID	LCS-80864	Batch ID:	80864	TestNo:	M2320 B	Units:	mg/L @ pH 3.98
SampType:	LCS	Run ID:	TITRATOR_170612A	Analysis Date:	6/12/2017 11:19:00 AM	Prep Date:	6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	52.8	20.0	50.00	0	106	74	129			

Sample ID	1706050-01B-DUP	Batch ID:	80864	TestNo:	M2320 B	Units:	mg/L @ pH 4.52
SampType:	DUP	Run ID:	TITRATOR_170612A	Analysis Date:	6/12/2017 12:12:00 PM	Prep Date:	6/12/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	275	20.0	0	277.6				1.01	20	
Alkalinity, Carbonate (As CaCO3)	<10.0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	275	20.0	0	277.6				1.01	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1706099
Project: Paladin/Lea Co. NM

ANALYTICAL QC SUMMARY REPORT

RunID: WC_170609C

The QC data in batch 80833 applies to the following samples: 1706099-01C, 1706099-02C

Sample ID	MB-80833	Batch ID:	80833	TestNo:	M2540C	Units:	mg/L
SampType:	MBLK	Run ID:	WC_170609C	Analysis Date:	6/12/2017 8:30:00 AM	Prep Date:	6/9/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	<10.0	10.0								

Sample ID	LCS-80833	Batch ID:	80833	TestNo:	M2540C	Units:	mg/L
SampType:	LCS	Run ID:	WC_170609C	Analysis Date:	6/12/2017 8:30:00 AM	Prep Date:	6/9/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	730	10.0	745.6	0	97.9	90	113			

Sample ID	1706091-01D-DUP	Batch ID:	80833	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_170609C	Analysis Date:	6/12/2017 8:30:00 AM	Prep Date:	6/9/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	491	10.0	0	496.0				1.01	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified