SEMI-ANNUAL
(March and June 2014)
GROUNDWATER MONITORING REPORT

Chamberlain Flow Line Leak and Historical Contamination
#1RP-1-10-2391

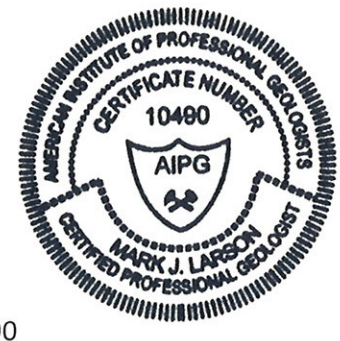
LAI Project No. 12-0126-01

July 11, 2014

Prepared for:
Legacy Reserves, L.P.
30 West Wall Street, Suite 1400
Midland, Texas 79701

Larson & Associates, Inc.
507 North Marienfeld Street, Suite 205
Midland, Texas 79701

Prepared by:



Mark J. Larson
Certified Professional Geologist No. 10490

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1.0 EXECUTIVE SUMMARY

This report has been prepared on behalf of Legacy Reserves, L.P. (Legacy) for submittal to the New Mexico Oil Conservation Division (OCD) to present laboratory analysis of 2014 quarterly (March and June) groundwater samples from a monitoring well (MW-1) near the Chamberlain Tank Battery (Site). The Site is located in Unit C (NE 1/4, NW 1/4), Section 14, Township 15 South, Range 37 East, in Lea County, New Mexico. The geodetic position is north 33° 01' 16.7" and west 103° 10' 13.6." The surface owner is Angell Ranch Co., LLC.

The following activities occurred during 2014:

- March 11, 2014 - First Quarter Gauging and Groundwater Sampling Event
- June 18, 2014 - Second Quarter Gauging and Groundwater Sampling Event

The following observations are documented in this report:

- BTEX was below the analytical method reporting limit (RL) and New Mexico Water Quality Control Commission (WQCC) human health standards during the March and June 2014 sampling events;
- Nitrate, chloride, sulfate and TDS were below WQCC human health and domestic water quality standards during the March and June 2014 sampling events.

Legacy will continue groundwater monitoring on a quarterly (4 times per year) schedule. Notification will be provided to the OCD at least 48 hours prior to each monitoring event, and as soon as possible upon any significant change in analyte concentrations.

2.0 INTRODUCTION

Legacy Reserves, L.P. (Legacy) submits this document to the New Mexico Oil Conservation Division (OCD) to present quarterly (4 times per year) groundwater monitoring results from a monitoring well (MW-1) located near the Chamberlain Tank Battery (Site), Lea County, New Mexico. This report is for groundwater sampling performed during March and June 2014. The Site is located in Unit C (NE 1/4, NW 1/4), Section 14, Township 15 South, and Range 37 East, about 20 miles northeast of Lovington, New Mexico. The surface is owned by Angell Ranch Co., LLC. The geodetic position is north 33° 01' 16.7" and west 103° 10' 13.6". Figure 1 presents a location and topographic map. Figure 2 presents an aerial photograph. Figure 3 presents a Site drawing.

2.1 Background

In 2009, while remediating a non-reportable spill from a flow line south of the Site, a Legacy contractor encountered contamination from a historic release. The contractor excavated about 200 cubic yards of soil from the non-reportable spill to a depth of approximately 5 feet below ground surface (bgs).

In May 2010 Legacy retained Basin Environmental Consulting, LLC (Basin), located in Lovington, New Mexico, to investigate the historic contamination. Among other things Basin collected soil samples from five (5) exploratory trenches (main, east, west, north and south) and six (6) borings (SB-1 through SB-6). The trenches were excavated with a track hoe between approximately 3.5 (north) and 18 (main, west, south and east) feet bgs. On January 7, 2010, Legacy submitted the initial C-141 to the OCD District 1 office located in Hobbs, New Mexico. The OCD assigned remediation project number 1RP-2391 to the historic release.

Between April 2012 and September 2013, Larson & Associates, Inc (LAI) supervised excavation of additional soil, collected soil samples from 9 borings (BH-1 through BH-9) and installed 1 monitoring well (MW-1) about 100 feet southeast (down gradient) of the Site. Groundwater was encountered at approximately 65 feet bgs. Laboratory results from the initial groundwater sample collected on June 11, 2013 reported chloride and total dissolved solids (TDS) at 263 milligrams per liter (mg/L) and 1,180 mg/L, respectively. The OCD requested groundwater monitoring fro 8 quarters (2 years) commencing in December 2013.

LAI supervised closure of the excavation during September 2013 including installing a 20 mil polyethylene (geomembrane) liner in the bottom of the excavation, approximately 38,000 square feet, and filling with approximately 10,308 cubic yards of clean soil. The surface will be seeded when adequate moisture is available, as determined by the landowner. A final report was submitted to the OCD on March 3, 2014 ("Excavation Closure Report, Chamberlain Flow Line and Historic Contamination, 1RP-10-1-2391") that included laboratory results of groundwater samples collected from the monitoring well on June 11, 2013 and December 26, 2013. The excavation closure and laboratory results of groundwater samples was documented in a report titled, *"Excavation Closure Report, Chamberlain Flow Line and Historic Contamination, #1RP1-10-2391, March 3, 2014".*

2.2 Setting

The surface elevation is approximately 3,791 feet above mean sea level (MSL) and slopes gently to the southeast. The soil is designated as "Kimbrough gravelly loam, 0 to 3 percent slopes (Kg)" which occurs on upland areas known locally as "scabland." The soil has a surface layer approximately 6 inches thick of dark grayish brown gravelly loam which is underlain by indurated caliche. The unit is comprised of approximately 85% Kimbrough soil with the remainder being Lea, Sharvana, Stegall and Slaughter soils.

The soil is too shallow for cropland therefore its main use is range and wildlife habitat. A well used for livestock watering is located about 1,600 feet southeast of the Site.

The Site is underlain by a thin layer of silty clay (loam) which is underlain by a resilient layer of caliche or caprock. The caliche is a hard, erosion resistant, pedogenic calcrete that between approximately 25 and 30 feet thick. The caliche grades into the Pliocene to Miocene-age Ogallala formation which is comprised of fluvial sand, silt, clay and localized gravel, with indistinct to massive crossbeds. The Ogallala sand is generally fine- to medium-grained quartz. The Ogallala formation is underlain by shale of the Triassic-age Chile formation of the Dockum Group.

Groundwater occurs in the Ogallala formation at approximately 62 feet bgs. The Triassic-age Chinle formation is the lower confining unit for the Ogallala formation and occurs at a depth of approximately 120 feet bgs according to records from the New Mexico Office of the State Engineer (OSE). The regional groundwater flow direction is to the southeast. 2.4Groundwater Occurrence

3.0 GROUNDWATER SAMPLES AND LABORATORY ANALYSIS

On March 11, 2014, groundwater samples were collected from the monitoring well during the first (1st) quarterly event and on June 18, 2014, during the second (2nd) quarterly event. The depth to groundwater was recorded prior to purging the well. On March 11, 2014, depth to groundwater was recorded at 66.34 feet from top of casing (TOC) or about 63.56 feet bgs. No static depth to groundwater reading was available for June 18, 2014. The groundwater samples were collected after removing approximately three (3) well volumes of groundwater or purging dry with dedicated disposable polyethylene bailers or pumping with an electric submersible pump and dedicated disposable tubing. The samples were carefully transferred to laboratory containers that were labeled, sealed with custody labels, packed in an ice filled chest and delivered under chain of custody control to DHL Analytical, Inc. (DHL), a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory, located in Round Rock, Texas. All metals samples were filtered by the laboratory to exclude particles larger than 0.45µ and acidified with nitric acid within 24-hours of collection. DHL analyzed the samples for benzene, toluene, ethylbenzene, xylene (BTEX) by method SW-8021B, filtered metals (calcium, magnesium, potassium, sodium) by methods SW-6020, anions, alkalinity, and total dissolved solids (TDS) by methods E-300, M2320B and M2540, respectively. Purge water was contained in a portable tank and discharged to the Facility's process water system for disposal in a permitted Class II injection well. Table 1 presents monitoring well completion and gauging summary. Table 2 presents the laboratory organic analytical data summary. Table 3 presents the laboratory inorganic analytical data summary. Appendix A presents the laboratory reports.

3.1 Organic Analysis

All BTEX values were below the analytical method reporting limit (RL) and New Mexico Water Quality Control Commission (WQCC) human health standards during the first and second 2014 quarterly monitoring events. These results are consistent with the previous monitoring event. No data quality exceptions were noted in the DHL case narratives.

3.2 Inorganic Analysis

Chloride decreased from 263 mg/L (June 11, 2013) to 147 mg/L (March 11, 2014) and 120 mg/L (June 18, 2014). The chloride concentrations were below the WQCC domestic water quality standard (250

mg/L) during March and June sample events. The TDS concentration decreased from 1,180 mg/L (June 11, 2013) to 798 mg/L (March 11, 2014) and 816 mg/L (June 18, 2014). The TDS concentrations were below WQCC domestic water quality standard (1,000 mg/L) during the March and June sampling events. The remaining inorganic constituents were within the range expected for the groundwater.

Case narrative was indicated for calcium for the low level calibration verification was slightly above the method control limits. This analyte was detected in the associated samples at greater than 10x the amount detected in the bracketing QC sample. Also the recovery of calcium for the matrix spike and matrix spike duplicate was below the method control limits. The recovery of magnesium, potassium and sodium for the Post Digestion Spike were above the method control limits. All samples in the case narrative were flagged accordingly in the QC summary report. No further corrective actions were taken by DHL. DHL indicated the response factor for internal standards for three samples, bracketing and Batch QC samples were outside of the specifications for method SW6020A, due to matrix interference.

No data quality exceptions were noted in the DHL case narratives for chloride, sulfate, TDS, and nitrate.

4.0 CONCLUSIONS

The following observations are documented in this report:

- BTEX was below the analytical method reporting limit and WQCC human health standards during the March and June 2014 sampling events;
- Chloride, nitrate, sulfate and TDS were below the WQCC human health (nitrate) and domestic water quality (chloride, sulfate and TDS) water quality standards during the March and June 2014 sampling events.

5.0 RECOMMENDATIONS

Legacy will monitor groundwater in monitoring well MW-1 on a quarterly (4 times per year) schedule. Depth to groundwater and groundwater samples will be collected during each event. The samples will be collected as stated earlier and analyzed for BTEX, anions (sodium, magnesium, calcium), anions (sulfate, chloride, alkalinity), nitrate and TDS. The groundwater sample results will be submitted to the OCD in semi-annual (twice yearly) reports. Notice will be provided to the OCD in Hobbs and Santa Fe, New Mexico, at least 48 hours prior to each event.

TABLES

Table 1
Monitoring Well Drilling and Completion Summary
Legacy Reserves, L.P., Chamberlin Site , 1RP-2391
Lea County, New Mexico

Well Information									Groundwater Data	
Well ID	Date Drilled	Drilled Depth (feet bgs)	Well Depth (feet TOC)	Well Diameter (inches)	Surface Elevation	Screen Interval (feet bgs)	Casing Stickup (feet)	TOC Elevation	Date Gauged	Depth to Water (TOC)
MW-1	6/10/2013	75.42	78.40	2	--	54.77 - 74.72	2.78	--	06/10/2013	65.82
									06/11/2013	65.85
									12/26/2013	--
									03/11/2014	66.34
									6/18/2014	--

Notes: Monitoring well drilled using air rotary rig by Scarborough Drilling, Inc., Lamesa, Texas and constructed with 2-inch threaded schedule 40 PVC casing and screen
All values are in feet, unless otherwise noted.
bgs - below ground surface
TOC - top of casing
--: No data available

Table 2
Groundwater Organic Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Site, 1RP-2391
Lea County, New Mexico

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylene
WQCC Limit:		**0.01**	**0.75**	**0.75**	**0.62**
MW-1	06/11/2013	<0.001	<0.001	<0.001	<0.003
	3/11/2014	<0.002	<0.006	<0.006	<0.009
	6/18/2014	<0.002	<0.006	<0.006	<0.009
Trip Blank	3/11/2014	<0.002	<0.006	<0.006	<0.009

Notes: Analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 method 8021B

All values except pH reported in milligrams per Liter (mg/L) equivelent to parts per million (ppm).

Table 3
Groundwater Inorganic Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Site, 1RP-2391
Lea County, New Mexico

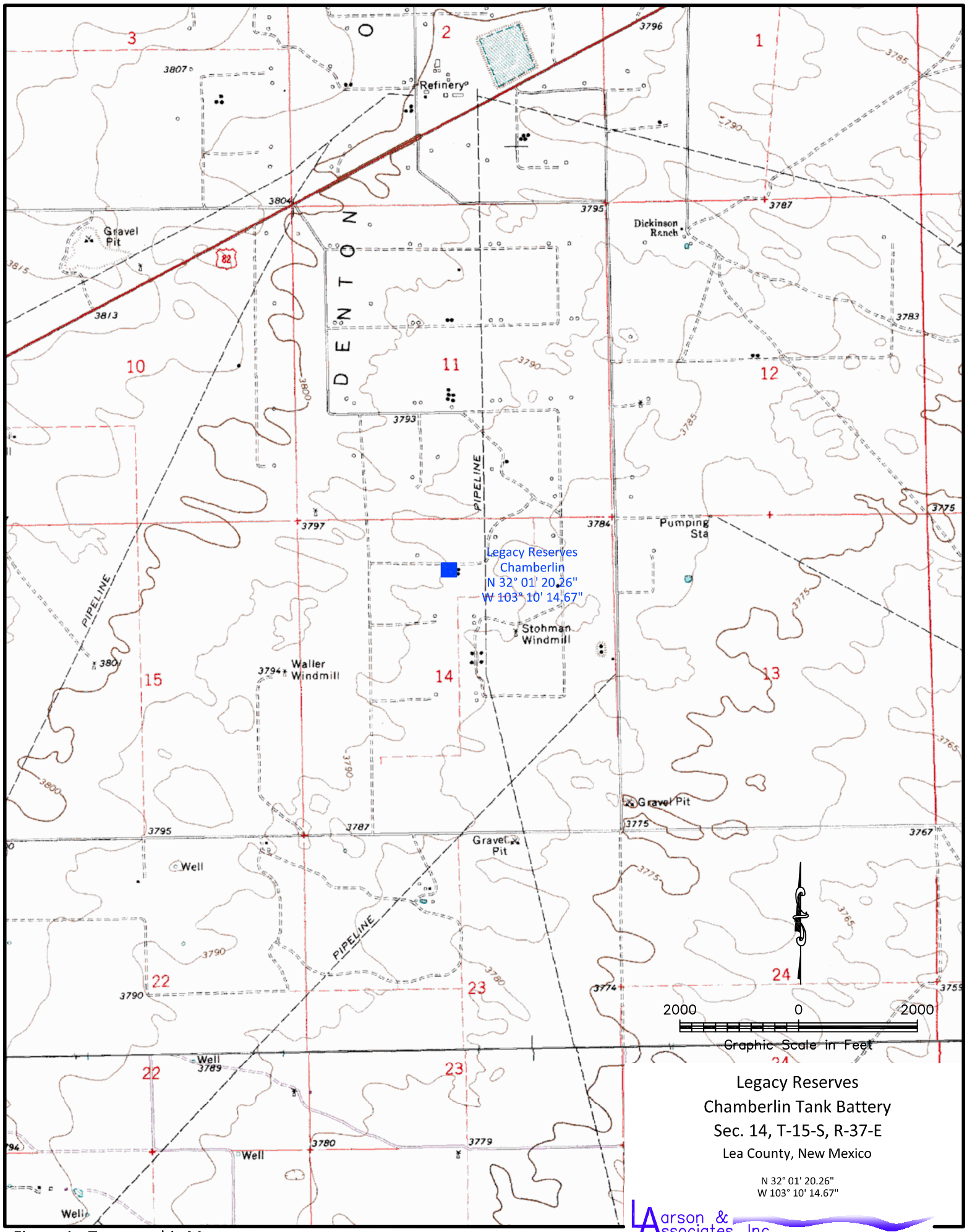
Sample ID	Date	Alkalinity (mg/L)	Chloride (mg/L)	Nitrate - N (mg/L)	TDS (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)
WQCC Limit:			**250**	**10**	**1,000**	**600**				
MW-1	06/11/2013	272	263	8.53	1,180	206	94	230	7.20	51
	3/11/2014	294	147	1.96	798	93.8	361	14.1	3.05	196
	6/18/2014	353	120	2.05	816	92.7	170	13.7	2.91	223

Notes: Analysis performed by DHL Analytical, Round Rock, Texas, by EPA method

All values except pH reported in milligrams per Liter (mg/L) equivelent to parts per million (ppm).

<: Denotes concentration less than method reporting limit (RL)

FIGURES



Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico

N 32° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

Figure 1 - Topographic Map

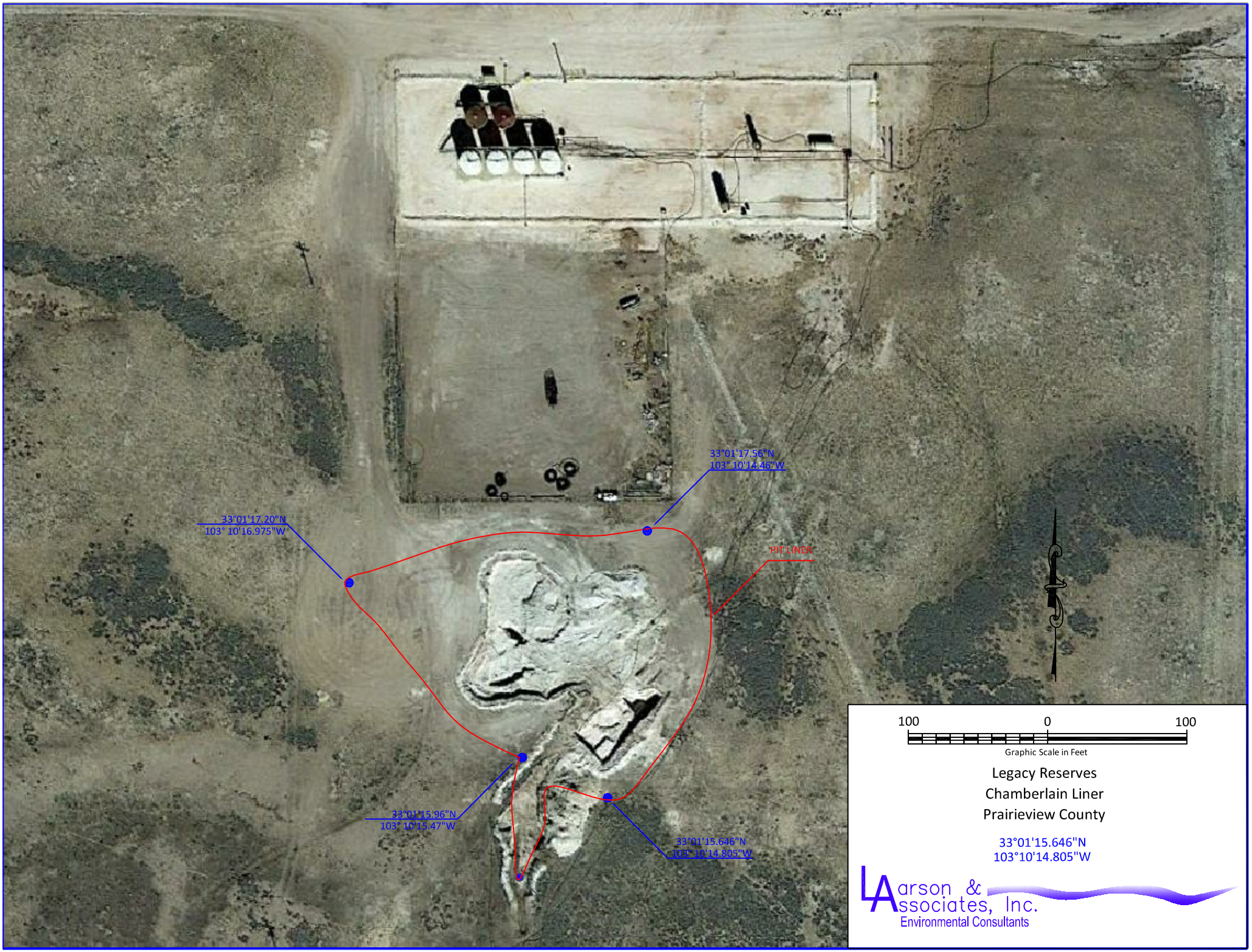


Figure 2- Aerial

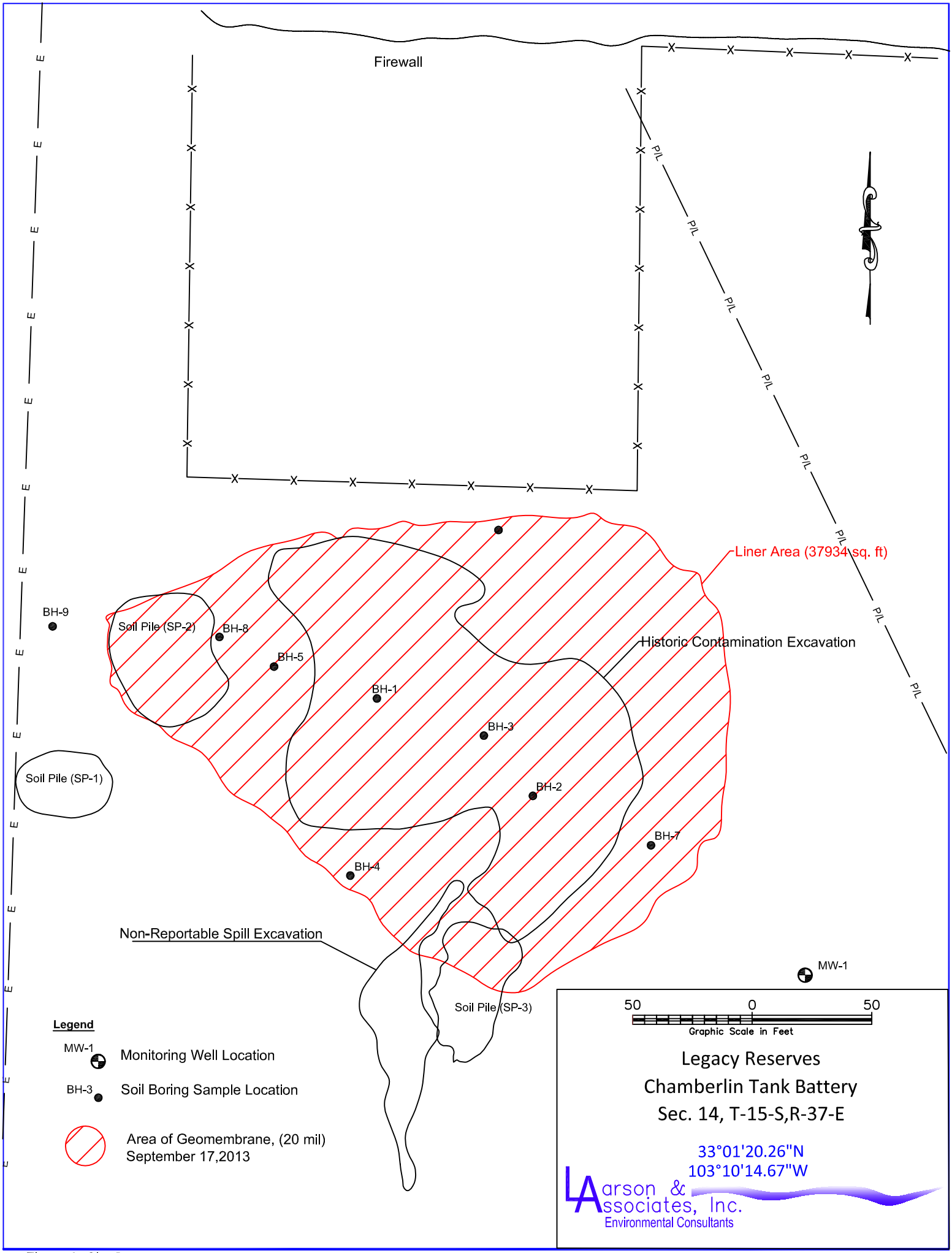


Figure 3- Site Drawing

APPENDIX A

LABORATORY ANALYTICAL REPORTS
AND
CHAIN OF CUSTODY DOCUMENTATION

June 26, 2014

Coty Woolf
Larson & Associates
507 N. Marienfeld #200
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1406204

RE: Legacy Chamberlain

Dear Coty Woolf:

DHL Analytical, Inc. received 1 sample(s) on 6/19/2014 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-14-12

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DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 65823

CHAIN-OF-CUSTODY

CLIENT: Larson and associates
ADDRESS: 507 N Marienfeld ste 200
PHONE: 432-687-0901 FAX/E-MAIL:
DATA REPORTED TO: mark Larson
ADDITIONAL REPORT COPIES TO: coty WOLF

DATE: 6-18-14 PAGE 1 OF 1
PO #: DHL WORK ORDER #: 1406704
PROJECT LOCATION OR NAME: 12-0128-01 Legacy chamberlin
CLENT PROJECT #: ✓ COLLECTOR: RW

Authorize 5% surcharge for TRRP Report? ☐ Yes ☑ No

S=SOIL W=WATER A=AIR L=LIQUID P=PAINT SL=SLUDGE O=OTHER SO=SOLID

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

ANALYSES: BTEX ☑ MTBE ☐ [METHOD 8021] | TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ | GRO [METHOD 8015] ☐ DRO [METHOD 8105] ☐ | VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ | 8081 PEST ☐ 608 PEST/PCB ☐ 8082 PCB ☐ 8270 PEST ☐ | 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ | 8321 HERB ☐ 8350 EXPL ☐ PERCHLORATE ☐ | METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ | RCRA ☐ TX11 ☐ ☐ | PH ☐ HEX CHROM ☐ ALKALINITY ☑ ☐ | CHLORIDE ☑ ANIONS ☐ | TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ | TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☑ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | nitrates | sodium | magnesium | calcium | sulfate | chloride | alkalinity

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 NaOH	ICE	UNPRESERVED	ANALYSES	FIELD NOTES
mw 1	01	6-18-14	10:50	W	Poly/Glas		✓	✓		✓		✓	

TOTAL

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	6-18-14 3:34pm	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	6/18/14	SD
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

3

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ~~EMS~~ 6/19/14
NORMAL ~~5~~ 10
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 4.6 THERM #: 57
CUSTODY SEALS: ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #: _____
☐ APC DELIVERY
☐ HAND DELIVERED

LSO

WWW.LSO.COM
Questions? Call 800-800-8984

Airbill No. 48852756

48852756

1. To: Print Name (Person) | Phone (Important)

Company Name

Street Address (No P.O. Box or P.O. Box Zip Code®Deliveries)

Suite / Floor

City | State | Zip

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

Company Name LARSON & ASSOCIATES, INC.

Street Address 507 N. MARIENFELD ST.

Suite / Floor #200

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.

- ☑ **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:

Your Company's Billing Reference Information

Ship Date: (mm/dd/yy) 6 / 12 / 11

5. Payment:

FOR DRIVER USE ONLY

Driver Number _____

☐ Check here if LSO Supplies are used with LSO Ground Service.

Pick-up Location _____

Date: _____

Time: _____

City Code:

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Larson & Associates | Date Received: 6/19/2014

Work Order Number 1406204 | Received by JB

Checklist completed by: [signature] 6/19/2014 (Signature / Date) | Reviewed by: [initials] 6/19/2014 (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 ☐	4.6 °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? NO		Checked by 9
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: _____

Corrective Action _____

Page 1 of 1

DHL Analytical, Inc. **Date:** *26-Jun-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1406204

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method E300 - Anions Analysis
Method SW6020A - Metals Analysis
Method SW8021B - Volatile Organics by GC Analysis
Method M2540C - Total Dissolved Solids Analysis
Method M2320 B - Alkalinity Analysis

LOG IN

The samples were received and log-in performed on 6/19/2014. A total of 1 sample was received and analyzed. The samples arrived in good condition and were properly packaged. The Time of Collection was Mountain Standard Time.

METALS ANALYSIS

For metals Analysis, the recovery of Calcium for the Low Level Calibration Verification (LCVL-140620) was slightly above the method control limits. This is flagged accordingly in the QC Summary Report. This analyte was detected in the associated samples at greater than 10x the amount detected in the bracketing QC sample. No further corrective actions were taken.

For Metals Analysis, the recovery of Calcium for the Matrix Spike and Matrix Spike Duplicate (1406177-01 MS/MSD) was below the method control limits. These are flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated LCS. No further corrective actions were taken.

For Metals Analysis, the recoveries of Magnesium, Potassium and Sodium for the Post Digestion Spike (1406177-01 PDS) were above the method control limits. These are flagged accordingly in the QC Summary Report. These analytes were within method control limits in the associated Serial Dilution. No further corrective actions were taken.

DHL Analytical, Inc.

Date: *26-Jun-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1406204

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1406204-01	MW-1		06/18/14 10:50 AM	6/19/2014

Lab Order: 1406204
Client: Larson & Associates
Project: Legacy Chamberlain

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1406204-01A	MW-1	06/18/14 10:50 AM	Aqueous	SW5030C	Purge and Trap Water GC	06/24/14 08:52 AM	64311
1406204-01B	MW-1	06/18/14 10:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/19/14 11:35 AM	64244
	MW-1	06/18/14 10:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/19/14 11:35 AM	64244
1406204-01C	MW-1	06/18/14 10:50 AM	Aqueous	M2320 B	Alkalinity Preparation	06/24/14 09:02 AM	64317
	MW-1	06/18/14 10:50 AM	Aqueous	E300	Anion Preparation	06/19/14 01:30 PM	64235
	MW-1	06/18/14 10:50 AM	Aqueous	E300	Anion Preparation	06/19/14 01:30 PM	64235
	MW-1	06/18/14 10:50 AM	Aqueous	M2540C	TDS Preparation	06/19/14 10:36 AM	64196

Lab Order: 1406204
Client: Larson & Associates
Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1406204-01A	MW-1	Aqueous	SW8021B	Volatile Organics by GC	64311	1	06/24/14 01:52 PM	GC8_140624A
1406204-01B	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	64244	1	06/20/14 12:30 PM	ICP-MS4_140620B
	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	64244	50	06/20/14 12:22 PM	ICP-MS4_140620B
1406204-01C	MW-1	Aqueous	M2320 B	Alkalinity	64317	1	06/24/14 10:49 AM	TITRATOR_140624B
	MW-1	Aqueous	E300	Anions by IC method - Water	64235	10	06/19/14 04:41 PM	IC_140619A
	MW-1	Aqueous	E300	Anions by IC method - Water	64235	1	06/19/14 03:23 PM	IC_140619A
	MW-1	Aqueous	M2540C	Total Dissolved Solids	64196	1	06/20/14 09:15 AM	WC_140619D

DHL Analytical, Inc.

Date: *26-Jun-14*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-1
Project:	Legacy Chamberlain	**Lab ID:**	1406204-01
Project No:	12-0126-01	**Collection Date:**	06/18/14 10:50 AM
Lab Order:	1406204	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **LM**
Benzene	ND	0.000800	0.00200		mg/L	1	06/24/14 01:52 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	06/24/14 01:52 PM
Toluene	ND	0.00200	0.00600		mg/L	1	06/24/14 01:52 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	06/24/14 01:52 PM
Surr: a,a,a-Trifluorotoluene	106	0	87-113		%REC	1	06/24/14 01:52 PM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **SW**
Calcium	170	5.00	15.0		mg/L	50	06/20/14 12:22 PM
Magnesium	13.7	5.00	15.0	J	mg/L	50	06/20/14 12:22 PM
Potassium	2.91	0.100	0.300		mg/L	1	06/20/14 12:30 PM
Sodium	223	5.00	15.0		mg/L	50	06/20/14 12:22 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **AV**
Chloride	120	3.00	10.0		mg/L	10	06/19/14 04:41 PM
Nitrate-N	2.05	0.100	0.500		mg/L	1	06/19/14 03:23 PM
Sulfate	92.7	1.00	3.00		mg/L	1	06/19/14 03:23 PM
ALKALINITY		**M2320 B**					Analyst: **LM**
Alkalinity, Bicarbonate (As CaCO3)	353	10.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
Alkalinity, Total (As CaCO3)	353	20.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **MK**
Total Dissolved Solids (Residue, Filterable)	816	10.0	10.0		mg/L	1	06/20/14 09:15 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		

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_140624A

The QC data in batch 64311 applies to the following samples: 1406204-01A

Sample ID **LCS-64311**	Batch ID: **64311**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **LCS**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 10:16:38 AM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0511	0.00200	0.0500	0	102	81	125			
Toluene	0.0551	0.00600	0.0500	0	110	84	123			
Ethylbenzene	0.0560	0.00600	0.0500	0	112	83	119			
Xylenes, Total	0.168	0.00900	0.150	0	112	81	117			
Surr: a,a,a-Trifluorotoluene	207		200.0		103	87	113			

Sample ID **MB-64311**	Batch ID: **64311**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 10:56:43 AM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00600								
Ethylbenzene	ND	0.00600								
Xylenes, Total	ND	0.00900								
Surr: a,a,a-Trifluorotoluene	199		200.0		99.6	87	113			

Sample ID **1406203-02AMS**	Batch ID: **64311**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MS**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 12:14:35 PM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0507	0.00200	0.0500	0	101	81	125			
Toluene	0.0540	0.00600	0.0500	0	108	84	123			
Ethylbenzene	0.0544	0.00600	0.0500	0	109	83	119			
Xylenes, Total	0.163	0.00900	0.150	0	109	81	117			
Surr: a,a,a-Trifluorotoluene	210		200.0		105	87	113			

Sample ID **1406203-02AMSD**	Batch ID: **64311**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MSD**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 12:33:53 PM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0428	0.00200	0.0500	0	85.6	81	125	16.8	20	
Toluene	0.0457	0.00600	0.0500	0	91.3	84	123	16.7	20	
Ethylbenzene	0.0454	0.00600	0.0500	0	90.9	83	119	18.0	20	
Xylenes, Total	0.137	0.00900	0.150	0	91.4	81	117	17.4	20	
Surr: a,a,a-Trifluorotoluene	176		200.0		87.8	87	113	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: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_140624A

Sample ID **ICV-140624**	Batch ID: **R73937**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 9:40:44 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0977	0.00200	0.100	0	97.7	80	120			
Toluene	0.103	0.00600	0.100	0	103	80	120			
Ethylbenzene	0.104	0.00600	0.100	0	104	80	120			
Xylenes, Total	0.310	0.00900	0.300	0	103	80	120			
Surr: a,a,a-Trifluorotoluene	208		200.0		104	87	113			

Sample ID **CCV1-140624**	Batch ID: **R73937**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 3:22:40 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0489	0.00200	0.0500	0	97.9	80	120			
Toluene	0.0520	0.00600	0.0500	0	104	80	120			
Ethylbenzene	0.0525	0.00600	0.0500	0	105	80	120			
Xylenes, Total	0.155	0.00900	0.150	0	103	80	120			
Surr: a,a,a-Trifluorotoluene	204		200.0		102	87	113			

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: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_140620B**

The QC data in batch 64244 applies to the following samples: 1406204-01B

Sample ID	**MB-64244**	Batch ID:	**64244**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 11:32:00 AM**	Prep Date:	**6/19/2014**

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

Sample ID	**LCS-64244**	Batch ID:	**64244**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 11:36:00 AM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.74	0.300	5.00	0	94.9	80	120			
Magnesium	5.00	0.300	5.00	0	99.9	80	120			
Potassium	5.02	0.300	5.00	0	100	80	120			
Sodium	5.00	0.300	5.00	0	100	80	120			

Sample ID	**LCSD-64244**	Batch ID:	**64244**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCSD**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 11:38:00 AM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.75	0.300	5.00	0	94.9	80	120	0.018	15	
Magnesium	4.95	0.300	5.00	0	99.0	80	120	0.939	15	
Potassium	5.02	0.300	5.00	0	100	80	120	0.033	15	
Sodium	4.98	0.300	5.00	0	99.6	80	120	0.475	15	

Sample ID	**1406177-01B SD**	Batch ID:	**64244**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**SD**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 11:46:00 AM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	34.7	15.0	0	33.0				4.89	10	
Potassium	0	15.0	0	2.16				0	10	
Sodium	33.0	15.0	0	31.6				4.51	10	

Sample ID	**1406177-01B PDS**	Batch ID:	**64244**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**PDS**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:05:00 PM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	97.6	3.00	50.0	33.0	129	80	120			S
Potassium	62.6	3.00	50.0	2.16	121	80	120			S
Sodium	97.7	3.00	50.0	31.6	132	80	120			S

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: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_140620B

Sample ID **1406177-01B MS**	Batch ID: **64244**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **MS**	Run ID: **ICP-MS4_140620B**	Analysis Date: **6/20/2014 12:07:00 PM**	Prep Date: **6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	122	3.00	5.00	124	-43.8	80	120			S
Magnesium	37.7	3.00	5.00	33.0	92.3	80	120			
Potassium	6.90	3.00	5.00	2.16	94.7	80	120			
Sodium	35.8	3.00	5.00	31.6	84.5	80	120			

Sample ID **1406177-01B MSD**	Batch ID: **64244**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **MSD**	Run ID: **ICP-MS4_140620B**	Analysis Date: **6/20/2014 12:09:00 PM**	Prep Date: **6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	124	3.00	5.00	124	-10.7	80	120	1.35	15	S
Magnesium	38.4	3.00	5.00	33.0	107	80	120	1.90	15	
Potassium	7.04	3.00	5.00	2.16	97.5	80	120	2.01	15	
Sodium	36.4	3.00	5.00	31.6	96.0	80	120	1.59	15	

Sample ID **1406177-01B SD**	Batch ID: **64244**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **SD**	Run ID: **ICP-MS4_140620B**	Analysis Date: **6/20/2014 12:38:00 PM**	Prep Date: **6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	125	75.0	0	122				1.93	10	

Sample ID **1406177-01B PDS**	Batch ID: **64244**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **PDS**	Run ID: **ICP-MS4_140620B**	Analysis Date: **6/20/2014 12:40:00 PM**	Prep Date: **6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	376	15.0	250	123	101	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: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_140620B

Sample ID	**ICV-140620**	Batch ID:	**R73874**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 11:21:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.56	0.300	2.50	0	103	90	110			
Magnesium	2.74	0.300	2.50	0	110	90	110			
Potassium	2.74	0.300	2.50	0	110	90	110			
Sodium	2.75	0.300	2.50	0	110	90	110			

Sample ID	**LCVL-140620**	Batch ID:	**R73874**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 11:24:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.105	0.300	0.100	0	105	70	130			
Magnesium	0.109	0.300	0.100	0	109	70	130			
Potassium	0.112	0.300	0.100	0	112	70	130			
Sodium	0.136	0.300	0.100	0	136	70	130			S

Sample ID	**CCV1-140620**	Batch ID:	**R73874**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:11:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.62	0.300	5.00	0	92.5	90	110			
Magnesium	4.95	0.300	5.00	0	99.0	90	110			
Potassium	4.79	0.300	5.00	0	95.8	90	110			
Sodium	4.96	0.300	5.00	0	99.1	90	110			

Sample ID	**LCVL1-140620**	Batch ID:	**R73874**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:18:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.102	0.300	0.100	0	102	70	130			
Magnesium	0.113	0.300	0.100	0	113	70	130			
Potassium	0.115	0.300	0.100	0	115	70	130			
Sodium	0.122	0.300	0.100	0	122	70	130			

Sample ID	**CCV2-140620**	Batch ID:	**R73874**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:42:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.66	0.300	5.00	0	93.2	90	110			
Magnesium	4.97	0.300	5.00	0	99.4	90	110			
Potassium	4.83	0.300	5.00	0	96.7	90	110			
Sodium	4.89	0.300	5.00	0	97.8	90	110			

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: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_140620B

Sample ID **LCVL2-140620** Batch ID: **R73874** TestNo: **SW6020A** Units: **mg/L**
SampType: **LCVL** Run ID: **ICP-MS4_140620B** Analysis Date: **6/20/2014 12:47:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.104	0.300	0.100	0	104	70	130			
Magnesium	0.114	0.300	0.100	0	114	70	130			
Potassium	0.111	0.300	0.100	0	111	70	130			
Sodium	0.109	0.300	0.100	0	109	70	130			

Qualifiers:

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

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140619A

The QC data in batch 64235 applies to the following samples: 1406204-01C

Sample ID	**MB-64235**	Batch ID:	**64235**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**IC_140619A**	Analysis Date:	**6/19/2014 9:53:27 AM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.00								
Nitrate-N	ND	0.500								
Sulfate	ND	3.00								

Sample ID	**LCS-64235**	Batch ID:	**64235**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**IC_140619A**	Analysis Date:	**6/19/2014 10:08:04 AM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.0	1.00	10.00	0	100	90	110			
Nitrate-N	4.98	0.500	5.000	0	99.6	90	110			
Sulfate	30.2	3.00	30.00	0	101	90	110			

Sample ID	**LCSD-64235**	Batch ID:	**64235**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**LCSD**	Run ID:	**IC_140619A**	Analysis Date:	**6/19/2014 10:22:40 AM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.94	1.00	10.00	0	99.4	90	110	0.932	20	
Nitrate-N	4.92	0.500	5.000	0	98.5	90	110	1.16	20	
Sulfate	29.8	3.00	30.00	0	99.5	90	110	1.25	20	

Sample ID	**1406179-01AMS**	Batch ID:	**64235**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**IC_140619A**	Analysis Date:	**6/19/2014 1:25:10 PM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2320	100	2000	384.8	96.6	90	110			
Nitrate-N	429	50.0	451.6	0	94.9	90	110			
Sulfate	4210	300	2000	2180	102	90	110			

Sample ID	**1406179-01AMSD**	Batch ID:	**64235**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**IC_140619A**	Analysis Date:	**6/19/2014 1:39:47 PM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2300	100	2000	384.8	95.7	90	110	0.760	20	
Nitrate-N	424	50.0	451.6	0	93.9	90	110	1.02	20	
Sulfate	4190	300	2000	2180	101	90	110	0.390	20	

Sample ID	**1406200-02AMS**	Batch ID:	**64235**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**IC_140619A**	Analysis Date:	**6/19/2014 1:54:23 PM**	Prep Date:	**6/19/2014**

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: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140619A

Sample ID **1406200-02AMS**	Batch ID: **64235**	TestNo: **E300**	Units: **mg/L**
SampType: **MS**	Run ID: **IC_140619A**	Analysis Date: **6/19/2014 1:54:23 PM**	Prep Date: **6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2190	100	2000	256.3	96.8	90	110			
Nitrate-N	418	50.0	451.6	0	92.6	90	110			
Sulfate	4180	300	2000	2271	95.5	90	110			

Sample ID **1406200-02AMSD**	Batch ID: **64235**	TestNo: **E300**	Units: **mg/L**
SampType: **MSD**	Run ID: **IC_140619A**	Analysis Date: **6/19/2014 2:08:59 PM**	Prep Date: **6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2200	100	2000	256.3	97.3	90	110	0.472	20	
Nitrate-N	420	50.0	451.6	0	93.0	90	110	0.408	20	
Sulfate	4190	300	2000	2271	95.7	90	110	0.113	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: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140619A

Sample ID **ICV-140619**	Batch ID: **R73863**	TestNo: **E300**	Units: **mg/L**
SampType: **ICV**	Run ID: **IC_140619A**	Analysis Date: **6/19/2014 9:36:24 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.2	1.00	25.00	0	101	90	110			
Nitrate-N	12.5	0.500	12.50	0	99.9	90	110			
Sulfate	75.2	3.00	75.00	0	100	90	110			

Sample ID **CCV1-140619**	Batch ID: **R73863**	TestNo: **E300**	Units: **mg/L**
SampType: **CCV**	Run ID: **IC_140619A**	Analysis Date: **6/19/2014 2:23:36 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.99	1.00	10.00	0	99.9	90	110			
Nitrate-N	4.91	0.500	5.000	0	98.3	90	110			
Sulfate	30.0	3.00	30.00	0	100	90	110			

Sample ID **CCV2-140619**	Batch ID: **R73863**	TestNo: **E300**	Units: **mg/L**
SampType: **CCV**	Run ID: **IC_140619A**	Analysis Date: **6/19/2014 5:04:02 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.85	1.00	10.00	0	98.5	90	110			
Nitrate-N	4.87	0.500	5.000	0	97.4	90	110			
Sulfate	29.4	3.00	30.00	0	97.9	90	110			

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: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_140624B

The QC data in batch 64317 applies to the following samples: 1406204-01C

Sample ID **MB-64317**	Batch ID: **64317**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.48**
SampType: **MBLK**	Run ID: **TITRATOR_140624B**	Analysis Date: **6/24/2014 10:14:00 AM**	Prep Date: **6/24/2014**

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

Sample ID **LCS-64317**	Batch ID: **64317**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.36**
SampType: **LCS**	Run ID: **TITRATOR_140624B**	Analysis Date: **6/24/2014 10:18:00 AM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	53.0	20.0	50.00	0	106	74	129			

Sample ID **1406204-01C DUP**	Batch ID: **64317**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.51**
SampType: **DUP**	Run ID: **TITRATOR_140624B**	Analysis Date: **6/24/2014 10:55:00 AM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	352	20.0	0	352.8				0.170	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	352	20.0	0	352.8				0.170	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: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_140624B

Sample ID **ICV-140624**	Batch ID: **R73925**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.4**
SampType: **ICV**	Run ID: **TITRATOR_140624B**	Analysis Date: **6/24/2014 9:59:00 AM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	5.52	20.0	0							
Alkalinity, Carbonate (As CaCO3)	93.3	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	98.8	20.0	100.0	0	98.8	98	102			

Sample ID **CCV1-140624**	Batch ID: **R73925**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.19**
SampType: **CCV**	Run ID: **TITRATOR_140624B**	Analysis Date: **6/24/2014 11:08:00 AM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	5.84	20.0	0							
Alkalinity, Carbonate (As CaCO3)	97.4	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	103	20.0	100.0	0	103	90	110			

Sample ID **CCV2-140624**	Batch ID: **R73925**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.06**
SampType: **CCV**	Run ID: **TITRATOR_140624B**	Analysis Date: **6/24/2014 12:06:00 PM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	9.68	20.0	0							
Alkalinity, Carbonate (As CaCO3)	95.5	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	105	20.0	100.0	0	105	90	110			

Qualifiers:

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

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: WC_140619D

The QC data in batch 64196 applies to the following samples: 1406204-01C

Sample ID	**MB-64196**	Batch ID:	**64196**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**WC_140619D**	Analysis Date:	**6/20/2014 9:15:00 AM**	Prep Date:	**6/19/2014**

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

Sample ID	**LCS-64196**	Batch ID:	**64196**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**WC_140619D**	Analysis Date:	**6/20/2014 9:15:00 AM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	763	10.0	745.6	0	102	90	113			

Sample ID	**1406197-02A-DUP**	Batch ID:	**64196**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_140619D**	Analysis Date:	**6/20/2014 9:15:00 AM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	3070	50.0	0	3085				0.487	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

March 19, 2014

Coty Woolf
Larson & Associates
507 N. Marienfeld #200
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1403093

RE: Legacy Chamberlain

Dear Coty Woolf:

DHL Analytical, Inc. received 2 sample(s) on 3/12/2014 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-13-11

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: Caty Woolf

DATE: 3/11/14 PAGE 1 OF 1
PO #:
LAB WORK ORDER #: 1403093
PROJECT LOCATION OR NAME: Legacy Chamberlain
LAI PROJECT #: 12-0126-01 COLLECTOR: [signature]

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: NM

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	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 ☒	NO_3^-, Sulfates (SO_4)	Ca, Na, K, Mg		FIELD NOTES
MW-1	01	3/11/14	1000	W	3	X			X		X																				
"		"	"	"	2				X															X		X	X	X			
"		"	"	"	1		X		X																			X			
Trip Blank	02	3/11/14	—	W	2	X			X		X																				per coty [illegible] 3/12/14

TOTAL

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	3/11/14 5:39pm	[signature]
[signature]	3/12/14 830	[signature]

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

LABORATORY USE ONLY:
RECEIVING TEMP: 1.5 THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED
☒ CARRIER BILL # [signature]
☐ HAND DELIVERED

LSO

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Questions? Call 800-800-8984

Airbill No. 48814330

48814330

1. To: Print Name (Person): T. Barker Phone (Important): 5123888222

Company Name: DHL

Street Address (No P.O. Box or P.O. Box Zip Code Deliveries): 2300 Double Creek Dr

Suite / Floor:

City: Round Rock State: TX Zip: 78664

2. From: Print Name (Person): [illegible] Phone (Important): [illegible]

Company Name: [illegible]

Street Address: [illegible]

Suite / Floor: [illegible]

City: [illegible] 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: 50

Your Company's Billing Reference Information: 12-0126-01

Ship Date: (mm/dd/yy) 03/11/14

5. Payment:

FOR DRIVER USE ONLY

Driver Number: 104391

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

Pick-up Location: 10001

Date: 03.11.14

Time: 1859

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: **3/12/2014**

Work Order Number **1403093**

Received by **JB**

Checklist completed by: _____ 3/12/2014
Signature | Date

Reviewed by: JD 3/12/2014
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 ☐	**1.5** °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 7179
	Adjusted? no		Checked by JB
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: _____

Corrective Action _____

DHL Analytical, Inc. **Date:** *19-Mar-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1403093

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method E300 - Anions Analysis
Method SW8021B - Volatile Organics by GC Analysis
Method SW6020A - Metals Analysis
Method M2540C - Total Dissolved Solids Analysis
Method M2320 B - Alkalinity Analysis

LOG IN

The samples were received and log-in performed on 3/12/14. A total of 2 samples were received. The Time of Collection was Mountain Standard Time. The samples arrived in good condition and were properly packaged.

ANIONS ANALYSIS

For Anions analysis performed on 3/12/14 the matrix spike duplicate recovery was below control limits for Nitrate-N. This is flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

METALS ANALYSIS

For Metals analysis performed on 3/13/14 the matrix spike and matrix spike duplicate recoveries were below control limits for Calcium and Sodium. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was not from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.

DHL Analytical, Inc.

Date: *19-Mar-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1403093

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1403093-01	MW-1		03/11/14 02:00 PM	3/12/2014
1403093-02	Trip Blank		03/11/14	3/12/2014

Lab Order: 1403093
Client: Larson & Associates
Project: Legacy Chamberlain

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1403093-01A	MW-1	03/11/14 02:00 PM	Aqueous	SW5030C	Purge and Trap Water GC	03/13/14 10:13 AM	62322
1403093-01B	MW-1	03/11/14 02:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/13/14 08:24 AM	62314
	MW-1	03/11/14 02:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/13/14 08:24 AM	62314
1403093-01C	MW-1	03/11/14 02:00 PM	Aqueous	M2320 B	Alkalinity Preparation	03/12/14 01:14 PM	62313
	MW-1	03/11/14 02:00 PM	Aqueous	E300	Anion Preparation	03/12/14 09:45 AM	62308
	MW-1	03/11/14 02:00 PM	Aqueous	E300	Anion Preparation	03/12/14 09:45 AM	62308
1403093-01D	MW-1	03/11/14 02:00 PM	Aqueous	M2540C	TDS Preparation	03/13/14 01:13 PM	62325
1403093-02A	Trip Blank	03/11/14	Trip Blank	SW5030C	Purge and Trap Water GC	03/13/14 10:13 AM	62322

Lab Order: 1403093
Client: Larson & Associates
Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1403093-01A	MW-1	Aqueous	SW8021B	Volatile Organics by GC	62322	1	03/13/14 12:31 PM	GC8_140313A
1403093-01B	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	62314	50	03/13/14 04:17 PM	ICP-MS3_140313A
	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	62314	1	03/13/14 03:29 PM	ICP-MS3_140313A
1403093-01C	MW-1	Aqueous	M2320 B	Alkalinity	62313	1	03/12/14 02:16 PM	TITRATOR_140312A
	MW-1	Aqueous	E300	Anions by IC method - Water	62308	1	03/12/14 11:49 AM	IC_140312B
	MW-1	Aqueous	E300	Anions by IC method - Water	62308	10	03/12/14 11:00 AM	IC_140312B
1403093-01D	MW-1	Aqueous	M2540C	Total Dissolved Solids	62325	1	03/14/14 08:40 AM	WC_140313A
1403093-02A	Trip Blank	Trip Blank	SW8021B	Volatile Organics by GC	62322	1	03/13/14 12:11 PM	GC8_140313A

DHL Analytical, Inc.

Date: *19-Mar-14*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-1
Project:	Legacy Chamberlain	**Lab ID:**	1403093-01
Project No:	12-0126-01	**Collection Date:**	03/11/14 02:00 PM
Lab Order:	1403093	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **AV**
Benzene	ND	0.000800	0.00200		mg/L	1	03/13/14 12:31 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	03/13/14 12:31 PM
Toluene	ND	0.00200	0.00600		mg/L	1	03/13/14 12:31 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	03/13/14 12:31 PM
Surr: a,a,a-Trifluorotoluene	105	0	87-113		%REC	1	03/13/14 12:31 PM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **SW**
Calcium	361	5.00	15.0		mg/L	50	03/13/14 04:17 PM
Magnesium	14.1	0.100	0.300		mg/L	1	03/13/14 03:29 PM
Potassium	3.05	0.100	0.300		mg/L	1	03/13/14 03:29 PM
Sodium	196	5.00	15.0		mg/L	50	03/13/14 04:17 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **JBC**
Chloride	147	3.00	10.0		mg/L	10	03/12/14 11:00 AM
Nitrate-N	1.96	0.100	0.500		mg/L	1	03/12/14 11:49 AM
Sulfate	93.8	10.0	30.0		mg/L	10	03/12/14 11:00 AM
ALKALINITY		**M2320 B**					Analyst: **LM**
Alkalinity, Bicarbonate (As CaCO3)	294	10.0	20.0		mg/L @ pH 4.51	1	03/12/14 02:16 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.51	1	03/12/14 02:16 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.51	1	03/12/14 02:16 PM
Alkalinity, Total (As CaCO3)	294	20.0	20.0		mg/L @ pH 4.51	1	03/12/14 02:16 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **MK**
Total Dissolved Solids (Residue, Filterable)	798	10.0	10.0		mg/L	1	03/14/14 08:40 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: *19-Mar-14*

CLIENT:	Larson & Associates	**Client Sample ID:**	Trip Blank
Project:	Legacy Chamberlain	**Lab ID:**	1403093-02
Project No:	12-0126-01	**Collection Date:**	03/11/14
Lab Order:	1403093	**Matrix:**	TRIP BLANK

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **AV**
Benzene	ND	0.000800	0.00200		mg/L	1	03/13/14 12:11 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	03/13/14 12:11 PM
Toluene	ND	0.00200	0.00600		mg/L	1	03/13/14 12:11 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	03/13/14 12:11 PM
Surr: a,a,a-Trifluorotoluene	104	0	87-113		%REC	1	03/13/14 12:11 PM

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		

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_140313A

The QC data in batch 62322 applies to the following samples: 1403093-01A, 1403093-02A

Sample ID **LCS-62322**	Batch ID: **62322**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **LCS**	Run ID: **GC8_140313A**	Analysis Date: **3/13/2014 10:43:12 AM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0511	0.00200	0.0500	0	102	81	125			
Toluene	0.0532	0.00600	0.0500	0	106	84	123			
Ethylbenzene	0.0537	0.00600	0.0500	0	107	83	119			
Xylenes, Total	0.160	0.00900	0.150	0	107	81	117			
Surr: a,a,a-Trifluorotoluene	207		200.0		103	87	113			

Sample ID **MB-62322**	Batch ID: **62322**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GC8_140313A**	Analysis Date: **3/13/2014 11:23:14 AM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00600								
Ethylbenzene	ND	0.00600								
Xylenes, Total	ND	0.00900								
Surr: a,a,a-Trifluorotoluene	209		200.0		105	87	113			

Sample ID **1403093-01AMS**	Batch ID: **62322**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MS**	Run ID: **GC8_140313A**	Analysis Date: **3/13/2014 12:51:12 PM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0475	0.00200	0.0500	0	95.0	81	125			
Toluene	0.0488	0.00600	0.0500	0	97.6	84	123			
Ethylbenzene	0.0493	0.00600	0.0500	0	98.7	83	119			
Xylenes, Total	0.147	0.00900	0.150	0	98.1	81	117			
Surr: a,a,a-Trifluorotoluene	190		200.0		94.9	87	113			

Sample ID **1403093-01AMSD**	Batch ID: **62322**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MSD**	Run ID: **GC8_140313A**	Analysis Date: **3/13/2014 1:11:15 PM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0512	0.00200	0.0500	0	102	81	125	7.62	20	
Toluene	0.0532	0.00600	0.0500	0	106	84	123	8.60	20	
Ethylbenzene	0.0533	0.00600	0.0500	0	107	83	119	7.78	20	
Xylenes, Total	0.159	0.00900	0.150	0	106	81	117	8.09	20	
Surr: a,a,a-Trifluorotoluene	206		200.0		103	87	113	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: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_140313A

Sample ID **ICV-140313**	Batch ID: **R71771**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC8_140313A**	Analysis Date: **3/13/2014 9:47:19 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.104	0.00200	0.100	0	104	80	120			
Toluene	0.107	0.00600	0.100	0	107	80	120			
Ethylbenzene	0.107	0.00600	0.100	0	107	80	120			
Xylenes, Total	0.322	0.00900	0.300	0	107	80	120			
Surr: a,a,a-Trifluorotoluene	214		200.0		107	87	113			

Sample ID **CCV1-140313**	Batch ID: **R71771**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_140313A**	Analysis Date: **3/13/2014 2:08:36 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0502	0.00200	0.0500	0	100	80	120			
Toluene	0.0524	0.00600	0.0500	0	105	80	120			
Ethylbenzene	0.0530	0.00600	0.0500	0	106	80	120			
Xylenes, Total	0.159	0.00900	0.150	0	106	80	120			
Surr: a,a,a-Trifluorotoluene	209		200.0		104	87	113			

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: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_140313A

The QC data in batch 62314 applies to the following samples: 1403093-01B

Sample ID	**MB-62314**	Batch ID:	**62314**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 2:47:00 PM**	Prep Date:	**3/13/2014**

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

Sample ID	**LCS-62314**	Batch ID:	**62314**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 2:53:00 PM**	Prep Date:	**3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.26	0.300	5.00	0	105	80	120			
Magnesium	5.01	0.300	5.00	0	100	80	120			
Potassium	5.32	0.300	5.00	0	106	80	120			
Sodium	5.10	0.300	5.00	0	102	80	120			

Sample ID	**LCSD-62314**	Batch ID:	**62314**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCSD**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 2:59:00 PM**	Prep Date:	**3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.19	0.300	5.00	0	104	80	120	1.28	15	
Magnesium	4.91	0.300	5.00	0	98.2	80	120	1.92	15	
Potassium	5.17	0.300	5.00	0	103	80	120	2.84	15	
Sodium	5.00	0.300	5.00	0	99.9	80	120	1.98	15	

Sample ID	**1403072-01C SD**	Batch ID:	**62314**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**SD**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 3:17:00 PM**	Prep Date:	**3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	5.06	1.50	0	4.96				2.10	10	
Potassium	7.21	1.50	0	7.05				2.23	10	

Sample ID	**1403072-01C PDS**	Batch ID:	**62314**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**PDS**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 3:41:00 PM**	Prep Date:	**3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	9.51	0.300	5.00	4.96	91.2	80	120			
Potassium	11.8	0.300	5.00	7.05	94.6	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: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_140313A

Sample ID **1403072-01C MS**	Batch ID: **62314**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **MS**	Run ID: **ICP-MS3_140313A**	Analysis Date: **3/13/2014 3:47:00 PM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	200	0.300	5.00	198	38.0	80	120			S
Magnesium	9.50	0.300	5.00	4.96	90.8	80	120			
Potassium	12.0	0.300	5.00	7.05	99.6	80	120			
Sodium	52.6	0.300	5.00	48.7	78.2	80	120			S

Sample ID **1403072-01C MSD**	Batch ID: **62314**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **MSD**	Run ID: **ICP-MS3_140313A**	Analysis Date: **3/13/2014 3:53:00 PM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	200	0.300	5.00	198	26.0	80	120	0.300	15	S
Magnesium	9.47	0.300	5.00	4.96	90.4	80	120	0.242	15	
Potassium	11.9	0.300	5.00	7.05	97.0	80	120	1.09	15	
Sodium	52.0	0.300	5.00	48.7	67.2	80	120	1.05	15	S

Sample ID **1403072-01C SD**	Batch ID: **62314**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **SD**	Run ID: **ICP-MS3_140313A**	Analysis Date: **3/13/2014 4:05:00 PM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	205	15.0	0	204				0.464	10	
Sodium	49.3	15.0	0	50.1				1.49	10	

Sample ID **1403072-01C PDS**	Batch ID: **62314**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **PDS**	Run ID: **ICP-MS3_140313A**	Analysis Date: **3/13/2014 4:11:00 PM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	253	3.00	50.0	204	97.6	80	120			
Sodium	102	3.00	50.0	50.1	103	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: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_140313A

Sample ID	**ILCVL-140313**	Batch ID:	**R71770**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 12:58:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0929	0.300	0.100	0	92.9	70	130			
Magnesium	0.105	0.300	0.100	0	105	70	130			
Potassium	0.115	0.300	0.100	0	115	70	130			
Sodium	0.114	0.300	0.100	0	114	70	130			

Sample ID	**LCVL1-140313**	Batch ID:	**R71770**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 2:35:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0927	0.300	0.100	0	92.7	70	130			
Magnesium	0.104	0.300	0.100	0	104	70	130			
Potassium	0.117	0.300	0.100	0	117	70	130			
Sodium	0.102	0.300	0.100	0	102	70	130			

Sample ID	**LCVL2-140313**	Batch ID:	**R71770**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 4:35:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.106	0.300	0.100	0	106	70	130			
Magnesium	0.100	0.300	0.100	0	100	70	130			
Potassium	0.122	0.300	0.100	0	122	70	130			
Sodium	0.102	0.300	0.100	0	102	70	130			

Sample ID	**ICV1-140313**	Batch ID:	**R71770**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 12:46:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.34	0.300	2.50	0	93.8	90	110			
Magnesium	2.42	0.300	2.50	0	96.6	90	110			
Potassium	2.45	0.300	2.50	0	98.0	90	110			
Sodium	2.42	0.300	2.50	0	96.6	90	110			

Sample ID	**CCV1-140313**	Batch ID:	**R71770**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 2:10:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.48	0.300	5.00	0	110	90	110			
Magnesium	5.22	0.300	5.00	0	104	90	110			
Potassium	5.37	0.300	5.00	0	107	90	110			
Sodium	5.40	0.300	5.00	0	108	90	110			

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: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_140313A

Sample ID	**CCV2-140313**	Batch ID:	**R71770**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 4:23:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.46	0.300	5.00	0	109	90	110			
Magnesium	5.11	0.300	5.00	0	102	90	110			
Potassium	5.49	0.300	5.00	0	110	90	110			
Sodium	5.15	0.300	5.00	0	103	90	110			

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: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140312B

The QC data in batch 62308 applies to the following samples: 1403093-01C

Sample ID	LCS-62308	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	LCS	Run ID:	IC_140312B	Analysis Date:	3/12/2014 10:13:33 AM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.6	1.00	10.00	0	106	90	110			
Nitrate-N	5.18	0.500	5.000	0	104	90	110			
Sulfate	31.4	3.00	30.00	0	105	90	110			

Sample ID	LCSD-62308	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	LCSD	Run ID:	IC_140312B	Analysis Date:	3/12/2014 10:28:10 AM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.8	1.00	10.00	0	108	90	110	1.75	20	
Nitrate-N	5.25	0.500	5.000	0	105	90	110	1.24	20	
Sulfate	31.8	3.00	30.00	0	106	90	110	1.31	20	

Sample ID	MB-62308	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	MBLK	Run ID:	IC_140312B	Analysis Date:	3/12/2014 10:42:46 AM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.00								
Nitrate-N	ND	0.500								
Sulfate	ND	3.00								

Sample ID	1403093-01C MS	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC_140312B	Analysis Date:	3/12/2014 11:20:01 AM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	347	10.0	200.0	147.3	99.8	90	110			
Sulfate	307	30.0	200.0	93.77	107	90	110			

Sample ID	1403093-01C MSD	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC_140312B	Analysis Date:	3/12/2014 11:34:37 AM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	348	10.0	200.0	147.3	100	90	110	0.331	20	
Sulfate	307	30.0	200.0	93.77	107	90	110	0.018	20	

Sample ID	1403093-01C MS	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC_140312B	Analysis Date:	3/12/2014 12:03:50 PM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate-N	6.09	0.500	4.516	1.955	91.5	90	110			

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: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140312B

Sample ID **1403093-01C MSD**	Batch ID: **62308**	TestNo: **E300**	Units: **mg/L**				
SampType: **MSD**	Run ID: **IC_140312B**	Analysis Date: **3/12/2014 12:18:26 PM**	Prep Date: **3/12/2014**				

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate-N	6.13	0.500	4.516	2.905	71.4	90	110	0.712	20	S

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: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140312B

Sample ID **ICV-140312**	Batch ID: **R71738**	TestNo: **E300**	Units: **mg/L**
SampType: **ICV**	Run ID: **IC_140312B**	Analysis Date: **3/12/2014 8:40:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	26.8	1.00	25.00	0	107	90	110			
Nitrate-N	13.3	0.500	12.50	0	107	90	110			
Sulfate	79.6	3.00	75.00	0	106	90	110			

Sample ID **CCV1-140312**	Batch ID: **R71738**	TestNo: **E300**	Units: **mg/L**
SampType: **CCV**	Run ID: **IC_140312B**	Analysis Date: **3/12/2014 12:47:39 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	11.0	1.00	10.00	0	110	90	110			
Nitrate-N	5.30	0.500	5.000	0	106	90	110			
Sulfate	32.5	3.00	30.00	0	108	90	110			

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: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_140312A

The QC data in batch 62313 applies to the following samples: 1403093-01C

Sample ID **LCS-62313**	Batch ID: **62313**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.35**
SampType: **LCS**	Run ID: **TITRATOR_140312A**	Analysis Date: **3/12/2014 2:05:00 PM**	Prep Date: **3/12/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	53.4	20.0	50.00	0	107	74	129			

Sample ID **MB-62313**	Batch ID: **62313**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.42**
SampType: **MBLK**	Run ID: **TITRATOR_140312A**	Analysis Date: **3/12/2014 2:07:00 PM**	Prep Date: **3/12/2014**

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

Sample ID **1403093-01C DUP**	Batch ID: **62313**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.51**
SampType: **DUP**	Run ID: **TITRATOR_140312A**	Analysis Date: **3/12/2014 2:23:00 PM**	Prep Date: **3/12/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	294	20.0	0	294.2				0.109	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	294	20.0	0	294.2				0.109	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: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_140312A

Sample ID **ICV-140312**	Batch ID: **R71744**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.49**
SampType: **ICV**	Run ID: **TITRATOR_140312A**	Analysis Date: **3/12/2014 2:01:00 PM**	Prep Date: **3/12/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	16.6	20.0	0							
Alkalinity, Carbonate (As CaCO3)	85.1	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	102	20.0	100.0	0	102	98	102			

Sample ID **CCV-140312**	Batch ID: **R71744**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.48**
SampType: **CCV**	Run ID: **TITRATOR_140312A**	Analysis Date: **3/12/2014 2:29:00 PM**	Prep Date: **3/12/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	17.8	20.0	0							
Alkalinity, Carbonate (As CaCO3)	83.5	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	101	20.0	100.0	0	101	90	110			

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: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: WC_140313A

The QC data in batch 62325 applies to the following samples: 1403093-01D

Sample ID	**MB-62325**	Batch ID:	**62325**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**WC_140313A**	Analysis Date:	**3/14/2014 8:40:00 AM**	Prep Date:	**3/13/2014**

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

Sample ID	**LCS-62325**	Batch ID:	**62325**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**WC_140313A**	Analysis Date:	**3/14/2014 8:40:00 AM**	Prep Date:	**3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	757	10.0	745.6	0	102	90	113			

Sample ID	**1403093-01D-DUP**	Batch ID:	**62325**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_140313A**	Analysis Date:	**3/14/2014 8:40:00 AM**	Prep Date:	**3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	796	10.0	0	798.0				0.251	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