BW - 8

MONITORING REPORTS

DATE: 2005 - Present



April 14, 2020

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

Re: Semiannual Groundwater Monitoring and O&M Report July 1 through December 31, 2020 Salty Dog Brine Station, Lea County, New Mexico

Dear Mr. Chavez:

On behalf of PAB Services, Inc., Daniel B. Stephens & Associates, Inc. (DBS&A) is submitting the enclosed groundwater monitoring and operation and maintenance (O&M) report for the Salty Dog brine station located in Lea County, New Mexico. Semiannual groundwater monitoring activities were completed at the site on December 17 and 18, 2019.

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

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

ohn Ayarbe, P.G.

Senior Hydrogeologist

JA/rpf Enclosure cc: Pieter Bergstein, PAB Services, Inc. Jim Sayre, Salty Dog, Inc.

Daniel B. Stephens & Associates, Inc.

6020 Academy NE, Suite 100 505-822-9400 FAX 505-822-8877

Second Semiannual 2019

Groundwater Monitoring and

O&M Report

Salty Dog Brine Station

Lea County, New Mexico

Prepared for

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

April 14, 2020



Daniel B. Stephens & Associates, Inc.

6020 Academy NE, Suite 100 • Albuquerque, New Mexico 87109



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Semiannual Groundwater Monitoring and O&M Report July 1 through December 31, 2019 Salty Dog Brine Station, Lea County, New Mexico

1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this groundwater monitoring and operation and maintenance (O&M) 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 the Salty Dog brine station (the site) located in Lea County, New Mexico (Figure 1). The report summarizes activities conducted at the site during the reporting period of July 1 through December 31, 2019. Groundwater monitoring and O&M during the reporting period was conducted in accordance with discharge permit BW-8 (DP-BW-8), which was last renewed on May 17, 2019 (NMEMNRD OCD, 2019).

The site consists of a northern portion, where the brine pond was located prior to closure in October 2008, and a southern portion, where the brine well is located. The brine pond area and the brine well area are separated by approximately 2,500 feet, joined by a dirt road (Figure 1). Injection water for the brine well comes from two fresh water supply wells (FWS-1 and FWS-2) and from remedial pumping at a recovery well in the brine well area (RW-2).

Brine that is produced for sale is stored at a tank battery on the southern boundary of the former brine pond area. The tank battery consists of six 750-barrel aboveground storage tanks (ASTs) surrounded by a berm (Figure 1). A concrete truck loading pad with two brine filling stations is located north of the tank battery. An operations shed is located adjacent to the loading pad to the west.

The former brine pond area contains 6 monitor wells (PMW-1, DBS-1R, and DBS-2 through DBS-5), 1 nested well (NW-1), 1 fresh water supply well (FWS-1), and a former recovery well (RW-1). The brine well area contains 10 monitor wells (MW-2 through MW-6, DBS-6 through



DBS-10), 1 nested well (NW-2), 1 fresh water supply well (FWS-2), and 1 recovery well (RW-2) (Figure 1).

In April 2012, DBS&A installed groundwater extraction systems at the site to provide hydraulic containment and removal of chloride-impacted groundwater in the former brine pond and brine well areas (DBS&A, 2009a and 2009b). The extraction systems consist of wells, submersible pumps, conveyance lines, electrical power, and controls to extract impacted groundwater. Extracted groundwater is conveyed to the on-site ASTs for reinjection at the brine well. Although groundwater extraction at well RW-1 was stopped in 2015, pumping at well FWS-1 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area; well FWS-1 is located approximately 50 feet southeast of RW-1. Extraction at RW-1 was stopped because the water level at the well had declined and was near the bottom of the well. Pumping at RW-2 provides hydraulic containment and removal of chloride-impacted groundwater in the brine well area.

2. Scope of Work

The scope of work for semiannual groundwater monitoring conducted in December 2019 consisted of (1) measuring groundwater levels in and collecting groundwater samples from 12 monitor wells, and (2) performing maintenance on the groundwater extraction systems, as necessary. Groundwater samples were collected and submitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for chloride analysis using U.S. Environmental Protection Agency (EPA) method 300.0. Section 2A.1 of DP-BW-8 requires that PAB collect one groundwater sample to be analyzed for general chemistry and other inorganic groundwater constituents in addition to chloride. In consultation with Carl Chavez (OCD), DBS&A selected monitor well MW-3 for this additional analysis. Appendices A and B provide the laboratory report and field notes, respectively.

The monitor wells included in the sampling program were selected in October 2010 in consultation with Jim Griswold, the OCD Project Manager for the site at that time. The sampled monitor wells are shown in Figures 2 through 5.



3. Monitoring Activities

3.1 Fluid Level Measurement

On December 17, 2019, DBS&A measured water levels in monitor wells DBS-1R, DBS-2 through DBS-5, and PMW-1 in the former brine pond area (Figure 2) and in wells DBS-6, DBS-8 through DBS-10, MW-3, and MW-5 in the brine well area (Figure 3) using a properly decontaminated electronic water level meter. Table 1 reports water level measurements and groundwater elevations. Appendix C provides historical groundwater level data.

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-1R	58.0–78.0	3,817.00 ^b	70.41	3,746.59
DBS-2	58.0–78.0	3,820.50	72.43	3,748.07
DBS-3	56.0–76.72	3,816.66	66.96	3,749.70
DBS-4	56.0–76.0	3,820.37	72.90	3,747.47
DBS-5	56.9–76.9	3,820.66	69.13	3,751.53
DBS-6	56.7–76.7	3,812.65	67.95	3,744.40
DBS-8	55.2–75.2	3,810.70	66.12	3,744.58
DBS-9	48.0–68.0	3,806.26	59.25	3,747.01
DBS-10	57.2–77.2	3,807.48	65.80	3,741.68
PMW-1	63–78	3,821.17	76.25	3,744.92
MW-3	NA	3,812.05	67.38	3,744.67
MW-5	112–132	3,808.96	65.57	3,743.39

Table 1. Fluid Level Measurements, December 17, 2019

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface btoc = Below top of casing

msl = Above mean sea level NA = Not available

During this monitoring event, the average depths to water beneath the former brine pond area and brine well area were 71.35 feet below ground surface (bgs) and 65.35 feet bgs, respectively. On average, water levels in the former brine pond area declined by approximately 1.82 feet since the last monitoring event in June 2019, while water levels in the brine well area rose by 0.10 foot.



Figures 2 and 3 present potentiometric surface maps for the former brine pond area and the brine well area, respectively. The direction of groundwater flow beneath the former brine pond area remains to the southeast; the hydraulic gradient was approximately 0.011 foot per foot (ft/ft) during this reporting period (Figure 2). The direction of groundwater flow beneath the brine well area also remains to the southeast; the hydraulic gradient in this area was approximately 0.005 ft/ft during this reporting period (Figure 3).

From July through December 2019, well FWS-1 was the primary pumping well used to provide fresh water for brine production. FWS-1 was pumping when groundwater levels were measured; as a result, a cone of depression is seen in the potentiometric surface (Figure 2). Well RW-2 was pumping before the groundwater monitoring event; however, the pump was down for maintenance at the time water levels were measured. Therefore, a cone of depression is not seen in the potentiometric surface (Figure 3). Little groundwater was extracted from well FWS-2 during this reporting period.

3.2 Groundwater Sampling

On December 17 and 18, 2019, groundwater samples were collected from monitor wells DBS-1R, DBS-2 through DBS-6, DBS-8 through DBS-10, MW-3, MW-5, and PMW-1. The samples were collected following standard sampling procedures developed from EPA guidance. Before sampling, each well was purged of a minimum of three casing volumes using a submersible pump to ensure that a representative groundwater sample was collected. While purging, DBS&A measured water quality field parameters consisting of temperature, specific conductance, and pH. Sample containers were filled, labeled, and placed in an ice-filled cooler. Groundwater samples were submitted under chain of custody to HEAL for analysis.

Samples of the brine well injection water and the produced brine were also collected to meet requirements under DP-BW-8. Analytical results of these samples will be presented in the 2019 annual Class III well report.



4. Analytical Results

Table 2 summarizes chloride analytical results for the collected groundwater samples. Figures 4 and 5 show the distribution of chloride in groundwater beneath the former brine pond area and the brine well area, respectively. The laboratory report and chain of custody documentation are provided in Appendix A. Field notes recorded during groundwater monitoring activities are provided in Appendix B. Historical groundwater quality data are provided in Appendix C.

Monitor Well	Date	Chloride Concentration (mg/L)
NM	WQCC Standard	250
DBS-1R	12/18/2019	210
DBS-2	12/17/2019	68
DBS-3	12/17/2019	48
DBS-4	12/17/2019	35
DBS-5	12/18/2019	160
DBS-6	12/17/2019	220
DBS-8	12/17/2019	30
DBS-9	12/17/2019	220
DBS-10	12/17/2019	540
PMW-1	12/18/2019	3,400
MW-3	12/18/2019	7,400
MW-5	12/18/2019	550

 Table 2. Chloride Groundwater Analytical Data, December 2019

Bold indicates that value exceeds the applicable standard. All samples analyzed using EPA method 300.0. NMWQCC = New Mexico Water Quality Control Commission

mg/L = Milligrams per liter

4.1 Former Brine Pond Area Wells

During this reporting period, the most significant change in chloride concentration occurred at well PMW-1, located just upgradient of the fresh water supply well FWS-1. Well PMW-1 continues to exhibit chloride concentrations above the New Mexico Water Quality Control Commission (NMWQCC) standard of 250 milligrams per liter (mg/L) (Figure 4); however, the



chloride concentration decreased from 11,000 mg/L in June 2019 to 3,400 mg/L in December 2019 (Appendix C).

The chloride concentration at well DBS-1R, located downgradient of well PMW-1, was 210 mg/L during this reporting period—below the NMWQCC standard (Figure 4). An increase in chloride concentration was observed at upgradient monitor well DBS-5 in June 2019, but the chloride concentration in December 2019 was 160 mg/L, which is more consistent with historical concentrations and below the NMWQCC standard.

The chloride plume in the former brine pond area remains bounded by the existing monitor well network (Figure 4). The chloride concentration at downgradient monitor well DBS-4 remains below the NMWQCC standard, as do chloride concentrations at the two cross-gradient monitor wells, DBS-2 and DBS-3.

4.2 Brine Well Area Wells

Since the last monitoring event in June 2019, minor changes in chloride concentrations were observed at the monitor wells in the brine well area (Appendix C). Monitor wells MW-3 (the well closest to extraction well RW-2) and downgradient monitor wells MW-5 and DBS-10 continue to exhibit chloride concentrations above the NMWQCC standard (Figure 5).

The chloride concentration at cross-gradient monitor well DBS-6, which had exceeded the NMWQCC standard until June 2017, remained below the NMWQCC standard during this reporting period at 220 mg/L.

The chloride concentration at upgradient monitor well DBS-9 was 220 mg/L during this reporting period. Chloride concentration has fluctuated at DBS-9 (Appendix C).

Section 2A.1 of DP-BW-8 requires that PAB collect one groundwater sample to be analyzed for general chemistry and several other groundwater constituents. Monitor well MW-3 was selected for this additional analysis because it is located downgradient of the brine well. Groundwater at



MW-3 has historically shown chloride impacts. Analytical results for the MW-3 sample are provided in Table 3.

	Concentration (mg/L ^a)				
	NMWQCC	MW-3			
Constituent	Standard	(12/18/2019)			
Alkalinity, total	NS	326.4			
Bicarbonate	NS	326.4			
Calcium, total	NS	1,200			
Carbonate	NS	<2.0			
Bromide	NS	<1.0			
Chloride	250	7,400			
Fluoride	1.6	<1.0			
Magnesium, total	NS	200			
Nitrate (as N)	1.0	<1.0			
Nitrite (as N)	10.0	<1.0			
Orthophosphate (as P)	NS	<5.0			
pH (s.u.)	6–9	7.12			
Potassium, total	NS	18			
Sodium, total	NS	3,600			
Sulfate	600	500			
Total dissolved solids	1,000	15,600			

Table 3. Groundwater Analytical Results, MW-3

Bold indicates that value exceeds New Mexico Water Quality Control Commission (NMWQCC) standard.

^a Unless otherwise noted

NS = No standard s.u. = Standard units

s.u. = Stanuaru u

5. Groundwater Extraction System O&M

Groundwater extraction from fresh water supply well FWS-1 and recovery well RW-2 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area and brine well area, respectively. PAB began remedial groundwater extraction in April 2012 (Appendix C). Extracted groundwater is used as injection water at the brine well.



Table 4 shows the average groundwater extraction rates for the two wells during this reporting period. The rates were determined using fresh water production records and totalizer flow meter readings.

Recovery Well	Date	Average Extraction Rate ^a (gpm)
FWS-1	12/18/2019	27.6
RW-2	12/18/2019	14.9

 ^a Average extraction rates based on totalizer flow meter readings and/or fresh water production records.
 gpm = Gallons per minute

5.1 Former Brine Pond Area

Based on Salty Dog production records from July through December 2019, the average pumping rate at well FWS-1 during this reporting period was 27.6 gallons per minute (gpm) (Table 3). Pumping at FWS-1 increased slightly this reporting period due to increased brine sales. A cone of depression is seen in the potentiometric surface for this reporting period (Figure 2).

In the former brine pond area, monitor well PMW-1 is currently the only well to exhibit a chloride concentration above the NMWQCC standard (Figure 4). Pumping at FWS-1 is preventing the downgradient migration of chloride-impacted groundwater. The chloride concentrations at wells DBS-1R and DBS-4, both located downgradient of well PMW-1, are below the NMWQCC standard (Figure 4).

5.2 Brine Well Area

During this reporting period, the average pumping rate at well RW-2 was 14.9 gpm (Table 3), which is more than double the average pumping rate recorded in June 2019 (7.0 gpm). According to PAB site manager Jim Sayer, well RW-2 was operating at a reduced capacity due to intermittent electrical failure at the pump. Well RW-2 was not actively pumping during the



week preceding the groundwater monitoring event, resulting in a flattening of the hydraulic gradient in the brine well area (Figure 3).

Downgradient monitor wells DBS-10 and MW-5 exhibit chloride concentrations above the NMWQCC standard (Figure 5). The chloride concentration at DBS-10 increased from 510 mg/L (June 2019) to 540 mg/L (December 2019), while the chloride concentration at MW-5 continues to decrease (Appendix C), dropping from 610 mg/L (June 2019) to 550 mg/L (December 2019). The chloride concentration at cross-gradient monitor well DBS-6 met the NMWQCC standard during this reporting period (Table 2). Water quality samples collected at this well have exceeded the NMWQCC standard in the past (Appendix C).

Pumping at well RW-2 is providing hydraulic containment and removal of chloride-impacted groundwater originating from the area upgradient of the recovery well. Pumping at this recovery well is preventing further degradation of downgradient and cross-gradient water quality. Chloride concentrations at monitor wells MW-5 and DBS-6 have decreased since PAB began remedial groundwater extraction at well RW-2 (Appendix C).

5.3 Facility and System Maintenance

In December 2019, PAB serviced the pump at extraction well RW-2. The pump was not operating when groundwater monitoring was conducted for this reporting period.

On December 12, 2019, Basin Surveys surveyed the five surface subsidence monitoring points that were installed at the site in March 2018 (DBS&A, 2018). The survey was conducted in accordance with Condition 2.B.1 of DP-BW-8 (NMEMNRD OCD, 2019). Results of the survey will be included in the 2019 annual Class III well report.

6. Recommendations

Based on the current groundwater monitoring results and site O&M activities, DBS&A has the following recommendations:



- Continue groundwater extraction at FWS-1 to provide hydraulic containment and removal of the chloride plume in the former brine pond area.
- Continue groundwater extraction at RW-2 to provide hydraulic containment and removal of the chloride plume in the brine well area.
- To the extent practical, attempt to balance groundwater extraction between FWS-1 and RW-2. During this reporting period, the pumping rate at FWS-1 was approximately twice as high as the pumping rate at RW-2. Increased pumping at RW-2 will provide more removal of chloride-impacted groundwater in the brine well area.

In addition, DBS&A and PAB will complete the following activities at the site in 2020 to meet the requirements of DP BW-8:

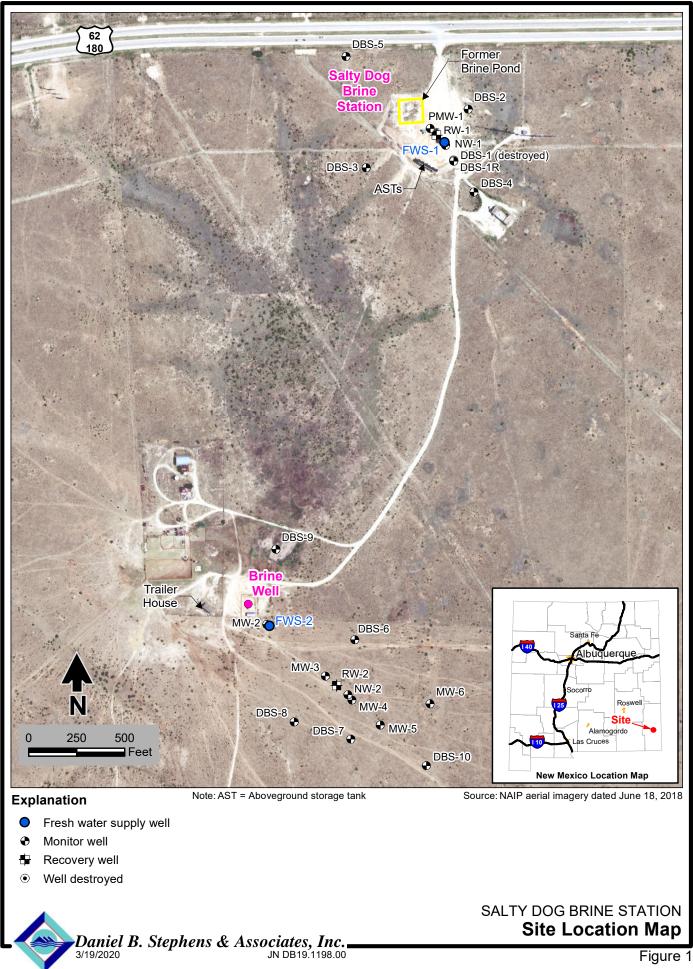
- Continue to conduct semiannual groundwater monitoring and O&M of the extraction systems at the site.
- Conduct semiannual surveys of the surface subsidence survey monitoring points.
- Prepare a 2019 annual Class III well report for submittal to OCD.

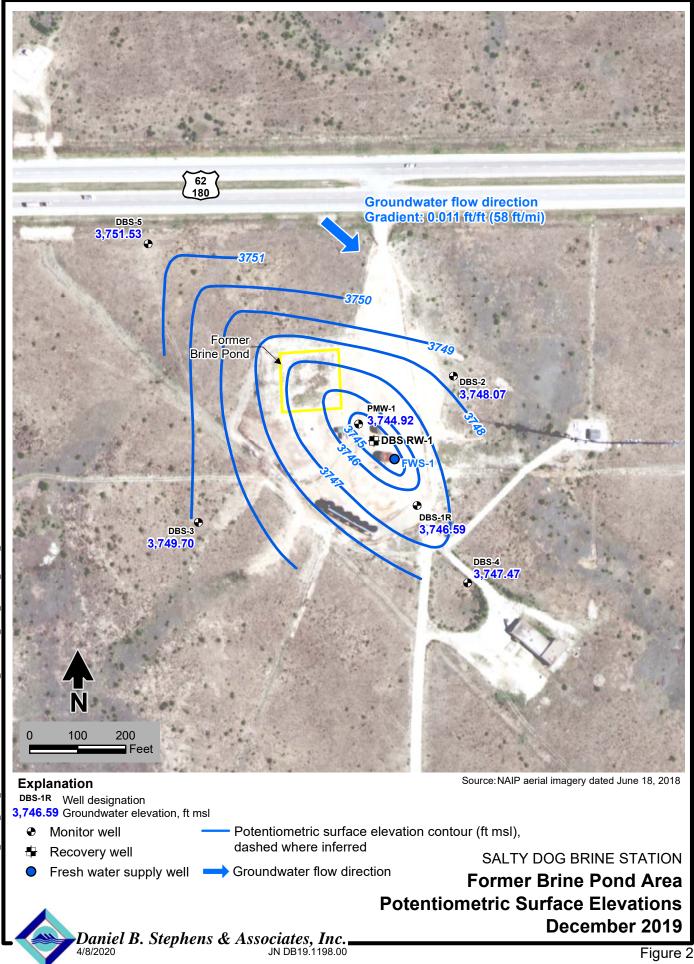


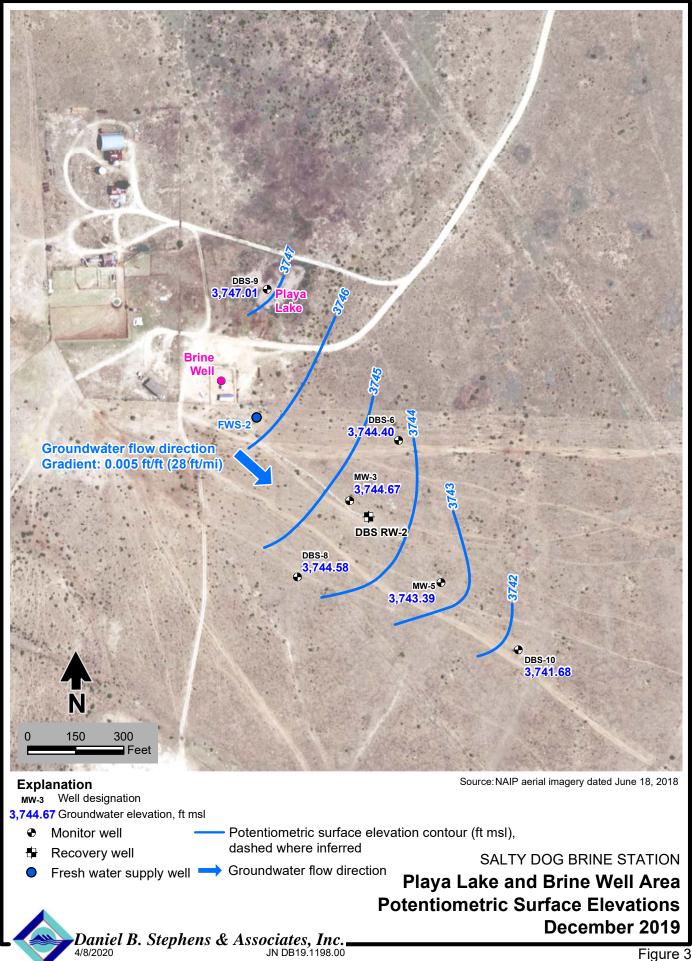
References

- Daniel B. Stephens & Associates (DBS&A). 2009a. Recovery well installation and pump test report, Salty Dog Brine Station, Lea County, New Mexico. Prepared for New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau. November 20, 2009.
- DBS&A. 2009b. *Preliminary conceptual remedial design report, Salty Dog Brine Station, Lea County, New Mexico.* Prepared for New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau. December 31, 2009.
- DBS&A. 2018. Letter report from John Ayarbe and Michael D. McVey to Carl Chavez, New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau, regarding Installation of a monitor well and subsidence survey monitoring points at the Salty Dog Brine Station (API No. 30-025-26307). June 25, 2018.
- New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Department (NMEMNRD OCD). 2019. Discharge Permit (BW-8), Standard Energy, UIC Class III Brine Well Brine Supply Well No.1 API No. 30-025-26307 UL: J Section 5 Township 19 South, Range 36 East, Lea County, New Mexico. May 17, 2019.

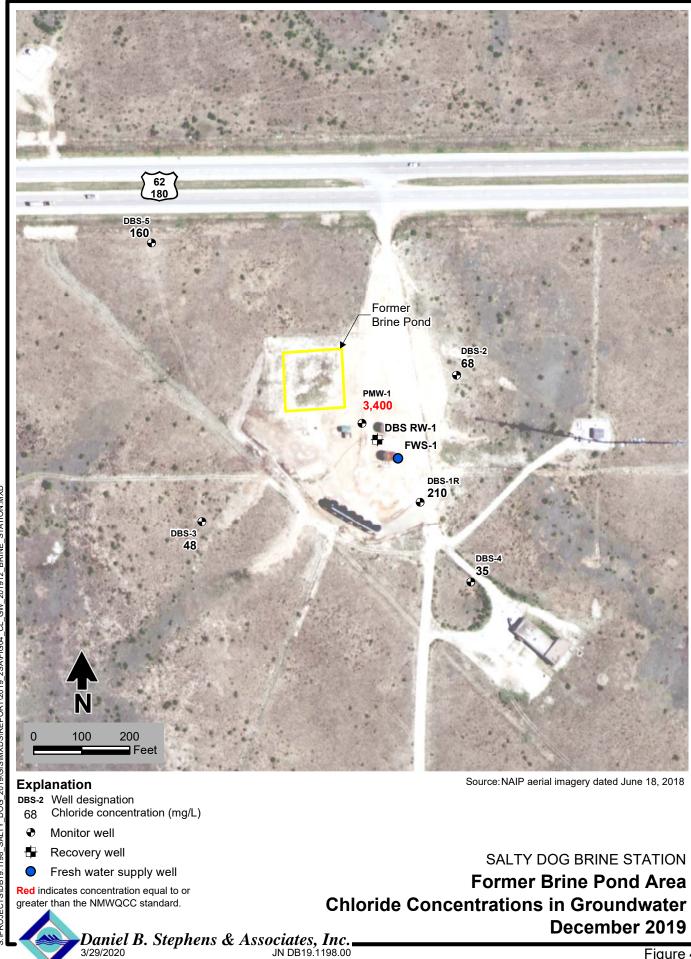
Figures





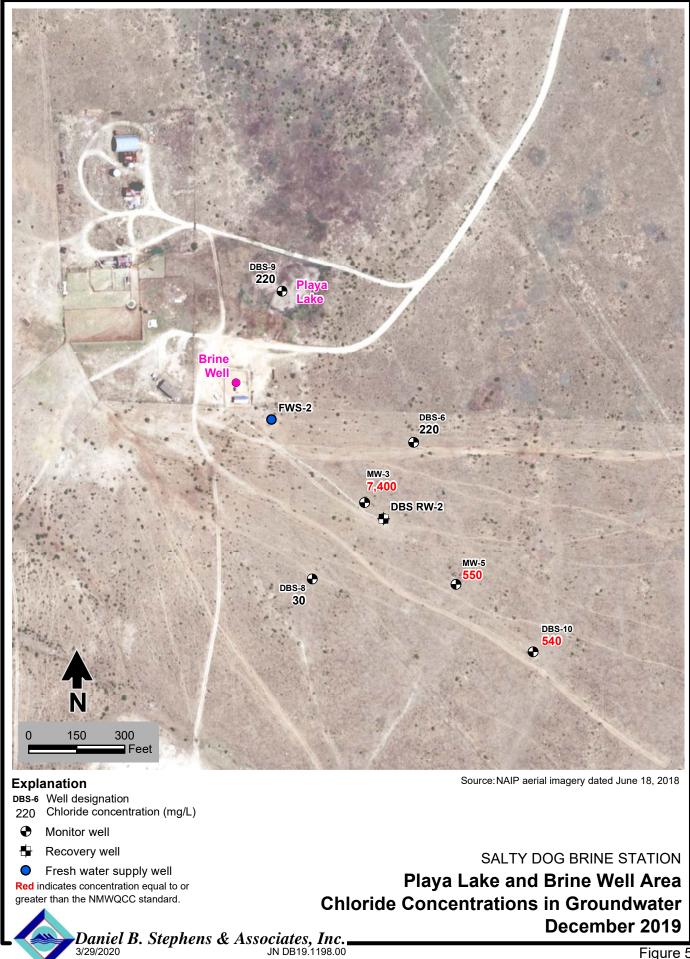


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\PROJECTS\DB19.1198_SALTY_DOG_2019\GIS\WXDS\REPORT\2019_2SA\FIG04_CL_GW_201912_BRINE_STATION.MXD

Figure 4



SIPROJECTS\DB19.1198_SALTY_DOG_2019\GIS\MXDS\REPORT\2019_2SA\FIG05_CL_GW_201912_BRINE_WELL.MXD

Figure 5

Appendix A

Laboratory Analytical Report



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

January 14, 2020

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

OrderNo.: 1912A30

RE: Salty Dog

Dear John Ayarbe:

Hall Environmental Analysis Laboratory received 14 sample(s) on 12/19/2019 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report
Lab Order 1912A30

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/14/2020

CLIENT: Daniel B. Stephens & Assoc.Project: Salty DogLab ID: 1912A30-001	Client Sample ID: Brine Collection Date: 12/18/2019 7:00:00 Matrix: AQUEOUS Received Date: 12/19/2019 10:05:00					18/2019 7:00:00 AM	
Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst:	JRR
Specific Gravity	1.199	0			1	12/30/2019 1:29:00 PM	R65470
EPA METHOD 300.0: ANIONS						Analyst:	CAS
Chloride	170000	10000	*	mg/L	2E+	- 12/27/2019 2:17:27 PM	R65460
SM2540C MOD: TOTAL DISSOLVED SOLI	DS					Analyst:	KS
Total Dissolved Solids	343000	2000	*D	mg/L	1	12/24/2019 7:03:00 PM	49489
SM4500-H+B / 9040C: PH						Analyst:	JRR
рН	7.30		Н	pH units	1	12/20/2019 11:50:28 AM	1 R65332
EPA 6010B: TOTAL RECOVERABLE MET	ALS					Analyst:	ELS
Sodium	91000	2000		mg/L	2E+	- 1/9/2020 10:13:26 AM	49581

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

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Analytical Report

Hall Environmental Analysis Laboratory, Inc.

Lab Order **1912A30** Date Reported: **1/14/2020**

CLIENT: Daniel B. Stephens & Assoc.	Client Sample ID: Injection						
Project: Salty Dog Lab ID: 1912A30-002	Matrix: AQUEOUS	(•,	18/2019 12:20:00 PM 19/2019 10:05:00 AM	
Analyses	Result	RL				Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst:	JRR
Specific Gravity	0.9956	0			1	12/30/2019 1:29:00 PM	R65470
EPA METHOD 300.0: ANIONS						Analyst:	CAS
Chloride	200	50		mg/L	100	12/27/2019 3:08:56 PM	R65460
SM2540C MOD: TOTAL DISSOLVED SOLI	os					Analyst:	KS
Total Dissolved Solids	618	40.0	*D	mg/L	1	12/24/2019 7:03:00 PM	49489
SM4500-H+B / 9040C: PH						Analyst:	JRR
рН	7.62		н	pH units	1	12/20/2019 11:54:55 AN	1 R65332
EPA 6010B: TOTAL RECOVERABLE META	ALS					Analyst:	ELS
Sodium	150	5.0		mg/L	5	1/9/2020 10:01:50 AM	49581

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

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Analytical Report	
Lab Order 1912A30	

Hall Environmental Analysis	•	Date Reported: 1/14/2020					
CLIENT: Daniel B. Stephens & Assoc.		Client S	ample I	D:DBS-1R			
Project: Salty Dog		Collect	tion Dat	te: 12/18/2019 9:12:00 AM	Л		
Lab ID: 1912A30-003	Matrix: AQUEOUS	Recei	ved Dat	te: 12/19/2019 10:05:00 A	М		
Analyses	Result	RL Qual	Units	DF Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS				Analy	vst: CAS		
Chloride	210	50	mg/L	100 12/27/2019 3:34:40 F	PM R65460		

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

- В Analyte detected in the associated Method Blank
- Value above quantitation range Е
- J Analyte detected below quantitation limits Sample pH Not In Range
- Р
- RL Reporting Limit

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Analytical Report	
Lab Order 1912A30	

Hall Environmental Analysis	Date Reported: 1/14/2020					
CLIENT: Daniel B. Stephens & Assoc.		Client Samp	ble ID: DBS-2			
Project: Salty Dog		Collection	Date: 12/17/2019 3:58:00 PM			
Lab ID: 1912A30-004	Matrix: AQUEOUS Received Date: 12/19/2019 10:05:00 AM					
Analyses	Result	RL Qual Un	nits DF Date Analyzed Batch			
EPA METHOD 300.0: ANIONS			Analyst: CAS			
Chloride	68	5.0 mg	g/L 10 12/27/2019 3:47:32 PM R65460			

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

- 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

Page 4 of 21

S % Recovery outside of range due to dilution or matrix

Analytical Report	
Lab Order 1912A30	

Hall Environmental Analysis Laboratory, Inc.			Date Reported: 1/14/2020					
CLIENT: Daniel B. Stephens & Assoc.		Client S	ample I	D: DI	BS-3			
Project: Salty Dog		Collec	tion Dat	t e: 12	/17/2019 4:55:00 PM	Л		
Lab ID: 1912A30-005	Matrix: AQUEOUS Received Date: 12/19/2019 10:05:00 AM					M		
Analyses	Result	RL Qua	l Units	DF	Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS					Analy	/st: CAS		
Chloride	48	5.0	mg/L	10	12/27/2019 4:13:16 I	PM R65460		

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н 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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Page 5 of 21
- RL Reporting Limit

Analytical Report	
Lab Order 1912A30	

Hall Environmental Analysis Laboratory, Inc.			Date Reported: 1/14/2020					
CLIENT: Daniel B. Stephens & Assoc.		Client S	Sample I	D: DI	3S-4			
Project: Salty Dog		Colle	ction Dat	t e: 12	/17/2019 3:15:00 PM	[
Lab ID: 1912A30-006	Matrix: AQUEOUS	Rece	eived Dat	t e: 12	/19/2019 10:05:00 Al	М		
Analyses	Result	RL Qua	l Units	DF	Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS					Analys	st: CAS		
Chloride	35	5.0	mg/L	10	12/27/2019 4:38:59 P	M R65460		

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
- JAnalyte detected below quantitation limitsPSample pH Not In Range
- P Sample pH Not In RL Reporting Limit

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Analytical Report	
Lab Order 1912A30	

Hall Environmental Analysis Laboratory, Inc.			Date Reported: 1/14/2020				
CLIENT: Daniel B. Stephens & Assoc.		Client S	Sample I	D: DI	3S-5		
Project: Salty Dog		Collec	ction Dat	t e: 12	/18/2019 8:32:00 AM	1	
Lab ID: 1912A30-007	Matrix: AQUEOUS Received Date: 12/19/2019 10:05:00 AM					М	
Analyses	Result	RL Qua	l Units	DF	Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS					Analys	st: CAS	
Chloride	160	5.0	mg/L	10	12/27/2019 5:30:27 P	M R65460	

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

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Analytical Report	
Lab Order 1912A30	

Hall Environmental Analysis Laboratory, Inc.			Date Reported: 1/14/2020				
CLIENT: Daniel B. Stephens & Assoc.		Client Sar	nple II	D: DBS-6			
Project: Salty Dog		Collectio	on Dat	e: 12/17/2019 11:30:00 A	М		
Lab ID: 1912A30-008	Matrix: AQUEOUS Received Date: 12/19/2019 10:05:00 AM						
Analyses	Result	RL Qual	Units	DF Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS				Analy	st: CAS		
Chloride	220	50	mg/L	100 12/27/2019 6:09:04 P	M R65460		

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

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Analytical Report	
Lab Order 1912A30	

Hall Environmental Analysis	Date Reported: 1/14/2020				
CLIENT: Daniel B. Stephens & Assoc.		Client Sample	ID: DBS-8		
Project: Salty Dog		Collection D	ate: 12/17/2019 1:15:00 PM		
Lab ID: 1912A30-009	Matrix: AQUEOUS Received Date: 12/19/2019 10:05:00 AM				
Analyses	Result	RL Qual Unit	S DF Date Analyzed Batch		
EPA METHOD 300.0: ANIONS			Analyst: CAS		
Chloride	30	5.0 mg/L	10 12/27/2019 6:21:56 PM R6546		

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

- 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

Page 9 of 21

S % Recovery outside of range due to dilution or matrix

Analytical Report	
Lab Order 1912A30	

Hall Environmental Analysis	Date Reported: 1/14/2020				
CLIENT: Daniel B. Stephens & Assoc.		Client Sam	ple ID: DI	BS-9	
Project: Salty Dog	Collection Date: 12/17/2019 2:05:00 PM				
Lab ID: 1912A30-010	Matrix: AQUEOUS	rix: AQUEOUS Received Date: 12/19/2019 10:05:00 AM			
Analyses	Result	RL Qual U	nits DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analys	st: CAS
Chloride	220	50 mg	g/L 10	0 12/27/2019 7:26:14 PM	M R65460

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

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Analytical Report	
Lab Order 1912A30	

Hall Environmental Analysis	Date Reported: 1/14/2020			
CLIENT: Daniel B. Stephens & Assoc.	Client Sample ID: DBS-10			
Project: Salty Dog	Collection Date: 12/17/2019 12:25:00 PM			
Lab ID: 1912A30-011	Matrix: AQUEOUS	Received Da	te: 12/19/2019 10:05:00 A	М
Analyses	Result	RL Qual Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS			Analyst: CAS	
Chloride	540	50 * mg/L	100 12/27/2019 11:17:56	PM R65460

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

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Hall Environmental Analysis I aboratory Inc

Analytical Report
Lab Order 1912A30

Hall Environmental Analysis	Date Reported: 1/14/2020			
CLIENT: Daniel B. Stephens & Assoc.		Client Sample I	D: PMW-1	
Project: Salty Dog	Collection Date: 12/18/2019 12:10:00 PM			
Lab ID: 1912A30-012	Matrix: AQUEOUS Received Date: 12/19/2019 10:05:00 AM			
Analyses	Result	RL Qual Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS			Analys	t: CAS
Chloride	3400	500 * mg/L	1E+ 12/27/2019 11:30:48 P	M R65460

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
- JAnalyte detected below quantitation limitsPSample pH Not In Range
- P Sample pH Not In RL Reporting Limit

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Analytical Report
Lab Order 1912A30

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/14/2020

CLIENT: Daniel B. Stephens & Assoc.		Cl	ient Sa	ample ID	: MV	W-3	
Project: Salty Dog		(Collect	ion Date:	: 12/	18/2019 11:15:00 AM	[
Lab ID: 1912A30-013	Matrix: AQUEOUS		Receiv	ved Date:	: 12/	19/2019 10:05:00 AM	[
Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst	JRR
Specific Gravity	1.005	0			1	12/30/2019 1:29:00 PM	R65470
EPA METHOD 300.0: ANIONS						Analyst	CAS
Fluoride	ND	1.0		mg/L	10	12/20/2019 12:51:44 AM	M A65303
Chloride	7400	250	*	mg/L	500	12/27/2019 11:56:31 PM	M A65303
Nitrogen, Nitrite (As N)	ND	10		mg/L	100	12/20/2019 1:04:09 AM	A65303
Bromide	ND	1.0		mg/L	10	12/20/2019 12:51:44 AM	M A65303
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	12/20/2019 12:51:44 AM	M A65303
Phosphorus, Orthophosphate (As P)	ND	5.0		mg/L	10	12/20/2019 12:51:44 AM	M A65303
Sulfate	500	5.0	*	mg/L	10	12/20/2019 12:51:44 AM	M A65303
SM2510B: SPECIFIC CONDUCTANCE						Analyst	: JRR
Conductivity	26000	25		µmhos/c	5	12/20/2019 3:43:18 PM	R65332
SM2320B: ALKALINITY						Analyst	JRR
Bicarbonate (As CaCO3)	326.4	20.00		mg/L Ca	1	12/20/2019 11:58:57 AM	M R65332
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	12/20/2019 11:58:57 AM	M R65332
Total Alkalinity (as CaCO3)	326.4	20.00		mg/L Ca	1	12/20/2019 11:58:57 A	M R65332
SM2540C MOD: TOTAL DISSOLVED SOL	.IDS					Analyst	KS
Total Dissolved Solids	15600	100	*D	mg/L	1	12/24/2019 7:03:00 PM	49489
SM4500-H+B / 9040C: PH						Analyst	JRR
рН	7.12		н	pH units	1	12/20/2019 11:58:57 AM	N R65332
EPA 6010B: TOTAL RECOVERABLE ME	TALS					Analyst	ELS
Calcium	1200	20		mg/L	20	1/9/2020 10:15:16 AM	49581
Magnesium	200	5.0		mg/L	5	1/9/2020 10:06:53 AM	49581
Potassium	18	5.0		mg/L	5	1/9/2020 10:06:53 AM	49581
Sodium	3600	100		mg/L	100	1/9/2020 10:17:05 AM	49581

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 MatrixH Holding times for preparation or analysis exceeded

 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

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Analytical Report	
Lab Order 1912A30	

Hall Environmental Analysis	•	Date Reported: 1/14/2020				
CLIENT: Daniel B. Stephens & Assoc.		Client Sa	ample I	D: MW-5		
Project: Salty Dog		Collect	tion Dat	e: 12/18/2019 10:32:00 A	М	
Lab ID: 1912A30-014	Matrix: AQUEOUS	Recei	ved Dat	e: 12/19/2019 10:05:00 A	М	
Analyses	Result	RL Qual	Units	DF Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS				Analy	/st: CAS	
Chloride	550	50 *	mg/L	100 12/28/2019 12:22:14	AM R65460	

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits J
- Р Sample pH Not In Range

RL Reporting Limit

Page 14 of 21

S % Recovery outside of range due to dilution or matrix



ANALYTICAL REPORT

December 27, 2019

Hall Environmental Analysis Laboratory

Sample Delivery Group:

L1173514 12/21/2019

Project Number:

Samples Received:

Report To:

Description:

4901 Hawkins NE Albuquerque, NM 87109

Entire Report Reviewed By:

Drittie Boyd

Brittnie L Boyd Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

PROJECT:

SDG: L1173514

DATE/TIME: 12/27/19 08:37 Тс

Ss

Cn

Sr

ʹQc

Gl

ΆI

Sc

TABLE OF CONTENTS

1

*
¹ Cp
² Tc
³ Ss
⁴ Cn

Sr

Qc

GI

ΆI

Sc

Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
1912A30-013C MW-3 L1173514-01	5
Qc: Quality Control Summary	6
Wet Chemistry by Method 2580	6
GI: Glossary of Terms	7
Al: Accreditations & Locations	8
Sc: Sample Chain of Custody	9

PAGE:

Cp: Cover Page

SDG: L1173514

DATE/TIME: 12/27/19 08:37

2 of 10

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

			Collected by	Collected date/time	Received dat	e/time
1912A30-013C MW-3 L1173514-01 GW				12/18/19 11:15	12/21/19 10:30)
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Wet Chemistry by Method 2580	WG1402385	1	12/26/19 16:45	12/26/19 16:45	BAM	Mt. Juliet, TN

IC
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

*

Ср

Тс

CASE NARRATIVE

*

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.

Drittine Boyd

Brittnie L Boyd Project Manager

Τс Ss Cn Sr Qc GI AI Sc

SDG: L1173514 DATE/TIME: 12/27/19 08:37

PAGE: 4 of 10

SAMPLE RESULTS - 01



Wet Chemistry by Method 2580

						1'0
	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	mV			date / time		2
ORP	35.0	<u>T8</u>	1	12/26/2019 16:45	WG1402385	-



WG1402385

QUALITY CONTROL SUMMARY L1173514-01

Wet Chemistry by Method 2580

L1173514-01 Original Sample (OS) • Duplicate (DUP)

L11/3514-01 Origin	LII73514-01 Original Sample (OS) • Duplicate (DOP)								
(OS) L1173514-01 12/26/19	(OS) L1173514-01 12/26/19 16:45 • (DUP) R3486097-2 12/26/19 16:45								
	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits	2		
Analyte	mV	mV		mV		mV	Tc		
ORP	35.0	34.0	1	2.90		20			

Laboratory Control Sample (LCS)

(LCS) R3486097-1 12/26/19 16:45										
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier					
Analyte	mV	mV	%	%						
ORP	105	104	99.0	86.0-105						



GLOSSARY OF TERMS

*

Τс

ŚS

Cn

Sr

Qc

GI

AI

Sc

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
Т8	Sample(s) received past/too close to holding time expiration.

SDG: L1173514

ACCREDITATIONS & LOCATIONS

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	Nebra
Alaska	17-026	Nevad
Arizona	AZ0612	New H
Arkansas	88-0469	New .
California	2932	New
Colorado	TN00003	New
Connecticut	PH-0197	North
Florida	E87487	North
Georgia	NELAP	North
Georgia ¹	923	North
Idaho	TN00003	Ohio-
Illinois	200008	Oklah
Indiana	C-TN-01	Orego
lowa	364	Penns
Kansas	E-10277	Rhode
Kentucky 16	90010	South
Kentucky ²	16	South
Louisiana	AI30792	Tenne
Louisiana ¹	LA180010	Texas
Maine	TN0002	Texas
Maryland	324	Utah
Massachusetts	M-TN003	Vermo
Michigan	9958	Virgin
Minnesota	047-999-395	Washi
Mississippi	TN00003	West
Missouri	340	Wisco
Montana	CERT0086	Wyom

Vebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Dhio-VAP	CL0069
Dklahoma	9915
Dregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee 1 4	2006
Texas	T104704245-18-15
「exas ⁵	LAB0152
Jtah	TN00003
/ermont	VT2006
/irginia	460132
Vashington	C847
Vest Virginia	233
Visconsin	9980939910
Wyoming	A21 A

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

L1173514

CHAIN OF CUSTODY RECORD

PAGE: OF: 1 1

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

SUB CC	NTRATOR: ESC 1	PACE COMP	ANY: ES	SC PACE	5 J	PHONE:	(800) 767-5859	FAX:	(615) 758-5859	
ADDRE	SS: 12065	Lebanon Rd				ACCOUNT #:		EMAIL:	and a second secon	denne i manana ar gar
CITY, S	TATE, ZIP: Mt. Ju	uliet, TN 37122	-	8		17. 17. ju		1. #1 3	1	
	-						# CON	61173	514	B02 0
ITEM	SAMPLE	CLIENT SAMPLE ID	1 - 1 - 1	BOTTLE TYPE	MATRIX	COLLECTION DATE	TAINERS	ANALYTICAL	COMMENTS	
1	1912A30-013C	MW-3		125HDP	Aqueous	12/18/2019 11:15:00 AM	1 ORP	1 ⁹⁵	-01	196

Cocst

RAD SCREEN: <0.5 mR/hr

Vu 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.

/			, jó			
Relinquished By	Date: 12/19/2019	Time: 3:44 PM	Received By:	Date:	Time:	REPORT TRANSMITTAL DESIRED:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	HARDCOPY (extra cost) FAX EMAIL ONLINE
Relinquished By:	Date:	Time:	Received By: What Can	12/21/19	Time:	Temp of samples
TAT: Stand	lard	RUSH	Next BD 2nd BD	3rd BE		Comments:

HALL NVIRONMENTAL ANALYSIS LABORATORY

Pace Analytical National Center for Testing & Innov	ation	
Cooler Receipt Form		
Client:	6117	3514
Cooler Received/Opened On: 12/2(119 Temperature: 0.5		
Received By: WILLIE TAYLOR /030		
Signature: Willin Tarler		
Receipt Check List NP	Yes	No
COC Seal Present / Intact?		1.
COC Signed / Accurate?		的事物的
Bottles arrive intact?		
Correct bottles used?		the states
Sufficient volume sent?	1/	
If Applicable		
VOA Zero headspace?		
Preservation Correct / Checked?		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#:	1912A30
	14-Jan-20

	aniel B. Stephen	s & Asso	oc.							
Project: Sa	lty Dog									
Sample ID: MB	Sam	oType: ml	olk	Tes	tCode: EF	PA Method	300.0: Anions	5		
Client ID: PBW	Bat	ch ID: A6	5303	F	RunNo: 6	5303				
Prep Date:	Analysis	Date: 12	2/19/2019	\$	SeqNo: 2	243077	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	e (As P ND	0.50								
Sulfate	ND	0.50								
Sample ID: LCS	Sam	oType: Ics	6	TestCode: EPA Method 300.0: Anions						
Client ID: LCSW	Bat	ch ID: A6	5303	F	5303					
Prep Date:	Analysis	Date: 12	2/19/2019	\$	SeqNo: 2	243078	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val		LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	109	90	110			
Chloride	4.8	0.50	5.000	0	96.2	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	94.9	90	110			
Bromide	2.5	0.10	2.500	0	98.6	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Phosphorus, Orthophosphate	e (As P 4.9	0.50	5.000	0	97.8	90	110			
Sulfate	9.7	0.50	10.00	0	97.3	90	110			
Sample ID: MB	Sam	oType: ml	olk	TestCode: EPA Method 300.0: Anions						
Client ID: PBW	Bat	ch ID: R6	5460	F	RunNo: 6	5460				
Prep Date:	Analysis	Date: 12	2/27/2019	:	SeqNo: 2	248796	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sample ID: LCS	Sam	oType: Ics	5	TestCode: EPA Method 300.0: Anion				6		
Client ID: LCSW	Bat	ch ID: R6	5460	F	RunNo: 6	5460				
Prep Date:	Analysis	Date: 12	2/27/2019	:	SeqNo: 2	248797	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.3	90	110			

- * Value exceeds Maximum Contaminant Level.
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- S % Recovery outside of range due to dilution or matrix

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- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

WO#:	1912A30
	14-Jan-20

Client: Project:	Daniel B. Salty Dog	Stephens &	Asso	с.							
Sample ID:	lcs-1 99.9uS eC	SampTyp	e: Ics		Tes	TestCode: SM2510B: Specific Conductance					
Client ID:	LCSW	Batch II	D: R6	5332	R	unNo: 6	5332				
Prep Date:		Analysis Date	e: 12	2/20/2019	S	eqNo: 2	244258	Units: µmho	os/cm		
Analyte		Result I	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity		98	5.0	99.90	0	98.6	85	115			
Sample ID:	1912a30-013a dup	SampTyp	e: du	р	TestCode: SM2510B: Specific Conductance						
Client ID:	MW-3	Batch II	D: R6	5332	R	unNo: 6	5332				
Prep Date:		Analysis Date	e: 12	2/20/2019	S	eqNo: 2	244266	Units: µmho	os/cm		
Analyte		Result I	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity		26000	25						2.39	20	

Qualifiers:

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- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#:	1912A30
	14-Jan-20

Client: Project:	Daniel B. Salty Dog	Stephens	& Asso	с.								
Sample ID:	MB-49581	SampType: MBLK				TestCode: EPA 6010B: Total Recoverable Metals						
Client ID:	PBW	Batch	n ID: 49	581	F	RunNo: 6	5605					
Prep Date:	12/31/2019	Analysis D	ate: 1/	7/2020	5	SeqNo: 22	253387	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-49581	SampT	ype: LC	S	Tes	tCode: EF	PA 6010B: 1	Total Recover	able Meta	als		
Client ID:	LCSW	Batch	n ID: 49	581	F	RunNo: 6	5605					
Prep Date:	12/31/2019	Analysis D	ate: 1/	7/2020	5	SeqNo: 22	253389	Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Calcium		50	1.0	50.00	0	99.6	80	120				
Magnesium		49	1.0	50.00	0	98.1	80	120				
Potassium		49	1.0	50.00	0	97.3	80	120				
Sample ID:	MB-49581	SampT	ype: ME	BLK	Tes	tCode: EF	PA 6010B: 1	Total Recover	able Meta	als		
Client ID:	PBW	Batch	n ID: 49	581	RunNo: 65667							
Prep Date:	12/31/2019	Analysis D	ate: 1/	9/2020	S	SeqNo: 22	255586	Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Sodium		ND	1.0					-				
Sample ID:	LCS-49581	SampT	ype: LC	s	Tes	tCode: EF	PA 6010B: 1	Fotal Recover	able Meta	als		
Client ID:			n ID: 49			RunNo: 6						
Prep Date:		Analysis D	_			SeqNo: 22		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Sodium		49	1.0	50.00	0	97.0	80	120		-		
Sample ID:	1912A30-002BMS	SampT	ype: MS	;	Tes	tCode: EF	PA 6010B: 1	Total Recover	able Meta	als		
Client ID:			n ID: 49			RunNo: 6						
	12/31/2019	Analysis D				SeqNo: 22		Units: mg/L				
		-						-				
Analyte Sodium		Result 200	PQL 5.0	SPK value 50.00	SPK Ref Val 145.3	%REC 99.9	LowLimit 75	HighLimit 125	%RPD	RPDLimit	Qual	
					1 10.0	50.0	,0	120				
	1912A30-002BMS		ype: MS					Total Recover	able Meta	als		
Client ID:	-		n ID: 49			RunNo: 6						
Prep Date:	12/31/2019	Analysis D	ate: 1/	9/2020	S	SeqNo: 22	255605	Units: mg/L				
Analyte		Result	PQL		SPK Ref Val		LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Sodium		190	5.0	50.00	145.3	98.4	75	125	0.378	20		

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- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#:	1912A30
	14-Jan-20

 Client:
 Daniel B. Stephens & Assoc.

 Project:
 Salty Dog

 Sample ID:
 1912a30-013a dup
 SampType: dup

Sample ID:	1912a30-013a dup	SampType	: dup	Test	Code: SI	M4500-H+B	/ 9040C: pH			
Client ID:	MW-3	Batch ID:	R65332	R	unNo: 6	5332				
Prep Date:		Analysis Date:	12/20/2019	S	eqNo: 22	244279	Units: pH un	its		
Analyte		Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pН		7.12								Н

- * 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

14-Jan-20

	iel B. Stephens & Assoc. 7 Dog			
Sample ID: mb-1 alk	SampType: mblk	TestCode: SM2320B: A	Ikalinity	
Client ID: PBW	Batch ID: R65332	RunNo: 65332		
Prep Date:	Analysis Date: 12/20/2019	SeqNo: 2244235	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: Ics-1 alk	SampType: Ics	TestCode: SM2320B: A	Ikalinity	
Client ID: LCSW	Batch ID: R65332	RunNo: 65332		
Prep Date:	Analysis Date: 12/20/2019	SeqNo: 2244236	Units: mg/L CaCO3	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Total Alkalinity (as CaCO3)	79.24 20.00 80.00	0 99.0 90	110	
Sample ID: 1912a30-013	a dup SampType: dup	TestCode: SM2320B: A	Ikalinity	
Client ID: MW-3	Batch ID: R65332	RunNo: 65332		
Prep Date:	Analysis Date: 12/20/2019	SeqNo: 2244238	Units: mg/L CaCO3	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Total Alkalinity (as CaCO3)	327.2 20.00		0.220	20

- * 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

Daniel B. Stephens & Assoc.

WO#: 1912A30 14-Jan-20

Project:	Salty Dog										
Sample ID:	1912A30-001ADUP	SampTy	pe: D l	JP	Tes	tCode: S	pecific Gra	vity			
Client ID:	Brine	Batch	D: R6	5470	F	RunNo: 6	5470				
Prep Date:		Analysis Da	te: 12	2/30/2019	S	SeqNo: 2	249072	Units:			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Specific Gravity		1.197	0						0.159	20	

Qualifiers:

Client:

- * 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

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WO#:	1912A30
	14-Jan-20

	aniel B. Stephens & Assoc. Ity Dog
Sample ID: MB-49489	SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids
Client ID: PBW	Batch ID: 49489 RunNo: 65394
Prep Date: 12/23/20	I9 Analysis Date: 12/24/2019 SeqNo: 2246446 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-4948	SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids
Client ID: LCSW	Batch ID: 49489 RunNo: 65394
Prep Date: 12/23/20	I9 Analysis Date: 12/24/2019 SeqNo: 2246447 Units: mg/L
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	1030 20.0 1000 0 103 80 120

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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HALL ENVIRONMENTAL ANALYSIS LABORATORY		4901 Hawk Ierque, NM 4X: 505-343	ins NE 87109 5-4107	Sample Log-In Check Lis					
Client Name: DBS V	Vork Order Number: 1	912A30			RcptNo: 1				
Received By: Desiree Dominguez 12/	19/2019 10:05:00 AM		TP	N					
Completed By: Erin Melendrez / / 12/	19/2019 2:52:19 PM		in	MA	5				
Reviewed By: DTR 12/19/19									
Chain of Custody									
1. Is Chain of Custody sufficiently complete?	Y	es 🗸	No		Not Present				
2. How was the sample delivered?	<u>C</u>	lient							
Log In		_		_	_				
3. Was an attempt made to cool the samples?	Y	es 🗸	No		NA				
 Were all samples received at a temperature of >0 	°C to 6.0°C Y	es 🗌	No	\checkmark					
	<u>s</u>	amples no							
5. Sample(s) in proper container(s)?	Y	es 🗹	No						
3. Sufficient sample volume for indicated test(s)?	Y	es 🗹	No						
7. Are samples (except VOA and ONG) properly pres	served? Ye	es 🖌	No						
8. Was preservative added to bottles?	Ye	es 🗌	No	✓	NA 🗌				
9. Received at least 1 vial with headspace <1/4" for A		es 🗌	No		NA 🗹				
0. Were any sample containers received broken?	Y	es 🗆	No	\checkmark	# of preserved				
1. Does paperwork match bottle labels?	Ye	es 🔽	No		bottles checked for pH:				
(Note discrepancies on chain of custody)						unless noted)			
2. Are matrices correctly identified on Chain of Custo	dy? Ye	es 🗹	No		Adjusted?				
3. Is it clear what analyses were requested?		es 🔽	No		Checked by: ¥6	12/19/14			
 Were all holding times able to be met? (If no, notify customer for authorization.) 	Ye	es 🗹	No		Checked by:				
pecial Handling (if applicable)									
5. Was client notified of all discrepancies with this or	der? Y	es 🗌	No		NA 🗹				
Person Notified:	Date:		alatsa attala attala attala attala	incon-salar					
By Whom:		eMail	Phone	Fax	In Person				
Regarding:				807 4 16 10 10	nannan an maranna dhahannan an an an an an				
Client Instructions:									
16. Additional remarks:									
17. Cooler Information									
Cooler No Temp °C Condition Seal Int	act Seal No Sea	I Date	Signed I	Зy					
1 -0.1 Good			antina 🗙 téc Trible		-				

Client: Sariel B. Stephens Mailing Address: ABD. Office Phone #: 505-822-9400	Turn-Around Time: A Standard \Box Rush Project Name: $S_{C-I}F_{Y}$ S_{CG} Project #: DB19, $1193,00$ $Ph1$ TQ	HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request						
email or Fax#: A yorde e geo-logic. Com QA/QC Package:	Project Manager: John Aycibe Sampler: Y.Mulga_ On Ice: & Yes □ No # of Coolers: 1 Cooler Temp(including CF): -0.1 -0.0 = -0.1 (°C)	BE / TMB's (8021) GRO / DRO / MRO) ides/8082 PCB's id 504.1) 10 or 8270SIMS 10 or 8270SIMS						
Date Time Matrix Sample Name 12-18-19 0700 GW Brine / 1 1900 I Injection / 1 6912 DBS-1R / 12-19 1558 DBS-2 /	Container Type and # Preservative Type 1912A3D 3 Pdy Varies -001 3 Poly Varies -007 1 Poly N/N -003 1 -004	 BTEX / MT BTEX / MT TPH:8015D(8081 Pestic 8081						
u 1655 DB5-3 V V- 1515 DB5-4 V 12-18-190832 DB5-5 1217-19 11:30 DB5-6 V W 13:15 DB5-8 V	-005 -006 -007 -008 -009							
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Received by: Via: Date Time Received by: Via: Date Time Received by: Via: Date Time	Remarks Lof 2 NOT FROTEN						

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.

C			ustody Record	Turn-Aroun	d Time:												_	-		
Client: DBS + A		Standar	d 🗆 Rusl	h		Sec.												10.00		
	~		pendi attende a serie de la composición de la composición de la composición de la composición de la composición Al autores de la composición de la compo	Project Nam		a national second second					NA						R/	110	Л	Y
Mailing A	Address	s: AB	2 office	- Sa	Ity Dog	í		49	01 H		www.ł ns NE						7109			
			eta la constante de la constant	Project #:	1	A16 10					5-397				-345				F	
Phone #	Phone #: 505 - 822 -9400		DB19.	DB19. 1193.00. AN 72							-		-	uest	_			~		
email or	Fax#:		a kateng-da	Project Man	ager:	The second s		Ô		1.200	1	070	SO4			at in the			Ĭ	
QA/QC P	124 11 1	Ze palee. Categorie	□ Level 4 (Full Validation)	5	sh~ Ac	yesbe	 TMB's (8021)	O / MR(PCB's		8270SIMS ALL Jmg	NO ₂ , PO ₄ , S			t/Abser		in teur Kadr an Mita un	a Parce	1001	Golog
Accredita	ation:	Az C	ompliance	Sampler:		serant receiption in a serai	- B	DR	82	Ę	270	02,	N		sen	P G	1	20	Derek	
□ NELAC □ Other		On Ice:	≰ Yes	□ No	-	101	s/80	504.1)	or 8			A	Pre	3.00.	Grew'h	2	5	Z		
	(Type)			# of Coolers			E H	(GR	side	pd 5	810 tolo	Q S		IS	E	1.4.	5	J.	3¢	<u>T</u>
			b a b a side a t	Cooler Tem	P(including CF): -0	.1-0.050.1 (°C) F	15D	estic	ethe	V 83		8	emi	olifo	12	4	N	3	15
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL NO.	BTEX / MTBE	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082	EDB (Method	PAHs by 8310 or	Cl, F, Br, NO ₃ ,	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	CI only	Speer	Prest	Sicaborde	Cal W
12-13-19	1115	Gw	MW-3 V	4 foly	Varies	-013					and the state	Y	V		0.1	-	X			
	1032	GW	MW-5V	1 Poly	NIA	-014										X	~	~		
	-			'J		spinned 2" . Million and the stars														
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Date: T	Ibos ime:	Reinquish	ed by:	Received by:	CPO I Via:	Date Time		incinte	Pe	ge	2	1.	oF	2		2	76	Fro	Zani	
	Red Linker	strange had been	In the set the same first fully an an																	

Appendix B

Field Notes

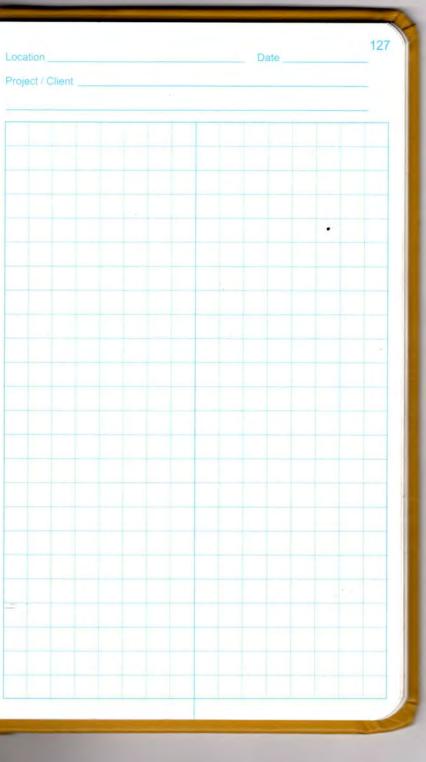
114 Location Saltz Deg - Hobbs Date 2-10-19 Project / Client V. Morgan 1003 Clear, 40°, Calm -0750 Arrive ansite - review scope/Props - shot gauging wells reet w1 Jim - Jim Joys he has been punging a lot FWS 2 running well but FWJ-1 Not running - has persistent problems W electived - No fune in Fed EX boxes. Call Geoblech to ship another to hotel. Will return Late this week. - 1300 - Leave site

Project / Client		-
		-
		-
		-
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		-

24 CHS DOTA Date 12-15.19 Project / Client High 57, Class, 2+ word y becoming Cold - 0740 - Arrive on site - Calibride pH peter prop gear - Calibride pH peter prop gear - Calber Gus samples From 12 Wells - 1715 - Leave site High 310, clear 12-16-5 - 0720 - Check out of hold - locd gew E hotel - 0745- Arrive onside Photos of gusobre post 10 upgredient of MW-5 For Ton switch pue cap e 5 W[newby well shipping deformed. -1530 - Finish Sampley Denobe to Hodbs

Location Soltz Dog Date 12-17-19125 Project / Client High 40, Char, Lt wind -0630 Leave hotel-topes - 0650 - Arrive on site - Calibrate we meter - Do sensor bad - Warstestoot & Menterane Zoo Still had readings - Transleshoot power to pump - DBS-8 Not evolute water to Gill tubing evidently. Troubleshot Collect surple from water trapped - DBS-2 - Scane as ABS 8 -Sampled with bailer . Traisboshot fump - apparenty a verbated (?) type to sample DBS-2. - Collected 7 Ger Samples Decond between each Sample Lots of delays we equipment Hare,

126 Location Salts Dog Date 12-12-12 Project / Client OD' or assivel, Hogh 450 Chor, 5-10 puph - 0630 - check out of Hobbs hoper -0650 - Arrive onsite - 0700. Collect Brine Sample From - Calibrate PH Reler Deservor Still work Calibrate - Collect remaining 5 GW Samples - Jim arside W electricions. Still having prouble W/ fimp Near brine well, ferairs made. Hervy puppy recently will both wells. intermittently due to electrical problems - 1220 Collect Injection (fresh weter) @ brown taks new PMW-1 - been + Stowe all gear - 1315 - Leave Site to ABO Via foscell





	GROL	JNDWATER ELEV	ATION DATA	SHEET	Λ	
Proje	ect Na <u>me: Sa</u>	alty Dog	S	am <u>pler:</u>	Mogan	8
Project #:	DB19.1198		Sample	e Date: 2/10	Hard 121	17/19
Project Ma	anager: <u>John</u>	Ayarbe	Sheet a	#1 of _1	. Isti	8/19
		12/10/1	9	12/17/19-	- All WLS	-). (
<u>Well ID</u>	previous (06	/19) Depth to Water		Comments: (well d	ia., sampled, condition)	
DBS-1R	<u>68.25</u>	63 16 69.99	74.42	70.41	C 07:07	-
DBS-2	70.94	177.36 [1]	105.15	7243	07:08	
DBS-3	<u>66.10</u>	66.78	7476	66.96	07:22	
DBS-4	71.66	72.36	78.81	72.90	07:12	
DBS-5	68.44	69.07	75.38	69.13	07:17	
DBS-6	<u>67.24</u>	68.13	76.02	67.9	5 08:05	
DBS-7	<u>65.99</u>	66.87		WL only Not on Map 60	561 07:58	
DBS-8	<u>65.52</u>	66.40	<u>69.91</u>	66.1	2 07:54	
DBS-9	58.53	59.27	67.55	59.25	07:32	
DBS-10	<u>65.11</u>	65-78	78.11	65.80	07.57	
MW-2	65.45	66.93	<i>F</i>	Norma 66.	c // · · ·	orly
MW-3	<u>68.18</u>	69.09	<u>147.13</u>	67,	38 07:30)
MW-4	<u>68.12</u>	68.98			7.4007:35	•
MW-5	65.30	66.09	<u>128.78</u>		5707:39	
MW-6	<u>66.70</u>	68.13 67.48		WL only 6	7.29 07.44	
PMW-1	71.76	1 7328	77.73	76.	25 0655	
Comments:	HDJ HW	1 63.4	DBS	RW-2-70.	12	
) 151'	49.3 ba	rels purfing rels Not pump	\sim	104	86	1,
5) E:\Projects\ES08.0118	.06_Salty_Dog_2016\Field F	Forms\SD GW Elevation.docx		0700 345		518 funding
	<u>.</u>	_	-	0105 FW 5	-7 1551	18,5 Nour



		ER METER CALIBRATION SHEET				
Project Name:	Salty Joy	sampler: <u>1.163a</u> Date: <u>12-12-19</u> Be Geoled ISI Ito Plus				
Project #:	<u>M. 1198.0</u>	Date: / 2~ 10-1 P				
Project Manager: _	J. Hyp	the line of the				
	`	Geoleon 15I to Plus				
<u>pH</u>	Temp (°C)	Comments				
(4) 4.04	4.7	No cal reedel				
(7) 7.12	4.4	2				
(10) 10.18	5.0	د ۱				
<u>SpCon (μs/cm)</u>	<u>Temp (°C)</u>	Comments				
1432-141) (1413)	5.3					
ORP (mv)	Temp (°C)	Comments				
221.0	5.0					
Dissolved O ₂	<u>Temp (°C)</u>	Comments				
(%)		Bad Sonsor				
(mg/L)						
<u>Pressure</u>	<u>Temp (°C)</u>	Comments				
(mmHg) 672.G	6.5					
Comments: 10 501500 is bud. New Menform + Zeroed yesterday. Out of parge. anyway. Geotech pertal wit						
	revoed	yesterday. Out of parge,				
anywa	y Ge	otech pertal wit				
م V						

,'



GROUNDWATER METER CALIBRATION SHEET							
Project Name:	Elt Dug	Sampler: <u>V. Maya</u> 26.2 Date: <u>1)</u> 17-19					
Project #:	48.00 1	62 Date: 017-19					
Project Manager: _	J-Ayu!						
p	<i>v</i>	Gentech YSI Pro Plug					
<u>pH</u>	Temp (°C)	Comments					
4.00	10.5	No Col Needer					
(7) 702	7.7						
(10) 10.20	9.4	L L					
<u>SpCon (μs/cm)</u>	<u>Temp (°C)</u>	Comments					
$\begin{array}{c} 1442 \rightarrow 143 \\ \hline (1413) \end{array}$	-77						
ORP (mv)	<u>Temp (°C)</u>	Comments					
236.1 → 220	8.						
Dissolved O ₂	<u>Temp (°C)</u>	<u>Comments</u>					
1345 →91.1 (%)	7.8	Was reading 1500 to initially. Out of rays - would Not C. (: brufe, Fished new Meabraik fer instructions)					
(mg/L)	3.9						
<u>Pressure</u>	<u>Temp (°C)</u>	Comments					
(mmHg) 674.7	8.0						
Comments:							
W/ New DO realizance reading remain and it of range. Teped							
W/ New DO realyrane readings remain and it range. Zeped DO & readings Continued to rise with > 100 again. Ac-culidrated & times - writtight realings pursist							
KE-Calibrate) b times	- unstable realing pursist					

147 5600

Cannot use Flow rich beinge adapters are too Smill For tuderry Civersil130/AppDatail.Local/Microsoft/Windows/INetCache/Content.Outlook/QWA9ULSN/GROUNDWATER METER CALIBRATION DATA SHEET (2).docx



GROUNDWA		FORING DATA SH	EEŢ		
Project Name: Salty Dog		Sampler:	Y Mayo	ir	
Project #: DB19.1198.00		Sample Date:	19-	18-19	
Project Manager: John Ayarbe		Sample Time:)	
Well #: DBS-1R					
Well Diameter:2"	(inches)	Height of Water	Column:	4,01	_(feet)
Depth to NAPL:	_(feet btoc)	Casing Volume:	.64		_(gal)
Depth to Water: 70.41	_(feet btoc)	Purge Volume:/_	.93		_(gal)
Total Depth of Well: 74.42	(feet)	Purge Method:	Grab /	ump	<u></u>
Note: One casing volume (SCH 40 PVC): 2.0"	ID casing = 0.	16 gal/ft; 4.0'' = 0.65 ga	l/ft; 6.0" = 1.	.47 gal/ft	

Groundwater Parameters:

Groundwa	ter Paramet	ers:		Bed Sery	jer	
Casing Volume	pН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	8,30	1,4,2	1361	234.1		Turbid
1	7.84	(8)	1148	227.0	· · · · · · · · · · · · · · · · · · ·	1 .
2	7.76	20.0	1992	226.5	-	Slight
3	771	91.7	1968	391.2		Non Slight

Sample Description: <u>1 poly</u>	
Physical Observations: No oder Slighty todd	

Analytical Method(s): Chloride

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	GRO			G DATA SHI	EET			
Project Nam	ne: Salty Do	og	Sa	mpler:	Y/bga	۱		
Project #: D	B19.1198.0	00	Sa	mple Date: .	J	7-17-19		
Project Man	ager: John	Ayarbe	Sa	mple Time: _	1.558			
Well #: DBS-2 Well Diameter:(inches) Height of Water Column: $\begin{array}{c} 1 & 70 \\ 7 & 97 $								
Groundwat	ter Paramet	ers:		2	x Serie	1	-	
Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	M.O. (mg/L)	Turbidity (NTU)		
Initial و،جعنامی 1	7.43	18.2	672	192.2	16.74	Very twobid		
2								
3							1	
	scription: <u>1</u> bservations:	Whe' cdi shatty of		tweeter u	ler - pu. religoing a pre	p Tept by. USS) Ne 4	

Analytical Method(s): Chloride

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GROUNDWAT	ER MONI	TORING DATA S	HEET	
Project Name: Salty Dog		Sampler:	4 morga	
Project #: DB19.1198.00		Sample Date	: 12-12-19	
Project Manager: John Ayarbe		Sample Time	16.55	
Well #: DBS-3			-	
Well Diameter: <u>2"</u>	(inches)	Height of Wate	er Column: 78	_(feet)
	(feet btoc)	Casing Volume:_	1.25	_(gal)
Depth to Water: <u>66.96</u> (f	(feet btoc)	Purge Volume:	3.75	_(gal)
Total Depth of Well: 74.76	(feet)	Purge Method:	Grab fung	
Note: One casing volume (SCH 40 PVC): 2.0" ID	D casing = 0.	16 gal/ft; 4.0" = 0.65	gal/ft; 6.0" = 1.47 gal/ft	

Groundwater Parameters:

Groundwater Parameters:					Brid Son	Sar
Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP ((mv)	(mg/L)	Turbidity (NTU)
Initial	7.88	16.2	572.4	271.0	15.4)	Tulk of
1	7.62	8.6	589	257.2	13.96	1
2	7.54	19.7	585	2347	13.32	1
3	7.52	21	579	211,0	15.32	NV

Sample Description: 1 poly

Physical Observations: Twbid, No odor

Analytical Method(s): _____Chloride__

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GROUNDWATER MON	NITORING DATA SHEEŢ
Project Name: Salty Dog	Sampler: Ym
Project #: <u>DB19.1198.00</u>	Sample Date: 12.17.19
Project Manager: John Ayarbe	Sample Time: 15/5
Well #:	645
Well Diameter:2"(inches) Height of Water Column: 19 36 (feet)
Depth to NAPL: (feet bloc	Casing Volume: TOF 103 (asl)
Depth to Water: 72.4312.5 (feet bloc) Purge Volume: <u>3,06</u> <u>3,09</u> (gal)
Total Depth of Well: 78.81 (feet	

One casing volume (SCH 40 PVC): 2.0" ID casing = 0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft But Sonsor

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm) 537	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	7.79	170	637	176.4	13.17	Turkid
1	7,59	19.5	539	139.5	1430	n
2	257	199	539	113.6	13.39	tr
3	7.54	19.9	539	113.5	14.34	51. twoid
		•	-			

Sample Description: <u>1 poly</u>

Fullid, No odor Physical Observations:

Analytical Method(s): Chloride

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GROUNDWATER MON	IITORING DATA SHEET
Project Name: Salty Dog	Sampler: 1. holga
Project #: <u>DB19.1198.00</u>	Sample Date: _/2-15-19
Project Manager: John Ayarbe	Sample Time: 0832
Well #: DBS-5	
Well Diameter: <u>2"</u> (inches) Height of Water Column: 6.25 (feet)
Depth to NAPL:(feet btoc) Casing Volume: <u>1.0</u> (gal)
Depth to Water: <u>G9.13</u> (feet btoc) Purge Volume: <u> </u>
) Purge Method: Grab Punp
Note: One casing volume (SCH 40 PVC): 2.0" ID casing =	0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	7.33	18.0	1390	1180		Twbid
1	7.12	20.1	143.2	143.6		51. fubric
2	7.06	20.4	1169	156.0		11
3	7.05	DOU	1172	1(12	(1

Sample Description: <u>1 poly</u>

Physical Observations: <u>Slights</u> tubid,

No odor

Analytical Method(s): <u>Chloride</u>

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GROUNDWATER MONITORING DATA SHEET							
Project Nan	ne: <u>Salty</u> D	og	Sa	mpler:	Miga		
Project #: 🛽	DB19.1198.	00	Sa	mple Date: _	12-17	7. 19	
Project Mar	nager: John	Ayarbe	Sa	mple Time: _	11:30		
Well #: DBS-6							
Well Diame	ter: <u>2</u>	"	(inches) Heig	ht of Water (Column: 0	(feet)	
-	APL:		et btoc) Casing				
Depth to W	ater:		et btoc) Purge				
Total Depth	of Well:	76.02	(feet) Purg	je Method: 🧕	irab pu	ч <u>С</u>	
Note: One casing vo	olume (SCH 40	PVC) [.] 2 0" ID c	asing = 0.16 gal/ft;	4 0" = 0 65 gal	/ft: 6 0" = 1 47	aal/ft	
	ter Paramet			- 4.0 - 0.00 gai	Bod Serve	gaint	
Casing Volume	pН	Temp	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)	
Initial	6.95	18.3	1310	208,3	14,67	very fushid	
1	7.10	19:3	1262	Fi).8	15:25	fuebid	
2	7.11	19.8	1264	170.2	15.40	N.	
3	7,15	D.O	128.5	154.5	15.21	ч	
Sample Des	scription: <u>1</u>	poly		• • • • • • • • • • • • • • • • • • •		······································	
		1 sh 1	1 white bonus	n d	r		

Physical Observations: <u>Jurbid</u> Obs! ou иÐ with 8 gelles , Emailed stord ~ wate ti

Analytical Method(s): _____Chloride

 $T: \label{eq:constraint} T: \label{eq:constraint} T: \label{eq:constraint} Admin \label{eq:constraint} T: \label{eq:constraint} Admin \label{eq:constraint} Field \ Forms \label{eq:constraint} Admin \label{eq:constraint} Field \ Forms \label{eq:constraint} Admin \ Field \ Forms \ Admin \ Admin \ Field \ Forms \ Admin \ Admi$



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GROUNDWATER MONITORING DATA SHEET								
Project Name: Salty Dog	Sampler:	1. Marga						
Project #: <u>DB19.1198.00</u>	Sample Date	12-17-19						
Project Manager: John Ayarbe	Sample Time	1315						
Well #: DBS-8								
Well Diameter:2"(inch	es) Height of Wate	r Column: $3.5/$ (feet)						
Depth to NAPL:(feet bt	oc) Casing Volume:							
Depth to Water: 66.40 (feet bt	oc) Purge Volume:	<u>[.((gal)</u>						
Total Depth of Well: 69.91 (fe	et) Purge Method:	Grab fum						
Note: One casing volume (SCH 40 PVC): 2.0" ID casing	= 0.16 gal/ft; 4.0" = 0.65 g	gal/ft; 6.0" = 1.47 gal/ft						

Groundwater Parameters:

Casing Volume	рН	Temp	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	NA -					-7
1						
2						
3						
	V					

Sample Description:	1 poly			
well goin dry	before jurge	tuby fills.	Collected Sample	for
water traff	sed in taking	after fulling	fund , Not prouse	h water to
Physical Observation	ns: Tubid,	the octor	take Gw	farancees

Analytical Method(s): _____Chloride___



	GR	OUNDWATE						
Project Nan	ne: Salty D	og	Sa	impler:	1 Morgar	١		
	DB19.1198.			mple Date: _	12	17.19		
Project Mar	nager: John	Ayarbe		imple Time: _	1405			
Well #: DB	S-9					0		
Well Diame	ter: <u>2</u>	11	(inches) Heig	ht of Water (Column: 🔏	<u>)</u> (feet)		
Depth to NA	\PL:	<u>(fe</u>	et btoc) Casing	Volume:	.33	(gal)		
Depth to Wa	ater:	59.25 (fe	et btoc) Purge	Volume:	1.93	(gal)		
Total Depth	of Well:	67.55	(feet) Purg	ge Method:	irato fun	mf		
Note: One casing vo	olume (SCH 40	PVC): 2.0" ID c	asing = 0.16 gal/ft;	: 4.0" = 0.65 gal	/ft: 6.0" = 1 47	oal/ft		
	ter Paramet		J	-	Bed Sensor	-		
Casing Volume	pН	Temp (S) c	Conductivity (µS/cm)	ORP (mv)	C D.O. (mg/L)	Turbidity (NTU)		
Initial	7.57	14.2	1972	222.0	15.08	Turdid		
1	7.30	17.5	1802	188.1	14.73	Trebod		
2	7.31	19.0	1524	154.7	13.70	Tubid		
3	7.27	19.6	1439	124.1	13.64	Slight Luga		
Sample Description: <u>1 poly</u>								
Physical Ot	oservations:	No odor,	Slighty the	54				

Analytical Method(s): ____Chloride



	GROUNDWATER MONITORING DATA SHEET								
Project Nam	Project Name: Salty Dog				Morgin				
Project #: D)B19.1198.0	00	Sa	mple Date: _	10-17	- 19			
Project Man	ager: John	Ayarbe	Sa	mple Time: _	1225				
Well #: DB	S-10								
Well Diame	ter: <u>2</u>	"((inches) Heig	ht of Water (Column:	(feet)			
Depth to NA	NPL:	<u>(fe</u>	et btoc) Casing	Volume: <u>1.</u>	97	(gal)			
Depth to Wa	ater:6	5.80 (fe	et btoc) Purge '	Volume:	5.91	(gal)			
Total Depth	of Well:		(feet) Purg		Ω	~			
Note: One casing vo	olume (SCH 40	PVC): 2.0" ID c	asing = 0.16 gal/ft;	4.0" = 0.65 gal	/ft; 6.0" = 1.47	gal/ft			
Groundwat	ter Paramet	ers:			bed sense	7			
Casing Volume	рН	Temp	Conductivity (µS/cm)	ORP (mv)	Ƙ D.O. (mg/L)	Turbidity (NTU)			
Initial	711	19.2	1766	207.9	14.50	Twitted			

Casing Volume	рН	Temp	Conductivity (µS/cm)	ORP (mv)	∯ , D.O. (mg/L)	Turbidity (NTU)
Initial	7.11	19.2	2071	207.9	14.50	Twibid
1	7.05	19.6	2354	191.7	15.35	Tubid
2	7.0	19.9	2453	173.0	16.25	Tuibid
3	7.00	20.0	2447	1'23,9	17.02	Non turbid

Sample Description: <u>1 poly</u> Physical Observations: No oder Non turbid .

Analytical Method(s): _____Chloride__

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GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog	Sampler: V. Megan
Project #: DB19.1198.00	Sample Date:
Project Manager: John Ayarbe	Sample Time: 12:10
Well #: PMW-1	
Well Diameter: <u>2"</u>	 _(inches) Height of Water Column: <u>l.</u> <u>4</u> 8 (feet)
Depth to NAPL:(f	eet btoc) Casing Volume: 0.24 (gal)
	eet btoc) Casing Volume: 0.24 (gal) eet btoc) Purge Volume: 0.73 actical (gal) (feet) Purge Methods and Relations
Total Depth of Well: 77.73	(feet) Purge Method: Grad forme Po. Is N
Note:	

One casing volume (SCH 40 PVC): 2.0" ID casing = 0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Groundwa	ter Paramet	ers:			Reid Seis	5
Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	7.45	18,3	12770	159.3		Non turbid
1			/			1010
2						
3		_				

Sample Description: <u>1 poly</u>	
Physical Observations: WC very	Short - King drawing down
Analytical Method(s): <u>Chloride</u>	Nortubid, No oda!

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	GR	OUNDWATE			- E -	
Project Nar	me: <u>Salty</u> D	og	Sa	impler:	Morgan	
Project #: [<u>DB19.1198.</u>	00	Sa	mple Date: .	12-	18-19
Project Ma	nager: John	Ayarbe		imple Time:	11.	
Well #: MV						• -
Well Diame	eter: <u>2</u>	11	(inches) Heig	ht of Water	Column: <u>79</u> .	15 (feet)
Depth to N/	APL: -	(fe	et btoc) Casino	Volume 12	16	(len)
Depth to W	/ater:67	. <u>}} (</u> fe	et btoc) Purge	Volume:	8.28	(gal)
		147.13		e Method:	0	+P
Note: One casing ve	olume (SCH 40	PVC): 2.0" ID c	casing = 0.16 gal/ft;	4.0'' = 0.65 ga	l/ft; 6.0" = 1.47	gal/ft
	ter Paramet				of Rod Sons	
Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	7.36	18.9	19810	182.7		Non bid
1	7.00	19.6	19:225	171.4		1
2	7.00	KI.7	21908	1355		U]
3	7.00	A.1	02337	151,2		l'
Sample Des	scription: <u>1</u>	ooly (unprese	erved Chloride),	Water Quali	ty Suite	4 Contries
Physical Ot	oservations:	Non H	ubid No	o de/		
Analytical N	lethod(s):	Chloride				
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	GRO	OUNDWATE		G DATA SHE	ET	
Project #: D	ne: Salty Do B19.1198.(ager: John	00	Sa	mpler:, mple Date: _ mple Time: _	12.1	8-19
Well #: <u>MW</u> Well Diame Depth to NA Depth to Wa Total Depth Note:	/-5 ter: <u>2'</u> NPL: <u></u> ater: <u>6</u> of Well: <u></u>	(fe 5- 57 (fe 128.78	(inches) Heig eet btoc) Casing eet btoc) Purge ^v (feet) Purg casing = 0.16 gal/ft;	ht of Water C Volume: <u> </u>	Column: 63 b. 1] 30. 34 Hato Punf	(gal) (gal) ?
-	er Paramete	·	503mg - 0. 10 gaint,	4.0 × 0.00 gan	Bed-Enjar	gaint
Casing	nH	Temp		ORP (mu)	D.O.	Turbidity

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	806	14.3	1969	ə35.ə		Non twikid
1	7.08	19.7	7378	166.7		
2	7.07	19.8	3358	141.2		ų.
3	7.06	19.8	2334	135.3	-	u

Sample Description: <u>1 poly</u>

Physical Observations: Non Lubid, N. Odar

Analytical Method(s): ____Chloride

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GROUNDW	ATER MON	ITORING DATA S	HEĘT	
Project Name: Salty Dog		Sampler:	V. hogen	
Project #: <u>DB19.1198.00</u>		Sample Date		
Project Manager: John Ayarbe		Sample Time	_	
Well #: Brine				
Well Diameter: <u>2"</u>	(inches)	Height of Wate	r Column:	(feet)
Depth to NAPL:	_(feet btoc)	Casing Volume:		(gal)
Depth to Water:	_(feet btoc)	Purge Volume:		(gal)
Total Depth of Well:	(feet)	Purge Method:	Grab	
Note: One casing volume (SCH 40 PVC): 2.0	" ID casing = 0	.16 gal/ft; 4.0'' = 0.65 g	gal/ft; 6.0'' = 1.47 gal/ft	

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	7.33	-4.7	256,4198	164.8	7.68	Non turbis
1						
2						
3						

Sample	e Descriptio	n: <u>3 poly</u>					
	Greb	For	Port	that	Fills	trucks	
				······································	• 	•	
Physica	al Observat	tions: <u>حما</u>	+ defo	D.45 07	fife		
			·		`		
A		() _					

Analytical Method(s): <u>Sodium, Chloride, TDS, Spec Gravity, pH</u>

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GROUNDWATE	ER MONI	TORING DATA S	HEET	
Project Name: Salty Dog		Sampler:	Mag	
Project #: <u>DB19.1198.00</u>		Sample Date:	12-12-19	
Project Manager: John Ayarbe		Sample Time:	in Xa	
Well #: Injection	_			
Well Diameter: <u>2"</u>	_(inches)	Height of Water	Column:	_(feet)
		Casing Volume:		(gal)
B (1) (1) (1)		Purge Volume:		(gal)
		Purge Method:		_(gui)
Note: One casing volume (SCH 40 PVC): 2.0" ID c				

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	7.80	96	1415	93.7	<u> </u>	Mon turbid
1						- <u>-</u>
2						
3						

Sample Description: <u>3 poly</u>

Physical Observations:	Frod fron	Fill	Pile	C	bown	tanks	
new Muilbox	o Provil.	C forces	ralve	for	Sample		

Analytical Method(s): <u>Chloride, TDS, Spec Gravity, pH, and Na</u>

Appendix C

Historical Data



Table C-1. Historical Fluid Level Measurements
Salty Dog Brine Station, Lea County, New Mexico
Page 1 of 9

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-1	56.0–76.0	3,817.09	4/08/2009	62.38	3,754.71
			5/11/2011	64.70	3,752.39
			10/04/2011	Well o	destroyed
DBS-1R	58.0–78.0	3,817.00 ^b	4/30/2012	63.60	3,753.40
			9/10/2012	65.65	3,751.35
			6/23/2013	64.40	3,752.60
			1/09/2014	67.23	3,749.77
			4/07/2014	66.36	3,750.64
			3/20/2015	67.17	3,749.83
			7/01/2015	67.92	3,749.08
			9/29/2015	67.07	3,749.93
			12/16/2015	67.54	3,749.46
			3/22/2016	66.61	3,750.39
			6/08/2016	66.23	3,750.77
			9/13/2016	67.43	3,749.57
			12/01/2016	67.31	3,749.69
			6/20/2017	69.60	3,747.40
			12/19/2017	67.80	3,749.20
			6/18/2018	67.45	3,749.55
			11/07/2018	68.71	3,748.29
			6/03/2019	68.25	3,748.75
			12/17/2019	70.41	3,746.59
DBS-2	58.0–78.0	3,820.50	4/08/2009	65.45	3,755.05
			5/11/2011	66.80	3,753.70
			10/04/2011	65.87	3,754.63
			2/08/2012	65.96	3,754.54
			4/30/2012	66.26	3,754.24
			9/10/2012	67.45	3,753.05
			6/23/2013	67.03	3,753.47
			1/09/2014	69.08	3,751.42
			4/07/2014	68.67	3,751.83
			3/20/2015	69.32	3,751.18

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009. ^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface msl = Above mean sea level btoc = Below top of casing NA = Not available



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-2 (cont.)	58.0-78.0	3,820.50	6/30/2015	69.29	3,751.21
			9/29/2015	69.41	3,751.09
			12/16/2015	69.71	3,750.79
			3/22/2016	69.13	3,751.37
			6/08/2016	68.91	3,751.59
			9/13/2016	69.76	3,750.74
			12/01/2016	69.73	3,750.77
			6/20/2017	71.33	3,749.17
			12/19/2017	70.42	3,750.08
			6/18/2018	70.25	3,750.25
			11/07/2018	71.07	3,749.43
			6/03/2019	70.94	3,749.56
			12/17/2019	72.43	3,748.07
DBS-3	56.0-76.72	3,816.66	4/08/2009	60.67	3,755.99
			5/11/2011	61.25	3,755.41
			10/04/2011	61.25	3,755.41
			2/08/2012	61.11	3,755.55
			4/30/2012	61.41	3,755.25
			9/10/2012	61.81	3,754.85
			6/23/2013	62.08	3,754.58
			1/09/2014	63.30	3,753.36
			4/07/2014	63.43	3,753.23
			3/20/2015	63.93	3,752.73
			6/30/2015	63.99	3,752.67
			9/29/2015	64.17	3,752.49
			12/16/2015	64.41	3,752.25
			3/22/2016	63.88	3,752.78
			6/08/2016	63.92	3,752.74
			9/13/2016	64.56	3,752.10
			12/01/2016	64.59	3,752.07
			6/20/2017	65.52	3,751.14
			12/19/2017	65.54	3,751.12

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 2 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

- bgs = Below ground surface msl = Above mean sea level
- btoc = Below top of casing NA = Not available



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-3 (cont.)	56.0-76.72	3,816.66	6/18/2018	65.60	3,751.06
			11/07/2018	66.11	3,750.55
			6/03/2019	66.10	3,750.56
			12/17/2019	66.96	3,749.70
DBS-4	56.0-76.0	3,820.37	4/08/2009	66.27	3,754.10
			5/11/2011	67.23	3,753.14
			10/04/2011	66.67	3,753.70
			2/08/2012	66.76	3,753.61
			4/30/2012	67.02	3,753.35
			9/10/2012	67.78	3,752.59
			6/23/2013	67.70	3,752.67
			1/09/2014	69.37	3,751.00
			4/07/2014	69.23	3,751.14
			3/20/2015	69.81	3,750.56
			6/30/2015	69.85	3,750.52
			9/29/2015	70.00	3,750.37
			12/16/2015	70.25	3,750.12
			3/22/2016	69.74	3,750.63
			6/08/2016	69.62	3,750.75
			9/13/2016	70.35	3,750.02
			12/01/2016	70.38	3,749.99
			6/20/2017	71.67	3,748.70
			12/19/2017	71.08	3,749.29
			6/18/2018	70.98	3,749.39
			11/07/2018	71.61	3,748.76
			6/03/2019	71.66	3,748.71
			12/17/2019	72.90	3,747.47
DBS-5	56.9–76.9	3,820.66	4/08/2009	62.99	3,757.67
			5/11/2011	63.45	3,757.21
			10/04/2011	63.41	3,757.25
			2/08/2012	63.46	3,757.20
			4/30/2012	63.70	3,756.96

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 3 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

- bgs = Below ground surface msl = Above mean sea level
- btoc = Below top of casing NA = Not available



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-5 (cont.)	56.9–76.9	3,820.66	9/10/2012	63.92	3,756.74
			6/23/2013	64.30	3,756.36
			1/09/2014	65.28	3,755.38
			4/07/2014	65.48	3,755.18
			3/20/2015	65.90	3,754.76
			7/01/2015	66.18	3,754.48
			9/29/2015	66.25	3,754.41
			12/16/2015	66.47	3,754.19
			3/22/2016	66.08	3,754.58
			6/08/2016	66.16	3,754.50
			9/13/2016	66.64	3,754.02
			12/01/2016	66.72	3,753.94
			6/20/2017	67.60	3,753.06
			12/19/2017	67.88	3,752.78
			6/18/2018	68.04	3,752.62
			11/07/2018	68.47	3,752.19
			6/03/2019	68.44	3,752.22
			12/17/2019	69.13	3,751.53
DBS-6	56.7–76.7	3,812.65	4/07/2009	62.75	3,749.90
			5/11/2011	63.11	3,749.54
			10/04/2011	63.16	3,749.49
			2/08/2012	63.20	3,749.45
			4/30/2012	63.43	3,749.22
			9/10/2012	63.60	3,749.05
			6/23/2013	63.74	3,748.91
			1/09/2014	64.00	3,748.65
			4/07/2014	64.22	3,748.43
			3/19/2015	64.78	3,747.87
			7/01/2015	64.81	3,747.84
			9/29/2015	65.48	3,747.17
			12/16/2015	65.26	3,747.39
			3/22/2016	65.38	3,747.27

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 4 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-6 (cont.)	56.7–76.7	3,812.65	6/08/2016	65.37	3,747.28
			9/13/2016	65.51	3,747.14
			12/01/2016	65.51	3,747.14
			6/20/2017	65.81	3,746.84
			12/19/2017	66.29	3,746.36
			6/18/2018	66.45	3,746.20
			11/07/2018	66.62	3,746.03
			6/03/2019	67.24	3,745.41
			12/17/2019	67.95	3,744.70
DBS-7	55.1–75.1	3,810.21	4/07/2009	61.74	3,748.47
DBS-8	55.2–75.2	3,810.70	4/07/2009	61.20	3,749.50
			5/11/2011	61.67	3,749.03
			10/04/2011	61.71	3,748.99
			2/08/2012	61.77	3,748.93
			4/30/2012	62.00	3,748.70
			9/10/2012	62.15	3,748.55
			6/23/2013	62.28	3,748.42
			1/09/2014	62.47	3,748.23
			4/07/2014	62.67	3,748.03
			3/19/2015	63.19	3,747.51
			6/30/2015	63.25	3,747.45
			9/29/2015	63.82	3,746.88
			12/16/2015	63.58	3,747.12
			3/22/2016	63.76	3,746.94
			6/08/2016	63.72	3,746.98
			9/13/2016	63.83	3,746.87
			12/01/2016	63.79	3,746.91
			6/20/2017	64.09	3,746.61
			12/19/2017	64.53	3,746.17
			6/18/2018	64.70	3,746.00
			11/07/2018	64.82	3,745.88

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 5 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

- bgs = Below ground surface msl = Above mean sea level
- btoc = Below top of casing NA = Not available



	Screen	Top of Casing	Dui	Depth to	Groundwater
Monitor Well	Interval (feet bgs)	Elevation ^a (feet msl)	Date Measured	Water (feet btoc)	Elevation (feet msl)
DBS-8	55.2-75.2	3,810.70	6/03/2019	65.52	3,745.18
			12/17/2019	66.12	3,744.58
DBS-9	48.0-68.0	3,806.26	4/08/2009	53.93	3,752.33
			5/11/2011	54.39	3,751.87
			10/04/2011	54.59	3,751.67
			2/08/2012	54.53	3,751.73
			4/30/2012	54.68	3,751.58
			9/10/2012	54.77	3,751.49
			6/23/2013	55.04	3,751.22
			1/09/2014	55.27	3,750.99
			4/07/2014	55.56	3,750.70
			3/19/2015	55.95	3,750.31
			7/01/2015	56.14	3,750.12
			9/29/2015	56.49	3,749.77
			12/16/2015	56.52	3,749.74
			3/22/2016	56.51	3,749.75
			6/08/2016	56.64	3,749.62
			9/13/2016	56.81	3,749.45
			12/01/2016	56.88	3,749.38
			6/20/2017	57.28	3,748.98
			12/19/2017	57.67	3,748.59
			6/18/2018	57.98	3,748.28
			11/07/2018	58.22	3,748.04
			6/03/2019	58.53	3,747.73
			12/17/2019	59.25	3,747.01
DBS-10	57.2–77.2	3,807.48	6/18/2018	64.46	3,743.02
			11/07/2018	64.66	3,742.82
			6/03/2019	65.11	3,742.37
			12/17/2019	65.80	3,741.68
NW-1s	52.95–72.95	3,817.33	4/08/2009	62.35	3,754.98
NW-1m	99.31–119.31	3,817.35	4/08/2009	62.25	3,755.10
NW-1d	149.45–169.45	3,817.35	4/08/2009	62.04	3,755.31

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 6 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface

msl = Above mean sea level

btoc = Below top of casing NA = Not available



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
NW-2s	53.35–73.35	3,812.50	4/08/2009	63.08	3,749.42
NW-2m	93.72–113.72	3,812.45	4/08/2009	63.27	3,749.18
NW-2d	126.87-146.87	3,812.46	4/08/2009	66.41	3,746.05
PMW-1	63–78	3,821.17	6/23/2008	67.51	3,753.66
			4/08/2009	65.97	3,755.20
			5/11/2011	68.70	3,752.47
			10/04/2011	66.95	3,754.22
			2/08/2012	66.69	3,754.48
			4/30/2012	67.27	3,753.90
			9/10/2012	69.77	3,751.40
			6/23/2013	68.40	3,752.77
			1/09/2014	71.24	3,749.93
			4/07/2014	69.97	3,751.20
			3/20/2015	70.78	3,750.39
			7/01/2015	71.41	3,749.76
			9/29/2015	70.76	3,750.41
			12/16/2015	71.03	3,750.14
			3/22/2016	70.30	3,750.87
			6/08/2016	69.65	3,751.52
			9/13/2016	71.08	3,750.09
			12/01/2016	70.97	3,750.20
			6/20/2017	73.06	3,748.11
			12/19/2017	71.19	3,749.98
			6/18/2018	70.97	3,750.20
			11/07/2018	72.52	3,748.65
			6/03/2019	71.76	3,749.41
			12/17/2019	76.25	3,744.92
MW-1	120–140	NA	6/23/2008	59.90	NA
MW-2	127–147	3,812.68	6/23/2008	61.42	3,751.26
			4/07/2009	61.65	3,751.03
MW-3	NA	3,812.05	6/23/2008	62.06	3,749.99
			4/07/2009	62.02	3,750.03

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 7 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
MW-3 (cont.)	NA	3,812.05	5/11/2011	62.91	3,749.14
			10/04/2011	62.91	3,749.14
			2/08/2012	62.95	3,749.10
			4/30/2012	63.39	3,748.66
			9/10/2012	63.50	3,748.55
			6/23/2013	63.36	3,748.69
			1/09/2014	63.55	3,748.50
			4/07/2014	63.88	3,748.17
			3/19/2015	64.27	3,747.78
			7/01/2015	64.34	3,747.71
			9/29/2015	67.94	3,744.11
			12/16/2015	64.75	3,747.30
			3/22/2016	64.84	3,747.21
			6/08/2016	64.89	3,747.16
			9/13/2016	66.33	3,745.72
			12/01/2016	66.66	3,745.39
			6/20/2017	65.56	3,746.49
			12/19/2017	65.70	3,746.35
			6/18/2018	66.52	3,745.53
			11/07/2018	66.09	3,745.96
			6/03/2019	68.18	3,743.87
			12/17/2019	67.38	3,744.67
MW-4	111–131	3,811.33	6/23/2008	62.12	3,749.21
			4/07/2009	62.51	3,748.82
MW-5	112–132	3,808.96	6/23/2008	60.60	3,748.36
			4/07/2009	60.79	3,748.17
			5/11/2011	61.17	3,747.79
			10/04/2011	61.72	3,747.24
			2/08/2012	61.23	3,747.73
			4/30/2012	61.50	3,747.46
			9/10/2012	61.65	3,747.31
			6/23/2013	61.75	3,747.21

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 8 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

- bgs = Below ground surface msl = Above mean sea level
- btoc = Below top of casing NA = Not available



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
MW-5 (cont.)	112–132	3,808.96	1/09/2014	61.90	3,747.06
			4/07/2014	62.18	3,746.78
			3/19/2015	62.96	3,746.00
			6/30/2015	62.71	3,746.25
			9/29/2015	63.92	3,745.04
			12/16/2015	63.02	3,745.94
			3/22/2016	63.14	3,745.82
			6/08/2016	63.47	3,745.49
			9/13/2016	63.66	3,745.30
			12/01/2016	63.70	3,745.26
			6/21/2017	63.62	3,745.34
			12/19/2017	65.02	3,743.94
			6/18/2018	64.32	3,744.64
			11/07/2018	64.34	3,744.62
			06/03/2019	65.30	3,743.66
			12/17/2019	65.57	3,743.39
MW-6	NA	3,810.17	6/23/2008	62.17	3,748.00
			4/07/2009	62.41	3,747.76

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 9 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009. ^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

btoc = Below top of casing NA = Not available bgs = Below ground surface

msl = Above mean sea level



Monitor Well	Date	Chloride Concentration (mg/L) ^a
	IWQCC Standard	250
DBS-1	4/08/2009	320
	5/12/2011	940
	10/04/2011	Well destroyed
DBS-1R	5/01/2012	3,000
	9/11/2012	3,200
	6/25/2013	3,300
	1/10/2014	1,000
	4/08/2014	1,700
	3/20/2015	1,200
	7/01/2015	860
	9/30/2015	670
	12/17/2015	760
	3/23/2016	560
	6/09/2016	570
	09/14/2016	360
	12/01/2016	360
	6/20/2017	320
	12/20/2017	190
	6/19/2018	190
	11/08/2018	180
	6/03/2019	190
	12/18/2019	210
DBS-2	4/08/2009	14
	5/12/2011	25
	10/05/2011	18
	2/09/2012	22
	5/01/2012	24
	9/11/2012	44
	6/25/2013	36
	1/10/2014	45
	4/08/2014	22

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 1 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NMWQCC Standard		250
DBS-2 (cont.)	3/20/2015	29
	6/30/2015	28
	9/30/2015	40
	12/17/2015	35
	3/23/2016	46
	6/09/2016	41
	9/14/2016	41
	12/02/2016	53
	6/20/2017	59
	12/20/2017	37
	6/18/2018	47
	11/08/2018	47
	6/03/2019	42
	12/17/2019	68
DBS-3	4/08/2009	36
	5/12/2011	35
	10/05/2011	34
	2/09/2012	34
	5/01/2012	33
	9/11/2012	34
	6/24/2013	32
	1/10/2014	34
	4/08/2014	32
	3/20/2015	35
	6/30/2015	35
	9/30/2015	34
	12/17/2015	34
	3/23/2016	36
	6/09/2016	35
	9/14/2016	37
	12/02/2016	37

Table C-2. Historical Chloride Groundwater Analytical Data Salty Dog Brine Station, Lea County, New Mexico Page 2 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NMWQCC Standard		250
DBS-3 (cont.)	6/20/2017	39
	12/20/2017	42
	6/18/2018	47
	11/08/2018	46
	6/03/2019	46
	12/17/2019	48
DBS-4	4/08/2009	38
	5/12/2011	33
	10/05/2011	32
	2/09/2012	32
	5/01/2012	31
	9/11/2012	32
	6/25/2013	31
	1/10/2014	32
	4/08/2014	30
	3/20/2015	33
	6/30/2015	31
	9/30/2015	33
	12/17/2015	35
	3/23/2016	38
	6/09/2016	35
	9/14/2016	37
	12/02/2016	41
	6/20/2017	35
	12/20/2017	32
	6/19/2018	39
	11/08/2018	35
	6/03/2019	30
	12/17/2019	35
DBS-5	4/08/2009	65
	5/12/2011	140

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 3 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NMWQCC Stand		250
DBS-5 (cont.)	10/05/2011	140
	2/09/2012	140
	4/30/2012	150
	9/11/2012	160
	6/24/2013	160
	1/10/2014	180
	4/08/2014	160
	3/20/2015	140
	7/01/2015	140
	9/30/2015	150
	12/17/2015	160
	3/23/2016	150
	6/09/2016	150
	9/14/2016	170
	12/02/2016	170
	6/20/2017	170
	12/20/2017	170
	6/18/2018	180
	11/08/2018	170
	6/03/2019	280
	12/18/2019	160
DBS-6	4/07/2009	380
	5/12/2011	410
	10/05/2011	400
	2/09/2012	380
	4/30/2012	400
	9/11/2012	390
	6/24/2013	340
	1/10/2014	390
	4/07/2014	400
	3/19/2015	370

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 4 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
	IWQCC Standard	250
DBS-6 (cont.)	7/01/2015	360
	9/30/2015	370
	12/17/2015	380
	3/23/2016	310
	6/09/2016	300
	9/14/2016	290
	12/02/2016	300
	6/21/2017	240
	12/19/2017	200
	6/19/2018	210
	11/08/2018	190
	6/03/2019	180
	12/17/2019	220
DBS-7	4/07/2008	570
DBS-8	4/07/2009	58
	5/12/2011	36
	10/05/2011	140
	2/09/2012	41
	4/30/2012	41
	9/10/2012	42
	6/24/2013	45
	1/09/2014	38
	4/07/2014	36
	3/19/2015	36
	7/01/2015	34
	9/30/2015	35
	12/17/2015	33
	3/23/2016	35
	6/09/2016	34
	9/14/2016	34
	12/02/2016	33

Table C-2. Historical Chloride Groundwater Analytical Data Salty Dog Brine Station, Lea County, New Mexico Page 5 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NMWQCC Standard		250
DBS-8 (cont.)	6/21/2017 12/19/2017	33
	6/19/2018	28 33
	11/08/2018	30
	6/03/2019	35
	12/17/2019	30
DBS-9	4/08/2009	210
	5/12/2011	600
	10/05/2011	440
	2/09/2012	290
	4/30/2012	330
	9/11/2012	320
	6/24/2013	200
	1/10/2014	170
	4/07/2014	220
	3/19/2015	260
	7/01/2015	210
	9/30/2015	260
	12/17/2015	230
	3/23/2016	200
	6/09/2016	190
	9/14/2016	190
	12/02/2016	180
	6/21/2017	200
	12/20/2017	230
	6/19/2018	260
	6/03/2019	160
	12/17/2019	220
DBS-10	6/19/2018	690
	11/08/2018	590

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 6 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B. mg/L = Milligrams per liter



Monitor Well	Date	Chloride Concentration (mg/L) ^a
	IWQCC Standard	250
DBS-10 (cont.)	6/03/2019	510
	12/17/2019	540
NW-1s	4/08/2009	630
NW-1m	4/08/2009	57
NW-1d	4/08/2009	38
NW-2s	4/08/2009	410
NW-2m	4/08/2009	570
NW-2d	4/08/2009	4,700
PMW-1	2/27/2008	9,500 ^b
	5/30/2008	8,600 ^b
	6/23/2008	12,700
	4/08/2009	11,000
	5/12/2011	13,000
	10/05/2011	12,000
	2/09/2012	12,000
	5/01/2012	12,000
	9/11/2012	14,000
	6/25/2013	14,000
	1/10/2014	11,000
	4/08/2014	12,000
	3/20/2015	8,500
	7/01/2015	8,600
	9/30/2015	9,700
	12/17/2015	9,800
	3/23/2016	8,200
	6/09/2016	8,500
	9/14/2016	9,300
	12/01/2016	8,300
	6/20/2017	13,000
	12/20/2017	12,000
	6/19/2018	9,600

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 7 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



		Chloride Concentration
Monitor Well	Date	(mg/L) ^a
NN	IWQCC Standard	250
PMW-1 (cont.)	11/08/2018	10,000
	6/03/2019	11,000
	12/18/2019	3,400
MW-1	5/30/2008	75 ^b
	6/23/2008	243
MW-2	2/27/2008	120 ^b
	5/30/2008	80 ^b
	6/23/2008	1,480
	4/07/2009	1,200
	6/19/2018	390
MW-3	2/27/2008	348 ^b
	5/30/2008	360 ^b
	6/23/2008	1,090
	4/07/2009	17,000
	5/12/2011	16,000
	10/05/2011	14,000
	2/09/2012	15,000
	4/30/2012	14,000
	9/10/2012	16,000
	6/24/2013	12,000
	1/10/2014	10,000
	4/07/2014	12,000
	3/19/2015	9,700
	7/01/2015	10,000
	9/30/2015	9,600
	12/17/2015	5,100
	3/23/2016	8,200
	6/09/2016	9,400
	9/14/2016	9,100
	12/02/2016	11,000
	6/21/2017	10,000

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 8 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
	MWQCC Standard	250
MW-3 (cont.)	12/20/2017	8,300
	6/19/2018	7,300
	11/08/2018	8,000
	6/03/2019	8,000
	12/18/2019	7,400
MW-4	2/27/2008	476 ^b
	5/30/2008	512 ^b
	6/23/2008	5,730
	4/07/2009	6,600
MW-5	2/27/2008	1,280 ^b
	5/30/2008	1,220 ^b
	6/23/2008	1,260
	4/07/2009	1,300
	5/12/2011	1,500
	10/05/2011	1,500
	2/09/2012	1,500
	4/30/2012	1,400
	9/10/2012	1,500
	6/24/2013	1,300
	1/10/2014	1,300
	4/07/2014	1,300
	3/19/2015	1,200
	7/01/2015	1,200
	9/30/2015	1,000
	12/17/2015	1,000
	3/23/2016	980
	6/09/2016	970
	9/14/2016	1,000
	12/02/2016	710
	6/21/2017	870
	12/19/2017	850

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 9 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NM	IWQCC Standard	250
MW-5 (cont.)	6/19/2018	840
	11/08/2018	680
	6/03/2019	610
	12/18/2019	550
MW-6	2/27/2008	32 ^b
	5/30/2008	36 ^b
	6/23/2008	31.4
	4/07/2009	25
Ranch Headquarters Supply Well	6/23/2008	35.4
Brine Station Fresh	2/27/2008	630 ^b
Water Supply Well	5/30/2008	590 ^b
	6/23/2008	650

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 10 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Recovery Well	Date	Average Extraction Rate ^a (gpm)
RW-1	4/07/2012	Groundwater extraction started
	5/01/2012	2.1
	9/11/2012	2.9
	6/25/2013	4.1
	11/15/2013	3.6
	3/20/2015 ^b	2.4
	6/30/2015	
FWS-1	12/17/2015	_
	3/22/2016	12.8
	6/08/2016	33.9
	9/13/2016	5.4
	12/02/2016	39.7
	6/20/2017	32.7
	12/19/2017	37.3
	6/18/2018	15.4
	11/08/2018	22.4
	6/03/2019 ^c	23.9
	12/18/2019	27.7
RW-2	4/06/2012	Groundwater extraction started
	5/01/2012	2.5
	9/11/2012	4.3
	12/14/2012	3.9
	6/25/2013 ^d	
	9/21/2013 ^e	2.9
	9/30/2015	68
	12/17/2015	44

Table C-3. Historical Average Groundwater Extraction Rates Salty Dog Brine Station, Lea County, New Mexico Page 1 of 2

^a Average extraction rates based on totalizer flow meter readings and/or fresh water production records.

^b Pumping at RW-1 stopped because pumping of FWS-1 lowered groundwater levels at RW-1, precluding groundwater extraction at RW-1. Pumping at FWS-1 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area.

^c New meter on December 3, 2019; well stopped pumping on May 11, 2019.

^d New pump installed in RW-2 and started on June 25, 2013.

^e Meter and pump were removed from RW-2 on approximately September 21, 2013 by facility manager to install a new, larger-capacity pump.

^f Meter was inoperable because it was damaged. Meter was replaced in November 2017.

^g Meter read on November 8, 2018, but well had not been pumped since October 10, 2018; average extraction rate between June 18 and October 10, 2018 is reported. gpm = Gallons per minute



Table C-3. Historical Average Groundwater Extraction Rates Salty Dog Brine Station, Lea County, New Mexico Page 2 of 2

Recovery Well	Date	Average Extraction Rate ^a (gpm)
RW-2 (cont.)	3/22/2016	32
	6/08/2016	9.0
	9/13/2016	5.7
	12/01/2016 ^f	—
	6/20/2017 ^f	—
	12/19/2017	12.4
	6/19/2018	5.2
	10/10/2018 ^g	3.4
	6/3/2019	7.0
	12/18/2019	14.9

^a Average extraction rates based on totalizer flow meter readings and/or fresh water

production records. ^b Pumping at RW-1 stopped because pumping of FWS-1 lowered groundwater levels at RW-1, precluding groundwater extraction at RW-1. Pumping at FWS-1 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area.

^c New meter on December 3, 2019; well stopped pumping on May 11, 2019.

^d New pump installed in RW-2 and started on June 25, 2013.

^e Meter and pump were removed from RW-2 on approximately September 21, 2013 by facility manager to install a new, larger-capacity pump.

^f Meter was inoperable because it was damaged. Meter was replaced in November 2017. ^g Meter read on November 8, 2018, but well had not been pumped since October 10.

2018; average extraction rate between June 18 and October 10, 2018 is reported. gpm = Gallons per minute

Chavez, Carl J, EMNRD

Monday, October 14, 2019 1:13 PM		
Chavez, Carl J, EMNRD		
;		
bg		

Hi Carl,

Attached is the Semiannual Groundwater Monitoring and O&M Report for the Salty Dog Brine Station for the period January 1 through June 30, 2019. I'm submitting the report to you on behalf of PAB Services, Inc.

Please let me know if you have questions.

Sincerely,

John P. Ayarbe Senior Hydrogeologist

Daniel B. Stephens & Associates, Inc.

a Geo-Logic Company 6020 Academy Road NE, Suite 100 Albuquerque, New Mexico 87109 Office: (505) 822-9400 | Direct: (505) 353-9137 Mobile: (505) 280-4339 jayarbe@dbstephens.com or jayarbe@geo-logic.com

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October 14, 2019

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

Re: Semiannual Groundwater Monitoring and O&M Report January 1 through June 30, 2019 Salty Dog Brine Station, Lea County, New Mexico

Dear Mr. Chavez:

On behalf of PAB Services, Inc., Daniel B. Stephens & Associates, Inc. (DBS&A) is submitting the enclosed groundwater monitoring and operation and maintenance (O&M) report for the Salty Dog brine station located in Lea County, New Mexico. Semiannual groundwater monitoring activities were completed at the site on June 3, 2019.

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

JA/rpfEnclosurecc: Pieter Bergstein, PAB Services, Inc.Jim Sayre, Salty Dog, Inc.

Daniel B. Stephens & Associates, Inc.

6020 Academy NE, Suite 100 505-822-9400

First Semiannual 2019

Groundwater Monitoring and

O&M Report

Salty Dog Brine Station

Lea County, New Mexico

Prepared for

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

October 14, 2019



Daniel B. Stephens & Associates, Inc.

6020 Academy NE, Suite 100 • Albuquerque, New Mexico 87109



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- A Laboratory Analytical Report
- B Field Notes
- C Historical Data



Semiannual Groundwater Monitoring and O&M Report January 1 through June 30, 2019 Salty Dog Brine Station, Lea County, New Mexico

1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this groundwater monitoring and operation and maintenance (O&M) 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 the Salty Dog brine station (the site) located in Lea County, New Mexico (Figure 1). The report summarizes activities conducted at the site during the reporting period of January 1 through June 30, 2019. Groundwater monitoring and O&M during the reporting period was conducted in accordance with discharge permit BW-8 (DP-BW-8), which was last renewed on May 17, 2019 (NMEMNRD OCD, 2019).

The site consists of a northern portion, where the brine pond was located prior to closure in October 2008, and a southern portion, where the brine well is located. The brine pond area and the brine well area are separated by approximately 2,500 feet, joined by a dirt road (Figure 1). Injection water for the brine well comes from two fresh water supply wells (FWS-1 and FWS-2) and from remedial pumping at a recovery well in the brine well area (RW-2).

Brine that is produced for sale is stored at a tank battery on the southern boundary of the former brine pond area. The tank battery consists of six 750-barrel aboveground storage tanks (ASTs) surrounded by a berm (Figure 1). A concrete truck loading pad with two brine filling stations is located north of the tank battery. An operations shed is located adjacent to the loading pad to the west.

The former brine pond area contains 6 monitor wells (PMW-1, DBS-1R, and DBS-2 through DBS-5), 1 nested well (NW-1), 1 fresh water supply well (FWS-1), and a former recovery well (RW-1). The brine well area contains 10 monitor wells (MW-2 through MW-6, DBS-6 through



DBS-10), 1 nested well (NW-2), 1 fresh water supply well (FWS-2), and 1 recovery well (RW-2) (Figure 1).

In April 2012, DBS&A installed groundwater extraction systems at the site to provide hydraulic containment and removal of chloride-impacted groundwater in the former brine pond and brine well areas (DBS&A, 2009a and 2009b). The extraction systems consist of wells, submersible pumps, conveyance lines, electrical power, and controls to extract impacted groundwater. Extracted groundwater is conveyed to the on-site ASTs for reinjection at the brine well. Although groundwater extraction at well RW-1 was stopped in 2015, pumping at well FWS-1 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area; well FWS-1 is located approximately 50 feet southeast of RW-1. Pumping at RW-2 provides hydraulic containment and removal of chloride-impacted groundwater in the brine well area.

2. Scope of Work

The scope of work for the semiannual groundwater monitoring conducted on June 3, 2019 consisted of (1) measuring groundwater levels in and collecting groundwater samples from 12 monitor wells, and (2) performing maintenance on the groundwater extraction systems, as necessary. Groundwater samples were collected and submitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for chloride analysis using U.S. Environmental Protection Agency (EPA) method 300.0. Section 2A.1 of DP-BW-8 requires that PAB collect one groundwater sample to be analyzed for general chemistry and other inorganic groundwater constituents in addition to chloride. In consultation with Carl Chavez (OCD), DBS&A selected monitor well MW-3 for this additional analysis. Appendices A and B provide the laboratory report and field notes, respectively.

The monitor wells included in the sampling program were selected in October 2010 in consultation with Jim Griswold, the OCD Project Manager for the site at that time. The sampled monitor wells are shown in Figures 2 through 5.



3. Monitoring Activities

3.1 Fluid Level Measurement

On June 3, 2019, DBS&A measured water levels in monitor wells DBS-1R, DBS-2 through DBS-5, and PMW-1 in the former brine pond area (Figure 2) and in wells DBS-6, DBS-8 through DBS-10, MW-3, and MW-5 in the brine well area (Figure 3) using a properly decontaminated electronic water level meter. Table 1 reports water level measurements and groundwater elevations. Appendix C provides historical groundwater level data.

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-1R	58.0–78.0	3,817.00 ^b	68.25	3,748.75
DBS-2	58.0–78.0	3,820.50	70.94	3,749.56
DBS-3	56.0–76.72	3,816.66	66.10	3,750.56
DBS-4	56.0–76.0	3,820.37	71.66	3,748.71
DBS-5	56.9–76.9	3,820.66	68.44	3,752.22
DBS-6	56.7–76.7	3,812.65	67.24	3,745.41
DBS-8	55.2–75.2	3,810.70	65.52	3,745.18
DBS-9	48.0–68.0	3,806.26	58.53	3,747.73
DBS-10	57.2–77.2	3,807.48	65.11	3,742.37
PMW-1	63–78	3,821.17	71.76	3,749.41
MW-3	NA	3,812.05	68.18	3,743.87
MW-5	112–132	3,808.96	65.30	3,743.66

Table 1. Fluid Level Measurements, June 3, 2019

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface btoc = Below top of casing

msl = Above mean sea level NA = Not available

During this monitoring event, the average depths to water beneath the former brine pond area and brine well area were 69.53 feet below ground surface (bgs) and 65.45 feet bgs, respectively. On average, water levels in the former brine pond area rose by approximately 0.22 foot since the last monitoring event in November 2018, while water levels in the brine well area declined by 1.33 feet.



Figures 2 and 3 present potentiometric surface maps for the former brine pond area and the brine well area, respectively. The direction of groundwater flow beneath the former brine pond area remains to the southeast; the hydraulic gradient was approximately 0.005 foot per foot (ft/ft) during this reporting period (Figure 2). The direction of groundwater flow beneath the brine well area also remains to the southeast; the hydraulic gradient in this area was approximately 0.006 ft/ft during this reporting period (Figure 3).

From January through June 2019, well FWS-1 was the primary pumping well used to provide fresh water for brine production. However, FWS-1 was not pumping when groundwater levels were measured. The direction of groundwater flow in the vicinity of FWS-1 is toward the well (Figure 2). Well RW-2 was pumping preceding the groundwater monitoring event. Increased pumping at RW-2 during this reporting period steepened the hydraulic gradient in the brine well area and caused a bending of groundwater elevation contours near RW-2 (Figure 3).

3.2 Groundwater Sampling

On June 3, 2019, groundwater samples were collected from monitor wells DBS-1R, DBS-2 through DBS-6, DBS-8 through DBS-10, MW-3, MW-5, and PMW-1. The samples were collected following standard sampling procedures developed from EPA guidance. Before sampling, each well was purged of a minimum of three casing volumes using a submersible pump to ensure that a representative groundwater sample was collected. While purging, DBS&A measured water quality field parameters consisting of temperature, specific conductance, and pH. Sample containers were filled, labeled, and placed in an ice-filled cooler. Groundwater samples were submitted under chain of custody to HEAL for analysis.

Samples of the brine well injection water and the produced brine were also collected to meet requirements under DP-BW-8. Analytical results of these samples will be presented in the 2019 annual Class III well report.



4. Analytical Results

Table 2 summarizes chloride analytical results for the collected groundwater samples. Figures 4 and 5 show the distribution of chloride in groundwater beneath the former brine pond area and the brine well area, respectively. The laboratory report and chain of custody documentation are provided in Appendix A. Field notes recorded during groundwater monitoring activities are provided in Appendix B. Historical groundwater quality data are provided in Appendix C.

Monitor Well	Date	Chloride Concentration (mg/L)
NM	WQCC Standard	250
DBS-1R	6/03/2019	190
DBS-2	6/03/2019	42
DBS-3	6/03/2019	46
DBS-4	6/03/2019	30
DBS-5	6/03/2019	280
DBS-6	6/03/2019	180
DBS-8	6/03/2019	35
DBS-9	6/03/2019	160
DBS-10	6/03/2019	510
PMW-1	6/03/2019	11,000
MW-3	6/03/2019	8,000
MW-5	6/03/2019	610

Table 2. Chloride Groundwater Analytical Data, June 2019

Bold indicates that value exceeds the applicable standard. All samples analyzed using EPA method 300.0.

NMWQCC = New Mexico Water Quality Control Commission mg/L = Milligrams per liter

4.1 Former Brine Pond Area Wells

Since the last monitoring event in November 2018, minor changes in chloride concentrations were observed at the former brine pond area monitor wells, with the exception of upgradient monitor well DBS-5 (Appendix C). Well PMW-1 continues to exhibit chloride concentrations above the New Mexico Water Quality Control Commission (NMWQCC) standard of



250 milligrams per liter (mg/L) (Figure 4). The chloride concentration at well DBS-1R, located downgradient of well PMW-1, was 190 mg/L—below the NMWQCC standard. An increase in chloride concentration was observed at upgradient monitor well DBS-5. The chloride concentrations at the well increased from 170 mg/L (November 2018) to 280 mg/L (June 2019). The increase in chloride concentration is likely due to an off-site source, as the well is located upgradient of the Salty Dog site.

The chloride plume in the former brine pond area remains bounded by the existing monitor well network (Figure 4). The chloride concentration at downgradient monitor well DBS-4 remains below the NMWQCC standard, as do chloride concentrations at the two cross-gradient monitor wells, DBS-2 and DBS-3.

4.2 Brine Well Area Wells

Since the last monitoring event in November 2018, minor to no changes in chloride concentrations were observed at the monitor wells in the brine well area (Appendix D). Monitor wells MW-3 (the well closest to extraction well RW-2) and downgradient monitor wells MW-5 and DBS-10 continue to exhibit chloride concentrations above the NMWQCC standard (Figure 5).

The chloride concentration at cross-gradient monitor well DBS-6, which had exceeded the NMWQCC standard until June 2017, remained below the NMWQCC standard during this reporting period at 180 mg/L.

The chloride concentration at upgradient monitor well DBS-9 was 160 mg/L this reporting period. Chloride concentration has fluctuated at DBS-9 (Appendix C).

Section 2A.1 of DP-BW-8 requires that PAB collect one groundwater sample to be analyzed for general chemistry and several other groundwater constituents. Monitor well MW-3 was selected for this additional analysis because it is located downgradient of the brine well. Groundwater at MW-3 has historically shown chloride impacts. Analytical results for the MW-3 sample are provided in Table 3.



	Concentration (mg/L ^a)					
	NMWQCC	MW-3				
Constituent	Standard	(6/03/2019)				
Alkalinity, total	NS	313.7				
Bicarbonate	NS	313.7				
Calcium, total	NS	1,200				
Carbonate	NS	<2.0				
Bromide	NS	<10				
Chloride	250	8,000				
Fluoride	1.6	<10				
Magnesium, total	NS	200				
Nitrate (as N)	1.0	<0.5				
Nitrite (as N)	10.0	<10				
Orthophosphate (as P)	NS	<2.5				
pH (s.u.)	6–9	7.21				
Potassium, total	NS	18				
Sodium, total	NS	3,700				
Sulfate	600	440				
Total dissolved solids	1,000	16,200				

Table 3. Groundwater Analytical Results, MW-3

Bold indicates that value exceeds New Mexico Water Quality Control Commission (NMWQCC) standard.

^a Unless otherwise noted

NS = No standard

s.u. = Standard units

5. Groundwater Extraction System O&M

Groundwater extraction from fresh water supply well FWS-1 and recovery well RW-2 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area and brine well area, respectively. PAB began remedial groundwater extraction in April 2012 (Appendix C). Extracted groundwater is used as injection water at the brine well.

Table 4 shows the average groundwater extraction rates for the two wells during this reporting period. The rates were determined using fresh water production records and totalizer flow meter readings.



Recovery Well	Date	Average Extraction Rate ^a (gpm)
FWS-1 ^{b, c}	5/11/2019	23.9
RW-2	6/3/2019	7.0

Table 4. Average Groundwater Extraction Rates

^a Average extraction rates based on totalizer flow meter readings and/or fresh water production records.

^b Meter read on June 3, 2019, but well had not been pumped since May 11, 2019; average extraction rate between December 3, 2018 and May 11, 2019 is reported.

^c New totalizer installed December 3,2018.

gpm = Gallons per minute

5.1 Former Brine Pond Area

Based on Salty Dog production records from January through June 2019, the average pumping rate at well FWS-1 during this reporting period was 23.9 gallons per minute (gpm) (Table 3). At the time of groundwater monitoring, FWS-1 had not been pumping for a period of 2 weeks because the pump was scheduled to be replaced. Nonetheless, the direction of groundwater flow in the vicinity of FWS-1 is toward the well, as indicated by the bending of groundwater elevation contours (Figure 2).

In the former brine pond area, monitor well PMW-1 is currently the only well to exhibit a chloride concentration above the NMWQCC standard (Figure 4). Pumping at FWS-1 is preventing the downgradient migration of chloride-impacted groundwater. The chloride concentrations at wells DBS-1R and DBS-4, both located downgradient of well PMW-1, are below the NMWQCC standard (Figure 4).

5.2 Brine Well Area

During this reporting period, the average pumping rate at well RW-2 was 7.0 gpm (Table 3). This average is based on totalizer readings and production records, and represents the average extraction rate between November 8, 2018 and June 3, 2019. Well RW-2 was the only active pumping well for the few weeks preceding the groundwater monitoring event, resulting in a



steepening of the hydraulic gradient in the brine well area and bending of groundwater elevation contours near RW-2 (Figure 3).

Chloride concentrations at downgradient monitor wells DBS-10 and MW-5 were less than those measured during the previous monitoring event (Appendix C). The chloride concentration at DBS-10 decreased from 590 mg/L (November 2018) to 510 mg/L (June 2019), while the chloride concentration at MW-5 decreased from 680 mg/L (November 2018) to 610 mg/L (June 2019). The chloride concentration at cross-gradient monitor well DBS-6 met the NMWQCC standard during this reporting period (Table 2). Water quality samples collected at this well have exceeded the NMWQCC standard in the past (Appendix C).

Pumping at well RW-2 is providing hydraulic containment and removal of chloride-impacted groundwater originating from the area upgradient of the recovery well. Pumping at this recovery well is preventing further degradation of downgradient and cross-gradient water quality. Chloride concentrations at monitor wells MW-5 and DBS-6 have decreased since PAB began remedial groundwater extraction at well RW-2 (Appendix C).

5.3 Facility and System Maintenance

In May 2019, the pump at FWS-1 burned out. This pump was subsequently replaced in July 2019. PAB attributes difficulties with the pumps, such as them burning out, to the high total dissolved solids (TDS) content of the extracted groundwater.

On June 10, 2019, Basin Surveys surveyed the five surface subsidence monitoring points that were installed at the site in March 2018 (DBS&A, 2018). The survey was conducted in accordance with Condition 2.B.1 of DP-BW-8 (NMEMNRD OCD, 2019). Results of the survey will be included in the 2019 annual Class III well report.

6. Recommendations

Based on the current groundwater monitoring results and site O&M activities, DBS&A has the following recommendations:



- Continue groundwater extraction at FWS-1 to provide hydraulic containment and removal of the chloride plume in the former brine pond area.
- Continue groundwater extraction at RW-2 to provide hydraulic containment and removal of the chloride plume in the brine well area.
- To the extent practical, attempt to balance groundwater extraction between FWS-1 and RW-2. During this reporting period, the pumping rate at FWS-1 was 3 times higher than at RW-2. Increased pumping at RW-2 will provide more removal of chloride-impacted groundwater in the brine well area.

In addition, DBS&A and PAB will complete the following activities at the site in 2019 to meet the requirements of DP BW-8:

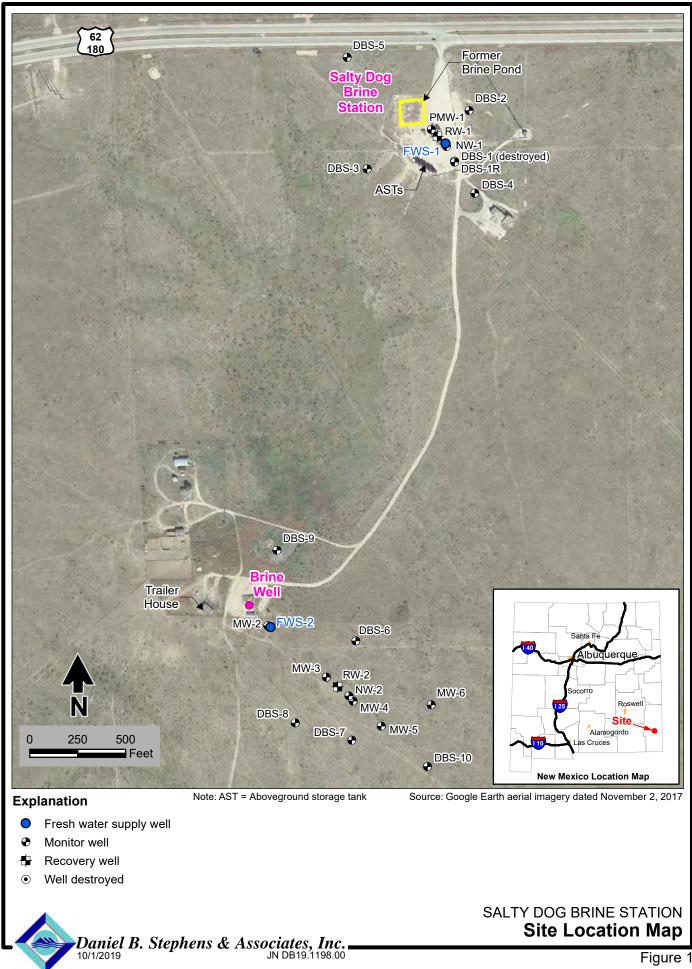
- Continue to conduct semiannual groundwater monitoring and O&M of the extraction systems at the site.
- Conduct semiannual surveys of the surface subsidence survey monitoring points.
- Prepare a 2019 annual Class III well report for submittal to OCD.



References

- Daniel B. Stephens & Associates (DBS&A). 2009a. Recovery well installation and pump test report, Salty Dog Brine Station, Lea County, New Mexico. Prepared for New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau. November 20, 2009.
- DBS&A. 2009b. *Preliminary conceptual remedial design report, Salty Dog Brine Station, Lea County, New Mexico.* Prepared for New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau. December 31, 2009.
- DBS&A. 2018. Letter report from John Ayarbe and Michael D. McVey to Carl Chavez, New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau, regarding Installation of a monitor well and subsidence survey monitoring points at the Salty Dog Brine Station (API No. 30-025-26307). June 25, 2018.
- New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Department (NMEMNRD OCD). 2019. Discharge Permit (BW-8), Standard Energy, UIC Class III Brine Well Brine Supply Well No.1 API No. 30-025-26307 UL: J Section 5 Township 19 South, Range 36 East, Lea County, New Mexico. May 17, 2019.

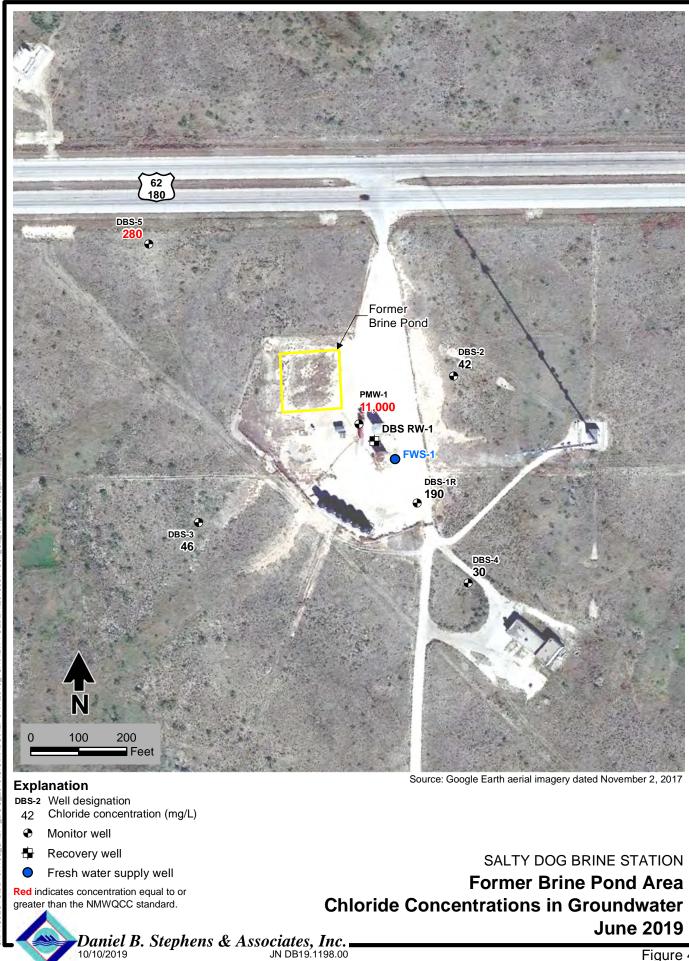
Figures







\PROJECTS\DB19.1198_SALTY_DOG_2019\GIS\MXDS\REPORT\2019_1SA\NEW FOLDER\201906\FIG03_GWE_201906_BRINE_WELL.MXD



Chroin Content Co

Figure 4



Figure 5

Daniel B. Stephens & Associates, Inc. 10/10/2019 JN DB19.1198.00

Appendix A

Laboratory Analytical Report



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

September 24, 2019

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

OrderNo.: 1906171

RE: Salty Dog

Dear John Ayarbe:

Hall Environmental Analysis Laboratory received 14 sample(s) on 6/5/2019 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 18, 2019.

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. 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. All samples are reported as received unless otherwise indicated.

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Han Environmental Analysis	S Laboratory, 1	ш.		Date Reported: 9/24/2	2019
CLIENT: Daniel B. Stephens & Assoc.		Client	Sample I	D: PMW-1	
Project: Salty Dog		Coll	ection Dat	te: 6/3/2019 5:20:00 PM	
Lab ID: 1906171-001	Matrix: GROUN	DWA Re	eived Dat	te: 6/5/2019 10:05:00 AM	
Analyses	Result	RL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	/st: MRA
Chloride	11000	5000 *	mg/L	1E+ 6/12/2019 11:28:50 A	M R60620

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

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Hall Environmental Analysis Laboratory, Inc.

Lab Order 1906171

Iall Environmental Analysis Laboratory, Inc.			Date Reported: 9/24/2019			
CLIENT: Daniel B. Stephens & Assoc.		Client	Sample I	D: DBS-1R		
Project: Salty Dog		Coll	ection Dat	te: 6/3/2019 5:00:00 P	М	
Lab ID: 1906171-002	Matrix: GROUNI	OWA Rec	eived Dat	te: 6/5/2019 10:05:00	AM	
Analyses	Result	RL Qu	al Units	DF Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS				A	nalyst: CJS	
Chloride	190	5.0	mg/L	10 6/9/2019 6:14:37	PM R60519	

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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL Reporting Limit
- Page 2 of 22

Hall Environmental Analysis Laboratory, Inc.				Date Reported: 9/24/2019			
CLIENT: Daniel B. Stephens & Assoc.		Client	Sample I	D: DE	38-2		
Project: Salty Dog		Colle	ection Dat	t e: 6/3	2019 3:50:00 PM		
Lab ID: 1906171-003	Matrix: GROUNI	OWA Rec	eived Dat	t e: 6/5	5/2019 10:05:00 AM		
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS					Analys	t: CJS	
Chloride	42	5.0	mg/L	10	6/9/2019 7:04:15 PM	R60519	

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

- 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

Page 3 of 22

S % Recovery outside of range due to dilution or matrix

Hall Environmental Analysis	Laboratory, In	oratory, mc.			Date Reported: 9/24/2019		
CLIENT: Daniel B. Stephens & Assoc.		Clien	t Sample I	D: DE	3S-3		
Project: Salty Dog		Col	lection Dat	: 6/3	/2019 4:45:00 PM		
Lab ID: 1906171-004	Matrix: GROUND	WA Re	eceived Dat	e: 6/5	/2019 10:05:00 AM		
Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS					Analys	t: CJS	
Chloride	46	5.0	mg/L	10	6/9/2019 9:08:22 PM	R60519	

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

Page 4 of 22

Hall Environmental Analysis Laboratory, Inc.			Date Reported: 9/24/2019				
CLIENT: Daniel B. Stephens & Assoc.		Client Sample I	D: DBS-4				
Project: Salty Dog		Collection Da	te: 6/3/2019 4:10:00 PM				
Lab ID: 1906171-005	Matrix: GROUNDWA Received Date: 6/5/2019 10:05:00 AM						
Analyses	Result R	Qual Units	DF Date Analyzed	Batch			
EPA METHOD 300.0: ANIONS			Analys	st: CJS			
Chloride	30 5.	0 mg/L	10 6/9/2019 8:18:43 PM	R60519			

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 exceededND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Hall Environmental Analysis	Laboratory, Inc.			Date Reported: 9/24/2019			
CLIENT: Daniel B. Stephens & Assoc.		Clie	ent Sa	mple I	D: DBS-5		
Project: Salty Dog		C	ollecti	ion Dat	e: 6/3/2019 4:30:00 PM		
Lab ID: 1906171-006	Matrix: GROUND	WA I	Receiv	ed Dat	e: 6/5/2019 10:05:00 AM		
Analyses	Result	RL (Qual	Units	DF Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS					Analy	st: CJS	
Chloride	280	50	*	mg/L	100 6/9/2019 8:55:57 PM	R60519	

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

- Analyte detected in the associated Method Blank В
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Hall Environmental Analysis Laboratory, Inc.			Date Reported: 9/24/2019					
CLIENT: Daniel B. Stephens & Assoc.		Client S	Sample I	D: DBS-6				
Project: Salty Dog		Collec	ction Da	te: 6/3/2019 2:05:00 PM				
Lab ID: 1906171-007	Matrix: GROUNDWA Received Date: 6/5/2019 10:05:00 AM							
Analyses	Result I	L Qua	l Units	DF Date Analyzed	Batch			
EPA METHOD 300.0: ANIONS				Analys	t: CJS			
Chloride	180	50	mg/L	100 6/9/2019 8:06:18 PM	R60519			

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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Hall Environmental Analysis Laboratory, Inc.			Date Reported: 9/24/2019				
CLIENT: Daniel B. Stephens & Assoc.		Client	Sample I	D: DE	3S-8		
Project: Salty Dog		Coll	ection Dat	t e: 6/3	/2019 1:00:00 PM		
Lab ID: 1906171-008	Matrix: GROUN	DWA Rec	ceived Dat	t e: 6/5	/2019 10:05:00 AM		
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS					Analys	t: CJS	
Chloride	35	5.0	mg/L	10	6/9/2019 9:33:10 PM	R60519	

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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Hall Environmental Analysis	Laboratory, In	с.			Date Reported: 9/24/2	019
CLIENT: Daniel B. Stephens & Assoc.		Client	Sample I	D: DE	3 S-9	
Project: Salty Dog		Colle	ection Dat	e: 6/3	2019 12:32:00 PM	
Lab ID: 1906171-009	Matrix: GROUND	WA Rec	eived Dat	e: 6/5	5/2019 10:05:00 AM	
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	st: CJS
Chloride	160	5.0	mg/L	10	6/9/2019 10:22:49 PM	R60519

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

- Analyte detected in the associated Method Blank В
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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100 6/9/2019 11:00:02 PM R60519

Hall Environmental Analysi	s Laboratory, Inc.	Date Reported: 9/24/2019
CLIENT: Daniel B. Stephens & Assoc.		Client Sample ID: DBS-10
Project: Salty Dog		Collection Date: 6/3/2019 1:30:00 PM
Lab ID: 1906171-010	Matrix: GROUNDWA	Received Date: 6/5/2019 10:05:00 AM
Analyses	Result R	L Qual Units DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS		Analyst: CJS

510

50 *

mg/L

Chloride

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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Hall Environmental Analysis	Laboratory, In	с.		Date Reported: 9/24/2	019
CLIENT: Daniel B. Stephens & Assoc.		Clie	nt Sample I	D: MW-5	
Project: Salty Dog		Co	llection Dat	e: 6/3/2019 2:45:00 PM	
Lab ID: 1906171-011	Matrix: GROUND	NA R	eceived Dat	e: 6/5/2019 10:05:00 AM	
Analyses	Result	RL C	Qual Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analys	st: CJS
Chloride	610	50	* mg/L	100 6/9/2019 11:24:52 PM	R60519

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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Analytical Report

Lab Order 1906171

Date Reported: 9/24/2019

Hall Environmental Analysis Laboratory, Inc.

CLIENT	Daniel B. Stephens & Assoc.	(Client Sample ID: MW-3
Project:	Salty Dog		Collection Date: 6/3/2019 3:20:00 PM
Lab ID:	1906171-012	Matrix: GROUNDWA	Received Date: 6/5/2019 10:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst:	JRR
Specific Gravity	1.009	0			1	6/12/2019 11:09:00 AM	R60579
EPA METHOD 300.0: ANIONS						Analyst:	CJS
Fluoride	ND	10		mg/L	100	6/9/2019 11:37:16 PM	R60519
Chloride	8000	500	*	mg/L	1E+	6/9/2019 11:49:40 PM	R60519
Nitrogen, Nitrite (As N)	ND	10	Н	mg/L	100	6/9/2019 11:37:16 PM	R60519
Bromide	ND	10		mg/L	100	6/9/2019 11:37:16 PM	R60519
Nitrogen, Nitrate (As N)	ND	0.50	Н	mg/L	5	6/13/2019 2:40:10 PM	R60644
Phosphorus, Orthophosphate (As P)	ND	2.5	Н	mg/L	5	6/13/2019 2:40:10 PM	R60644
Sulfate	440	50	*	mg/L	100	6/9/2019 11:37:16 PM	R60519
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	JRR
Conductivity	26000	25		µmhos/c	5	6/10/2019 5:44:12 PM	R60535
SM2320B: ALKALINITY						Analyst:	JRR
Bicarbonate (As CaCO3)	313.7	20.00		mg/L Ca	1	6/10/2019 12:01:18 PM	R60535
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/10/2019 12:01:18 PM	R60535
Total Alkalinity (as CaCO3)	313.7	20.00		mg/L Ca	1	6/10/2019 12:01:18 PM	R60535
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	KS
Total Dissolved Solids	16200	200	*D	mg/L	1	6/10/2019 4:44:00 PM	45439
SM4500-H+B / 9040C: PH						Analyst:	JRR
рН	7.21		н	pH units	1	6/10/2019 12:01:18 PM	R60535
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	ELS
Calcium	1200	50		mg/L	50	6/12/2019 11:16:51 AM	45452
Magnesium	200	5.0		mg/L	5	6/12/2019 9:42:30 AM	45452
Potassium	18	1.0		mg/L	1	6/12/2019 9:40:30 AM	45452
Sodium	3700	50		mg/L	50	6/12/2019 11:16:51 AM	45452

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

* Value exceeds Maximum Contaminant Level. **Qualifiers:**

- D Sample Diluted Due to Matrix Н
- 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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Analytical Report

Hall Environmental Analysis Laboratory, Inc.

Lab Order **1906171** Date Reported: **9/24/2019**

CLIENT: Daniel B. Stephens & Assoc.		Cl	ient Sa	mple ID	: Inj	ection	
Project: Salty Dog		(Collect	ion Date	e: 6/3	2019 10:21:00 AM	
Lab ID: 1906171-013	Matrix: GROUND	WA	Receiv	ved Date	e: 6/5	5/2019 10:05:00 AM	
Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst:	JRR
Specific Gravity	0.9991	0			1	6/12/2019 11:09:00 AM	R60579
EPA METHOD 300.0: ANIONS						Analyst:	CJS
Chloride	370	50	*	mg/L	100) 6/10/2019 12:14:30 AM	R60519
SM2540C MOD: TOTAL DISSOLVED SOL	DS					Analyst:	KS
Total Dissolved Solids	915	100	*D	mg/L	1	6/10/2019 4:44:00 PM	45439
SM4500-H+B / 9040C: PH						Analyst:	JRR
рН	7.56		н	pH units	1	6/6/2019 12:00:11 PM	R60464
EPA 6010B: TOTAL RECOVERABLE MET	ALS					Analyst:	ELS
Sodium	250	5.0		mg/L	5	6/12/2019 11:18:32 AM	45452

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

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Analytical Report

Hall Environmental Analysis Laboratory, Inc.

EPA 6010B: TOTAL RECOVERABLE METALS

Lab Order **1906171** Date Reported: **9/24/2019**

6/6/2019 12:08:47 PM R60464

1E+ 6/12/2019 11:28:57 AM 45452

Analyst: ELS

CLIENT:	Daniel B. Stephens & Assoc.		C	lient Sa	ample I	D: Br	ine	
Project:	Salty Dog		(Collect	ion Dat	te: 6/3	3/2019 10:16:00 AM	
Lab ID:	1906171-014	Matrix: GROUN	DWA	Recei	ved Dat	te: 6/5	5/2019 10:05:00 AM	
Analyses		Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC	CGRAVITY						Analys	t: JRR
Specific	Gravity	1.206	0			1	6/12/2019 11:09:00 AM	1 R60579
EPA MET	HOD 300.0: ANIONS						Analys	t: MRA
Chloride		220000	10000	*	mg/L	2E	+ 6/12/2019 12:18:12 PN	1 R60620
SM25400	MOD: TOTAL DISSOLVED SO	LIDS					Analys	t: KS
Total Dis	solved Solids	312000	2000	*D	mg/L	1	6/10/2019 4:44:00 PM	45439
SM4500-I	H+B / 9040C: PH						Analys	t: JRR

7.09

67000

Н

1000

pH units 1

mg/L

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

pН

Sodium

- D Sample Diluted Due to MatrixH 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

Page 14 of 22

1906171-012C MW-3 Collected date/time: 06/03/19 15:20

SAMPLE RESULTS - 01

Wet Chemistry by Method 2580

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	mV			date / time		
ORP	231	<u>T8</u>	1	06/15/2019 12:00	WG1296217	

.....

DATE/TIME: 06/17/19 18:06

WG1296217 Wet Chemistry by Method 2580			Ø	JALITY CC	QUALITY CONTROL SUMMARY	ONE LAB. NATIONWIDE.
L1106550-01 Original Sample (OS) • Duplicate (DUP)	ile (OS) • Du	plicate (D	(JD)			
(OS) L1106550-01 06/15/19 12:00 • (DUP) R3421337-2 06/15/19 12:00	UP) R3421337-2	06/15/19 12:C	10			
Original Re	Original Result DUP Result	Dilution DUP RPD		DUP Qualifier DUP RPD Limits		
mV 231	mV 228	÷	6% 1.31	²⁰		
				1		
Laboratory Control Sample (LCS)	(LCS)					
(LCS) R3421337-1 06/15/19 12:00						
Spike Amo mV	Spike Amount LCS Result mV mV	LCS Rec.	Rec. Limits	LCS Qualifier		
					t	
ACCOUNT: Hall Environmental Analysis Laboratory	aboratory		PRC	PROJECT:	SDG: L1106550	DATE/TIME: 06/17/19 18:05

GLOSSARY OF TERMS

Τc

Ss

Cn

Sr

Qc

AI

Sc

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.

Abbreviations and Definitions

18	Sample(s) received past/too close to holding time expiration
Qualifier	Description
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.
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 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.
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.
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.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resu 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.
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.
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.
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.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
SDG	Sample Delivery Group.
RPD	Relative Percent Difference.
Rec.	Recovery.

Sample(s) received past/too close to holding time expiration.

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#:	1906171
	24.6 10

Client:	Daniel B.	Stephens	& Asso	C.							
Project:	Salty Dog	5									
Sample ID:	МВ	SampT	ype: m t	olk	Tes	tCode: EF	PA Method	300.0: Anions	6		
Client ID:	PBW	Batcl	h ID: R6	0519	F	RunNo: 6	0519				
Prep Date:		Analysis D	Date: 6/	9/2019	S	SeqNo: 20	047402	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	e (As N)	ND	0.10								
Bromide		ND	0.10								
Sulfate		ND	0.50								
Sample ID:	LCS	SampT	ype: Ics	5	Tes	tCode: EF	PA Method	300.0: Anions	5		
Client ID:	LCSW	Batcl	h ID: R6	0519	F	RunNo: 60	0519				
Prep Date:		Analysis D	Date: 6/	9/2019	S	SeqNo: 20	047403	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		0.54	0.10	0.5000	0	108	90	110			
Chloride		4.7	0.50	5.000	0	93.9	90	110			
Nitrogen, Nitrite	e (As N)	0.93	0.10	1.000	0	92.8	90	110			
Bromide		2.3	0.10	2.500	0	93.9	90	110			
Sulfate		9.6	0.50	10.00	0	96.5	90	110			
Sample ID:	1906171-002AMS	SampT	ype: ms	5	Tes	tCode: EF	PA Method	300.0: Anions	5		
Client ID:	DBS-1R	Batcl	h ID: R6	0510	F	RunNo: 6	0510				
Short ID.	DB3-IK	Duto		0313	•	-	0319				
Prep Date:	000-11	Analysis D				SeqNo: 2		Units: mg/L			
	DB3-1K			9/2019				Units: mg/L HighLimit	%RPD	RPDLimit	Qual
Prep Date:		Analysis D	Date: 6/	9/2019	S		047407	•	%RPD	RPDLimit	Qual
Prep Date: Analyte		Analysis D Result	Date: 6/ PQL	9/2019 SPK value	SPK Ref Val	%REC	047407 LowLimit	HighLimit	%RPD	RPDLimit	Qual
Prep Date: Analyte Fluoride Bromide		Analysis D Result 6.2	Date: 6/ PQL 1.0	9/2019 SPK value 5.000	SPK Ref Val 1.510	%REC 94.7	047407 LowLimit 61.6	HighLimit 129	%RPD	RPDLimit	Qual
Prep Date: Analyte Fluoride Bromide Sulfate	1906171-002AMSE	Analysis E Result 6.2 24 180	Date: 6/ PQL 1.0 1.0	9/2019 SPK value 5.000 25.00 100.0	SPK Ref Val 1.510 0 80.86	%REC 94.7 94.2 98.1	047407 LowLimit 61.6 81.9 84.2	HighLimit 129 109		RPDLimit	Qual
Prep Date: Analyte Fluoride Bromide Sulfate Sample ID:		Analysis D Result 6.2 24 180 D SampT	Date: 6/ PQL 1.0 1.0 5.0	9/2019 SPK value 5.000 25.00 100.0	SPK Ref Val 1.510 0 80.86 Tes	%REC 94.7 94.2 98.1	047407 LowLimit 61.6 81.9 84.2 PA Method	HighLimit 129 109 122		RPDLimit	Qual
Prep Date: Analyte Fluoride Bromide Sulfate Sample ID: Client ID:	1906171-002AMSE	Analysis D Result 6.2 24 180 D SampT	Date: 6/ PQL 1.0 1.0 5.0 Type: ms h ID: R6	9/2019 SPK value 5.000 25.00 100.0 sd 0519	SPK Ref Val 1.510 0 80.86 Tes F	%REC 94.7 94.2 98.1 tCode: EF	047407 LowLimit 61.6 81.9 84.2 PA Method 0519	HighLimit 129 109 122		RPDLimit	Qual
Prep Date: Analyte Fluoride Bromide Sulfate Sample ID:	1906171-002AMSE	Analysis D Result 6.2 24 180 D SampT Batcl	Date: 6/ PQL 1.0 1.0 5.0 Type: ms h ID: R6	9/2019 SPK value 5.000 25.00 100.0 3d 0519 9/2019	SPK Ref Val 1.510 0 80.86 Tes F	%REC 94.7 94.2 98.1 tCode: EF	047407 LowLimit 61.6 81.9 84.2 PA Method 0519	HighLimit 129 109 122 300.0: Anions		RPDLimit	Qual
Prep Date: Analyte Fluoride Bromide Sulfate Sample ID: Client ID: Prep Date:	1906171-002AMSE	Analysis D Result 6.2 24 180 O SampT Batcl Analysis D	Date: 6/ PQL 1.0 1.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	9/2019 SPK value 5.000 25.00 100.0 3d 0519 9/2019	SPK Ref Val 1.510 0 80.86 Tes F	%REC 94.7 94.2 98.1 tCode: EF RunNo: 66 SeqNo: 26	047407 LowLimit 61.6 81.9 84.2 PA Method 0519 047408	HighLimit 129 109 122 300.0: Anions Units: mg/L	3		
Prep Date: Analyte Fluoride Bromide Sulfate Sample ID: Client ID: Prep Date: Analyte	1906171-002AMSE	Analysis D Result 6.2 24 180 D SampT Batcl Analysis D Result	Date: 6/ PQL 1.0 1.0 5.0 Fype: ms h ID: R6 Date: 6/ PQL	9/2019 SPK value 5.000 25.00 100.0 3d 0519 9/2019 SPK value	SPK Ref Val 1.510 0 80.86 Tes F SPK Ref Val	%REC 94.7 94.2 98.1 tCode: EF RunNo: 60 SeqNo: 20 %REC	047407 LowLimit 61.6 81.9 84.2 PA Method 0519 047408 LowLimit	HighLimit 129 109 122 300.0: Anions Units: mg/L HighLimit	%RPD	RPDLimit	
Prep Date: Analyte Fluoride Bromide Sulfate Sample ID: Client ID: Prep Date: Analyte Fluoride Bromide	1906171-002AMSE	Analysis D Result 6.2 24 180 D SampT Batcl Analysis D Result 6.2	Date: 6/ PQL 1.0 1.0 5.0 Fype: ms h ID: R6 Date: 6/ PQL 1.0	9/2019 SPK value 5.000 25.00 100.0 3d 0519 9/2019 SPK value 5.000	SPK Ref Val 1.510 0 80.86 Tes F SPK Ref Val 1.510	%REC 94.7 94.2 98.1 tCode: EF RunNo: 66 SeqNo: 26 %REC 94.4	047407 LowLimit 61.6 81.9 84.2 PA Method 0519 047408 LowLimit 61.6	HighLimit 129 109 122 300.0: Anions Units: mg/L HighLimit 129	%RPD 0.257	RPDLimit 20	
Prep Date: Analyte Fluoride Bromide Sulfate Sample ID: Client ID: Prep Date: Analyte Fluoride Bromide	1906171-002AMSE DBS-1R	Analysis C Result 6.2 24 180 O SampT Batcl Analysis C Result 6.2 23 180	Date: 6/ PQL 1.0 1.0 5.0 Type: ms h ID: R6 Date: 6/ PQL 1.0 1.0 1.0	9/2019 SPK value 5.000 25.00 100.0 3d 0519 9/2019 SPK value 5.000 25.00 100.0	SPK Ref Val 1.510 0 80.86 Tes F SPK Ref Val 1.510 0 80.86	%REC 94.7 94.2 98.1 tCode: EF RunNo: 66 SeqNo: 20 %REC 94.4 93.8 96.1	047407 LowLimit 61.6 81.9 84.2 PA Method 0519 047408 LowLimit 61.6 81.9 84.2	HighLimit 129 109 122 300.0: Anions Units: mg/L HighLimit 129 109	%RPD 0.257 0.464 1.14	RPDLimit 20 20	
Prep Date: Analyte Fluoride Bromide Sulfate Sample ID: Client ID: Prep Date: Analyte Fluoride Bromide Sulfate	1906171-002AMSE DBS-1R MB	Analysis D Result 6.2 24 180 D SampT Batcl Analysis D Result 6.2 23 180 SampT	Date: 6/ PQL 1.0 1.0 5.0 Type: ms h ID: R6 Date: 6/ PQL 1.0 1.0 5.0	9/2019 SPK value 5.000 25.000 100.0 3d 0519 9/2019 SPK value 5.000 25.000 100.0 Dlk	SPK Ref Val 1.510 0 80.86 Tes SPK Ref Val 1.510 0 80.86 Tes	%REC 94.7 94.2 98.1 tCode: EF RunNo: 66 SeqNo: 20 %REC 94.4 93.8 96.1	047407 LowLimit 61.6 81.9 84.2 PA Method 0519 047408 LowLimit 61.6 81.9 84.2 PA Method	HighLimit 129 109 122 300.0: Anions Units: mg/L HighLimit 129 109 122	%RPD 0.257 0.464 1.14	RPDLimit 20 20	
Prep Date: Analyte Fluoride Bromide Sulfate Sample ID: Prep Date: Analyte Fluoride Bromide Sulfate Sample ID:	1906171-002AMSE DBS-1R MB	Analysis D Result 6.2 24 180 D SampT Batcl Analysis D Result 6.2 23 180 SampT	Date: 6/ PQL 1.0 1.0 5.0 Type: ms h ID: R6 Date: 6/ PQL 1.0 1.0 5.0 Type: mt h ID: R6	9/2019 SPK value 5.000 25.00 100.0 3d 0519 9/2019 SPK value 5.000 25.00 100.0 Dlk 0620	SPK Ref Val 1.510 0 80.86 Tes SPK Ref Val 1.510 0 80.86 Tes F	%REC 94.7 94.2 98.1 tCode: EF RunNo: 60 SeqNo: 20 %REC 94.4 93.8 96.1 tCode: EF	047407 LowLimit 61.6 81.9 84.2 PA Method 0519 047408 LowLimit 61.6 81.9 84.2 PA Method 0620	HighLimit 129 109 122 300.0: Anions Units: mg/L HighLimit 129 109 122	%RPD 0.257 0.464 1.14	RPDLimit 20 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

24-Sep-19

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: D	aniel B. Stephen	s & Asso	oc.							
Project: S	alty Dog									
Sample ID: MB	Samp	SampType: mblk			TestCode: EPA Method 300.0: Anions					
Client ID: PBW	Bate	ch ID: R6	0620	F	RunNo: 6	0620				
Prep Date:	Analysis	Date: 6/	12/2019	5	SeqNo: 2	051022	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sample ID: LCS	Samp	SampType: Ics			TestCode: EPA Method 300.0: Anions					
Client ID: LCSW Batch ID: R			RenNo: 60620							
Prep Date:	Analysis	Analysis Date: 6/12/2019		SeqNo: 2051023			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	95.4	90	110			
		ample ID: MB SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Sample ID: MB	Samp	Туре: МЕ	BLK	Tes	tCode: E	PA Method	300.0: Anion:	6		
Sample ID: MB Client ID: PBW		Type: ME			tCode: E RunNo: 6		300.0: Anions	5		
	Bate		0644	F		0644	300.0: Anion Units: mg/L	5		
Client ID: PBW	Bate	ch ID: R6	0644 13/2019	F	RunNo: 6 SeqNo: 2	0644		s %RPD	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte Nitrogen, Nitrate (As N)	Analysis Result ND	ch ID: R6 Date: 6/ PQL 0.10	0644 13/2019	F	RunNo: 6 SeqNo: 2	0644 052029	Units: mg/L	-	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte	Analysis Result ND	ch ID: R6 Date: 6/ PQL	0644 13/2019	F	RunNo: 6 SeqNo: 2	0644 052029	Units: mg/L	-	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte Nitrogen, Nitrate (As N)	Analysis Result ND te (As P ND	ch ID: R6 Date: 6/ PQL 0.10	0644 13/2019 SPK value	F SPK Ref Val	RunNo: 6 SeqNo: 2 %REC	0644 052029 LowLimit	Units: mg/L	%RPD	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte Nitrogen, Nitrate (As N) Phosphorus, Orthophospha	Bate Analysis Result ND te (As P ND Samp	ch ID: R6 Date: 6 / PQL 0.10 0.50	0644 13/2019 SPK value	F SPK Ref Val Tes	RunNo: 6 SeqNo: 2 %REC	Diversified Technologies (1997) Constraint (1997	Units: mg/L HighLimit	%RPD	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte Nitrogen, Nitrate (As N) Phosphorus, Orthophospha Sample ID: LCS	Bate Analysis Result te (As P ND Samp Bate	ch ID: R6 Date: 6 / PQL 0.10 0.50 Type: LC	0644 13/2019 SPK value SS 0644	F SPK Ref Val Tes F	RunNo: 6 SeqNo: 2 %REC tCode: E	0644 2052029 LowLimit PA Method	Units: mg/L HighLimit	%RPD	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte Nitrogen, Nitrate (As N) Phosphorus, Orthophospha Sample ID: LCS Client ID: LCSW	Bate Analysis Result te (As P ND Samp Bate	ch ID: R6 Date: 6/ <u>PQL</u> 0.10 0.50 Type: LC ch ID: R6	0644 13/2019 SPK value S 0644 13/2019	F SPK Ref Val Tes F	RunNo: 6 SeqNo: 2 %REC tCode: E RunNo: 6	0644 2052029 LowLimit PA Method	Units: mg/L HighLimit 300.0: Anions	%RPD	RPDLimit	Qual
Client ID: PBW Prep Date: Analyte Nitrogen, Nitrate (As N) Phosphorus, Orthophospha Sample ID: LCS Client ID: LCSW Prep Date:	Bate Analysis Result ND te (As P ND Samp Bate Analysis Result 2.5	Ch ID: R6 Date: 6/ PQL 0.10 0.50 Type: LC Ch ID: R6 Date: 6/	0644 13/2019 SPK value S 0644 13/2019	F SPK Ref Val Tes F S	RunNo: 6 SeqNo: 2 %REC tCode: E RunNo: 6 SeqNo: 2	20644 2052029 LowLimit PA Method 20644 2052030	Units: mg/L HighLimit 300.0: Anions Units: mg/L	%RPD		

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

Client: Project:	Daniel B. Salty Dog	Stephens &	z Asso	ос.							
Sample ID:	lcs-1 99.0uS eC	SampTy	pe: Ics	5	Test	tCode: SI	M2510B: Sp	pecific Condu	uctance		
Client ID:	LCSW	Batch	ID: R6	0535	R	unNo: 6	0535				
Prep Date:		Analysis Da	te: 6/	10/2019	S	eqNo: 2	048171	Units: µmh	os/cm		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity		98	5.0	99.00	0	99.4	85	115			
Sample ID:	1906171-012a dup	SampTy	pe: du	р	Test	tCode: SI	M2510B: Sp	pecific Condu	uctance		
Client ID:	MW-3	Batch	ID: R6	0535	R	unNo: 6	0535				
Prep Date:		Analysis Da	te: 6/	10/2019	S	eqNo: 2	048185	Units: µmh	os/cm		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity		26000	25						1.07	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

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#:	1906171
	24 Sam 10

24-Sep-19

	iel B. Stephens o V Dog	& Asso	с.							
Sample ID: MB-45452	SampT	ype: ME	BLK	Test	tCode: EF	PA 6010B: 1	Total Recover	rable Meta	als	
Client ID: PBW	Batch	ID: 454	452	R	RunNo: 60	0581				
Prep Date: 6/7/2019	Analysis D	ate: 6/	12/2019	S	SeqNo: 20	049712	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								
Magnesium Potassium	ND ND	1.0 1.0								
•										
Potassium	ND ND	1.0	<u></u> s	Test	tCode: EF	PA 6010B: 1	Fotal Recover	rable Meta	als	
Potassium Sodium	ND ND SampT	1.0 1.0			tCode: EF		Fotal Recover	rable Meta	als	
Potassium Sodium Sample ID: LCS-45452	ND ND SampT	1.0 1.0 ype: LC	452	R		0581	Fotal Recover Units: mg/L	rable Meta	als	
Potassium Sodium Sample ID: LCS-45452 Client ID: LCSW	ND ND SampT Batch	1.0 1.0 ype: LC	452 12/2019	R	RunNo: 60	0581		vable Meta	als RPDLimit	Qual
Potassium Sodium Sample ID: LCS-45452 Client ID: LCSW Prep Date: 6/7/2019	ND ND SampT Batch Analysis D	1.0 1.0 ype: LC ID: 454 ate: 6/	452 12/2019	R	RunNo: 60 SeqNo: 20	0581 049713	Units: mg/L			Qual
Potassium Sodium Sample ID: LCS-45452 Client ID: LCSW Prep Date: 6/7/2019 Analyte	ND ND SampT Batch Analysis D Result	1.0 1.0 ype: LC D: 454 ate: 6/	452 1 2/2019 SPK value	R S SPK Ref Val	RunNo: 6(SeqNo: 2(%REC	0581 049713 LowLimit	Units: mg/L HighLimit			Qual
Potassium Sodium Sample ID: LCS-45452 Client ID: LCSW Prep Date: 6/7/2019 Analyte Calcium	ND ND SampT Batch Analysis D Result 48	1.0 1.0 ype: LC ID: 454 ate: 6/ PQL 1.0	452 12/2019 SPK value 50.00	R SPK Ref Val 0	RunNo: 60 SeqNo: 20 %REC 95.7	0581 049713 LowLimit 80	Units: mg/L HighLimit 120			Qual

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#:	1906171
	24-Sep-19

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

110jeeu	Sulty Dog										
Sample ID:	1906171-012a dup	SampType	dup	Test	tCode: SN	14500-H+B	/ 9040C: pH				
Client ID:	MW-3	Batch ID:	R60535	R	RunNo: 60	535					
Prep Date:		Analysis Date:	6/10/2019	S	SeqNo: 20	48231	Units: pH u	nits			
Analyte		Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
pН		7.18								Н	

Qualifiers:

pН

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Analysis Date: 6/10/2019

Result

77.76

PQL

20.00

Client: Project:	Daniel B. Stephens & Assoc. Salty Dog
Sample ID: mb-1 a	alk SampType: mblk TestCode: SM2320B: Alkalinity
Client ID: PBW	Batch ID: R60535 RunNo: 60535
Prep Date:	Analysis Date: 6/10/2019 SeqNo: 2048188 Units: mg/L CaCO3
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCC	03) ND 20.00
Sample ID: Ics-1 a	alk SampType: Ics TestCode: SM2320B: Alkalinity
Client ID: LCSW	Batch ID: R60535 RunNo: 60535
Prep Date:	Analysis Date: 6/10/2019 SeqNo: 2048189 Units: mg/L CaCO3
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCC	03) 76.60 20.00 80.00 0 95.8 90 110
Sample ID: 190617	71-012a dup SampType: dup TestCode: SM2320B: Alkalinity
Client ID: MW-3	Batch ID: R60535 RunNo: 60535
Prep Date:	Analysis Date: 6/10/2019 SeqNo: 2048191 Units: mg/L CaCO3
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCC	03) 314.7 20.00 0.318 20
Sample ID: mb-2 a	alk SampType: mblk TestCode: SM2320B: Alkalinity
Client ID: PBW	Batch ID: R60535 RunNo: 60535
Prep Date:	Analysis Date: 6/10/2019 SeqNo: 2048211 Units: mg/L CaCO3
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Alkalinity (as CaCC	03) ND 20.00
Sample ID: Ics-2 a	alk SampType: Ics TestCode: SM2320B: Alkalinity
Client ID: LCSW	Batch ID: R60535 RunNo: 60535

Analyte Total Alkalinity (as CaCO3)

Prep Date:

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

SeqNo: 2048212

97.2

LowLimit

90

- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

SPK value SPK Ref Val %REC

0

80.00

Units: mg/L CaCO3

110

HighLimit

%RPD

RPDLimit

Qual

Page 20 of 22

24-Sep-19

WO#: 1906171
 Client:
 Daniel B. Stephens & Assoc.

 Project:
 Salty Dog

Sample ID: 1906171-012ADUP	SampTy	pe: DL	IP	Tes	Code: S	pecific Grav	vity			
Client ID: MW-3	Batch	ID: R6	0579	R	unNo: 6	0579				
Prep Date:	Analysis Da	ite: 6/	12/2019	S	eqNo: 2	049587	Units:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Specific Gravity	1.011	0						0.238	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

Page 21 of 22

	iel B. Stephens & Assoc. y Dog			
Sample ID: MB-45439	SampType: MBLK	TestCode: SM2540C MC	OD: Total Dissolved Solids	
Client ID: PBW	Batch ID: 45439	RunNo: 60528		
Prep Date: 6/7/2019	Analysis Date: 6/10/2019	SeqNo: 2047649	Units: mg/L	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qu	al
Total Dissolved Solids	ND 20.0			
Sample ID: LCS-45439	SampType: LCS	TestCode: SM2540C MC	OD: Total Dissolved Solids	
Client ID: LCSW	Batch ID: 45439	RunNo: 60528		
Prep Date: 6/7/2019	Analysis Date: 6/10/2019	SeqNo: 2047650	Units: mg/L	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qu	al
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

Page 22 of 22

ANAL	RONMENTAL Ysis Ratory	Hall Environmen TEL: 505-345-39 Website: www	4901 Ha Albuquerque, 1 975 FAX: 505-	wkins NE NM 87109 Sar 345-4107	mple Log-In Check List
Client Name:	DBS	Work Order Numb	er: 1906171		RcptNo: 1
Received By:	Erin Melendrez	6/5/2019 10:05:00 A	M	ing	5
Completed By:	Isaiah Ortiz	6/5/2019 12:34:49 F	PM	IL MA	24
Reviewed By:	¢				
Chain of Cus	stody				
1. Is Chain of C	sustody complete?		Yes 🔽	No 🗌	Not Present
2. How was the	sample delivered?		<u>Client</u>		
Log In 3. Was an atten	npt made to cool the samp	les?	Yes 🔽	No 🗌	
4. Were all sam	ples received at a tempera	ture of >0° C to 6.0°C	Yes 🔽	No 🗌	
5. Sample(s) in	proper container(s)?		Yes 🗹	No 🗌	
6. Sufficient sam	nple volume for indicated to	est(s)?	Yes 🔽	No 🗌	
7. Are samples ((except VOA and ONG) pr	operly preserved?	Yes 🔽	No 🗌	
8. Was preserva	ative added to bottles?		Yes 🗌	No 🗹	NA 🗆
9. VOA vials hav	ve zero headspace?		Yes 🗌	No 🗌	No VOA Vials 🗹
	mple containers received b	oroken?	Yes 🗌	No 🗹	# of preserved bottles checked
	ork match bottle labels? ancies on chain of custody)	Yes 🔽	No 🗌	for pH: (<2 of >12 unless noted
	correctly identified on Chai		Yes 🗹	No 🗌	Adjusted? No
	t analyses were requested	12	Yes 🗹	No 🗌	
	ing times able to be met? ustomer for authorization.)		Yes 🗹	No 🗌	Checked by: Thin 6-5-19
Special Handl	ling (if applicable)				
15. Was client no	otified of all discrepancies	with this order?	Yes 🗌	No 🗌	NA 🔽
Person	Notified:	Date:	F		
By Who	om:	Via:	eMail	Phone Fax	In Person
Regard	ling:				
Client I	nstructions:				
16. Additional re	marks:			•	
17. <u>Cooler Infor</u> Cooler No	Temp °C Condition	Seal Intact Seal No	Seal Date	Signed By	_
1	15.3 Good	Yes			1

		110110	5-10-	VIIaIII-VI-VUSUUU NECUIU				L		INAL	-	OL LA	NC	FNVTPONMENTAL	11	
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Gold For Field State Address:		\$	-		Project Nam	e.				d www	allenviro	nmenta	Com)		
Constrained Project #: Tel. 505-345-3970 Fras 60-337 Fax 505-3375 Fras 60-337 Fax 505-357 Fax 705-357 Fax 705	Mailing	Address	S:		S N	ニナトレ	60	49(11 Hawk	ins NE	- Albuq	nerque	, NM 8	7109		
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Type and #</td><td>Preservative
Type</td><td>190617 (</td><td></td><td></td><td><u></u></td><td>CI')</td><td>) 0728</td><td>) letoT</td><td>1</td><td></td></tr><tr><td>1200 DBS-1R -CO2 -CO2 -CO2 /550 DBS-3 -CO4 DBS-3 /6/0 DBS-5 -CO4 DB /6/10 DBS-5 -CO4 DB /6/10 DBS-5 -CO4 DB /1530 DBS-5 -CO4 DB /1530 DBS-5 -CO4 DB /1530 DBS-5 -CO4 DB /1320 DBS-5 -CO4 DB /1320 DBS-5 -CO4 DB /1320 DBS-6 -CO5 DB /1320 DBS-7 -CO6 DB /1330 DBS-7 -CO6 DB /1330 DBS-9 -CO1 DB /1330 DBS-10 -D010 DB /1445 MM-5 -D11 DB /1445 MM-5 -D11 DB /1445 MM-5 -D11 DD /1445 MM-5 -D12 DB /1445 MM-5 -D12 DB /1400 MB -D12 D10 /1400 MB -D12 D10 /1400 MB MB /1400 MB</td><td>5.3.19</td><td></td><td></td><td>PMW-1</td><td>17041</td><td>NA</td><td>100-</td><td></td><td></td><td>_</td><td>)_</td><td></td><td></td><td></td><td></td></tr><tr><td>/550 1035-2 -003 1035-3 /610 1035-3 -004 1035-1 /610 1035-5 -004 101 /530 1035-5 -006 101 /1405 1035-6 1006 101 /1405 1035-7 -006 101 /1405 1035-7 -006 101 /1205 1035-7 -006 101 /1323 1035-7 -001 101 /1325 1035-10 -001 101 /1405 1035-10 -011 101 /1405 1035 -011 11 /1232 1035-10 -011 11 /1405 1330 -011 11 /1005 1335 1000 11 /1005 1335 1000 11 /1005 1335 1000 11 /1005 1000 1000 /1005 1000 11 /1005 1000 11 /1005 1000 11 /1005 1000 11 /1005 1000 11 /1005 1000 11 /1000 1000 <</td><td></td><td>1700</td><td></td><td>DBS-1R</td><td>-</td><td>-</td><td>200-</td><td>-</td><td></td><td>-</td><td></td><td></td><td>_</td><td></td><td></td></tr><tr><td>krg</math> D3S-3 <math>-004</math> D3S-4 <math>-003</math> <math>-004</math> <math>-006</math> <math>-006</td><td></td><td>1550</td><td></td><td>DRS-2</td><td>_</td><td></td><td>-003</td><td></td><td></td><td>-</td><td>-</td><td></td><td></td><td></td><td></td></tr><tr><td>16.0 1035-7 -006 10 16.30 1035-5 -006 10 17.00 1035-6 -006 10 17.30 1035-7 -006 10 17.30 1035-9 -006 10 17.30 1035-9 -006 10 17.30 1035-9 -006 10 17.30 1035-10 -006 10 17.30 1035-10 -006 10 17.30 1035-10 -0010 10 17.30 1035-10 -011 10 17.52 100 10 10 17.92 14.350 -012 11 17.455 MW-5 -012 11 17.455 MW-5 -012 11 17.520 -012 1005 11 1905 -012 1005 11 1905 -012 10 11 1605 -012 10 17.520 -012 10 1605 -012 11 17 10 18 1005 1905 10 1005 10 1006 10 110</td><td></td><td>1645</td><td></td><td>D3S-3</td><td></td><td></td><td>-00H</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td><math> \mathcal{K} _{3C}</math> <math> \mathcal{D} _{3S-S}</math> <math> \mathcal{C} _{1SC}</math> <math> \mathcal{D} _{2S-S}</math> <math> \mathcal{C} _{1SC}</math> <math> \mathcal{D} _{2S-S}</math> <math> \mathcal{C} _{1SC}</math> <math> </math></td><td></td><td>1610</td><td></td><td>D35-4</td><td></td><td>-</td><td>-005</td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td><math> \sqrt{VCS} </math> <math>DSS-6</math> <math>-007</math> <math>-007</math> <math>-007</math> <math>-001</math> <math> 332</math> <math>D35-7</math> <math>-006</math> <math>-006</math> <math>-006</math> <math>-006</math> <math>-006</math> <math> 332</math> <math>D35-7</math> <math>-006</math> <math>-006</math> <math>-006</math> <math>-006</math> <math>-006</math> <math> 332</math> <math>D35-10</math> <math>-000</math> <math>-001</math> <math>-001</math> <math>-011</math> <math>-011</math> <math> 132</math> <math>+ MW-3</math> <math>4761Y</math> <math>41053</math> <math>-011</math> <math>-011</math> <math>-011</math> <math> 1me:</math> Relinquished by: <math>Va: 00</math> <math>-012</math> <math>-017</math> <math>-017</math> <math>-012</math> <math> 1me:</math> Relinquished by: <math>Va: 00</math> <math>-017</math> <math>-017</math> <math>-017</math> <math>-017</math> <math> 1me:</math> Relinquished by: <math>Va: 00</math> <math>-012</math> <math>-017</math> <math>-017</math> <math>-017</math> <math> 1me:</math> Relinquished by: <math>Va: 00</math> <math>-017</math> <math>-017</math> <math>-017</math> <math>-017</math> <math>-017</math> <math>-017</math> <math> 1me:</math> Relinquished by: <math>Va: 000</math> <math>-017</math> <math>-01</math></td><td></td><td>1630</td><td>_</td><td>DBS-5</td><td></td><td></td><td>900-</td><td></td><td></td><td>-</td><td>_</td><td></td><td></td><td></td><td></td></tr><tr><td>1300 D35-9 -006</td><td></td><td>1405</td><td>10</td><td>D85-6</td><td></td><td></td><td>100-</td><td></td><td></td><td></td><td>_</td><td></td><td>_</td><td></td><td></td></tr><tr><td><math display=">\begin{array}{ c c c c c c c c c c c c c c c c c c c</th>	\begin{array}{ c c c c c c c c c c c c c c c c c c c		1300	6	.DB5-8			-008				-		_	_	-
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Turn-Around Time:	CyStandard C Rush	Project Name:	Salty Dog	Project #:	ESOR.0118.00	(Brothert Manager:		U. Aracoe	Sampler: M. Zbrotch	On Ice: VYes DNo	# of Coolers:	Cooler Temp(including CF): IU, S+05(CF)=	Container Preservative HEAL No. Type and # Type /9 66.17	1 M 4 3	1		Received by: Via: COO Date Time Received by: Via: Date Time contracted to other accredited laboratories. This serves as notic
Chain-of-Custody Record	Client: DBSA		Mailing Address: 6020 Academy RONE		Phone #: 505-822-9400	email or Fax#: MZbroz & K. C. Geo-Logic (Bone) et Manager:	QA/QC Package:	K Standard Devel 4 (Full Validation)	:uo	NELAC Other	EDD (Type)		Date Time Matrix Sample Name	19 1021 GW			Date: Time: Relinquished by:

Appendix B

Field Notes

6/3/19 foc detalls pumping latering glove onthe D35-8 New total Report FWS-1 Jhn Bays that the lowing of " Low thy attace 10+ 7 working 130159 661 back slot ab Ru-2 one completion to starts 5- clt sompling at Deconn ggutzment Somple of PMU-1 1905 OHE 1220 1300 220 V des t'samplet 1240 Meet W/ Olm discussed apreal Start Grouping wells w/ PNW R Z INO TAT VLONV y no Im 1550 Total: zer reading + 52973.7 build 1232 1200 1645 1610 1905 1630 1300 1330 0251 to be deal over Inthe 5261 1220 0830 M. Zbrezek onstre 824. 2 bbl/day Salty Dog coming days 70.94 68.25 66.10 71.66 67.24 68 44 65.52 65.99 65.11 58.53 64.12 65.30 0£.99 64.18 うちした RW-2 Well ID 1 6/3/19 1000 D85-1R D35-6 D 05-2 01-520 DUS-3 282-5 DB3-8 2 -22 -2 MW-3 D85-7 D85-4 D82-9 -MW-MM-S 1200 MM-0 1130



GROUNDWATER ELEVATION DATA SHEET

Project Name. <u>Salty Dog</u>

Sampler <u>M. Zbrozek</u>

Project # _______

Project Manager: <u>John Ayarbe</u>

SampleDate: ____06.03.2019_____

Sheet # __1_ of _1___

Well ID	previous (11/19)	Depth to Water	Total Depth	Comments: (well dia. sampled. condition)
,DBS-1R	<u>68.71</u>	64.25	74.42	1700
,DBS-2	<u>71.07</u>	20 94	75.35	1550
,DBS-3	<u>66.11</u>	66 10	<u>74.76</u>	1645
,DBS-4	<u>71.61</u>	71.66	<u>78.81</u>	1610
DBS-5	<u>68.47</u>	68 44	<u>75.38</u>	1630
, DBS-6	<u>66.62</u>	67.24	<u>76.02</u>	Sample @ 1405
DBS-7	<u>65.30</u>	65.99		WL only
DBS-8	<u>64.82</u>	65.52	<u>69.91</u>	Jample 1300
DBS-9	<u>58.22</u>	58.53	<u>67.55</u>	Sample. 1232
-DBS-10	<u>64.66</u>	65.11	<u>78.11</u>	Jample Q 1330
MW-2	<u>65.45</u>			•
-MW-3	<u>66.09</u>	68.18	<u>147.13</u>	1520
MW-4	<u>66.11</u>	6812		WL only
,MW-5	<u>64.34</u>	65.30	128.78	1445
-MW-6	<u>66.06</u>	66 70		WL only
PMW-1	72.52	71.76	77.73	1720

Comments:

 $\$ Projects ES08 0118 06_Salty_Dog_2016 Field Forms SD GW Elevation doc



GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog		Sampler [.] M. Zbrozek				
Project # ES08.0118.06		Sample Date: <u>6. 3 .2019</u>				
Project Manager: John Ayarbe		Sample Time	[700			
Well # DBS-1R						
Well Diameter2"	(inches)	Height of Wate	r Column <u>: 6.17</u>	_(feet)		
Depth to NAPL ⁻	_(feet btoc)	Casing Volume	0.98	_(gal)		
Depth to Water 69.25	_(feet btoc)	Purge Volume	2.96	_(gal)		
Total Depth of Well: 74.42	(feet)	Purge Method.	Grab			
Note: One casing volume (SCH 40 PVC) 2.0"	ID casing = 0	.16 gal/ft; 4 0" = 0.65 g	gal/ft; 6.0" = 1.47 gal/ft			

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)		
Initial	9.46	21.2	1159	240.30	6.99	47.80	749	0.57
1	7.35	19.2	1170	237.)	7.03	27.91	757	0.57 0.58
1.5		Ð					1	
2	8.35	19.1	1172	235.7	7.00	27.84	760	058
2.5								
3	8.34	19.1	1147	234.3	7.08	13.53	738	057
3.5							Ì	
4								
4.5								
5								

Sample Description: <u>1 poly</u>

Physical Observations _____

Analytical Method(s)[.] <u>Chloride</u>

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GROUNDWATER MONITORING DATA SHEET

Project Name Salt	y Dog		Sampler: M. Zbrozek				
Project # ES08.01	18.06		Sample Date: <u>6. 3 .2019</u>				
Project Manager. J	ohn Ayarbe		Sample Time	1645			
Well # DBS-3							
Well Diameter	2"	(inches)	Height of Wate	r Column. 8.66	_(feet)		
Depth to NAPL:		_(feet btoc)	Casing Volume	1.38	_(gal)		
Depth to Water:	66.10	_(feet btoc)	Purge Volume	4.15	_(gal)		
Total Depth of Well	74.76	(feet)	Purge Method [.]	Grab			
Note: One casing volume (SC	H 40 PVC): 2 0"	ID casing = 0	.16 gal/ft; 4.0" = 0.65 g	gal/ft; 6.0" = 1.47 gal/ft			

Groundwater Parameters:

Casıng Volumə	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O (mg/L)	Turbidity (NTU)		
Initial	8.35	21.2	597	232.7	7.37	251.43	387	029
1	8.72	19.7	595	237.1	7.44	287.44	387	0.29
1.5								
2	8.17	19.5	595	241.5	7.43	101.96	387	0.29
2.5								
3	8.18	19.5	594	239.0	7.67	89.03	3%	0.29
3.5								
4						_		
4.5							ļ	
5								

Sample Description <u>1 poly</u>

Physical Observations.

Analytical Method(s) Chloride



GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog		Sampler [.] M. Zbrozek				
Project #: ES08.0118.06		Sample Date <u>6. 3 .2019</u>				
Project Manager: John Ayarbe		Sample Time 1630				
Well # DBS-5	<u></u>					
Well Diameter <u>2"</u>	(inches)	Height of Water Column: <u>6-99</u> (feet)				
Depth to NAPL:	_(feet btoc)	Casing Volume/.//(gal)				
Depth to Water 68.49	_(feet btoc)	Purge Volume <u>3.33 (gal)</u>				
Total Depth of Well: 75.38	(feet)	Purge Method: <u>Grab</u>				
Note: One casing volume (SCH 40 PVC): 2.0"	ID casing = 0	.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft				

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	DO (mg/L)	Turbidity (NTU)		
Initial	7.75	24.3	1236	192.6	6.43	199.44	798	0.61
1	7.32	20.4	1226	77.6	6,17	20.03	797	0.61
1.5								
2	7.73	19.9	1226	128.8	6 06	89.92	799	0,61
2.5								-
3	7.73	19.46	1214	165.1	633	4311	785	0.60
3.5								
4								
4.5							1	
5					-		1	

Sample Description <u>1 poly</u>

Physical Observations.

Analytical Method(s) <u>Chloride</u>

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GROUNDWATER MONITORING DATA SHEET

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Project Name Salty Dog	Sampler M Zbrozek
Project # ES08.0118.06	Sample Date: <u>6. 3 .2019</u>
Project Manager:	Sample Time610
Well # DBS-4	
Well Diameter: <u>2</u> * (inc	thes) Height of Water Column: $\frac{7}{15}$ (feet)
Depth to NAPL:(feet	btoc) Casing Volume/./Y(gal)
Depth to Water: 71.66 (feet	btoc) Purge Volume ⁻
Total Depth of Well: 78.81	feet) Purge Method: <u>Grab</u>
Note:	

One casing volume (SCH 40 PVC). 2.0" iD casing = 0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casıng Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)]	
Initial	8.43	24.4	566	230.7	7.03	156.48	379	028
1	5.27	19.5	555 .	245.7	7.60	24.25	361	0.27
1.5	9.24	19.6	555	217.9	7.61	1	361	0.27
2	8.24	17.5	555	248.7	7.61	11.58	361	0.27
2.5								
3	8.24	19.6	555	249.6	7.61	9.65	361	o 27
3.5								
4								
4.5								
5								

Sample Description: <u>1 poly</u>

Physical Observations.

Analytical Method(s): <u>Chloride</u>

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GROUNDWATER MONITORING DATA SHEET

Project Name [·] Salty Dog		Sampler: M	Zbrozek	
Project # <u>ES08.0118.06</u>		Sample Date	6.3.2019	
Project Manager: John Ayarbe		Sample Time	1556	
Well #: DBS-2	<u> </u>			
Well Diameter2"	(inches)	Height of Wate	er Column. <u>4.4/</u>	_(feet)
Depth to NAPL		Casing Volume _		_(gal)
Depth to Water 70.94	_(feet btoc)	Purge Volume	2.11	_(gal)
Total Depth of Well: 75.35	(feet)	Purge Method:	Grab	
Note: One casing volume (SCH 40 PVC): 2.0"	ID casing = 0	16 gal/ft; 4.0" = 0.65	gal/ft; 6.0" = 1 47 gal/ft	

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O (mg/L)	Turbidity (NTU)	
Initial	8.77	27.0	887	207.1	5.9%	47.01	455 0.34
1	8.65	23.9	624	208.6	5.74	3476	404 0.36
1.5	5.44	19.8	601	214.9	5.93	5.73	397 0.30
2	8.38	19:4	624	218.5	5.93	71.77	408 0.37
2.5	<u> </u>						
3	8.31	19.3	625	219.4	5.76	74.44	398 0.30
3.5							
4							
4,5	 	<u> </u>					
5							

Sample Description <u>1 poly</u>

Physical Observations

Analytical Method(s) <u>Chloride</u>

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GROUNDWATER MONITORING DATA SHEET

Project Name: Sa	lty Dog		Sampler M. Zbrozek				
Project # ES08.0	118.06		Sample Date	6. 3 .2019			
Project Manager	John Ayarbe		Sample Time: 1520				
Well # MW-3							
Well Diameter:	2"	(inches)	Height of Wate	er Column: 78.95	_(feet)		
Depth to NAPL		_(feet btoc)	Casing Volume _	12.63	_(gal)		
Depth to Water:	68.18	_(feet btoc)	Purge Volume:	37.89	_(gal)		
Total Depth of We	147.13	(feet)	Purge Method:	Grab	()		
Note:							

One casing volume (SCH 40 PVC): 2.0' ID casing = 0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O. (mg/L)	Turbidity (NTU)	TD3 Sal
Initial	8.15	19.4	2215	264.2	3.55	4.21	1440 1.14
1	8.01	19.4	4487	2524	295	2.31	2735 2.24
1.5	7.80	19.4	16429	2653	2.72	2.20	11096 10.15
2	7.79	194	20263	259 3	2.69	2.25	13358 12.37
2.5	7.50	19.4	22029	252.6	2.64	2.25	14376 13.37
3	7.81	19.4	22979	247.3	2.60	2.09	14968 13.95
3.5	7.43	196	21537	234.4	2.92	4.87	13678 13.51
4							
4.5							
5							

Sample Description <u>1 poly</u>				
Physical Observations.				
Analytical Method(s). Chloride Fifteetd metals, etc.				

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GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog	Sampler: M. Zbrozek
Project # ES08.0118.06	Sample Date. <u>6. 3.2019</u>
Project Manager John Ayarbe	Sample Time <u>1445</u>
Well # MW-5	
Well Diameter: <u>2</u> " (inches	B) Height of Water Column: <u>63.4% (</u> feet)
Depth to NAPL(feet btoo	c) Casing Volume. <u>IO, 15</u> (gal)
Depth to Water: 65.30 (feet block	c) Purge Volume <u>30.47</u> (gal)
Total Depth of Well <u>128.78</u> (fee	t) Purge Method [.] <u>Grab</u>
Note: One casing volume (SCH 40 PVC): 2.0" ID casing =	0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)	TUS 501
Initial	7.85	19.6	2219	246.7	3.47	249	1442 1.14
1	7.85	19.6	1494	237.7	3.82	2.73	1479 1.17
1.5	7.63	19.5	2428	235.2	3.82	246	1580 1.26
2	7.83	19.5	2447	234.5	3.83	2.51	1588 1.26
2.5	7.84	19.5	2421	234.1	3.85	2.64	1572 1.25
3	7.83	19.5	2409	235.4	3.08	2.76	1568 1.25
3.5							
4							
4.5							
5							

Sample Description <u>1 poly</u>

Physical Observations. _____

Analytical Method(s) <u>Chloride</u>

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GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog	Sampler M. Zbrozek
Project # ES08.0118.06	Sample Date: <u>6. 3 .2019</u>
Project Manager John Ayarbe	Sample Time:/いりう
Well # DBS-6	_
Well Diameter 2"	_(inches) Height of Water Column: <u>8.7%</u> (feet)
Depth to NAPL(f	eet btoc) Casing Volume <u>/. 40</u> (gal)
Depth to Water <u>67.24</u> (f	eet btoc) Purge Voiume. <u> Ý. 21 (</u> gal)
Total Depth of Well76.02	(teet) Purge Method <u>Grab</u>
Note:	

One casing volume (SCH 40 PVC): 2 0" ID casing = 0 16 gal/ft; 4 0" = 0.65 gal/ft; 6.0' = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)	TDS	501
Initial	7.99	22.3	1213	2624	6.95	1968.13	789	0.61
1	7.94	20.1	1229	247.5	6.92	1747.41	799	0.61
1.5								
2	7.69	19.56	1227	249.2	6.77	649.45	798	0.61
2.5	1-7						_ ~ ~ ~	
3	6.73	19.6	1228	220.1	6.73	27.45	799	0.61
3.5								
4.5	<u> </u>		·		1			
<u> </u>								

Sample Description	1 poly	
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Physical Observations

Analytical Method(s) <u>Chloride</u>

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GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog		Sampler: M. Zbrozek			
Project # [.] <u>ES08.0118.06</u>		Sample Date:	<u>6. 3 .2019</u>		
Project Manager [.] John Ayarbe		Sample Time	1330		
Well # DBS-10					
Well Diameter:2"	(inches)	Height of Wate	r Column: <u>i3. 0</u> (feet)		
Depth to NAPL:	_(feet btoc)	Casing Volume:	<u>∂_0≪ (gal)</u>		
Depth to Water: 65 11	_(feet btoc)	Purge Volume:	<u>6.27</u> (gal)		
Total Depth of Well [.] 78.11	(feet)	Purge Method:	Grab		
Note:					

One casing volume (SCH 40 PVC): 2.0" ID casing = 0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	pН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)	M9/K TD5
Initial	8.02	20.2	2082	238.6	6.0-6	159.25	1350 1,07
1	7.82	19.5	2133	241.8	6.01	49.35	1353 1.21
1.5	_	*				42.46	
2	7.51	19.4	2154	245.3	5.86	2154	1400 1.17
2.5						17.26	
3	782	19.6	2232	246.0	5.77	2232	1451 1.15
3.5							
4							
4.5							
5							

Sample Description[.] <u>1 poly</u>

Physical Observations.

Analytical Method(s) ______

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GROUNDWATER MONITORING DATA SHEET

Project Name Sa	alty Dog	· · · · · · · · · · · · · · · · · · ·	Sampler: M. Zbrozek			
Project # ES08.	0118.06		Sample Date	<u>6.3.2019</u>		
Project Manager:	John Ayarbe		Sample Time	1300		
Well # DBS-8						
Well Diameter	2"	(inches)	Height of Wate	er Column: <u>4, 39 (</u>	feet)	
Depth to NAPL: _		_(feet btoc)	Casing Volume _	0.70 (gal)	
Depth to Water	65.52	_(feet btoc)	Purge Volume	2.11	gal)	
Total Depth of We	ell: <u>69.91</u>	(feet)	Purge Method [.]	Grab		

One casing volume (SCH 40 PVC): 2.0" iD casing = 0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1 47 gal/ft

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)	TOS 2 Salpt
Initial	8.46	23.5	647	189.9	6.77	231.51	14 0.31
1	9.29	20.4	634	199.1	6.71	177.70	411 0.31
1.5							
2	8.24	20.0	630	200.2	6.63	140.54	409 0.31
2.5							
3	8,23	19.9	625	207.5	6.61	268 24	405 0.30
3.5							
4							
4.5							
5							

Sample Description. <u>1 poly</u>

Physical Observations.

Analytical Method(s). <u>Chloride</u>

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GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog	Sampler [.] M. Zbrozek
Project # ES08.0118.06	Sample Date <u>6. 3 .2019</u>
Project Manager [.] John Ayarbe	Sample Time: 1232
Well # DBS-9	
Well Diameter: <u>2</u> [*] (inches)	Height of Water Column. <u> </u>
Depth to NAPL(feet btoc)	Casing Volume. / YY (gal)
Depth to Water: 58.53 (feet btoc)	Purge Volume <u> </u>
Total Depth of Well: 67.55 (feet)	Purge Method: <u>Grab</u>
Note ⁻ One casing volume (SCH 40 PVC) ⁻ 2.0" ID casing = 0.	16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)	mg/k TD5/501 1028 1035
Initial	7 73	19. 9	1962	173.1	7.86	1801,21	1028 1075
1	7.91	19.1	1589	116.5	7.90	1731.76	
1.5							
2	7.22	19.3	1446	133.1	7.21	1131.97	933 0.73
2.5							
3	7.20	19.3	1430	134.7	7.20	1096.13	933 0.72
3.5							
4							
4.5							
5							

Sample	Description	1	polv	/
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Physical Observations.

Analytical Method(s). <u>Chloride</u>

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GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog	Sampler [.] M. Zbrozek
Project # ES08.0118.06	Sample Date: <u>6. 3 .2019</u>
Project Manager John Ayarbe	Sample Time: 1720
Well # PMW-1	
Well Diameter [.] 2"	(inches) Height of Water Column. <u>597</u> _(feet)
Depth to NAPL	_(feet btoc) Casing VolumeO.95(gal)
Depth to Water: 71 76	(feet btoc) Purge Volume 2.86 (gal)
	(feet) Purge Method: <u>Grab</u>
Note:	

One casing volume (SCH 40 PVC): 2.0" ID casing = 0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)	
Initial	7.79	21.9	23449	258.7	7.07	19.85	15175 14.16
1	7.15	19.7	23600	253.7	7.13	6.03	15611 14.66
1.5							
2	7,73	19.4	24612	251.9	6.99	4.60	1633 😭 15.55
2.5	6-87.74	19.3	26526	249.2	6.81	3.55	17374 /6.57
<u>3</u> 3.5		11.5	10520				
4	7.77	193	27503	247.7	6.75	3.24	17968 17 07
4.5		·					
5	7-81	19.3	28101	2461	672	3 58	18344 1744

Sample Description: <u>1 poly</u>

Physical Observations.

Analytical Method(s) Chloride

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Appendix C

Historical Data



Monitor Well	Screen Interval (ft bgs)	Top of Casing Elevation ^a (ft msl)	Date Measured	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
DBS-1	56.0–76.0	3,817.09	4/08/2009	62.38	3,754.71
			5/11/2011	64.70	3,752.39
			10/04/2011	Well	destroyed
DBS-1R	58.0–78.0	3,817.00 ^b	4/30/2012	63.60	3,753.40
			9/10/2012	65.65	3,751.35
			6/23/2013	64.40	3,752.60
			1/09/2014	67.23	3,749.77
			4/07/2014	66.36	3,750.64
			3/20/2015	67.17	3,749.83
			7/01/2015	67.92	3,749.08
			9/29/2015	67.07	3,749.93
			12/16/2015	67.54	3,749.46
			3/22/2016	66.61	3,750.39
			6/08/2016	66.23	3,750.77
			9/13/2016	67.43	3,749.57
			12/01/2016	67.31	3,749.69
			6/20/2017	69.60	3,747.40
			12/19/2017	67.80	3,749.20
			6/18/2018	67.45	3,749.55
			11/07/2018	68.71	3,748.29
			6/03/2019	68.25	3,748.75
DBS-2	58.0–78.0	3,820.50	4/08/2009	65.45	3,755.05
			5/11/2011	66.80	3,753.70
			10/04/2011	65.87	3,754.63
			2/08/2012	65.96	3,754.54
			4/30/2012	66.26	3,754.24
			9/10/2012	67.45	3,753.05
			6/23/2013	67.03	3,753.47
			1/09/2014	69.08	3,751.42
			4/07/2014	68.67	3,751.83
			3/20/2015	69.32	3,751.18
			6/30/2015	69.29	3,751.21

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 1 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012. ft btoc = Feet below top of casing

ft bgs = Feet below ground surface ft msl = Feet above mean sea level

NA = Not available



Monitor Well	Screen Interval (ft bgs)	Top of Casing Elevation ^a (ft msl)	Date Measured	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
DBS-2 (cont.)	58.0–78.0	3,820.50	9/29/2015	69.41	3,751.09
			12/16/2015	69.71	3,750.79
			3/22/2016	69.13	3,751.37
			6/08/2016	68.91	3,751.59
			9/13/2016	69.76	3,750.74
			12/01/2016	69.73	3,750.77
			6/20/2017	71.33	3,749.17
			12/19/2017	70.42	3,750.08
			6/18/2018	70.25	3,750.25
			11/07/2018	71.07	3,749.43
			6/03/2019	70.94	3,749.56
DBS-3	56.0–76.72	3,816.66	4/08/2009	60.67	3,755.99
			5/11/2011	61.25	3,755.41
			10/04/2011	61.25	3,755.41
			2/08/2012	61.11	3,755.55
			4/30/2012	61.41	3,755.25
			9/10/2012	61.81	3,754.85
			6/23/2013	62.08	3,754.58
			1/09/2014	63.30	3,753.36
			4/07/2014	63.43	3,753.23
			3/20/2015	63.93	3,752.73
			6/30/2015	63.99	3,752.67
			9/29/2015	64.17	3,752.49
			12/16/2015	64.41	3,752.25
			3/22/2016	63.88	3,752.78
			6/08/2016	63.92	3,752.74
			9/13/2016	64.56	3,752.10
			12/01/2016	64.59	3,752.07
			6/20/2017	65.52	3,751.14
			12/19/2017	65.54	3,751.12
			6/18/2018	65.60	3,751.06

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 2 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

- ^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.
- ft bgs = Feet below ground surface ft btoc = Feet below top of casing
- ft msl = Feet above mean sea level
- NA = Not available



Monitor Well	Screen Interval (ft bgs)	Top of Casing Elevation ^a (ft msl)	Date Measured	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
DBS-3 (cont.)	56.0-76.72	3,816.66	11/07/2018	66.11	3,750.55
			6/03/2019	66.10	3,750.56
DBS-4	56.0–76.0	3,820.37	4/08/2009	66.27	3,754.10
			5/11/2011	67.23	3,753.14
			10/04/2011	66.67	3,753.70
			2/08/2012	66.76	3,753.61
			4/30/2012	67.02	3,753.35
			9/10/2012	67.78	3,752.59
			6/23/2013	67.70	3,752.67
			1/09/2014	69.37	3,751.00
			4/07/2014	69.23	3,751.14
			3/20/2015	69.81	3,750.56
			6/30/2015	69.85	3,750.52
			9/29/2015	70.00	3,750.37
			12/16/2015	70.25	3,750.12
			3/22/2016	69.74	3,750.63
			6/08/2016	69.62	3,750.75
			9/13/2016	70.35	3,750.02
			12/01/2016	70.38	3,749.99
			6/20/2017	71.67	3,748.70
			12/19/2017	71.08	3,749.29
			6/18/2018	70.98	3,749.39
			11/07/2018	71.61	3,748.76
			6/03/2019	71.66	3,748.71
DBS-5	56.9–76.9	3,820.66	4/08/2009	62.99	3,757.67
			5/11/2011	63.45	3,757.21
			10/04/2011	63.41	3,757.25
			2/08/2012	63.46	3,757.20
			4/30/2012	63.70	3,756.96
			9/10/2012	63.92	3,756.74
			6/23/2013	64.30	3,756.36
			1/09/2014	65.28	3,755.38

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 3 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012. ft btoc = Feet below top of casing

ft bgs = Feet below ground surface ft msl = Feet above mean sea level



Monitor Well	Screen Interval (ft bgs)	Top of Casing Elevation ^a (ft msl)	Date Measured	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
DBS-5 (cont.)	56.9–76.9	3,820.66	4/07/2014	65.48	3,755.18
			3/20/2015	65.90	3,754.76
			7/01/2015	66.18	3,754.48
			9/29/2015	66.25	3,754.41
			12/16/2015	66.47	3,754.19
			3/22/2016	66.08	3,754.58
			6/08/2016	66.16	3,754.50
			9/13/2016	66.64	3,754.02
			12/01/2016	66.72	3,753.94
			6/20/2017	67.60	3,753.06
			12/19/2017	67.88	3,752.78
			6/18/2018	68.04	3,752.62
			11/07/2018	68.47	3,752.19
			6/03/2019	68.44	3,752.22
DBS-6	56.7–76.7	3,812.65	4/07/2009	62.75	3,749.90
			5/11/2011	63.11	3,749.54
			10/04/2011	63.16	3,749.49
			2/08/2012	63.20	3,749.45
			4/30/2012	63.43	3,749.22
			9/10/2012	63.60	3,749.05
			6/23/2013	63.74	3,748.91
			1/09/2014	64.00	3,748.65
			4/07/2014	64.22	3,748.43
			3/19/2015	64.78	3,747.87
			7/01/2015	64.81	3,747.84
			9/29/2015	65.48	3,747.17
			12/16/2015	65.26	3,747.39
			3/22/2016	65.38	3,747.27
			6/08/2016	65.37	3,747.28
			9/13/2016	65.51	3,747.14
			12/01/2016	65.51	3,747.14
			6/20/2017	65.81	3,746.84

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 4 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

ft bgs = Feet below ground surface ft btoc = Feet below top of casing ft msl = Feet above mean sea level

NA = Not available



Monitor Well	Screen Interval (ft bgs)	Top of Casing Elevation ^a (ft msl)	Date Measured	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
DBS-6 (cont.)	56.7–76.7	3,812.65	12/19/2017	66.29	3,746.36
			6/18/2018	66.45	3,746.20
			11/07/2018	66.62	3,746.03
			6/03/2019	67.24	3,745.41
DBS-7	55.1–75.1	3,810.21	4/07/2009	61.74	3,748.47
DBS-8	55.2–75.2	3,810.70	4/07/2009	61.20	3,749.50
			5/11/2011	61.67	3,749.03
			10/04/2011	61.71	3,748.99
			2/08/2012	61.77	3,748.93
			4/30/2012	62.00	3,748.70
			9/10/2012	62.15	3,748.55
			6/23/2013	62.28	3,748.42
			1/09/2014	62.47	3,748.23
			4/07/2014	62.67	3,748.03
			3/19/2015	63.19	3,747.51
			6/30/2015	63.25	3,747.45
			9/29/2015	63.82	3,746.88
			12/16/2015	63.58	3,747.12
			3/22/2016	63.76	3,746.94
			6/08/2016	63.72	3,746.98
			9/13/2016	63.83	3,746.87
			12/01/2016	63.79	3,746.91
			6/20/2017	64.09	3,746.61
			12/19/2017	64.53	3,746.17
			6/18/2018	64.70	3,746.00
			11/07/2018	64.82	3,745.88
			6/03/2019	65.52	3,745.18
DBS-9	48.0–68.0	3,806.26	4/08/2009	53.93	3,752.33
			5/11/2011	54.39	3,751.87
			10/04/2011	54.59	3,751.67
			2/08/2012	54.53	3,751.73
			4/30/2012	54.68	3,751.58

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 5 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012. ft btoc = Feet below top of casing

ft bgs = Feet below ground surface ft msl = Feet above mean sea level

NA = Not available



	Screen	Top of Casing		Depth to	Groundwater
Monitor Well	Interval (ft bgs)	Elevation ^a (ft msl)	Date Measured	Water (ft btoc)	Elevation (ft msl)
DBS-9 (cont.)	48.0–68.0	3,806.26	9/10/2012	54.77	3,751.49
			6/23/2013	55.04	3,751.22
			1/09/2014	55.27	3,750.99
			4/07/2014	55.56	3,750.70
			3/19/2015	55.95	3,750.31
			7/01/2015	56.14	3,750.12
			9/29/2015	56.49	3,749.77
			12/16/2015	56.52	3,749.74
			3/22/2016	56.51	3,749.75
			6/08/2016	56.64	3,749.62
			9/13/2016	56.81	3,749.45
			12/01/2016	56.88	3,749.38
			6/20/2017	57.28	3,748.98
			12/19/2017	57.67	3,748.59
			6/18/2018	57.98	3,748.28
			11/07/2018	58.22	3,748.04
			6/03/2019	58.53	3,747.73
DBS-10	57.2–77.2	3,807.48	6/18/2018	64.46	3,743.02
			11/07/2018	64.66	3,742.82
			6/03/2019	65.11	3,742.37
NW-1s	52.95–72.95	3,817.33	4/08/2009	62.35	3,754.98
NW-1m	99.31–119.31	3,817.35	4/08/2009	62.25	3,755.10
NW-1d	149.45–169.45	3,817.35	4/08/2009	62.04	3,755.31
NW-2s	53.35–73.35	3,812.50	4/08/2009	63.08	3,749.42
NW-2m	93.72–113.72	3,812.45	4/08/2009	63.27	3,749.18
NW-2d	126.87–146.87	3,812.46	4/08/2009	66.41	3,746.05
PMW-1	63–78	3,821.17	6/23/2008	67.51	3,753.66
			4/08/2009	65.97	3,755.20
			5/11/2011	68.70	3,752.47
			10/04/2011	66.95	3,754.22
			2/08/2012	66.69	3,754.48
			4/30/2012	67.27	3,753.90

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 6 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

ft msl = Feet above mean sea level

ft bgs = Feet below ground surface ft btoc = Feet below top of casing



Monitor Well	Screen Interval (ft bgs)	Top of Casing Elevation ^a (ft msl)	Date Measured	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
PMW-1 (cont.)	63–78	3,821.17	9/10/2012	69.77	3,751.40
			6/23/2013	68.40	3,752.77
			1/09/2014	71.24	3,749.93
			4/07/2014	69.97	3,751.20
			3/20/2015	70.78	3,750.39
			7/01/2015	71.41	3,749.76
			9/29/2015	70.76	3,750.41
			12/16/2015	71.03	3,750.14
			3/22/2016	70.30	3,750.87
			6/08/2016	69.65	3,751.52
			9/13/2016	71.08	3,750.09
			12/01/2016	70.97	3,750.20
			6/20/2017	73.06	3,748.11
			12/19/2017	71.19	3,749.98
			6/18/2018	70.97	3,750.20
			11/07/2018	72.52	3,748.65
			6/03/2019	71.76	3,749.41
MW-1	120–140	NA	6/23/2008	59.90	NA
MW-2	127–147	3,812.68	6/23/2008	61.42	3,751.26
			4/07/2009	61.65	3,751.03
MW-3	NA	3,812.05	6/23/2008	62.06	3,749.99
			4/07/2009	62.02	3,750.03
			5/11/2011	62.91	3,749.14
			10/04/2011	62.91	3,749.14
			2/08/2012	62.95	3,749.10
			4/30/2012	63.39	3,748.66
			9/10/2012	63.50	3,748.55
			6/23/2013	63.36	3,748.69
			1/09/2014	63.55	3,748.50
			4/07/2014	63.88	3,748.17
			3/19/2015	64.27	3,747.78
			7/01/2015	64.34	3,747.71

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 7 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

ft bgs = Feet below ground surface ft msl = Feet above mean sea level



Monitor Well	Screen Interval (ft bgs)	Top of Casing Elevation ^a (ft msl)	Date Measured	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
MW-3 (cont.)	NA	3,812.05	9/29/2015	67.94	3,744.11
			12/16/2015	64.75	3,747.30
			3/22/2016	64.84	3,747.21
			6/08/2016	64.89	3,747.16
			9/13/2016	66.33	3,745.72
			12/01/2016	66.66	3,745.39
			6/20/2017	65.56	3,746.49
			12/19/2017	65.70	3,746.35
			6/18/2018	66.52	3,745.53
			11/07/2018	66.09	3,745.96
			6/03/2019	68.18	3,743.87
MW-4	111–131	3,811.33	6/23/2008	62.12	3,749.21
			4/07/2009	62.51	3,748.82
MW-5	112–132	3,808.96	6/23/2008	60.60	3,748.36
			4/07/2009	60.79	3,748.17
			5/11/2011	61.17	3,747.79
			10/04/2011	61.72	3,747.24
			2/08/2012	61.23	3,747.73
			4/30/2012	61.50	3,747.46
			9/10/2012	61.65	3,747.31
			6/23/2013	61.75	3,747.21
			1/09/2014	61.90	3,747.06
			4/07/2014	62.18	3,746.78
			3/19/2015	62.96	3,746.00
			6/30/2015	62.71	3,746.25
			9/29/2015	63.92	3,745.04
			12/16/2015	63.02	3,745.94
			3/22/2016	63.14	3,745.82
			6/08/2016	63.47	3,745.49
			9/13/2016	63.66	3,745.30
			12/01/2016	63.70	3,745.26
			6/21/2017	63.62	3,745.34

Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 8 of 9

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012. ft btoc = Feet below top of casing

ft bgs = Feet below ground surface ft msl = Feet above mean sea level

NA = Not available



Table C-1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 9 of 9

Monitor Well	Screen Interval (ft bgs)	Top of Casing Elevation ^a (ft msl)	Date Measured	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
MW-5 (cont.)	112–132	3,808.96	12/19/2017	65.02	3,743.94
			6/18/2018	64.32	3,744.64
			11/07/2018	64.34	3,744.62
			06/03/2019	65.30	3,743.66
MW-6	NA	3,810.17	6/23/2008	62.17	3,748.00
			4/07/2009	62.41	3,747.76

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009. ^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

ft bgs = Feet below ground surface ft msl = Feet above mean sea level ft btoc = Feet below top of casing

NA = Not available



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NMWQCC Standard		250
DBS-1	4/08/2009	320
DP2-1	5/12/2011	
		940
	10/04/2011	Well destroyed
DBS-1R	5/01/2012	3,000
	9/11/2012	3,200
	6/25/2013	3,300
	1/10/2014	1,000
	4/08/2014	1,700
	3/20/2015	1,200
	7/01/2015	860
	9/30/2015	670
	12/17/2015	760
	3/23/2016	560
	6/09/2016	570
	09/14/2016	360
	12/01/2016	360
	6/20/2017	320
	12/20/2017	190
	6/19/2018	190
	11/08/2018	180
	6/03/2019	190
DBS-2	4/08/2009	14
	5/12/2011	25
	10/05/2011	18
	2/09/2012	22
	5/01/2012	24
	9/11/2012	44
	6/25/2013	36
	1/10/2014	45
	4/08/2014	22
	3/20/2015	29

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 1 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NMWQCC Standard		250
DBS-2 (cont.)	6/30/2015	28
	9/30/2015	40
	12/17/2015	35
	3/23/2016	46
	6/09/2016	41
	9/14/2016	41
	12/02/2016	53
	6/20/2017	59
	12/20/2017	37
	6/18/2018	47
	11/08/2018	47
	6/03/2019	42
DBS-3	4/08/2009	36
	5/12/2011	35
	10/05/2011	34
	2/09/2012	34
	5/01/2012	33
	9/11/2012	34
	6/24/2013	32
	1/10/2014	34
	4/08/2014	32
	3/20/2015	35
	6/30/2015	35
	9/30/2015	34
	12/17/2015	34
	3/23/2016	36
	6/09/2016	35
	9/14/2016	37
	12/02/2016	37
	6/20/2017	39
	12/20/2017	42

Table C-2. Historical Chloride Groundwater Analytical Data Salty Dog Brine Station, Lea County, New Mexico Page 2 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NN	IWQCC Standard	250
DBS-3 (cont.)	6/18/2018	47
	11/08/2018	46
	6/03/2019	46
DBS-4	4/08/2009	38
	5/12/2011	33
	10/05/2011	32
	2/09/2012	32
	5/01/2012	31
	9/11/2012	32
	6/25/2013	31
	1/10/2014	32
	4/08/2014	30
	3/20/2015	33
	6/30/2015	31
	9/30/2015	33
	12/17/2015	35
	3/23/2016	38
	6/09/2016	35
	9/14/2016	37
	12/02/2016	41
	6/20/2017	35
	12/20/2017	32
	6/19/2018	39
	11/08/2018	35
	6/03/2019	30
DBS-5	4/08/2009	65
	5/12/2011	140
	10/05/2011	140
	2/09/2012	140
	4/30/2012	150
	9/11/2012	160

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 3 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NMWQCC Standard		250
DBS-5 (cont.)	6/24/2013	160
	1/10/2014	180
	4/08/2014	160
	3/20/2015	140
	7/01/2015	140
	9/30/2015	150
	12/17/2015	160
	3/23/2016	150
	6/09/2016	150
	9/14/2016	170
	12/02/2016	170
	6/20/2017	170
	12/20/2017	170
	6/18/2018	180
	11/08/2018	170
	6/03/2019	280
DBS-6	4/07/2009	380
	5/12/2011	410
	10/05/2011	400
	2/09/2012	380
	4/30/2012	400
	9/11/2012	390
	6/24/2013	340
	1/10/2014	390
	4/07/2014	400
	3/19/2015	370
	7/01/2015	360
	9/30/2015	370
	12/17/2015	380
	3/23/2016	310
	6/09/2016	300

Table C-2. Historical Chloride Groundwater Analytical Data Salty Dog Brine Station, Lea County, New Mexico Page 4 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



		Chloride Concentration
Monitor Well	Date	(mg/L) ^a
NM	IWQCC Standard	250
DBS-6 (cont.)	9/14/2016	290
	12/02/2016	300
	6/21/2017	240
	12/19/2017	200
	6/19/2018	210
	11/08/2018	190
	6/03/2019	180
DBS-7	4/07/2008	570
DBS-8	4/07/2009	58
	5/12/2011	36
	10/05/2011	140
	2/09/2012	41
	4/30/2012	41
	9/10/2012	42
	6/24/2013	45
	1/09/2014	38
	4/07/2014	36
	3/19/2015	36
	7/01/2015	34
	9/30/2015	35
	12/17/2015	33
	3/23/2016	35
	6/09/2016	34
	9/14/2016	34
	12/02/2016	33
	6/21/2017	33
	12/19/2017	28
	6/19/2018	33
	11/08/2018	30
	6/03/2019	35

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 5 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NMWQCC Standard		250
DBS-9	4/08/2009	210
	5/12/2011	600
	10/05/2011	440
	2/09/2012	290
	4/30/2012	330
	9/11/2012	320
	6/24/2013	200
	1/10/2014	170
	4/07/2014	220
	3/19/2015	260
	7/01/2015	210
	9/30/2015	260
	12/17/2015	230
	3/23/2016	200
	6/09/2016	190
	9/14/2016	190
	12/02/2016	180
	6/21/2017	200
	12/20/2017	230
	6/19/2018	260
	6/03/2019	160
DBS-10	6/19/2018	690
	11/08/2018	590
	6/03/2019	510
NW-1s	4/08/2009	630
NW-1m	4/08/2009	57
NW-1d	4/08/2009	38
NW-2s	4/08/2009	410
NW-2m	4/08/2009	570
NW-2d	4/08/2009	4,700

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 6 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
N	MWQCC Standard	250
PMW-1	2/27/2008	9,500 ^b
	5/30/2008	8,600 ^b
	6/23/2008	12,700
	4/08/2009	11,000
	5/12/2011	13,000
	10/05/2011	12,000
	2/09/2012	12,000
	5/01/2012	12,000
	9/11/2012	14,000
	6/25/2013	14,000
	1/10/2014	11,000
	4/08/2014	12,000
	3/20/2015	8,500
	7/01/2015	8,600
	9/30/2015	9,700
	12/17/2015	9,800
	3/23/2016	8,200
	6/09/2016	8,500
	9/14/2016	9,300
	12/01/2016	8,300
	6/20/2017	13,000
	12/20/2017	12,000
	6/19/2018	9,600
	11/08/2018	10,000
	6/03/2019	11,000
MW-1	5/30/2008	75 ^b
	6/23/2008	243
MW-2	2/27/2008	120 ^b
	5/30/2008	80 ^b
	6/23/2008	1,480

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 7 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B. mg/L = Milligrams per liter



Monitor Well	Date	Chloride Concentration (mg/L) ^a
	IWQCC Standard	250
MW-2 (cont.)	4/07/2009	1,200
WW-2 (COIII.)	6/19/2018	390
MW-3	2/27/2008	348 ^b
10100-3	5/30/2008	340 360 ^b
	6/23/2008	1,090
	4/07/2009	17,000
	5/12/2011	16,000
	10/05/2011	14,000
	2/09/2012	15,000
	4/30/2012	14,000
	9/10/2012	16,000
	6/24/2013	12,000
	1/10/2014	10,000
	4/07/2014	12,000
	3/19/2015	9,700
	7/01/2015	10,000
	9/30/2015	9,600
	12/17/2015	5,100
	3/23/2016	8,200
	6/09/2016	9,400
	9/14/2016	9,100
	12/02/2016	11,000
	6/21/2017	10,000
	12/20/2017	8,300
	6/19/2018	7,300
	11/08/2018	8,000
	6/03/2019	8,000
MW-4	2/27/2008	476 ^b
	5/30/2008	512 ^b
	6/23/2008	5,730
	4/07/2009	6,600

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 8 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
	IWQCC Standard	250
MW-5	2/27/2008	1,280 ^b
	5/30/2008	1,220 ^b
	6/23/2008	1,260
	4/07/2009	1,300
	5/12/2011	1,500
	10/05/2011	1,500
	2/09/2012	1,500
	4/30/2012	1,400
	9/10/2012	1,500
	6/24/2013	1,300
	1/10/2014	1,300
	4/07/2014	1,300
	3/19/2015	1,200
	7/01/2015	1,200
	9/30/2015	1,000
	12/17/2015	1,000
	3/23/2016	980
	6/09/2016	970
	9/14/2016	1,000
	12/02/2016	710
	6/21/2017	870
	12/19/2017	850
	6/19/2018	840
	11/08/2018	680
	6/03/2019	610
MW-6	2/27/2008	32 ^b
	5/30/2008	36 ^b
	6/23/2008	31.4
	4/07/2009	25

Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 9 of 10

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Table C-2. Historical Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 10 of 10

Monitor Well	Date	Chloride Concentration (mg/L) ^a
NN	IWQCC Standard	250
Ranch Headquarters Supply Well	6/23/2008	35.4
Brine Station Fresh Water Supply Well	2/27/2008	630 ^b
	5/30/2008	590 ^b
	6/23/2008	650

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Recovery Well	Date	Average Extraction Rate ^a (gpm)
RW-1	4/07/2012	Groundwater extraction started
	5/01/2012	2.1
	9/11/2012	2.9
	6/25/2013	4.1
	11/15/2013	3.6
	3/20/2015 ^b	2.4
	6/30/2015	—
FWS-1	12/17/2015	
	3/22/2016	12.8
	6/08/2016	33.9
	9/13/2016	5.4
	12/02/2016	39.7
	6/20/2017	32.7
	12/19/2017	37.3
	6/18/2018	15.4
	11/08/2018	22.4
	6/03/2019 [°]	23.9
RW-2	4/06/2012	Groundwater extraction started
	5/01/2012	2.5
	9/11/2012	4.3
	12/14/2012	3.9
	6/25/2013 ^d	_
	9/21/2013 ^e	2.9
	9/30/2015	68
	12/17/2015	44
	3/22/2016	32

Table C-3. Historical Average Groundwater Extraction Rates Salty Dog Brine Station, Lea County, New Mexico Page 1 of 2

^a Average extraction rates based on totalizer flow meter readings and/or fresh water production records.

^b Pumping at RW-1 stopped because pumping of FWS-1 lowered groundwater levels at RW-1, precluding groundwater extraction at RW-1. Pumping at FWS-1 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area.

^c New meter on December 3, 2019; well stopped pumping on May 11, 2019.

^d New pump installed in RW-2 and started on June 25, 2013.

^e Meter and pump were removed from RW-2 on approximately September 21, 2013 by facility manager to install a new, larger-capacity pump.

^f Meter was inoperable because it was damaged. Meter was replaced in November 2017.

^g Meter read on November 8, 2018, but well had not been pumped since October 10, 2018; average extraction rate between June 18 and October 10, 2018 is reported. gpm = Gallons per minute



Table C-3. Historical Average Groundwater Extraction Rates Salty Dog Brine Station, Lea County, New Mexico Page 2 of 2

Recovery Well	Date	Average Extraction Rate ^a (gpm)
RW-2 (cont.)	6/08/2016	9.0
	9/13/2016	5.7
	12/01/2016 ^f	—
	6/20/2017 ^f	_
	12/19/2017	12.4
	6/19/2018	5.2
	10/10/2018 ^g	3.4
	6/3/2019	7.0

^a Average extraction rates based on totalizer flow meter readings and/or fresh water production records.
 ^b Pumping at RW-1 stopped because pumping of FWS-1 lowered groundwater levels at

^b Pumping at RW-1 stopped because pumping of FWS-1 lowered groundwater levels at RW-1, precluding groundwater extraction at RW-1. Pumping at FWS-1 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area.

^c New meter on December 3, 2019; well stopped pumping on May 11, 2019.

^d New pump installed in RW-2 and started on June 25, 2013.

^e Meter and pump were removed from RW-2 on approximately September 21, 2013 by facility manager to install a new, larger-capacity pump.

^f Meter was inoperable because it was damaged. Meter was replaced in November 2017.

^g Meter read on November 8, 2018, but well had not been pumped since October 10, 2018; average extraction rate between June 18 and October 10, 2018 is reported. gpm = Gallons per minute

Chavez, Carl J, EMNRD

From:	McVey, Michael <mmcvey@dbstephens.com></mmcvey@dbstephens.com>
Sent:	Thursday, March 16, 2017 1:35 PM
То:	Chavez, Carl J, EMNRD
Cc:	Ayarbe, John
Subject:	4th Qtr 2016 Groundwater Monitoring and O&M Report - Salty Dog
Attachments:	Salty Dog_4th Qtr 2016 Mntrng Rpt_3-16-2017.pdf

Carl,

Attached is a pdf of the Fourth Quarter 2016 Groundwater Monitoring and O&M Report for the Salty Dog Brine Station in Hobbs, NM. Per our agreement, we will be conducting groundwater monitoring and O&M on a semiannual basis going forward. The next monitoring event is scheduled for June 2017. Please give me a call if you have any questions.

Thanks, Michael D. McVey Senior Hydrogeologist

Daniel B. Stephens & Associates, Inc. Hydrology | Engineering | Geoscience

Providing solutions for water, natural resources, and the environment

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March 16, 2017

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

Re: Fourth Quarter 2016 Groundwater Monitoring and O&M Report, Salty Dog Brine Station

Dear Mr. Chavez:

On behalf of PAB Services, Inc., Daniel B. Stephens & Associates, Inc. (DBS&A) is pleased to submit the enclosed groundwater monitoring and operation and maintenance (O&M) report for the Salty Dog brine station located in Lea County, New Mexico. The report documents results of fourth quarter 2016 groundwater monitoring activities completed at the site on December 1 and 2, 2016, as well as groundwater extraction system O&M information.

Please do not hesitate to 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 D. McVey, P.G. Senior Hydrogeologist

JA/MDM/rpf Enclosure cc: Pieter Bergstein, PAB Services, Inc. Jim Sayre, Salty Dog, Inc.

Daniel B. Stephens & Associates, Inc.

6020 Academy NE, Suite 100 505-822-9400 FAX 505-822-8877

Fourth Quarter 2016

Groundwater Monitoring and

O&M Report

Salty Dog Brine Station

Lea County, New Mexico

Prepared for

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

March 16, 2017



Daniel B. Stephens & Associates, Inc.

6020 Academy NE, Suite 100 • Albuquerque, New Mexico 87109



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Fourth Quarter 2016 Groundwater Monitoring and O&M Report Salty Dog Brine Station, Lea County, New Mexico

1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this groundwater monitoring and operations and maintenance (O&M) 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 the Salty Dog brine station (the site) located in Lea County, New Mexico (Figure 1). The report summarizes activities conducted at the site on December 1 and 2, 2016.

The site consists of a northern portion, where the brine pond was located prior to closure in October 2008, and a southern portion, where the brine well is located. The brine pond area and the brine well area are separated by approximately 2,500 feet, joined by a dirt road (Figure 1). Injection water for the brine well comes from two fresh water supply wells (FWS-1 and FWS-2) and remedial pumping at recovery wells in both the former brine pond area (RW-1) and brine well area (RW-2). Groundwater extraction at RW-1 is limited due to pumping from FWS-1. However, pumping at FWS-1 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area.

Brine that is produced for sale is stored at a tank battery on the southern boundary of the former brine pond area. The tank battery consists of six 750-barrel aboveground storage tanks (ASTs) surrounded by a berm. A concrete truck loading pad with two brine filling stations is located north of the tank battery. An operations shed is located adjacent to the loading pad to the west.

Six monitor wells (PMW-1, DBS-1R, and DBS-2 through DBS-5), one nested well (NW-1), one fresh water supply well (FWS-1), and one recovery well (RW-1) are located in the former brine pond area. Nine monitor wells (MW-2 through MW-6, DBS-6 through DBS-9), one nested well (NW-2), one fresh water supply well (FWS-2), and one recovery well (RW-2) are located in the brine well area (Figure 1).



DBS&A installed groundwater extraction systems at the site in early April 2012 to provide hydraulic containment and removal of chloride-impacted groundwater in the former brine pond and brine well areas. The extraction systems consist of submersible pumps, conveyance lines, electrical power, and controls to extract impacted groundwater from the recovery wells. Extracted groundwater is conveyed to the on-site ASTs for reinjection at the brine well.

2. Scope of Work

The scope of work for groundwater monitoring consisted of (1) measuring fluid levels in and collecting groundwater samples from 11 monitor wells, and (2) performing maintenance on the groundwater extraction systems, as necessary. Groundwater samples were submitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for chloride analysis using U.S. Environmental Protection Agency (EPA) method 300.0. The monitor wells included in the quarterly sampling were selected in consultation with Jim Griswold on October 4, 2010; Mr. Griswold was the OCD Project Manager for the site at that time. The selected monitor wells are shown in Figures 2 through 5.

3. Monitoring Activities

3.1 Fluid Level Measurement

On December 1, 2016, DBS&A measured water levels in monitor wells DBS-1R, DBS-2 through DBS-5, and PMW-1 in the former brine pond area (Figure 2) and DBS-6, DBS-8, DBS-9, MW-3, and MW-5 in the brine well area (Figure 3) using a properly decontaminated electronic water level meter. Table 1 reports water level measurements and groundwater elevations.

During this monitoring event, the average depths to water beneath the former brine pond area and brine well area were 68.3 feet below ground surface (bgs) and 63.3 feet bgs, respectively. On average, water levels in the former brine pond area increased by approximately 0.02 foot since the last monitoring event in September 2016, while water levels in the brine well area declined by 0.1 foot.



Figures 2 and 3 present potentiometric surface maps for the former brine pond area and the brine well area, respectively. The direction of groundwater flow beneath the former brine pond area remains to the southeast at a gradient of approximately 0.005 foot per foot (ft/ft) (Figure 2)—decreasing slightly since the previous monitoring event. A broad cone of depression was observed in the vicinity of the fresh water supply well (FWS-1) due to increased fresh water production when depth to water level measurements were recorded. The direction of groundwater flow beneath the brine well area remains to the southeast at a gradient of approximately 0.004 ft/ft (Figure 3)—consistent with the previous monitoring event.

3.2 Groundwater Sampling

On December 1 and 2, 2016, groundwater samples were collected from monitor wells DBS-1R, DBS-2 through DBS-6, DBS-8, DBS-9, MW-3, MW-5, and PMW-1 following standard sampling procedures developed from EPA guidance. Before sampling, each well was purged of a minimum of three casing volumes using a submersible pump so that a representative groundwater sample was collected. While purging, DBS&A measured water quality field parameters consisting of temperature, specific conductance, and pH. Samples were collected once three casing volumes were purged. Sample containers were then filled, labeled, and placed in an ice-filled cooler. Groundwater samples were submitted under chain of custody to HEAL for chloride analysis.

Samples of the brine well injection water and the produced brine were also collected to meet requirements under discharge permit BW-8. Analytical results of these samples will be reported in the 2016 Annual Class III Well Report.

4. Analytical Results

Table 2 summarizes chloride analytical results for the 11 groundwater samples. Figures 4 and 5 show the distribution of chloride in groundwater beneath the former brine pond area and the brine well area, respectively. The laboratory report and chain of custody documentation are provided in Appendix A. Field notes recorded during groundwater monitoring activities are provided in Appendix B.



4.1 Former Brine Pond Area Wells

Since the last monitoring event in September 2016, minor to no changes in chloride concentrations were observed at monitor wells DBS-2 through DBS-5 (Table 2). DBS-1R and PMW-1 continue to exhibit chloride concentrations above the New Mexico Water Quality Control Commission (NMWQCC) standard of 250 milligrams per liter (mg/L) (Figure 4). The chloride concentration at DBS-1R remained at 360 mg/L, while the concentration at PMW-1 decreased from 9,300 mg/L to 8,300 mg/L.

The chloride plume in the former brine pond area remains bounded by the existing monitor well network (Figure 4). Pumping from PAB's fresh water supply well FSW-1 provides hydraulic containment of the chloride plume. The chloride concentration at downgradient monitor well DBS-4 remains below the NMWQCC standard, as do chloride concentrations at the two cross-gradient monitor wells, DBS-2 and DBS-3.

4.2 Brine Well Area Wells

Since the last monitoring event in September 2016, minor changes in chloride concentrations were observed at most of the monitor wells in the brine well area (Table 2). Monitor wells MW-3 (the well closest to extraction well RW-2), MW-5 (the farthest downgradient well), and DBS-6 (the northernmost cross-gradient well) continue to exhibit chloride concentrations above the NMWQCC standard (Figure 5). The chloride concentration at MW-3 increased from 9,100 mg/L to 11,000 mg/L. The chloride concentration at MW-5 decreased from 1,000 mg/L to 710 mg/L. The chloride concentration at DBS-6 rebounded slightly from 290 mg/L to 300 mg/L.

During previous monitoring events, monitor well DBS-9 (an upgradient monitor well) has exhibited chloride concentrations above the NMWQCC standard; however, during this reporting period, the chloride concentration at DBS-9 was 180 mg/L, below the NMWQCC standard (Table 2). DBS-9 was installed in the playa located northeast of the brine well to help characterize groundwater impacts from documented releases in 2002 and 2005.



5. Groundwater Extraction System O&M

Remedial groundwater extraction in the former brine pond and brine well areas began in April 2012 by pumping from recovery wells RW-1 and RW-2. Extracted groundwater volumes at RW-1 and RW-2 are reported in Table 3.

Production from the fresh water supply well (FWS-1) also supports hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area.

5.1 Former Brine Pond Area

Other than some brief shutdowns to address a few maintenance issues, the groundwater extraction system at RW-1 operated continually until approximately March 2015 (Table 3). Pumping from the nearby fresh water supply well (FWS-1) is inhibiting the effectiveness of RW-1 as an extraction well by lowering groundwater levels at this well. PAB attempted to set the pump at RW-1 to a deeper depth in the well so that pumping from RW-1 could continue, but the pump is already set near the bottom of the well. Although pumping from RW-1 has ceased, pumping at FWS-1 provides containment of the chloride plume in the former brine pond area. The average pumping rate at FWS-1 during the fourth quarter 2016 was approximately 39.7 gallons per minute (gpm).

Monitor wells DBS-1R and PMW-1 are the only wells that exhibit chloride concentrations above the NMWQCC standard. Pumping of the fresh water supply well is preventing the downgradient migration of the chloride groundwater plume; although the chloride concentrations in wells DBS-1R and PMW-1 remain elevated, they have decreased from historical highs (Table 2) and are expected to continue to decrease through time with continued pumping at the fresh water supply well. The chloride concentration at downgradient monitor well DBS-4 is well below the NMWQCC standard.



5.2 Brine Well Area

The groundwater extraction system at RW-2 has been operated continually since April 6, 2012 with the exception of addressing a few maintenance issues. A total of 18,456,447 gallons of chloride-impacted groundwater have been pumped from RW-2 (Table 3); this value reflects the total recorded at the meter until it was damaged during the fourth quarter. Historically, pumping of recovery well RW-2 at flow rates of 2.5 to 4.3 gpm produced little drawdown in the brine well area. However, after increasing the average pumping rate to 68 gpm after the second quarter 2015 monitoring event (Table 3), a cone of depression became evident, thereby improving hydraulic containment and removal of the chloride plume.

Due to damage to the RW-2 totalizer, the average pumping rate at RW-2 during this reporting period was estimated to be approximately 5 gpm based on PAB fresh water injection volumes. A cone of depression was not observed during this monitoring event (Figure 3), although RW-2 was pumping at the time water level measurements were recorded.

The chloride plume remains undefined downgradient and cross-gradient to the north of the recovery well (RW-2). Since April 2009, chloride concentrations in the northernmost cross-gradient well (DBS-6) have fluctuated between 290 and 410 mg/L. Since February 2008, chloride concentrations in the downgradient well (MW-5) have fluctuated between 710 and 1,500 mg/L. The chloride concentration in monitor well MW-3, the well closest to the extraction well (RW-2), decreased by almost half between September and December 2015, but has been showing a slight rebound since that time (Table 2).

5.3 Facility and System Maintenance

On June 13, 2016 the pump at RW-2 was damaged during a lightning storm. Operations manager Jim Sayre promptly replaced the pump on June 15, 2016. The pump at FWS-2, upgradient from RW-2 (Figure 1), was also damaged and subsequently replaced.

During the fourth quarter monitoring event, DBS&A field staff discovered that the wire from the pump at RW-2 to the totalizer had been damaged and was not recording while the pump was



active. DBS&A staff are working with PAB site management to replace the totalizer as soon as possible.

5.4 Future Extraction System Operation

Pumping of the fresh water supply well (FWS-1) has lowered groundwater levels at RW-1, precluding groundwater extraction at this well. Pumping of FWS-1 provides hydraulic containment and removal of the chloride plume. Future monitoring data will be used to evaluate the effectiveness of FWS-1 in providing hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area.

Pumping of extraction well RW-2 will continue. Increased pumping at RW-2 since the second quarter of 2015 has provided improved hydraulic containment and removal of the chloride plume in the brine well area; however, at the request of the OCD, greater hydraulic containment is required. DBS&A will work with PAB to develop a plan for enhanced groundwater extraction in the brine well area to optimize hydraulic containment and removal of the chloride plume. DBS&A will submit a work plan detailing the proposed enhancements to OCD for review and approval.

6. Recommendations

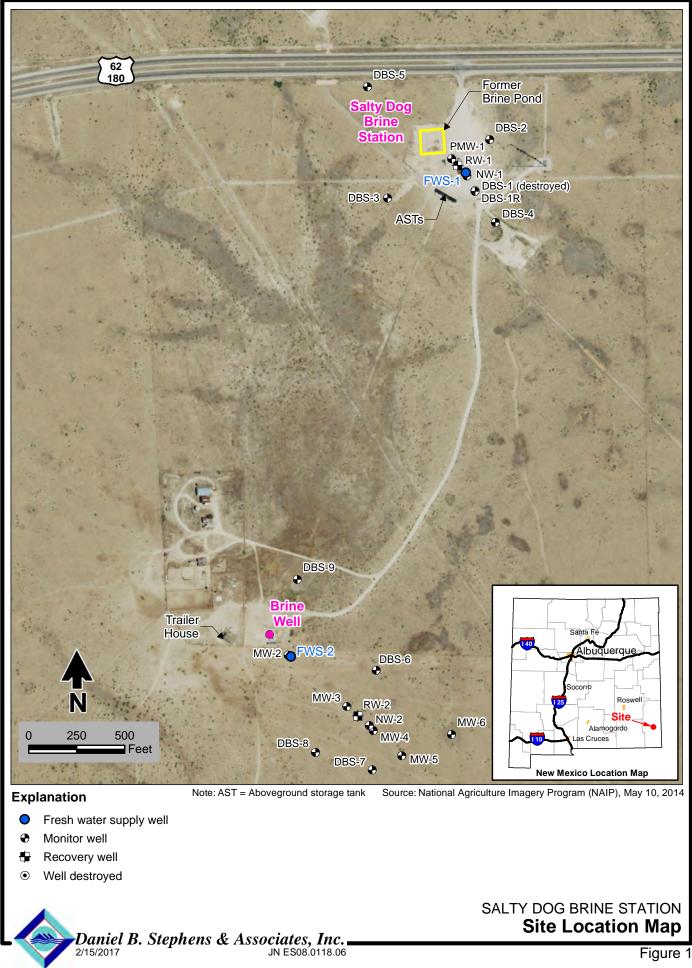
Based on the current groundwater monitoring results, site O&M activities, and discussions with OCD, DBS&A has the following recommendations:

- Continue groundwater extraction at FWS-1 to provide hydraulic containment and removal of the chloride plume in the former brine pond area.
- Work with PAB site management to optimize groundwater extraction at RW-2 to provide better hydraulic containment and removal of the chloride plume in the brine well area.
- Install one new downgradient monitor well approximately 300 feet southeast of MW-5 in the brine well area to determine the downgradient extent of chloride-impacted groundwater.



• Reduce the frequency of groundwater monitoring and reporting from quarterly to semiannual in 2017, with semiannual monitoring events to be conducted in June and December.

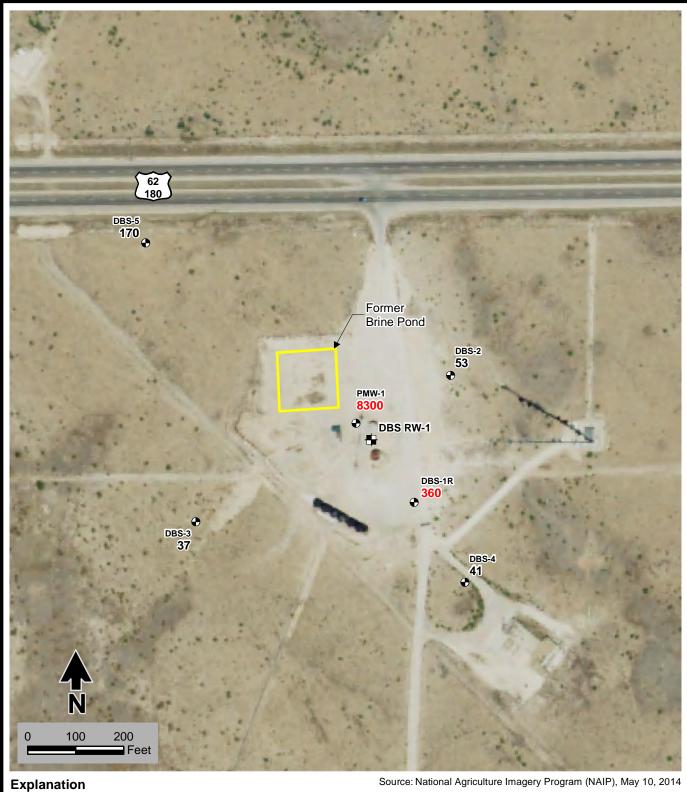
Figures





%;PROJECTS\ES08.0118.01_SALTY_DOG_INC\GISMXDS\REPORT\2016_4Q\FIG02_GWE_201612_BRINE_STATION.MXD





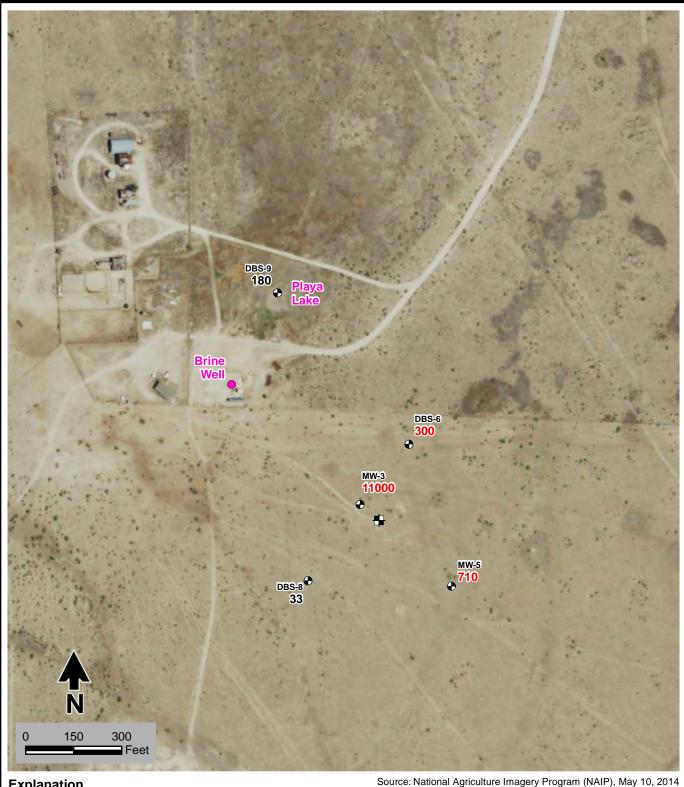
- DBS-5 Well designation 170 Chloride concentration (mg/L) ♥ Monitor well
 - Recovery well

Red indicates concentration equal to or greater than the NMWQCC standard.

SALTY DOG BRINE STATION Former Brine Pond Area Chloride Concentrations in Groundwater December 2016

Daniel B. Stephens & Associates, Inc. 2/15/2017 JN ES08.0118.06

Figure 4



Explanation

- DBS-8 Well designation Chloride concentration (mg/L) 33
- Ð Monitor well
- Recovery well

Red indicates concentration equal to or greater than the NMWQCC standard.

SALTY DOG BRINE STATION Playa Lake and Brine Well Area **Chloride Concentrations in Groundwater** December 2016

Daniel B. Stephens & Associates, Inc. 2/15/2017 JN ES08.0118.06

Tables



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-1	56.0–76.0	3,817.09	4/08/2009	62.38	3,754.71
			5/11/2011	64.70	3,752.39
			10/04/2011	Well de	estroyed
DBS-1R	58.0–78.0	3,817.00 ^b	4/30/2012	63.60	3,753.40
			9/10/2012	65.65	3,751.35
			6/23/2013	64.40	3,752.60
			1/09/2014	67.23	3,749.77
			4/07/2014	66.36	3,750.64
			3/20/2015	67.17	3,749.83
			7/01/2015	67.92	3,749.08
			9/29/2015	67.07	3,749.93
			12/16/2015	67.54	3,749.46
			3/22/2016	66.61	3,750.39
			6/08/2016	66.23	3,750.77
			9/13/2016	67.43	3,749.57
			12/01/2016	67.31	3,749.69
DBS-2	58.0–78.0	3,820.50	4/08/2009	65.45	3,755.05
			5/11/2011	66.80	3,753.70
			10/04/2011	65.87	3,754.63
			2/08/2012	65.96	3,754.54
			4/30/2012	66.26	3,754.24
			9/10/2012	67.45	3,753.05
			6/23/2013	67.03	3,753.47
			1/09/2014	69.08	3,751.42
			4/07/2014	68.67	3,751.83
			3/20/2015	69.32	3,751.18
			6/30/2015	69.29	3,751.21
			9/29/2015	69.41	3,751.09
			12/16/2015	69.71	3,750.79
			3/22/2016	69.13	3,751.37
			6/08/2016	68.91	3,751.59

Table 1. Historical Fluid Level MeasurementsSalty Dog Brine Station, Lea County, New MexicoPage 1 of 7

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface msl = Above mean sea level



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-2 (cont.)	58.0–78.0	3,820.50	9/13/2016	69.76	3,750.74
			12/01/2016	69.73	3750.77
DBS-3	56.0–76.72	3,816.66	4/08/2009	60.67	3,755.99
			5/11/2011	61.25	3,755.41
			10/04/2011	61.25	3,755.41
			2/08/2012	61.11	3,755.55
			4/30/2012	61.41	3,755.25
			9/10/2012	61.81	3,754.85
			6/23/2013	62.08	3,754.58
			1/09/2014	63.30	3,753.36
			4/07/2014	63.43	3,753.23
			3/20/2015	63.93	3,752.73
			6/30/2015	63.99	3,752.67
			9/29/2015	64.17	3,752.49
			12/16/2015	64.41	3,752.25
			3/22/2016	63.88	3,752.78
			6/08/2016	63.92	3,752.74
			9/13/2016	64.56	3,752.10
			12/01/2016	64.59	3,752.07
DBS-4	56.0–76.0	3,820.37	4/08/2009	66.27	3,754.10
			5/11/2011	67.23	3,753.14
			10/04/2011	66.67	3,753.70
			2/08/2012	66.76	3,753.61
			4/30/2012	67.02	3,753.35
			9/10/2012	67.78	3,752.59
			6/23/2013	67.70	3,752.67
			1/09/2014	69.37	3,751.00
			4/07/2014	69.23	3,751.14
			3/20/2015	69.81	3,750.56
			6/30/2015	69.85	3,750.52
			9/29/2015	70.00	3,750.37

Table 1. Historical Fluid Level MeasurementsSalty Dog Brine Station, Lea County, New MexicoPage 2 of 7

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface msl = Above mean sea level



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-4 (cont.)	56.0–76.0	3,820.37	12/16/2015	70.25	3,750.12
			3/22/2016	69.74	3,750.63
			6/08/2016	69.62	3,750.75
			9/13/2016	70.35	3,750.02
			12/01/2016	70.38	3,749.99
DBS-5	56.9–76.9	3,820.66	4/08/2009	62.99	3,757.67
			5/11/2011	63.45	3,757.21
			10/04/2011	63.41	3,757.25
			2/08/2012	63.46	3,757.20
			4/30/2012	63.70	3,756.96
			9/10/2012	63.92	3,756.74
			6/23/2013	64.30	3,756.36
			1/09/2014	65.28	3,755.38
			4/07/2014	65.48	3,755.18
			3/20/2015	65.9	3,754.76
			7/01/2015	66.18	3,754.48
			9/29/2015	66.25	3,754.41
			12/16/2015	66.47	3,754.19
			3/22/2016	66.08	3,754.58
			6/08/2016	66.16	3,754.50
			9/13/2016	66.64	3,754.02
			12/01/2016	66.72	3,753.94
DBS-6	56.7–76.7	3,812.65	4/07/2009	62.75	3,749.90
			5/11/2011	63.11	3,749.54
			10/04/2011	63.16	3,749.49
			2/08/2012	63.20	3,749.45
			4/30/2012	63.43	3,749.22
			9/10/2012	63.60	3,749.05
			6/23/2013	63.74	3,748.91
			1/09/2014	64.00	3,748.65
			4/07/2014	64.22	3,748.43

Table 1. Historical Fluid Level MeasurementsSalty Dog Brine Station, Lea County, New MexicoPage 3 of 7

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface

msl = Above mean sea level



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-6 (cont.)	56.7–76.7	3,812.65	3/19/2015	64.78	3,747.87
			7/01/2015	64.81	3,747.84
			9/29/2015	65.48	3,747.17
			12/16/2015	65.26	3,747.39
			3/22/2016	65.38	3,747.27
			6/08/2016	65.37	3,747.28
			9/13/2016	65.51	3,747.14
			12/01/2016	65.51	3,747.14
DBS-7	55.1–75.1	3,810.21	4/07/2009	61.74	3,748.47
DBS-8	55.2–75.2	3,810.70	4/07/2009	61.20	3,749.50
			5/11/2011	61.67	3,749.03
			10/04/2011	61.71	3,748.99
			2/08/2012	61.77	3,748.93
			4/30/2012	62.00	3,748.70
			9/10/2012	62.15	3,748.55
			6/23/2013	62.28	3,748.42
			1/09/2014	62.47	3,748.23
			4/07/2014	62.67	3,748.03
			3/19/2015	63.19	3,747.51
			6/30/2015	63.25	3,747.45
			9/29/2015	63.82	3,746.88
			12/16/2015	63.58	3,747.12
			3/22/2016	63.76	3,746.94
			6/08/2016	63.72	3,746.98
			9/13/2016	63.83	3,746.87
			12/01/2016	63.79	3,746.91
DBS-9	48.0–68.0	3,806.26	4/08/2009	53.93	3,752.33
			5/11/2011	54.39	3,751.87
			10/04/2011	54.59	3,751.67
			2/08/2012	54.53	3,751.73
			4/30/2012	54.68	3,751.58

Table 1. Historical Fluid Level MeasurementsSalty Dog Brine Station, Lea County, New MexicoPage 4 of 7

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface

msl = Above mean sea level



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-9 (cont.)	48.0–68.0	3,806.26	9/10/2012	54.77	3,751.49
			6/23/2013	55.04	3,751.22
			1/09/2014	55.27	3,750.99
			4/07/2014	55.56	3,750.70
			3/19/2015	55.95	3,750.31
			7/01/2015	56.14	3,750.12
			9/29/2015	56.49	3,749.77
			12/16/2015	56.52	3,749.74
			3/22/2016	56.51	3,749.75
			6/08/2016	56.64	3,749.62
			9/13/2016	56.81	3,749.45
			12/01/2016	56.88	3,749.38
NW-1s	52.95-72.95	3,817.33	4/08/2009	62.35	3,754.98
NW-1m	99.31–119.31	3,817.35	4/08/2009	62.25	3,755.10
NW-1d	149.45–169.45	3,817.35	4/08/2009	62.04	3,755.31
NW-2s	53.35–73.35	3,812.50	4/08/2009	63.08	3,749.42
NW-2m	93.72–113.72	3,812.45	4/08/2009	63.27	3,749.18
NW-2d	126.87-146.87	3,812.46	4/08/2009	66.41	3,746.05
PMW-1	63–78	3,821.17	6/23/2008	67.51	3,753.66
			4/08/2009	65.97	3,755.20
			5/11/2011	68.70	3,752.47
			10/04/2011	66.95	3,754.22
			2/08/2012	66.69	3,754.48
			4/30/2012	67.27	3,753.90
			9/10/2012	69.77	3,751.40
			6/23/2013	68.40	3,752.77
			1/09/2014	71.24	3,749.93
			4/07/2014	69.97	3,751.20
			3/20/2015	70.78	3,750.39
			7/01/2015	71.41	3,749.76
			9/29/2015	70.76	3,750.41

Table 1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 5 of 7

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012. bgs = Below ground surface btoc = Below top of casing

msl = Above mean sea level



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
PMW-1 (cont.)	63–78	3,821.17	12/16/2015	71.03	3,750.14
			3/22/2016	70.30	3,750.87
			6/08/2016	69.65	3,751.52
			9/13/2016	71.08	3,750.09
			12/01/2016	70.97	3,750.20
MW-1	120–140	NA	6/23/2008	59.90	NA
MW-2	127–147	3,812.68	6/23/2008	61.42	3,751.26
			4/07/2009	61.65	3,751.03
MW-3	NA	3,812.05	6/23/2008	62.06	3,749.99
			4/07/2009	62.02	3,750.03
			5/11/2011	62.91	3,749.14
			10/04/2011	62.91	3,749.14
			2/08/2012	62.95	3,749.10
			4/30/2012	63.39	3,748.66
			9/10/2012	63.50	3,748.55
			6/23/2013	63.36	3,748.69
			1/09/2014	63.55	3,748.50
			4/07/2014	63.88	3,748.17
			3/19/2015	64.27	3,747.78
			7/01/2015	64.34	3,747.71
			9/29/2015	67.94	3,744.11
			12/16/2015	64.75	3,747.30
			3/22/2016	64.84	3,747.21
			6/08/2016	64.89	3,747.16
			9/13/2016	66.33	3,745.72
			12/01/2016	66.66	3,745.39
MW-4	111–131	3,811.33	6/23/2008	62.12	3,749.21
			4/07/2009	62.51	3,748.82
MW-5	112–132	3,808.96	6/23/2008	60.60	3,748.36
			4/07/2009	60.79	3,748.17
			5/11/2011	61.17	3,747.79

Table 1. Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 6 of 7

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012. bgs = Below ground surface btoc = Below top of casing

msl = Above mean sea level



Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation ^a (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
MW-5 (cont.)	112–132	3,808.96	10/04/2011	61.72	3,747.24
			2/08/2012	61.23	3,747.73
			4/30/2012	61.50	3,747.46
			9/10/2012	61.65	3,747.31
			6/23/2013	61.75	3,747.21
			1/09/2014	61.90	3,747.06
			4/07/2014	62.18	3,746.78
			3/19/2015	62.96	3,746.00
			6/30/2015	62.71	3,746.25
			9/29/2015	63.92	3,745.04
			12/16/2015	63.02	3,745.94
			3/22/2016	63.14	3,745.82
			6/08/2016	63.47	3,745.49
			9/13/2016	63.66	3,745.30
			12/01/2016	63.70	3,745.26
MW-6	NA	3,810.17	6/23/2008	62.17	3,748.00
			4/07/2009	62.41	3,747.76

Table 1. Historical Fluid Level MeasurementsSalty Dog Brine Station, Lea County, New MexicoPage 7 of 7

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

^b Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface msl = Above mean sea level btoc = Below top of casing NA = Not available



Monitor Well	Date	Chloride Concentration (mg/L) ^a
	IWQCC Standard	250
DBS-1		320
003-1	4/08/2009 5/12/2011	940
	10/04/2011	Well destroyed
DBS-1R	5/01/2012	3,000
DB3-TK	9/11/2012	3,200
	6/25/2013	3,300
	1/10/2014	1,000
	4/08/2014	1,700
	3/20/2015	1,200
	7/01/2015	860
	9/30/2015	670
	12/17/2015	760
	3/23/2016	560
	6/09/2016	570
	09/14/2016	360
	12/01/2016	360
DBS-2	4/08/2009	14
	5/12/2011	25
	10/05/2011	18
	2/09/2012	22
	5/01/2012	24
	9/11/2012	44
	6/25/2013	36
	1/10/2014	45
	4/08/2014	22
	3/20/2015	29
	6/30/2015	28
	9/30/2015	40
	12/17/2015	35
	3/23/2016	46
	6/09/2016	41

Table 2. Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 1 of 8

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NN	IWQCC Standard	250
DBS-2 (cont.)	9/14/2016	41
	12/02/2016	53
DBS-3	4/08/2009	36
	5/12/2011	35
	10/05/2011	34
	2/09/2012	34
	5/01/2012	33
	9/11/2012	34
	6/24/2013	32
	1/10/2014	34
	4/08/2014	32
	3/20/2015	35
	6/30/2015	35
	9/30/2015	34
	12/17/2015	34
	3/23/2016	36
	6/09/2016	35
	9/14/2016	37
	12/02/2016	37
DBS-4	4/08/2009	38
	5/12/2011	33
	10/05/2011	32
	2/09/2012	32
	5/01/2012	31
	9/11/2012	32
	6/25/2013	31
	1/10/2014	32
	4/08/2014	30
	3/20/2015	33
	6/30/2015	31
	9/30/2015	33

Table 2. Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 2 of 8

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
NN	IWQCC Standard	250
DBS-4 (cont.)	12/17/2015	35
- ()	3/23/2016	38
	6/09/2016	35
	9/14/2016	37
	12/02/2016	41
DBS-5	4/08/2009	65
	5/12/2011	140
	10/05/2011	140
	2/09/2012	140
	4/30/2012	150
	9/11/2012	160
	6/24/2013	160
	1/10/2014	180
	4/08/2014	160
	3/20/2015	140
	7/01/2015	140
	9/30/2015	150
	12/17/2015	160
	3/23/2016	150
	6/09/2016	150
	9/14/2016	170
	12/02/2016	170
DBS-6	4/07/2009	380
	5/12/2011	410
	10/05/2011	400
	2/09/2012	380
	4/30/2012	400
	9/11/2012	390
	6/24/2013	340
	1/10/2014	390
	4/07/2014	400

Table 2. Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 3 of 8

Bold indicates that value exceeds the applicable standard.

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^b Samples analyzed using Standard Method 4500-Cl B.



Marchard Marth	Data	Chloride Concentration
Monitor Well	Date	(mg/L) ^a
NN	IWQCC Standard	250
DBS-6 (cont.)	3/19/2015	370
	7/01/2015	360
	9/30/2015	370
	12/17/2015	380
	3/23/2016	310
	6/09/2016	300
	9/14/2016	290
	12/02/2016	300
DBS-7	4/07/2008	570
DBS-8	4/07/2009	58
	5/12/2011	36
	10/05/2011	140
	2/09/2012	41
	4/30/2012	41
	9/10/2012	42
	6/24/2013	45
	1/09/2014	38
	4/07/2014	36
	3/19/2015	36
	7/01/2015	34
	9/30/2015	35
	12/17/2015	33
	3/23/2016	35
	6/09/2016	34
	9/14/2016	34
	12/02/2016	33
DBS-9	4/08/2009	210
	5/12/2011	600
	10/05/2011	440
	2/09/2012	290
	4/30/2012	330

Table 2. Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 4 of 8

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
	IWQCC Standard	250
	i	
DBS-9 (cont.)	9/11/2012	320
	6/24/2013	200
	1/10/2014	170
	4/07/2014	220
	3/19/2015	260
	7/01/2015	210
	9/30/2015	260
	12/17/2015	230
	3/23/2016	200
	6/09/2016	190
	9/14/2016	190
	12/02/2016	180
NW-1s	4/08/2009	630
NW-1m	4/08/2009	57
NW-1d	4/08/2009	38
NW-2s	4/08/2009	410
NW-2m	4/08/2009	570
NW-2d	4/08/2009	4,700
PMW-1	2/27/2008	9,500 ^b
	5/30/2008	8,600 ^b
	6/23/2008	12,700
	4/08/2009	11,000
	5/12/2011	13,000
	10/05/2011	12,000
	2/09/2012	12,000
	5/01/2012	12,000
	9/11/2012	14,000
	6/25/2013	14,000
	1/10/2014	11,000
	4/08/2014	12,000
	3/20/2015	8,500

Table 2. Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 5 of 8

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



Monitor Well	Date	Chloride Concentration (mg/L) ^a
	IWQCC Standard	
		250
PMW-1 (cont.)	7/01/2015	8,600
	9/30/2015	9,700
	12/17/2015	9,800
	3/23/2016	8,200
	6/09/2016	8,500
	9/14/2016	9,300
	12/01/2016	8,300
MW-1	5/30/2008	75 ^b
	6/23/2008	243
MW-2	2/27/2008	120 ^b
	5/30/2008	80 ^b
	6/23/2008	1,480
	4/07/2009	1,200
MW-3	2/27/2008	348 ^b
	5/30/2008	360 ^b
	6/23/2008	1,090
	4/07/2009	17,000
	5/12/2011	16,000
	10/05/2011	14,000
	2/09/2012	15,000
	4/30/2012	14,000
	9/10/2012	16,000
	6/24/2013	12,000
	1/10/2014	10,000
	4/07/2014	12,000
	3/19/2015	9,700
	7/01/2015	10,000
	9/30/2015	9,600
	12/17/2015	5,100
	3/23/2016	8,200
	6/09/2016	9,400

Table 2. Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 6 of 8

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B.



		Chloride Concentration
Monitor Well	Date	(mg/L) ^a
NN	IWQCC Standard	250
MW-3 (cont.)	9/14/2016	9,100
	12/02/2016	11,000
MW-4	2/27/2008	476 ^b
	5/30/2008	512 ^b
	6/23/2008	5,730
	4/07/2009	6,600
MW-5	2/27/2008	1,280 ^b
	5/30/2008	1,220 ^b
	6/23/2008	1,260
	4/07/2009	1,300
	5/12/2011	1,500
	10/05/2011	1,500
	2/09/2012	1,500
	4/30/2012	1,400
	9/10/2012	1,500
	6/24/2013	1,300
	1/10/2014	1,300
	4/07/2014	1,300
	3/19/2015	1,200
	7/01/2015	1,200
	9/30/2015	1,000
	12/17/2015	1,000
	3/23/2016	980
	6/09/2016	970
	9/14/2016	1,000
	12/02/2016	710
MW-6	2/27/2008	32 ^b
	5/30/2008	36 ^b
	6/23/2008	31.4
	4/07/2009	25

Table 2. Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 7 of 8

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B. mg/L = Milligrams per liter



Table 2. Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 8 of 8

Monitor Well	Date	Chloride Concentration (mg/L) ^a
NM	IWQCC Standard	250
Ranch Headquarters Supply Well	6/23/2008	35.4
Brine Station Fresh	2/27/2008	630 ^b
Water Supply Well	5/30/2008	590 ^b
	6/23/2008	650

Bold indicates that value exceeds the applicable standard.

^a All samples analyzed using EPA method 300.0, unless otherwise noted.

^b Samples analyzed using Standard Method 4500-Cl B. mg/L = Milligrams per liter



Recovery Well	Date	Average Days of Flow Rate Operation (gpm)		Extracted Volume (gallons)
RW-1	4/07/2012	Groundwater extraction started		
	5/01/2012	24	2.1	73,740
	9/11/2012	154	2.9	636,237
	6/25/2013	441	4.1	2,599,392
	11/15/2013 ^a	585	3.6	3,060,181
	3/20/2015	1,075	2.4	3,668,511
	6/30/2015 ^b	1,167	_	3,668,511
	9/30/2015	1,259	_	3,668,511
FWS-1	12/17/2015		_	1,232,787
	3/22/2016	359	12.8	3,011,469
	6/08/2016	437	33.9	6,818,179
	9/13/2016	534	5.4	7,578,404
	12/02/2016	614	39.7	12,149,596
RW-2	4/06/2012	Gro	Groundwater extraction started	
	5/01/2012	25	2.5	91,450
	9/11/2012	158	4.3	963,789
	12/14/2012 ^c	252	3.9	1,406,748
	6/25/2013 ^d	_	_	—
	9/21/2013 ^e	335	2.9	1,407,005
	9/30/2015 ^f	1,074	68 ^f	7,313,515
	12/17/2015	1,152	44	12,266,210
	3/22/2016	1,248	32	16,657,635
	6/08/2016	1,326	9.0	17,661,576
	9/13/2016	1,423	5.7	18,453,822
	12/01/2016 ^b		_	18,453,447

Table 3. Cumulative Extracted Groundwater VolumesSalty Dog Brine Station, Lea County, New Mexico

^a Pump went down in RW-1 on approximately November 15, 2013.

^b Meter appears to not be functioning correctly, but the pumping well is functioning.

^c Pump in RW-2 went down on December 14, 2012 due to a blown inner shaft motor seal.

^d New pump installed in RW-2 and started on June 25, 2013.

Meter and pump were removed from RW-2 on approximately September 21, 2013 by facility manager to install a new, larger-capacity pump.

^f Meter reinstalled and pumping increased after the June 30 and July 1, 2015 monitoring event; flowrate assumes 60 days of operation (August 1 through September 30, 2015) based on personal communication with Jim Sayre (PAB).

gpm = Gallons per minute

Appendix A

Laboratory Analytical Report



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

December 15, 2016

John Ayarbe Daniel B. Stephens & Assoc. 6020 Academy NE Suite 100 Albuquerque, NM 87109 TEL: (505) 822-9400 FAX (505) 822-8877

RE: Salty Dog

OrderNo.: 1612248

Dear John Ayarbe:

Hall Environmental Analysis Laboratory received 13 sample(s) on 12/5/2016 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 <u>www.hallenvironmental.com</u> 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 qualifers 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 #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1612248 Data Dat artade 12/15/2016

Hall Environmental Analys	tory, Inc.	Date Reported: 12/15/2016				
CLIENT: Daniel B. Stephens & Assoc.		(lient Sam	ple ID: DBS-1R		
Project: Salty Dog			Collection	Date: 12/1/2016 4:35:00 PM		
Lab ID: 1612248-001	Matrix:	Matrix: AQUEOUS		Received Date: 12/5/2016		
Analyses	Result	PQL Qual	Units	DF Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS				Analyst	LGT	
Chloride	360	50 *	mg/L	100 12/10/2016 2:54:51 PM	R39310	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte
	D	Sample Diluted Due to Matrix	Е	Value al
	Н	Holding times for preparation or analysis exceeded	J	Analyte
	ND	Not Detected at the Reporting Limit	Р	Sample
	R	RPD outside accepted recovery limits	RL	Reportin
	S	% Recovery outside of range due to dilution or matrix	W	Sample

- te detected in the associated Method Blank
- above quantitation range
- te detected below quantitation limits Page 1 of 17
- e pH Not In Range
- ting Detection Limit
- e container temperature is out of limit as specified

Analytical Report Lab Order 1612248

Hall Environmental Analysi	is Labora	ntory, Inc.	Date Reported: 12/15/2016			
CLIENT: Daniel B. Stephens & Assoc.		(lient Sar	nple ID: DBS-2		
Project: Salty Dog			Collectio	on Date: 12/2/2016 9:00:00 AM		
Lab ID: 1612248-002	Matrix:	AQUEOUS	Receive	ed Date: 12/5/2016		
Analyses	Result	PQL Qual	Units	DF Date Analyzed Batch		
EPA METHOD 300.0: ANIONS				Analyst: LGT		
Chloride	53	5.0	mg/L	10 12/10/2016 3:07:16 PM R39310		

prort and sample login checklist for flagged OC data and preservation info Refer to the OC Su tion.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation inf
--

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	Н	Holding times for preparation or analysis exceeded

- ig t ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 17 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1612248 2/15/201 ъ 1

Hall Environmental Analysi	s Labora	tory, Inc.	Date Reported: 12/15/2016			
CLIENT: Daniel B. Stephens & Assoc. Project: Salty Dog		(nple ID: DBS-3 on Date: 12/2/2016 8:25:00 AM		
Lab ID: 1612248-003	Matrix:	AQUEOUS	Receive	ed Date: 12/5/2016		
Analyses	Result	PQL Qual	Units	DF Date Analyzed Batch		
EPA METHOD 300.0: ANIONS Chloride	37	5.0	mg/L	Analyst: LGT 10 12/10/2016 3:32:06 PM R39310		

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В
	D	Sample Diluted Due to Matrix	Е
	Н	Holding times for preparation or analysis exceeded	J
	ND	Not Detected at the Reporting Limit	Р
	R	RPD outside accepted recovery limits	RL
	S	% Recovery outside of range due to dilution or matrix	W

- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 3 of 17
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analys	• Date Reported: 12/15/2016			
CLIENT: Daniel B. Stephens & Assoc.			-	le ID: DBS-4
Project: Salty Dog			Collection	Date: 12/2/2016 9:45:00 AM
Lab ID: 1612248-004	Matrix:	AQUEOUS	Received	Date: 12/5/2016
Analyses	Result	PQL Qua	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: LGT
Chloride	41	5.0	mg/L	10 12/10/2016 4:21:44 PM R3931

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	A
	D	Sample Diluted Due to Matrix	Е	V
	Н	Holding times for preparation or analysis exceeded	J	A
	ND	Not Detected at the Reporting Limit	Р	Sa
	R	RPD outside accepted recovery limits	RL	R
	S	% Recovery outside of range due to dilution or matrix	W	Sa

- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 17
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analys	sis Labora	tory, Inc.	Date Reported: 12/15/2016			
CLIENT: Daniel B. Stephens & Assoc.		(Client Sar	nple ID: DBS-5		
Project: Salty Dog			Collectio	on Date: 12/2/2016 7:45:00 AM		
Lab ID: 1612248-005	Matrix:	AQUEOUS	Receive	ed Date: 12/5/2016		
Analyses	Result	PQL Qual	Units	DF Date Analyzed Batch		
EPA METHOD 300.0: ANIONS				Analyst: LGT		
Chloride	170	5.0	mg/L	10 12/10/2016 4:46:33 PM R39310		

on.

ŀ	Refer to the QC	Summary repo	ort and samp	le login c	hecklist for	flagged (QC da	ata and	preservati	on in	formati	01
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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
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 5 of 17 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Hall Environmental Analysi	s Labora	• Date Reported: 12/15/2016			
CLIENT: Daniel B. Stephens & Assoc.			Client Sam	ple ID: DBS-6	
Project: Salty Dog			Collection	Date: 12/2/2016 3:30:00 PM	
Lab ID: 1612248-006	Matrix:	AQUEOUS	Received	Date: 12/5/2016	
Analyses	Result	PQL Qua	l Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analys	t: LGT
Chloride	300	50 *	mg/L	100 12/10/2016 5:23:46 PM	1 R39310

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	I
	D	Sample Diluted Due to Matrix	I
	Н	Holding times for preparation or analysis exceeded	J
	ND	Not Detected at the Reporting Limit	I
	R	RPD outside accepted recovery limits	R
	S	% Recovery outside of range due to dilution or matrix	v

- Analyte detected in the associated Method Blank В
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 6 of 17 J
- Sample pH Not In Range Р
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Analytical Report Lab Order 1612248 Data Damantadi 12/15/2016

Hall Environmental Analys	is Laborat	C. Date Reported: 12/15/2016			
CLIENT: Daniel B. Stephens & Assoc.			Client Samp	le ID: DBS-8	=
Project: Salty Dog			Collection	Date: 12/2/2016 1:30:00 PM	
Lab ID: 1612248-007	Matrix: A	AQUEOUS	Received	Date: 12/5/2016	
Analyses	Result	PQL Qua	al Units	DF Date Analyzed Batc	:h
EPA METHOD 300.0: ANIONS				Analyst: LGT	-
Chloride	33	5.0	mg/L	10 12/10/2016 5:36:10 PM R393	310

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	Н	Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 7 of 17 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Analytical Report Lab Order 1612248

Hall Environmental Analys	sis Labora	tory, Inc.	• Date Reported: 12/15/2016			
CLIENT: Daniel B. Stephens & Assoc.		(Client Sar	nple ID: DBS-9		
Project: Salty Dog			Collectio	on Date: 12/2/2016 12:50:00 PM		
Lab ID: 1612248-008	Matrix:	AQUEOUS	Receive	ed Date: 12/5/2016		
Analyses	Result	PQL Qual	Units	DF Date Analyzed Batch		
EPA METHOD 300.0: ANIONS				Analyst: LGT		
Chloride	180	5.0	mg/L	10 12/10/2016 6:00:59 PM R39310		

rt and sam and OC data and preservation info Dafa to the OC S nla login charlist for fla tion.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation	on informatio
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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
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 8 of 17 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analys	is Labora	• Date Reported: 12/15/2016			
CLIENT: Daniel B. Stephens & Assoc.			Client Samp	ble ID: MW-3	
Project: Salty Dog			Collection	Date: 12/2/2016 2:45:00 PM	
Lab ID: 1612248-009	Matrix:	AQUEOUS	Received	Date: 12/5/2016	
Analyses	Result	PQL Qua	d Units	DF Date Analyzed Batch	
EPA METHOD 300.0: ANIONS				Analyst: LGT	
Chloride	11000	500 *	mg/L	1E 12/12/2016 2:04:30 PM R39342	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	A
	D	Sample Diluted Due to Matrix	Е	V
	Н	Holding times for preparation or analysis exceeded	J	A
	ND	Not Detected at the Reporting Limit	Р	5
	R	RPD outside accepted recovery limits	RL	ł
	S	% Recovery outside of range due to dilution or matrix	W	S

- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 9 of 17
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Analytical Report Lab Order 1612248 Data Da artade 12/15/2016

Hall Environmental Analys	sis Labora	tory, Inc.	Date Reported: 12/15/2016		
CLIENT: Daniel B. Stephens & Assoc.		(Client Sam	ple ID: MW-5	
Project: Salty Dog			Collection	Date: 12/2/2016 2:10:00 PM	
Lab ID: 1612248-010	Matrix:	AQUEOUS	Received	l Date: 12/5/2016	
Analyses	Result	PQL Qual	Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analys	st: LGT
Chloride	710	50 *	mg/L	100 12/10/2016 7:27:52 P	M R39310

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	1
	D	Sample Diluted Due to Matrix	Е	1
	Н	Holding times for preparation or analysis exceeded	J	1
	ND	Not Detected at the Reporting Limit	Р	5
	R	RPD outside accepted recovery limits	RL	I
	S	% Recovery outside of range due to dilution or matrix	W	5

- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 10 of 17
- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Hall Environmental Analysi	• Date Reported: 12/15/2016			
CLIENT: Daniel B. Stephens & Assoc.			Client Sam	ble ID: PMW-1
Project: Salty Dog			Collection	Date: 12/1/2016 4:00:00 PM
Lab ID: 1612248-011	Matrix:	AQUEOUS	Received	Date: 12/5/2016
Analyses	Result	PQL Qua	l Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: LGT
Chloride	8300	500 *	mg/L	1E 12/12/2016 12:12:49 PM R393

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	Н	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits
	S	% Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limitsPage 11 of 17 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: Brine Well **Project:** Salty Dog Collection Date: 12/1/2016 4:10:00 PM Lab ID: 1612248-012 Matrix: AQUEOUS Received Date: 12/5/2016 **PQL** Qual Units Analyses Result **DF** Date Analyzed Batch SPECIFIC GRAVITY Analyst: LGT 0 12/12/2016 11:32:00 AM R39308 Specific Gravity 1.200 1 **EPA METHOD 300.0: ANIONS** Analyst: LGT 12/12/2016 12:37:38 PM R39342 Chloride 200000 10000 mg/L 2E SM2540C MOD: TOTAL DISSOLVED SOLIDS Analyst: SRM 12/12/2016 1:24:00 PM 29074 **Total Dissolved Solids** 310000 2000 *D mg/L 1 SM4500-H+B: PH Analyst: JRR 12/6/2016 9:30:09 PM R39213 pН 7.47 1.68 pH units н 1 **EPA 6010B: TOTAL RECOVERABLE METALS** Analyst: MED Sodium 74000 mg/L 12/10/2016 2:27:59 PM 29037 1000 1E

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
	Н	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits
	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 Page 12 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

1 12/6/2016 9:34:45 PM R39213

CLIENT: Daniel B. Stephens & Assoc. Project: Salty Dog			(-	le ID: Injection Well Date: 12/1/2016 3:55:00 PM	
Lab ID: 1612248-013	Matrix:	AQUEOUS		00110011011	Date: 12/5/2016	
Analyses	Result	PQL Q	Jual	Units	DF Date Analyzed	Batch
SPECIFIC GRAVITY					Analys	st: LGT
Specific Gravity	0.9961	0			1 12/12/2016 11:32:00 /	AM R39308
EPA METHOD 300.0: ANIONS					Analys	st: LGT
Chloride	330	50	*	mg/L	100 12/12/2016 1:27:16 PI	M R39342
SM2540C MOD: TOTAL DISSOLVED S	OLIDS				Analys	st: SRM
Total Dissolved Solids	882	20.0	*	mg/L	1 12/12/2016 1:24:00 PI	M 29074
SM4500-H+B: PH					Analys	st: JRR

1.68

Н

pH units

8.00

Hall Environmental Analysis Laboratory, Inc.

pН

d preservation information. Refer to the OC Summary report and sample login checklist for flagged OC date

Refer to the	QC Summar	y report and	sample lo	ogin checklis	st for flagged	QC data and	preservation	nformation

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected
	D	Sample Diluted Due to Matrix	Е	Value above qua
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not

- R RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix S
- ed in the associated Method Blank
- uantitation range
- ed below quantitation limit Page 13 of 17
- ot In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

Client: Project:		Daniel B. Stephens & Assoc. Salty Dog	
Sample ID	МВ	SampType: MBLK TestCode: EPA Method 300.0: Anions	
Client ID:	PBW	Batch ID: R39310 RunNo: 39310	
Prep Date:		Analysis Date: 12/10/2016 SeqNo: 1230358 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: R39310 RunNo: 39310	
Prep Date:		Analysis Date: 12/10/2016 SeqNo: 1230359 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 95.9 90 110	
Sample ID	MB	SampType: MBLK TestCode: EPA Method 300.0: Anions	
Client ID:	PBW	Batch ID: R39342 RunNo: 39342	
Prep Date:		Analysis Date: 12/12/2016 SeqNo: 1231568 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: R39342 RunNo: 39342	
Prep Date:		Analysis Date: 12/12/2016 SeqNo: 1231569 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 97.0 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
- R RPD outside accepted recovery limits
- 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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 14 of 17

Client: Project:	Danie Salty	el B. Stephens o Dog	& Asso	c.							
Sample ID	MB-29037	SampTy	ype: ME	BLK	Tes	tCode: E	PA 6010B:	Total Recover	able Meta	als	
Client ID:	PBW	Batch	ID: 29	037	F	RunNo: 3	9293				
Prep Date:	12/7/2016	Analysis Da	ate: 12	2/10/2016	S	SeqNo: 1	229838	Units: mg/L			
Analyte Sodium		Result ND	PQL 1.0	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sample ID	LCS-29037	SampTy	ype: LC	S	Tes	tCode: E	PA 6010B:	Total Recover	able Meta	als	
Client ID:	LCSW	Batch	ID: 29	037	F	RunNo: 3	9293				
Prep Date:	12/7/2016	Analysis Da	ate: 12	2/10/2016	5	SeqNo: 1	229839	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium		50	1.0	50.00	0	99.9	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
- R RPD outside accepted recovery limits
- 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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 15 of 17

WO#: 1612248 15-Dec-16

Client:	Daniel B.	Stephens	& Asso	oc.							
Project:	Salty Dog	5									
Sample ID	1612248-013ADUF	• SampT	ype: DL	JP	Tes	tCode: S	pecific Grav	/ity			
Client ID:	Injection Well	Batch	n ID: R3	9308	F	RunNo: 3	9308				
Prep Date:		Analysis D	ate: 12	2/12/2016	S	SeqNo: 1	230352	Units:			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Specific Gravity		0.9999	0						0.381	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
- R RPD outside accepted recovery limits
- 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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 16 of 17

Client: Project:	Daniel B. Salty Dog		& Asso	c.							
Sample ID ME		•	ype: ME					DD: Total Dise	olved So	lids	
Client ID: PB	W	Batch	n ID: 29	074	F	RunNo: 39	9320				
Prep Date: 12	2/8/2016	Analysis D	ate: 12	2/12/2016	S	SeqNo: 12	230647	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Sol	ids	ND	20.0								
Sample ID LC	S-29074	SampT	ype: LC	S	Tes	tCode: SI	M2540C MC	DD: Total Diss	olved So	lids	
Client ID: LC	sw	Batch	n ID: 29	074	F	RunNo: 39	9320				
Prep Date: 12	2/8/2016	Analysis D	ate: 12	2/12/2016	5	SeqNo: 12	230648	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Sol	ids	1030	20.0	1000	0	103	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
- R RPD outside accepted recovery limits
- 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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 17 of 17

Client Name: DBS Work Order Number			RcptNo: 1	
received by/date: 12/05/16				
	_			
ogged By: Anne Thome 12/5/2016		anne Im		
Completed By: Anne Thorne 12/6/2016 2:09:24 PM	Α	anne Am		1
Reviewed By: 12/01/11	J			
Chain of Custody		-		
1. Custody seals intact on sample bottles?	Yes 🗌	No 🗌	Not Present	
2. Is Chain of Custody complete?	Yes 🗹	No 🗀	Not Present	
3. How was the sample delivered?	<u>Client</u>			
Log In				
 Was an attempt made to cool the samples? 	Yes 🗹	No 🗌		
5. Were all samples received at a temperature of $>0^{\circ}$ C to 6.0° C	Yes 🗹	No 🗌	NA 🗔	
6. Sample(s) in proper container(s)?	Yes 🗹	No 🗀		
7. Sufficient sample volume for indicated test(s)?	Yes 🗹	No 🗌		
8. Are samples (except VOA and ONG) properly preserved?	Yes 🗹	No 🗌	_	
9. Was preservative added to bottles?	Yes	No 🗹	NA 🗌	
	¥ . 🗖	No 🗔	No VOA Vials 🗹	
10. VOA vials have zero headspace?	Yes └┘ Yes □	No 🗹 🛛		
11. Were any sample containers received broken?	Yes 🖵		# of preserved bottles checked	
12. Does paperwork match bottle labels?	Yes 🗹	No 🗖	for pH: $\sqrt{(<)}$ or >12	unless note
(Note discrepancies on chain of custody)		No 🗔	Adjusted?	2
13. Are matrices correctly identified on Chain of Custody?	Yes 🗹	No 🛄 No 🗔	0	A
14. Is it clear what analyses were requested?	Yes ⊻ Yes ⊻	No 🗆	Checked by:	<u> </u>
15. Were all holding times able to be met? (If no, notify customer for authorization.)	169 🖭			
o				
Special Handling (if applicable) 16. Was client notified of all discrepancies with this order?	Yes	No 🗌	NA 🗹	
	ate			
By Whom: Vi	a: 🗌 eMail 🗌] Phone 🗌 Fax	In Person	
Regarding:				
Client Instructions:				
17. Additional remarks:				
18. Cooler Information			1	
Cooler No Temp °C Condition Seal Intact Seal N	o Seal Date	Signed By	4	
1 2.0 Good Not Present	and a second second	La companya ang ang ang ang ang ang ang ang ang an		
Page 1 of 1		*****		

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ENVIRONMENTAL	ANALYSIS LABORATORY		109					S de		No Jen	- soortos												x ×x		
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ld Time:	🗆 Rush		ty Dog		ES08.0118.06	iger:	J. A Yarbe	1. Zbcozek	T Yes	erature: 🗠	Preservative Type	none										A Rainer	No no.		
Turn-Around	ot Standard	Project Name:	Salty	Project #:	eso	ψroject Mana	4	Sampler: N	1.1	Sample Temperature:	Container Type and #	1/20/	` _	******								li <i>u</i> r	3901Y 3001Y	Received by:	Received by:
Chain-of-Custody Record			Mailing Address: 6020 Acodems RD NE		Phone # 50 < * 22 - 9400	email or Fax#: (7 AYARBE @DBSTEPHENS.ConProject Manager:	□ Level 4 (Full Validation)				Sample Request ID	BBS-IR	D85-2	DBS-3	DBS-4	035-5	DBS-6	DBS-8	DB5-7	MW-3	S-WW	441 .	Brine wer AW	7	AD CO
of-Cu	₹¥		6020		1-821	TAYARE			□ Other		Matrix	GW	م ^ع دهن			yan mulang					a ()			Relinquishe	Relinguished by
hain	DBSA		Address		1.	r Fax#: (QA/QC Package:	itation	AP	🗆 EDD (Type)	Time	1635	2.2.16 0900	CRASS	094S	0745	1530	1330	1250	1445	0/2/	1600	16:0	Time:	Date: Time:
0	Client:		Mailing	S, to C	Phone	email o	QA/QC Packag	Accreditation	NELAP		Date	2.1.16	2.2.16	_			Oli Bayanta					2.1.16	3.1.16	Date:	Date:

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 B

Field Notes

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(32)													Ĩ					ļ								

a.a.K all samples on Ice for thous port Sample @ 1005-6 M. ZLIDICK AFESITE M. Zbcozek Totolizero & WS-י ז = 892,76, BBL 295.2 BPD to Aall 2530 1330 Weather overcost ~ 40° rain possible trankle Shoet, Internal control Wices Pumpedra not Ennettan, remarked to Borth corroded and Broken 1135 M. FLUZEN OFESTR. For tools - Peoblem with Geosub Plamp Sample DBS-5 @ 0745 Sample Brown 0900 Sangle 083-3 6 0835 Sample O MW-S 1410 Set 49 at MW-3 0710 Set 47 at well DBS-5 M. Zbostek 1250 Sample @ DBS-9 1330 Sampre & DUS-8 0700 M. Zheresh onsthe Setupat muss Sample @ OUVS 0830 Set up at D85-2 Set up at DBS-4 0957 Satur at DBS-9 1340 Setup at MW-5 0800 Set up at DBS-3 Durple O 145 12 40 pumpreparced Colled geotech. continue GWM 12.2.2016 7455 0160 srep/ 22)



Daniel B. Stephens & Associates, Inc.

GROUNDWATER ELEVATION DATA SHEET

Project Name. <u>Salty Dog</u>

Sampler[.] <u>M. Zbrozek</u>

Sample Date. <u>12/01/16</u>

Project #: _<u>ES08.0118.06</u>_____

Project Manager[.] John Ayarbe

Sheet # __1_ of _1___

Well ID	Depth to NAPL	Depth to Water	Total Depth	Comments: (well dia., sampled, condition)
DBS-1R		67.31	74.42	
DBS-2		69.73	75.35	
DBS-3		64.59	74.76	
DBS-4		70.38	78.82	
DBS-5		66.72	75.38	
DBS-6		65.51	76.02	
DBS-7		62.30	76.71	WL only
DBS-8		63.79	69.9]	
DBS-9		56.88	67.55	
MW-3		66.66	/47.13	
MW-4		66.42	147.50	WL only
MW-5		63.70	128.78	
MW-6		63.70	119.18	WL only
PMW-1		70.97	77.73	
NW-1				WL only

Comments:



Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name. Salty Dog		Sampler M Zbrozek	
Project #: ES08.0118.06		Sample Date: <u>12/02/2016</u>	
Project Manager John Ayarbe		Sample Time: <u>/6/0</u>	
Well # [.] Brine			
Well Diameter <u>2"</u>	(inches)	Height of Water Column:	_(feet)
Depth to NAPL	_(feet btoc)	Casing Volume	_(gal)
Depth to Water:	_(feet btoc)	Purge Volume ⁻	_(gal)
Total Depth of Well:	(feet)	Purge Method: <u>Grab</u>	
Note: One casing volume (SCH 40 PVC): 2.0)" ID casing = 0	16 gal/ft; 4.0" = 0 65 gal/ft; 6.0" = 1 47 gal/ft	

Groundwater Parameters:

Casing Volume	pН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial						
1						
1.5						
2						
2.5						
3						
3.5						
4						
4.5						
5						

Sample Description. <u>3 poly</u>

Physical Observations.

Analytical Method(s)⁻ Sodium, Chloride, TDS, Spec Gravity, pH



GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog		Sampler [_] _M_Zbrozek	
Project # ES08.0118.06		Sample Date. <u>12/02/201</u>	6
Project Manager [.] John Aya	rbe	Sample Time: <u>1655</u>	
Well #: Injection			
Well Diameter2"	(inches)	Height of Water Column	(feet)
Depth to NAPL	(feet btoc)	Casing Volume	(gal)
Depth to Water [.]	(feet btoc)	Purge Volume	(gal)
Total Depth of Well:	(feet)	Purge Method <u>Grab</u>	
Note ⁻ One casing volume (SCH 40 PVC)	: 2.0" ID casing = 0.1	16 gal/ft, 4.0" = 0.65 gal/ft; 6.0" = 1.4	47 gal/ft

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial						
1						
1.5						
2						
2.5						
3						
3.5						
4						
4.5						
5						

Sample Description. 2 poly

Physical Observations.

Analytical Method(s) <u>Chloride, TDS, Spec Gravity, pH</u>



GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog		Sampler ⁻ M. Zbrozek	
Project # ES08.0118.06		Sample Date <u>12/02/2016</u>	
Project Manager ⁻ John Ayarbe		Sample Time: <u>/635</u>	
Well #: DBS-1R			
Well Diameter [.] 2"	(inches)	Height of Water Column: 7. II	_(feet)
Depth to NAPL	_(feet btoc)	Casing Volume: 1,19	_(gal)
Depth to Water: 67,31	_(feet btoc)	Purge Volume: <u>3, 4//</u>	_(gal)
Total Depth of Well: <u>74.72</u>	(feet)	Purge Method: <u>Grab</u>	
Note			

One casing volume (SCH 40 PVC): 2.0" ID casing = 0 16 gal/ft; 4 0" = 0 65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.72	17.2	1793	90.7	9.02	Tan Hazy
1	7.46	19.0	1424	93.5	7.29	
1,5	7.43	19.2	1449	94.8	7.42	
2	7.37	194	1530	94.9	6.90	
2.5	7.37	19.4	1512	94.2	6.77	Hazyclear
3	7.36	19.3	1524	93.6	6.67	
3.5						
4						
4.5						
5	_					

Sample Description. <u>1 poly</u>

Physical Observations

Analytical Method(s): Chloride



GROUNDWATER MONITORING DATA SHEET

Project Name. Salty Dog		Sampler [.] M. Zbrozek		
Project #: ES08.0118.06		Sample Date: <u>12/02/2016</u>		
Project Manager: John Ayarbe		Sample Time:		
Well #: DBS-2				
Well Diameter 2"	(inches)	Height of Water Column: <u>5.62</u>	_(feet)	
Depth to NAPL	_(feet btoc)	Casing Volume: 0.59	_(gal)	
Depth to Water: <u>69.73</u>	_(feet btoc)	Purge Volume: <u>2.70</u>	_(gal)	
Total Depth of Well: 75.35	(feet)	Purge Method: <u>Grab</u>		
Note One casing volume (SCH 40 PVC): 2.0	" ID casing = 0	.16 gal/ft, 4.0" = 0 65 gal/ft; 6.0" = 1.47 gal/ft		

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.33	14.0	862.3	126.2	6.41	clear
1	7.08	18.9	543.3	69.6	5.55	clear
1.5	7.11	20.0	538.8	54.2	5.43	
2	7.12	21.3	540.0	43.5	5.29	
2.5	7.13	21.1	538.7	42.9	5.09	clear
3	7.14	21.1	534.8	42.8	4.91	
3.5						
4						
4.5						
5						

Sample Description: <u>1 poly</u>

Physical Observations.

Analytical Method(s) _____ Chloride___



GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog		Sampler M. Zbrozek	
Project # [.] ES08.0118.06		Sample Date <u>12/02/2016</u>	
Project Manager John Ayarb	e	Sample Time: <u>2825</u>	
Well # DBS-3			
Well Diameter <u>2</u> "	(inches)	Height of Water Column: 10.17	_(feet)
Depth to NAPL	(feet btoc)	Casing Volume: <u>/ 6 🤿</u>	_(gal)
Depth to Water: <u>69.59</u>	(feet btoc)	Purge Volume: <u> <i>9.88</i> </u>	_(gal)
Total Depth of Well: <u>79.76</u>	(feet)	Purge Method. <u>Grab</u>	
Note [:] One casing volume (SCH 40 PVC): 2.	0" ID casing = 0.	.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft	

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L.)	Turbidity (NTU)
Initial	7.25	19.9	478.3	163,7	7.57	Clear
1	7.22	20.1	479.4	142.5	6.85	
1.5	7.23	20.6	483.9	131.6	6.50	
2	7.22	20.2	485.3	108.8	6.08	Hatr clear
2.5	7.24	20.1	480.7	78.1	6.18	
3	7.24	20.1	477.2	87.1	6.29	
3.5						
4						
4.5						
5						

Sample Description: <u>1 poly</u>

Physical Observations.

Analytical Method(s). _____Chloride___



GROUNDWATER MONITORING DATA SHEET

Project Name [.] Salty Dog	Sampler [.] M. Zbrozek			
Project # ES08.0118.06		Sample Date [.]	12/02/2016	
Project Manager John Ayarbe		Sample Time:	0945	
Well #: DBS-4				
Well Diameter <u>2"</u>	(inches)	Height of Water	Column: <u> 8.99</u>	_(feet)
Depth to NAPL	_(feet btoc)	Casing Volume:	1.35	_(gal)
Depth to Water: 70.38	_(feet btoc)	Purge Volume	4.05	_(gal)
Total Depth of Well: <u>78.8</u>	(feet)	Purge Method:	Grab	
Note: One casing volume (SCH 40 PVC): 2.0	" ID casing = 0	.16 gal/ft; 4.0" = 0.65 ga	al/ft; 6.0'' = 1 47 gal/ft	

Groundwater Parameters:

Casıng Volume	pН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.44	14.1	515.5	100.1	6.23	Silt; Brown
1	7.26	15.9	512.4	103.2	5.20	
1.5	7.30	19.3	496.6	102.5	6.47	
2	7.29	21.8	499.0	91.2	7.85	clear
2.5	7.28	21.0	487.0	86.8	6.94	
3	7.28	20.9	485.6	86.4	7.00	
3.5						
4						
4.5						
5						

Sample Description: <u>1 poly</u>

Physical Observations: <u>Clear</u>

Analytical Method(s)⁻ Chloride



GROUNDWATER MONITORING DATA SHEET

Project Name. Salty Dog	Sampler <u>M</u> Zbrozek	
Project # ES08.0118.06	Sample Date <u>12/02/2016</u>	
Project Manager John Ayarbe	Sample Time: 0795	
Well #: DBS-5		
Well Diameter [.] <u>2</u> "	inches) Height of Water Column: <u>6.66</u> (fe	eet)
Depth to NAPL(fe	et btoc) Casing Volume: <u>/.38</u> (ga	al)
Depth to Water: 66.72 (fe	et btoc) Purge Volume: <u> </u>	al)
Total Depth of Well: 75.38	(feet) Purge Method: <u>Grab</u>	
Note. One casing volume (SCH 40 PVC): 2.0" ID c	asing = 0.16 gal/ft, 4.0" = 0.65 gal/ft; 6.0" = 1 47 gal/ft	

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	6.37	18.6	1069	225.8	5.71	Tan/red Harry
1	6,54	19.0	1057	211.5	5.71	
1.5	6.61	19.4	1054	202.5	5.59	Tan Hazy
2	6.66	19.5	1047	194.6	5.68	
2.5	6.67	19.4	1046	182.4	5.72	
3	6.68	19.5	1040	189.4	5.73	TanHazy
3.5						
4						
4.5						
5						

Sample Description: <u>1 poly</u>

Physical Observations: Tan/Red Harr

Analytical Method(s). __Chloride



GROUNDWATER MONITORING DATA SHEET

Project Name. Salty D	og	Sampler [.] M. Z	Zbrozek	
Project #: ES08.0118.	06	Sample Date.	12/02/2016	
Project Manager [.] John	Ayarbe	Sample Time:	1545 153	0
Well #: DBS-6				
Well Diameter [.] 2	(inches)	Height of Water	Column: 10.51	(feet)
Depth to NAPL:	(feet btoc)	Casing Volume:	1.68	(gal)
Depth to Water: 65.	<u>5/</u> (feet btoc)	Purge Volume:	5.04	(gal)
Total Depth of Well:	26. <i>0</i> ⊋(feet)	Purge Method:	Grab	<u> </u>
Note: One casing volume (SCH 40	PVC): 2.0" ID casing = 0	16 gal/ft; 4 0" = 0.65 ga	al/ft; 6.0" = 1.47 gal/ft	

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.25	18.7	1633	45.8	12.71	Harry Brain Theby
1	7.13	21.2	1363	47.0	6.70	Thebld Brown
1.5	7.01	20.8	1328	67.9	5.72	Tan Hazy cking
2	7.00	20.9	1327	70.4	5.67	
2.5	6.99	20.8	1333	72.7	5.49	Jan Hazy Clea
3	6.99	20.8	1326	74.2	5.58	
3.5						
4						
4.5						
5						

Sample Description 1 poly

Physical Observations.

Analytical Method(s) _____ Chloride



GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog	Sampler [.] M. Zbrozek
Project # ES08.0118.06	Sample Date <u>12/02/2016</u>
Project Manager [.] John Ayarbe	Sample Time: <u>133</u> 0
Well #· DBS-8	
Well Diameter:2" (inche	s) Height of Water Column: <u>6.12</u> (feet)
Depth to NAPL:(feet bto	c) Casing Volume: <u> </u>
Depth to Water: 69.7763.79 (feet bto	c) Purge Volume:?Y(gal)
Total Depth of Well: 69.91 (fee	et) Purge Method: <u>Grab</u>
Note: One casing volume (SCH 40 PVC): 2.0" ID casing =	= 0.16 gal/ft; 4.0'' = 0.65 gal/ft; 6.0'' = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O (mg/L)	Turbidity (NTU)
Initial	7.33	15.1	558.6	144.3	5.94	Hazy
1	7.25	17.8	559.7	141.4	5.50	
1.5	7.18	24.7	607.0	132.5	4.96	Haty Clear
2	7.22	23.6	586.0	124.1	5.55	
2.5	7.22	22.1	575.0	122.7	5.84	
3	7.21	21.4	570	121.6	5.89	Hazy
3.5						
4					_	
4.5						
5						

Sample Description: 1 poly

Physical Observations.

Analytical Method(s) Chloride



GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog		Sampler M. J	Zbrozek	
Project # ES08.0118.06		Sample Date	12/02/2016	
Project Manager [.] John Ayarbe	Э		1250	
Well #: DBS-9				
Well Diameter: <u>2"</u>	(inches)	Height of Water	Column: <u>10.67</u>	_(feet)
Depth to NAPL	(feet btoc)	Casing Volume:	1.70	_(gal)
Depth to Water:_ <u>.56.88</u>	(feet btoc)	Purge Volume:	5.12	_(gal)
Total Depth of Well: <u>67.55</u>	(feet)	Purge Method	Grab	
Note: One casing volume (SCH 40 PVC): 2	0" ID casing = 0	.16 gal/ft; 4.0" = 0.65 g	al/ft; 6.0" = 1.47 gal/ft	

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	6.91	16.4	1205	163.3	12.80	HARY THIBIJ BROWN
1	7.01	19.4	1140	138.6	7.43	
1.5	7.05	19.3	1075	134.0	7.12	Nazr Brown
2	7.11	19.2	999	129.9	6.91	_
2.5	7.11	19.2	992	125.9	6.92	Haver
3	7.09	19.1	992	122.2	6.51	
3.5						
4						
4.5						
5						

Sample Description: <u>1 poly</u>

Physical Observations

Analytical Method(s) _____Chloride___



GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog		Sampler M. Zbrozek	
Project # ES08.0118.06		Sample Date <u>12/02/2016</u>	
Project Manager: John Ayarbe		Sample Time: <u>/4 4 5</u>	
Well # MW-3			
Well Diameter 2"	(inches)	Height of Water Column: <u>%0.</u> 9	(feet)
Depth to NAPL	_(feet btoc)	Casing Volume: /2.87	(gal)
Depth to Water: 66.66	_(feet btoc)	Purge Volume: <u>38.62</u>	(gal)
Total Depth of Well: / Y 7 13	(feet)	Purge Method: Grab	,
Note: One casing volume (SCH 40 PVC): 2.0"	ID casing = 0	16 gal/ft; 4 0" = 0 65 gal/ft, 6 0" = 1 47 gal	/ft

Groundwater Parameters:

Casing Volume	pН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O (mg/L)	Turbidity (NTU)
Initial	7.04	19.3	2844	123.0	5.03	Clear
1	7.06	19.3	3130	105.1	3.67	chae.
1.5	6.90	19.3	7919	115.1	3.26	clear
2	6.71	19.3	19137	125.1	3.26	
2.5	6.71	19.3	21420	125.3	3.25	clear
3	6.71	19.3	23000	126.3	3.22	Clear
3.5	6.72	19.3	23207	126.3	3.21	
4	6.72	19.3	23373	126.5	3.21	Clear
4.5						
5						

Sample Description. <u>1 poly</u>

Physical Observations[.]

Analytical Method(s) Chloride



GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog		Sampler [.]	Zbrozek	
Project # <u>ES08.0118.06</u>		Sample Date	12/02/2016	
Project Manager John Ayarbe		Sample Time:	1410	_
Well # MW-5				
Well Diameter <u>2</u> "	(inches)	Height of Water	Column: <u>65.08</u>	_(feet)
Depth to NAPL	_(feet btoc)	Casing Volume:	10.41	_(gal)
Depth to Water: 63.70	_(feet btoc)	Purge Volume:	31.24	_(gal)
Total Depth of Well: <u>128.78</u>	(feet)	Purge Method:	Grab	
Note: One casing volume (SCH 40 PVC): 2 0	" ID casing = 0	.16 gal/ft; 4 0'' = 0.65 g	al/ft, 6.0" = 1 47 gal/ft	

Groundwater Parameters:

Casing Volume	рН	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	6.79	19.1	2283	187.5	9.32	Clear
1	6.79	19.2	3305	128.3	3.61	clear
1.5	6.89	19.3	3003	114.2	3.53	
2	6.91	19.3	2824	109.3	3.55	clear
2.5	6.92	19.3	2736	106.8	3.57	
3	6.92	19.3	2721	106.0	3.59	clear
3.5						
4						
4.5						
5						

Sample Description <u>1 poly</u>

Physical Observations: ______

Analytical Method(s) Chloride



GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog		Sampler [.] _M. Z	Zbrozek	
Project # ES08.0118.06		Sample Date	12/02/2016	
Project Manager John Ayarbe	!	Sample Time:		
Well # [.] PMW-1				
Well Diameter 2"	(inches)	Height of Water	Column: <u>6.76</u>	_(feet)
Depth to NAPL	_(feet btoc)	Casing Volume:	1.08	_(gal)
Depth to Water:70.97	_(feet btoc)	Purge Volume:	3.24	_(gal)
Total Depth of Well: 77 73	(feet)	Purge Method: _	Grab	<u> </u>
Note: One casing volume (SCH 40 PVC): 2.0)" ID casing = 0	16 gal/ft; 4.0" = 0 65 ga	al/ft; 6 0'' = 1.47 gal/ft	

Groundwater Parameters:

Casing Volume	рН	Temp (°F) C	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	6.89	18.9	20038	185.2	7.37	Hazrelen
1	6.93	19.0	18822	170.6	6.99	
1.5	6.96	19.1	20491	169.5	6.71	
2	6.96	19.1	21061	167.5	6.54	
2.5	6.97	19.1	21373	166.4	6.57	Hazr
3	6.99	19.1	21579	165.2	6.46.	
3.5						
4						
4.5						
5						

Sample Description. <u>1 poly</u>

Physical Observations: Hazr clear

Analytical Method(s)⁻ __Chloride



PHONE (325) 673-7001 · 2111 BEECHWOOD · ABILENE, TX 79603

PHONE (505) 393-2326 · 101 E. MARLAND · HOBBS, NM 88240

ANALYTICAL RESULTS FOR SALTY DOG ATTN: JIM SAYRE P.O. BOX 513 HOBBS, NM 88241 FAX TO: (505) 393-8353

Receiving Date: 06/12/07 Reporting Date: 06/12/07 Project Owner: NOT GIVEN Project Name: NOT GIVEN Project Location: NOT GIVEN Analysis Date: 06/12/07 Sampling Date: 06/10/07 - 06/12/07 Sample Type: GROUNDWATER Sample Condition: COOL & INTACT Sample Received By: AB Analyzed By: AB

LAB NO. SAMPLE ID

Cí (mg/L)

H12740-1 1 MW at Well	460
H12740-2 2 MW ^d /	940
H12740-3 3 MW Z	400
H12740-4 4 MW 3	420
H12740-5 5 MW 4	1340
H12740-6 B4 PIT @ Pit	640
H12740-7 WATER WELL	11200
H12740-8 RANCH HOUSE	36
Quality Control	500
True Value QC	500
% Recovery	100
Relative Percent Difference	1.0
/ETHOD: Standard Methods	4500.000
	4500-CI'B

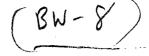
Store

06-13-07 Date

H12740 SALTY DOG

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ANALYTICAL RESULTS FOR SALTY DOG, INC. ATTN: TERRY WALLACE P.O. BOX 513 HOBBS, NM 88241 FAX TO: (505) 393-8353

Receiving Date: 04/05/07 Reporting Date: 04/06/07 Project Number: NOT GIVEN Project Name: NOT GIVEN Project Location: NOT GIVEN Analysis Date: 04/06/07 Sampling Date: 04/04/07 Sample Type: GROUNDWATER Sample Condition: COOL & INTACT Sample Received By: NF Analyzed By: HM

сГ

LAB NUMBER	SAMPLE ID	(mg/L)	
H12431-1	MONITOR WELL #1	6398	
H12431-2	MONITOR WELL #2	340	
H12431-3	MONITOR WELL #3	404	
H12431-4	MONITOR WELL #4	1280	
H12431-5	MONITOR WELL @ WELL	660	
H12431-6	MONITOR WELL @ PIT	5398	
Quality Control		500	
True Value QC		500	
% Recovery		100	
Relative Percent	Difference	1.0	
ETHOD: Standard	4500-CI ⁻ B		

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Oil Conservation Division 1220 S. St. Francis Drive Santa Fe, NM 87505

Chemist

64= Date

H12431

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September 18, 2009

RECEIVED 2009 SEP 21 PM 1 29

Mr. Jim Griswold New Mexico Oil Conservation Division Environmental Bureau 1220 South St. Francis Drive Santa Fe, NM 87505

Re: Monitor Well Installation and Groundwater Monitoring Report

Dear Mr. Griswold:

On behalf of PAB Services, Inc., Daniel B. Stephens & Associates, Inc. (DBS&A) is pleased to submit the enclosed Monitor Well Installation and Groundwater Monitoring Report for the Salty Dog brine station located in Lea County, New Mexico. The report documents field investigation activities conducted at the site in March and April 2009 in partial fulfillment of the requirements set forth in Section 15 of the New Mexico Oil Conservation Division (OCD) Settlement Agreement & Stipulated Revised Final Order (Order), dated August 6, 2008.

Please don't hesitate to call me at (505) 353-9130 if you have any questions or require additional information.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

1: 1.7,

Michael D. McVey Senior Hydrogeologist

Enclosures

cc: James Millett, PAB Services Inc.

Daniel B. Stephens & Associates, Inc.

Albuquerque, NM 87109-3315

505-822-9400 FAX 505-822-8877

Monitoring Well Installation and Groundwater Monitoring Report Salty Dog Brine Station Lea County, New Mexico

Prepared for New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau

September 18, 2009



Daniel B. Stephens & Associates, Inc.

6020 Academy NE, Suite 100 • Albuquerque, New Mexico 87109



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1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this monitor well installation and groundwater monitoring report for submission to the New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD) on behalf of PAB Services, Inc. (PAB) for the Salty Dog brine station (Site). The Site is located in Lea County in southeastern New Mexico, approximately 12 miles west of Hobbs on the south side of the Hobbs/Carlsbad Highway (Figure 1). Formally, the Site is located in the in the J Unit of Section 5, Township 19 South, Range 36 East. This report summarizes field investigation activities conducted at the Site in March and April 2009.

1.1 Background

On May 18, 2008, OCD issued Administrative Compliance Order (ACO), NM-OCD-2008-02, to Mr. Peter Bergstein (d/b/a "Salty Dog, Inc.") (OCD, 2008a). After issuance of the ACO, OCD and Mr. Bergstein engaged in settlement discussions to resolve the outstanding issues addressed by the ACO. The OCD and Mr. Bergstein agreed to a Settlement Agreement & Stipulated Revised Final Order (Order), NM-OCD 2008-2A (OCD, 2008b), for the purpose of resolving the violations outlined in the ACO.

The Order requires Mr. Bergstein to complete certain actions to address environmental compliance-related issues at the Site in accordance with milestone deliverable dates agreed upon by the OCD and PAB. Specifically, among other things, the Order requires PAB to address contamination resulting from documented releases in 1999, 2002, and 2005, as well as releases at the brine loading/unloading area.

The ACO provides a description of each of these releases, which are summarized here. The 1999 release was caused by a hole in the casing of the Salty Dog brine well and resulted in contamination of the fresh water well on "Snyder Ranches," adjacent to the Site. The 2002 release was caused by a leaking tank in the vicinity of the brine well, and the 2005 release was caused by a rupture in the brine supply pipeline. The 2002 and 2005 releases were noted to have entered a fresh water playa located just north of the brine well.



1.2 Previous Work Conducted by DBS&A at the Site

To date, DBS&A has performed the following activities under contract to PAB: (1) preparation of a Comprehensive Site Plan, (2) groundwater monitoring, and (3) removal of the brine pond. Each of these activities is summarized below.

1.2.1 Comprehensive Site Plan

In September 2008, DBS&A submitted a Comprehensive Site Plan (Plan) to OCD addressing the requirements set forth in Section 15 of the Order (DBS&A, 2008). The Plan presented a proposed project schedule and individual specifications/proposals for addressing the environmental compliance-related issues at the Site. The Plan formed the basis for future investigation, characterization, and remediation of the Site.

1.2.2 Groundwater Monitoring

In June 2008, DBS&A completed groundwater monitoring at the Site. Groundwater samples were collected from existing monitor wells PMW-1, MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6, and from the ranch headquarters water supply well and the brine station fresh water supply (Figure 2). A groundwater sample was not collected from the mobile home located west of the brine well because the mobile home and the ranch headquarters use the same water supply well.

Prior to sampling, the depth to water was measured in each of the seven monitor wells listed above. Water levels were not measured in the ranch headquarters water supply well and the brine station fresh water supply well because of the presence of permanent submersible downhole pumps that blocked access to the wells. DBS&A could not determine groundwater elevations in the existing site wells nor could a potentiometric surface map be developed because an official survey from a New Mexico licensed land surveyor had not been completed at the Site. However, based on regional groundwater data and information contained in previous reports provided by PAB, DBS&A assumed that the direction of groundwater flow beneath the Site is to the southeast.

Laboratory results showed that chloride concentrations increased in six of the seven existing groundwater monitor wells (PMW-1, MW-1, MW-2, MW-3, MW-4, and MW-5) and in the brine station fresh water well since the wells were last sampled by employees of Salty Dog in May



2008. In six of the nine samples collected (PMW-1, MW-2, MW-3, MW-4, MW-5, and the brine station fresh water supply well), chloride concentrations exceeded the New Mexico Water Quality Control Commission (NMWQCC) standard of 250 mg/L (Figure 2).

The groundwater monitoring results indicated that the extent of the chloride groundwater plume in the vicinity of the brine pond has not been delineated. To the south, in the area of the brine well, the chloride groundwater plume extends from the brine well downgradient to monitor wells MW-4 and MW-5. Assuming a southeasterly groundwater flow direction, the plume is bounded downgradient by monitor well MW-6. The cross-gradient extent of the plume, however, has not been delineated (Figure 2).

Based on the findings, DBS&A recommended that the extent of the chloride groundwater plume in the vicinity of the brine pond be delineated, and that the cross-gradient extent of the chloride groundwater plume downgradient of the brine well be delineated.

1.2.3 Brine Pond Removal

In October 2008, the brine pond was removed in accordance with the OCD Order. Employees of Salty Dog pumped all of the aqueous brine from the pond into aboveground frac tanks located on-site. A trackhoe was then used to excavate the accumulated salt from the interior of the pond. The excavated salt was loaded into sealed bins and dump trucks and transported to Sundance Services, Inc. (Sundance) in Eunice, New Mexico for disposal. After the salt was removed from the pond interior, the underlying liner was removed and an additional six inches of the clay beneath the liner was excavated. The liner and soil excavated from beneath the liner were transported to Sundance for disposal. A total of 2,128 cubic yards of salt and contaminated soil were hauled to Sundance for disposal.

DBS&A completed soil sampling beneath the former brine pond and in the former brine loading area located on east side of the pond in November 2008. A 30-foot by 30-foot grid was laid out over an area measuring 180 feet (north-south) by 240 feet (east-west). The gridded area encompassed: (1) the entire extent of the former brine pond (including the berms and a distance of approximately 10 feet outside of the berms) and (2) the former brine loading area. A total of 76 composite soil samples were submitted for laboratory analysis. At each sample location, a backhoe was used to excavate soil to the maximum attainable depth. Sixty-one soil samples

were collected from depths of 4 feet below ground surface (ft bgs) or less and 15 samples were collected from depths greater than 4 ft bgs. Excavation to depths greater than 3 to 4 ft bgs was limited in most cases by the presence of caliche in the shallow subsurface.

Soil samples collected from the bucket of the backhoe during excavation were composited in a stainless steel bowl and then placed in laboratory-provided four-ounce glass jars. The samples were submitted to the laboratory for chloride analysis using U.S. Environmental Protection Agency (EPA) method 300.0.

Laboratory results showed significant concentrations of chloride in the shallow interval (0 to 4 ft bgs) beneath the former brine pond and brine loading area. Although the number of samples collected at greater depths (i.e., greater than 4 ft bgs) were limited due to the presence of caliche in the shallow subsurface at the site, the results from the samples that were collected in this deeper interval indicated that there is not a noticeable difference in chloride concentration from 0 to 4 ft bgs and 4 to 8 ft bgs. It is anticipated, based on the concentrations of chloride observed in the soils beneath the former pond and loading area, that these concentrations do not decrease significantly in the vadose zone and that the concentrations exceed the OCD standard of 500 mg/kg (site with groundwater less than 100 ft bgs) throughout the vadose zone to the water table at approximately 60 ft bgs. This conclusion was supported by the June 2008 sampling of monitor well PMW-1, located at the southeast corner (downgradient) of the brine pond, where the chloride concentration in groundwater was 12,700 mg/L.

Based on the findings, DBS&A recommended that the chloride-contaminated soils be left in place, but the potential for leaching and migration of chloride to the water table be reduced by limiting the infiltration of surface water and precipitation in the source area. To accomplish this, DBS&A and PAB propose to level the entire extent of the former brine pond and brine loading area, backfill and compact the former brine pond to grade, and cover the entire area with concrete. A new brine tank battery, brine loading area, and truck turnaround will then be constructed in this area as detailed in Section 3.6 of the Comprehensive Site Plan.

DBS&A also recommended that the extent of the chloride groundwater plume in the vicinity of the former brine pond and brine loading area be delineated as detailed in Sections 3.1.1.1 and 3.1.1.2



of the Plan by installing five groundwater monitor wells, one nested well, and ongoing quarterly groundwater monitoring and reporting.

1.3 Purpose

The purpose of the field investigation was to determine the magnitude and extent of impacts to soil and groundwater from the 1999, 2002, 2005, and the brine loading/unloading releases. The investigation was performed in accordance with the requirements of the Order and Sections 3.1, 3.2, and 3.3 of the Plan, approved by the OCD on September 17, 2008.

This report constitutes the first of three milestone deliverables: (1) Monitor Well Installation and Ground Water Monitoring report, (2) Recovery Well Installation and Pump Test report, and (3) Conceptual Remedial Design.

1.4 Project Scope

The Order identified three areas of primary concern (AOPC) requiring investigation and/or further delineation of the extent of contamination: (1) the brine loading/unloading area and brine pond, (2) the brine well, and (3) the playa.

To address the AOPCs and groundwater quality at the site, DBS&A completed a field investigation program that included the installation of nine groundwater monitor wells and two nested wells. DBS&A also instituted an analytical program to assess the likely contaminants of concern (COCs) in soil and groundwater at the Site. Finally, DBS&A prepared this report documenting the investigation.

Sections 2 and 3 of this report detail the field investigation and analytical program, respectively. Section 4 presents the results of the investigation, and Section 5 provides DBS&A's summary and conclusions.

2. Field Investigation

Subsurface conditions and groundwater quality were evaluated by the installation of nine monitor wells and two nested wells, and the collection of soil and groundwater samples in each of the three AOPCs. Samples of soil and groundwater were submitted to the selected analytical laboratory for chemical analysis based on the identified COCs. Descriptions of the soil and groundwater field investigation programs are presented below.

2.1 Soil Boring

The soil investigation program included the installation of 11 soil borings, which were later completed as monitor wells to assess groundwater quality. Details of monitor well installation and construction are discussed in Section 2.2 below. The drilling was performed by Peterson Drilling and Testing, Inc. of Amarillo, Texas, a New Mexico licensed drilling company, using air rotary drilling technology. All of the borings were advanced to a total depth of 83 ft bgs. The locations of the borings were predetermined by DBS&A prior to the field investigation (DBS&A, 2008).

All field work was performed under the supervision of a licensed professional geologist. Soil samples were collected during drilling using a split spoon for laboratory analysis. Samples collected for laboratory analysis from the borings were placed in an ice-filled cooler immediately after collection and remained on ice until they were delivered to the analytical laboratory. Chain-of-custody documentation accompanied the samples at all times. Investigation derived waste was stockpiled on visqueen and properly disposed of at a licensed facility after completion of the field investigation.

A description of the field investigation in each of the three AOPCs is provided below.

2.1.1 Brine Pond

Six soil borings, designated DBS-1 through DBS-5 and NW-1, were installed in the vicinity of the brine pond (Figure 3). Soil cuttings and split spoon samples were used during drilling for lithologic description. Soil samples were collected for laboratory analysis at 10-foot intervals



during drilling to quantify the chloride concentration profile with depth. Soil boring logs showing the subsurface geology at each location are provided in Appendix A. Laboratory results from soil samples collected during drilling are summarized in Table 1. Complete laboratory reports for the soil samples are provided in Appendix B.

2.1.2 Brine Well

Four soil borings designated DBS-6 through DBS-8 and NW-2, were installed downgradient of the brine well (Figure 4). Soil samples were collected at 10-foot intervals during drilling for laboratory analysis as described above. Soil cuttings and split spoon samples were used during drilling for lithologic description. Soil boring logs showing the subsurface geology at each location are provided in Appendix A. Laboratory results from soil samples collected during drilling are summarized in Table 1. Complete laboratory reports for the soil samples are provided in Appendix B.

2.1.3 Playa Lake

One soil boring, designated DBS-9, was installed in the fresh water playa lake located just north of the brine well (Figure 4). Soil samples were collected at 10-foot intervals during drilling for laboratory analysis as described above. Soil cuttings and split spoon samples were used during drilling for lithologic description. The soil boring log showing the subsurface geology is provided in Appendix A. Laboratory results of soil samples collected during drilling are summarized in Table 1. Complete laboratory reports for the soil samples are provided in Appendix B.

2.2 Groundwater Investigation

The groundwater investigation included the installation of nine monitor wells and two nested wells, and the collection of groundwater samples for laboratory analysis. The wells were completed at predetermined locations, as specified in Sections 3.1 and 3.2 of the Plan (DBS&A, 2008). The locations specified in the Plan were selected to delineate the extent of the chloride groundwater plume in the vicinity of the brine pond, the cross-gradient extent of the chloride plume resulting from the 1999 release at the brine well, and to determine if groundwater beneath the playa was impacted as a result of the 2002 and 2005 releases. All of the wells



were constructed in accordance with the New Mexico Environment Department Ground Water Quality Bureau Monitoring Well Construction Guidelines, Revision 1.0, dated July 2008.

2.2.1 Monitor Well Installation

2.2.1.1 Brine Pond

Soil borings DBS-1 through DBS-5 were advanced to approximately 20 ft below the water table and completed as 2-inch-diameter groundwater monitor wells (Figure 5). The wells were installed in upgradient, downgradient, and cross-gradient locations to delineate the extent of the chloride plume as follows:

- DBS-1: approximately 200 feet downgradient (southeast) of the brine pond
- DBS-2: approximately 200 feet cross-gradient (east) of the brine pond
- DBS-3: approximately 200 feet cross-gradient (south-southwest) of the brine pond
- DBS-4: approximately 400 feet downgradient (southeast) of the brine pond
- DBS-5: approximately 300 feet upgradient (northwest) of the brine pond

The wells were constructed of 20 feet of 2-inch-diameter, 0.020-inch slot, flush-threaded, machine-cut, Schedule 40 (SCH 40) polyvinyl chloride (PVC) well screen with a 2-foot sump. Blank 2-inch-diameter, SCH 40 PVC casing extended to approximately 2.5 feet above the ground surface. The screens were placed so that approximately five feet would be above the water table and 15 feet below. The filter pack consisted of 8-16 silica sand, placed by a tremie pipe, extending from the bottom of the boring to approximately 3 feet above the well screen. A 3-foot-thick bentonite pellet seal (hydrated) was then placed above the sand pack, and the annular space above the bentonite seal was filled with a cement/bentonite grout to the surface. The wells were completed aboveground with a protective steel well vault and a 3-foot by 3-foot by 4-inch-thick concrete pad and bollards at each corner. The well construction diagrams for DBS-1 through DBS-5 are provided in Appendix A.

Nested well NW-1 was drilled to the red beds (base of the Ogallala Formation) approximately 150 feet downgradient (southeast) of the former brine pond (Figure 5). NW-1 was installed to determine if a chloride density gradient exists with depth in the saturated zone. The well will enable DBS&A to evaluate vertical hydraulic and concentration gradients at a single location to



ensure that future recovery wells are screened properly. The well consists of three 2-inchdiameter monitor wells installed in one 10-inch-diameter soil boring with separate shallow (s), intermediate (m), and deep (d) screens. The screens are separated from each other in the boring by a bentonite seal.

The deep well consists of 20 feet of 2-inch-diameter 0.020-inch slot, flush-threaded, machinecut, SCH 40 PVC well screen with a 2-foot sump. Blank 2-inch SCH 40 PVC casing extends to approximately 2.5 feet above the ground surface. The screen was placed from approximately 149 ft bgs to 169 ft bgs. The filter pack (8-16 silica sand) was placed by a tremie pipe from the bottom of the boring to approximately 4 feet above the top of the screen. A bentonite pellet seal (hydrated) was then placed above the sand pack.

The middle well consists of 20 feet of 2-inch-diameter 0.020-inch slot, flush-threaded, machinecut, SCH 40 PVC well screen with a 2-foot sump. Blank 2-inch SCH 40 PVC casing extends to approximately 2.5 feet above the ground surface. The screen was placed from approximately 99 ft bgs to 119 ft bgs. The filter pack (8-16 silica sand) was placed by a tremie pipe from the bottom of the boring to approximately 4 feet above the top of the screen. A bentonite pellet seal (hydrated) was then placed above the sand pack.

The shallow well consists of 20 feet of 2-inch-diameter 0.020-inch slot, flush-threaded, machinecut, SCH 40 PVC well screen with a 2-foot sump. The well is screened across the water table from approximately 52 ft bgs to 72 ft bgs. Blank 2-inch SCH 40 PVC casing extends to approximately 2.5 feet above the ground surface. The filter pack (8-16 silica sand) was placed by a tremie pipe from the bottom of the boring to approximately 2 feet above the top of the screen. A bentonite pellet seal (hydrated) was then placed above the sand pack. The remaining open annular space above the bentonite seal was then filled with a cement/bentonite grout to the surface.

The well was completed aboveground with a protective steel well vault and a 3-foot by 3-foot by 4-inch-thick concrete pad and bollards at each corner. The well construction diagram for NW-1 is provided in Appendix A.



2.2.1.2 Brine Well

Soil borings DBS-6 through DBS-8 were advanced to approximately 20 ft below the water table and completed as 2-inch-diameter groundwater monitor wells (Figure 6). The wells were installed to delineate the cross-gradient extent of the chloride plume as follows:

- DBS-6: approximately 300 feet north of existing monitor well MW-4
- DBS-7: approximately 200 feet south of existing monitor well MW-4
- DBS-8: approximately 300 feet southwest of existing monitor well MW-4

The wells were constructed as described above in Section 2.2.1.1 for wells DBS-1 through DBS-5. The well construction diagrams for DBS-6 through DBS-8 are provided in Appendix A.

Nested well NW-2 was drilled to the red beds approximately 20 feet upgradient (northwest) of monitor well MW-4 (Figure 6). NW-2, like NW-1, was installed to determine if a chloride density gradient exists with depth in the saturated zone. The well was constructed in similar manner to NW-1 with three 2-inch-diameter monitor wells installed in one 10-inch-diameter soil boring with separate shallow (s), intermediate (m), and deep (d) screens. The well was completed aboveground with a protective steel well vault and a 3-foot by 3-foot by 4-inch-thick concrete pad and bollards at each corner. The well construction diagram for NW-2 is provided in Appendix A.

2.2.1.3 Playa Lake

Soil boring DBS-9 was advanced to approximately 20 ft below the water table and completed as 2-inch-diameter groundwater monitor well (Figure 6). The well was installed to determine if groundwater beneath the playa was impacted from releases which occurred in the past. The well was constructed as described above in Section 2.2.1.1. The well construction diagram for DBS-9 is provided in Appendix A.

After completion, each of the newly installed monitor wells was developed by pumping until temperature, pH, and conductivity stabilized and turbidity was reduced to the extent practicable (Appendix C).

2.2.2 Survey

After drilling and installation of the monitor wells was completed, a survey was completed. Each of the newly installed monitor wells, as well as the existing monitor wells, was surveyed by



Pettigrew & Associates of Hobbs, New Mexico, a licensed New Mexico land surveyor. The top of casing elevations of each of the wells was surveyed to a North American Vertical Datum, 1988 (NAVD88), and the x-y coordinates of each well was surveyed to a North American Datum, 1983 (NAD83) in a state plane coordinate system. Survey results are provided in Appendix D.

2.2.3 Groundwater Sampling

Groundwater samples were collected from each of the newly installed monitor wells and the existing monitor wells for laboratory analysis. Before sampling, fluid levels in each well were gauged using a decontaminated electronic water level meter. After gauging, each well was purged of a minimum of three casing volumes using a pump. Field parameters of pH, specific conductivity, and temperature were monitored during purging to ensure that stagnant water was removed from the well (Appendix C). Groundwater samples were then collected from each well and transferred into laboratory-prepared sample containers. Immediately after the samples were collected, they were placed in an ice-filled cooler and remained on ice until they were delivered to the laboratory for analysis. Chain-of-custody documentation accompanied the samples at all times.

3. Analytical Program

The analytical program included analysis of soil and groundwater media. Samples were submitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for analysis. Copies of the soil and groundwater laboratory analytical reports are included in Appendix B.

3.1 Soil Analysis

Soil samples were analyzed for chloride using U.S. Environmental Protection Agency (EPA) method 300.0. A total of 89 soil samples were submitted for laboratory analysis from the eleven soil borings installed during the field investigation. In addition, the samples collected from boring DBS-9 were also analyzed for total petroleum hydrocarbons (TPH) in accordance with EPA method 418.1.

3.2 Groundwater Analysis

Groundwater samples were analyzed for chloride using EPA method 300.0. In addition, samples collected from boring DBS-9 only were analyzed for TPH (gasoline range organics [GRO], diesel range organics [DRO], and motor oil range organics [MRO]) in accordance with EPA method 8015B. A total of 21 groundwater samples were submitted for laboratory analysis. Nine samples from newly installed monitor wells DBS-1 through DBS-9, six from the two newly installed nested wells (NW-1 [s], NW-1 [m], NM-1 [d], NW-2 [s], NW-2 [m], NW-2 [d]), and six from the existing wells (PMW-1, MW-2, MW-3, MW-4, MW-5, and MW-6).



4. Results

4.1 Soil

A summary of chloride concentrations with depth in the soil borings installed during the field investigation is provided in Table 1. TPH results for boring DBS-9 are provided in Table 2. The soil analytical results are also shown graphically on Figures 3 and 4.

4.1.1 Brine Pond

Of the six borings installed at the brine pond, only three borings contained concentrations of chloride in excess of the OCD standard of 500 mg/kg. In boring DBS-1, located approximately 200 ft southeast of the former brine pond, samples collected from the 10-12 ft bgs and 30-32 ft bgs intervals yielded chloride concentrations of 3,600 and 1,400 mg/kg, respectively. Below 32 ft bgs, chloride concentrations decreased from 380 to 18 mg/kg (Table 1, Figure 3).

In boring DBS-2, located approximately 200 feet east of the former brine loading/unloading area, samples collected from the 0-2 ft bgs and 10-12 ft bgs intervals yielded chloride concentrations of 2,000 and 940 mg/kg, respectively. Below 12 ft bgs, chloride concentrations decreased from 42 to 5.8 mg/kg (Table 1, Figure 3).

Soil boring NW-1, located approximately 70 ft southeast of the former brine pond, showed chloride concentrations exceeding the OCD standard of 500 mg/kg in all of the samples collected from the boring. Measured chloride concentrations ranged from 800 to 3,600 mg/kg (Table 1, Figure 3). No notable decrease in chloride concentration occurred with depth.

4.1.2 Brine Well

No chloride concentrations in the soil samples collected from borings DBS-6, DBS-7, DBS-8, and NW-2, installed downgradient of the brine well, exceeded the OCD standard of 500 mg/kg (Table 1, Figure 4). Measured chloride concentrations ranged from 1.8 to 240 mg/kg.

4.1.3 Playa Lake

Soil samples collected from boring DBS-9 showed elevated chloride concentrations in three samples. In samples collected from the 10-12 ft bgs, 20-22 ft bgs, and 40-42 ft bgs intervals, measured chloride concentrations were 4,100, 560, and 550 mg/kg, respectively (Table 1, Figure 4). Below 42 ft bgs, chloride concentrations decreased from 160 to 9.7 mg/kg.

Soil samples from boring DBS-9 were also analyzed for TPH. In samples collected from the 10-12 ft bgs, 20-22 ft bgs, 30-32 ft bgs, 40-42 ft bgs, and 50-52 ft bgs intervals, measured TPH concentrations were 36, 220, 64, 40, and 82 mg/kg, respectively (Table 2). Below 52 ft bgs, TPH concentrations were below the laboratory reporting limit.

4.2 Groundwater

Table 3 provides water level measurements and corresponding groundwater elevations for each of the newly installed and existing monitor wells. These data were used to generate the potentiometric surface maps for the brine pond and brine well/playa lake areas shown on Figures 7 and 8. The groundwater data were combined for the two areas above and a Site potentiometric surface map was generated (Figure 9). The direction of groundwater flow beneath the Site is to the southeast; the average hydraulic gradient beneath the Site is relatively flat at 0.004 foot per foot.

Groundwater analytical results for chloride are provided in Tables 4 and 5 and shown graphically on Figures 5 and 6. Of the 21 groundwater samples submitted for chloride analysis, 12 samples exceeded the NMWQCC Standard of 250 mg/L for chloride. The samples exceeding the standard were: DBS-1 (320 mg/L), DBS-6 (380 mg/L), DBS-7 (570 mg/L), NW-1(s) (630 mg/L), NW-2(s) (410 mg/L), NW-2(m) (570 mg/L), NW-2(d) (4,700 mg/L), PMW-1 (11,000 mg/L), MW-2 (1,200 mg/L), MW-3 (17,000 mg/L), MW-4 (6,600 mg/L), and MW-5 (1,300 mg/L).

Groundwater samples submitted from DBS-9 for TPH GRO, DRO, and MRO analysis were all below the laboratory reporting limits.

5. Summary and Conclusions

5.1 Site Conditions

5.1.1 Soil

Chloride concentrations in soil were generally below the OCD standard of 500 mg/kg. Three exceptions were noted at the brine pond in borings DBS-1, DBS-2, and NW-1. All three of these borings contained chloride concentrations in excess of 500 mg/kg in two or more samples. The chloride concentrations exceeding 500 mg/kg in borings DBS-1 and DBS-2 were limited to the upper 32 ft in DBS-1 and the upper 12 ft in DBS-2. The chloride concentrations in NW-1, however, exceeded 500 mg/kg in all of the soil samples submitted from the boring.

TPH results from soil samples submitted from boring DBS-9 showed concentrations ranging from 36 to 220 mg/kg from 10 ft bgs to 52 ft bgs. Below 52 ft bgs, TPH concentrations were below the laboratory reporting limit. The sample collected from the 20-22 ft bgs interval exceeded the New Mexico Environment Petroleum Storage Tank Bureau action level of 100 mg/kg.

5.1.2 Groundwater

The chloride groundwater plume was delineated during the field investigation at the brine pond and brine well areas. At the brine pond, the highest chloride concentration in groundwater was encountered in monitor well PMW-1 11,000 mg/L, just downgradient of the former brine pond and brine loading/unloading area. Downgradient of PMW-1, the chloride concentration decreases two orders of magnitude in NW-1(s) (630 mg/L) and decreases by half again in DBS-1 (320 mg/L). The downgradient extent of the plume is bounded by monitor well DBS-4 (38 mg/L) and the cross-gradient extent is bounded by monitor wells DBS-2 (14 mg/L) and DBS-3 (36 mg/L). The upgradient monitor well contained a chloride concentration of 65 mg/L.

At the brine well location, the highest chloride concentration (17,000 mg/L) in groundwater was encountered in monitor well MW-3 (17,000 mg/L), located approximately 550 ft downgradient of the brine well. Downgradient of MW-4, the chloride concentration decreases one order of



magnitude in MW-4 (6,600 mg/L) and continues to decrease further downgradient in MW-5 (1,300 mg/L) and DBS-7 (570 mg/L). The downgradient extent of the plume was not delineated, as the farthest downgradient monitor wells, MW-5 and MW-7, contain chloride concentrations exceeding the NMWQCC standard of 250 mg/L. The cross-gradient extent of the plume was bounded to the south by monitor well DBS-8 (58 mg/L), while the cross-gradient extent of the plume was not defined to the north by DBS-6 (380 mg/L).

The groundwater sample collected from DBS-9 located in the playa was below the NMWQCC standard for chloride (210 mg/L), and below the laboratory reporting limits for TPH. GRO, DRO, and MRO.

5.2 Conclusions

Overall, the extent of the chloride groundwater plumes have been delineated at the brine pond, brine well, and playa. Although the chloride plume at the brine well has not been definitively defined by the field investigation, the chloride concentrations in the farthest downgradient and northernmost cross-gradient wells are low enough to suggest that the wells were installed in the outer fringe of the plume.

DBS&A recommends that recovery wells be installed at the brine pond and the brine well areas and that pump tests be performed on the wells so that a remedial approach for the Site can be developed.



References

DBS&A. 2008. Comprehensive Site Plan, Salty Dog Brine Station, Lea County, New Mexico. Prepared for the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division, Environmental Bureau, Santa Fe, New Mexico. September 5, 2008.

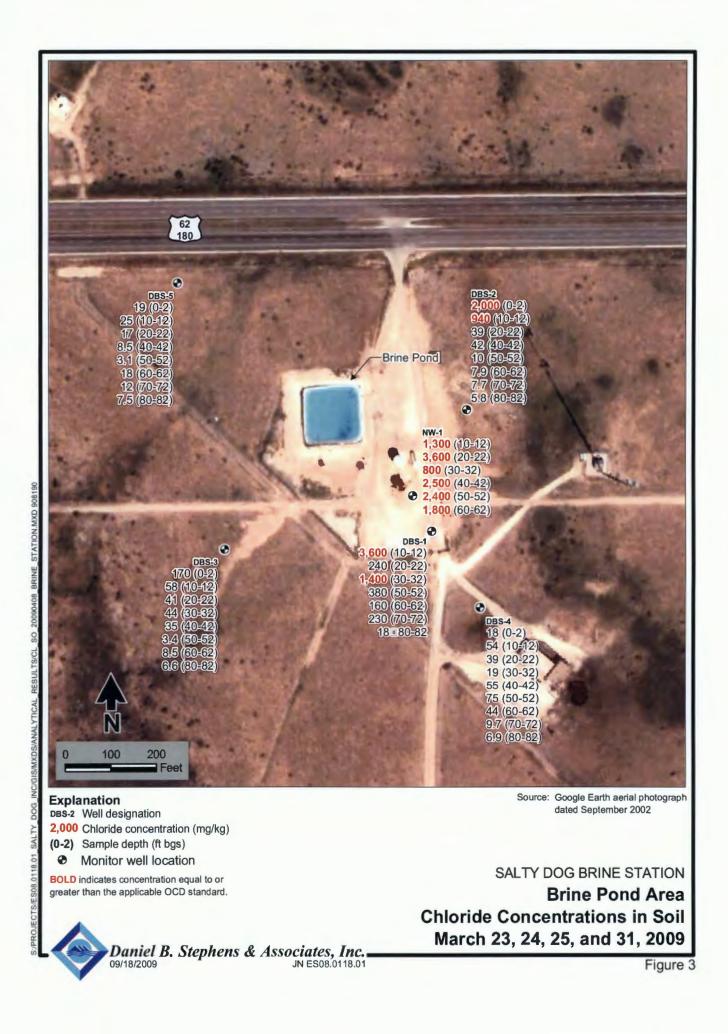
New Mexico Energy, Minerals and Natural Resources Department. 2008. Notification of Compliance/Enforcement Action-Administrative Compliance Order, ACO 2008-02. Directed to Pieter Bergstein d/b/a Salty Dog, Inc. (OGRID 184208). May 20, 2008.

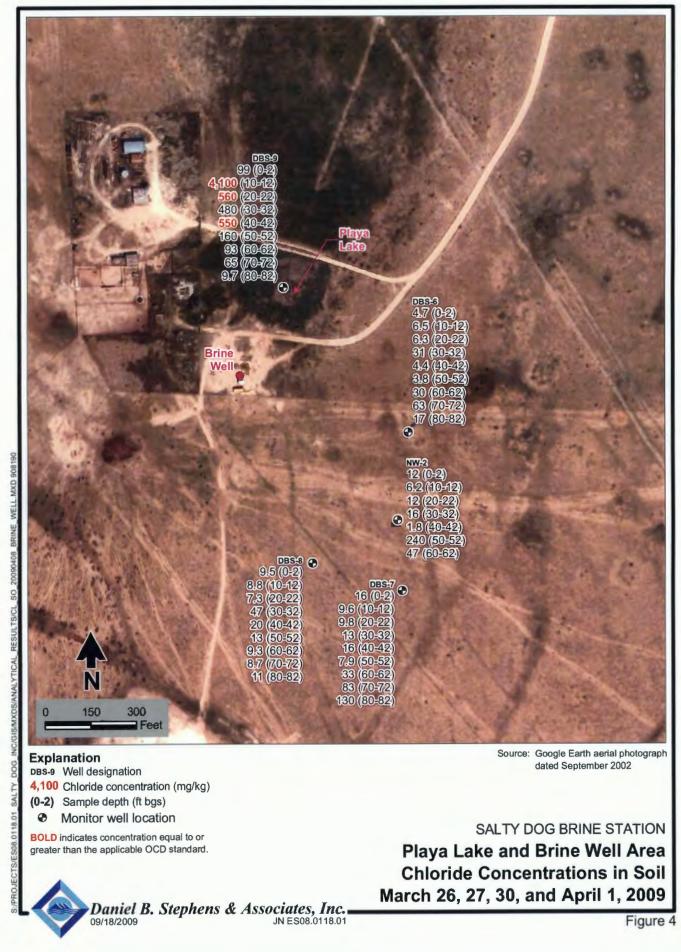
State of New Mexico New Oil Conservation Division, Constituent Agency of the Water Quality Control Commission In the Matter of Pieter Bergstein d/b/a "Salty Dog, Inc., (OGRID 184208). 2008. Settlement Agreement and Stipulated Revised Final Order NM-OCD 2008-2A. August 6, 2008.

Figures



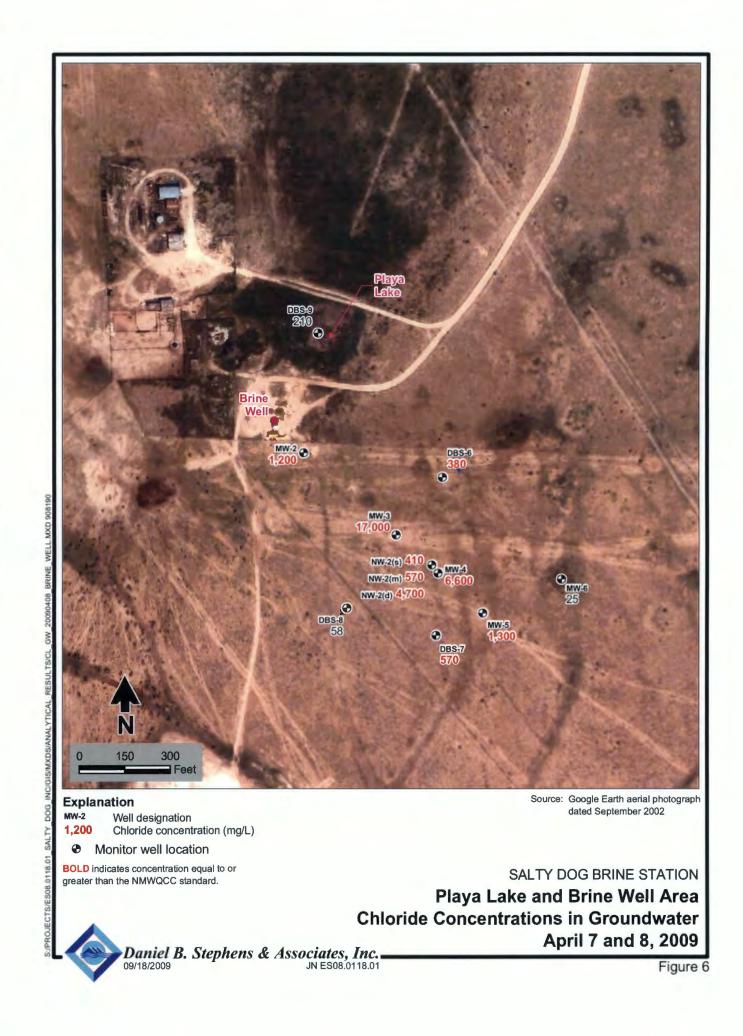






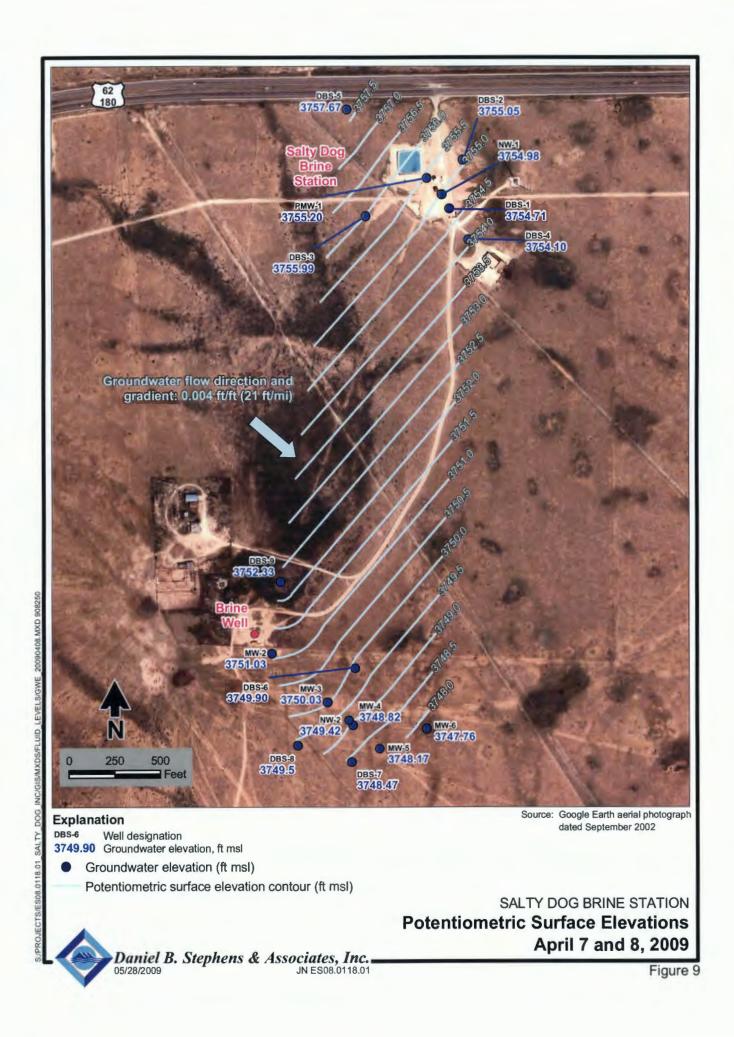


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Tables



Table 1. Summary of Chloride Soil Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 1 of 3

		Depth Interval	Chloride
Monitor Well	Sample Date	(ft bgs)	Concentration (mg/kg) ^a
Oil Conservatio	tandard ^b	500	
DBS-1	03/25/09	10-12	3600
		20-22	240
		30-32	1400
		50-52	380
		60-62	160
		70-72	230
		80-82	18
DBS-2	03/24/09	0-2	2000
		10-12	940
		20-22	39
		40-42	42
		50-52	10
		60-62	7.9
		70-72	7.7
		80-82	5.8
DBS-3	03/24/09	0-2	170
		10-12	58
		20-22	41
		30-32	44
		40-42	35
		50-52	3.4
		60-62	8.5
		80-82	6.6
DBS-4	03/25/09	0-2	18
		10-12	54
		20-22	39
		30-32	19
		40-42	55
		50-52	75
		60-62	44
		70-72	9.7
		80-82	6.9
DBS-5	03/23/09	0-2	19
		10-12	25

Bold indicates concentrations that exceed the applicable standard.

^aAll samples analyzed in accordance with EPA method 300.0, unless otherwise noted.

^b OCD standard for a site with groundwater less than 100 feet below ground surface.

ft bgs = Feet below ground surface

mg/kg = Milligrams per kilogram

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Table 1. Summary of Chloride Soil Analytical Data Salty Dog Brine Station, Lea County, New Mexico Page 2 of 3

		Depth Interval	Chloride
Monitor Well	Sample Date	(ft bgs)	Concentration (mg/kg) ^a
Oil Conservatio	tandard ^b	500	
DBS-5 (cont.)	03/23/09	20-22	17
		40-42	8.5
		50-52	3.1
		60-62	18
		70-72	12
		80-82	7.5
DBS-6	03/26/09	0-2	4.7
		10-12	6.5
		20-22	6.3
		30-32	31
		40-42	4.4
		50-52	3.8
		60-62	30
		70-72	63
		80-82	17
DBS-7	03/26/09	0-2	16
		10-12	9.6
		20-22	9.8
		30-32	13
		40-42	16
		50-52	7.9
		60-62	33
		70-72	83
		80-82	130
DBS-8	03/26/09	0-2	9.5
		10-12	8.8
		20-22	7.3
		30-32	47
		40-42	20
		50-52	13
		60-62	9.3
		70-72	8.7
		80-82	11
DBS-9	03/30/09	0-2	99

Bold indicates concentrations that exceed the applicable standard.

^aAll samples analyzed in accordance with EPA method 300.0, unless otherwise noted.

^b OCD standard for a site with groundwater less than 100 feet below ground surface.

ft bgs = Feet below ground surface

mg/kg = Milligrams per kilogram



Table 1. Summary of Chloride Soil Analytical Data Salty Dog Brine Station, Lea County, New Mexico Page 3 of 3

			<u> </u>
		Depth Interval	
Monitor Well	Sample Date	(ft bgs)	Concentration (mg/kg) ^a
Oil Conservatio	500		
DBS-9 (cont.)	03/30/09	10-12	4100
		20-22	560
		30-32	480
		40-42	550
		50-52	160
		60-62	93
		70-72	65
		80-82	9.7
DBS NW-1	03/31/09	10-12	1300
		20-22	3600
		30-32	800
		40-42	2500
		50-52	2400
		60-62	1800
DBS NW-2	04/01/09	0-2	12
		10-12	6.2
		20-22	12
		30-32	16
		40-42	1.8
		50-52	240
		60-62	47

Bold indicates concentrations that exceed the applicable standard.

^aAll samples analyzed in accordance with EPA method 300.0, unless otherwise noted.

^bOCD standard for a site with groundwater less than 100 feet below ground surface.

ft bgs = Feet below ground surface

mg/kg = Milligrams per kilogram



Table 2. Summary of DBS-9 Total Petroleum Hydrocarbons Soil Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 1 of 1

		Depth Interval	TPH
Monitor Well	Sample Date	(ft bgs)	Concentration (mg/kg) ^a
NMED F	STB Action Lev	el	100
DBS-9	03/30/09	0-2	<6.0
		10-12	36
		20-22	220
		30-32	64
		40-42	40
		50-52	82
		60-62	<20
		70-72	<20
		80-82	<20

Bold indicates concentrations that exceed the NMED PSTB action level.

^aAll samples analyzed in accordance with EPA method 418.1

NMED PSTB = New Mexico Environment Department Petroleum Storage Tank Bureau

TPH = Total petroleum hydrocarbons

ft bgs = Feet below ground surface

mg/kg = Milligrams per kilogram



Monitor Well	Screen Interval (ft bgs)	Top of Casing Elevation ^a (ft msl)	Date Measured	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
DBS-1	56.0-76.0	3817.09	04/08/09	62.38	3754.71
DBS-2	58.0-78.0	3820.50	04/08/09	65.45	3755.05
DBS-3	56.0-76.72	3816.66	04/08/09	60.67	3755.99
DBS-4	56.0-76.0	3820.37	04/08/09	66.27	3754.10
DBS-5	56.9-76.9	3820.37	04/08/09	62.99	3757.67
DBS-6	56.7-76.7	3812.65	04/07/09	62.75	3749.90
DBS-7	55.1-75.1	3810.21	04/07/09	61.74	3748.47
DBS-8	55.2-75.2	3810.70	04/07/09	61.20	3749.50
DBS-9	48.0-68.0	3806.26	04/08/09	53.93	3752.33
NW-1(s)	52.95-72.95	3817.33	04/08/09	62.35	3754.98
NW-1 (m)	99.31-119.31	3817.35	04/08/09	62.25	3755.10
NW-1 (d)	149.45-169.45	3817.35	04/08/09	62.04	3755.31
NW-2 (s)	53.35-73.35	3812.50	04/08/09	63.08	3749.42
NW-2 (m)	93.72-113.72	3812.45	04/08/09	63.27	3749.18
NW-2 (d)	126.87-146.87	3812.46	04/08/09	66.41	3746.05
PMW-1	63-78	3821.17	06/23/08	67.51	3753.66
			04/08/09	65.97	3755.20
MW-1	120-140	NA	06/23/08	59.90	NA
MW-2	127-147	3812.68	06/23/08	61.42	3751.26
			04/07/09	61.65	3751.03
MW-3	NA	3812.50	06/23/08	62.06	3750.44
			04/07/09	62.02	3750.03
MW-4	111-131	3811.33	06/23/08	62.12	3749.21
			04/07/09	62.51	3748.82
MW-5	112-132	3808.96	06/23/08	60.60	3748.36
			04/07/09	60.79	3748.17
MW-6	NA	3810.17	06/23/08	62.17	3748.00
			04/07/09	62.41	3747.76

Table 3. Summary of Historical Fluid Level Measurements Salty Dog Brine Station, Lea County, New Mexico Page 1 of 1

^a Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.

ft bgs = Feet below ground surface ft msl

= Feet above mean sea level

ft btoc = Feet below top of casing NA

= Not available

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Table 4. Summary of Chloride Groundwater Analytical DataSalty Dog Brine Station, Lea County, New MexicoPage 1 of 2

Monitor Well	Date	Chloride Concentration (mg/L) ^ª
New Mexico Water Quality Con	trol Commission Standard	250
DBS-1	04/08/09	320
DBS-2	04/08/09	14
DBS-3	04/08/09	36
DBS-4	04/08/09	38
DBS-5	04/08/09	65
DBS-6	04/07/09	380
DBS-7	04/07/08	570
DBS-8	04/07/09	58
DBS-9	04/08/09	210
NW-1 (s)	04/08/09	630
NW-1 (m)	04/08/09	57
NW-1 (d)	04/08/09	38
NW-2 (s)	04/08/09	410
NW-2 (m)	04/08/09	570
NW-2 (d)	04/08/09	4,700
Brine Pit Well (PMW-1)	02/27/08	9,500 ^b
	05/30/08	8,600 ^b
	06/23/08	12,700
	04/08/09	11,000
MW-1	05/30/08	75 ^b
	06/23/08	243
MW-2	02/27/08	120 ^b
	05/30/08	80 ^b
	06/23/08	1,480
	04/07/09	1,200
MW-3	02/27/08	348 ^b
	05/30/08	360 ^b
	06/23/08	1,090
	04/07/09	17,000
MW-4	02/27/08	476 ^b
	05/30/08	512 ^b
	06/23/08	5,730

Bold indicates concentrations that exceed the applicable standard.

^aAll samples analyzed in accordance to EPA method 300.0, unless otherwise noted.

^b Samples analyzed in accordance to Standard Method 4500-CI B.

mg/L = Milligrams per liter



Table 4. Summary of Chloride Groundwater Analytical Data Salty Dog Brine Station, Lea County, New Mexico Page 2 of 2

Monitor Well	Date	Chloride Concentration (mg/L) ^a
New Mexico Water Quality Control (Commission Standard	250
MW-4 (cont.)	04/07/09	6,600
MW-5	02/27/08	1,280 ^b
	05/30/08	1,220 ^b
	06/23/08	1,260
	04/07/09	1,300
MW-6	02/27/08	32 ^b
	05/30/08	36 ^b
	06/23/08	31.4
	04/07/09	25
Ranch Headquarters Water Supply Well	06/23/08	35.4
Brine Station Fresh Water Supply Well	02/27/08	630 ^b
	05/30/08	590 ^b
	06/23/08	650

Bold indicates concentrations that exceed the applicable standard.

^aAll samples analyzed in accordance with EPA method 300.0, unless otherwise noted.

^b Samples analyzed in accordance with Standard Method 4500-Cl B.

mg/L = Milligrams per liter



Table 5. Summary of DBS-9 Total Petroleum Hydrocarbons
Groundwater Analytical Data
Salty Dog Brine Station, Lea County, New Mexico
Page 1 of 1

ТРН	Sample Date	Concentration (mg/L) ^a
	Standard	None
DRO	04/08/09	<1.0
MRO	04/08/09	<5.0
GRO	04/08/09	<0.05

^aAll samples analyzed in accordance with EPA method 8015B.

TPH = Total petroleum hydrocarbon

mg/L = Milligrams per liter

= Diesel Range Organics

= Motor Oil Range Organics

n GRO = Gasoline Range Organics

DRO

MRO

NMWQCC = New Mexico Water Quality Control Commission

Appendices

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Appendix A

Soil Boring Logs and Well Completion Diagrams

1			Geological Servic				BOREH	
			II, NM 88202-230	4		OTAL D		
	nviro@dfn. 522-2012 Fa		625-0538				LI III. 70.	50
	PROJEC					DRILLIN	IG INFORMA	ΠΟΝ
ROJE	CT:	ESC	08.0118.01.00004	DRIL	LING C	:0	Peterson	n Drilling Co.
TELC	DCATION:	Lea	a Co., NM	DRIL	LER:		Charles	Johnson
BNC	D.:	Salt	y Dog	RIG	YPE:		Ingersol	l-Rand TH-60
GGE	D BY:	CM	f Barnhill, PG	METI	HOD C	F DRILL	ING: Air Rota	гу б 1/4"
ROJE	CT MANAGE	R: Mil	ke McVey, PG	SAM	PLING	METHO	DS: Split Spo	on
TES	DRILLED:	03/2	25/09	HAM	MER W	VT./DRO	P N/A	
DTES	: Split Spool	n Pushed	by TH-60 Drilling Rig.				uring drilling 1 completed well	Page 1 of 1
PTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Rec. ' feet.	PPM TPH	BORING COMPLETION	WELL DESCRIPTION
		GM	GM: Hard Packed Caliche Pad Area of SW Disposal Plant. No Sample. SW: Tan 5 YR 8/3 Fine	0'-2'	N/A 0.3			Cement Bentonite 53.0 - 5'BG Surface
5 0 1		នឃ	Grained Sand, well sorted, minor caliche	20'-22'	0.5			
0		SS SW	SANDSTONE: Hard SW: Tan brown,7.5YR 8/3 medium to fine grained, wellsorted, sugarsand.No Odor or staining.	30'-32'	0.3			Bentonite
0		នន	SANDSTONE: Hard cemented tan brown SS.	40'-42'	N/A			
5		នឃ	SW: Tan brown, 2.5YR 8/3 to 7 YR 5/4, medium to fine grained, well sorted, sugar sand. No Odor or staining. Capillary Fringe 60'-62'	50'-52'	0.5			
0 1 1 1 1 5		SW	BGS.Measured Water at 62.38' from TOC	60'-62'	1.0			8 /16 Sand 78.50' - 53.0' Screen 0.02 Slot 76'-56'
0		SW		70'-72'	2.0			2' foot. Sump @ 76'-78'
5-		នឃ		80'-82'	2.0			T.D. 78.50', drilled to 83'

			Geological Servic				BOREH	
			II, NM 88202-230	4			EPTH: 79.	
	nviro@dfn.c 522-2012 Fa:		625-0538					50
	PROJECT						IG INFORMAT	ΓΙΟΝ
ROJE			08.0118.01.00004	DRI	LING C			Drilling Co.
SITE LOCATION: Lea Co., NM				DRI	LER:		Charles	Johnson
DB NO	D.:	Salt	y Dog	RIG	TYPE:		Ingersol	l-Rand TH-60
OGGE	ED BY:	CM	I Barnhill, PG	MET	HODO	F DRILL	ING: Air Rota	гу б 1/4"
ROJE	CT MANAGE	R: Mil	ke McVey, PG	SAM	IPLING I	METHO	DS: Split Spo	on
ATES	DRILLED:	03/2	24/09	HAM	IMER W	T./DRO	P N/A	
OTES	Split Spoor	n Pushed	by TH-60 Drilling Rig.				uring drilling n completed well	Page 1 of 1
EPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Rec. / feet.	PPM TPH	BORING COMPLETION	WELL DESCRIPTION
5 10 115		GM	GM: Brown Silt, Sand,Calichemixture.Hard Caprock SW: Tan 5 YR 8/3 Fine Grained Sand, well sorted, minor caliche	0'-2'	0.3 0.2			Cement Bentonite 52.8 - 5'BG Surface
5 0 5		SU SS SS	SANDSTONE: Hard cemented tan brown SS. Fn.to med.gr.,well sorted. SYR 8/4	20'-22' 30'-32'	0.3 N/A			Bentonite
0 5		នា នន នា	SW: Tan brown,7.5YR 6/3 SANDSTONE: Hard	40'-42'	Grab			
5 0		SV	SW: Tan brown, 7.5 YR 6/3, medium to fine grained, well sorted, sugar sand. No Odor or staining. Capillary Fringe 60'-62'	50'-52'	0.5			8 /16 Sand 79.80' - 52.8'
		នឃ	BGS.Measured Water at 65.45' from TOC	60'-62'	2.0			Screen 0.02 Slot 78'-58'
5		នឃ		70'-72'	2.0			2' foot. Sump @ 78'-80' T.D. 79.80',
		ລພ		80'-82'	2.0			drilled to 83'

			Geological Servic II, NM 88202-230		E	BOREHO	DLE NO.: D	
the state of the local division of the local	nviro@dfn.				T	TOTAL D	EPTH: 78	3.90'
103) (622-2012 Fa			1			IG INFORM	
ROJE			08.0118.01.00004	DRI	LING			on Drilling Co.
DITE LOCATION: Lea Co., NM					LER:			s Johnson
BNO			y Dog		TYPE:		Ingers	oll-Rand TH-60
GGE	ED BY:	CM	I Barnhill, PG	MET	HOD	OF DRILL	ING: Air Ro	
ROJE	CT MANAGE	R: Mil	ke McVey, PG	SAN	PLING	METHO	DS: Split S	poon
TES	DRILLED:	03/2	23/09	HAN	MER V	VT/DRC	P N/A	
DTES	Split Spool	n Pushed	by TH-60 Drilling Rig.				luring drilling n completed we	Page 1 of 1
PTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Rec. / feet.	PPM TPH		WELL DESCRIPTION
		GM SW SS	GM: Tan White Caliche mixed with brown silt. Caprock material. @ 6' Sand 7.5YR 8/2 SW: Tan 5 YR 8/3 Fine Grained Sand, well sorted, minor caliche SANDSTONE: Hard cemented tan brown SS. Fn.to med.gr., well sorted. 5YR 8/4	0'-2' 10'-12' 20'-22' 30'-32'	0.4 0.5 0.3 N/A			Cement Bentonite 53.0 - 5' BG Surface Bentonite
5 0 5		នឃ នឃ នឃ	SW: Tan brown, 2.5YR 8/3 to 7 YR 5/4, medium to fine grained, well sorted, sugar sand. No Odor or staining. Capillary Fringe 60'-62' BGS.Measured Water at 62.99' from TOC	40'-42' 50'-52'	0.4			8 /16 Sand
		នឃ		60'-62' 70'-72'	0.5			78.90' - 53.0' Screen 0.02 Slot 76.9'- 56.9' 2' foot. Sump 0 76.9'-78'.9
5		SV		80'-82'	2.0			T.D. 78.90', drilled to 83'

PROJECT PROJECT F: ATION: BY: MANAGER RILLED:	CIM CIM CIM CIM CIM CIM CIM		DRII DRII RIG MET SAM	LUNG C LER: TYPE: HOD O PLING I MER W	OTAL DE DRILLIN CO.:	G INFORMAT Peterson Charles J Ingersoli ING: Air Rotan	72' ION Drilling Co. Johnson I-Rand TH-60 ry 6 1/4''
2-2012 Fax PROJECT F: ATION: BY: MANAGEF RILLED: Split Spoon	(505) INFOR ESC Lea Salt CM R: Mil 03/2	RMATION 08.0118.01.00004 a Co., NM y Dog f Bamhill, PG ke McVey, PG 24/09	DRII RIG MET SAM	LLING C LER: TYPE: HOD O PLING I MER W	DRILLIN CO.: DF DRILLI METHOD	G INFORMAT Peterson Charles J Ingersoll ING: Air Rotan	10N a Drilling Co. Johnson I-Rand TH-60 ry 6 1/4''
PROJECT F: ATION: BY: MANAGEF RILLED: Split Spoon SOIL	INFOR ESC Lea Salt CM R: Mil 03/2	RMATION 08.0118.01.00004 a Co., NM y Dog f Bamhill, PG ke McVey, PG 24/09	DRII RIG MET SAM	LING C LER: TYPE: HOD O PLING I	DF DRILLI METHOE	Peterson Charles J Ingersoll ING: Air Rotar	n Drilling Co. Johnson I-Rand TH-60 ry 6 1/4''
T: ATION: BY: MANAGEF RILLED: Split Spoon	ESC Lea Salt CM R: Mil 03/2	08.0118.01.00004 a Co., NM y Dog I Barnhill, PG ke McVey, PG 24/09	DRII RIG MET SAM	LING C LER: TYPE: HOD O PLING I	DF DRILLI METHOE	Peterson Charles J Ingersoll ING: Air Rotar	n Drilling Co. Johnson I-Rand TH-60 ry 6 1/4''
BY: MANAGER RILLED: Split Spoon	Lea Salt CM R: Mil 03/2	a Co., NM y Dog I Barnhill, PG ke McVey, PG 24/09	DRII RIG MET SAM	LER: TYPE: HOD O PLING MER W)F DRILLI METHOD	Charles J Ingersoll ING: Air Rotar	Johnson I-Rand TH-60 ry 6 1/4''
MANAGER RILLED: Split Spoon	Salt CM R: Mil 03/2	y Dog I Barnhill, PG ke McVey, PG 24/09	MET	HOD O IPLING I IMER W	METHOE	ING: Air Rota	гу б 1/4"
MANAGER RILLED: Split Spoon	R: Mil 03/2	ke McVey, PG 24/09	SAM	IPLING I	METHOE		
RILLED: Split Spoon SOIL	03/2	24/09		IMER W		OS: Split Spo	on
Split Spoon			HAM		T./DROF		
SOIL	Pushed	by TH-60 Drilling Rig.		1.0.1		P N/A	
						uring drilling completed well	Page 1 of 1
	USCS	SOIL DESCRIPTION	SAMP. #	Rec. / feet.	PPM TPH	BORING COMPLETION	WELL DESCRIPTION
	GM Su SS	GM: Brown Silt, 7.5YR 4/4,Sand,Caliche mixture. Hard Caprock SW: Tan 5 YR 8/3 Fine Grained Sand, well sorted, minor caliche SANDSTONE: Hard cemented tan brown SS. Fn.tomed.gr.,well sorted. SW: Tan Fine grained	0'-2' 10'-12' 20'-22'	0.3 0.3 0.4			Cement Bentonite 53.0 - 5' BG Surface
	5W 55	sand, well sorted, 7.5YR 8/2 SANDSTONE: Hard Sandstone Layer	30'-32'	0.6			Bentonite
		6/3, medium to fine grained, well sorted, sugar sand. No Odor or staining. Capillary Fringe 60'-62'					
	SV	BGS.Measured Water at 60.67' from TOC					8 /16 Sand 78.72' - 53.0'
	នា		60'-62'	2.0			Screen 0.02 Slot 76.72'-56'
	នម		70'-72'	N/A			2' foot. Sump @ 76.72'-78.72' T.D. 78.72',
		8 8 6 SW SW SS SW SW SW SW SW SW SW	B B B E SW SW Tan 5 YR 8/3 Fine Grained Sand, well sorted, minor caliche SW SS SANDSTONE: Hard cemented tan brown SS. Fn.to med. qr.,well sorted. SW Tan Fine grained sand, well sorted, 7.5YR 8/2 SS SANDSTONE: Hard cemented tan brown SS. Fn.to med. qr.,well sorted, 7.5YR 8/2 SS SANDSTONE: Hard cemented tan brown 7.5YR 8/2 SS SANDSTONE: Hard Sandstone Layer SW SS SW SS SW SW SW SS SW SS SW SS SW SW SW SW	B B	SW SW Tan 5 YR 8/3 Fine Grained Sand, well sorted, minor caliche 10'-12' 0.3 SW SW SW SW SW 20'-22' 0.4 SS SANDSTONE: Hard cemented tan brown SS. Fn. tomed. gr., well sorted. 20'-22' 0.4 SW SS SANDSTONE: Hard cemented tan brown SS. Fn. tomed. gr., well sorted. 30'-32' 0.6 SW SW SW SW Tan Fine grained sand, well sorted, 7.5YR 30'-32' 0.6 SS SANDSTONE: Hard Sandstone Layer SW SW SW 10'-42' 0.6 SW SW SW SW. Tan brown, 7.5 YR 6/3, medium to fine grained, well sorted, sugar sand. No Odor or staining. Capillary Fringe 60'-62' 50'-52' 1.0. SW SW SW BGS.Measured Water at 60.67' from TOC 60'-62' 2.0 SW SW SW 60'-62' 2.0 70'-72' N/A	Image:	B B

O Bo		oswel	Geological Servic I, NM 88202-230		B	OREHO	LEN	REHC D: DBS : 80.1	
	22-2012 Fax		<u>625-0538</u>						
	PROJECT	INFOR	MATION			DRILLIN	IG INF	ORMAT	ION
ROJE	CT:	ESO	8.0118.01.00004	DRILL	ING C	:0.:	I	Peterson	Drilling Co.
ITE LO	DCATION:	Lea	Co., NM	DRILL	ER:		(Charles J	ohnson
DB NC	D.:	Salt	y Dog	RIG T	YPE:		1	ingersoll-	Rand TH-60
OGGE	D BY:	CM	[Barnhill, PG	METH		F DRILL	ING: 2	Air Rotar	y 6 1/4"
ROJE	CT MANAGE	R: Mil	ce McVey, PG	SAMP	LING	METHO	DS: 1	Split Spoo	m
ATES	DRILLED:	03/2	25/09	HAMN	IER W	/T./DRO	P	N/A	
DTES	: Split Spoor	n Pushed	by TH-60 Drilling Rig.	7		ter level d ter level ir	-	-	Page 1 of 1
EPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	ISAMD #	Rec. feet.	PPM TPH		RING	WELL DESCRIPTION
5 10 15 12 5 10 15 15 15 15 15 15 15 15 15 15 15 15 15		GM SW SS SW SW	GM: Brown Silt, 7.5YR 4/4,Sand,Caliche mixture. Hard Caprock SW: Tan 5 YR 8/3 Fine Grained Sand, well sorted, minor caliche SANDSTONE: Hard cemented tan brown SS. Fn. to med. gr.,well sorted. 5YR 8/4 SW: Tan brown, 7.5 YR 6/3, to 8/2 medium to fine grained, well sorted, sugar sand. No Odor or staining. Capillary Fringe 60'-62' BGS.Measured Water at	10'-12' 20'-22' 30'-32' 40'-42'	0.6 N/A N/A 0.6				Cement Bentonite 52.4" - 5' BG Surface Bentonite
55		SW SW	66.27' from TOC	60'-62'	1.0. 1.0 1.0				8 /16 Sand 80.15' - 52.4' Screen 0.02 Slot 76'-56' 2' foot. Sump @ 78'-80'
		SU		80'-82'	2.0				T.D. 80.15', drilled to 83'

			Geological Servic				LE NO .: DB	OLE LOG
			II, NM 88202-230	4			EPTH: 78. '	
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	PROJECT			1			IG INFORMAT	TION
ROJE			8.0118.01.00004	DRIL	LING C			Drilling Co.
	OCATION:		Co., NM		LER:		Charles	-
BNO			y Dog		TYPE:		Ingersol	l-Rand TH-60
	ED BY:	CIM	I Barnhill, PG	MET	HODO	FDRILL	ING: Air Rota	
ROJE	CT MANAGE		ke McVey, PG	SAM	PLING	METHO	DS: Split Spo	on
ATES	DRILLED:		26/09	HAM	MER W	T./DRO	P N/A	
DTES	} [.]				v Wa	ter level d	luring drilling	
	Split Spoor	n Pushed	by TH-60 Drilling Rig.				n completed well	Page 1 of 1
PTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Rec. / feet.	PPM TPH	BORING COMPLETION	WELL DESCRIPTION
		GM SW SS SS SW	GM: Tan White Caliche mixed with brown silt. Caprock material. @ 6' Sand 7.5YR 8/2 SW: Tan 7.5 YR 8/2 Fine Grained Sand, well sorted, SANDSTONE: Hard cemented tan brown SS. Fn. to med. gr., well sorted. 7.5YR 8/2 SW: Tan brown, 7.5YR 8/4 to 7 YR 5/4, medium to fine grained, well sorted, sugar sand. No Odor or staining. Capillary Fringe 62'-64'	0'-2' 10'-12' 20'-22' 30'-32' 40'-42'	0.3 0.5 Grab 1.0			Cement Bentonite 51.9 - 5' BG Surface Bentonite
5		SW SW	BGS.Measured Water at 62.75' from TOC	50'-52'	0.5			8 /16 Sand 78.70' - 51.9'
		SW		60'-62'	0.5			Screen 0.02 Slot 76.70'- 56.70'
5		SW		70'-72'	2.0			2' foot. Sump @ 76.7'-78'.7 T.D. 78.70', drilled to 83'

O Bo	x 2304 R	oswel	Geological Servic I, NM 88202-230		B	OREHO	LE NO.: DB	
	nviro@dfn.d 22-2012 Fax		525-0538				L.I III. //+.	
	PROJECT					DRILLIN	IG INFORMAT	ΠΟΝ
ROJE			8.0118.01.00004	DRIL	LING C	O.:	Peterson	n Drilling Co.
TELC	DCATION:	Lea	Co., NM	DRIL	LER:		Charles	Johnson
DB NO).:	Salty	Dog	RIG	TYPE:		Ingersol	l-Rand TH-60
DGGE	D BY:	CM	Barnhill, PG	MET	HOD O	F DRILL	ING: Air Rota	гу б 1/4"
ROJE	CT MANAGEI	R: Mil	ce McVey, PG	SAM	PLING	METHO	DS: Split Spo	on
ATES	DRILLED:	03/2	.6/09	HAM	MERW	/T./DRO	P N/A	
DTES	: Split Spoor	n Pushed	by TH-60 Drilling Rig.				uring drilling a completed well	Page 1 of 1
EPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Rec. / feet.	PPM TPH	BORING COMPLETION	WELL DESCRIPTION
5 10 15 10		GM SW	GM: Brown Silt, 5YR 5/6, Sand,Calichemixture.Hard Caprock SW: Tan 5 YR 8/3 Fine Grained Sand,well sorted, minor caliche	0'-2' 10'-12' 20'-22'	0.3			Cement Bentonite 52.0' - 5' BG Surface
15-111		SS SW	SANDSTONE: Hard SW: Tan brown, 5YR 6/6 to 7.5 YR 8/3, medium to fine grained, well sorted, sugar sand. No Odor or	30'-32' 40'-42'	1.0 Grab 1.0			Bentonite
15 50 55		ទធ	staining. Capillary Fringe 60'-62' BGS.Measured Water at 61.74' from TOC	50'-52'	1.0.			8 /16 Sand
55		SW		60'-62'	2.0			77.10' - 52.0' Screen 0.02 Slot 75.10'- 55.10'
10				70'-72'	2.0			2' foot. Sump @ 75.10'-77.10'
15 -		SU		80'-82'	2.0			T.D. 77.10', drilled to 83'

			Geological Servic I, NM 88202-230		B	OREHO	BOREHO	
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103/0	PROJECT					DRILLIN	IG INFORMAT	10N
ROJE			8.0118.01.00004	DRILI	ING C	0.:	Peterson	Drilling Co.
	DCATION:		Co., NM	DRILI	ER:		Charles .	Johnson
BNC).:		Dog	RIG T	YPE:		Ingersoll	-Rand TH-60
DGGE	D BY:	CM	Barnhill, PG	METH		F DRILL	ING: Air Rota	гу б 1/4''
ROJE	CT MANAGE	R: Mil	ce McVey, PG	SAMF	LING I	METHO	DS: Split Spo	on
ATES	DRILLED:	03/2	6/09	HAMN	IER W	/T./DRO	P N/A	
OTES	Split Spoor	n Pushed	by TH-60 Drilling Rig.				uring drilling 1 completed well	Page 1 of 1
PTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Rec. / feet.	PPM TPH	BORING COMPLETION	WELL DESCRIPTION
5 10 15		GM GM	GM: Brown Silt, 5YR 5/3 to 8/2, Sand,Caliche mixture. Hard Caprock	0'-2' 10'-12'	0.3 0.5			Cement Bentonite 52.5 - 5'BG Surface
5 5 5		55 5W 5W	SANDSTONE: Hard cemented tan brown SS. Fn.tomed.gr.,wellsorted. <u>7 SYR 8/2</u> SW: Tan brown, SYR 6/6 to 7.5 YR 7/3 - 8/3, medium to fine grained, wellsorted, sugarsand.No Odor or staining. Capillary	20'-22' 30'-32'	Grab 1.0			Bentonite
10		នម	Fringe 60'-62' BGS.Measured Water at 61.20' from TOC	40'-42'	1.0			•
50		SW		50'-52'	2.0			8 /16 Sand
55		នធ		60'-62'	2.0			77.20' - 52.5' Screen 0.02 Slot 75.20'- 55.20'
70				70'-72'	2.0			2' foot. Sump @ 75.20'-77.20'
27		SV		80'-82'	2.0			T.D. 77.20', drilled to 83'

			Geological Servic				LE NO.: DB	OLE LOG S-9
	nviro@dfn.o		I, NM 88202-230	-		OTAL D		
	22-2012 Fa		625-0538					
	PROJECT	INFOR	MATION			DRILLIN	IG INFORMAT	TION
OJE	CT:	ESC	08.0118.01.00004	DRIL	LING C	:0.:	Petersor	Drilling Co.
ELC	DCATION:	Lea	Co., NM	DRIL	LER:		Charles	Johnson
BINC	D.:	Salt	y Dog	RIG	TYPE:		Ingersol	l-Rand TH-60
GGE	D BY:	CM	I Barnhill, PG	MET	HOD C	FDRILL	ING: Air Rota	ry 6 1/4"
OJE	CT MANAGE	R: Mil	ke McVey, PG	SAM	PLING	METHO	DS: Split Spo	on
TES	DRILLED:	03/3	30/09	HAM	MER W	/T./DRC	P N/A	
TES	Split Spoor	n Pushed	by TH-60 Drilling Rig.				luring drilling n completed well	Page 1 of 1
этн	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Rec. / feet.	PPM TPH	BORING COMPLETION	WELL DESCRIPTION
لىبىل		SM	SM: Gray Black - Brown Silty Sand, clay , silt	0'-2'	0.3			Cement
		SW	SW: Tan brown,7.5YR 6/4 medium to fine grained, wellsorted, sugarsand.No Odor or staining. SANDSTONE: Hard	10'-12'	0.5			Bentonite 42.5 - 5'BG Surface
	·····	នន នឃ	SANDSTONE, Hard SW: Tan brown,10YR 8/3, medium to fine grained, well sorted, sugarsand.No Odor or staining. @52' BGS softer diflling.	20'-22'	0.5			
		នឃ	Capillary fringe @ 50' BGS? @ 53' BGS saturated to total drilled depth of 83'	30'-32'	1.0		1999999 1999999	Bentonite
ليتنابين		នន នធ	SANDSTONE: Hard	40'-42'	1.0			
Internet		ទា	SW: Tan brown,7.5YR 6/4 medium to fine grained, well sorted, sugarsand.No Odor or staining. Water at	50'-52'	2.0			8 /16 Sand
		នធ	53.93' from TOC	60'-62'	1.0			70.85'-42.5' Screen 0.02 Slot 68'-48'
				70'-72'	2.0			2' foot. Sump @ 68'-70'
3		SW		80'-82'	2.0			T.D. 70.85', drilled to 83'

PO Box 2304 Roswell, NM 88202-2304 :mbenviro@dfn.com							EPTH: 74.9	-1 5',121.31',17
	22-2012 Fax		<u>525-0538</u>					
	PROJECT	INFOR	MATION		[IG INFORMAT	ION
ROJE	CT:	ESO	8.0118.01.00004	DRIL	LING C	:0.:	Peterson	Drilling Co.
ITE LO	DCATION:	Lea	Co., NM	DRIL	LER:		Charles J	Johnson
DB NC	D.:	Salt	y Dog		YPE:			Rand TH-60
OGGE	D BY:	$\mathbf{C}\mathbf{M}$	Barnhill, PG	MEŢŀ	HOD O	F DRILL	ING: Air Rota	
ROJE	CT MANAGE	R: Mil	ce McVey, PG			METHO		m
ATES	DRILLED:	03/3	31/09	HAMN	IER W	/T./DRC	P N/A	
OTES	Split Spoor	n Pushed	by TH-60 Drilling Rig.				luring drilling n completed well	Page 1 of 1
EPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Rec. / feet.	PPM TPH	BORING COMPLETION	WELL DESCRIPTION
5 Imp		GM	GM: Brown Silt, 5YR 5/3 to	0'-2'	N/A			NW-1 Shallow: DTW = 62.35'
-10 15 20		នឃ	8/2, Sand,Caliche mixture. SW: Tan brown, 5YR 6/6 to 7.5 YR 7/3 - 8/3,	10'-12' 20'-22'	1.0			TOC, T.D. = 74.95' Cement: 0'-5' Bentonite
25 - 30 - 35 -		នន	SANDSTONE: Hard cemented tan brown SS. Fn.tomed.gr.,well sorted.	30'-32'	1.0 Grab			Seal 5'-50', 8/16 Sand Pack: 50'-74.95'
40 -		នន នឃ	SW: Tan brown, 5YR 6/8 - 7/4 to 7.5 YR 7/3 - 8/3, medium to fine grained,	40'-42'	1.0			0.020 Slot Screen: 52.95'- 72.95' Sump and
50 - 55 -		នឃ	wellsorted,sugarsand.No Odor or staining. Capillary Fringe 60'-62'	50'-52' 60'-62'	1.0 2.0			Screen Cap: 72.95'-74.95'
65 - 70 - 75 -			BGS.Measured Water at 62.35' from TOC NW-1 Shallow; 62.25' NW-1					NW-1 Middle DTW = 62.25' TOC T.D. = 121.31'
80 - 85 - 90 -		នឃ	Middle; 62.04'NW-1 Deep. Three Nested wells placed in one large 9" inch Soil				19991	Bentonite Seal: 80'-95' 8/16 Sand pack 95' -
.95 - 100 105		នឃ	boring. All wells are cased to surface, but separated and isolated by different bentonite seals, 8/16 sand					121.31' 0.020 Slot Screen: 99.31' -
110 115 120			filter packs, and 20 foot screened intervals at different depths. Soil	*				119.31' Sump and Screen Cap 119.31' -
125		នឃ	Boring was split spoon sampled from ground surface at 10 foot intervals				HE HE	121.31' NW-1 Deep DTW = 62.04' TOC T.D.
135 140 145 150		នឃ	to 60'-62' BGS. After 60', all sample descriptions were from cuttings from mud rotary drilling.					= 171.45' Bentonite Seal: 122' - 145' 8/16 Sand pack
155 160 165		SW			4			145' - 171.45' 0.020 Slot Screen: 149.45' - 169.45'
.70 175	21111	Red Bed /	CL: Red Bed formation: Maroon siltstone /					Sump and Screen

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	22-2012 Fa		<u>625-0538</u>					
	PROJEC	TINFOR	MATION			DRILLIN	NG INFORMAT	ION
ROJE	CT:	ESC	08.0118.01.00004	DRIL	LING C	0.:	Peterson	Drilling Co.
	DCATION:	Lea	n Co., NM	DRIL	LER:		Charles .	Johnson
DB NC).:	Salt	y Dog	RIG 1	YPE:		Ingersol	-Rand TH-60
	D BY:		I Barnhill, PG				LING: Air Rota	гу б 1/4"
	CT MANAGE		ke McVey, PG			METHO		on
ATES	DRILLED:	04/0	01/09	HAM	IER W	/T./DRC	P N/A	
OTES	Split Spoor	n Pushed	by TH-60 Drilling Rig.				luring drilling n completed well	Page 1 of 1
EPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMP. #	Rec. / feet.	PPM TPH	BORING COMPLETION	WELL DESCRIPTION
5 10 15 20 25		GM SW SS	GM: Brown Silt, 5YR 5/3 to 8/2, Sand,Caliche mixture. SVV: Tan brown, 5YR 6/6 to 7.5 YR 7/3 - 8/3, SANDSTONE: Hard cemented tan brown SS.	0'-2' 10'-12' 20'-22'	0.3 1.0 Grab			NW-2 Shallow: DTW = 63.08' TOC, T.D. = 75.35' Cement: O'-5' Bentonite Seal 5'-50',
0 5 0 5 0 5 0 5		SV	SW: Tan brown, 5YR 6/6 - 7/4 to 7.5 YR 7/3 - 8/3, medium to fine grained, wellsorted, sugarsand.No Odor or staining. Capillary	30'-32' 40'-42' 50'-52'	0.5 1.0 2.0			8/16 Sand Pack: 50'-75.35' 0.020 Slot Screen: 53.35'- 73.35' Sump and Screen Cap:
		SV	Fringe 60'-62' BGS.Measured Water at 63.08' from TOC NW-2 Shallow; 63.27' NW-2 Middle; 66.41' NW-2 Deep. Three Nested wells placed	60'-62'	0.5			73.35'-75.35' NM-2 Middle DTW = 63.27' TOC T.D. = 115.72'
		នធ	in one large 9" inch Soil boring. All wells are cased to surface, but separated and isolated by different					Bentonite Seal: 80'-90' 8/16 Sand pack 90' - 115.72' 0.020 Slot Screen:
.05 10		នធ	bentonite seals, 8/16 sand filter packs, and 20 foot screened intervals at <u>different depths. Soil</u> SC: @ 115' BGS Clayey					93.72' - 113.72' Sump and Screen Cap 113.72' -
20 25 30 35		SC	Sand, fine grained sand / clay mixture 2.5 YR 5/8					115.72' NM-2 Deep DTW = 66.41' TOC T.D. = 148.87'
40 45 50 55		SC	CL: Red Bed formation: @					Bentonite Seal: 115' - 125' 8/16 Sand pack 125' - 148.87'
.60 .65 .70		CL	150' BGS Maroon siltstone / mudstone 2.5 YR 3/2					0.020 Slot Screen: 126.87' - 146.87'
75	MAL							Sump and Screen

Appendix B Laboratory Reports

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Soil

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	- ENVIRONMENTAL
÷6140)	
	COVER LETTER
- 400	Friday, April 17, 2009
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2.6 43 9.	
3 33	Mike McVey
	Daniel B. Stephens & Assoc.
-1994	6020 Academy NE Suite 100
	Albuquerque, NM 87109
-15195	TEL: (505) 822-9400
2.00	FAX (505) 822-8877
	PEt Salty Dog
1.11490	RE: Salty Dog Order No.: 0903463
	Dear Mike McVey:
>4 16	
大藝術	Hall Environmental Analysis Laboratory, Inc. received 67 sample(s) on 3/30/2009 for the
	analyses presented in the following report.
17 C 18	
た世世界	These were analyzed according to EPA procedures or equivalent. Below is a list of our
- weige	accreditations. To access our accredited tests please go to www.hallenvironmental.com or the
	state specific web sites.
	Reporting limits are determined by EPA methodology. No determination of
	compounds below these (denoted by the ND or $<$ sign) has been made.
3899	Please don't hesitate to contact HEAL for any additional information or clarifications.
	Sincerely,
-	(marting)
-	Andy Freeman, Business Manager
	Nancy McDuffie, Laboratory Manager
-	
	NM Lab # NM9425
29 64 9	AZ license # AZ0682
X.	ORELAP Lab # NM100001
	Texas Lab# T104704424-08-TX



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

	Daniel B. Stephens of Salty Dog	& Assoc.				Lab Orde	r: 0903463
Lab ID: Client Sample	0903463-01 e ID: DBS-1 10'-12'	, , ,				Date: 3/25/20	009 8:45:00 AM
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	3600	15		mg/Kg	50	Analyst: RA 4/13/2009 7:09:37 PM
Lab ID:	0903463-02		<u> </u>		Collection I	Date: 3/25/20	009 9:00:00 AM
Client Sample	ID: DBS-1 20'-22'				Ma	trix: SOIL	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	240	3.0		mg/Kg	10	Analyst: RA 4/13/2009 7:27:02 PN
Lab ID:	0903463-03				Collection I	Date: 3/25/20	09 9:15:00 AM
Client Sample	ID: DBS-1 30'-32'				Ma	trix: SOIL	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	1400	6.0		mg/Kg	20	Analyst: RA 4/13/2009 7:44:27 PM
Lab ID:	0903463-04			(Collection I	Date: 3/25/20	09 9:50:00 AM
Client Sample	ID: DBS-1 50'-52'				Ma	trix: SOIL	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	380	3.0		mg/Kg	10	Analyst: RA 4/13/2009 8:01:52 PM
Lab ID:	0903463-05			(Collection D	ate: 3/25/20	09 10:10:00 AM
Client Sample	ID: DBS-1 60'-62'				Ma	trix: SOIL	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
Chloride	300.0: ANIONS	160	3.0		mg/Kg	10	Analyst: RA 4/13/2009 8:19:16 PM
ab ID:	0903463-06			(Collection D	ate: 3/25/20	09 10:30:00 AM
lient Sample	ID: DBS-1 70'-72'				Mat	rix: SOIL	
		Result	PQL	Qual	Units	DF	Date Analyzed
nalyses	300.0: ANIONS	230	3.0		mg/Kg	10	Analyst: RA 4/13/2009 8:36:41 PM
PA METHOD Chloride		200					
PA METHOD	Value exceeds Maximum Estimated value	Contaminant Level		E F MO	H Holding ti		ociated Method Blank on or analysis exceeded vel

CLIENT: Project:	Daniel B. Stephens Salty Dog	& Assoc.				L	ıb Orde	er: 0903463
Lab ID: Client Sample	0903463-07 e ID: DBS-1 80'-82'				Collect	ion Date: Matrix:		009 12:05:00 PM
Analyses	E ID. DB3-1 80-82	Result	POL	Oual	Units		DF	Date Analyzed
	0 300.0: ANIONS	18	0.30		mg/Kg		1	Analyst: RAG 4/13/2009 10:03:42 PM
Lab ID:	0903463-08				Collecti	on Date:	3/24/2	009 4:05:00 PM
Client Sample	e ID: DBS-2 0'-2'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD Chloride) 300.0: ANIONS	2000	6.0		mg/Kg		20	Analyst: RAG 4/13/2009 10:21:07 PM
Lab ID: Client Sample	0903463-09 • ID: DBS-2 10'-12'			1	Collecti	on Date: Matrix:		009 4:15:00 PM
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	940	3.0		mg/Kg		10	Analyst: RAG 4/13/2009 10:38:32 PM
Lab ID:	0903463-10				Collecti	on Date:	3/24/20	009 4:25:00 PM
Client Sample	ID: DBS-2 20'-22'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	39	0.30		mg/Kg		1	Analyst: RAG 4/13/2009 10:55:56 PM
Lab ID:	0903463-11			(Collectio	on Date:	3/24/20	009 4:45:00 PM
Client Sample	ID: DBS-2 40'-42'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	42	0.30		mg/Kg		1	Analyst: RAG 4/13/2009 11:13:21 PM
Lab ID:	0903463-12			Ċ	Collectio	on Date:	3/24/20	09 5:10:00 PM
Client Sample	ID: DBS-2 50'-52'					Matrix:	SOIL	
nalyses		Result	PQL	Qual	Units		DF	Date Analyzed
PA METHOD Chloride	300.0: ANIONS	10	0.30		mg/Kg		1	Analyst: RAG 4/13/2009 11:30:45 PM
Qualifiers: * E J	E Estimated value Analyte detected below q	antitation limits		E H MO	H Holdi CL Maxi	ng times for mum Conta	preparati	ociated Method Blank ion or analysis exceeded evel
N			_	R	L Repo	rting Limit		Page 2 of

CLIENT: Daniel B. Stephens & Project: Salty Dog	é Assoc.			L	.ab Orde	er: 0903463
Lab ID: 0903463-13 Client Sample ID: DBS-2 60'-62'			Co		e: 3/24/2	009 5:20:00 PM
Analyses	Result	PQL	Qual L	J nits	DF	Date Analyzed
EPA METHOD 300.0: ANIONS Chloride	7.9	0.30	n	ng/Kg	1	Analyst: RA 4/13/2009 11:48:10 P
Lab ID: 0903463-14			Co	llection Date	: 3/24/2	009 5:45:00 PM
Client Sample ID: DBS-2 70'-72'				Matrix	: SOIL	
Analyses	Result	PQL	Qual L	Jnits	DF	Date Analyzed
EPA METHOD 300.0: ANIONS Chloride	7.7	3.0	n	ng/Kg	10	Analyst: RA 4/10/2009 2:56:20 AN
Lab ID: 0903463-15	· · · · · · · · · · · · · · · · · · ·		Co	llection Date	: 3/24/2	009 6:10:00 PM
Client Sample ID: DBS-2 80'-82'				Matrix	: SOIL	
Analyses	Result	PQL	Qual L	Jnits	DF	Date Analyzed
EPA METHOD 300.0: ANIONS Chloride	5.8	3.0	r	ng/Kg	10	Analyst: RA 4/10/2009 3:13:45 AN
Lab ID: 0903463-16			Co	llection Date	: 3/24/2	009 12:45:00 PM
Client Sample ID: DBS-3 0'-2'				Matrix	: SOIL	
Analyses	Result	PQL	Qual U	nits	DF	Date Analyzed
EPA METHOD 300.0: ANIONS Chloride	170	3.0	m	g/Kg	10	Analyst: RA 4/10/2009 3:31:10 AN
Lab ID: 0903463-17			Co	llection Date	: 3/24/20	009 1:00:00 PM
Client Sample ID: DBS-3 10'-12'				Matrix	: SOIL	
Analyses	Result	PQL	Qual U	nits	DF	Date Analyzed
EPA METHOD 300.0: ANIONS Chloride	58	3.0	m	g/Kg	10	Analyst: RA 4/10/2009 3:48:34 AM
Lab ID: 0903463-18			Co	llection Date:	3/24/20	009 1:10:00 PM
Client Sample ID: DBS-3 20'-22'				Matrix:	SOIL	
Analyses	Result	PQL	Qual U	nits	DF	Date Analyzed
EPA METHOD 300.0: ANIONS Chloride	41	3.0	m	g/Kg	10	Analyst: RA 4/10/2009 4:05:59 AM
Qualifiers: * Value exceeds Maximum (E Estimated value J Analyte detected below qu			B H MCL	Holding times	for prepara	sociated Method Blank tion or analysis exceeded evel
ND Not Detected at the Report	ing Limit		RL	Reporting Limi	it	

Project:	Daniel B. Stephens & Salty Dog	k Assoc.				La	b Order	: 0903463
Lab ID: Client Sample I	0903463-19 D: DBS-3 30'-32'				Collecti	on Date: Matrix:		09 1:25:00 PM
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 3 Chloride	00.0: ANIONS	44	0.30		mg/Kg		1	Analyst: RA 4/10/2009 4:23:24 AM
Lab ID:	0903463-20				Collecti	on Date:	3/24/200	09 1:45:00 PM
Client Sample II	D: DBS-3 40'-42'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 3 Chloride	00.0: ANIONS	35	0.30		mg/Kg		1	Analyst: RA 4/14/2009 10:26:44 A
Lab ID:	0903463-21				Collecti	on Date:	3/24/200	09 2:00:00 PM
Client Sample II	DES-3 50'-52'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 30 Chloride	0.0: ANIONS	3.4	0.30		mg/Kg		1	Analyst: RA 4/14/2009 11:18:58 A
Lab ID:	0903463-22			(Collecti	on Date:	3/24/200)9 2:15:00 PM
Client Sample II): DBS-3 60'-62'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 30 Chloride	0.0: ANIONS	8.5	0.30		mg/Kg		1	Analyst: RA 4/14/2009 11:36:23 A
Lab ID:	0903463-23			(Collectio	on Date:	3/24/200	9 3:00:00 PM
Client Sample ID	: DBS-3 80'-82'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
PA METHOD 30 Chloride	0.0: ANIONS	6.6	0.30		mg/Kg		1	Analyst: RA 4/14/2009 11:53:47 AM
ab ID:	0903463-24			C	Collectio	n Date:	3/25/200	9 1:45:00 PM
lient Sample ID	: DBS-4 0'-2'					Matrix:	SOIL	
mente sumpte no		Result	PQL	Qual	Units		DF	Date Analyzed
Analyses								
-	0.0: ANIONS	18	0.30		mg/Kg		1	Analyst: RA(4/14/2009 1:03:25 PM
Analyses PA METHOD 30	0.0: ANIONS Value exceeds Maximum (Estimated value Analyte detected below qua	Contaminant Level	0.30	E H MO	3 Analy H Holdi		in the assoc	4/14/2009 1:03:25 PM ciated Method Blank n or analysis exceeded

	Daniel B. Stephens & alty Dog	& Assoc.				La	ıb Ordeı	r: 0903463
Lab ID: Client Sample ID:	0903463-25 DBS-4 10'-12'				Collect	ion Date: Matrix:		09 1:50:00 PM
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300. Chloride	D: ANIONS	54	0.30		mg/Kg		1	Analyst: RA(4/14/2009 1:20:49 PM
Lab ID:	0903463-26				Collecti	ion Date:	3/25/20	09 2:00:00 PM
Client Sample ID:	DBS-4 20'-22'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0 Chloride): ANIONS	39	0.30		mg/Kg		1	Analyst: RA 4/14/2009 1:38:14 PM
Lab ID:	0903463-27				Collecti	on Date:	3/25/20	09 2:10:00 PM
Client Sample ID:	DBS-4 30'-32'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0 Chloride	: ANIONS	19	0.30		mg/Kg		1	Analyst: RA 4/14/2009 1:55:38 PM
Lab ID:	0903463-28			(Collecti	on Date:	3/25/20	09 2:20:00 PM
Client Sample ID:	DBS-4 40'-42'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0 Chloride	: ANIONS	55	0.30		mg/Kg		1	Anaiyst: RA 4/14/2009 2:13:03 PM
Lab ID:	0903463-29			(Collectio	on Date:	3/25/200	09 2:40:00 PM
Client Sample ID:	DBS-4 50'-52'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0	ANIONS	75	0.30		mg/Kg		1	Analyst: RA(4/14/2009 2:30:27 PM
Lab ID:	0903463-30			0	Collectio	on Date:	3/25/200	9 3:00:00 PM
Client Sample ID:	DBS-4 60'-62'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0: Chloride	ANIONS	44	0.30		mg/Kg		1	Analyst: RAC 4/14/2009 2:47:52 PM
E Est J An	lue exceeds Maximum C imated value alyte detected below qua	ntitation limits		E H M(I Holdi CL Maxi	ing times fo mum Conta	r preparatio	ciated Method Blank on or analysis exceeded rel
	t Detected at the Reporti	ng Limit pted recovery limits		R	L Repo	rting Limit		Page 5 o

CLIENT: Project:		Daniel B. Stephens & Salty Dog	& Assoc.		<u> </u>		La	ıb Orde	r: 0903463
Lab ID: Client Sar	nole II	0903463-31 D: DBS-4 70'-72'				Collect	ion Date: Matrix:		009 3:20:00 PM
Analyses	npie is		Result	POL	Qual	Units		DF	Date Analyzed
	HOD 3	00.0: ANIONS	9.7	0.30		mg/Kg		1	Analyst: RAC 4/14/2009 3:05:16 PM
Lab ID:		0903463-32				Collect	ion Date:	3/25/20	009 3:55:00 PM
Client San	nple II	DES-4 80'-82'					Matrix:	SOIL	
Analyses			Result	PQL	Qual	Units		DF	Date Analyzed
EPA METH Chloride	10D 30	00.0: ANIONS	6.9	0.30		mg/Kg		1	Analyst: RAC 4/14/2009 3:22:41 PM
Lab ID:		0903463-33				Collecti	ion Date:	3/23/20	009 3:40:00 PM
Client San	nple II	DBS-5 0'-2'					Matrix:	SOIL	
Analyses			Result	PQL	Qual	Units		DF	Date Analyzed
EPA METH Chloride	IOD 30	00.0: ANIONS	19	0.30		mg/Kg		1	Analyst: RA0 4/14/2009 4:32:19 PM
Lab ID:		0903463-34				Collecti	on Date:	3/23/20	09 4:00:00 PM
Client Sam	ple ID	: DBS-5 10'-12'					Matrix:	SOIL	
Analyses			Result	PQL	Qual	Units		DF	Date Analyzed
EPA METH Chloride	OD 30	0.0: ANIONS	25	0.30		mg/Kg		1	Analyst: RA0 4/14/2009 4:49:44 PM
Lab ID:		0903463-35			(Collecti	on Date:	3/23/20	09 4:20:00 PM
Client Sam	ple ID	: DBS-5 20'-22'					Matrix:	SOIL	
Analyses			Result	PQL	Qual	Units		DF	Date Analyzed
PA METH Chloride	OD 30	0.0: ANIONS	17	0.30		mg/Kg		1	Analyst: RAG 4/14/2009 5:07:09 PM
ab ID:		0903463-36			(Collecti	on Date:	3/23/20	09 5:20:00 PM
Client Sam	ple ID	: DBS-5 40'-42'					Matrix:	SOIL	
nalyses			Result	PQL	Qual	Units		DF	Date Analyzed
PA METH	OD 30(0.0: ANIONS	8.5	0.30		mg/Kg		1	Analyst: RAG 4/14/2009 5:24:34 PM
Qualifiers:	* E J	Value exceeds Maximum (Estimated value Analyte detected below qua			ł	H Hold	-	r preparati	ociated Method Blank on or analysis exceeded vel
	ND S	Not Detected at the Report Spike recovery outside acc	ing Limit	-	R	L Repo	orting Limit		Page 6 of
	3	spike recovery outside acc	cpred recovery millis	6					

CLIENT: Project:	Daniel B. Stephens Salty Dog	& Assoc.				La	ab Orde	r: 0903463
Lab ID:	0903463-37	<u>, 10 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 </u>			Collect	ion Date:	3/24/20	009 7:50:00 AM
Client Samp	le ID: DBS-5 50'-52'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHO Chloride	D 300.0: ANIONS	3.1	0.30		mg/Kg		1	Analyst: RA0 4/14/2009 5:41:58 PM
Lab ID:	0903463-38				Collect	ion Date:	3/24/20	09 8:10:00 AM
Client Samp	le ID: DBS-5 60'-62'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHO Chloride	D 300.0: ANIONS	18	0.30		mg/Kg		1	Analyst: RA(4/14/2009 5:59:23 PM
Lab ID:	0903463-39				Collect	on Date:	3/24/20	09 8:45:00 AM
Client Samp	e ID: DBS-5 70'-72'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHO Chloride	D 300.0: ANIONS	12	0.30		mg/Kg		1	Analyst: RA 4/14/2009 6:51:36 PM
Lab ID:	0903463-40				Collecti	on Date:	3/24/20	09 9:20:00 AM
Client Sampl	e ID: DBS-5 80'-82'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOI Chloride	0 300.0: ANIONS	7.5	1.5		mg/Kg		5	Analyst: TAI 4/11/2009 5:04:35 PM
Lab ID:	0903463-41			(Collecti	on Date:	3/26/20	09 8:20:00 AM
Client Sample	e ID: DBS-6 0'-2'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOL Chloride) 300.0: ANIONS	4.7	1.5		mg/Kg		5	Analyst: TAF 4/11/2009 6:14:13 PM
Lab ID:	0903463-42			(Collecti	on Date:	3/26/20	09 8:35:00 AM
Client Sample	e ID: DBS-6 10'-12'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
Chloride	300.0: ANIONS	6.5	1.5		mg/Kg		5	Analyst: TAF 4/12/2009 2:21:39 AM
Qualifiers:	 Value exceeds Maximum E Estimated value J Analyte detected below q NOt Detected at the Repo 	uantitation limits		ł Me	H Hold CL Max	-	r preparati	ociated Method Blank on or analysis exceeded vel
	S Spike recovery outside ac		7	K	ла керс	and Link		Page 7 o

CLIENT: Project:	Daniel B. Stephens & Salty Dog	è Assoc.				La	ıb Ordei	r: 0903463
Lab ID: Client Sample	0903463-43 ID: DBS-6 20'-22'				Collecti	on Date: Matrix:		009 8:45:00 AM
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	6.3	1.5		mg/Kg		5	Analyst: T/ 4/12/2009 2:56:27 A
Lab ID:	0903463-44				Collecti	on Date:	3/26/20	009 9:00:00 AM
Client Sample	ID: DBS-6 30'-32'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	31	1.5		mg/Kg		5	Analyst: T/ 4/12/2009 3:31:16 Al
Lab ID:	0903463-45				Collecti	on Date:	3/26/20	09 9:15:00 AM
Client Sample	ID: DBS-6 40'-42'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	4.4	1.5		mg/Kg		5	Analyst: T/ 4/12/2009 4:06:04 A
Lab ID:	0903463-46			(Collecti	on Date:	3/26/20	09 9:40:00 AM
Client Sample I	ID: DBS-6 50'-52'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD : Chloride	300.0: ANIONS	3.8	1.5		mg/Kg		5	Analyst: TA 4/12/2009 4:40:53 Al
Lab ID:	0903463-47			(Collectio	on Date:	3/26/20	09 10:00:00 AM
Client Sample I	D: DBS-6 60'-62'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
Chloride	300.0: ANIONS	30	1.5		mg/Kg		5	Analyst: TA 4/12/2009 5:50:31 AN
Lab ID:	0903463-48			(Collectio	on Date:	3/26/200	09 10:15:00 AM
Client Sample I	D: DBS-6 70'-72'					Matrix:	SOIL	
analyses		Result	PQL	Qual	Units		DF	Date Analyzed
PA METHOD 3 Chloride	00.0: ANIONS	63	1.5		mg/Kg		5	Analyst: TA 4/12/2009 6:25:20 AM
Qualifiers: * E J	Value exceeds Maximum (Estimated value Analyte detected below qua	antitation limits		H MQ	H Hold CL Maxi	ing times fo mum Conta	r preparati	ociated Method Blank on or analysis exceeded vel
NE	Not Detected at the Report	ing Limit		R	L Repo	rting Limit		Page 8

	aniel B. Stephens & alty Dog	& Assoc.				La	b Order	: 0903463
Lab ID: Client Sample ID:	0903463-49 DBS-6 80'-82'				Collecti	ion Date: Matrix:		09 10:45:00 AM
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300. Chloride	D: ANIONS	17	1.5		mg/Kg		5	Analyst: TAF 4/12/2009 7:34:57 AM
Lab ID:	0903463-50				Collecti	ion Date:	3/26/20	09 1:00:00 PM
Client Sample ID:	DBS-7 0'-2'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0 Chloride	: ANIONS	16	1.5		mg/Kg		5	Analyst: RAG 4/14/2009 8:36:03 PM
Lab ID:	0903463-51				Collecti	on Date:	3/26/20	09 1:10:00 PM
Client Sample ID:	DBS-7 10'-12'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0 Chloride	: ANIONS	9.6	0.30		mg/Kg		1	Analyst: RA0 4/14/2009 8:53:28 PM
Lab ID:	0903463-52			(Collecti	on Date:	3/26/200	09 1:20:00 PM
Client Sample ID:	DBS-7 20'-22'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0 Chloride	ANIONS	9.8	0.30		mg/Kg		1	Analyst: RAG 4/14/2009 9:45:42 PM
Lab ID:	0903463-53			(Collectio	on Date:	3/26/200	9 1:30:00 PM
Client Sample ID:	DBS-7 30'-32'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0: Chloride	ANIONS	13	0.30		mg/Kg		1	Analyst: RAG 4/14/2009 10:03:07 PM
Lab ID:	0903463-54			C	Collectio	on Date:	3/26/200	9 1:45:00 PM
Client Sample ID:	DBS-7 40'-42'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0: Chloride	ANIONS	16	1.5		mg/Kg		5	Analyst: RAG 4/14/2009 10:20:32 PM
E Est. J Ana	ue exceeds Maximum C imated value alyte detected below qua	untitation limits		B H MC	I Holdi CL Maxi	ing times for mum Contar	preparatio	ciated Method Blank n or analysis exceeded el
	Detected at the Reporti ke recovery outside acce	-		R	L Repo	rting Limit		Page 9 of

CLIENT: Project:	Daniel B. Stephens & Salty Dog	& Assoc.				L	b Orde	r: 0903463
Lab ID: Client Sample ID	0903463-55 : DBS-7 50'-52'	· <u>·</u> ·····			Collecti	ion Date: Matrix:		09 2:00:00 PM
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 30 Chloride	0.0: ANIONS	7.9	1.5		mg/Kg		5	Analyst: RAG 4/14/2009 11:30:09 PM
Lab ID:	0903463-56				Collecti	ion Date:	3/26/20	09 2:15:00 PM
Client Sample ID	: DBS-7 60'-62'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 30 Chloride	0.0: ANIONS	33	1.5		mg/Kg		5	Analyst: RAG 4/14/2009 11:47:35 PM
Lab ID:	0903463-57				Collecti	on Date:	3/26/20	09 2:30:00 PM
Client Sample ID	: DBS-7 70'-72'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300 Chloride	0.0: ANIONS	83	0.30		mg/Kg	K	1	Analyst: RAG 4/15/2009 12:04:59 AM
Lab ID:	0903463-58				Collecti	on Date:	3/26/20	09 3:00:00 PM
Client Sample ID	DBS-7 80'-82'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300 Chloride	0.0: ANIONS	130	1.5		mg/Kg		5	Analyst: RAG 4/16/2009 1:02:12 AM
Lab ID:	0903463-59			(Collecti	on Date:	3/26/20	09 4:40:00 PM
Client Sample ID:	DBS-8 0'2'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300 Chloride	.0: ANIONS	9.5	1.5		mg/Kg		5	Analyst: RAG 4/15/2009 12:39:49 AM
Lab ID:	0903463-60			(Collectio	on Date:	3/26/200	09 4:55:00 PM
Client Sample ID:	DBS-8 10'-12'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300 Chloride	.0: ANIONS	8.8	0.30		mg/Kg		1	Analyst: RAG 4/15/2009 12:57:13 AM
EJ	Value exceeds Maximum (Estimated value Analyte detected below qu	antitation limits		H Me	H Hold CL Maxi	ing times fo imum Conta	r preparati	ociated Method Blank on or analysis exceeded vel
ND	Not Detected at the Report	in a Tring is		R	I Dawn	rting Limit		

CLIENT: Project:	Daniel B. Stephens Salty Dog	& Assoc.				L:	ab Orde	r: 0903463
Lab ID:	0903463-61				Collect			009 5:13:00 PM
Client Sam	ple ID: DBS-8 20'-22'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METH	OD 300.0: ANIONS	7.3	0.30		mg/Kg		1	Analyst: RAC 4/15/2009 1:14:37 AM
Lab ID:	0903463-62				Collect	ion Date:	3/26/20	009 5:25:00 PM
Client Sam	ple ID: DBS-8 30'-32'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHO Chloride	OD 300.0: ANIONS	47	0.30		mg/Kg		1	Analyst: RAC 4/15/2009 2:59:05 AM
Lab ID:	0903463-63				Collect	ion Date:	3/26/20	009 5:40:00 PM
Client Sam	ple ID: DBS-8 40'-42'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHO Chloride	OD 300.0: ANIONS	20	1.5		mg/Kg		5	Analyst: RAC 4/15/2009 3:16:30 AM
Lab ID:	0903463-64				Collect	ion Date:	3/26/20	009 5:55:00 PM
Client Sam	ple ID: DBS-8 50'-52'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHO Chloride	DD 300.0: ANIONS	13	1.5		mg/Kg		5	Analyst: RA(4/15/2009 3:33:54 AM
Lab ID:	0903463-65			(Collecti	on Date:	3/27/20	09 8:30:00 AM
Client Samp	ole ID: DBS-8 60'-62'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHO Chloride	DD 300.0: ANIONS	9.3	0.30		mg/Kg		1	Analyst: RAC 4/15/2009 3:51:18 AM
Lab ID:	0903463-66			(Collecti	on Date:	3/27/20	09 8:45:00 AM
Client Samp	ole ID: DBS-8 70'-72'					Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHO Chloride	0D 300.0: ANIONS	8.7	1.5		mg/Kg		5	Analyst: RAG 4/15/2009 4:08:43 AM
Qualifiers:	 Value exceeds Maximum E Estimated value J Analyte detected below quite 	uantitation limits		1	H Hold CL Max	ling times fo imum Conta	or preparati aminant Le	ociated Method Blank on or analysis exceeded vel
	ND Not Detected at the Report	ting Limit		R	L Repo	orting Limit		

CLIENT: Project:	Daniel B. Stephens & Salty Dog	ż Assoc.				Lab Ord	er: 0903463
Lab ID: Client Sample II	0903463-67 D: DBS-8 80'-82'					ite: 3/27/2	2009 9:25:00 AM
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 3 Chloride	00.0: ANIONS	11	1.5		mg/Kg	5	Analyst: RAC 4/15/2009 4:26:08 AM
				·			
Qualifiers: * E J	Value exceeds Maximum C Estimated value Analyte detected below qua			E H MC	Holding time	s for prepara	ssociated Method Blank ation or analysis exceeded Level

QA/QC SUMMARY REPORT

C___ent: Project:

Daniel B. Stephens & Assoc.

Salty Dog

Work Order: 0903463

, alyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RPDLimit Qual
Mathod: EPA Method 300.0:	Anions					
S 1ple ID: 0903463-19AMSD		MSD			Batch ID: 18770	Analysis Date: 4/10/2009 5:15:36 AN
Chloride	60.43	mg/Kg	0.30	112	75 125	2.13 20
Sample ID: 0903463-38AMSD		MSD			Batch ID: 18798	•
C pride Sample ID: 0903463-40AMSD	31.40	mg/Kg <i>MSD</i>	0.30	94.2	75 125 Batch ID: 18807	2.17 20 20 Analysis Date: 4/11/2009 5:39:23 PM
Chipride	22.33	mg/Kg	1.5	99.2	75 125	0.411 20
5 nple ID: 0903463-48AMSD		MSD			Batch ID: 18807	Analysis Date: 4/12/2009 7:17:33 A
Chioride	82.67	mg/Kg	1.5	128	75 125	9.33 20 S
Sample ID: 0903463-20AMSD		MSD			Batch ID: 18798	Analysis Date: 4/14/2009 11:01:34 AM
C pride	50.63	mg/Kg	0.30	103	75 125	3.79 20
Sample ID: 0903463-51AMSD		MSD			Batch ID: 18810	Analysis Date: 4/14/2009 9:28:17 PM
Chloride	25.35	mg/Kg	0.30	105	75 125	1.57 20
nple ID: 0903463-61AMSD		MSD			Batch ID: 18810	Analysis Date: 4/15/2009 1:49:27 AN
Chloride	22.21	mg/Kg	0.30	99.4	75 125	0.417 20
Sample ID: MB-18770		MBLK			Batch ID: 18770	
bride	ND	mg/Kg	0.30			
ample ID: MB-18798		MBLK			Batch ID: 18798	Analysis Date: 4/10/2009 7:46:02 PM
bloride	ND	mg/Kg	0.30			
nple ID: MB-18807		MBLK			Batch ID: 18807	Analysis Date: 4/11/2009 4:29:46 PM
Chloride	ND	mg/Kg	0.30			-
ample ID: MB-18810		MBLK			Batch ID: 18810	Analysis Date: 4/14/2009 8:01:14 PM
oride	ND	mg/Kg	0.30			
ample ID: LCS-18770	110	LCS	0.00		Batch ID: 18770	Analysis Date: 4/9/2009 8:50:46 PM
loride	13.87	mg/Kg	0.30	92.5	90 110	,,
nple ID: LCS-18770	10.07	LCS	0.00	02.0	Batch ID: 18770	Analysis Date: 4/10/2009 2:50:06 PM
hloride	14.13	mg/Kg	0.30	94.2	90 110	· · · · · · · · · · · · · · · · · · ·
ample ID: LCS-18798	14.15	LCS	0.50	54.2	Batch ID: 18798	Analysis Date: 4/10/2009 8:03:27 PM
oride	15.05	mg/Kg	0.30	100	90 110	
ample ID: LCS-18807	10.00	LCS	0.50	100	Batch ID: 18807	Analysis Date: 4/11/2009 4:47:10 PM
	15.49	mg/Kg	0.30	103	90 110	
nple ID: LCS-18798	10.45	LCS	0.50	103		Analysis Date: 4/14/2009 10:09:19 AM
hloride	15.30	mg/Kg	0.30	102	90 110	
ample ID: LCS-18810	13.50	LCS	0.30	102	Batch ID: 18810	Analysis Date: 4/14/2009 8:18:39 PM
oride	15.75	mg/Kg	0.30	105	90 110	7 maryolo Data. 4/14/2000 0.10.00 1 M
ample ID: 0903463-19AMS	10.75	MS	0.30	105	Batch ID: 18770	Analysis Date: 4/10/2009 4:58:12 AN
bloride	61.73		0.20	101		
nple ID: 0903463-38AMS	01.75	mg/Kg <i>MS</i>	0.30	121	75 125 Batch ID: 18798	Analysis Date: 4/11/2009 4:10:54 AN
	20 7 2		0.20	90 7		7 11 ayois Date. 4/11/2003 4.10.34 Alv
hloride	30.73	mg/Kg MS	0.30	89.7	75 125 Batch ID: 18807	Analysis Date: 4/11/2009 5:21:59 PM
ample ID: 0903463-40AMS	00.07					Analysis Date: 4/11/2009 5:21:59 PM
oride	22.24	mg/Kg	1.5	98.6	75 125	

Qualifiers:

-

Estimated value

Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

13

S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

C _{um} ent:	Daniel B. Stephens & Assoc.
- · ·	a 1

Project: Salty Dog

Work Order: 0903463

, alyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RF	DLimit Qual
Method: EPA Method 300.0: A	nions						
S1ple ID: 0903463-48AMS		MS			Batch ID: 18807	Analysis Date:	4/12/2009 7:00:09 AN
Chloride	75.30	mg/Kg	1.5	79.2	75 125		
Sample ID: 0903463-20AMS		MS			Batch ID: 18798	Analysis Date:	4/14/2009 10:44:09 AN
Coride	48.74	mg/Kg	0.30	90.8	75 125		
Sample ID: 0903463-51AMS		MS			Batch ID: 18810	Analysis Date:	4/14/2009 9:10:53 PN
Calpride	24.95	mg/Kg	0.30	102	75 125		
S_nple ID: 0903463-61AMS		MS			Batch ID: 18810	Analysis Date:	4/15/2009 1:32:02 AN
Chloride	22.30	mg/Kg	0.30	100	75 125		
;44 4.							

***alifiers:

Estimated value

- Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- ------

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

14

S Spike recovery outside accepted recovery limits

	Sample	Receipt C	hecklist			
Client Name DBS	•	•	Date Receiv	ed:	3/30/2009	
Vork Order Number 0903463	t		Received b Sample ID	y: ARS labels checked by:	T	
Checklist completed by:		330 Date	09	-	Initials	
Matrix:	Carrier name:	Greyhound				
Shipping container/cooler in good condition?	,	Yes 🗹	No 🗌	Not Present		
Sustody seals intact on shipping container/c	ooler?	Yes 🗹	No 🗌	Not Present	Not Shipped	
sustody seals intact on sample bottles?		Yes 🗹	No 🗌	N/A		
Chain of custody present?		Yes 🗹	No 🗌			
hain of custody signed when relinquished a	and received?	Yes 🗹	Νο			
Chain of custody agrees with sample labels?)	Yes 🗹	No 🗌			
amples in proper container/bottle?		Yes 🗹	No 🗌			
Sample containers intact?		Yes 🗹	No 🗌			
ufficient sample volume for indicated test?		Yes 🗹	No 🗌			
All samples received within holding time?		Yes 🗹	No 🗌			
Vater - VOA vials have zero headspace?	No VOA vials subr	nitted 🗹	Yes 🗌	No 🗌		
Vater - Preservation labels on bottle and car	o match?	Yes 🗌	No 🗌	N/A 🗹		
Water - pH acceptable upon receipt?		Yes 🗌	No 🗌	N/A 🔽		
ontainer/Temp Blank temperature?		3°	<6° C Accepta			
COMMENTS:			If given sufficier	nt time to cool.		
•						
Nient contacted	Date contacted:		Per	son contacted		
Contacted by:	Regarding:					
čomments:						
			<u></u>			
J				·····	<u></u>	
Corrective Action		-		· · · · · · · · · · · · · · · · · · ·		
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Client DBS & A	Kerter Standard Compared Rush	
ATTN: Mike Mevey	Project Name:	environmen
	Salty Doc	4901 Hawkins NE - Albuquerque, NM 87109
en Que		Tel. 505-345-3975 Fax 505-345-4107
Phone #: 205- 222- 5400	~ >08.0118, 01. 0000 4	Analysis Request
email or Fax#: 515 - 822 - 8677	Project Manager:	(lese) (4) (4)
QA/QC Package:	Mille McVer, DE	o ssð 9iŪ\ss 8, ₄ OG
	Sampler:	3085 3085 1) 1) 1) 1)
NELAP Other		T + 310 4A 4A 1,6 5 1,6 5 7 1,6 7 7 7 7 7 7 7
EDD (Type)	Sample Temperature:	
Date Time Matrix Sample Request ID	Container Preservative HEAL No. Type and # Type ARO344.3	TM + X∃TB TM + X∃TB TPH Metho TPH Metho TPH (Metho TPH (Metho S10 (PNA 8310 (PNA 8310 (PNA 8081 Pestic Anions (F,C 8081 Pestic Pestic S200 (VO Anions (F,C 8081 Pestic S200 (VO Anions (F,C 8081 Pestic 8081 Pesti
NO Semple Soil DBS-10: 2 - NO Same	1462/6/ NINC.	
2/2/06 0845 Soi 6 DBS-1 10-12'		
4569 0900	2	
Soic DBS-1		
1 Sample DBS-1		
12640950 Sovi DBS-1 50-52	· 33° × 4	
25/04 10:10 Soic DBS-1 60'-62'	N 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
564 10:30 Soil		
12:05		
Date: Time: Reliviquished by:	Received by: Date Time	Remarks: Any Questons Please
/는	Date	Call Mile me veg
		C 505-822-9400
If necessary, samples submitted to Hall Environmental may be sub	ubcontracted to other accredited laboratories. This serves as notice of this	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.

DOS & A Restandard	🗆 Rush	
Mille Me Vey Project Name: Codering Rd. NK 5814	the Doc	Www.hallenvironmental.com
chave, NM STA Proje		
9400 E508.	0118.01.00004	Analysis
- 822 - 8877 Project Manager:	jer:	()¢(()¢(
□ Level 4 (Full Validation)	Mike me Vay, PE	ro 260 eei()/26 20,50 D2,400
Sampler:	CM Barnhill PL	1 10 ⁵ 1))) 1) 1) 1) 1)
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Sample Temperature:	erature: S	4 4 9 4 4 9 4 4 9 4 4 9 4 7 9
	Preservative HEAL No. Type O9 634-C3	Air Bubbles
Sovi DB5-3 0121 40316	None 18 16	
5016 DB5-3 10'-12'	EI DA NO I	
Spic DB5-3 201-23	No 20 18	
Soll DBS-3 30:32	21 19	
-Sou DBS-3 40-42	1 20 20	
DB5-3		
Soil DBS- 3 60'-62'		
- DDS-370-721	8	
5011 DBS-3 80'-82' V	V 23	
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Relinquighed by:	Date Time	Remarks: AWY QUESTION'S Please Call
Relinquished by:	Date Time	Mille Mc Vey @
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STE	10	Al	64 aut a	NIN	Project #:			1	Tel.	505-3	Tel. 505-345-3975		Fax	505-345-4107	45-4	107			
Phone #	150	532	- 9400	8114	18057	0118.	01. 0000 Ja					Ana	lysis	Analysis Request	est				
email or Fax#:	~	505-	822-88	577	Project Manager:	er:		((100			(*(0			
QA/QC Package:	ickage: ard		Level 4 (Full Validation)	Validation)	miple	1110	Vey, PE	1208)					DS'⁺Od	PCB's		102			
Accreditation	tion				Sampler:	108 14	74:11 . PL	s'8M			(1	(10 ⁵ 'E	280		\$0		((
		□ Other	۲. 			Z Yes	ON C	⊥ +			.40			8 / 9					
EDD (Type)	Type)				Sample Temperature:	erature: 3		BE			g p							<u>, v</u>	о Y)
Date	Time	Matrix	Sample Request ID	quest ID	Container Type and #	Preservative Type	HEAL No.	TM + XJ	Pethod TEX + MTI	odteM) Ho	odteM) 80) AN9) 01 9M 8 A위C	O,F) snoir	181 Pestici	40V) 808	-ime2) 07		30 44118.	səlddud .
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3/25/09 1	1350	SOL	DB5-4	181-,01			28 25									1-			<u> </u>
1	1400	SOIC	X	20-221															
3/23/09/1	1410	Jus	DBS-4 =	30-32															
3/25/09/	025160	Soic	DB3-4	104-42										-					ļ
3/25/04/	OHH	1440 Soll	285-4 SBC	50'-52'															ļ
3/25/09	1500	Soll	085-4	60-62															
3/25/6/1	1520	Soil	DBS-4	70'-72]												ļ
3/25/29/1	1555	Spil	DBS-4	80'-82'	\rightarrow	\rightarrow													
			2																
Date: Ti	Time: 17 AD	Relinguished by	ed by:		Received by:	0.1 <i>C</i>	Date Time	Remarks	arks:	K		- Q	2/1	13	IV-	- Ji	0		
ate: 1	Time:	Relinquish	ed by:		Received by:		Date Time	<u>.</u>		14	12	Mc	10 109	0	,				
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lf ne	scessary,	samples sub	mitted to Hall Environmer	ntal may be subco	ntracted to other acc	redited laboratorie	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.	s possibil	lity. Any	sub-cor	tracted	data will	be clear	y notate	d on the	e analytic	cal report.		

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 HALL ENVIRONMENTAL ANALYSIS LABORATORY COVER LETTER Friday, April 17, 2009 Mike McVey Daniel B. Stephens & Assoc. 6020 Academy NE Suite 100 Albuquerque, NM 87109 TEL: (505) 822-9400 FAX (505) 822-9400 FAX (505) 822-8877 RE: Salty Dog Order No.: 0904064 Dear Mike McVey: Hall Environmental Analysis Laboratory, Inc. received 22 sample(s) on 4/3/2009 for the analyses presented in the following report. These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com state specific web sites. Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made. Please don't hesitate to contact HEAL for any additional information or clarifications. Sincerely, Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager 		
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Nancy McDuffie, Laboratory Manager	C.	Sincerely,
Nancy McDuffie, Laboratory Manager	6	and the second s
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NM Lab # NM9425		

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



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

CLIENT: Lab Order: Project: Lab ID:	:	Daniel B. Stephen 0904064 Salty Dog 0904064-01	s & Assoc.		Col	t Sample ID: llection Date: ate Received: Matrix:	3/31/2009 4/3/2009	-1 10'-12' 9 10:20:00 AM
Analyses			Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHO Chloride	OD 30	00.0: ANIONS	1300	6.0		mg/Kg	20	Analyst: RA 4/16/2009 1:19:37 AM
Qualifiers:	* E J	Value exceeds Maximu Estimated value Analyte detected below			B H MC	Holding times	for preparati	ociated Method Blank on or analysis exceeded vel

CLIENT: Lab Order Project: Lab ID:	r:	Daniel B. Stephens 0904064 Salty Dog 0904064-02	& Assoc.		Col	llection Da	D: DBS NW- te: 3/31/2009 ed: 4/3/2009 ix: SOIL		1
Analyses			Result	PQL	Qual	Units	DF	Date Ana	lyzed
EPA METH Chloride	IOD 3	00.0: ANIONS	3600	15		mg/Kg	50	Ana 4/16/2009 1	alyst: RAG 37:02 AM
								•	
Qualifiers:	* E	Value exceeds Maximum Estimated value			B H M	Holding t	etected in the asso imes for preparation Contaminant Let	on or analysis ex	
	J ND S	Analyte detected below of Not Detected at the Repo Spike recovery outside as	orting Limit		R			VCI	Page 2 of

CLIENT:		Daniel B. Stephens	& Assoc.		Clier	nt Sample I	D: DBS NW	-1 30'-32'
Lab Order	:	0904064			Co	llection Dat	e: 3/31/2009	0 10:45:00 AM
Project:		Salty Dog			D	ate Receive	d: 4/3/2009	
Lab ID:		0904064-03				Matri	x: SOIL	
Analyses			Result	PQL	Qual	Units	DF	Date Analyzed
	OD 3	00.0: ANIONS	<u></u>					Analyst: RAG
Chloride			800	6.0		mg/Kg	20	4/16/2009 1:54:27 AM
•								
Qualifiers:	* E	Value exceeds Maximum Estimated value	Contaminant Level		B H			ociated Method Blank on or analysis exceeded
	J	Analyte detected below qu			MC	CL Maximum	Contaminant Le	
	ND	Not Detected at the Repor	ting Limit		RI	L Reporting	Limit	Page 3 of

CLIENT: Lab Order Project: Lab ID:			ssoc.		Col	t Sample ID: llection Date: ate Received: Matrix:	3/31/2009 4/3/2009		1
Analyses			Result	PQL	Qual	Units	DF	Date Ana	-
EPA METH Chloride	OD 300.0: ANIO	NS	2500	15	•	mg/Kg	50	Ana 4/16/2009 2:	elyst: RAG 11:51 AM
Qualifiers:	E Estimated val	s Maximum Conta lue ted below quantita			B H MC	Holding time		ciated Method E on or analysis ex	
	ND Not Detected	at the Reporting L y outside accepted	imit		RL				Page 4 of

CLIENT: Lab Order: Project: Lab ID:	Daniel B. Stephens 0904064 Salty Dog 0904064-05	& Assoc.		Col	llection Da	D: DBS NW te: 3/31/2009 ed: 4/3/2009 ix: SOIL	7-1 50'-52' 9 11:15:00 AM
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	2400	15		mg/Kg	50	Analyst: RAG 4/16/2009 3:21:29 AM
Qualifiers: * E J ND	Value exceeds Maximum Estimated value Analyte detected below of Not Detected at the Repo	quantitation limits		B H MC RI	Holding ti CL Maximum	imes for preparat Contaminant L	sociated Method Blank tion or analysis exceeded evel

Analyses EPA METHOD Chloride	300.0: ANIONS	Result 1800	PQL 6.0	Qual U	Units ng/Kg	DF 20	Date Analyzed Analyst: RAC 4/16/2009 3:38:53 AM
EPA METHOD Chloride	300.0: ANIONS	1800	6.0	n	ng/Kg	20	
	•						
Qualifiers: * E J ND	Value exceeds Maximum Estimated value Analyte detected below qu Not Detected at the Repor	uantitation limits		B H MCL RL	Holding tir	nes for preparati Contaminant Le	ociated Method Blank on or analysis exceeded vel

CLIENT:		Daniel B. Stephens	& Assoc.		Clier	it Sample I	D: DBS NW	-2 0'-2'
Lab Orde	r:	0904064	2 1155001			-	te: 4/1/2009	
Project:		Salty Dog					ed: 4/3/2009	
Lab ID:		0904064-07			D		ix: SOIL	
Analyses		-, p ≥	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METH	IOD 3	00.0: ANIONS						Analyst: RAC
Chloride			12	0.30		mg/Kg	1	4/15/2009 11:52:35 PN
Qualifiers:	*	Value exceeds Maximum (Contaminant I aval		В	Anolista da	tented in the acce	ciated Method Blank
zuanners:	Ē	Estimated value	Jonammant Level		в Н			on or analysis exceeded
	J	Analyte detected below qua			MC	L Maximum	Contaminant Lev	
	ND	Not Detected at the Report Spike recovery outside account	ing Limit		RI	Reporting	Limit	Page 7 of

CLIENT: Lab Order: Project: Lab ID:	Daniel B. Stephens 0904064 Salty Dog 0904064-08			Col Da	tt Sample ID: llection Date: ate Received: Matrix:	4/1/2009 1 4/3/2009 SOIL	0:25:00 AM
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHO Chloride	DD 300.0: ANIONS	6.2	0.30		mg/Kg	1	Analyst: RAG 4/16/2009 12:10:00 AM
Qualifiers:	 Value exceeds Maximum E Estimated value 	n Contaminant Level		B			ciated Method Blank on or analysis exceeded
	J Analyte detected below of ND Not Detected at the Repo S Spike recovery outside a	orting Limit		MC R1	L Maximum Co	ntaminant Lev	

1 (****)5**

Lab Order	r:	Daniel B. Stephens & 0904064	Assoc.		Co	nt Sample ID	: 4/1/2009 1	
Project: Lab ID:		Salty Dog 0904064-09			D	ate Received: Matrix		
Analyses			Result	POL	Qual	Units	DF	Date Analyzed
		00.0: ANIONS	Kesuit	TQL	Quai		Dr	Analyst: RAG
Chloride			12	0.30		mg/Kg	1	4/16/2009 12:27:24 AM
Qualifiers:	* E J	Value exceeds Maximum Co Estimated value Analyte detected below quar Not Detected at the Reportin	ntitation limits		E F MO R	H Holding time CL Maximum C	es for preparation	ociated Method Blank on or analysis exceeded vel

q

CLIENT: Lab Order: Project: Lab ID:	Daniel B. Stephen 0904064 Salty Dog 0904064-10	is & Assoc.		Co	nt Sample ID: llection Date: ate Received: Matrix:	4/1/2009 4/3/2009	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHO Chloride	DD 300.0: ANIONS	16	0.30		mg/Kg	1	Analyst: RAG 4/16/2009 12:44:48 AM
Qualifiers:	 Value exceeds Maximu E Estimated value J Analyte detected below 			E F MO	Holding times	s for preparati	ociated Method Blank ion or analysis exceeded :vel
	ND Not Detected at the Rep		10	R			Page 10 of

CLIENT: Lab Order: Project: Lab ID:	Daniel B. Stephen: 0904064 Salty Dog 0904064-11	s & Assoc.		Coll	ection Date te Received	: DBS NŴ : 4/1/2009 : 4/3/2009 : SOIL	-2 40'-42' 11:00:00 AM
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHC Chloride	D 300.0: ANIONS	1.8	0.30	ſ	mg/Kg	1	Analyst: RA(4/16/2009 6:32:58 AM
•							
						· ·	
Qualifiers:	 Value exceeds Maximum E Estimated value 			B H	Holding tin	nes for preparat	ociated Method Blank ion or analysis exceeded
	J Analyte detected below ND Not Detected at the Rep S Spike recovery outside a	orting Limit	;	MCI RL		Contaminant Le Limit	evel Page 11 c

CLIENT: Lab Order: Project: Lab ID:	Daniel B. Stephens 0904064 Salty Dog 0904064-12	& Assoc.		Col	lection Dat	D: DBS NW e: 4/1/2009 d: 4/3/2009 x: SOIL	-2 50'-52' 11:15:00 AM
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	240	6.0		mg/Kg	20	Analyst: RA 4/15/2009 3:10:18 PM
						· .	
Qualifiers: * E J	Estimated value			B H MCI	Holding tin		ociated Method Blank on or analysis exceeded vel
NI S	D Not Detected at the Repo	rting Limit		RL			Page 12 o

3.48

CLIENT:	Daniel B. Stephens & Assoc.			-			DBS NW-2 60'-62'			
Lab Order							4/1/2009 11:30:00 A		М	
Project:		Salty Dog			D	ate Received:				
Lab ID:	0904064-13					Matrix	: SOIL			
Analyses			Result	PQL	Qual	Units	DF	Date A	nalyzed	
EPA METH Chloride	OD 3	00.0: ANIONS	47	6.0	i.	mg/Kg	20		nalyst: RAG 8:58:28 PM	
Qualifiers:	* Value exceeds Maximum Contaminant Level				B Analyte detected in the associated Method Blank					
	E Estimated valueJ Analyte detected below quantitation limits				H MC		Holding times for preparation or analysis exceeded Maximum Contaminant Level			
	ND	Not Detected at the Repo			R					

CLIENT: Lab Order: Project: Lab ID:	Daniel B. Stephen 0904064 Salty Dog 0904064-14	ns & Assoc.		Col	lection Date te Received	 SB-1/DBS 3/30/2009 4/3/2009 SOIL 	-9 0'-2' 10:50:00 AM
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHO Chloride	DD 300.0: ANIONS	99	6.0		mg/Kg	20	Analyst: RAG 4/15/2009 9:15:53 PM
	DD 418.1: TPH lydrocarbons, TR	ND	20		mg/Kg	1	Analyst: LRW 4/8/2009
Qualifiers:	 Value exceeds Maximu Estimated value J Analyte detected below 	quantitation limits		B H MC	Holding tin L Maximum (nes for preparation Contaminant Lev	ciated Method Blank on or analysis exceeded el
	ND Not Detected at the Rep S Spike recovery outside	accepted recovery limits		RL	Reporting I	Junit	Page 14 of

CLIENT:	Daniel B. Stepher	is & Assoc.		Clien	t Sample ID:	SB-1/DBS	5-9 10'-12'	
Lab Order:	0904064			Col	lection Date:	3/30/2009	11:05:00 Al	M
Project:	Salty Dog			Da	ate Received:			
Lab ID:	0904064-15				Matrix:	SOIL		
Analyses		Result	PQL	Qual	Units	DF	Date Ana	alyzed
EPA METHO Chloride	D 300.0: ANIONS	4100	15		mg/Kg	50	An 4/16/2009 6	alyst: TA ::24:02 PM
	D 418.1: TPH ydrocarbons, TR	36	20		mg/Kg	1	An 4/8/2009	alyst: LR
,								
					•			
Qualifiers:	 Value exceeds Maximu E Estimated value 	m Contaminant Level		B H			ociated Method i	
	J Analyte detected below ND Not Detected at the Rep S Spike recovery outside			MC. RL	L Maximum Co	ontaminant Le	vel	Page 15 o

Lab Order: Project: Lab ID:	0904064 Salty Dog 0904064-16	& Assoc.		Coll	Sample ID: ection Date: te Received: Matrix:	3/30/2009 4/3/2009	9 11:15:00 AM	
Analyses		Result	PQL	∩u₀l [†]		DF	Date Analyze	d
EPA METHOD : Chloride	300.0: ANIONS	560	6.0		mg/Kg	20	Analyst: 4/15/2009 9:50:4	RAG
EPA METHOD A Petroleum Hydro		220	20	ı	ng/Kg	1	Analyst: 4/8/2009	LRW
Qualifiers: * E	Value exceeds Maximum Estimated value	Contaminant Level	, , , , , , , , , , , , , , , , ,	B H	Holding times	for preparat	ociated Method Blank on or analysis exceede	
J	Analyte detected below qu	constant, 11 to		MCL	, Maximum Co			

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CLIENT: Lab Order: Project: Lab ID:	Daniel B. Stephens 0904064 Salty Dog 0904064-17	s & Assoc.		Coll	Sample ID: ection Date: te Received: Matrix:	3/30/2009 4/3/2009	-9 30'-32' 11:30:00 AM
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	300.0: ANIONS	480	6.0	I	ng/Kg	20	Analyst: RA 4/15/2009 10:08:07 Pl
EPA METHOD 4 Petroleum Hydro		64	20	T	ng/Kg	1	Analyst: LR 4/8/2009
`							
Qualifiers: * E	Value exceeds Maximun Estimated value	n Contaminant Level		B H			ciated Method Blank n or analysis exceeded

S Spike recovery outside accepted recovery limits

CLIENT: Lab Order: Project: Lab ID:	Daniel B. Stephens 0904064 Salty Dog 0904064-18	s & Assoc.		Co	at Sample ID: llection Date: ate Received: Matrix:	3/30/2009 4/3/2009	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHO Chloride	DD 300.0: ANIONS	550	6.0	n	mg/Kg	20	Analyst: RAG 4/15/2009 10:25:31 PM
	DD 418.1: TPH ydrocarbons, TR	40	20		mg/Kg	1	Analyst: LRW 4/8/2009
Qualifiers:	 Value exceeds Maximum E Estimated value Analyte detected below 			E H M(Holding times	for preparatio	ciated Method Blank n or analysis exceeded
	J Analyte detected below of ND Not Detected at the Repo S Spike recovery outside a	orting Limit		MC Ri			el Page 18 d

CLIENT: Lab Order: Project:	Daniel B. Steph 0904064 Salty Dog	nens & Assoc.		Coll	Sample ID: ection Date: te Received:	3/30/2009 4/3/2009	
Lab ID:	0904064-19				Matrix:	SOIL	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHO Chloride	DD 300.0: ANIONS	160	6.0	1	mg/Kg	20	Analyst: RA 4/15/2009 10:42:56 Pl
	DD 418.1: TPH lydrocarbons, TR	82	20	I	mg/Kg	1	Analyst: LR 4/8/2009
Qualifiers:	* Value exceeds Max	imum Contaminant Level		В	Analyte detec	ted in the asso	ciated Method Blank
Quaimers;	E Estimated valueJ Analyte detected below	low quantitation limits		H MCI	Holding times Maximum Co	s for preparatio ntaminant Lev	n or analysis exceeded
	ND Not Detected at the S Spike recovery outs	Reporting Limit ide accepted recovery limits		RL	Reporting Lin	nit	Page 19 c

CLIENT:		Daniel B. Stephens	& Assoc.		Clier	it Sample I	(D:	SE	8-1/DBS	5-9 60'-62'	
Lab Order	:	0904064			Co	llection Da	te:	3/3	30/2009	1:20:00 P	М
Project:		Salty Dog			D	ate Receive					
Lab ID:		0904064-20				Matr	ix:	SC	DIL		
Analyses			Result	PQL	Qual	Units			DF	Date A	nalyzed
EPA METH Chloride	OD 3	00.0: ANIONS	93	0.30		mg/Kg			1		Analyst: RAC 9 4:13:42 AM
EPA METH		18.1: TPH carbons, TR	ND	20		mg/Kg			1	A 4/8/2009	Analyst: LRV
	-										
				-							
a											
Qualifiers:	* E	Value exceeds Maximum Estimated value	Contaminant Level		F					ociated Metho	
	J ND S	Analyte detected below q Not Detected at the Repo Spike recovery outside ac	rting Limit		M0 R	CL Maximur L Reporting			ninant Le	evel	Page 20 of

Hall Envir	onmental Analy	ysis Laborat	ory, Iı	nc.	Da	te: 17-Apr	-09
CLIENT: Lab Order: Project: Lab ID:	Daniel B. Stephens 0904064 Salty Dog 0904064-21	& Assoc.		Col	t Sample ID: llection Date: ate Received: Matrix:	3/30/2009 4/3/2009	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD Chloride	300.0: ANIONS	65	3.0		mg/Kg	10	Analyst: RAC 4/16/2009 5:05:55 AM
EPA METHOD Petroleum Hydr		ND	20		mg/Kg	1	Analyst: LRV 4/8/2009
Qualifiers: * E J NE	Value exceeds Maximum Estimated value Analyte detected below qu Not Detected at the Report	uantitation limits		B H MC RI	Holding times	s for preparation ontaminant Lev	ciated Method Blank on or analysis exceeded rel
NL S	Spike recovery outside ac		21	KI	- Keborung Pu		Page 21 of

CLIENT:	Daniel B. Stephens	s & Assoc.		Clien	t Sample ID:	SB-1/DBS-9 80'-82'			
Lab Order:	0904064			Col	lection Date:	3/30/2009	9 2:00:00 PM		
Project:	Salty Dog			Da	ate Received:	4/3/2009			
Lab ID:	0904064-22				Matrix:	SOIL			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	300.0: ANIONS						Analyst: RAG		
Chloride		9.7	3.0		mg/Kg	10	4/16/2009 5:23:19 AM		
EPA METHOD	418.1: TPH						Analyst: LRW		
Petroleum Hydr	ocarbons, TR	ND	20		mg/Kg	1	4/8/2009		

Qualifiers:	*	Value exceeds Maximum Contaminant Level	В	Analyte detected i
	Е	Estimated value	Н	Holding times for
	J	Analyte detected below quantitation limits	MCL	Maximum Contan
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

- in the associated Method Blank
- r preparation or analysis exceeded

minant Level

QA/QC SUMMARY REPORT

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

Project: Salty Dog							Worl	k Order: 0904064
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RF	PDLimit Qual
Jethod: EPA Method 300.0:	Anions				÷			
ample ID: MB-18826		MBLK			Batch I	D: 18826	Analysis Date:	4/15/2009 5:53:11 AM
Chloride ample ID: MB-18837	ND	mg/Kg <i>MBLK</i>	0.30		Batch I	D: 18837	Analysis Date:	4/15/2009 8:23:40 PM
mhloride Sample ID: LCS-18826	ND	mg/Kg LCS	0.30		Batch I	D: 18826	Analysis Date:	4/15/2009 6:10:36 AM
"hloride _ample ID: LCS-18837	15.39	mg/Kg LCS	0.30	103	90 Batch I	110 D: 18837	Analysis Date:	4/15/2009 8:41:04 PM
Chloride	15.66	mg/Kg	0.30	104	90	110		
ethod: EPA Method 418.1: 1 Sample ID: MB-18766	ГРН	MBLK			Batch I	D: 18766	Analysis Date:	4/8/2009
Petroleum Hydrocarbons, TR ample ID: LCS-18766	ND	mg/Kg LCS	20		Batch I	D: 18766	Analysis Date:	4/8/2009
Fetroleum Hydrocarbons, TR Sample ID: LCSD-18766	103.7	mg/Kg LCSD	20	104	82 Batch I	114 D: 18766	Analysis Date:	4/8/2009
etroleum Hydrocarbons, TR	105.1	mg/Kg	20	105	82	114	1.32	20

alifiers:

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

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

"Hall Environmental Analysis Laboratory, Inc.

ku# ∙	Sample	Rec	eipt Ch	ecklist				
Client Name DBS				Date Received	d:		4/3/2009	
Work Order Number 0904064	\mathbf{N}			Received by	AT		11	
**Checklist completed by:	Ý	i	430	Sample ID la	bels checked	-	Initials	
Signature		1	• Date					
Matrix:	Carrier name:	<u>Clier</u>	nt drop-of	ff				
Shipping container/cooler in good condition?		Yes		No 🗌	Not Present			
Custody seals intact on shipping container/coole	r?	Yes		No 🗌	Not Present		Not Shipped	\checkmark
³ Custody seals intact on sample bottles?		Yes		Νο	N/A	✓		
***Chain of custody present?		Yes		No 🗌				
**Chain of custody signed when relinquished and r	eceived?	Yes		No 🗌				
Chain of custody agrees with sample labels?		Yes	✓	No 🗌				
Samples in proper container/bottle?		Yes		No 🗔				
Sample containers intact?		Yes		No 🗌				
Sufficient sample volume for indicated test?		Yes		No 🗌				
All samples received within holding time?		Yes		No 🗔				
Water - VOA vials have zero headspace?	No VOA vials subm	itted		Yes 🗌	No 🗌			
Water - Preservation labels on bottle and cap ma	tch?	Yes		Νο	N/A 🗹			
****Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🗹			
Container/Temp Blank temperature?			6°	<6° C Acceptabl				
COMMENTS:				If given sufficient	time to cool.			
	=====							
				D				
Client contacted	Date contacted:			Perso	on contacted			
Contacted by:	Regarding:							·····
Comments:								
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Corrective Action								
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Phone #	1:50	5 - 8	22 - 9400	E508,	0118,	01.0	0000 F				010			ysis							
email or	Fax#:	505-	- 822 - 8877	Project Mana	ager:				only)	sel)				SO4)							
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Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		AL NO. 14064	BTEX + MTB	BTEX + MTBE	TPH Method	TPH (Method 418.1) FDR (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,CI,NO ₃ ,NO ₂ ,	8081 Pesticides	8260B (VOA)	8270 (Semi-VOA)	app.		Bubbloc	Air Bubbles (Y
_1/	o 5a,	nple	DBS NW-10-2	1×402/ G/Jer	None		1											X		N	TA
2/2/14	10:20	SOR	OBS NW-1 10'-A			R	21														Π
			DBS NW-120-2			43	82											T			Π
3/31/04			DBS NW-130-3			1	43														Π
3/3/69	11:00	Soic	OBS NW-140-4				84														Π
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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.

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□ Othe				Sampler: C	MBar	nhill o	4	TMB's (8021)	TPH (Gas	B (G	€			Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,	8082			3		Î
	(Type) _			On Ice:	Z Yes	No		+	+	TPH Method 8015B	TPH (Method 418.1) EDB (Method 504.1)	8310 (PNA or PAH)	s	0 ₃ ,1	\sim		(A)	N		or N
			Г	Sample Tem	perature: ¿	9		MTBE	MTBE	od 8	7 po	or	RCRA 8 Metals	C, N	8081 Pesticides	(Y)	(Semi-VOA)			ک ۳
Data	T :	D. A		Container	Preservative			∑ +	≥	lethc	Aeth Aeth	ANA	⊠ ∞	(F,(esti	8260B (VOA)	Sem	101		Air Bubbles
Date	Time	Matrix	Sample Request ID	Type and #	Туре	HEALT	•	BTEX	BTEX	≥ H	€	10	RA	ions	1 P	30B	2	1		But
				ntust.		09040)64	BT	BT	Ê		83	80	An	80	82(8270	Ŷ_		Ţ.
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101/09	10:30	Soil	DBS NW-2 20-2	21		413 60	9											\prod		
1/01/04	10:45	SOIL	DB5 NW-2 30-3	2/		1 H	10													
4/01/09	11:00	SOIL	DBS NW-240-0	2/		V V	()											$\uparrow \uparrow$		
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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.

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				On Ice: Sample Tem		□ No	+ 山	+ 山	20		PA 4	als	Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄	es		(Semi-VOA)				(Y or
	(Type)_			Sample Tem			+ MTBI	+ MTBE	pol	(Method	Aor	RCRA 8 Metals	D,	Pesticides	(VOA)	-in	No.			es (
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Date	Time	Matrix	Sample Request ID	Type and #	Туре		BTEX	BTEX		FUH (CR/	lion	8081	8260B	8270	24			ы В
		1		284021	·	0904064	В	'n	Ë,	<u></u>	<u>i </u>	Ř	Ä	80	8	8				Air Bubbles (
3/30/19	1050	SOIL	5B-1/DBS-9 0'-2'	6/Jan	None	15 14				XL.							Z	-		10
3/30/09	1105	Soil	5B-1/ DBS-9 10-12			16 15														
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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.

Groundwater

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L	ENVIRONMENTAL
	LABORATORY
	COVER LETTER
	Wednesday, April 22, 2009
	Mike McVey
	Daniel B. Stephens & Assoc.
	6020 Academy NE Suite 100
	Albuquerque, NM 87109
	TEL: (505) 822-9400
	FAX (505) 822-8877
	RE: Salty Dog Brine Station
	Order No.: 0904165
	Dear Mike McVey:
	Hall Environmental Analysis Laboratory, Inc. received 21 sample(s) on 4/10/2009 for the
	analyses presented in the following report.
	These were analyzed according to EPA procedures or equivalent. Below is a list of our
	accreditations. To access our accredited tests please go to www.hallenvironmental.com of
	state specific web sites.
	Reporting limits are determined by EPA methodology. No determination of
	compounds below these (denoted by the ND or $<$ sign) has been made.
	Please don't hesitate to contact HEAL for any additional information or clarifications.
	Thease don't heshale to contact THE TOT any additional information of clarifications.
	Sincerely,
4	Called Marine Marine
	Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager
	Nancy MeDunne, Daboratory Manager
	NM Lab # NM9425
	AZ license # AZ0682
	ORELAP Lab # NM100001
	Texas Lab# T104704424-08-TX
	NEO IN ACCORD
	<i>helan</i>
	4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107
	www.hallenvironmental.com

	Stephens & Assoc. Brine Station			Lab Ord	er: 0904165
Lab ID:090416.Client Sample ID:PMW-1				te: 4/8/20 ix: AQUI	009 2:57:00 PM EOUS
Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 300.0: ANION Chloride	IS 11000	50	mg/L	500	Analyst: T 4/21/2009 1:27:50 F
Lab ID: 0904165	5-02		Collection Da	te: 4/7/20	009 1:18:00 PM
Client Sample ID: MW-2			Matr	ix: AQUI	EOUS
Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 300.0: ANION Chloride	S 1200	5.0	mg/L	50	Analyst: T 4/22/2009 2:31:16 A
Lab ID: 0904165	5-03		Collection Dat	t e: 4/7/20	09 2:13:00 PM
Client Sample ID: MW-3			Matri	ix: AQUE	EOUS
Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 300.0: ANION Chloride	S 17000	50	mg/L	500	Analyst: T 4/21/2009 2:02:39 F
Lab ID: 0904165	5-04		Collection Dat	e: 4/7/20	09 3:00:00 PM
Client Sample ID: MW-4			Matri	x: AQUE	EOUS
Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 300.0: ANION Chloride	S 6600	50	mg/L	500	Analyst: T 4/22/2009 2:13:52 A
Lab ID: 0904165	-05		Collection Dat	e: 4/7/20	09 3:45:00 PM
Client Sample ID: MW-5			Matri	x: AQUE	COUS
Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS Chloride	3 1300	5.0	mg/L	50	Analyst: T, 4/22/2009 3:23:30 A
Lab ID: 0904165	-06		Collection Date	e: 4/7/200	09 4:23:00 PM
Client Sample ID: MW-6			Matrix	K: AQUE	OUS
Analyses	Result	PQL	Qual Units	DF	Date Analyzed
PA METHOD 300.0: ANIONS	3 25	0.10	mg/L	1	Analyst: T/ 4/21/2009 2:54:52 Pl
Chloride					
Chloride Qualifiers: * Value exceeds E Estimated valu	Maximum Contaminant Level		•	s for prepara	sociated Method Blank tion or analysis exceeded evel

CLIENT: Project:	Daniel B. Stephens Salty Dog Brine Sta					Lab Orde	er: 0904165
Lab ID: Client Sample I	0904165-07 D: DBS-1					ate: 4/8/20 rix: AQUE	09 10:55:00 AM COUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 3 Chloride	00.0: ANIONS	320	1.0		mg/L	10	Analyst: TA 4/21/2009 3:12:17 PM
Lab ID:	0904165-08				Collection Da	ate: 4/8/20	09 10:13:00 AM
Client Sample I	D: DBS-2				Mat	rix: AQUE	OUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 3 Chloride	00.0: ANIONS	14	0.10		mg/L	1	Analyst: TA 4/21/2009 3:29:41 PM
Lab ID:	0904165-09			(Collection Da	ate: 4/8/20	09 8:44:00 AM
Client Sample II	D: DBS-3				Mati	rix: AQUE	OUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 30 Chloride	00.0: ANIONS	36	0.10		mg/L	1	Analyst: TA 4/21/2009 3:47:05 PM
Lab ID:	0904165-10				Collection Da	ite: 4/8/200	09 9:28:00 AM
Client Sample II	DBS-4				Matu	ix: AQUE	OUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 30 Chloride	0.0: ANIONS	38	0.10		mg/L	1	Analyst: TA 4/21/2009 4:04:30 PN
Lab ID:	0904165-11			(Collection Da	te: 4/8/200	09 7:58:00 AM
Client Sample ID	: DBS-5				Matr	ix: AQUE	OUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
PA METHOD 30 Chloride	0.0: ANIONS	65	1.0		mg/L	10	Analyst: TA 4/21/2009 6:06:22 PM
.ab ID:	0904165-12			C	Collection Da	te: 4/7/200	9 6:32:00 PM
Client Sample ID	: DBS-6				Matr	ix: AQUE	OUS
nalyses		Result	PQL	Qual	Units	DF	Date Analyzed
PA METHOD 30 Chloride	0.0: ANIONS	380	2.0		mg/L	20	Analyst: TA 4/21/2009 6:23:46 PM
Qualifiers: * E	Value exceeds Maximum Estimated value	Contaminant Level		E H	•		ociated Method Blank ion or analysis exceeded
J	Analyte detected below que Not Detected at the Report			M	CL Maximum C	Contaminant Le	evel

Project:	Daniel B. Stephen Salty Dog Brine S					Lab Ord	ler: 0904165
Lab ID:	0904165-13			(Collection	Date: 4/7/2	009 5:07:00 PM
Client San	nple ID: DBS-7				Ma	atrix: AQU	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METH Chloride	IOD 300.0: ANIONS	570	5.0		mg/L	50	Analyst: TA 4/21/2009 6:41:10 PM
Lab ID:	0904165-14	•	·	(Collection 1	Date: 4/7/2	009 5:52:00 PM
Client San	nple ID: DBS-8				Ma	trix: AQU	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METH Chloride	IOD 300.0: ANIONS	58	1.0		mg/L	10	Analyst: TA 4/21/2009 6:58:34 PM
Lab ID:	0904165-15			(Collection 1	Date: 4/8/20	009 6:01:00 PM
Client Sam	ple ID: DBS-9				Ma	trix: AQU	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA MĚTH	OD 8015B: DIESEL RAN	GE					Analyst: SC
Diesel Ran	ige Organics (DRO)	ND	1.0		mg/L	1	4/13/2009
	Range Organics (MRO)	ND	5.0		mg/L	1	4/13/2009
Surr: DN	IOP	115	58-140		%REC	1	4/13/2009
EPA METH	OD 8015B: GASOLINE R	ANGE					Analyst: DA
	ange Organics (GRO)	ND	0.050		mg/L	1	4/15/2009 2:17:54 AM
Surr: BF	• • • •	89.1	59.9-122		%REC	· 1	4/15/2009 2:17:54 AM
РА МЕТН	OD 300.0: ANIONS						Analyst: TA
Chloride		210	10		mg/L	100	4/21/2009 7:15:59 PM
Lab ID:	0904165-16				Collection I	Date: 4/8/20	009 12:56:00 PM
Client Sam	ple ID: NW-1 Shallow				Ma	trix: AQUI	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
Chloride	OD 300.0: ANIONS	630	5.0		mg/L	50	Analyst: TAI 4/21/2009 7:33:24 PM

	iel B. Stephens & y Dog Brine Stati					La	b Order:	0904165
Lab ID: 0 Client Sample ID: N	904165-17 WW-1 Middle						4/8/2009 AQUEO) 12:31:00 PM US
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0: Chloride	ANIONS	57	1.0		mg/L		10	Analyst: TA 4/21/2009 8:25:37 PM
Lab ID: 0	904165-18				Collectio	n Date:	4/8/2009	0 12:00:00 PM
Client Sample ID: N	IW-1 Deep				1	Matrix:	AQUEO	US
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0: . Chloride	ANIONS	38	0.10		mg/L		1	Analyst: TA 4/21/2009 8:43:02 PM
Lab ID: 0	904165-19				Collectio	n Date:	4/8/2009	5:07:00 PM
Client Sample ID: N	W-2 Shallow				Ι	Matrix:	AQUEO	US
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0: / Chloride	ANIONS	410	5.0		mg/L		50	Analyst: TA 4/21/2009 9:00:26 PM
Lab ID: 0	904165-20			(Collection	n Date:	4/8/2009	4:51:00 PM
Client Sample ID: N	W-2 Middle				N	Matrix:	AQUEO	US
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0: A Chloride	ANIONS	570	2.0		mg/L		20	Analyst: TA 4/22/2009 11:06:09 Af
Lab ID: 09	04165-21			(Collection	1 Date:	4/8/2009	4:19:00 PM
Client Sample ID: N	W-2 Deep				N	Aatrix:	AQUEO	US
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 300.0: A Chloride	NIONS	4700	20		mg/L		200	Analyst: TAI 4/21/2009 9:35:16 PM
E Estim J Analy	exceeds Maximum C ated value te detected below qua	ntitation limits		I M	H Holdin CL Maxim	g times fo um Conta		siated Method Blank n or analysis exceeded el
ND Not D	etected at the Reportin	ng Limit		R	L Report	ing Limit		Page 4

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QA/QC SUMMARY REPORT

ient: Daniel B. St Project: Salty Dog B	-						Wor	k Order: 0904165
nalyte	Result	Units	PQL	%Rec	LowLimit Hi	ighLimit	%RPD RF	PDLimit Qual
Method: EPA Method 300.0: An mple ID: 0904165-08AMSD	nions	MSD			Batch ID:	R33344	Analysis Date:	4/21/2009 5:14:09 PM
Chloride	18.72		0.10	87.9		125	•	20
Sample ID: MB	10.72	mg/L MBLK	0.10	07.9	Batch ID:	R33344	Analysis Date:	4/21/2009 12:53:01 PM
	ND	mg/L	0.10		Buton iB.			
Jemple ID: MB	ND	MBLK	0.10		Batch ID:	R33358	Analysis Date:	4/22/2009 10:31:19 AM
Chloride	ND	mg/L	0.10					
mple ID: LCS		LCS			Batch ID:	R33344	Analysis Date:	4/21/2009 1:10:25 PM
শোloride	5.075	mg/L	0.10	101	90	110		
Sample ID: LCS		LCS			Batch ID:	R33358	Analysis Date:	4/22/2009 10:48:44 AM
loride	4.969	mg/L	0.10	99.4	90	110		
		MS			Batch ID:	R33344	Analysis Date:	4/21/2009 4:56:44 PM
Chloride	18.92	mg/L	0.10	92.0	75	125		
sthod: EPA Method 8015B: D	iesel Range							
Sample ID: MB-18809		MBLK			Batch ID:	18809	Analysis Date:	4/13/2009
Siesel Range Organics (DRO)	ND	mg/L	1.0					
stor Oil Range Organics (MRO)	ND	mg/L	5.0					
Sample ID: LCS-18809		LCS			Batch ID:	18809	Analysis Date:	4/13/2009
Diesel Range Organics (DRO)	5.228	mg/L	1.0	105		157		
mple ID: LCSD-18809		LCSD			Batch ID:	18809	Analysis Date:	4/13/2009
Diesel Range Organics (DRO)	5.455	mg/L	1.0	109	74	157	4.25	23
"hthod: EPA Method 8015B: G	asoline Ran	ge						
mple ID: 5ML RB		MBLK			Batch ID:	R33239	Analysis Date:	4/14/2009 9:30:26 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
mple ID: 2.5UG GRO LCS		LCS			Batch ID:	R33239	Analysis Date:	4/14/2009 6:38:55 PM
soline Range Organics (GRO)	0.5620	mg/L	0.050	112	80	115		

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Qualifiers:

Estimated value

Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

5

S Spike recovery outside accepted recovery limits

- 20

~ 4	Sample	Rece	eipt Ch	ecklist				
Client Name DBS				Date Received	i:		4/10/2009	
Vork Order Number 0904165				Received by: Sample ID la	TLS bels checked	by:	Initials	
Signature	3	1	Date					
Matrix:	Carrier name:	<u>UPS</u>						
Shipping container/cooler in good condition?		Yes		No 🗌	Not Present			
Sustody seals intact on shipping container/cool	er?	Yes	✓	No 🗌	Not Present		Not Shipped	
ustody seals intact on sample bottles?		Yes		No 🗌	N/A	✓		
Chain of custody present?		Yes		No 🗌				
:hain of custody signed when relinquished and	received?	Yes	✓	No 🗌				
Chain of custody agrees with sample labels?		Yes	ľ	No 🗔				
amples in proper container/bottle?		Yes	\checkmark	No 🗌				
Sample containers intact?		Yes	\checkmark	No 🗌				
"ufficient sample volume for indicated test?		Yes	\checkmark	No 🗌				
All samples received within holding time?		Yes	\checkmark	No 🗔				•
/ater - VOA vials have zero headspace?	No VOA vials submi	itted		Yes 🗹	No 🗌			
/ater - Preservation labels on bottle and cap m	atch?	Yes		No 🗌	N/A 🗹			
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🗹			
ontainer/Temp Blank temperature?		:	2°	<6° C Acceptable				
COMMENTS:				If given sufficient	time to cool.			
Aba .								
549 								
····								
1998								
iient contacted	Date contacted:			Perso	on contacted			
Contacted by:	Regarding:							
momments:								
				<u>. </u>	<u>.</u>			
Corrective Action							· · · · · · · · · · · · · · · · · · ·	
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Hall Environmental Analysis Laboratory, Inc.

			Los Brine Statis 4901 Hawkins NE - Albuquerque NM 87109	Tel 505-345-3075	- 0/. 000 4 Analysis	۱۹)۹) ۱۹)۹) ۱۹)۱)	esiDies PCB's PCB's	<i>Burnill Per</i> <i>Burnill Per</i> <i>Burnill Per</i> <i>Burnill Per</i>	O O O O O O O O O O O O O O	ATBE ATBE ATBE AD04 8 A or F A or F A	Alt Bubble Pir Bubble BIEX + M BIEX + M BI							t						I Date Time Remarks: Any Question's Merce Call	110 107 1000 ku he we ver e	505-822-5400
			4901 Hawkins	Tel 505-345-		ıl)	no seĐ	1 PH (5 (G: 1)	811 910 +	38TN 98 bor 94 de	N + X∃T8 ti ₉ M HqT t9M) HqT													ANY	in the second	
	Kandard 🗆 Rush		thy Lob Bun St	ect #:	0118.01.	Project Manager:		a (My Barn	XYes	Sample Temperature:	^o reservative Type	Beric None		2		S	9	t	8	0	01				by: 7110 00 Date)
-Eusidy hecolu	4	Melley, Proj	READ NE	a B & NM 87109	822-9400	- 822 - 8877	Level 4 (Full Validation)	1		Sam	Matrix Sample Request ID ^{Col}	Hro PMW-1 15	to mu-2	Hro MW-3	H2D MW-H	40 MW-5	Hro Mu-6	H20 DBS-1	H20 085-2	Hil DB5-3	Hr0 DBS-4	Her DBS-5		Relifiquished py:	Received by: Received	
i Chułn-ð	Client: DBS &	ATTN	Conting Address: Walk w y	576 100 B	Phone #: 505-	email or Fax#: 505	QA/QC Package:	Accreditation		EDD (Type)	Date Time	4 1424 1424 1	1/01/00 1218 1	4/01/09 1413 a	4/07/01 1500 .	4/27/06/15451	407691623	4/08/09 1055	7/06/24 1013	4/02/09 0844	4/08/0928	4/08/08/0758	1681832	PH Different Time: Re	Time:	

Air Bubbles (Y or N) Ż 20 Sin SIO ANALYSIS LABORATORY 0 HALL ENVIRONMENTAL -S8 mever 57.5. 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. 0.102013 4901 Hawkins NE - Albuquerque, NM 87109 4U 505-345-4107 (AOV-im92) 0728 11/10 www.hallenvironmental.com on Sample **Analysis Reques** (AOV) 80828 9400 8081 Pesticides / 8082 PCB's 4441710 n C) Fax Anions (F,CI,NO3,NO2,PO4,SO4) CUN RCRA 8 Metals Tel. 505-345-3975 (HA9 to AN9) 0168 10/00 (1.403 borthem) 803 505-Vecaed (1.814 bodteM) H91 シシン (TPH Method 8015B (Gas/Diesel) Remarks: Θ BTEX + MTBE + TPH (Gas only) BTEX + MTBE (1208) s'8MT + Salty Doc Brine Statia 26. 00 Dag Santana Mille Melley, PE Time Time HEAL No. ą 000 5 \simeq c) \mathcal{O} 9 7 c^{n} Ţ Date 5 WM 6 SUNDI Corres - D No Sample Temperature: 🔊 ES18.018. Container Preservative 410 C Rush NOXC \$ Nike Type 1.11/11/27 Time Project Manager: m sel Project Name: 205 12540 TILGU. **D** Standard Type and # Diastro 250 Received by: 027 X/ å-Ard E2 Project #: Sampler: Received On Ice: K 2 Z 1W-2 5hallow Mi'dd le hallow Uego Level 4 (Full Validation) Sample Request ID Decp Ci...in-t. Cuá.Jdy. Jcolu N. K. Midd brouch Que NM 1 887 9400 ATTN: Mike Meden D85-7 8-580 205-9 Ŋ A024 d UW-2 822-NW-1 822 - M/1 11-11-A Ha fed by édbý Mailing Address Actodems DBSLA Other (JZD) 120 Han 120 64 Matrix KZD elinguis Kil Ó Relinfui email or Fax#: 505 505 16/9 4/01/04 1752 1256 1707 108/04 1200 Time C00 105/09/1651 QA/QC Package: 1231 EDD (Type) 1081991801 Time: lime: Accreditation Z Standard Phone #: 4/as/of 1 8 4/08/09 4/0/64 Date Client: 576 Bate: Date Ś ž

Appendix C

Well Data Forms

Type Well	Type of Data	L I	Well No. D	BS-1
XMW	Developm		Sheet 1 $ u$	
	Sampling		of / Sheets	5
Other	Pump Tes	st	1	
	□ Other			
1. Project DBS c, A	2. Project Location		3. Date ,	,
Salty Dob Brine Statin	Salt Du	Ruis Prin Ara	04/0	8/09
		Drike Vom rijen		101
4. Technician Barnhill, PG	1 1000	o, NM		
		······································		
7. Method	8.Manufacturer's Desig	nation of Rig		ell (Site, Description)
Pumping Surging Air Lift Bailing Other	DSR-2	200/	I DBS	-/
	, 	ter Levels		
Initial	Final	(Final	+ 24 Hours
	rinal		rinal	+ 24110015
Date: 04/08/09 Time: 10:30	Date: 04/05/09	^{Time:} //:00	Date:	Time:
	04/08/09	11.00	00 7 1 1 2	
10. Total Depth of Well (from TOC)	15. Total Depth of W		20. Total Depth	ef Well (from TOC)
78.50		1.50		
11. Water Level (from TOC)	16. Water Level (fron	n TOC)	21. Water Leve	I (from TOC)
62.38	16. Water Level (from	2.65		
12. Water Column Height No	om x = gal/ft	17.3 Well Volumes	22 Si	ze and Type of
16.12 Di			1 .	ump or Bailer
		1.1362/104	5- 6	
13. Well Diameter	0.16 0.1534		, Red	floz, 1.8
$\downarrow $ $\cup (f $	0.65 0.5972 1.47 1.3540		NS. SUL	b mersible
14. Well Volume (gal) 2.5163/ 8"				teT.D.
(s) w.e. height) 2, 5/62/			5 5	, e , e ,
		Field Analysis		
23. Total Amount of Water 24. Was V Removed				Sampled Ces No
Removed Pumped [Yes C	Dry? Also Yes No2 If yes, source:	Sampling	what was the sample \mathcal{D}	BS-1,04/8
10 Gallons Yes &		AN	Barkin	e-10:55
			Jarnyill	
27. Final Parameters /++3 Time Temp C Conducti		NTUs WL Removed	Flow Rate	Photo Roll #, Observations
10:34 19.99 1.3				
		clear 62.63 10621		
	VISIN THE WELL, DO NO	OT TAKE PH AND CONDUCTIVI	IY PARAMETERS	,
28. Physical Appearance and Remarks	Toxain 14	ntislly - Clerk	C Sam	ale.
	VUNDIN IN	/		-/
29. Purgewater disposal method:	ON 1	SROUND Surfac	e	
29. Purgewater disposal method:		GROUND Surfac	e	
		velopment Parameters		Flow Bate Photo
r15/Cm	Sampling / Dev	Velopment Parameters	Dissolved Oxygen	
Time Temp C Conductivity	Sampling / Dev	velopment Parameters WL Volume (from TOC) (gallons)	Dissolved Oxygen	(gpm) Observ.
Time Temp C Conductivity 10:42 21.53 1.343	Sampling / Dev pH NTUs 8,11 TULBID	Velopment Parameters WL Volume (from TOC) (gallons) (from TOC) (gallons) (from TOC) (gallons)	Dissolved	(gpm) Observ. 1.0 TOPP
Time Temp C Conductivity $10:42 \ 21.53 \ 1.343$ $10:45 \ 20.99 \ 1.366$	Sampling / Dev pH NTUs 8,1/ TULBID 8,27 TULB	Velopment Parameters WL Volume (from TOC) (gallons)	Dissolved Oxygen 4.39 2.37	(gpm) Observ. <u>1.0</u> Tokk <u>1.0</u> Tokk
Time Temp C Conductivity 10:42 21.53 1-343	Sampling / Dev pH NTUs 8,11 TULBID	Velopment Parameters WL Volume (from TOC) (gallons)	Dissolved Oxygen	(gpm) Observ. <u>1.0</u> Tokk <u>1.0</u> Tokk
Time Temp C Conductivity $10.42 \ 21.53 \ 1.343$ $10.45 \ 20.99 \ 1.366$ $10.48 \ 20.30 \ 1.394$	Sampling / Dev pH NTUs 8,1/ Torrain 8,27 Torrain 8,33 Torrain	Velopment Parameters WL Volume (from TOC) (gallons) 2 62.38 In:Ta / 10 - 2.5 2 5.0	Dissolved Oxygen <u>4.39</u> <u>2.37</u> <u>2.36</u>	$(gpm) Observ.$ $1 \cdot 0 Torres$ $1 \cdot 0 Torres$ $1 \cdot 0 Torres$ $1 \cdot 0 Torres$
Time Temp C Conductivity $10.42 \ 21.53 \ 1.343$ $10.45 \ 20.99 \ 1.366$ $10.48 \ 20.30 \ 1.394$ $10.51 \ 19.72 \ 1.386$	Sampling / Dev pH NTUs 8,1/ TURBIE 8,27 TURB 8,33 TURBIE 8,33 TURBIE 8,33 C/err	velopment Parameters WL Volume (from TOC) (gallons) b $2, 5$ b $2, 5$ b 5.0 f 7.5	Dissolved Oxygen 4.39 2.37	(gpm) Observ. 1.0 TOFR 1.0 TOFR 1.0 TOFR 1.0 TOFR
Time Temp C Conductivity $10.42 \ 21.53 \ 1.343$ $10.45 \ 20.99 \ 1.366$ $10.48 \ 20.30 \ 1.394$	Sampling / Dev pH NTUs 8,1/ Torrain 8,27 Torrain 8,33 Torrain	velopment Parameters WL Volume (from TOC) (gallons) b $2, 5$ b $2, 5$ b 5.0 f 7.5	Dissolved Oxygen <u>4.39</u> <u>2.37</u> <u>2.36</u>	(gpm) Observ. $1.0 Total $ $1.0 Total $ $1.0 Total $ $1.0 Total $ $1.0 C/c$
Time Temp C Conductivity 10.42 = 21.53 = 1.343 10.45 = 20.99 = 1.366 10.48 = 20.30 = 1.394 10.51 = 19.72 = 1.386	Sampling / Dev pH NTUs 8,1/ TURBIE 8,27 TURB 8,33 TURBIE 8,33 TURBIE 8,33 C/err	velopment Parameters WL Volume (from TOC) (gallons) b $2, 5$ b $2, 5$ b 5.0 f 7.5	Dissolved Oxygen <u>4.39</u> <u>2.37</u> <u>2.36</u>	(gpm) Observ. $1.0 Total $ $1.0 Total $ $1.0 Total $ $1.0 Total $ $1.0 C/c$
Time Temp C Conductivity 10.42 21.53 $1.34310.45$ 20.99 $1.36610.48$ 20.30 $1.39410.51$ 19.72 1.386	Sampling / Dev pH NTUs 8,1/ TURBIE 8,27 TURB 8,33 TURBIE 8,33 TURBIE 8,33 C/err	velopment Parameters WL Volume (from TOC) (gallons) b $2, 5$ b $2, 5$ b 5.0 f 7.5	Dissolved Oxygen <u>4.39</u> <u>2.37</u> <u>2.36</u>	(gpm) Observ. 1.0 TOFR 1.0 TOFR 1.0 TOFR 1.0 TOFR
Time Temp C Conductivity $10:42 \ 21.53 \ 1.343$ $10:45 \ 20.99 \ 1.366$ $10:48 \ 20.30 \ 1.394$ $10:51 \ 19.72 \ 1.386$	Sampling / Dev pH NTUs 8,1/ TURBIE 8,27 TURB 8,33 TURBIE 8,33 TURBIE 8,33 C/err	velopment Parameters WL Volume (from TOC) (gallons) b $2, 5$ b $2, 5$ b 5.0 f 7.5	Dissolved Oxygen <u>4.39</u> <u>2.37</u> <u>2.36</u>	(gpm) Observ. 1.0 TOFR 1.0 TOFR 1.0 TOFR 1.0 TOFR
Time Temp C Conductivity $10:42 \ 21.53 \ 1.343$ $10:45 \ 20.99 \ 1.366$ $10:48 \ 20.30 \ 1.394$ $10:51 \ 19.72 \ 1.386$	Sampling / Dev pH NTUs 8,1/ TURBIE 8,27 TURB 8,33 TURBIE 8,33 TURBIE 8,33 C/err	velopment Parameters WL Volume (from TOC) (gallons) b $2, 5$ b $2, 5$ b 5.0 f 7.5	Dissolved Oxygen <u>4.39</u> <u>2.37</u> <u>2.36</u>	(gpm) Observ. 1.0 TOFE 1.0 TOFE 1.0 TOFE 1.0 TOFE 1.0 C/C
Time Temp C Conductivity $/0.42$ $2/.53$ $/.343$ $/0.45$ 20.99 1.366 $/0.45$ 20.30 1.394 $/0.51$ 19.72 $/.386$ $/0.54$ 19.99 1.386 $/0.54$ 19.99 1.383 $/0.54$ 19.99 1.383 $/0.54$ 19.99 1.383 $/0.54$ 19.99 1.383	Sampling / Dev pH NTUs 8,1/ Turbin 8,27 Turbin 8,33 Turbin 8,33 Turbin 8,35 C/err 8,35 c/err	velopment Parameters WL Volume (from TOC) (gallons) b $2, 5$ b $2, 5$ b 5.0 f 7.5	Dissolved Oxygen <u>4.39</u> <u>2.37</u> <u>2.36</u>	(gpm) Observ. $1.0 Total $ $1.0 Total $ $1.0 Total $ $1.0 Total $ $1.0 C/c$
Time Temp C Conductivity 10.42 21.53 1.343 10.45 20.99 1.366 10.45 20.99 1.366 10.45 20.99 1.366 10.45 20.99 1.386 10.51 19.72 1.386 10.54 19.99 1.383 10.54 19.99 1.383 10.54 19.99 1.383 10.54 19.99 1.383 10.54 19.99 1.383	Sampling / Dev pH NTUs 8,1/ Turbin 8,27 Turbin 8,33 Turbin 8,33 Turbin 8,35 C/err 8,35 c/err	velopment Parameters WL Volume (from TOC) (gallons) b $2, 5$ b $2, 5$ b 5.0 f 7.5	Dissolved Oxygen <u>4.39</u> <u>2.37</u> <u>2.36</u>	(gpm) Observ. 1.0 TOFR 1.0 TOFR 1.0 TOFR 1.0 TOFR
Time Temp C Conductivity 10.42 21.53 $1.34310.45$ 20.99 $1.36610.45$ 20.99 $1.36610.45$ 20.30 $1.39410.51$ 19.72 $1.38610.54$ 19.99 $1.383(1) Note volume and physical character of secNTU = Nephelometric turbidity unitsWL = Water Level from Top of PVC Casing$	Sampling / Dev pH NTUs 8,1/ Turbin 8,27 Turbin 8,33 Turbin 8,33 Turbin 8,35 C/err 8,35 c/err	velopment Parameters WL Volume (from TOC) (gallons) b $2, 5$ b $2, 5$ b 5.0 f 7.5	Dissolved Oxygen 4.39 2.37 2.37 2.36 2.67 2.7/	(gpm) Observ. $1.0 Total $ $1.0 Total $ $1.0 Total $ $1.0 Total $ $1.0 C/c$
Time Temp C $n3/cm$ 10.42 21.53 1.343 10.45 20.99 1.364 10.45 20.99 1.364 10.45 20.30 1.394 10.45 20.30 1.394 10.45 20.99 1.384 10.51 19.72 1.384 10.54 19.99 1.383	Sampling / Dev pH NTUs 8,1/ Turbin 8,27 Turbin 8,33 Turbin 8,33 Turbin 8,33 C/err 8,35 C/err 8-35 c/err	velopment Parameters WL Volume (from TOC) (gallons) b $2, 5$ b $2, 5$ b 5.0 f 7.5	Dissolved Oxygen <u>4.39</u> <u>2.37</u> <u>2.37</u> <u>2.7/</u> <u>2.7/</u> Date	(gpm) Observ. $1.0 Total $ $1.0 Total $ $1.0 Total $ $1.0 Total $ $1.0 C/c$

1994	CMB ENVIRONMENTAL	& GEOLOGICAL	SERVICES, INC.
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Type Well	Type of Data	Well No. DBS - 2
D MW	Development	Sheet 1 2000 de
Production Other	Sampling ☐ Pump Test	of Sheets
	Other	-
1. Project DBGC A	2. Project Location	3. Date
Salty Dot Brine Statio	in Salty Dob Brine Port	Area 04/08/09
4. Technician CM Barnhill, PG	Len Co, N.M.	
7. Method Pumping Surging Air Lift Bailing Other	8. Manufacturer's Designation of Rig DSR - 200/	9. Location of Well (Site, Description) DBS - 2
	Water Levels	
Initial	Final	Final + 24 Hours
Date: 04/08/09 Time: 0950	Date: 04/08/09 Time: 10:15	Date: Time:
10. Total Depth of Well (from TOC) 79.80	15. Total Depth of Well (from TOC)	20. Total Depth of Well (from TOC)
11. Water Level (from TOC) 65.451	16. Water Level (from TOC)	21. Water Level (from TOC)
12. Water Column Height N	om x = gal/ft 17.3 Well Volumes	
11.59	0.000	a110h3
O" SAHILA DUL MILL	0.1534 18.5 Well Volume: 0.65 0.5972 //.4/9	Eller neditio 2, 10
a SCHADDAC MIN 6"		Submersible
14. Well Volume (gal) 2. 2961/- 8" (s) w.e. height)	2.61 2.3720 19. Purge Volume	ellons setet.D.
23. Total Amount of Water 24. Was	Final Field Analysis	26. Was the Groundwater Sampled (
Removed Pumped	Dry? No Yes	If yes, what was the sample number & Date:
10 Gallons Yes S	N If yes, source:	Sampling Personnel? DB5-2, 04/08,
27. Final Parameters	A 1	CmBonshille 10:13 Photo Roll #,
Time Temp C Conduct	ivity pH NTUs WL Re	moved Flow Rate Observations
10:12 20.08 0.43		
IF PETROLEUI 28. Physical Appearance and Remarks	M IS IN THE WELL, DO NOT TAKE PH AND COND	
	TUXBID Initially - 4/m	ost class a Sample.
29. Purgewater disposal method:	ON GROUND Su.	-face
······································	Sampling / Development Paramet	
Time Temp C Conductivity		lume Dissolved Flow Rate Photo # Ilons) Oxygen (gpm) Observ.
10.00 21.34 0.699		tis 5.87 1.0 Tue
10'03 20.79 0.494	8:28 TURBIO 2	5 4.98 1.0 TOE
In ole 20 20 0 ULI	8.24 TULISIS - 5	
IN DE DO IT DIET		
10.09 dv.14 0.774		Alter
10:12 20.08 0.451	8.23 Mars 66.33 10	<u>. 0 3.6/ 1.0 c/en</u>
(1) Note volume and physical character of se	diments removed.	
NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing	γ	
Checked By	Mit land N	Date
/	XMar Maan PG	04/08/09

- caf	CMB ENVIRONMENTAL	&	GEOLOGICAL	SERVICES,	INC.
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Type Well MW Production Other	Type of Data Development Sampling Pump Test Other	Well No. DBS- 3 Sheet 1 of 1 Sheets
1. Project DBS& A Salty Dob Brine Station	2. Project Location Salty Dob Brine Powp A	3. Date 04/08/09
4. Technician CM Barnh: 11, Pb-	Lea Co; N.M.	
7 Method Pumping Surging Air Lift Bailing Other	8.Manufacturer's Designation of Rig $DSR - 200/$	9. Location of Well (Site, Description) DBS - 3
	Water Levels	
Initial	Final	Final + 24 Hours
Date: 09/09 Time: 0820	Date: <u>04/68/09</u> 15. Total Depth of Well (from TOC)	Date: Time:
10. Total Depth of Well (from TOC) 78.72	15. Total Depth of Well (from TOC)	20. Total Depth of Well (from TOC)
11. Water Level (from TOC)	16. Water Level (from TOC)	21 Water Level (from TOC)
12. Water Column Height Nor 18.05 Dia	x = gal/ft 17. 3 Well Volume Sch 40 Sch 80 8,46 G	
13. Well Diameter 2" 2"ScH 40 PVC MW 4" 6" 4" 14. Well Volume (gal), (s) w.e. height) 2. 88 Ga/.	0.18 0.1534 18. 5 Well Volume 0.65 0.5972 14. 444 1.47 1.3540 19. Purge Volume 2.61 2.3720 19. Purge Volume	Gallons- Submersible
· · · · · · · · · · · · · · · · · · ·	Final Field Analysis	
23. Total Amount of Water Removed 24. Was W Pumped Dr Yes 27. Final Parameters Time Temp C Conductivi	12 Yes Tryes, source:	26. Was the Groundwater Sampled Cas No If yes, what was the sample number & Date: Sampling Personnel? DB5-3, 04/09/09 (IMBarnh: 110 0844 Photo Roll #,
0843 19.53 0.53	2 7.44 Clean bl.44	
00 District Assessment of Description	SIN THE WELL, DO NOT TAKE PH AND COND TURBIO Initely - Clea	
29. Purgewater disposal method:	ON GROUND SUR	FACE .
	Sampling / Development Paramet	
Time Temp C Conductivity 0831 18.06 0.735	pH NTUs (from TOC) (ga	blume Dissolved Flow Rate Photo #, allons) Oxygen (gpm) Observ. (1 1110-1 6-44 1.0 Tvrok
0834 18.85 0.620 7 0837 19.34 0.583 7	7.68 TURBIO - 2. 7.52 TURBIO - 5.	5 4.5% 1.0 TUNON
0840 19.58 0.558	7.48 TURAIO 7.	5 2.55 1.0 TURAIL
0843 [9.53 0.552	<u> </u>	0.0 <u>2,93</u> <u>1.0</u> <u>Clean</u>
(1) Note volume and physical character of sedir NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing Checked By	nents removed.	Date
()//4	Mi Monte P6	04/08/09

XLW Development Development Dif Sheets Droduction Dother Image: Development Dif Sheets 1. Project DB5 & A Satty Db4 Brinc Stattin Sotty Db4 Brinc Pand Hrac 04/b8/b9/09 4. Technician Satty Db4 Brinc Stattin Sotty Db4 Brinc Pand Hrac 04/b8/b9/09 4. Technician Satty Db4 Brinc Pand Hrac 04/b8/b9/09 7. Mathod B.Manufacturer's Designation of Rig 9. Location of Well (Site, Description) Tumping Surging Air Lift Bailing Other B.Manufacturer's Designation of Rig 9. Location of Well (Site, Description) Date: Initial Final Final + 24 Hours/ Date: Date: Date: Time: D'H/b6/b5 Time: 0905 Date Date: Time: D'H/b6/b5 Time: 0905 Date Date Time: Date Time: 10. Total Depth of Well (from TOC) 15. Total Depth of Well (from TOC) 21. Water Level (from TOC) 21. Water Level (from TOC) 22. Size and Type of 12. Water Column Height Dia Soft 40 Soft 40 Soft 40 Soft 40 Soft 40 Soft 40	Type Well	Type of Data		Well No. DB	5-12	
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$ \begin{array}{ $				of / Sheets		
1. Project $DB55.4$ 2. Project Location 3. Date $Sarty Daf Brinc Pand France O4/log/log/log/log/log/log/log/log/log/log$	Other			,		
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4. Techniam $(4. Techniam (4. Februard))$ 7. Mathod (4. Techniam (4. Februard)) 7. Mathod (4. Techniam (4.		Salt Do	+ Bring Pond Kri	a 04/1	8/09	
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Finding Surging Ar Lift Balling Other $DSA^2 - 2001$ $DBS - 44$ Water Levels Initial Final Final Final + 24 Hours/ Date: Time: $DAS - 4001$ Date: Time: $DAS - 4001000000000000000000000000000000000$	CmBornhill, Pt	Lea l	O, NM			
Water Levels Initial Final + 24 Hours/ Water Levels Date: Time: OPUS Date: Time: Time: OPUS Date: Time: OPUS Date: Time:		8.Manufacturer's Design	ation of Rig	9. Location of Wel	I (Site, Description)	
Initial Final Final Final Final Final Final Final Final Final Pate: Time: Date: Date: <thdate:< th=""> <</thdate:<>	Pumping Surging Air Lift Bailing Other	DSR-	2001	DBS	-4	
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10. Total Depth of Well (from TOC) 15. Total Depth of Well (from TOC) 20. Total Depth of Well (from TOC) 11. Water Level (from TOC) 15. Total Depth of Well (from TOC) 20. Total Depth of Well (from TOC) 11. Water Level (from TOC) 16. Water Level (from TOC) 17. 3 Well Volumes 21. Water Level (from TOC) 12. Water Column Height Nom $x \equiv gal/t$ 17. 3 Well Volumes 22. Size and Type of 13. Well Diameter D10 0.1534 18. 5 Well Volumes $R = J - Alp_2$, 1.9 21. Size height) 0.1534 18. 5 Well Volumes $R = J - Alp_2$, 1.9 14. Well Volume (gel) 0.22.64/r 1.47 13.540 15. We leight) 24. Was Well Submers; it Account of Water 24. Was Well 16. Machine (gel) 2.2.2.61/r 2.3720 19. Purge Volume Submers; it Account of Water 23. Total Amount of Water 24. Was Well Yes Yes 19. Purge Volume Submers; it Account of Water 24. Was Well Perpo De Total Depth of Well Yes Yes Yes 19. Definers 19. Submers; it Account of Water 27. Final Parameters Conductivity pH NTUs NTUs Removed Flow Rate						
11. Water Level (from TOC) 16. Water Level (from TOC) 21. Water Level (from TOC) 12. Water Column Height 13. Well Diameter 17. 3 Well Volumes 22. Size and Type of 13. Well Diameter 17. 3 Well Volumes 17. 3 Well Volumes 22. Size and Type of 13. Well Diameter 17. 3 Kell Volumes 17. 3 Well Volumes 22. Size and Type of 14. Well Volume (gal) 27. 22.65/r 1.47 1.540 14. Well Volume (gal) 27. 22.65/r 1.47 1.540 23. Total Amount of Water 24. Was Well 24. Was water added to Well? 19. Purge Volumes Sch 40 19. Gg/1645- 19. Submater 28. Was the Groundwater Sampled Core No 27. Final Farameters 19. Submater 28. Was the Groundwater Sampled Core No 28. Physical Appearance and Remarks 0.52.0 7.55.0 Condition 1.0 Gallons 1.0	10. Total Depth of Well (from TOC)		ll (from TOC)	20. Total Depth o	Well (from TOC)	
12. Water Column Height Nom x = gal/t 17.3 Well Volumes 22. Size and Type of Primpor Bailer 13. Well Diameter 2^{H} 5ch 49 Point 20 9.150 18.5 Well Volumes $R = 1/1 + 1/1 + 2/1 + 8$ 2 ^H 5ch 49 PUL MW 65 0.557 6 1.47 1.3540 19. Purge Volumes $R = 1/1 + 1/1 + 2/1 + 8$ 50 Lamers; 14/e 2 ^H 5ch 49 PUL MW 65 0.557 19. Purge Volumes $R = 1/1 + 1/1 + 2/1 + 8$ 50 Lamers; 14/e 2 ^H 5ch 49 Pul MW 65 1.47 1.3540 19. Purge Volumes $R = 1/1 + 1/1 + 2/1 + 8$ 2 ^H 30 we, height 0.72 + 1/1 + 1		16 Water Level (from		21. Water Level (from TOC)	
13. Well DiameterDiaSch 40Sch 806.6.6.6.60//ms $Pumpor Bailer13. Well Diameter2^{H} Sch 400.153418.5 Well VolumesRel./Hs_{2}1.82^{H} Sch 40PUL MW6.50.597211.10 fo.1/orsRel./Hs_{2}1.814. Well Volume (gal)2.265^{H}1.354019. Purge Volume/Sub enersiskleSub enersiskle15. we. height2.265^{H}2.61^{H}2.3720^{H}19. Purge Volume/Sub enersiskle23. Total Amount of Water24. Was WellPumped Dn?YesYes26. Was the Groundwater Sampled CesNo23. Total Amount of Water24. Was WellPumped Dn?YesYesSub enersiskleSampling Personnel?DBS-4/.04/6827. Final ParametersPumped Dn?YesYesYesOther Sub enersiskleSampling Personnel?DBS-4/.04/6827. Final ParametersIf PETROLEUM IS IN THE WELL, DO NOT TAKE pH AND CONDUCTIVITY PARAMETERSIf Define A ClearObservations28. Physical Appearance and RemarksTukbrin Tak, try. (Lg - ClearC Sampling / Define DissolvedFlow Rate29. Purgewater disposal method:OchdeutivitypHNTUsWLVolumeDissolvedFlow Rate29. Purgewater disposal method:S. M. S. TukbrinS. M. S. TukbrinS. M. S. TukbrinS. M. S. TukbrinS. M. S. TukbrinDissolvedFlow Rate29. Purgewater disposal method:0.542TukbrinS. M. S. TukbrinS. M. S. TukbrinS. M. S. TukbrinS. M. S. $	66.27					
13. Well Diameter 2 0.1534 18. 5 Well Volumes $Rel.I.Haz, I.S. 2HSCH 40 PULMW 6 0.5972 1.3540 19. Purge Volumes Rel.I.Haz, I.S. 14. Well Volume (gal) 3.226H 8* 2.61 2.3720 19. Purge Volumes Sub mars; Ide 15. We. height) 9. 2.64 8* 2.61 2.3720 19. Purge Volumes Sub mars; Ide 23. Total Amount of Water 24. Was Well 25. Was water added to Well? 26. Was the Groundwater Sampled Core No 23. Total Amount of Water 24. Was Well 25. Was water added to Well? 26. Was the Groundwater Sampled Core No 23. Total Amount of Water 24. Was Well 25. Was water added to Well? 26. Was the Groundwater Sampled Core No 24. J. J. J. Dependence Conductivity pH NTUs NU Removed Flow Rate Observations 27. Final Parameters Time Temp C Conductivity pH NTUs WL Removed Flow Rate Observations 26. Physical Appearance and Remarks 0.520 7.59 Clease Clease Sampling / Development Parameters $	12. Water Column Height	Nom $x = qal/ft$				
13. Well Diameter 2^{H} 0.162 0.1534 18.5 Well Volumes $Rel.1+Hs_{2}$	13.88'	Dia Sch 40 Sch 80	6.66 63/1	ens. et	imp or Bailer	
IAP + P + P + P + P + P + P + P + P + P +	13. Well Diameter	0.1534		Red	A102, 1.8	
14. Well Volume (gal) $2.22.65/t$ 8° 2.61 2.3720 19. Purge Volume (b) $5etcc.7.2$. 23. Total Amount of Water Removed 24. Was Well 25. Was water added to well? Yes 26. Was the Groundwater Sampled Cost No 27. Final Parameters 24. Was Well 25. Was water added to well? Yes 26. Was the Groundwater Sampled Cost No 27. Final Parameters 10. Conductivity Time Temp C Conductivity Conductivity pH NTUs WL Removed Flow Rate Observations 19. Purgevalue disposal method: 0.520 7.59 Clear 10.836 10.61/ons 1.0.664 Clear 19. PetroLEUM IS IN THE WELL, DO NOT TAKE pH AND CONDUCTIVITY PARAMETERS 28. Physical Appearance and Remarks Tunchin Table Clear Clear Clear Clear Clear Photo Observal 29. Purgewater disposal method: 00. Genume Signifing / Development Parameters Clear Clear Photo Observal 0915 19.41 0.819 7.527 Tunchin Clear Clear Clear Photo 0915 19.41 0.5419 7.527 Tunchin		0.65 0.5972 5" 1.47 1.3540	11.10621	laws En		
Final Field Analysis Final Field Analysis 23. Total Amount of Water 24. Was Well Pumped Dry? Yes 25. Was water added to well? 26. Was the Groundwater Sampled Clear No If yes, what was the sample number & Date: Removed Pumped Dry? Yes Col 10 Go / 64 5- 10 Go /	14. Well Volume (gal) 7 77 64		19. Purge Volume	11 Se	teta.	
23. Total Amount of Water Removed 24. Was Well Pumped Dry? Yes 10 Ga/1645- 27. Final Parameters Time Temp C Conductivity PH NTUS 10 Ga/1645- 27. Final Parameters Time Temp C Conductivity PH NTUS 10 Ga/1645- 27. Final Parameters Time Temp C Conductivity PH NTUS 10 Ga/1645- 28. Was when was the Groundwater Sampled Clear Photo Roll #, Photo R	(s) w.e. neight)	Final Fi	eld Analysis			
RemovedPumped Dry? YesYes If yes, source:If yes, what was the sample number & Date: Sampling Personnel?If yes, what was the sample number & Date: Sampling Personnel?If yes, what was the sample number & Date: Sampling Personnel?If yes, what was the sample number & Date: Sampling Personnel?If yes, what was the sample number & Date: Sampling Personnel?If yes, what was the sample number & Date: Sampling Personnel?If yes, what was the sample number & Date: Sampling Personnel?If yes, what was the sample number & Date: Sampling Personnel?If yes, what was the sample number & Date: Sampling Personnel?Photo Roll #, 04/68101121.380.5207.59C/cut b/r38 / 10 b/r/as1.0 b/r/aC/cut111PEROLEUM IS IN THE WELL, DO NOT TAKE PH AND CONDUCTIVITY PARAMETERS28. Physical Appearance and RemarksTurkbin Ta, t_1, f_1, f_4 - C fork C Sample.Sampling / Development Parameters29. Purgewater disposal method:0NGenumb SurfaceOxygen(gpm)091519.910.8197.52Turkbin G (66.97)(m1711)7.941.0091519.910.5418.03Turkbin SolvedFlow RatePhoto092120.380.5207.59C/cent5.05.4221.0Turkbin G092420.380.5207.59C/cent66.971.07.57.92Turkbin G092420.380.5207.59C/cent66.3810.04.921.0C/cent092420.380.5207.59C/cent64.38		Well 25. Was water ad	ded to well? 26. Was			
(IMBG: ING: III COG2B Photo Roll #, Time Temp C Conductivity pH NTUs WL Removed Flow Rate Observations (P37) 20.38 0.520 7.59 Clear bl/38 10 b1/045 1.0 6PM Clear IF PETROLEUM IS IN THE WELL, DO NOT TAKE pH AND CONDUCTIVITY PARAMETERS 28. Physical Appearance and Remarks TURBID TA, T, ILg - Clear C Sample. 29. Purgewater disposal method: 0N GROWND Surfoce 29. Purgewater disposal method: 0N GROWND Surfoce TURBID TA, T, ILg - Clear C Sample. 29. Purgewater disposal method: 0N GROWND Surfoce TURBID TA, T, ILg - Clear C Sample. 29. Purgewater disposal method: 0N GROWND Surfoce TURBID TA, T, ILg - Clear C Sample. 29. Purgewater disposal method: 0N GROWND Surfoce TOW Bio Ta, T, ILg - Clear C Sample. 29. Purgewater disposal method: 0N GROWND Surfoce TURBID TA, T, ILg - Clear C Sample. OPIS 19.9.1 0.819 7.52 TURBID 166.21 / m.Ti.1 7.94 1.0 OPIS 19.9.1 0.819 7.52 TURBID 166.21 / m.Ti.1 7.94 1.0 OPIS 19.9.1 0.819 7.52 TURBID 166.21 / m.Ti.1 7.94 1.0 OPIS 20.38 0.591 8.09 TURBID 5.0 5.425 1.0 OPIL 20.38 0.592 7.59 Clear 10.0 OPIL 20.38 0.592 7.59 Clear 10.0 OPIC 20.38 0.592 7.59 Clear 10.0 <td< td=""><td>No.</td><td>Dry? Yes</td><td>lfves.v</td><td>what was the sample</td><td>number & Date:</td></td<>	No.	Dry? Yes	lfves.v	what was the sample	number & Date:	
27. Final Parameters MS/CH PH NTUs WL Removed Flow Rate Observations (Pa)7 20.38 0.520 7.59 C/cmc 6/38 1.06446 1.06446 1.06446 C/cmc Observations (Pa)7 20.38 0.520 7.59 C/cmc 6/38 1.06446 C/cmc Observations (Pa)7 20.38 0.520 7.59 C/cmc 6/38 1.06446 Observations (Pa)7 20.38 0.520 7.59 C/cmc 6/2000 1.06446 Observations 28. Physical Appearance and Remarks TWB in Towain Towain C/cma C Sample 29. Purgewater disposal method: 0.0 Genue Surface Sampling / Development Parameters Observ. 0915 19.91 0.819 7.52 Towain (b6.27) pinfal 7.94 1.0 Towain 0921 20.38 0.591 8.09 Towain 2.5 6.45 1.0 Towain 0921 20.38 0.592 7.59 C/cma 5.0 5.42	DG2/645- Yes	it yes, source:	Samplin	mR.	104,04/08	
Time Temp C Conductivity pH NTUS WL Removed Flow Rate Observations M_{27} 20.38 0.520 7.59 Class block block lines 1.064M Class IF PETROLEUM IS IN THE WELL, DO NOT TAKE pH AND CONDUCTIVITY PARAMETERS 28. Physical Appearance and Remarks TURE in Ta, f., M_{2} - Class C Sample. 29. Purgewater disposal method: ON GROUND Starfoce Sampling / Development Parameters WL Volume Dissolved Flow Rate Photo Observ. OI = 19.41 0.819 7.52 TURBID (gallons) Oxygen (gpm) OBSIS 19.41 0.819 7.52 TURBID (bb 21) 10.1121 7.94 1.0 OI = 19.41 0.819 7.52 TURBID (bb 21) 10.1121 7.94 1.0 OI = 2.5 6.45 1.0 OI = 2.5 1.45 1.0 OI = 1.20.38 0.595 8.08 TURBID (bb 21) 10.1121 7.94 1.0 OI = 2.5 1.45 1.0 OI = 2.5 1.45 1.0 OI = 1.20.34 0.544 8.05 TURBID (bb 21) 10.1121 7.94 1.0 OI = 2.5 1.45 1.0 OI = 2.5 1.45 1.0 OI = 2.5 1.45 1.0 OI = 2.5 1.45 1.0 OI = 2.5 1.0	27 Final Parameters			1122144.1	Photo Boll #	
IF PETROLEUM IS IN THE WELL, DO NOT TAKE PH AND CONDUCTIVITY PARAMETERS 28. Physical Appearance and Remarks TURBID Th, fis //g - C/CML C Sample: 29. Purgewater disposal method: ON GROUND Surfoce Sampling / Development Parameters TURBID TOC: (gallons) Oxygen (gpm) Observe OP15 / 9.91 O.819 7.52 TURBID (b6.27 / ID.1714) T.94 /.0 OP16 J.9.91 O.819 7.52 TURBID (b6.27 / ID.1714) T.94 /.0 TURE 0915 / 9.91 O.819 7.52 TURBID (b6.27 / ID.1714) 7.94 1.0 TURE 0915 / 9.91 0.819 7.52 TURBID (b6.27 / ID.1714) 7.94 1.0 TURE 0914 20.38 0.591 8.08 TURBID - 2.5 1.45 1.0 TURE 0921 20.38 0.592 7.96 C/em 5.0 5.42 1.0 TURE 0922 20.38 0.590 7.59 C/em 6.6.38 10.0 4.92 1.0 C/em 0927 20.38 0.590 7.59 C/em 6.6.38 10.0 4.92 1.0 C/em 0927 20.38 0.590 7.59 C/em 6.6.38 10.0 4.92 1.0 C/em 0927 20.38 0.590 7.59 C/em C/em 0.6.38 10.0 4.92 1.0 C/em 0.10 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Time Temp C Conduc	ctivity pH N	TUs WL Removed	Flow Rate	Observations	
IF PETROLEUM IS IN THE WELL, DO NOT TAKE PH AND CONDUCTIVITY PARAMETERS 28. Physical Appearance and Remarks TURBID TA, fis //g - C/CML C Sample: 29. Purgewater disposal method: ON GROUND Surfoce Sampling / Development Parameters TURBID TOC: (gallons) Oxygen (gpm) Observ. OP15 / 9.91 O.819 TURBID (b6.27) IDI/TAL T.94 I.0 TURBID (b6.27) IDI/TAL T.94 I.0 TURE OP15 I.9.6 I.9.6 I.9.6 I.9.6 I.9.6 I.9.6 I.9.6 I.9.6 I.9.6 <th colspa<="" td=""><td>1927 20.38 0.</td><td>520 7.59 Ch</td><td>cen 6/0.38' 10 601</td><td>1045 1.0e</td><td>SPM Clear</td></th>	<td>1927 20.38 0.</td> <td>520 7.59 Ch</td> <td>cen 6/0.38' 10 601</td> <td>1045 1.0e</td> <td>SPM Clear</td>	1927 20.38 0.	520 7.59 Ch	cen 6/0.38' 10 601	1045 1.0e	SPM Clear
$\frac{TVRBID}{FR, f_{12}/Ly - Cleak} \subset Sample}{ON GROUND Strfoce}$ 29. Purgewater disposal method: $\frac{ON GROUND Strfoce}{Sampling / Development Parameters}$ $\frac{VL}{Volume} Dissolved} Flow Rate Photo Oscillation (from TOC) (gallons) Oxygen (gpm) Observ. 0915 19.91 0.819 7.52 TURBID (66.01 initial 7.94 1.0 TUR 0918 20.38 0.591 8.08 TURBID (66.01 initial 7.94 1.0 TUR 0921 20.34 0.544 8.05 TURBID (66.01 initial 7.94 1.0 TUR 0921 20.34 0.544 8.05 TURBID (66.01 initial 7.94 1.0 TUR 0921 20.34 0.544 8.05 TURBID (66.01 initial 7.94 1.0 TUR 0921 20.38 0.523 7.96 Cleak (66.38 10.0 4.92 1.0 TUR 0924 20.38 0.520 7.59 Cleak (66.38 10.0 4.92 1.0 Clear 0927 20.38 0.520 7.59 Cleak (66.38 10.0 4.92 1.0 Clear (1) Note volume and physical character of sediments bemoved. NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing$	IF PETROLEU					
29. Purgewater disposal method: ON GROWND Starfoce Sampling / Development Parameters $WL Volume Dissolved Flow Rate Photo (gpm) Observ. (g$	28. Physical Appearance and Hemarks	TUMAIN	To to 11 - Ch	en c.S.	mole	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	29 Purgewater disposal method:	IVNDID .		-		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	20, i urgewater disposar metrioù.	ON		ce		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Sampling / Deve		Dissolved F	low Rate Photo	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Time Temp C Conductivity	pH NTUs	(from TOC) (gallons)		(gpm) Observ.	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0915 19.91 0.819	7.52 TUKBIO	66.27 Initial	7.94	1.0 TUR.	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0918 20.38 0.595	- 8.08 TURAID		6.45	1,0 TUR.	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			p - 5.0	5.42	110 Tues	
0927 20.38 0.520 7.59 C/een 66.38' 10.0 4.92 1.0 C/een		4 4 1				
(1) Note volume and physical character of sediments removed. NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing Checked By	A				ETT	
NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing Checked By Date	0911 20.38 0.520	1.59 Clerk	(14.30 10.0	7.72 /	ro Clea	
NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing Checked By Date				·		
NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing Checked By Date						
NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing Checked By Date						
WL = Water Level from Top of PVC Casing		ediments removed.				
Checked By Date Date	NTU = Neohelometric turbidity units	× /				
		11 / .				

-34	CMB ENVIRONMENTAL	. &	GEOLOGICAL	SERVICES, INC.	
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Type Well	Type of Data	Well No. DRC-E
Жмw	Development	Sheet 1 DB5-5
	A Sampling	of Sheets
Other	Pump Test	
	Other	
1. Project DBS& A	2. Project Location Brine Po	un Ara 3. Date
Solty Dit Brine Station	Solty Dob Plage	HORE 0110012009
4. Technician	Shed & Brine Well	
CM Barnhill, Pb	Lea Cornta, NM	
7. Method	8.Manufacturer's Designation of Rig	9. Location of Well (Site, Description)
Pumping Surging Air Lift Bailing Other	•	DBS-5
	DSA-2001	UDS-5
	Water Levels	
Initial	Final	Final + 24 Hours
Date:/// Time: 0720	Date: Time: 0800	Date: Time:
Date: 04/09 Time: 0730	() 4 100 117	
10. Total Depth of Well (from TOC)	15. Total Depth of Well (from TOC)	20. Total Depth of Well (from TOC)
78-90	78.90'	
11. Water Level (from TOC)	16. Water Level (from TOC)	21. Water Level (from TOC)
11. Water Lever (110111100)	43,55	
12. Water Column Height Nor		
15,91 Dia		3 Gallons Pump of Bailer
		110011111111
2"SCH 40 PVC MW 6"	1.47 1.3540	2 Gallors Submersible
14. Well Volume (gal) (s) w.e. height) 2.54 6/	2.61 2.3720 19. Purge Volu	Sete T.D.
(s) w.e. height) 0.5462/		Allows Selelis.
•	Final Field Analysis	
23. Total Amount of Water 24. Was W		26. Was the Groundwater Sampled Ces No
Removed Pumped Dr		If yes, what was the sample number & Date:
10 Gallons Yes et	If yes, source:	Sampling Personnel? DBS-5. 04/08/0
1.00-11.00-		CmBarnh: 11@ 0758
27. Final Parameters ms/		Photo Boll #
27. Final Parameters MS/U Time Temp C Conductivi	ty pH NTUs WL	Removed Flow Rate Observations
6757 19.60 0.77	T, 15 Clain - 13.55	10 tallens lilloom Almist cla
	IS IN THE WELL, DO NOT TAKE PH AND CO	NOUCTIVITY PADAMETEDS
28. Physical Appearance and Remarks		
20. Thyologi Appearance and Homano	TURBID Initialy-	Almest cleur e Sample
29. Purgewater disposal method:	ON GROUND Sur	face
	Sampling / Development Parar	
Time Temp C Conductivity	pH NTUs (from TOC)	Volume Dissolved Flow Rate Photo #, (gallons), Oxygen (gpm) Observ. (1
0748 17.89 0.811	7.16 TURFIO -	2.5 4.07 1.0 TUNG,
0751 19.09 0.758 -	7.19 TUEBID	5.0 4.18 1.0 Tresh
hadde a det i and		
	7.16 TURBID	7.5 4.57 1.0 TURDI
0757 19.60 0.777	7.15 Almist 63.55'	10.0 4.96 1.0 41 mist
······		
(1) Note volume and physical character of sedin	nents removed.	
NTU = Nephelometric turbidity units		
WL = Water Level from Top of PVO Casing		Data
Checked By	Mhu Ph	Date 04/08/09
	Mar 10.	9/08/09
- //		

Type Well MW Production Other	Type of Data Development Sampling Pump Test Other		Well N Sheet of		
1. Project DBS& A Salty Dob Brine Statton 4. Technician (M Barnhill, Db	Shed & Br		3. Dat He U	04/07/09	
7. Method Pumping Surging Air Lift Bailing Other	Lea G 8.Manufacturer's Designat DSR -	-		ation of Well (Site, De $OB5-6$	escription)
	Wate	r Levels			
Initial	Final			Final + 24 Hour	'S
Date://///09 Time: /8 : /5 10. Total Depth of Well (from TOC)	Date: Tim 04/07/09 15. Total Depth of Well	e: 18:34	Date:	otal Depth of Well (fro	Time:
10. Total Depth of Weil (from TOC)	78,4		20. 10		JII 100)
11. Water Level (from TOC) 02.75	16. Water Level (from To	00)	21. W	later Level (from TOC	2)
12. Water Column Height Norr 15.95 / Dia		17.3 Well Volume 7.65		22. Size and Typ Pump of Ba	
13. Well Diameter $\mathcal{A}^{"}$	0.1534 0.65 0.5972 1.47 1.3540 2.61 2.3720	18. 5 Well Volume	s Gallons	Redificz submers c T.D.	
23. Total Amount of Water Removed /// Collocus 27. Final Parameters 23. Total Amount of Water Pumped Dn Yes 24. Was We Pumped Dn Yes	ell 25. Was water add 25. Was water add 25. Yes 25. Yes 26. Ye		If yes, what was Sampling Person	undwater Sampled (the sample number & nel? DB5-6 nh:110 18	Date: 04/07/36
Time Temp C Conductivit 18:32 20,12 1,562 IF PETROLEUM		m. 63.70 1		low Rate Obse	ervations almost Clence
28. Physical Appearance and Remarks	VKBID Initi	ally - 4.	Imost C	leur e San	nde
29. Purgewater disposal method:	ON	GROUND	Surtac	e	
	Sampling / Devel	opment Paramet			
18:13 21.06 1.308 18:26 20:45 1.434	рн NTUS 7.96 Тикою 7.37 Тикою 7.06 Тикою 6.99 Тикой 6.99 Тикой	(from TOC) (ga (ba, 75' / n) 2. 5	illons), Oxy	polved Flow Rate (gpm) p_{4} (gpm) g_{5} (gpm) g_{5} (gpm) f_{1} p_{1} f_{1} p_{2} f_{1} p_{2} f_{2} f_{1} p_{2} f_{2} f_{2} f_{1} p_{2} f_{2}	Photo #, Observ. (1) TOKISI TOKISI TOKISI TOKISI ANA-SI
(1) Note volume and physical character of sedir NTU = Nephelometric turbidity units	<u> () /) / () / () / () / () / () / (</u>				<u> </u>
WL = Water Level from Top of PVC Casing / Checked By	Tin M.Bn	-P6-		Date 04/07/	09

			147 IL 11
Type Well	Type of Data		Well No. DB5-7
ZHWW		t	
	Sampling	1	of Sheets
Other	Pump Test Other		/
1. Project DB5 ; A			
	2. Project Location		3. Date
Salty Dob Brine Station	Solty Dof	ne well area	04/07/09
4. Technician	Shed & Brit	re well Arca	
4. Technician Cm Barnhill, PG	Lea Co.	N.M.	
7_Method	8.Manufacturer's Designa		9. Location of Well (Site, Description)
Pumping Surging Air Lift Bailing Other	DSR-	- /	DB5-7
		r Levels	First, 04 House
Initial	Final		Final + 24 Hours
Date: 07/09 Time: 16:45	Date: Tim	ne: 17/10	Date: Time:
	Date: 04/07/09 15. Total Depth of Well	//.//	20. Total Depth of Well (from TOC)
10. Total Depth of Well (from TOC)	15. Total Depth of Well		20. Total Depth of Well (from TOC)
77.10	76.20		/
11. Water Level (from TOC)	16. Water Level (from T	;OC)	21. Water Level (from TOC)
61.74	61	. 89	
12. Water Column Height Non	n $x = gal/ft$	17.3 Well Volumes	22. Size and Type of
	Sch 40 Sch 80	7.3768/10.	
15, 36 ^{Dia}	616	18. 5 Well Volumes	3 9
13. Well Diameter 2 ¹¹ 2 ¹¹ SCH 40 PVC MW 6"	0.1534 0.65 0.5972	18.5 Well volumes 12.28 621/0	Redit102, 1.8"
	1.47 1.3540	· ·	JURNERSINC
14. Well Volume (gal) 7 115-1 8"	2.61 2.3720	19. Purge Volume	s. Set a T.D.
(s) w.e. height) 2. 75 68/	Einol Ein		/ 00 - 10
23. Total Amount of Water 24. Was W		eld Analysis	the Groundwater Sampled
Removed Pumped Dr		If ves. w	hat was the sample number & Date:
10 Gallons. Yes	If yes, source:	Sampling	Personnel? DBS-7,04/6
10 Gallous.		CH	nBarnhille 176
27. Final Parameters m 6//			Photo Roll #
27. Final Parameters # 5/2 Time Temp C Conductivi	ity pH NT	Us WL Removed	
1706 20,51 1,99	19 7.07 GIM	Us WL Removed Mast 61.89 / DG1, Hear	las 1 1 1 pm Almost
	/ /13 C/	the HAND CONDUCTIVI	Creak
IF PETROLEUM	IS IN THE WELL, DO NOT	TAKE pH AND CONDUCTIVI	TY PARAMETERS Sampl
28 Physical Appearance and Remarks	Tux BID INT	tially - alm	
28. Physical Appearance and Remarks	4		ost cleare Samp
28 Physical Appearance and Remarks		tially - alm ND Surface	
28. Physical Appearance and Remarks	ON GROU		
28. Physical Appearance and Remarks 29. Purgewater disposal method: ms/cm	ON GROU Sampling / Devel	Iopment Parameters WL Volume	Dissolved Flow Rate Photo
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity	ON GROU Sampling / Devel	Iopment Parameters WL Volume (from TOC) (gallons),	Dissolved Flow Rate Photo
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:54</u> 21.79 3.051	ON GROU Sampling / Devel	Iopment Parameters WL Volume	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.71 "2.5 Tok
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:54</u> 21:79 3.051	ON GROU Sampling / Devel	Iopment Parameters WL Volume (from TOC) (gallons), 61.74 [m, tin]	Dissolved Flow Rate Photo
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:54</u> <u>21:79</u> <u>3.051</u> <u>16.57</u> <u>21.16</u> <u>1.776</u>	ON GROU Sampling / Devel pH NTUs 7.37 TUEBID 7.36 TUEBID	$\begin{array}{c} \text{PD} \text{Surface} \\ \hline \text{Iopment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.711/2 \\ \hline 2.5 \end{array}$	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.71 102.5 $70c$, 4.35 $1.02.5$ $70c$,
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:54</u> <u>21:79</u> <u>3.051</u> <u>16.57</u> <u>21:16</u> <u>1.776</u> <u>1700</u> <u>20.83</u> <u>1.869</u>	ON GROU Sampling / Devel PH NTUS 7.37 TUEBID 7.36 TUEBID 7.25 TUEBID	$\begin{array}{c c} \text{Iopment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.111/2 \\ \hline $	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.7/ 1025 Tok 4.35 1.025 Tok 5.23 1.025 Tok
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:57</u> <u>21.79</u> <u>3.051</u> <u>16.57</u> <u>21.16</u> <u>1.776</u> <u>1700</u> <u>20.83</u> <u>1.869</u> <u>1703</u> <u>20.69</u> <u>1.959</u>	ON GROU Sampling / Devel PH NTUS 7.37 TULBID 7.36 TULBID 7.25 TUKBID 7.15 TUKBID	$\begin{array}{c} \text{PD} \text{Surface} \\ \hline \text{Iopment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.711/2 \\ \hline 2.5 \\ \hline - & 5.0 \\ \hline - & 7.5 \\ \hline \end{array}$	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.71 "02.5 Tok. 4.35 1.02.5 Tok. 5.23 1.02.5 Tok. 4.65 1.02.5 Tok.
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:57</u> <u>21.79</u> <u>3.051</u> <u>16.57</u> <u>21.16</u> <u>1.776</u> <u>1700</u> <u>20.83</u> <u>1.869</u> <u>1703</u> <u>20.69</u> <u>1.959</u>	ON GROU Sampling / Devel PH NTUS 7.37 TULBID 7.36 TULBID 7.25 TUKBID 7.15 TUKBID	$\begin{array}{c c} \text{Iopment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.111/2 \\ \hline $	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.7/ 1025 Tok 4.35 1.025 Tok 5.23 1.025 Tok
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:54</u> 21.79 3.051 <u>16.57</u> 21.16 1.776 <u>1700</u> 20.83 <u>1.869</u> 1703 20.69 1.959	ON GROU Sampling / Devel pH NTUS 7.37 TULBID 7.36 TULBID 7.25 TULBID 7.15 TULBID	$\begin{array}{c} \text{Inpment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.171/2 \\ \hline 2 & 2.5 \\ \hline \hline 2 & 5.0 \\ \hline \hline 1.166 & 7.5 \\ \hline \hline 1.166 & 10.0 \\ \hline \end{array}$	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.71 102.5 $70.44.35$ $1.22.5$ $70.65.23$ $1.02.5$ $70.64.65$ $1.02.5$ $70.61.02.5$ 70.6
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:57</u> <u>21:79</u> <u>3.051</u> <u>16.57</u> <u>21:16</u> <u>1.776</u> <u>1700</u> <u>20.83</u> <u>1.869</u> <u>1703</u> <u>20.69</u> <u>1.959</u>	ON GROU Sampling / Devel PH NTUS 7.37 TULBID 7.36 TULBID 7.25 TUKBID 7.15 TUKBID	$\begin{array}{c} \text{Inpment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.171/2 \\ \hline 2 & 2.5 \\ \hline \hline 2 & 5.0 \\ \hline \hline 1.166 & 7.5 \\ \hline \hline 1.166 & 10.0 \\ \hline \end{array}$	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.71 102.5 $70.44.35$ $1.22.5$ $70.65.23$ $1.02.5$ $70.64.65$ $1.02.5$ $70.61.02.5$ 70.6
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:57</u> <u>21:79</u> <u>3.051</u> <u>16.57</u> <u>21:16</u> <u>1.776</u> <u>1700</u> <u>20.83</u> <u>1.869</u> <u>1703</u> <u>20.69</u> <u>1.959</u>	ON GROU Sampling / Devel PH NTUS 7.37 TULBID 7.36 TULBID 7.25 TUKBID 7.15 TUKBID	$\begin{array}{c} \text{Inpment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.171/2 \\ \hline 2 & 2.5 \\ \hline \hline 2 & 5.0 \\ \hline \hline 1.166 & 7.5 \\ \hline \hline 1.166 & 10.0 \\ \hline \end{array}$	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.71 102.5 $70.44.35$ $1.22.5$ $70.65.23$ $1.02.5$ $70.64.65$ $1.02.5$ $70.61.02.5$ 70.6
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:57</u> <u>21:79</u> <u>3.051</u> <u>16.57</u> <u>21:16</u> <u>1.776</u> <u>1700</u> <u>20.83</u> <u>1.869</u> <u>1703</u> <u>20.69</u> <u>1.959</u>	ON GROU Sampling / Devel PH NTUS 7.37 TULBID 7.36 TULBID 7.25 TUKBID 7.15 TUKBID	$\begin{array}{c} \text{Inpment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.171/2 \\ \hline 2 & 2.5 \\ \hline \hline 2 & 5.0 \\ \hline \hline 1.166 & 7.5 \\ \hline \hline 1.166 & 10.0 \\ \hline \end{array}$	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.71 102.5 $70.44.35$ $1.22.5$ $70.65.23$ $1.02.5$ $70.64.65$ $1.02.5$ $70.61.02.5$ 70.6
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:54</u> - <u>21:79</u> <u>3.051</u> <u>16.57</u> <u>21:16</u> <u>1.776</u> <u>1700</u> <u>20.83</u> <u>1.869</u> <u>1703</u> <u>20.69</u> <u>1.959</u> <u>1706</u> <u>20.51</u> <u>1.999</u>	ON GROU Sampling / Devel PH NTUS 7.37 TURBID 7.36 TURBID 7.25 TURBID 7.15 TURBID 7.03 Almost 0 fear	$\begin{array}{c} \text{Inpment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.171/2 \\ \hline 2 & 2.5 \\ \hline \hline 2 & 5.0 \\ \hline \hline 1.166 & 7.5 \\ \hline \hline 1.166 & 10.0 \\ \hline \end{array}$	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.71 102.5 $70.44.35$ $1.22.5$ $70.65.23$ $1.02.5$ $70.64.65$ $1.02.5$ $70.61.02.5$ 70.6
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity 16:54- 21:79 16:57 21.16 1.776 1700 20.83 1.869 1703 20.69 1.959 1706 20.51 1.999 1706 20.51 1.999 1706 20.51 1.999	ON GROU Sampling / Devel PH NTUS 7.37 TURBID 7.36 TURBID 7.25 TURBID 7.15 TURBID 7.03 Almost 0 fear	$\begin{array}{c} \text{Inpment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.171/2 \\ \hline 2 & 2.5 \\ \hline \hline 2 & 5.0 \\ \hline \hline 1.166 & 7.5 \\ \hline \hline 1.166 & 10.0 \\ \hline \end{array}$	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.71 102.5 $70.44.35$ $1.22.5$ $70.65.23$ $1.02.5$ $70.64.65$ $1.02.5$ $70.61.02.5$ 70.6
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity <u>16:54</u> - <u>21:79</u> <u>3.051</u> <u>16.57</u> <u>21:16</u> <u>1.776</u> <u>1700</u> <u>20.83</u> <u>1.869</u> <u>1703</u> <u>20.69</u> <u>1.959</u> <u>1706</u> <u>20.51</u> <u>1.999</u>	ON GROU Sampling / Devel PH NTUS 7.37 TURBID 7.36 TURBID 7.25 TURBID 7.15 TURBID 7.03 Almost 0 fear	$\begin{array}{c} \text{Inpment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.171/2 \\ \hline 2 & 2.5 \\ \hline \hline 2 & 5.0 \\ \hline \hline 1.166 & 7.5 \\ \hline \hline 1.166 & 10.0 \\ \hline \end{array}$	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.71 102.5 $70.44.35$ $1.22.5$ $70.65.23$ $1.02.5$ $70.64.65$ $1.02.5$ $70.61.02.5$ 70.6
28. Physical Appearance and Remarks 29. Purgewater disposal method: Time Temp C Conductivity 16.57 21.79 $3.05116.57$ 21.16 1.7761700 20.83 1.8691703 20.69 1.9591706 20.51 1.9791706 20.51 $1.9791.9991.$	ON GROU Sampling / Devel PH NTUS 7.37 TURBID 7.36 TURBID 7.25 TURBID 7.15 TURBID 7.03 Almost 0 fear	$\begin{array}{c} \text{Inpment Parameters} \\ \hline \text{WL} & \text{Volume} \\ (\text{from TOC}) & (\text{gallons}), \\ \hline 61.74' & 19.171/2 \\ \hline 2 & 2.5 \\ \hline \hline 2 & 5.0 \\ \hline \hline 1.166 & 7.5 \\ \hline \hline 1.166 & 10.0 \\ \hline \end{array}$	Dissolved Flow Rate Photo Oxygen (gpm) Observ 4.71 102.5 $70.44.35$ $1.22.5$ $70.65.23$ $1.02.5$ $70.64.65$ $1.02.5$ $70.64.65$ $1.02.5$ 70.6

CMB ENVIRONMENTAL & GE	OLOGICAL SERVI	CES, INC	WEL	L DATA FORM		
Type Well 反 MW □ Production □ Other	Type of Data □ Developmen Ø Sampling □ Pump Test □ Other	☐ Development ⊅Sampling ☐ Pump Test		Well No. DBS-B Sheet 1 of Sheets		
1. Project DB5& A Salty Dof Brine Statt 4. Technician	2. Project Location 52. 114 Dob Shed & Bri	Plays Lake ne Well Area	3. Date	4/07/09		
7. Method Pumping Surging Air Lift Bailing Other	8.Manufacturer's Designa	N が ation of Rig	9. Location	of Well (Site, Description)		
	DSR-á		DB.	5-8		
Initial	Wate Final	r Levels	1	Final + 24 Hojørs		
Date: 04/07/69 Time: 17:30	Date: / Tim 04/67/09	ne: 17:56	Date:	Time:		
10. Total Depth of Well (from TOC) 77.20'	15. Total Depth of Well 77, 6	(from TOC)	20. Total D	Depth of Well (from TOC)		
11. Water Level (from TOC)	16. Water Level (from T	571	21. Water	Level (from TOC)		
12. Water Column Height No 16. 0 Dia		17.3 Well Volumes 7.68 Ga 1/0	1	2. Size and Type of		
13. Well Diameter 4" 2'' SCH 40 PVC MW 6" 14. Well Volume (gal) 2, 56 6 //ors (s) w.e. height) 2, 56 6 //ors	0.16 0.65 0.5972 1.47 2.61 2.3720	18. 5 Well Volumes 1 2 . 8 63//0 19. Purge Volume 10 Gallon	ی ^{کس}	Redifloz, 1.8 Submers; bla Setc T.D.		
		eld Analysis				
23. Total Amount of Water Removed 10 Gallons. Yes		lf yes, Sampli	what was the s ng Personnel?	vater Sampled Ves N ample number & Date: DBS-8 04/6; h:11 C 17:5		
27. Final Parameters m.3/2 Time Temp C Conductiv 17:5/ 20.52 0.66	4 7.52 TVA	Us WL Removed CB10 61.57 10 Ga TAKE pH AND CONDUCTIV	Flow Flow Flow Flow Flow Flow Flow Flow	Photo Rolls Rate Observations OGPM TUKB		
28. Physical Appearance and Remarks	TUX BIA	. /				
29. Purgewater disposal method:		ROUND Surfac	e.			
		lopment Parameters				
Time Temp C Conductivity 17:39 21.42 $2.37417:42$ 20.58 $0.97417:42$ 20.58 0.974	рн NTUS 8.62 ТИКВІО 8.77 ТИКВІО 9.73 ТИКВІО	WL Volume (from TOC) (gallons), $6/.20'$ $1h_1 f 1a_1$ 	Dissolved Oxygen <u>3,9</u> <u>4,65</u>	(gpm) Observ <u>1.0</u> <u>Tork</u> <u>1.0</u> <u>Tork</u>		
17:48 20.54 0.898	8.70 TULISIS 7.94 TULISIS 7.52 TULISIS		4.88	7 1.0 TUE		
(1) Note volume and physical character of sec NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing	iments removed.					
Checked By	turber B.	PL	Date	outantan		

CMB ENVIRONMENTAL & GEOLOGICAL SERVICES, INC. - WELL DATA FORM

Type Well DHMW	Type of Data		Well No. Sheet 1	DB5-9	i -
Production Other	Sampling Pump Test Other		of / Shee	ets	
1. Project DBSC A Salty DBS Brine Station	2. Project Location Saity Dob Plays Shed & Brine We	Lake	3. Date 04/0	8/09	
4. Technician CM Barnhill, Pb-	Leh Co, NM	-11 Aren			
7. Method Pumping Surging Air Lift Bailing Other	8. Manufacturer's Designation of Rig DSR - 200 /	<u> </u>	9. Location of つ <i>BS</i>		scription)
	Water Levels		0,00		
Initial	Final		Fin	al + 24 Hours	
Date: 4/48/04 Time: 17:35	Date: 04/08/09 Time: 18		Date:		me:
10. Total Depth of Well (from TOC) 70,75	15. Total Depth of Well (from TOC 70-85)	20. Total Dep	th of Well (fror	n TOC)
11. Water Level (from TOC) 53.93	16. Water Level (from TOC) 541/2		21. Water Lev	vel (from TOC)	
12. Water Column Height Nom 16.82 Dia	x = gal/ft 17.3 W	ell Volumes 3,07 621/11		Size and Type	
13. Well Diameter 2" 21'SCH 40 PUL MW 4" 6" 8" 14. Well Volume (gal) 2.696al (s) w.e. height) 2.696al	0.16 0.1534 18.5 W 0.65 0.5972	1911 Volumes 13.45 G11 19 Volume 10 Ga/10	lons 50	5-120, 6mcrsi fo T.	hle
(s) w.e. height)	Final Field Analy	sis	<u> </u>		
23. Total Amount of Water Removed 106a110h5 Yes	? Vies Yes If yes, source:	If yes, w Sampling	the Groundwate hat was the sam Personnel? <i>Barn h</i> , '	ple number &	Date:
27. Final Parameters ms/cm Time Temp C Conductivity 18:00 18:48 1,176	PH NTUS W 7.12 TUASIE 5	Removed	Flow Rat	e Obser	vations
IF PETROLEUM IS 28. Physical Appearance and Remarks	SIN THE WELL, DO NOT TAKE PHA TURBIB		Y PARAMETER	15	
29. Purgewater disposal method:	ON GROUND.	Surface.			
	Sampling / Development		Dissolved	Flow Rate	Photo #
Time Temp C Conductivity 16:48 18.49 1.358 7	рН NTUs (from TO 163 Тиклоб 53.93		Oxygen	(gpm)	Observ. (
	20 TURBIO -	2.5	4.86	1.0	TURA
	7.14 TURBID	5.0	4.43	1.0	TURB
	7.13 TUKALO - 7.12 TUKALO 54.1	7.5	<u>5.08</u> 5.59	1.0	TURB
(1) Note volume and physical character of sedime NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing					
Checked By	116 1 411 -1	7/.	Date	4/08/0	

CMB ENVIRONMENTAL & GEOLOGICAL SERVICES, INC. - WELL DATA FORM

Type Well MW Production Other	Type of Data Development Sampling Pump Test Other		Well No. NW-15hallow Sheet 1 of Sheets	
1. Project DBS & A Salty Dog Brine Statio	2. Project Location Solty Dot Brin	C POND Area	3. Date 04/08/04	
4. Technician Cm Bamhill, PG	Len Co			
7. Method Pumping Surging Air Lift Bailing Other	8. Manufacturer's Designation of $DSR - 2D1$		9. Location of Well (Site, Description) NW-/ Shallow	
	Water Lev	vels		
Initial	Final		Final + 24 Hours	
Date: 12:40	te: 18/09 Time: 12:40 Date: 18/06/09 Time: 1300		Date: Time:	
10. Total Depth of Well (from TOC) 74.95	15. Total Depth of Well (from TOC)		20. Total Depth of Well (from TOC)	
11. Water Level (from TOC)	16. Water Level (from TOC)	-	21. Water Level (from TOC)	
12. Water Column Height / Nom 12.60	x = gal/ft 17. $sch 40$ Sch 80	3 Well Volumes 6.048 Gall	22. Size and Type of	
13. Well Diameter 2" 2 ¹¹ CCH 40 PYC MW 4" 6" 6" 14. Well Volume (gal) 2.0161/1 8" 8"	0.65 0.5972	5 Well Volumes 10.08 Ga// Purge Volume 10 Ga //04	1015 Rediflaz, 1.8"	
	Final Field A	nalysis		
23. Total Amount of Water Removed 24. Was With Pumped Dr Yes 25. Final Parameters Time 12:55 20.26 1.40	y pH NTUs	If yes, w Sampling WL Removed	the Groundwater Sampled <u>Yes</u> No hat was the sample number & Date: Personnel? <u>MH-1</u> Shallow, 04/0 Barhhille D' 56 Photo Roll #, Flow Rate Observations 110 TURBIO	
	S IN THE WELL, DO NOT TAKE		10-135-	
			T Well Developed	
29. Purgewater disposal method:	ON GR	OUND Surta	ic	
	Sampling / Developm	ent Parameters	Dissolved Flow Rate Photo #.	
Time Temp C Conductivity 12:43 21:29 1.253	pH NTUS (from 7.48 TURBID 62	n TOC) (gallons).	Oxygen (gpm) Observ. (1) <u>3.69</u> <u>1.0</u> <u>Tores</u>	
12:45 20.92 1.444	7.46 TURAN -	5.0	2.08 2.0 TURE 2.11 1.0 TONE	
12:52 21.0 1.442 12:55 20.36 1.404	7.40 TURBO 7.39 TURBO 6.	7.5 2.35 10.0	2.09 1.0 TURE 2.08 1.0 TURE	
(1) Note volume and physical character of cedir NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing	nents removed.			
Checked By	Man Po	4	Date 04/08/09	

CMB ENVIRONMENTAL & GEOLOGICAL SERVICES, INC. - WELL DATA FORM

Type Well	Type of Data ☐ Developme ☐ Sampling ☐ Pump Test ☐ Other	nt	Well No. NW-/ Middle Sheet 1 of Sheets
1. Project DBS& A. Salty Dob Brine Stat	2. Project Location	Brine POND	3. Date Area 04/08/09
4. Technician CM Barnhill, Pb	,	(0., N.M.	
7 Method Pumping Surging Air Lift Bailing Other	8.Manufacturer's Design	ation of Rig	9. Location of Well (Site, Description) NW-1 M; Idle
	Wate	er Levels	
Initial	Final		Final + 24 Hours
Date: /08/09 Time: 12',10	VIIVXIVI	me: 12:35	Date: Time:
10. Total Depth of Well (from TOC) 121,31	15. Total Depth of We	II (from TOC) 3/	20. Total Depth of Well (from TOC)
11. Water Level (from TOC)	16. Water Level (from	TOC) 2.5/	21. Water Level (from TOC)
	Nom $x = gal/ft$ Dia Sch 40 Sch 80	17. 3 Well Volumes 28, 34	s 22. Size and Type of Pump of Bailer
2" SCH YOPVC MW	2 0.1534 4" 0.65 0.5972 6" 1.47 1.3540 8" 2.61 2.3720	18. 5 Well Volume 47. 24 19. Purge Volume 3063/	+ Gallous Submers, Ble
(s) w.e. height)	Final Fi	eld Analysis	
23. Total Amount of Water Removed 30 Gallon S- Yes	d Dry? 19 If yes, source:	1	26. Was the Groundwater Sampled Yes No If yes, what was the sample number & Date: Sampling Personnel? NW-1, Middle, 04 CMBarn 6: 11 @ [2:3]
	-38 7.47 TV	KBU 62.51 3	Photo Roll #, emoved Flow Rate Observations 2065/, 2.56Pm TVKB13
IF PETROLEI 28. Physical Appearance and Remarks	UM IS IN THE WELL, DO NOT TVKBIL	. /	DUCTIVITY PARAMETERS
29. Purgewater disposal method:	ON	GROUND SI	urfoce
	Sampling / Deve	lopment Paramet	ers
Time Temp C Conductivity 121,18 20:07 0:755	pH NTUS 7.61 TURBIO	(from TOC) (ga	olume Dissolved Flow Rate Photo #, allons) Oxygen (gpm) Observ. (1) Hail 6,17 3.0 Turelo
12:22 19.90 0.735 12:26 20.02 0.663	7.54 TURBID 7.48 TURBIR		0 2.89 3.5 TOAMS 20 2.86 2.5 TURDIS
12:30 20.00 0.638		67.51 3	
(1) Note volume and physical character of s NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing.	γ		
Checked By	Mon Man	-P6-	Date 04/08/09

CMB ENVIRONMENTAL & GEOLOGICAL SERVICES, INC.

WELL DATA FORM

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Type Well MW Production Other		Type of Data Development Sampling Pump Test Other	t		Well No. A Sheet 1 of / She	/ W - / Ź ets	Deep
1. Project DBS& A Salty DOG Brine :	station	2. Project Location So 174 Do 6 2	Brine Poro	Arca	3. Date	08/09	
4. Technician CM Bornhill, O		Lea Co,				·	
7. Method Pumping Surging Air Lift Bailing		3.Manufacturer's Designa DSR - 200	-			Well (Site, De:	
	l_		r Levels	l	/ // /	Derp	
Initial		Final			Fir	nal + 24 Hours	
Date: 04/08/09 Time: //: 3 10. Total Depth of Well (from TOC)	, t	Date: / +8/69 Tim	e: 12:02	-	Date:		ime:
10. Total Depth of Well (from TOC)	1	15. Total Depth of Well	(from TOC) 11,45		20. Total Dep	oth of Well (from	n TOC)
11. Water Level (from TOC) 62,04	/	16. Water Level (from T			21. Water Le	vel (from TOC))
12. Water Column Height 103. 46	Nom Dia	$\frac{x = \text{gal/ft}}{\text{Sch 40}}$ Sch 80	17.3 Well Volum 49.1	nes 166 62		Size and Type Pump or Bail	
13. Well Diameter <i>DII SCH 40 PVL M1</i> 14. Well Volume (gal)	4" 6" 8"	0.16 0.65 1.47 2.61 0.1534 0.5972 1.3540 2.3720	18. 5 Well Volun	nes 76 6a/	R.	Submer Sete 7	sible
(s) w.e. height) (5, 16, 35	M Y	Final Fie	Id Analysis	21109 2			
23. Total Amount of Water Removed 50 Ga //0115 ·	24. Was Well Pumped Dry? Yes No	No Yes	ded to well?	If yes, wh Sampling	at was the san Personnel?	er Sampled & nple number & / W-/ De / / C	Date:
27. Final Parameters Time Temp C 11:55 19.85	m 5/cm Conductivity 0.497	•		Removed 50 Ga /	Flow Ra		oto Roll #, rvations Class
	TROLEUM IS	IN THE WELL, DO NOT	TAKE pH AND COM	DUCTIVIT	Y PARAMETE		
29. Purgewater disposal method:			OUND Sur			<u></u>	
		Sampling / Devel	opment Param	eters			
Time Temp C Cond <u>11:40</u> <u>20.27</u> <u>0.4</u>		рн NTUs 55 <i>Тилло</i> 50 <i>Тилло</i>	(from TOC) (Volume gallons), , /), / / 0	Dissolved Oxygen <u>4, 92</u> <u>3, 59</u>	Flow Rate (gpm) 3.5 3.5	Photo #, Observ. (1) Tuess & Tuess J
11:49 19.80 0.	505 7	48 TUKBIN AT ATAIST		30	3.53	3.5	Almost Almost
	497 7 497 7	.46 Clerk .44 Clerk	62.60	41 50	3, 39 3, 49	2,5 3,5	Cler
(1) Note volume and physical chara NTU = Nephelometric turbidity units WL = Water Level from Top of PVC		ents removed.					
Checked By		manau	PG.		Date	04/08/	P9

CMB ENVIRONMENTAL & GEOLOGICAL SERVICES, INC.

WELL DATA FORM

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Type Well	Type of Data ☐ Development ⊠ Sampling ☐ Pump Test ☐ Other	Well No. Sheet 1 NW - 2 Sha //w of Sheets
1. Project DBSC. A Salty Dob Brine Station	2. Project Location	Lake 04/08/09
4. Technician CMBarnhill, Pt	Salty Dob Playa Shed & Brine Well Lea G, NM	Area 01/08/09
7. Method Pumping Surging Air Lift Bailing Other	8.Manufacturer's Designation of Rig	9. Location of Well (Site, Description)
	DSR-2001	NW-2-Shallow
Initial	Final	Final + 24 Hours
Date: 04/05/04 Time: 16:45	Date: 04/08/04 Time: 17',	
10. Total Depth of Well (from TOC) 74,15	15. Total Depth of Well (from TOC) 75.35	20. Total Depth of Well (from TOC)
11. Water Level (from TOC)	16. Water Level (from TOC)	21. WaterLevel (from TOC)
12. Water Column Height Non 16-071 Dia		I Volumes 22. Size and Type of BI Gallows Pump or Bailer
13. Well Diameter 2" 21' 5(H 40 PVCmb 6" 14. Well Volume (gal) 1.77 8"	0.65 0.5972 8	IV Volumes FS 120, 1.8" 18.6alla Submersible Volume Submersible 106allors Submersible
(s) w.e. height) / / / /	Final Field Analys	
23. Total Amount of Water Removed 10 62/10115 Yes	ell 25. Was water added to well? y? Ves	26. Was the Groundwater Sampled See No If yes, what was the sample number & Date: Sampling Personnel? NW-2 5ha/low 04/05/09 CMBarnh;//@17:07
27. Final ParametersMs/raTimeTemp CConductivi17, 0619.321.85	ty pH NTUs WL	Photo Roll #, Removed Flow Rate Observations 188' 10 6311043 110 6PM TURBIO
28 Physical Appearance and Remarks	IS IN THE WELL, DO NOT TAKE PHAN TUKBID - POPEly	
29. Purgewater disposal method:	ON GROUND -	
	Sampling / Development P	
Time Temp C Conductivity 16:35 19.62 1.928 $716:57$ 19.54 1.927 7	рн NTUs (from TOC) 7.37 Тиквій (43.08) 7.42 Тиквій —	
17:00 19.46 1.866	7.40 TURBIN -	5.0 4.03 1.0 TURM.
	7:35 TUKBID	
(1) Note volume and physical character of sedir NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing	nents removed.	
	Tura P6.	Date 04/03/09

CMB ENVIRONMENTAL & GEOLOGICAL SERVICES, INC. - WELL DATA FORM

Type Well MW Production Other	Type of Data Development Sampling Pump Test Other			NW-2	m, ddle
1. Project DBSC A Solty DOG Brine Station 4. Technician CMBarnhill, PG	2. Project Location Solty Dob Shire & Bri	Playa Lo.		4/08/09	
CMBarnhill, PG	Lea 4,	NM,			
7. Method Pamping Surging Air Lift Bailing Other	8.Manufacturer's Designat	tion of Rig $\ell = 200/$		ion of Well (Site, De $W - 2 - m_{f}$	
		r Levels			
Initial	Final			Final + 24 Hours	S
Date: //08/09 Time: 16:25 10. Total Depth of Well (from TOC)	Date: 04/05/09 15. Total Depth of Well	e: 16:55	Date:	al Depth of Well (fro	ime:
10. Total Deptit of Weil (Iron 100) 10 4. 4 9		5.72	20. 104		111100)
11. Water Level (from TOC) (3.27	16. Water Level (from To	oc) 4,41	21. Wat	ter Level (from TOC	;)
12. Water Column Height Nor 4/1. 22. / Dia	n $x = gal/ft$ 8ch 40 Sch 80	17. 3 Well Volumes 19, 78	50/1046	22. Size and Type Pump or Ba	
13. Well Diameter 4" 14. Well Volume (gal) 6,5963/, (s) w.e. height) 6,5963/,	0.16 0.65 0.5972 1.47 2.61 2.3720	18. 5 Well Volumes 32,95 19. Purge Volume		ES 120 Submi Sot c Tit	16,60
(s) w.e. height)	Final Fie	ld Analysis			
23. Total Amount of Water Removed 206allors- 206allors-	y? No Yes	lf Sa	yes, what was th mpling Personne	ndwater Sampled S le sample number & el? NW-2, M CM Bornh	Date: n. dele
27. Final Parameters MG/07 Time Temp C Conductiv 16:50 19.04 2.17 IF PETROLEUM	ty pH NTU	Js WL Rem 21 64.4/2	noved Flo	Pl ow Rate Obse / 06 Pm	noto Roll #, rvations
28. Physical Appearance and Remarks	TURB	10 Hzo			
29. Purgewater disposal method:	ON) GROUND SU	ntre.		
	Sampling / Devel	opment Paramete			
16:40 18.91 2.155 16:45 18.76 2.153	рн NTUs 7137 <u>Тукаю</u> 7.36 <u>Тукаю</u> 7.25 <u>Тукаю</u>		ons) Oxyge 7) 7 5, 3 7 5, 5 6, 3 6, 3	en (gpm) 18 <u>1.0</u> 12 <u>1.0</u> 1.0 1.0	Photo # Observ. (TURB, TORB TURB
<u>16:50 19.04 2.172</u>	7.17 TUKBIO		2 6.6	3 //0	TURA
(1) Note volume and physical character of sedi NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing Checked By	ments removed.		 Da	ate 0 4/18/0	

Checked By			Als &	III -	-01		14	ate	4/08/0	-
WL = Water Le	ometric turbidity units evel from Top of PVC (Casing						ato	~	
	ne and physical charac	ter of sedim	ents remov	ved.						
910				1 VAID	<u> </u>		<u> </u>	~		
16:18	18:82 10.		.81	TURAD	64,10	40	6.3		1.0	TUKBIS
16:08	18.65 8.1		6.88	TUKBIO		30	7.		1-0	TUKBA
15:58			1.01	TURBIO		20	6-		1-0	TUKRIO
15:48	19.86 3,6		7.53	TVEBID		16		55	1.0	TUKBIE
Time 15:38	Temp C Condu 19.15 1.5		рН 1-69	NTUS TVKA ID	(from TOC)	(gallons) In・Tis/	- Oxyg		(gpm) / , <i>O</i>	Observ. (1)
		1cm			WL	Volume	Disso		Flow Rate	Photo #,
			Samp		opment Para					
29. Purgewate	r disposal method:			ON GR	OUND SU.	- Tace				
				IVKB	IN HIZA	2				
28. Physical A	ppearance and Remai				A					
10.18					TAKE pH AND C					UNBIN
	18,82			8/ T.	1810 46.10					Trans
27. Final Para Time	meters Temp C	AS/CH		oH NTI	Js WL	Removed	FI	ow Rate		hoto Roll #, ervations
/		4				04/08	109 C	mΒ		1e 16:1
40		es Ale		yes, source:		Samplin	g Personr	iel? 人	1W-2 D	eep
23. Total Amo Removed		umped Dry	2, 1 🖌	Yes	IEO IO WEIL?	ifyes, w	/hat was t	he sam	pie number &	A Date:
23. Total Amo	unt of Water	4. Was We	1 25	Final Fie Was water add	Id Analysis	26 Ma	the Grou	Indivato	r Sampled (Yes No
(s) w.e. height	ne (gal)) 10.52G2	<u> </u>	2.01		19. Purge Volu	0 60/10 A	s		ToC.	,
7 14. Well Volun	HO PUC MW	6" 8"	1.47 2.61	1.3540 2.3720	19. Purae Volu	ume ,		Q		Kon
		27	0.65			63G	llous	Ē	5 120	Set 1.0 Subi
ي 13. Well Diam	• /	- 57		_	18, 5 Well Vol					
	65.79	Dia	Sch 40	Sch 80		umes 762/101	45-		Pump or Ba	
12. Water Col		Nom	 Y	c = gal/ft	17.3 Well Vol	umes	·	22.5	Size and Typ	e of
II. Water Lev	el (from TOC)		16. Wate	er Level (from Tr	10		21. W	aver Lev)
11 Mator Loui			16 Mat				21 144		el (from TOC	
10. Total Dept	h of Well (from TOC)		15. Tota	al Depth of Well $48,8$			20. To	tal Dept	n of Well (fro	om IOC)
04/08/0	5 Time: 15:3	v	AL	10x107	e: 16:22			tal Deci		
Date: /	Time: 15:0		Date:	/ / Tim	e: 1/		Date:		7	Time:
	Initial		<u> </u>	Final			1	Fina	al + 24 Hour	ſS
					r Levels					
	ging Air Lift Bailing (Other		-	-2011				2 - I	
7_Method			8.Manufac	cturer's Designat	tion of Rig		9. Loca	tion of \	Nell (Site, De	escription)
CME	Parnhill, P	4	K	Ken Co.	, NM	rea				
4. Technician	Dot Brine :	12/11/	Shel	E Brin	e well A	trek-		0 1	10010-1	
Salti	Dok Bring	Stin	Salt	Dol	Planzh	ake			108/04	4
1 Project 7	BSCA		2 Project	t Location			3. Date	 }		
Other		<u> </u>		Pump Test Other			/			
Production			Development Development Development			of	Shee	W-Z ts	v	
DAWA C			Type of Data			Choot	4 / 7			

WELL DATA FORM

Typë Well 🔊 🗍 MW	Type of Data		Well No. PMW-/ Sheet 1	
	Development Sampling		of / Sheets	
□ Other	Pump Test			
	Other			
1. Project DBSC A	2. Project Location	0.01	3. Date	
So Ity Dot Brine Station	Salty Dob	Brine Poup Hr	rea 04/08/09	
4. Technician CMBarnhill, PF	Lea Co.			
7. Method	8.Manufacturer's Designation	······································	9. Location of Well (Site, Descrip	tion)
Pumping Surging Air Lift Bailing Other	DSR - 2	-	Pmw-/	liony
			111101	
		Levels		
Initial	Final		Final + 24 Høurs	
Date: 04/08/09 Time: 14:35	Date: 04/05/09 Time	15:00	Date: Time:	
10. Total Depth of Well (from TOC)	15. Total Depth of Well (f	rom,TOC)	20. Total Depth of Well (from TC	DC)
78.87	79.4	//		
11. Water Level (from TOC)	16. Water Level (from TO)C)	21. Water Level (from TOC)	
65.97	66.	25		
12. Water Column Height Nor	n x = gai/ft	17.3 Well Volumes	22. Size and Type of	
12.9 Dia	Sch 40 Sch 80	6.19 Gal	Pump or Bailer	
13. Well Diameter	0.1534	18. 5 Well Volumes		011
	0.65 0.5972	10.326	allows Repifloz, 1	
2 ¹¹ SCH 40 PVC mV 14. Well Volume (gal) (s) w.e. height) 2.06 Gm/ ⁴ 8"	1.47 1.3540 2.61 2.3720			e
(s) w.e. height) 2.06 Gal		19. Purge Volume	llons Sere T.D.	
23. Total Amount of Water 24. Was W		d Analysis	Vas the Groundwater Sampled	No
23. Total Amount of Water 24. Was W Removed Pumped Dr		lf yes	s, what was the sample number & Date	
	If yes, source:		s, what was the sample number & Date pling Personnel? Pm & -/ 0	
IV CALLORY		C	MBarnhille 14.	57
27. Final Parameters m/s// Time Temp C Conductiv	(M.		Photo	Roll #,
Time Temp C Conductiv	ty pH NTU	s WL Remov	ed Flow Rate Observation المعام	ons The pr
	1 6.83 cla			
	IS IN THE WELL, DO NOT T			
20. Thysical Appealance and Remarks	TURKIN INTO	14- clear	C Sample.	
		/	-	
		16		
29. Purgewater disposal method:		UND Surface		
29. Purgewater disposal method:	ON GRO	pment Parameters	-	
29. Purgewater disposal method:	ON GRO Sampling / Develo	pment Parameters WL Volume	e Dissolved Flow Rate F	
29. Purgewater disposal method: Time Temp C Conductivity	ON GRO	pment Parameters WL Volume (from TOC) (gallons	e Dissolved Flow Rate F) Oxygen (gpm) Ol	bserv.
29. Purgewater disposal method:	ON GRO Sampling / Develo pH NTUs 7.13 TUKBIP	pment Parameters WL Volume	e Dissolved Flow Rate f) Oxygen (gpm) O 21 5-372 1-1 7	bserv.
29. Purgewater disposal method: Time Temp C Conductivity 14:44 22:42 17-24 14:47 21.87 23.02	О <i>N GR0</i> Sampling / Develo pH NTUs <u>7:13</u> <u>Тиквір</u> 7:11 Тиквір	pment Parameters WL Volume (from TOC) , (gallons) (6 5. 97 [n/f] 2.5	e Dissolved Flow Rate () Oxygen (gpm) Ol 1 8-30 1-0 7-88 1-0 6-62 1-0	bserv. Vers Turk
29. Purgewater disposal method: Time Temp C Conductivity 14:44 22:42 17-24 14:47 21.87 23.02 14:50 21.22 24.56	ON GRO Sampling / Develo pH NTUS 7.13 TUKBIP 7.11 TUKBIP 7.05 TUKBIP 7.05 TUKBIP 5.05 TUKBIP	pment Parameters WL Volume (from TOC) , (gallons) (6 5. 97 1 n/17. 2.5 5.0	e Dissolved Flow Rate () Oxygen (gpm) O 21 8-30 1-9 7 9-58 1-9 6-61 1-9 7	bserv. Vers Turk
29. Purgewater disposal method: Time Temp C Conductivity 14:44 22:42 17-24 14:47 21:87 23.02 14:50 21:22 24:56 14:53 20:62 25.25	О <i>N GR0</i> Sampling / Develo pH NTUs <u>7:13</u> <u>Тиквір</u> 7:11 Тиквір	pment Parameters WL Volume (from TOC) , (gallons) (6 5. 97 [n/f] 2.5	$\begin{array}{c} \text{Dissolved} & \text{Flow Rate} \\ \text{Oxygen} & (\text{gpm}) & \text{Oi} \\ \text{I} & \frac{8 \cdot 37}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 62}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & 1 \cdot $	bserv. Vers Turk
29. Purgewater disposal method: Time Temp C Conductivity 14:44 22:42 17-24 14:47 21:87 23.02 14:50 21:22 24.56	ON GRO Sampling / Develo pH NTUS 7.13 TUKBIP 7.11 TUKBIP 7.05 TUKBIP 7.05 TUKBIP 5.05 TUKBIP	pment Parameters WL Volume (from TOC) , (gallons) (6 5. 97 1 n/17. 2.5 5.0	e Dissolved Flow Rate () Oxygen (gpm) O 21 8-30 1-9 7 9-58 1-9 6-61 1-9 7	Photos bserv. VKR VKR VKR VKR VKR VKR VKR
29. Purgewater disposal method: Time Temp C Conductivity 14:44 22:42 17-24 14:47 21:87 23.02 14:50 21:22 24:56 14:53 20:62 25.25	ON GRO Sampling / Develo pH NTUS 7.13 TUKBIP 7.11 TUKBIP 7.05 TUKBIP 7.05 TUKBIP 5.05 TUKBIP	pment Parameters WL Volume (from TOC) , (gallons) (6 5. 97 1 n/17. 2.5 5.0	$\begin{array}{c} \text{Dissolved} & \text{Flow Rate} \\ \text{Oxygen} & (\text{gpm}) & \text{Oi} \\ \text{I} & \frac{8 \cdot 37}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & 1 \cdot $	bserv. Vers Turk
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29. Purgewater disposal method: Time Temp C Conductivity 14:44 22:42 17-24 14:47 21:87 23.02 14:50 21:22 24:56 14:53 20:62 25.25	ON GRO Sampling / Develo pH NTUS 7.13 TUKBIP 7.11 TUKBIP 7.05 TUKBIP 7.05 TUKBIP 5.05 TUKBIP	pment Parameters WL Volume (from TOC) , (gallons) (6 5. 97 1 n/17. 2.5 5.0	$\begin{array}{c} \text{Dissolved} & \text{Flow Rate} \\ \text{Oxygen} & (\text{gpm}) & \text{Oi} \\ \text{I} & \frac{8 \cdot 37}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & 1 \cdot $	bserv. Vers Turk
29. Purgewater disposal method: Time Temp C Conductivity 14:44 22:42 17:24 14:47 21:87 23.02 14:50 21:22 24.56 14:50 21:22 24.56 14:55 20:62 25.25 14:56 20:49 25.41	ON GRO Sampling / Develo pH NTUS 7.13 TUKBIP 7.11 TUKBIP 7.05 TUKBIP 6.84 SIISHT 6.83 C/CM	pment Parameters WL Volume (from TOC) , (gallons) (6 5. 97 1 n/17. 2.5 5.0	$\begin{array}{c} \text{Dissolved} & \text{Flow Rate} \\ \text{Oxygen} & (\text{gpm}) & \text{Oi} \\ \text{I} & \frac{8 \cdot 37}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & 1 \cdot $	bserv. Vers Turk
29. Purgewater disposal method: Time Temp C Conductivity 14'.44' 22.42' 17.24' 14'.44' 21.87 23.02' 14.50 21.32 24.56' 1453 20.62 25.25' 1456 20.49 25.41' (1) Note volume and physical character of sedi	ON GRO Sampling / Develo pH NTUS 7.13 TUKBIP 7.11 TUKBIP 7.05 TUKBIP 6.84 SIISHT 6.83 C/CM	pment Parameters WL Volume (from TOC) , (gallons) (6 5. 97 1 n/17. 2.5 5.0	$\begin{array}{c} \text{Dissolved} & \text{Flow Rate} \\ \text{Oxygen} & (\text{gpm}) & \text{Oi} \\ \text{I} & \frac{8 \cdot 37}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & 1 \cdot $	bserv. Vers Turk
29. Purgewater disposal method: Time Temp C Conductivity 14:44 22:42 17:24 14:47 21:87 23.02 14:50 21:22 24.56 14:50 21:22 24.56 14:55 20:62 25.25 14:56 20:49 25.41	ON GRO Sampling / Develo pH NTUS 7.13 TUKBIP 7.11 TUKBIP 7.05 TUKBIP 6.84 SIISHT 6.83 C/CM	pment Parameters WL Volume (from TOC) , (gallons) (6 5. 97 1 n/17. 2.5 5.0	$\begin{array}{c} \text{Dissolved} & \text{Flow Rate} \\ \text{Oxygen} & (\text{gpm}) & \text{Oi} \\ \text{I} & \frac{8 \cdot 37}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{6 \cdot 62} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 62}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & \frac{1 \cdot 1}{7 \cdot 88} \\ \text{I} & \frac{1 \cdot 1}{7 \cdot 88} & 1 \cdot $	bserv. Vers Turk

	IB ENVIRONMENTAL & GEOLOGICAL SERVICES, INC.				WELL D		
Type Well I MW □ Production		Sampling	Type of Data Development Sampling Pump Test Other			nw-j	\sim
Other							
1. Project DBS! A Salty DOFB	i stati	2. Project Location	DOG, Play		Date	107/0	Ġ
4. Technician CM Barnh: //,	DI	shed & Bri Lea C	ne arch Awell	, one	//		
7. Method	00	B.Manufacturer's Desi		91	ocation of We	ell (Site, De	scription
Pumping Surging Air Lift Bailing	g Other		- 200/		MW-	•	ionplien)
			ater Levels				
Initial		Final	· · · ·		· · · · · · · · · · · · · · · · · · ·	+ 24 Hours	/
Date: 12! Time: 12!	00	Date: 04/b7/09 15. Total Depth of V	Time: 13:2	2 Dat			me:
10. Total Depth of Well (from TOC /37.			Vell (from TOC) 37.351	20.	Total Depth	or Well (from	n 10C)
11. Water Level (from TOC) 61.65	/	16. Water Level (from	1.61		Water Level	(from TOC)	
12. Water Column Height $75.7 \sigma'$	Nom Dia	sch 40 Sch 8	0 17.3 Refl Vo	Gallons		e and Type	
13. Well Diameter	w 2" 4" 6"	0.153 0.65 0.153	4 18.5 Well Vo	olumes	Red	if 102,	
2" SCH 40 PVC M	W 6"	1.47 1.354		56 Gallons			
14. Well Volume (gal) (s) w.e. height)	a/· "	2.61 2.372		ume 40 60 llon	s Se	Te T	.0 -
23. Total Amount of Water	24. Was We		Field Analysis added to well?	26. Was the C	Groundwater S	Sampled &	es N
Removed 406allons	Pumped Dry Yes	2 (No2 Yes		If yes, what was Sampling Pers	as the sample onnel?	W^{-2}	Date:
27. Final Parameters	hat le			CMB	annh	11 e	-/3
Time Temp C 13:17 19.73	Conductivit 4.49		NTUS WL Elein 61.61'	Removed	Flow Rate	Obsei	vations
	ETROLEUMI	IS IN THE WELL, DO N					
	7	VARID INIT	tolly - C	lead a =	Sample	-	
29. Purgewater disposal method:		ONC	SROUND -	Surface	1		
	n l la	Sampling / De	velopment Para		ssolved f	-low Rate	Phot
	m <i>SlCm</i> nductivity .720	рн NTUs 8-19 Токвл	(from TOC)	(gallons) C	Dxygen	(gpm) 3.33	Obser Juz
13:05 19.32 4		8.47 Clear		10 H		3.33	Cle
		8.66 Clean				2.5	Cle
		8.68 Clair		30 3		2.5	Clea
<u>13:17 19.73 4</u>	.492	8.68 Cler	61.61	40 3	3.7 <u>3</u> -	2.5	<u>c/a</u>
(1) Note volume and physical cha		nents removed.					
(1) Note volume and physical cha NTU = Nephelometric turbidity up WL = Water Level from Top of P Checked By	its V	nents removed.			Date		

Type Well ₽⊄MW	Type of Da		Well No. Sheet 1	mw-3
Production	⊡ Developi	Development Sampling		ets
□ Other	Pump Te Other		of / She	
1. Project DBS& A	2. Project Location		3. Date	
Salty Dot Brine Statil		of Playa Lar		107/09
1 Technician	Shel & B	rine well Are.	c	
Cm Barnhill, P6	Lea la.			
7. Method Pumping Surging Air Lift Bailing Other	8.Manufacturer's Des	ignation of Rig		Well (Site, Description)
		ater Levels	1.1.001	102 108/13
Initial	Final		Fir	nal + 24 Hoursy
Date: // / . Time: /2////	Date:	Time: 14:17	Date:	Time:
Date: 13:46 04/09/06 13:46 10. Total Dépth of Well (from TOC)	Date: 04/07/09 15. Total Depth of 1			oth of Well (from TOC)
147.02		05	EU. TOTALDE	
11. Water Level (from TOC)	16. Water Level (fro	TOC) g	21. Water Le	vel (from TOC)
	Nom $x = gal/ft$ Dia Sch 40 Sch 8	17. 3 Well Volumes 30 40.80		Size and Type of Pump or Bailer
				ed, floz, 1.
13. Well Diameter 2 ¹¹ SCH 40 PVC 4 6	0.65 0.597	· · · · · · · · · · · · · · · · · · ·	1/10/15	vbmersible
68 14. Well Volume (gal) s) w.e. height) 13.6 Gallors			11.46 5	eter.o.
	Final	Field Analysis		
23. Total Amount of Water 24. Was	Well 25. Was water		5. Was the Groundwat	
Removed Pumped Yes	Drx? No Yes No If yes, source	: Sa	yes, what was the san	mW^-3 , $04/b$
HI 62/1045				C 14:1-
27. Final Parameters M5/2	m			Photo Roll
Time Temp C Conduc		NTUS WL Rem Lear 67-68 4/1	noved Flow Ra	
1412 1990 36.4		OT TAKE PH AND CONDU		
28. Physical Appearance and Remarks		- H20		
20. Burgawater dispacel method:				
29. Purgewater disposal method;		GROUND Surta		
HS/PLE		WL Volu		Flow Rate Phot
Time Temp C Conductivity	pH NTUs	(from TOC) (galle		(gpm) Obser
13:55 <u>19:46 24.87</u> 13:59 20:05 31:40	6.67 Clen 6.37 Clen		<u>4.87</u> 4.35	2.5 c/c
14:03 20:06 35.97	6.37 Cler			2.5 Cla
14:07 19.91 36.48	6.37 Clean			2.5 C/e
14:12 19.90 36.61	6.39 Clerk		/ 3.18	2.5 C/e
1) Note volume and physical character of several volume and physical character of several volume transformed and the several volume transformed and transformed a	diments removed.			
WL = Water Level from Top of PVC Casing	//			
Checked By			Date	

CMB ENVIRONMENTAL & GEOLOGICAL SERVICES, INC.

WELL DATA FORM

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Type Well MW Production Other	Type of Data Development Sampling Pump Test Other		Well No. MW-44 Sheet 1 of Sheets
1. Project DBSC A Salty Dob Brine Statish	2. Project Location Solity Day Shed & Brin	Playa Loke	3. Date - 04/07/2009
4. Technician CMBarnhill, PG	Shed & Brin Lek G.		,
7. Method Pumping Surging Air Lift Bailing Other	8.Manufacturer's Designat	ion of Rig	9. Location of Well (Site, Description)
			MONITON Well # 4
Initial	Water Final	r Levels	Final + 24 Hours
Date: 04/07/09 Time: 14:35 10. Total Depth of Well (from TOC)	Date: 04/07/19 Time	: 15:05	Date:
10. Total Depth of Well (from TOC)	15. Total Depth of Well (147.37	, ,	20. Total Depth of Well (from TOC)
11. Water Level (from TOC) 62.51	16. Water Level (from TC	,	21. Water Level (from TOC)
12. Water Column Height 84,79 Dia	x = gal/ft Sch 40 Sch 80	17. 3 Well Volumes 40.69 (22. Size and Type of Pump or Bailer
13. Well Diameter 2 ¹¹ <u>SCH 40 PVC MW</u> 14. Well Volume (gal) /3,56 6af (s) w.e. height)	0.1534 0.65 0.5972 1.47 1.3540 2.61 2.3720	18.5 Well Volumes 67.836 19. Purge Volume 4/6a/	11005. Rol, floz 2, 1.8
(s) w.e. neight)	Final Fiel	Id Analysis	
23. Total Amount of Water Removed 41601/0475 24. Was We Pumped Dn Yes	Y? (No Yes	lf ye Sam	Was the Groundwater Sampled Yes No s, what was the sample number & Date; pling Personnel? MW - 4, 04/07/09 MBarnh://c 15:00
27. Final Parameters m3/Cm Time Temp C Conductivit 14:39 19.67 15.5		Us WL Remov 101 67.50 41	Photo Roll #, yed Flow Rate Observations Gallows 2.56Pm Class
28. Physical Appearance and Remarks	(Please)	Hzo	
29. Purgewater disposal method:	ON GROU	IND Surface	٤
rs/cm	Sampling / Develo	opment Parameters	
Time Temp C Conductivity	pH NTUS 6.80 <u>Clean</u>	(from TOS), / (gallons <u>traitist</u> initist 10	s), Oxygen (gpm) Observ. (1) 2/ 2.42 2.56pm Clerv.
14:50 19,91 15.80	6.72 <u>Clerk</u> 6.74 Clerk	- 20	3.45 2.5 Clean 3.67 2.5 Clean
14:54 19.83 15.72 0	.14 clear		3.89 2.5 C/un
14:59 19.67 15.58	6.65 clerk		3.93 2.5 Clau
(1) Note volume and physical character of sedir NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing	nents removed.		
Checked By	Ton Mahan	-P6.	Date 04/07/2009

CMB ENVIRONMENTAL & GEOL	OGICAL SERVI	CES, INC	WELL	DATA FORM
Type Well XMW □ Production □ Other	Type of Data ☐ Development ☑ Sampling ☐ Pump Test ☐ Other		Well No. Sheet 1 of She	MW-3
-	2. Project Location Salty Dob Shed & Brith Lea Co.	Playa Lake kell Arca NM	3. Date	107/09
	3.Manufacturer's Designat	tion of Rig		f Well (Site, Description)
			TIPPI	or well # 5
Initial	Final	r Levels	Fi	nal + 24 Hours
Date: // Time: 15:23	Date: 04/01/04 Time	e: 15:48	Date:	Time:
10. Total Depth of Well (from TOC) 1.29.78	15. Total Depth of Well 129.	(from TOC)	20. Total De	pth of Well (from TOC)
11. Water Level (from TQC) 60, 79	16. Water Level (from To	0C)	21. Water L	evel (from TOC)
12. Water Column Height Nom <i>68.99</i> Dia	x = gal/ft Sch 40 Sch 80	17. 3 Well Volumes 33 62//17	~	Size and Type of
13. Well Diameter 2" 2 '' Sc H 4 PVL MW 4" 6" 6" 14. Well Volume (gal) 11 Gallors 5" 8" 8"	0.16 0.1534 0.65 0.5972 1.47 1.3540 2.61 2.3720	18. 5 Well Volumes 55. 19 G. 11 19. Purge Volume 35 G. 110	18+5. SU	l, f/a2, 1.8" bmors; ble fcT, D.
23. Total Amount of Water Removed 35 Gallon 5. Yes	25. Was water add	If yes, v Samplir	what was the same ng Personnel?	ter Sampled Yes No mple number & Date: MW - 5, 04/17/16
		Js WL Removed A. L. P. F.S. 3567 TAKE PH AND CONDUCTIV	111 2.5	GPM Clen
28. Physical Appearance and Remarks		tully - claur	C 504	ple
29. Purgewater disposal method:		10 Surface		
	Sampling / Devel	opment Parameters	Dissolved	Flow Rate Photo
15:30 20.27 5.210 1 15:34 20.42 4.117 7 15:38 20.19 3.791 7	PH NTUS 16 TURBID 10 TURBID 51,54T 102 SLIGHT 102 SLIGHT 102 BID 102	$\sqrt{100000000000000000000000000000000000$		(gpm) Observ. <u>2.5</u> Tue B <u>2.5</u> Tue B <u>2.5</u> Tue <u>2.5</u> Tue <u>2.5</u> Clen
(1) Note volume and physical character of sedime NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing Checked By	ints removed.	 	Date	04/07/09

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**	CMB ENVIRONMENTAL	&	GEOLOGICAL	SERVICES,	INC.
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WELL DATA FORM

Type Well MW Production Other	Type of Data Development Sampling Pump Test Other	Well No. MW-6 Sheet 1 of / Sheets
1. Project DBS& A Salty Dob Brine Station 4. Technician	2. Project Location Salty Dob Plana La, Shed & Brine Well A	3. Date Ke 04/07/09 Prea
CMBarnhill, PG 7. Method Pumping Surging Air Lift Bailing Other	8.Manufacturer's Designation of Rig	9. Location of Well (Site, Description) MONITOR Well # 6
	Water Levels	
Initial	Final	Final + 24 Hours
Date: 1/07/09 Time: 16:00	Date: 04/07/09 Time: 16:30 15. Total Depth of Well (from TOC)	Date: Time:
10. Total Depth of Well (from TOC)	119.40	20. Total Depth of Well (from TOC)
11. Water Level (from TOC)	16. Water Level (from TOC)	21. Water Level (from TOC)
12. Water Column Height Nom 56,70 / Dia	x = gal/ft Sch 40 Sch 80 77. 2	1 6 1/0 n 5 22. Size and Type of
13. Well Diameter 2 ¹¹ SCH 40 PVC MW 6" 14. Well Volume (gal) 9-07267 (s) w.e. height) 8"	0.15 0.65 0.5972 1.47 2.61 0.1534 18. 5 Well Volum 4/57 19. Purge Volum 30	36611005 Subactichie
23. Total Amount of Water Removed 30 G 1 loss 27. Final Parameters Time Temp C 19,92 0,45	PH NTUs WL	26. Was the Groundwater Sampled (es) No If yes, what was the sample number & Date: Sampling Personnel? MW-6, 04/17 CMBarnh://c 16:23 Photo Roll #, Removed Flow Rate Observations
	7.65 TURBID 62-38 SIN THE WELL, DO NOT TAKE PH AND CON TURBID HED	20001- 0.0 0000
29. Purgewater disposal method:	ON GROUND Sur	face
	Sampling / Development Parame	
16:14 20,13 0.486 16:18 19.89 0.458 7	pH NTUs (from TOC) (g 7.73 TUKBID 62.41 11 7.95 TUKBID	VolumeDissolvedFlow RatePhoto #,gallons)Oxygen(gpm)Observ. (1 $n.Tial$ 5.94 2.5 $Tvee$ 10 5.78 2.5 $Tvee$ 20 $5.6/$ 2.5 $Tvee$ 38 5.63 2.5 $Tvee$
(1) Note volume and physical character of sedim NTU = Nephelometric turbidity units WL = Water Level from Top of PVC Casing Checked By	ents removed.	Date 04/07/09

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Longitude -103.370911	-103.370655	-103.37239	-103.370571	-103.372714	-103.372656	-103.372739	-103.373696	-103.373978	-103.3713	-103.374144	-103.373159	-103.372712	-103.372238	-103.371391	-103.371043	-103.371043	-103.371043	-103.37278	-103.37278	-103.37278
Latitude 32.694886	32.69561	32.694786	32.694426	32.696384	32.68803	32.686608	32.686864	32.689339	32.695341	32.688261	32.687516	32.687169	32.686806	32.687104	32.695098	32.695097	32.695098	32.687244	32.687245	32.687244
STICK_UP -0.269	2.980	2.709	2.933	2.658	2.437	3.000	2.648	2.804	2.521	2.418	2.433	2.682	0.903	1.578	-0.302	-0.276	-0.275	3.341	3.296	3.304
NOTE															SHALLOW	MIDDLE	DEEP	SHALLOW	MIDDLE	DEEP
CONCRETE_ELEV 3817.360	3817.524	3813.953	3817.441	3818.001	3810.213	3807.210	3808.051	3803.460	3818.646	3810.259	3809.616	3808.643	3808.058	3808.590	3817.627	3817.627	3817.627	3809.156	3809.156	3809.156
CASING_ELEV 3817.091	3820.504	3816.662	3820.374	3820.659	3812.650	3810.210	3810.699	3806.264	3821.167	3812.677	3812.049	3811.325	3808.961	3810.168	3817.325	3817.351	3817.352	3812.497	3812.452	3812.460
NORTHING 617873.964	618138.347	617833.410	617707.515	618414.069	615374.784	614857.267	614947.540	615847.216	618038.544	615454.721	615186.298	615061.483	614930.722	615041.326	617950.772	617950.542	617950.848	615088.572	615088.794	615088.531
EASTING 837410.946	837487.158	836956.004	837516.816	836851.361	836896.578	836875.641	836580.482	836485.585	837289.690	836438.049	836743.571	836882.305	837029.110	837288.689	837369.632	837369.657	837369.402	836860.966	836861.043	836861.137
WELL DBS-1	DBS-2	DBS-3	DBS-4	DBS-5	DBS-6	DBS-7	DBS-8	DBS-9	PMW-1	MW-2	MW-3	MW-4	MW-5	MW-6	NW-1(s)	NW-1(m)	(p)1-WN	NW-2(s)	NW-2(m)	NW-2(d)