BW - ____8____

ANNUAL REPORT (2020)

April 9, 2021

Mr. Carl Chavez
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505-4225

Re: 2020 Annual Class III Well Report
Salty Dog Brine Station, Lea County, New Mexico
DP-BW-8, API No. 30-025-26307

Dear Mr. Chavez:

On behalf of PAB Services, Inc., Daniel B. Stephens & Associates, Inc. (DBS&A) is submitting the enclosed annual Class III well report for the Salty Dog brine station located in Lea County, New Mexico. The report includes the annual certification by the site operator (Appendix A).

Please call us at (505) 822-9400 if you have any questions or require additional information.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

John Ayarbe, P.G.
Senior Hydrogeologist

Michael Zbrozek
Geologist

JA/rpf
Enclosure
cc: Pieter Bergstein, PAB Services, Inc.

2020 Annual Class III Well Report
Salty Dog Brine Station
Lea County, New Mexico
DP-BW-8, API No. 30-025-26307

Prepared for

New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division

Prepared by

DBS&A
Daniel B. Stephens & Associates, Inc.
a Geo-Logic Company

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Albuquerque, New Mexico 87109
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DB19.1198

April 9, 2021

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1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this annual Class III well report for submission to the New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD) Environmental Bureau on behalf of PAB Services, Inc. (PAB) for operation of a brine well (Brine Supply Well #1 [API No. 30-025-26307]) at the Salty Dog Brine Station (the site). The site is located in Lea County, New Mexico, approximately 11 miles west of Hobbs, New Mexico along U.S. Highway 62/180 (US 62/80) (Figure 1). This report summarizes operational and monitoring activities conducted at the site in 2020, and was prepared in accordance with the requirements of discharge permit (DP) BW-8, last renewed on May 17, 2019 (NMEMNRD, 2019). Submittal of this report meets Condition 2.J of the permit.

Appendix A provides an annual certification signed by Mr. Pieter Bergstein stating that continued salt solution mining will not cause cavern collapse, surface subsidence, or property damage, and will not otherwise threaten public health and the environment, based on geologic and engineering data.

Salty Dog is a brine water production and loading station, consisting of fresh water supply wells, a brine production well, and a concrete truck loading pad with two brine filling stations. Fresh water is stored in two 1,000-barrel (bbl) aboveground storage tanks (ASTs). Produced brine is pumped from the brine well to a bermed tank battery consisting of six 750-bbl ASTs, where the brine is stored for sale. The brine well is located approximately 0.5 mile southwest of the brine filling station (Figure 1). Figure 2 presents a 2020 aerial photograph of the brine station showing the layout of the current facility infrastructure.

Brine is produced from the in situ extraction of salt at the brine well, a UIC Class III well (Brine Supply Well #1 [API No. 30-025-26307]). The brine well is approximately 3,000 feet deep and has been in operation since the early 1980s. The Salty Dog brine well is configured for reverse circulation brine recovery, where fresh water is circulated down the casing annulus into the Salado Formation—a Permian Age sedimentary rock unit composed of halite (salt) and other evaporative beds. Fresh water dissolves the salt, and the brine is extracted through the center tubing of the well. Figure 3 provides a generalized schematic of the brine well showing its construction, current tubing depth, and the penetrated geologic units.

The physical location of the brine well is 1,980 feet from south line (FSL) and 1,980 feet from east line (FEL) (NW/4 SE/4, Unit Letter J) in Section 5, Township 19 South, Range 36 East, New

Mexico Principal Meridian (NMPM). The brine well was installed in June 1979. The original discharge permit for the brine well (GWB-2) appears to have been issued on December 18, 1982 (OCD, 1994). The discharge permit was last renewed on May 17, 2019 (NMEMNRD, 2019).

Injection water used in brine production is obtained from the Ogallala Aquifer by pumping from two fresh water supply wells (FWS-1 and FWS-2) and groundwater remediation well RW-2. Well FWS-1 is the main fresh water supply well. Well FWS-2, located near the brine well, is used as an auxiliary fresh water well during periods of high brine demand. Well RW-2 is used to remove and provide hydraulic containment of chloride-impacted groundwater in the brine well area; groundwater extracted from this well is also used for brine production. Chloride-impacted groundwater in the former brine pond area is contained and removed by pumping from FWS-1. Depth to regional groundwater is approximately 60 feet below ground surface (bgs). Figure 4 shows the well locations.

2. Brine Well Operational Activities

The following subsections report fluid injection/brine production volumes and well maintenance activities.

2.1 Fluid Injection and Brine Production

Except for an approximately 2-year shutdown between 2011 and 2013 and temporary interruptions for routine maintenance and testing (e.g., February 2009 sonar survey [SOCON, 2009]), the brine well has been in continuous operation since 1980, producing an average of approximately 10,500 barrels per month (bbl/mo) of brine between 1980 and 2009. This production rate is based on 1987, 1996–1999, and 2009 brine production and sales records (Salty Dog, 1988, 1999, and Undated).

Both fluid injection and brine production volumes are metered, and daily volumes are recorded on monthly fresh and brine water report forms (Appendix B). Table 1 summarizes monthly injection and production volumes for the reporting period. Injection water for the brine well comes from two fresh water wells (FWS-1 and FWS-2) and a groundwater remediation well (RW-2) (Figure 4). In 2020, average monthly ratios of injected water to produced brine ranged from 0.98 to 1.02.

Table 1. Monthly Water Injection and Brine Production Volumes, 2020

Month	Volume (bbl)		Ratio (injection:production)
	Water Injection	Brine Production	
January	46,235	45,425	1.02
February	35,543	35,006	1.02
March	50,928	49,686	1.02
April	14,736	14,586	1.01
May	16,595	16,363	1.01
June	9,662	9,533	1.01
July	12,780	12,705	1.01
August	9,425	9,430	1.00
September	6,650	6,650	1.00
October	6,137	6,137	1.00
November [a]	—	5,901	—
December	20,008	20,428	0.98
Annual total	228,699	231,850	—

[a] Fresh water injection data not available for November 2020; brine production reported from brine sales.
bbl = Barrels

Based on the data reported in Table 1 and previously reported production records (Salty Dog, 1988, 1999, and Undated; DBS&A, 2014), the estimated cumulative volume of brine production is 7,020,919 bbl.

In 2020, brine production activities at the site dissolved an estimated 34,828 bbl of Salado Formation. This estimate is based on the brine production data reported in Table 1, the average total dissolved solids (TDS) concentrations of the produced brine and injection water reported in Table 2, and an assumed density of the Salado Formation of 2.17 grams per cubic centimeter (g/cm^3). Based on the historical and current brine production data, the total estimated size of the brine solution cavern is approximately 1,015,889 bbl. In 2012, OCD estimated a volume of 1,022,196 bbl for the Salty Dog solution cavern (NMEMNRD, 2012).

Table 2. Injection Water and Produced Brine Chemical and Physical Characteristics

Constituent	Average Concentration (mg/L [a])	
	Injection Water	Produced Brine
pH (s.u.)	7.98	7.17
Specific gravity (unitless)	1.006	1.198
Chloride	715	205,000
Sodium	420	80,000
TDS	1,525	327,500

[a] Unless otherwise noted
mg/L = Milligram per liter
NM = Not measured
s.u. = Standard units
TDS = Total dissolved solids

2.2 Injection Pressure

Pressure is monitored on the well tubing and on the annulus between the inner tubing and outer casing. These measurements are recorded on the monthly fresh and brine water report forms (Appendix B). In 2020, recorded daily tubing pressure remained steady at 125 pounds per square inch (psi), while annulus pressure was generally 375 psi.

2.3 Chemical and Physical Analyses

Condition 2.A of DP-BW-8 requires semiannual monitoring of the chemical and physical characteristics of the injection water and produced brine, including pH, density, and TDS and chloride concentrations. The permit also requires that the sodium concentration of the produced brine be analyzed.

Table 2 reports average constituent concentrations calculated from the 2020 semiannual monitoring data. Samples of the injection water and produced brine were collected in June and November 2020. Dissolution of the Salado Formation increases the constituent concentrations and specific gravity of the produced brine relative to the injection water. The average TDS concentration and average specific gravity of the injection water are 1,525 milligrams per liter (mg/L) and 1.006, respectively, while the same properties of the produced brine are 327,500 mg/L and 1.198, respectively. Appendix C provides the laboratory analytical reports associated with the semiannual monitoring events.

Historical water quality analyses show TDS concentrations of the fresh water and produced brine to be approximately 600 mg/L and 320,000 to 350,000 mg/L, respectively (Martin, 1982; Unichem, 1987).

2.4 Deviations from Normal Operations

There were no deviations from normal operations in 2020.

2.5 Leaks and Spills

There were no leaks or spills in 2020.

2.6 Area of Review

Condition 3.G of DP BW-8 requires Salty Dog to report within 72 hours the discovery of any new wells, conduits, or other devices that (1) are within a 1-mile radius and (2) may penetrate to the injection zone of the brine well.

The brine station is located on private property in rural southeastern New Mexico, approximately 11 miles west of Hobbs. The majority of the area surrounding the site is undeveloped and owned by the State of New Mexico.

On March 18, 2021, DBS&A conducted an area of review evaluation using the OCD online oil and gas maps application. This application is accessible through the OCD website (http://www.emnrd.state.nm.us/OCD/ocdgis.html). Appendix D provides a map produced from the area of review evaluation. The map shows that there are two previously plugged and abandoned wells (API 30-025-03989 and API 30-025-42773) southwest of the Salty Dog brine well. However, no new brine wells or other penetrations that may penetrate into the injection zone of the Salty Dog brine well are present within a 1-mile radius of the brine well.

2.7 Mechanical Integrity Test

A mechanical integrity test (MIT) was not conducted on the brine well in 2020. The last MIT was performed in 2018.

In December 2017, the brine well was damaged because anhydrite had collapsed the well tubing. The well was subsequently repaired, and was operational again in February 2018. On February 9, 2018, before placing the well back in operation, PAB conducted an MIT on the well;

it passed the test. Gary Robinson of OCD was present during the MIT. A record of the MIT was provided in the 2017 annual Class III well report (DBS&A, 2018a).

Prior to the February 2018 MIT, the last MIT was performed on October 31, 2013, when Salty Dog conducted a Bradenhead test on the brine well. The test showed no problems with the integrity of the well casing. Results of this test were reported to OCD on November 15, 2013.

Pursuant to 20.6.2.5204 New Mexico Administrative Code (NMAC), PAB is required to demonstrate mechanical integrity of the brine well at least once every five years.

3. Other Facility Activities

There were no other facility activities in 2020 outside of normal operations.

4. Subsidence Monitoring and Cavern Characterization

Condition 2.B.1 of DP BW-08 requires Salty Dog to monitor for potential land subsidence in the area of the brine well (OCD, 2019). To meet this condition, PAB contracted Peterson Drilling and Testing, Inc. and DBS&A to install five subsidence survey monitoring points at the site in March 2018 (DBS&A, 2018b). The five subsidence survey monitoring points include three points located approximately 200 feet from the brine well, one point located approximately 60 feet from the brine well, and one point that is a metal tab welded to the brine well casing (Figure 5). Construction and placement of the monitoring points were conducted in accordance with DBS&A (2014). Basin Surveys of Hobbs, New Mexico surveyed the monitoring points after their installation (Appendix E). The initial survey was conducted on March 23, 2018 using the nearest U.S. Geological Survey (USGS) benchmark referenced to NMSPCE (NAD 83).

In accordance with Condition 2.B.1 of DP-BW-8, Salty Dog has each monitoring point surveyed semiannually to at least the nearest 0.10 foot (OCD, 2019). Basin Surveys conducted the 2020 semiannual surveys on July 20 and November 24, 2020. The survey data are reported in Table 3, and show no indication of land subsidence. The semiannually surveyed elevations are within ±0.02 foot of the initial survey. Appendix E provides the survey reports.

Table 3. Semiannual Surface Subsidence Monitoring, 2020

Survey Monitoring Point	Elevation (feet msl)		
	Initial 3/23/2018	First Semiannual 7/20/2020	Second Semiannual 11/24/2020
SMP-01	3,810.11	3,810.10	3,810.10
SMP-02	3,809.01	3,809.00	3,809.00
SMP-03	3,808.80	3,808.81	3,808.81
SMP-04	3,806.32	3,806.32	3,806.32
SMP-05 (brine well)	3,811.72	3,811.72	3,811.72

msl = Above mean sea level

Condition 2.B.2 of DP BW-08 requires solution cavern characterization using geophysical methods to estimate the size and shape of the solution cavern. During a December 9, 2016 phone call between DBS&A (on behalf of PAB) and OCD (Jim Griswold and Carl Chavez), it was agreed that solution cavern characterization using geophysical methods would be conducted only if surface subsidence was detected during semiannual surveying of the monitoring points. Section 2.1 of this report presents an estimated size for the solution cavern.

5. Groundwater Conditions

Salty Dog is addressing groundwater impacts resulting from releases at the brine well and a former brine pond. A hole in the casing of the brine well at 250 feet bgs was discovered in 1999 (Salty Dog, 1999). The hole released brine, impacting groundwater, and was repaired in August 1999 by installing a casing liner (Salty Dog, 1999). In October 2008, the brine pond was removed and impacted soil was excavated and disposed of (DBS&A, 2008). The area of the former brine pond is shown in Figures 1 and 2.

Two chloride plumes currently exist at the site: one in the area of the brine station (i.e., the former brine pond area) and a second near the brine well. In 2009, PAB initiated groundwater extraction to remove and provide hydraulic containment of brine-impacted groundwater at the brine station and near the brine well (DBS&A, 2009). Groundwater abatement and monitoring activities are being conducted to satisfy an administrative compliance order issued by OCD (ACO 2008-02) and settlement agreement and stipulated revised final order (NM-OCD 2008-2A) between OCD and Mr. Bergstein.

Groundwater monitoring and extraction data are reported and evaluated in reports submitted to OCD (e.g., DBS&A, 2021). The data include water levels and water quality at the site monitor wells. Site monitor wells are shown in Figure 4.

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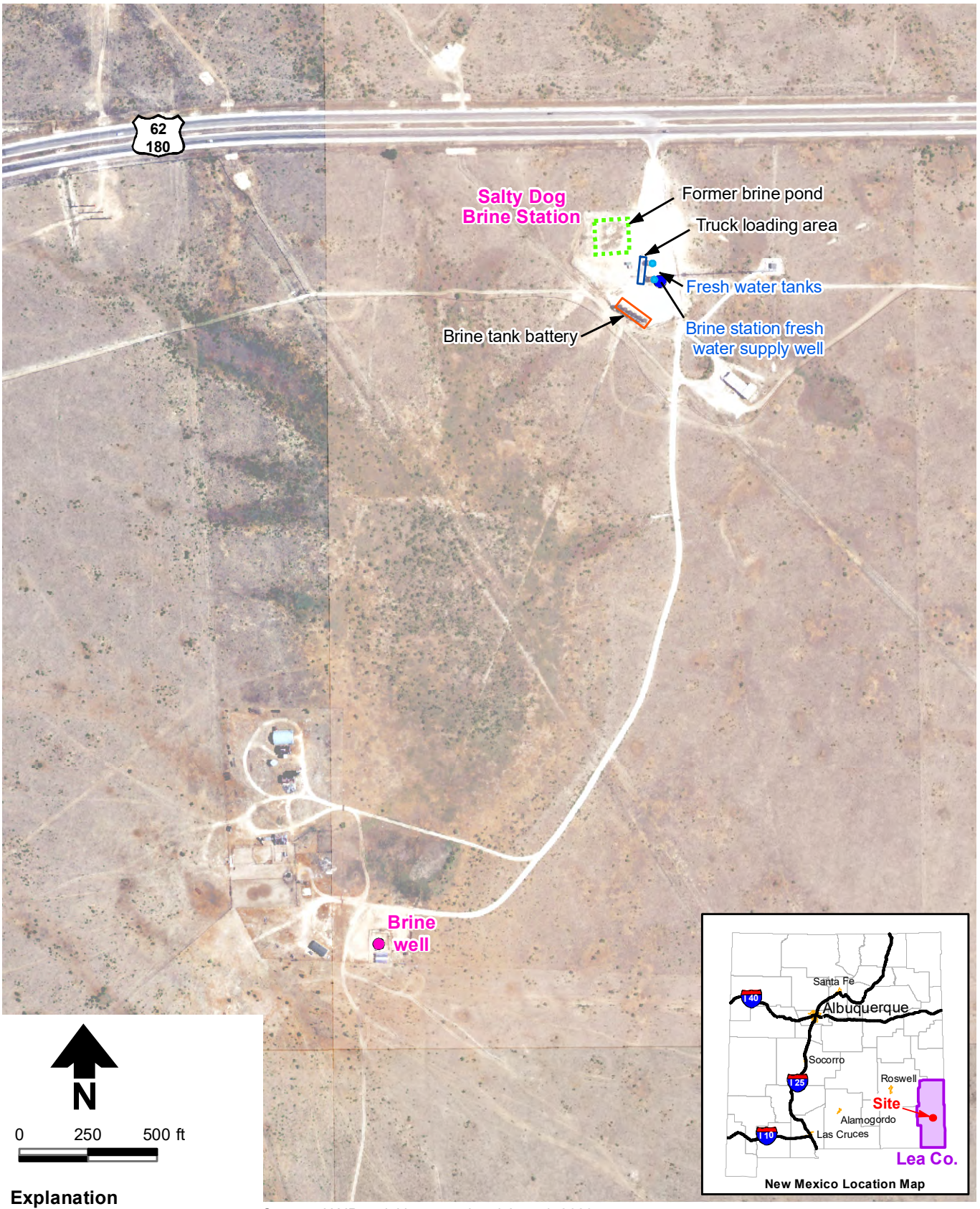
Figures



Source: NAIP aerial imagery dated June 4, 2020

S:\PROJECTS\DB19.1198_SALTY_DOG_2019\GIS\MXDS\ANNUAL_REPORT_2020\TEMPLATEUPDATE\FIG01_SITE_LOCATION_AND_FACILITIES.MXD

DBS&A
Daniel B. Stephens & Associates, Inc.
3/29/2021 JN DB19.1198.00

SALTY DOG BRINE STATION

Site Location and Facilities

Figure 1

S:\PROJECTS\DB19.1198_SALTY_DOG_2019\GIS\MXDS\ANNUAL_REPORT_2020\TEMPLATEUPDATE\FIG02_SITE_2020_AERIAL_PHOTO.MXD

Source: NAIP aerial imagery dated June 4, 2020

Figure 2

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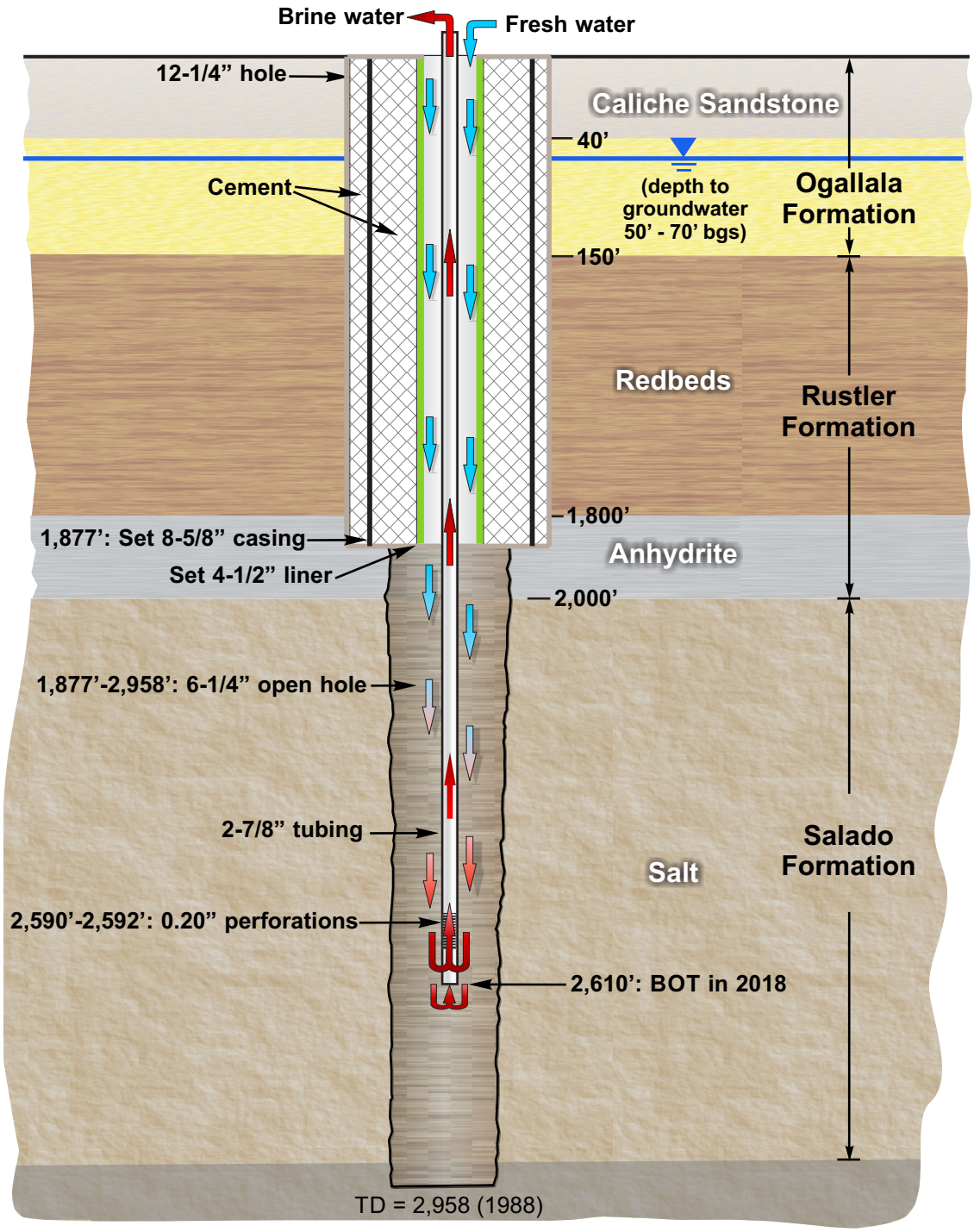
3/29/2021
JN DB19.1198.00

SALTY DOG BRINE STATION

2020 Aerial Photograph of Salty Dog Brine Station

Salty Dog Brine Well



Notes:
1. BOT = Bottom of tubing
2. Figure not to scale

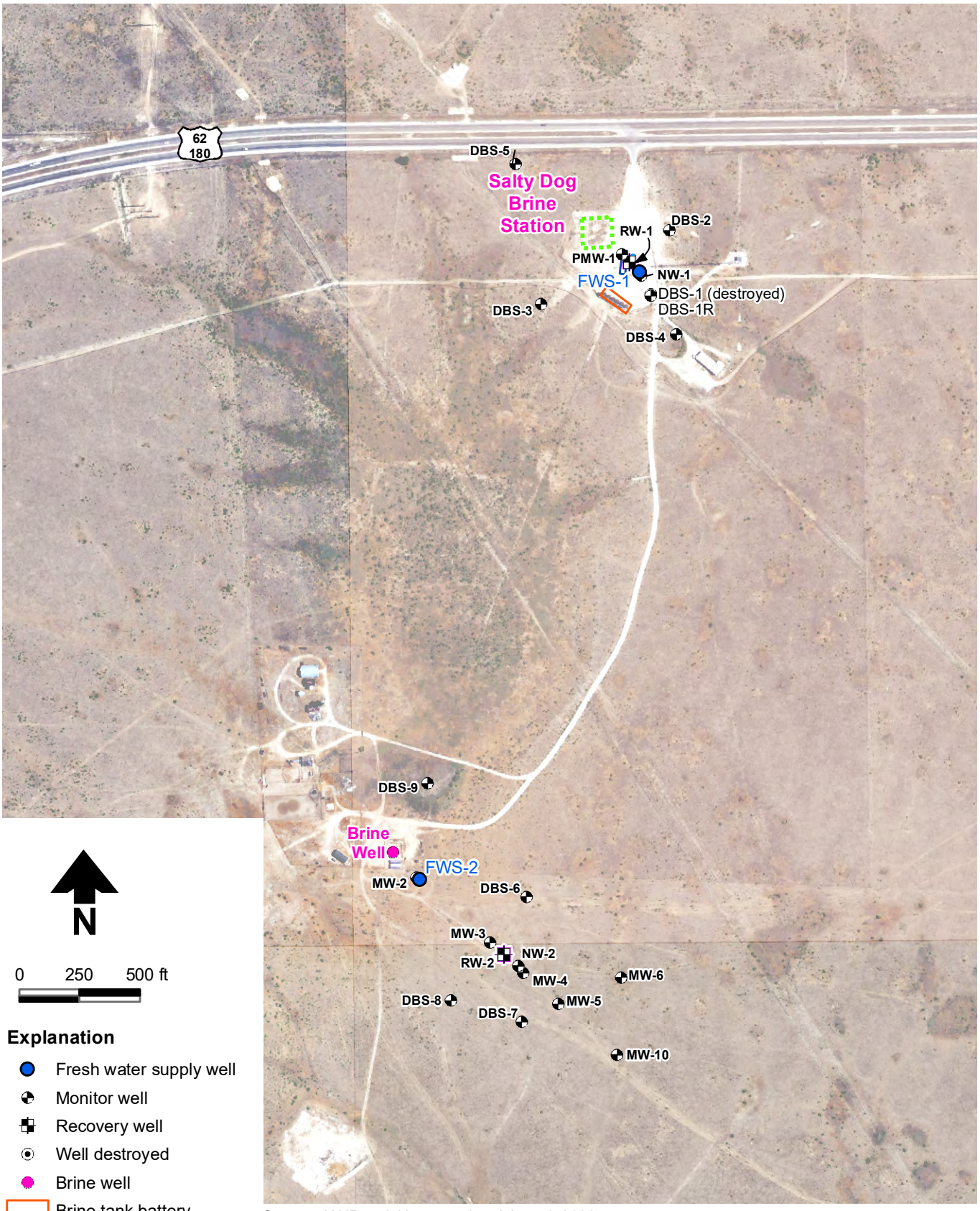
Sources:
1. Completion data based on OCD well reports
2. Lithology from Salty Dog (1988)

S:\Projects\ES08.0118_Salty_Dog_2018\VR_drawings\Fig03_Generalized_brine_well_schematic.cdr

DBS&A
Daniel B. Stephens & Associates, Inc.
3/29/2021 DB19.1198

SALTY DOG BRINE STATION
Generalized Brine Well Schematic

Figure 3



Source: NAIP aerial imagery dated June 4, 2020

S:\PROJECTS\DB19.1198_SALTY_DOG_2019\GIS\MXDS\ANNUAL_REPORT_2020\TEMPLATEUPDATE\FIG04_SITE_MONITOR_AND_EXTRACTION_WELL_LOCS.MXD

DBS&A
Daniel B. Stephens & Associates, Inc.
4/8/2021 JN DB19.1198.00

SALTY DOG BRINE STATION

Monitor and Extraction Well Locations

Figure 4

Source: NAIP aerial imagery dated June 4, 2020

S:\PROJECTS\DB19.1198_SALTY_DOG_2019\GIS\MXDS\ANNUAL_REPORT_2020\TEMPLATEUPDATE\FIG05_LTTR_REPORT_.MXD

SALTY DOG BRINE STATION

Land Subsidence
Survey Monitoring Point Locations

DBS&A
Daniel B. Stephens & Associates, Inc.
3/29/2021 JN DB19.1198.00

Figure 5

Appendix A

Annual Certification

DBS&A
Daniel B. Stephens & Associates, Inc.

Annual Certification

PAB Services, Inc. certifies that continued salt solution mining will not cause cavern collapse, surface subsidence, property damage, or otherwise threaten public health and the environment based on geologic and engineering data.

Name

Title

Signature

4/8/21

Date

Appendix B

2020 Monthly Fresh Water and Brine Report Forms

DBS&A
Daniel B. Stephens & Associates, Inc.

MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION SALTY Dog

MONTH/YEAR JAN 2020

Date	AMOUNT OF FRESH WATER PUMPED DOWN HOLE BBLS	AMOUNT OF BRINE WATER OUT OF HOLE BBLS SOLD	DAILY TUBING PRESSURES PSI	DAILY CASING PRESSURES PSI	FRESH WATER SOLD
1	410	400	125	375	
2	1200	1183	125	375	120
3	415	400	125	375	
4	915	900	125	375	
5	1590	1580	125	375	
6	2170	2155	125	375	
7	965	950	125	375	
8	1655	1645	125	375	
9	1440	1425	125	375	110
10	1620	1600	125	375	
11	1215	1200	125	375	
12	710	700	125	375	
13	3000	2085	125	375	90
14	1740	1825	125	375	130
15	410 2015	2440	125	375	125
16	3000	2970	125	375	210
17	330	120	125	375	
18	510	500	125	375	110
19	2220	2200	125	375	125
20	2330	2318	125	375	25
21	1470	1455	125	375	120
22	635	625	125	375	85
23	3500	3476	125	375	120
24	2365	2355	125	375	
25	1235	1220	125	375	185
26	34476 1520	1500	125	375	
27	1260	1245	125	375	
28	1645	1630	125	375	565
29	655	645	125	375	
30	1300	1483	125	375	
31	800	725	125	375	500
TOTALS		45203			

REPAIRS AND/OR EXPENSES

Date	Company Performing Work/Repairs	Descritpion of Work/Repairs	Estimated Cost	Work Authorized by

MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION SALTY DOG

MONTH/YEAR Feb 2020

Date	AMOUNT OF FRESH WATER PUMPED DOWN HOLE BBLS	AMOUNT OF BRINE WATER OUT OF HOLE BBLS SOLD	DAILY TUBING PRESSURES PSI	DAILY CASING PRESSURES PSI	FRESH WATER SOLD
1	760	750	125	375	
2	2020	2000 100	125	375	240
3	1095	1085	125	375	150
4	1925	1910	125	375	220
5	2945	2930	125	375	
6	2028	2018	125	375	120
7	2000	1785	125	375	130
8	615	600	125	375	
9	1310	1300	125	375	100
10	1300	1283	125	375	120
11	715	710	125	375	120
12	805	799	125	375	120
13	725	715	125	375	25
14	240	235	125	375	230
15	695	685	125	375	190
16	815	800	125	375	
17	200	190	125	375	240
18	1925	1905	125	375	220
19	1515	1500	125	375	110
20	2350	2345	125	375	120
21	810	800	125	375	290
22	2760	1430 1420	125	375	360
23	0	0	125	375	120
24	1525	1515	125	375	
25	800	780	125	375	365
26	1180	1166	125	375	20
27	1220	1210	125	375	8
28	2095	2070	125	375	320
29	610	600	125	375	120
30					
31					
TOTALS		35,006			

REPAIRS AND/OR EXPENSES

Date	Company Performing Work/Repairs	Descritpion of Work/Repairs	Estimated Cost	Work Authorized by

MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION SALTY Dog

MONTH/YEAR 3 - 2024

Date	AMOUNT OF FRESH WATER PUMPED DOWN HOLE BBLS	AMOUNT OF BRINE WATER OUT OF HOLE BBLS SOLD	DAILY TUBING PRESSURES PSI	DAILY CASING PRESSURES PSI	FRESH WATER SOLD
1	940	920	125	375	
2	2145	2130	125	375	125
3	2055	2040	125	375	
4	1750	1725	125	375	
5	650	640	125	375	240
6	825	815	125	375	
7	2010	1990	125	375	
8	1310	1290	125	375	
9	2800	2775	125	375	
10	1280	1265	125	375	
11	1625	1610	125	375	160
12	4260	4240	125	375	80
13	1585	1575	125	375	250
14	1325	1310	125	375	240
15	790	780	125	375	40
16	1540	1525	125	375	
17	2345	2235	125	375	
18	2590	2570	125	375	
19	1470	1455	125	375	
20	1540	1525	125	375	40
21	205	200	125	375	
22	410	400	125	375	260
23	3375	3350	125	375	40
24	2838	2835	125	375	
25	1275	1260	125	375	
26	530	525	125	375	
27	1453	1443	125	375	130
28	3095	3080	125	375	210
29	1230	1220	125	375	
30	910	900	125	375	
31	860	855	125	375	
TOTALS		49648			

REPAIRS AND/OR EXPENSES

Date	Company Performing Work/Repairs	Descritpion of Work/Repairs	Estimated Cost	Work Authorized by

MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION Salty Dog

MONTH/YEAR April 2020

Date	AMOUNT OF FRESH WATER PUMPED DOWN HOLE BBLS	AMOUNT OF BRINE WATER OUT OF HOLE BBLS SOLD	DAILY TUBING PRESSURES PSI	DAILY CASING PRESSURES PSI	FRESH WATER SOLD
1	780 ~~180~~	780	125	350	1085
2	760	745	125	325	960 ~~120~~
3	111	110	125	325	1820 ~~320~~
4	305	300	125	325	1110
5	790	780	125	325	0
6	280	275	125	325	1125 ~~350~~
7	945	930	125	325	2210
8	710	710 ~~200~~	125	325	1125
9	905	905	125	325	1645
10	300	300	125	325	0
11	1600	1600	125	325	0
12	1360	1338 ~~200~~	125	325	1160
13	120	120	125	325	0
14	530	525 ~~540~~	125	325	1580
15	605	600	125	325	1606
16	320	315 15	125	325	1576
17	410	400	125	325	2450
18	~~80~~	~~80~~	125	325	610
19	0	0	125	325	0
20	148	148 ~~180~~	125	325	1560
21	218	218	125	325	1675 ~~1875~~ ~~200~~
22	218	218	125	325	1275
23	48	48	125	325	1440 ~~240~~
24	120	100	125	325	0
25	210	200	125	325	730
26	100	100 ~~100~~	125	325	1830
27	265	260	125	325	2050
28	1328	1318	125	325	1720
29	250	243	125	325	1835 ~~120~~
30	1010	1000	125	375	1440
31					
TOTALS		14586			36550

13343

32280

REPAIRS AND/OR EXPENSES

Date	Company Performing Work/Repairs	Descritpion of Work/Repairs	Estimated Cost	Work Authorized by

MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION SALTY Dog

MONTH/YEAR MAY

Date	AMOUNT OF FRESH WATER PUMPED DOWN HOLE BBLS	AMOUNT OF BRINE WATER OUT OF HOLE BBLS SOLD	DAILY TUBING PRESSURES PSI	DAILY CASING PRESSURES PSI	FRESH WATER SOLD
1	100	100	125	375	1860
2	710	700	125	375	2245
3	0	0	125	375	
4	215	210 ~~200~~	125	375	1715
5	270	268	125	375	1460
6	820 ~~700~~	810	125	375	2005 ~~1005~~
7	435	420 ~~700~~	125	375	535
8	695	695 ~~680~~	125	375	180
9	0	0	125	375	
10	210 ~~200~~	200	125	375	240
11	70	70 ~~70~~	125	375	
12	500	490	125	375	
13	1135	1120 ~~1020~~	125	375	
14	100	100	125	375	
15	345	340 ~~200~~	125	375	
16	430	420	125	375	
17	205	200 ~~700~~	125	375	
18	6993 870	850	125	375	20
19	1320	1300 ~~800~~	125	375	
20	205	200 ~~700~~	125	375	
21	1615	1600 ~~1300~~	125	375	
22	810	800	125	375	
23	1220	1200	125	375	
24	~~0~~	~~0~~	125	375	375
25	205	200	125	375	
26	1520	1500 ~~1300~~	125	375	10
27	1630	1620 ~~700~~	125	375	125
28	855	850 ~~410~~	125	375	~~120~~
29	0	0	125	375	75
30	0	0	125	375	
31	105	100	125	375	
TOTALS		16363			

AVG 400

REPAIRS AND/OR EXPENSES MADE

Date	Company Performing Work/Repairs	Descritpion of Work/Repairs	Estimated Cost	Work Authorized by

MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION SALTY Dog

MONTH/YEAR JUNE 2020

Date	AMOUNT OF FRESH WATER PUMPED DOWN HOLE BBLS	AMOUNT OF BRINE WATER OUT OF HOLE BBLS SOLD	DAILY TUBING PRESSURES PSI	DAILY CASING PRESSURES PSI	FRESH WATER SOLD
1	0	18	125	375	
2	415	410	125	375	
3	605	606	125	375	130
4	570	560 400	125	375	
5	220	215	125	375	
6	205	200	125	375	
7	205	200	125	375	
8	510	500 200	125	375	
9	521	520 480	125	375	80
10	455	450	125	375	25
11	765	755 505	125	375	
12	410	400	125	375	
13	221	220 220	125	375	
14	715	700	125	375	
15	220	220	125	375	
16	185	180	125	375	125
17	215	215	125	375	
18	305	300 150	125	375	
19	100	100	125	375	490
20	410	400	125	375	
21	0	0	125	375	
22	415	400	125	375	
23	510	500 400	125	375	
24	250	250	125	375	
25	0	15	125	375	
26	210	200	125	375	70
27	510	500	125	375	30
28	0	0	125	375	
29	210	205	125	375	50
30	205	200	125	375	750 650
31					
TOTALS					

REPAIRS AND/OR EXPENSES

Date	Company Performing Work/Repairs	Descritpion of Work/Repairs	Estimated Cost	Work Authorized by

MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION SALTY DOG

MONTH/YEAR JULY 2020

Date	AMOUNT OF FRESH WATER PUMPED DOWN HOLE BBLS	AMOUNT OF BRINE WATER OUT OF HOLE BBLS SOLD	DAILY TUBING PRESSURES PSI	DAILY CASING PRESSURES PSI	FRESH WATER SOLD
1	420	415	125	375	
2	0	0	125	375	780
3	1640	1630	125	375	
4	0	0	125	375	
5	0	100	125	375	
6	615	600	125	375	
7	100	100	125	375	
8	300	300	125	375	120
9	515	515	125	375	257
10	540	530 ~~100~~	125	375	125
11	210	200 ~~700~~	125	375	120
12	715	700 ~~1210~~	125	375	100
13	1230	1210 ~~970~~	125	375	
14	1975	1960 ~~1400~~ ~~2360~~	125	375	60
15	85	80	125	375	510
16	840	830 ~~530~~	125	375	
17	65	65	125	375	130
18	315	310	125	375	120
19	0	0	125	375	
20	475	470	125	375	90
21	455	450	125	375	100
22	230	230	125	375	
23	210	210	125	375	380
24	230	220	125	375	
25	200	200	125	375	
26	310	300	125	375	
27	125	220	125	375	120
28	480	460	125	375	130
29			125	375	240
30	300	300	125	375	
31	100	100	125	375	
TOTALS					

REPAIRS AND/OR EXPENSES

Date	Company Performing Work/Repairs	Descritpion of Work/Repairs	Estimated Cost	Work Authorized by

MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION Salty DOG

MONTH/YEAR August 2020

Date	AMOUNT OF FRESH WATER PUMPED DOWN HOLE BBLS	AMOUNT OF BRINE WATER OUT OF HOLE BBLS SOLD	DAILY TUBING PRESSURES PSI	DAILY CASING PRESSURES PSI	FRESH WATER SOLD
1	100	100	125	375	
2	0	0	125	375	120
3	225	220	125	375	
4	340	345	125	375	
5	200	200	125	375	
6	0	0	125	375	
7	200	200	125	375	
8	600	600	125	375	
9	120	120	125	375	
10	200	200	125	375	100
11	495	500	125	375	60
12	0	0	125	375	
13	0	0	125	375	
14	0	0	125	375	
15	0	0	125	375	
16	0	0	125	375	
17	200	200	125	375	30
18	500	500	125	375	100
19	310	310	125	375	0
20	530	530	125	375	250
21	390	380	125	375	625
22	200	205	125	375	
23	100	100	125	375	50
24	910	910	125	375	0
25	500	500	125	375	120
26	800	800	125	375	0
27	215	215	125	375	0
28	600	600	125	375	0
29	720	720	125	375	0
30	200	200	125	375	250
31	770	770	125	375	0
TOTALS	9,425	9,425			1,705

REPAIRS AND/OR EXPENSES

Date	Company Performing Work/Repairs	Descritpion of Work/Repairs	Estimated Cost	Work Authorized by

MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION: Salty Dog

MONTH/YEAR: September 2020

Date	AMOUNT OF FRESH WATER PUMPED DOWN HOLE BBLS	AMOUNT OF BRINE WATER OUT OF HOLE BBLS SOLD	DAILY TUBING PRESSURES PSI	DAILY CASING PRESSURES PSI	FRESH WATER SOLD
1	1055	~~1050~~	125	375	
2	310	310 ~~310~~	125	375	620
3	300	~~300~~ 300	125	375	90
4	175	~~165~~	125	375	
5	100	100	125	375	
6	200	200	125	375	
7	215	215	125	375	
8	150	150	125	375	
9	80	~~80~~	125	375	
10	240	240	125	375	
11	510	510	125	375	40
12	400	400	125	375	
13	135	135	125	375	
14			125	375	
15			125	375	
16	10	0	125	375	
17	415	425	125	375	
18	15	15	125	375	200
19	115	115	125	375	
20	600	600	125	375	
21	485	485	125	375	
22	200	200	125	375	100
23	330	330	125	375	125
24			125	375	
25			125	375	40
26			125	375	
27			125	375	
28	50	50	125	375	190
29	60	60	125	375	
30			125	375	260
31					
TOTALS	6,150	6,150			1,665

REPAIRS AND/OR EXPENSES

Date	Company Performing Work/Repairs	Descritpion of Work/Repairs	Estimated Cost	Work Authorized by
9-26	J & J pumping	replace plungers	$ 514.19	Adam Sitton

MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION Salty Dog

MONTH/YEAR October 20-20

Date	AMOUNT OF FRESH WATER PUMPED DOWN HOLE BBLS	AMOUNT OF BRINE WATER OUT OF HOLE BBLS SOLD	DAILY TUBING PRESSURES PSI	DAILY CASING PRESSURES PSI	FRESH WATER SOLD
1	300	300	125	375	130
2	60	60	125	375	140
3	50	50	125	375	10
4	215	215	125	375	120
5	751	751	125	375	195
6	110	110	125	375	20
7					
8					
9	408	408	125	375	100
10	215	215	125	375	170
11	115	115	125	375	
12	85	85	125	375	
13	110	110	125	375	155
14	100	100	125	375	
15	400	400	125	375	
16	230	230	125	375	125
17	540	540	125	375	
18	273	273	125	375	218
19	205	205	125	375	100
20	655	655	125	375	170
21					
22			125	375	120
23	130	130	125	375	
24	200	200	125	375	
25	100	100	125	375	
26	85	85	125	375	
27	500	500	125	375	
28	100	100	125	375	
29					
30	200	200	125	375	
31					
TOTALS					

REPAIRS AND/OR EXPENSES

Date	Company Performing Work/Repairs	Descritpion of Work/Repairs	Estimated Cost	Work Authorized by
	~~Vanguard~~	5304 bbls		
	~~VF Petroleum~~	4124	805	AT KP

MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION: Salty Dog

MONTH/YEAR: ~~B~~ December ~~2~~ 2020

Date	AMOUNT OF FRESH WATER PUMPED DOWN HOLE BBLS	AMOUNT OF BRINE WATER OUT OF HOLE BBLS SOLD	DAILY TUBING PRESSURES PSI	DAILY CASING PRESSURES PSI	FRESH WATER SOLD
1					
2	825	825	125	375	
3	1500	1560	125	375	
4	1270	1270	125	375	
5	360	360	125	375	
6	120	120	125	375	
7	1075	1075	125	375	180
8	165	165	125	375	
9	630	630	125	375	125
10	1100	1100	125	375	120
11	148	148	125	375	240
12	1420	1420	125	375	
13	0				120
14	1215	1215	125	375	130
15	800	1215	125	375	240
16					410
17	900	900	125	375	
18	440	440	125	375	
19	560	560	125	375	
20	200	200	125	375	
21	1170	1170	125	375	210
22	760	760	125	375	
23	1210	1210	125	375	
24	300	300	125	375	
25	300	300	125	375	
26	2,200	2,200	125	375	
27	600	1000	125	375	
28	650	650	125	375	245
29					
30					
31	115	115	125	375	
TOTALS					

REPAIRS AND/OR EXPENSES

Date	Company Performing Work/Repairs	Descritpion of Work/Repairs	Estimated Cost	Work Authorized by

Appendix C

Laboratory Analytical Reports

DBS&A
Daniel B. Stephens & Associates, Inc.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

July 09, 2020

John Ayarbe

Daniel B. Stephens & Assoc.
6020 Academy NE Suite 100
Albuquerque, NM 87109
TEL:
FAX:

RE: Salty Dog OrderNo.: 2006E69

Dear John Ayarbe:

Hall Environmental Analysis Laboratory received 14 sample(s) on 6/26/2020 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2006E69**
Date Reported: **7/9/2020**

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-1R
Project: Salty Dog
Collection Date: 6/23/2020 5:38:00 PM
Lab ID: 2006E69-001
Matrix: GROUNDWA
Received Date: 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	220	50		mg/L	100	7/1/2020 9:56:11 PM	A70083

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-2
Project: Salty Dog **Collection Date:** 6/24/2020 8:55:00 AM
Lab ID: 2006E69-002 **Matrix:** GROUNDWA **Received Date:** 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	66	5.0		mg/L	10	7/1/2020 10:09:02 PM	A70083

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-3
Project: Salty Dog
Collection Date: 6/24/2020 10:16:00 AM
Lab ID: 2006E69-003
Matrix: GROUNDWA
Received Date: 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	50	5.0		mg/L	10	7/1/2020 10:34:47 PM	A70083

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-4
Project: Salty Dog
Collection Date: 6/23/2020 6:50:00 PM
Lab ID: 2006E69-004
Matrix: GROUNDWA
Received Date: 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	35	5.0		mg/L	10	7/1/2020 11:00:31 PM	A70083

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-5
Project: Salty Dog **Collection Date:** 6/23/2020 5:10:00 PM
Lab ID: 2006E69-005 **Matrix:** GROUNDWA **Received Date:** 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	190	5.0		mg/L	10	7/1/2020 11:52:00 PM	A70083

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-6
Project: Salty Dog
Collection Date: 6/24/2020 3:00:00 PM
Lab ID: 2006E69-006
Matrix: GROUNDWA
Received Date: 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	230	50		mg/L	100	7/2/2020 12:30:37 AM	A70083

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-8
Project: Salty Dog **Collection Date:** 6/24/2020 12:45:00 PM
Lab ID: 2006E69-007 **Matrix:** GROUNDWA **Received Date:** 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	34	5.0		mg/L	10	7/2/2020 12:43:29 AM	A70083

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-9
Project: Salty Dog
Collection Date: 6/24/2020 10:55:00 AM
Lab ID: 2006E69-008
Matrix: GROUNDWA
Received Date: 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	360	50	*	mg/L	100	7/2/2020 1:22:08 AM	A70083

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-10
Project: Salty Dog
Collection Date: 6/24/2020 11:26:00 AM
Lab ID: 2006E69-009
Matrix: GROUNDWA
Received Date: 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	560	50	*	mg/L	100	7/2/2020 1:47:51 AM	A70083

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: PWM-1
Project: Salty Dog
Collection Date: 6/23/2020 6:21:00 PM
Lab ID: 2006E69-010
Matrix: GROUNDWA
Received Date: 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	11000	500	*	mg/L	1E+	7/2/2020 2:26:26 AM	A70083

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: MW-5
Project: Salty Dog
Collection Date: 6/24/2020 2:35:00 PM
Lab ID: 2006E69-011
Matrix: GROUNDWA
Received Date: 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	660	50	*	mg/L	100	7/2/2020 3:30:44 AM	A70083

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-3
Project: Salty Dog **Collection Date:** 6/24/2020 4:38:00 PM
Lab ID: 2006E69-012 **Matrix:** GROUNDWA **Received Date:** 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst: **CAS**	
Specific Gravity	0.9969	0			1	7/1/2020 2:10:00 PM	R70056
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Fluoride	ND	1.0		mg/L	10	7/2/2020 12:31:13 PM	R70134
Chloride	6400	250	*	mg/L	500	7/8/2020 12:53:31 AM	A70164
Bromide	1.6	1.0		mg/L	10	7/2/2020 12:31:13 PM	R70134
Phosphorus, Orthophosphate (As P)	ND	5.0	H	mg/L	10	7/2/2020 12:31:13 PM	R70134
Sulfate	350	5.0	*	mg/L	10	7/2/2020 12:31:13 PM	R70134
Nitrate+Nitrite as N	ND	4.0		mg/L	20	7/8/2020 1:43:08 AM	A70164
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	19000	50		µmhos/c	5	6/30/2020 11:57:39 AM	R70035
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	292.3	20.00		mg/L Ca	1	6/30/2020 11:13:19 AM	R70035
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/30/2020 11:13:19 AM	R70035
Total Alkalinity (as CaCO3)	292.3	20.00		mg/L Ca	1	6/30/2020 11:13:19 AM	R70035
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	11200	20.0	*H	mg/L	1	7/6/2020 6:07:00 PM	53476
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.44		H	pH units	1	6/29/2020 4:27:55 PM	R69980
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **ELS**	
Calcium	970	10		mg/L	10	6/30/2020 1:41:26 PM	53392
Magnesium	160	10		mg/L	10	6/30/2020 1:41:26 PM	53392
Potassium	16	1.0		mg/L	1	6/30/2020 12:41:42 PM	53392
Sodium	2700	50		mg/L	50	7/1/2020 12:09:54 PM	53392

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** Brine
Project: Salty Dog **Collection Date:** 6/24/2020 5:20:00 PM
Lab ID: 2006E69-013 **Matrix:** GROUNDWA **Received Date:** 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst: **CAS**	
Specific Gravity	1.191	0			1	7/1/2020 2:10:00 PM	R70056
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	210000	10000	*	mg/L	2E+	7/8/2020 1:30:44 AM	A70164
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	279000	2000	*HD	mg/L	1	7/6/2020 6:07:00 PM	53476
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.17		H	pH units	1	6/29/2020 4:42:22 PM	R69980
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **ELS**	
Sodium	78000	2000		mg/L	2E+	7/1/2020 12:12:44 PM	53392

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** Injection
Project: Salty Dog **Collection Date:** 6/24/2020 5:00:00 PM
Lab ID: 2006E69-014 **Matrix:** GROUNDWA **Received Date:** 6/26/2020 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst: **CAS**	
Specific Gravity	0.9900	0			1	7/1/2020 2:10:00 PM	R70056
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	500	50	*	mg/L	100	7/2/2020 1:58:05 PM	R70134
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1210	20.0	*H	mg/L	1	7/6/2020 6:07:00 PM	53476
SM4500-H+B / 9040C: PH						Analyst: **JRR**	
pH	7.96		H	pH units	1	6/29/2020 4:46:16 PM	R69980
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **ELS**	
Sodium	310	5.0		mg/L	5	7/1/2020 12:15:24 PM	53392

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

July 07, 2020

Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1234733
Samples Received:	06/30/2020
Project Number:	
Description:	

Report To: Jackie Bolte
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

Jason Romer
Project Manager

2006E69-012C MW-3 L1234733-01 GW

Collected by	Collected date/time	Received date/time
	06/24/20 16:38	06/30/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2580	WG1504198	1	07/06/20 06:00	07/06/20 06:00	AKA	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

Wet Chemistry by Method 2580

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	mV			date / time	
ORP	289		1	07/06/2020 06:00	WG1504198

L1234733-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1234733-01 07/06/20 06:00 • (DUP) R3546210-3 07/06/20 06:00

Analyte	Original Result mV	DUP Result mV	Dilution	DUP Diff mV	DUP Qualifier	DUP Diff Limits mV
ORP	289	289	1	0.400		20

L1235746-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1235746-05 07/06/20 06:00 • (DUP) R3546210-4 07/06/20 06:00

Analyte	Original Result mV	DUP Result mV	Dilution	DUP Diff mV	DUP Qualifier	DUP Diff Limits mV
ORP	229	228	1	1.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3546210-1 07/06/20 06:00 • (LCSD) R3546210-2 07/06/20 06:00

Analyte	Spike Amount mV	LCS Result mV	LCSD Result mV	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	Diff mV	Diff Limits mV
ORP	228	224	226	98.4	99.3	86.0-105			1.90	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

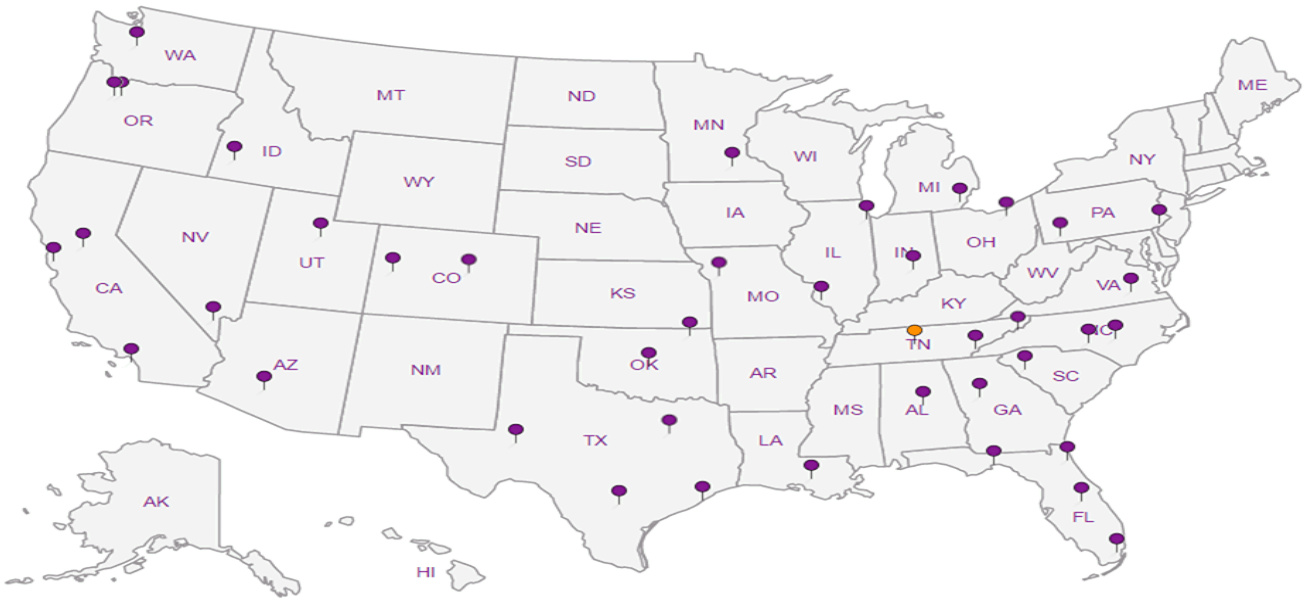
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

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

L234733

SUB CONTRATOR: **Pace TN**	COMPANY: **PACE TN**	PHONE: **(800) 767-5859**	FAX: **(615) 758-5859**
ADDRESS: **12065 Lebanon Rd**		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: **Mt. Juliet, TN 37122**			D021

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2006E69-012C	MW-3	125HDP	Groundwater	6/24/2020 4:38:00 PM	1	ORP -01

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

OK

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
EM	6/29/2020	10:30 AM			
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	6/30/20	0745

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 4.2+0.2 NM Attempt to Cool ? _____
Comments: _____

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: HOLLENFARM	CL234733	
Cooler Received/Opened On: 6 /30 / 20 Temperature:	4.2	
Received By: joey brent		
Signature:		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2006E69**

09-Jul-20

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A70083**	RunNo: **70083**
Prep Date:	Analysis Date: **7/1/2020**	SeqNo: **2434998** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A70083**	RunNo: **70083**
Prep Date:	Analysis Date: **7/1/2020**	SeqNo: **2434999** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.8	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R70134**	RunNo: **70134**
Prep Date:	Analysis Date: **7/2/2020**	SeqNo: **2437168** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R70134**	RunNo: **70134**
Prep Date:	Analysis Date: **7/2/2020**	SeqNo: **2437169** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	103	90	110			
Chloride	4.9	0.50	5.000	0	98.4	90	110			
Bromide	2.5	0.10	2.500	0	102	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	96.9	90	110			
Sulfate	9.8	0.50	10.00	0	98.3	90	110			

Sample ID: **2006E69-012AMS**	SampType: **ms**	TestCode: **EPA Method 300.0: Anions**
Client ID: **MW-3**	Batch ID: **R70134**	RunNo: **70134**
Prep Date:	Analysis Date: **7/2/2020**	SeqNo: **2437180** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	4.4	1.0	5.000	0	87.3	70.2	118			
Bromide	27	1.0	25.00	1.588	101	87.5	104			
Sulfate	480	5.0	100.0	354.7	121	91.2	105			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2006E69**
09-Jul-20

Client: Daniel B. Stephens & Assoc.
Project: Salty Dog

Sample ID: **2006E69-012AMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **MW-3**	Batch ID: **R70134**	RunNo: **70134**
Prep Date:	Analysis Date: **7/2/2020**	SeqNo: **2437181** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	4.4	1.0	5.000	0	87.5	70.2	118	0.229	20	
Bromide	26	1.0	25.00	1.588	99.5	87.5	104	1.31	20	
Sulfate	460	5.0	100.0	354.7	106	91.2	105	3.26	20	S

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A70164**	RunNo: **70164**
Prep Date:	Analysis Date: **7/8/2020**	SeqNo: **2438254** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A70164**	RunNo: **70164**
Prep Date:	Analysis Date: **7/8/2020**	SeqNo: **2438255** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.3	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	98.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2006E69**
09-Jul-20

Client: Daniel B. Stephens & Assoc.
Project: Salty Dog

Sample ID: **lcs-1 99.5uS eC**	SampType: **lcs**	TestCode: **SM2510B: Specific Conductance**
Client ID: **LCSW**	Batch ID: **R70035**	RunNo: **70035**
Prep Date:	Analysis Date: **6/30/2020**	SeqNo: **2433192** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	99	10	99.50	0	99.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2006E69**

09-Jul-20

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **MB-53392** SampType: **MBLK** TestCode: **EPA 6010B: Total Recoverable Metals**

Client ID: **PBW** Batch ID: **53392** RunNo: **70033**

Prep Date: **6/29/2020** Analysis Date: **6/30/2020** SeqNo: **2432951** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								

Sample ID: **LCS-53392** SampType: **LCS** TestCode: **EPA 6010B: Total Recoverable Metals**

Client ID: **LCSW** Batch ID: **53392** RunNo: **70033**

Prep Date: **6/29/2020** Analysis Date: **6/30/2020** SeqNo: **2432952** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	52	1.0	50.00	0	104	80	120			
Magnesium	53	1.0	50.00	0	106	80	120			
Potassium	51	1.0	50.00	0	102	80	120			

Sample ID: **MB-53392** SampType: **MBLK** TestCode: **EPA 6010B: Total Recoverable Metals**

Client ID: **PBW** Batch ID: **53392** RunNo: **70048**

Prep Date: **6/29/2020** Analysis Date: **7/1/2020** SeqNo: **2433650** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	1.0								

Sample ID: **LCS-53392** SampType: **LCS** TestCode: **EPA 6010B: Total Recoverable Metals**

Client ID: **LCSW** Batch ID: **53392** RunNo: **70048**

Prep Date: **6/29/2020** Analysis Date: **7/1/2020** SeqNo: **2433651** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	50	1.0	50.00	0	100	80	120			

Sample ID: **2006E69-014BMS** SampType: **MS** TestCode: **EPA 6010B: Total Recoverable Metals**

Client ID: **Injection** Batch ID: **53392** RunNo: **70048**

Prep Date: **6/29/2020** Analysis Date: **7/1/2020** SeqNo: **2433659** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	340	5.0	50.00	309.5	58.5	75	125			S

Sample ID: **2006E69-014BMSD** SampType: **MSD** TestCode: **EPA 6010B: Total Recoverable Metals**

Client ID: **Injection** Batch ID: **53392** RunNo: **70048**

Prep Date: **6/29/2020** Analysis Date: **7/1/2020** SeqNo: **2433660** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	350	5.0	50.00	309.5	76.0	75	125	2.54	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2006E69**
09-Jul-20

Client: Daniel B. Stephens & Assoc.
Project: Salty Dog

Sample ID: **mb-1 alk**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R70035**	RunNo: **70035**							
Prep Date:	Analysis Date: **6/30/2020**	SeqNo: **2433180**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: **lcs-1 alk**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R70035**	RunNo: **70035**							
Prep Date:	Analysis Date: **6/30/2020**	SeqNo: **2433181**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	76.16	20.00	80.00	0	95.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2006E69**
09-Jul-20

Client: Daniel B. Stephens & Assoc.
Project: Salty Dog

Sample ID: **MB-53476**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **53476**	RunNo: **70120**
Prep Date: **7/2/2020**	Analysis Date: **7/6/2020**	SeqNo: **2436557** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-53476**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **53476**	RunNo: **70120**
Prep Date: **7/2/2020**	Analysis Date: **7/6/2020**	SeqNo: **2436558** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Daniel B. Stephens & Assoc.** Work Order Number: **2006E69** RcptNo: 1

Received By: **Juan Rojas** **6/26/2020 11:15:00 AM** Juan Rojas

Completed By: **Emily Mocho** **6/29/2020 9:13:31 AM**

Reviewed By: DAD 6/29/20
6/29/20 DAD

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? UPS

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
5. Sample(s) in proper container(s)? Not frozen Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 4
(<2 or >12 unless noted)
Adjusted? NO
Checked by: JO 6/29/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	-0.7	Good	Not Present			

Chain-of-Custody Record

Client: Daniel B Stephens

Mailing Address: ABQ Office

Phone #: 505-822-9400

email or Fax#: JAyarbe@geo-logic.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: Salty Dog

Project #: DB19.1198.00 Ph3 T1

Project Manager: John Ayarbe

Sampler: York Morgan

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): -0.7-0=-0.7 (°C)

Not Frozen

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2006E69	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Cl only 300.0
6-23-20	1738	GW	DBS-1R ✓	1 Poly	N/A	-001											X
6-24-20	0855		DBS-2 ✓			-002											X
"	1016		DBS-3 ✓			-003											X
6-23-20	1850		DBS-4 ✓			-004											X
"	1710		DBS-5 ✓			-005											X
6-24-20	1500		DBS-6 ✓			-006											X
"	1245		DBS-8 ✓			-007											X
"	1055		DBS-9 ✓			-008											X
"	1126		DBS-10 ✓			-009											X
6-23-20	1821		RMW-1 ✓			-010											X
6-24-20	1435	↓	MW-5 ✓	↓	↓	-011											X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6-25-20	1250	York Morgan	UPS			
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
				UPS	6/26/20	11:5

Remarks: Page 1 of 2

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

Chain-of-Custody Record

Client: DBS&A

Mailing Address:

Phone #: 505-522-9400

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Salty Dog

Project #: DB19.1198.00 Ph1 T2

Project Manager: J. Ayers

Sampler: Y. Moya

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): -0.7-0=-0.7(°C)

Not Frozen

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
6-24-20	1638	GW	MW-3 ✓	4 Poly	varies	-012
↓	1720	↓	Brine ✓	2 Poly	↓	-013
↓	1700	↓	Injection ✓	2 Poly	↓	-014

Analysis Request

BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals 300.0	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA) ORP	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Specific Gravity, TDS, pH	Cl only - 300.0	Sodium 6010B	Specific Conductivity	Total Alkalinity Bicarbonate Carbonate	Ca, Mg, K, Na 6010B
						X	X			X			X	X	X
										X	X	X			
										X	X	X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6.25.20	1250			UPS	6/26/20	11:15
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: Page 2 of 2

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

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

December 09, 2020

John Ayarbe

Daniel B. Stephens & Assoc.
6020 Academy NE Suite 100
Albuquerque, NM 87109
TEL:
FAX:

RE: Salty Dog OrderNo.: 2011C63

Dear John Ayarbe:

Hall Environmental Analysis Laboratory received 14 sample(s) on 11/25/2020 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2011C63**
Date Reported: **12/9/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-1R
Project: Salty Dog
Collection Date: 11/21/2020 10:31:00 AM
Lab ID: 2011C63-001
Matrix: GROUNDWA
Received Date: 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	530	50	*	mg/L	100	12/3/2020 11:58:03 AM	R73788

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-2
Project: Salty Dog **Collection Date:** 11/21/2020 9:54:00 AM
Lab ID: 2011C63-002 **Matrix:** GROUNDWA **Received Date:** 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	81	5.0		mg/L	10	12/3/2020 12:10:55 PM	R73788

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-3
Project: Salty Dog **Collection Date:** 11/21/2020 9:33:00 AM
Lab ID: 2011C63-003 **Matrix:** GROUNDWA **Received Date:** 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	49	5.0		mg/L	10	12/3/2020 12:36:40 PM	R73788

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-4
Project: Salty Dog **Collection Date:** 11/21/2020 11:04:00 AM
Lab ID: 2011C63-004 **Matrix:** GROUNDWA **Received Date:** 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	37	5.0		mg/L	10	12/3/2020 1:28:14 PM	R73788

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-5
Project: Salty Dog **Collection Date:** 11/21/2020 9:06:00 AM
Lab ID: 2011C63-005 **Matrix:** GROUNDWA **Received Date:** 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	190	5.0		mg/L	10	12/3/2020 1:53:59 PM	R73788

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-6
Project: Salty Dog
Collection Date: 11/21/2020 12:29:00 PM
Lab ID: 2011C63-006
Matrix: GROUNDWA
Received Date: 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	230	50		mg/L	100	12/3/2020 2:32:37 PM	R73788

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-8
Project: Salty Dog **Collection Date:** 11/21/2020 12:02:00 PM
Lab ID: 2011C63-007 **Matrix:** GROUNDWA **Received Date:** 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	34	5.0		mg/L	10	12/3/2020 2:45:29 PM	R73788

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-9
Project: Salty Dog
Collection Date: 11/21/2020 11:35:00 AM
Lab ID: 2011C63-008
Matrix: GROUNDWA
Received Date: 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	280	50	*	mg/L	100	12/3/2020 3:24:06 PM	R73788

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-10
Project: Salty Dog **Collection Date:** 11/21/2020 1:03:00 PM
Lab ID: 2011C63-009 **Matrix:** GROUNDWA **Received Date:** 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	620	50	*	mg/L	100	12/3/2020 4:15:37 PM	R73788

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** PMW-1
Project: Salty Dog **Collection Date:** 11/21/2020 3:10:00 PM
Lab ID: 2011C63-010 **Matrix:** GROUNDWA **Received Date:** 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	8200	500	*	mg/L	1E+	12/3/2020 4:28:29 PM	R73788

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-5
Project: Salty Dog **Collection Date:** 11/21/2020 2:38:00 PM
Lab ID: 2011C63-011 **Matrix:** GROUNDWA **Received Date:** 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	710	50	*	mg/L	100	12/3/2020 5:07:06 PM	R73788

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-3
Project: Salty Dog **Collection Date:** 11/21/2020 5:20:00 PM
Lab ID: 2011C63-012 **Matrix:** GROUNDWA **Received Date:** 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	1.004	0			1	12/3/2020 11:34:00 AM	R73754
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Fluoride	ND	1.0		mg/L	10	12/3/2020 5:19:58 PM	R73788
Chloride	7100	250	*	mg/L	500	12/4/2020 11:14:11 PM	A73821
Nitrogen, Nitrite (As N)	ND	1.0	H	mg/L	10	12/3/2020 5:19:58 PM	R73788
Bromide	2.5	1.0		mg/L	10	12/3/2020 5:19:58 PM	R73788
Nitrogen, Nitrate (As N)	2.8	1.0	H	mg/L	10	12/3/2020 5:19:58 PM	R73788
Phosphorus, Orthophosphate (As P)	ND	5.0	H	mg/L	10	12/3/2020 5:19:58 PM	R73788
Sulfate	340	5.0	*	mg/L	10	12/3/2020 5:19:58 PM	R73788
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **MH**	
Conductivity	22000	50		µmhos/c	5	12/7/2020 10:37:53 AM	R73841
SM2320B: ALKALINITY						Analyst: **MH**	
Bicarbonate (As CaCO3)	239.7	20.00		mg/L Ca	1	11/30/2020 1:58:20 PM	R73676
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	11/30/2020 1:58:20 PM	R73676
Total Alkalinity (as CaCO3)	239.7	20.00		mg/L Ca	1	11/30/2020 1:58:20 PM	R73676
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	12100	20.0	*	mg/L	1	11/30/2020 10:52:00 AM	56674
SM4500-H+B / 9040C: PH						Analyst: **MH**	
pH	7.34		H	pH units	1	11/30/2020 1:58:20 PM	R73676
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **JLF**	
Calcium	1000	100		mg/L	100	12/2/2020 2:50:15 PM	56708
Magnesium	160	5.0		mg/L	5	12/2/2020 2:19:00 PM	56708
Potassium	16	5.0		mg/L	5	12/2/2020 2:19:00 PM	56708
Sodium	3100	100		mg/L	100	12/2/2020 2:50:15 PM	56708

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** Brine
Project: Salty Dog **Collection Date:** 11/21/2020 3:30:00 PM
Lab ID: 2011C63-013 **Matrix:** GROUNDWA **Received Date:** 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	1.205	0			1	12/3/2020 11:34:00 AM	R73754
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	200000	10000	*	mg/L	2E+	12/4/2020 11:27:04 PM	A73821
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	376000	2000	*D	mg/L	1	11/30/2020 10:52:00 AM	56674
SM4500-H+B / 9040C: PH						Analyst: **MH**	
pH	7.16		H	pH units	1	11/30/2020 2:12:12 PM	R73676
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **JLF**	
Sodium	82000	1000		mg/L	1E+	12/2/2020 2:52:00 PM	56708

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** Injection
Project: Salty Dog **Collection Date:** 11/21/2020 3:39:00 PM
Lab ID: 2011C63-014 **Matrix:** GROUNDWA **Received Date:** 11/25/2020 9:08:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	1.022	0			1	12/3/2020 11:34:00 AM	R73754
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	930	50	*	mg/L	100	12/3/2020 6:50:09 PM	R73788
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1840	20.0	*	mg/L	1	11/30/2020 10:52:00 AM	56674
SM4500-H+B / 9040C: PH						Analyst: **MH**	
pH	8.00		H	pH units	1	11/30/2020 2:19:38 PM	R73676
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **JLF**	
Sodium	530	10		mg/L	10	12/2/2020 2:38:20 PM	56708

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

December 07, 2020

Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1290945
Samples Received:	12/01/2020
Project Number:	
Description:	

Report To: Jackie Bolte
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

TABLE OF CONTENTS

2011C63-012C MW-3 L1290945-01 GW

Collected by	Collected date/time	Received date/time
	11/21/20 17:20	12/01/20 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2580	WG1585185	1	12/05/20 12:17	12/05/20 12:17	LRP	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 2580

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	mV			date / time	
ORP	217		1	12/05/2020 12:17	WG1585185

L1290945-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1290945-01 12/05/20 12:17 • (DUP) R3600635-3 12/05/20 12:17

Analyte	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits
	mV	mV		mV		mV
ORP	217	205	1	12.2		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3600635-1 12/05/20 12:17 • (LCSD) R3600635-2 12/05/20 12:17

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	Diff	Diff Limits
	mV	mV	mV	%	%	%			mV	mV
ORP	228	225	225	98.8	98.5	86.0-105			0.700	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

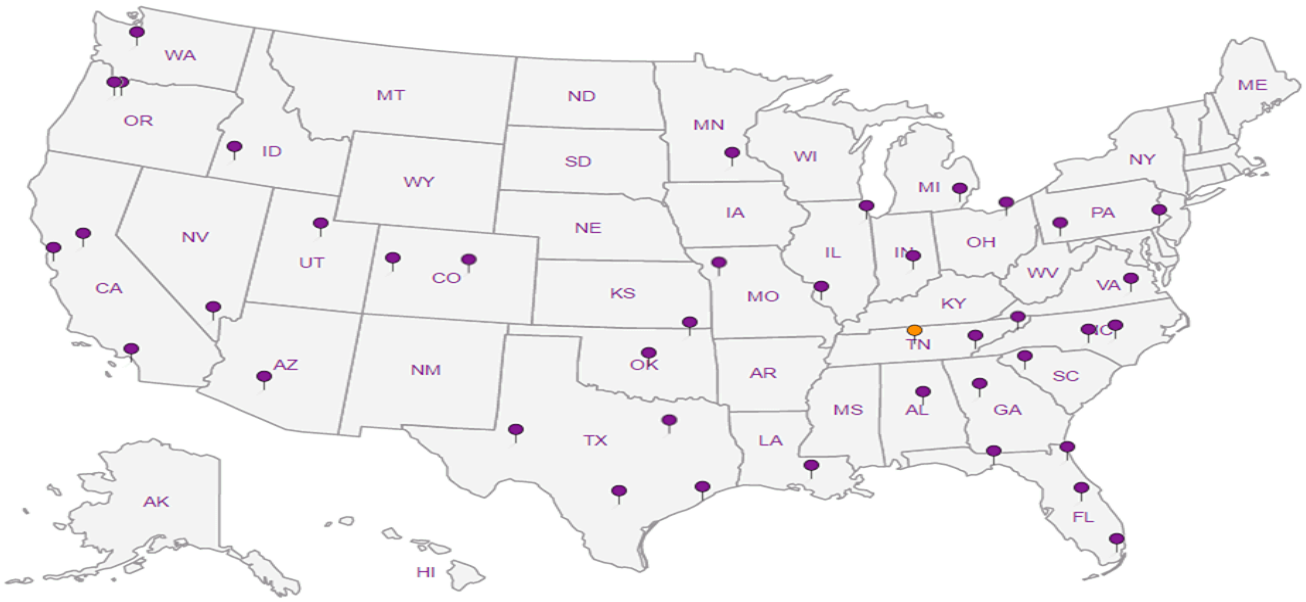
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

G015

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

SUB CONTRATOR: **Pace TN**	COMPANY: **PACE TN**		PHONE: **(800) 767-5859**	FAX: **(615) 758-5859**	
ADDRESS: **12065 Lebanon Rd**			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: **Mt. Juliet, TN 37122**					

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2011C63-012C	MW-3	125HDP	Groundwater	11/21/2020 5:20:00 PM	1	ORP 1290945-c1

Sample Receipt Checklist

COC Seal Present/Intact:	Y__N	If Applicable	
COC Signed/Accurate:	Y__N	VOA Zero Headspace:	__Y__N
Bottles arrive intact:	Y__N	Pres.Correct/Check:	__Y__N
Correct bottles used:	Y__N		
Sufficient volume sent:	Y__N		
RAD Screen <0.5 mR/hr:	Y__N		

SPECIAL INSTRUCTIONS / COMMENTS: 1749 9998 6428

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: EM	Date: 11/25/2020	Time: 10:47 AM	Received By:	Date: 11/25/20	Time: 9:30
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☐ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 1.9+0-1.9 °C Attempt to Cool ?

Comments: COCSI

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2011C63**

09-Dec-20

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R73788**	RunNo: **73788**
Prep Date:	Analysis Date: **12/3/2020**	SeqNo: **2601130** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R73788**	RunNo: **73788**
Prep Date:	Analysis Date: **12/3/2020**	SeqNo: **2601131** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	101	90	110			
Chloride	4.7	0.50	5.000	0	94.9	90	110			
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	96.7	90	110			
Bromide	2.5	0.10	2.500	0	99.3	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.6	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	94.2	90	110			
Sulfate	9.7	0.50	10.00	0	97.3	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A73821**	RunNo: **73821**
Prep Date:	Analysis Date: **12/4/2020**	SeqNo: **2602523** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A73821**	RunNo: **73821**
Prep Date:	Analysis Date: **12/4/2020**	SeqNo: **2602524** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2011C63**

09-Dec-20

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **lcs-1 99.2uS eC**	SampType: **lcs**	TestCode: **SM2510B: Specific Conductance**
Client ID: **LCSW**	Batch ID: **R73841**	RunNo: **73841**
Prep Date:	Analysis Date: **12/7/2020**	SeqNo: **2604113** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	10	99.20	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2011C63**

09-Dec-20

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **MB-56708**	SampType: **MBLK**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **PBW**	Batch ID: **56708**	RunNo: **73731**
Prep Date: **11/30/2020**	Analysis Date: **12/2/2020**	SeqNo: **2598881** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID: **LCS-56708**	SampType: **LCS**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **LCSW**	Batch ID: **56708**	RunNo: **73731**
Prep Date: **11/30/2020**	Analysis Date: **12/2/2020**	SeqNo: **2598883** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	98.7	80	120			
Magnesium	49	1.0	50.00	0	97.3	80	120			
Potassium	48	1.0	50.00	0	96.7	80	120			
Sodium	48	1.0	50.00	0	96.0	80	120			

Sample ID: **2011C63-012BMS**	SampType: **MS**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **MW-3**	Batch ID: **56708**	RunNo: **73731**
Prep Date: **11/30/2020**	Analysis Date: **12/2/2020**	SeqNo: **2598895** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	210	5.0	50.00	161.2	92.8	75	125			
Potassium	65	5.0	50.00	16.28	97.6	75	125			

Sample ID: **2011C63-012BMSD**	SampType: **MSD**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **MW-3**	Batch ID: **56708**	RunNo: **73731**
Prep Date: **11/30/2020**	Analysis Date: **12/2/2020**	SeqNo: **2598896** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	200	5.0	50.00	161.2	79.6	75	125	3.25	20	
Potassium	63	5.0	50.00	16.28	94.1	75	125	2.78	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2011C63**

09-Dec-20

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **mb-1 alk**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**
Client ID: **PBW**	Batch ID: **R73676**	RunNo: **73676**
Prep Date:	Analysis Date: **11/30/2020**	SeqNo: **2596698** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: **lcs-1 alk**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**
Client ID: **LCSW**	Batch ID: **R73676**	RunNo: **73676**
Prep Date:	Analysis Date: **11/30/2020**	SeqNo: **2596699** Units: **mg/L CaCO3**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.28	20.00	80.00	0	96.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2011C63**

09-Dec-20

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **2011C63-014ADUP**	SampType: **DUP**	TestCode: **Specific Gravity**							
Client ID: **Injection**	Batch ID: **R73754**	RunNo: **73754**							
Prep Date:	Analysis Date: **12/3/2020**	SeqNo: **2599795**	Units:						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Specific Gravity	0.9954	0						2.64	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2011C63**

09-Dec-20

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **MB-56674**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **56674**	RunNo: **73663**
Prep Date: **11/26/2020**	Analysis Date: **11/30/2020**	SeqNo: **2596407** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-56674**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **56674**	RunNo: **73663**
Prep Date: **11/26/2020**	Analysis Date: **11/30/2020**	SeqNo: **2596408** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Daniel B. Stephens & Assoc.** Work Order Number: **2011C63** RcptNo: **1**

Received By: **Juan Rojas** **11/25/2020 9:08:00 AM**

Completed By: **Emily Mocho** **11/25/2020 10:32:04 AM**

Reviewed By: SPA 11.25.20

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	UPS		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 3 (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? NO
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: SGL 11/25/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good				

Chain-of-Custody Record

Client: Daniel B Stephens & Associates

Mailing Address: ABQ office

Phone #: 505-822-9400

email or Fax#: JAyarbe@geo-logic.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Salty Dog

Project #: DBR.1198.00

Project Manager: John Ayarbe

Sampler: York Morgan

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 1.1+0.1=1.2 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2011663	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Cl only 300.0
11-21-20	1031	GW	DBS-1R	1 Poly	N/A	001											X
	0954		DBS-2			002											X
	0933		DBS-3			003											X
	1104		DBS-4			004											X
	0906		DBS-5			005											X
	1229		DBS-6			006											X
	1202		DBS-8			007											X
	1135		DBS-9			008											X
	1303		DBS-10			009											X
	1510		MW-1			010											X
	1438		MW-5			011											X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
11-21-20	1335		(N/A)	Fed Ups Store		
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
				UPS	11/25/20	9:05

Remarks: Page 1 of 2

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

Chain-of-Custody Record

Client: DBS+A

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Salty Dog

Project #: DBS. 1198.00

Project Manager: J. Ayube

Sampler: V. Morgan

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 1.1 +0.1 = 1.2 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4 300.0	8260 (VOA) ORP	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Specific Gravity, TDS pH	Cl only - 300.0	Sodium 6010B	Specific Conductance	Total Alk, Bicarbonate Carbonate	Ca, Mg, K, NA 6010B
11-2-20	1720	GW	MW-3	3 Poly	Rames	012							X	X			X			X	X	X
	1530		Brine	2 Poly		013											X	X	X			
	1539		Injection	2 Poly		014											X	X	X			

YSI Bag

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11-2-20	1735		UPS	Store		
				UPS	11/5/20	9:08

Remarks: Page 2 of 2

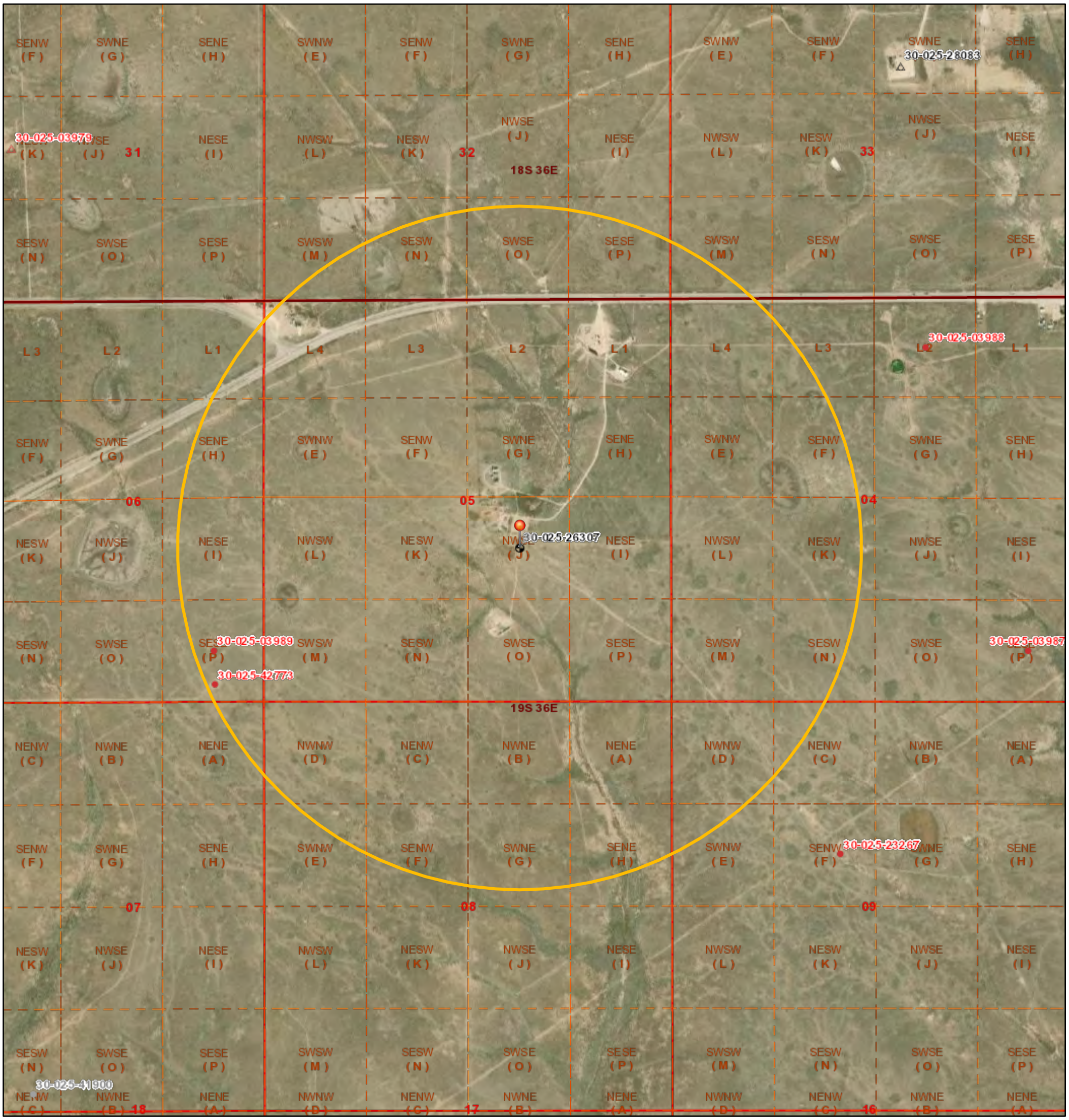
If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Appendix D

Area of Review Evaluation

DBS&A
Daniel B. Stephens & Associates, Inc.

30-025-26307 - BW-8 Area of Review



3/18/2021, 2:12:02 PM

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

Wells - Large Scale

- undefined
- Miscellaneous
- CO2, Active
- CO2, Cancelled
- CO2, New
- CO2, Plugged
- CO2, Temporarily Abandoned
- Gas, Active
- Gas, Cancelled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned
- Injection, Active
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abandoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water Injection, Temporarily Abandoned
- Water, Active
- Water, Cancelled
- Water, New
- Water, Plugged
- Water, Temporarily Abandoned
- OCD District Offices
- PLSS First Division
- PLSS Second Division
- PLSS Townships

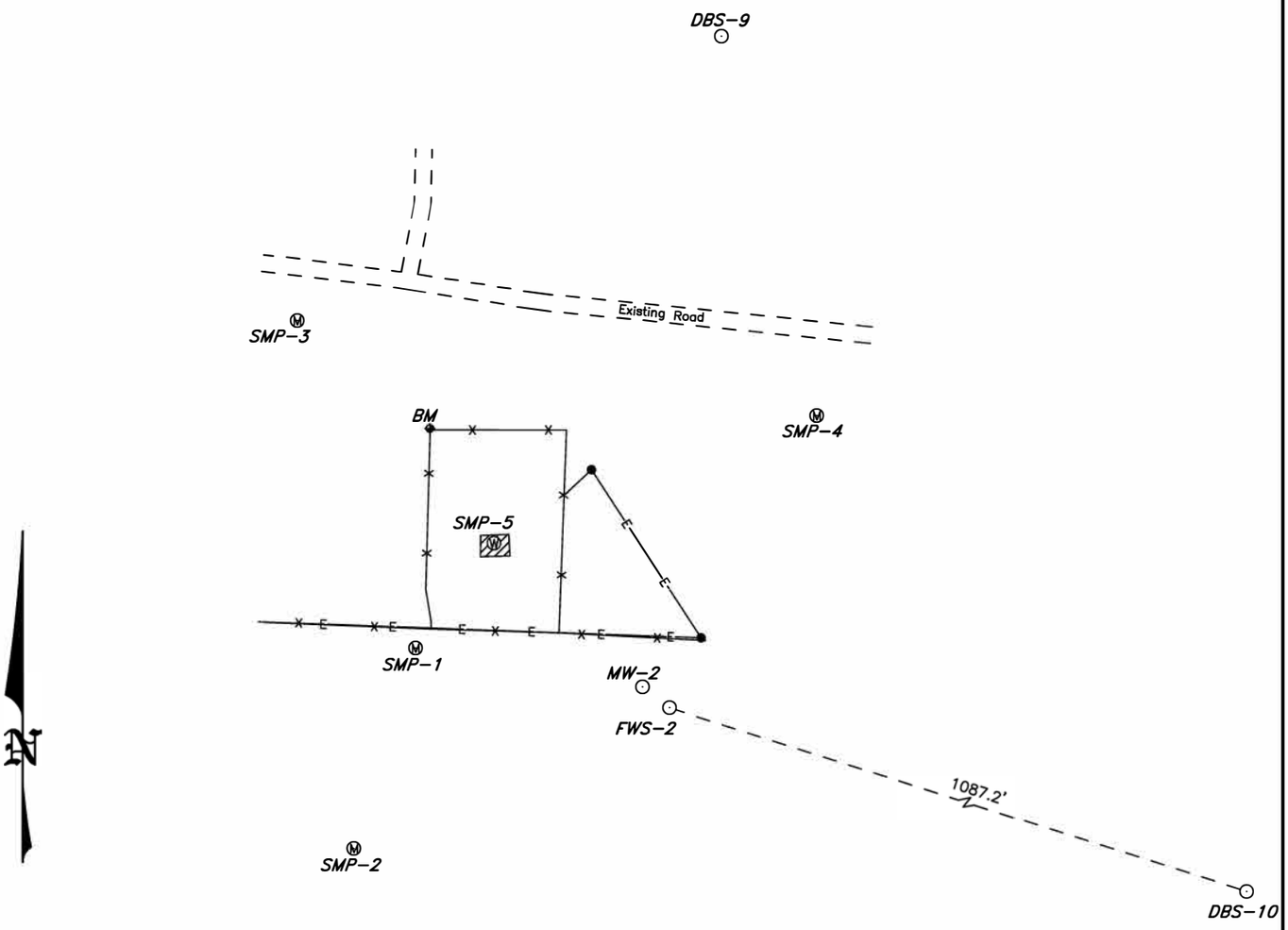
Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., USDA FSA, GeoEye, Maxar, OCD, Esri, HERE, Garmin, iPC, BLM

Appendix E

2020 Survey Data for Land Surface Subsidence Monitoring

DBS&A
Daniel B. Stephens & Associates, Inc.

SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



ALL COORDINATES ARE BASED ON NMSPCE (NAD83)

NAME	SECTION CALLS	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION TOP CASING	ELEVATION CONCRETE
SMP-1	2153' FSL & 2020' FEL	615475.977	836301.437	N32°41'17.960"	W103°22'28.520"	3810.10'	3810.38'
SMP-2	2032' FSL & 2058' FEL	615354.850	836264.338	N32°41'16.795"	W103°22'28.966"	3809.00'	3809.41'
SMP-3	2350' FSL & 2089' FEL	615673.004	836230.083	N32°41'19.945"	W103°22'29.334"	3808.81'	3809.18'
SMP-4	2291' FSL & 1776' FEL	615615.830	836543.487	N32°41'19.352"	W103°22'25.673"	3806.32'	3806.72'
SMP-5	2216' FSL & 1972' FEL	615539.029	836348.733	N32°41'18.609"	W103°22'27.960"	3811.72'	
DBS-9	2520' FSL & 1831' FEL	615844.539	836485.906	N32°41'21.593"	W103°22'26.317"	3805.66'	3802.94'
DBS-10	1389' FSL & 1060' FEL	614720.368	837270.028	N32°41'10.428"	W103°22'17.269"	3807.48'	3805.44'
BENCH MARK		615608.14	836310.07	N32°41'19.27"	W103°22'28.40"	3808.62'	

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES, N.M. P.S. No. 7977
TEXAS P.L.S. No. 5074

200 0 200 400 FEET

DANIEL B. STEPHENS & ASSOCIATES, INC

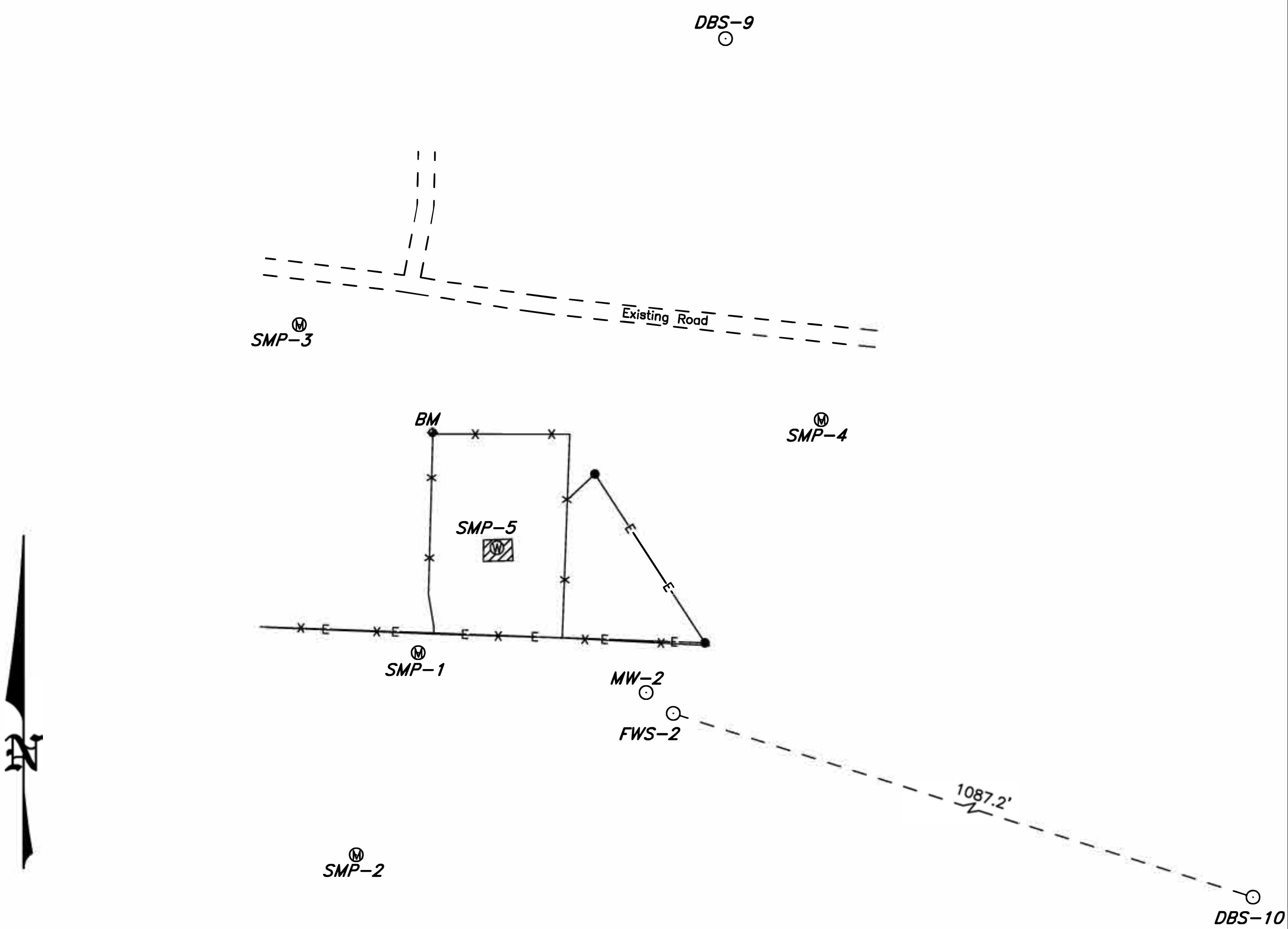
REF: SALTY DOG BRINE FACILITY

MONITOR WELLS AND SUBSIDENCE MONITORING POINTS LOCATED IN SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 – Office
(575) 392-2206 – Fax
basinsurveys.com

W.O. Number: 35139	Drawn By: K. GOAD	Date: 07-22-2020	Survey Date: 07-20-2020	Sheet 1 of 1 Sheets

SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.



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200 0 200 400 FEET

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TEXAS P.L.S. No. 5074

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DANIEL B. STEPHENS & ASSOCIATES, INC

REF: SALTY DOG BRINE FACILITY

MONITOR WELLS AND SUBSIDENCE MONITORING POINTS LOCATED IN SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 35229	Drawn By: K. GOAD	Date: 11-25-2020	Survey Date: 11-24-2020	Sheet 1 of 1 Sheets