

BW - 37

ANNUAL REPORTS

2018

2018 Annual Class III Well Report Llano Disposal, LLC BW-37 API – 30-25-26370

Submitted by: Laura Angell, 10/11/22

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Summary of Class III Well Operations

BW37 (State 4 # 1) was put into service in the last quarter 2018 after a successful re-entry and recompletion. After re-entry was accomplished, a production string was run into the Salado. Fresh water was then circulated to test brine quality. Brine quality from this well has been excellent at 10.00 and + lbs per gallon. The amount of fresh water injected to brine recovered has been within expected ratio. Injection pressure required to raise brine to surface has also been found to be very close to anticipated (calculated) values. All numbers concerning fresh water injected to bbls brine recovered can be found on page 4 of this document. There has not been a great demand for brine water in the Tatum area. However, this well has serviced the northern Lea County very well for the demand that does exist. At this time, this well is the only brine producer located north of Lovington NM. Occasional sales have also gone into Texas.

Changes to well construction: Since the production equipment was initially ran into this well, the well has not required servicing. Therefore, no changes have been made.

Changes to tankage/loading facility: No changes have been made to the physical plant since the well was first put into operation. Loading is on a thick concrete pad as planned. The pad is curbed and has a sump for catching any water that might be incidentally spilled by the handling of hoses, etc.

Because this well has not required servicing, very few C-103 reports have needed to be filed since operation began. Those are viewable in the C-103 Summary Report.

A MIT was run on this well per regulation requirements. The chart, along with a description of the successful test (no leak off) is also found in the C-103 Summary report.

A chronological list of C103 forms that Llano Disposal has filed on subject well can be found in **APPENDIX D** at the end of this report.

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Llano Disposal, LLC BW-37 API 30-025-26370

2018

Monthly Fluid Injection and Brine Production

2018

Month	Brine Monthly BBLS	Brine Cumulative BBLS	Fresh Monthly BBLS	Fresh Cumulative BBLS	PSI
Jan					
Feb					
Mar					
Apr					
May					
June					
July					
Aug	720	720	793	793	265
Sep	2,350	3,070	2,585	3,378	265
Oct	4,570	7,640	5,031	8,410	265
Nov	5,723	13,363	6,302	14,711	265
Dec	12,865	26,228	14,154	28,865	265

Year	Brine Yearly BBLS	Brine Cumulative BBLS	Fresh Yearly BBLS	Fresh Cumulative BBLS
2018	26,228	26,228	28,865	28,865

Annual Monitor Well Analytical Data Results

Please see page 8 of this report for deviations.

Injection Pressure Data

Injection pressure at the well (tubing) averages 275/PSI. The brine well casing pressure (brine to battery), averages about 22 PSI. The field operator checks the pressures daily and records them on the daily log.

Pipeline Hydrostatic Test Results

Service piping both to and from BW37 is 3" SDR11 high density poly. These 2 lines are tested accordingly to 160 psi. The feeder line (fresh water) runs due north from the freshwater pump and facility. The distance is approximately 125'. Testing is accomplished by closing a steel ball valve on the well head, then allowing the freshwater pump to bring pressure up to 160 psi. The line is then isolated by valving installed at each end of the line. Pressure is held static on the line for 1 hour, during which time the line is visually inspected. The 3" SDR11 HD poly line leading from BW37 to the tankage facility, is tested in the same manner. A valve in the line is closed at the tankage facility. Then the freshwater line at the wellhead is allowed to pressure to 160 psi. A jumper line between the freshwater line and the brine line has been installed at BW37 well head to accomplish this. After brine line pressure has risen to 160 psi, the entire system is shut down, then the brine line is isolated by closing valving in place at each end of the line. Pressure is held for 1 hour, during which time the line is visually inspected. The brine line between BW37 and tankage is approximately 200' long. The freshwater line and the brine line run across land that is under the same ownership as Llano Disposal, LLC. Therefore, observing these lines for inspection during testing, and during normal operations, is frequent and at will. The lines between the storage tanks and the truck loading valves, are all 6" SDR11 high density poly. These lines carry normal head pressure of 0 psi (emptied tanks) to 17 psi (full tankage) but are virtually always under positive pressure. These lines are under continual live camera observation and viewed daily, both by truckers and by Llano field personnel. All tanks are 30' fiberglass and are manifolded together with said 6" SDR11 HD poly line. Valving is installed on the outlet of each tank so that any one, or all the tanks can be closed off if needed. All valving and connections are plastic coated steel, stainless steel, poly, or fiberglass.

Pipeline Visual Inspections for leaks are done at minimum every other day, monitoring lines, joints, tanks, and recording volumes and pressure.

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Quarterly Chemical Analysis

The full report can be viewed in **APPENDIX F** at the end of this report.

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

Analytical Results For:

LLANO DISPOSAL, LLC
125 W. ST. ANNE
HOBBS NM, 88240

Project: TATUM BRINE
Project Number: SE CORNER OF TATUM
Project Manager: MARVIN BURROWS
Fax To: NONE

Reported:
28-Nov-17 17:15

EAST FRESH WATER WELL**H703118-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Alkalinity, Bicarbonate	200		5.00	mg/L	1	7110705	AC	10-Nov-17	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	7110705	AC	10-Nov-17	310.1	
Chloride*	88.0		4.00	mg/L	1	7110601	AC	10-Nov-17	4500-Cl-B	
Conductivity*	825		1.00	uS/cm	1	7111001	AC	10-Nov-17	120.1	
pH*	7.63		0.100	pH Units	1	7111001	AC	10-Nov-17	150.1	
Sulfate*	140		25.0	mg/L	2.5	7110903	AC	09-Nov-17	375.4	
TDS*	410		5.00	mg/L	1	7110809	AC	10-Nov-17	160.1	
Alkalinity, Total*	164		4.00	mg/L	1	7110705	AC	10-Nov-17	310.1	

Green Analytical Laboratories**Total Recoverable Metals by ICP (E200.7)**

Calcium*	75.1		1.00	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Magnesium*	16.6		1.00	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Potassium*	<10.0		10.0	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Sodium*	61.2		10.0	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018



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Analytical Results For:

LLANO DISPOSAL, LLC
125 W. ST. ANNE
HOBBS NM, 88240

Project: TATUM BRINE
Project Number: SE CORNER OF TATUM
Project Manager: MARVIN BURROWS
Fax To: NONE

Reported:
28-Nov-17 17:15

WEST FRESH WATER WELL**H703118-02 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Alkalinity, Bicarbonate	205		5.00	mg/L	1	7110705	AC	10-Nov-17	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	7110705	AC	10-Nov-17	310.1	
Chloride*	56.0		4.00	mg/L	1	7110601	AC	10-Nov-17	4500-Cl-B	
Conductivity*	607		1.00	uS/cm	1	7111001	AC	10-Nov-17	120.1	
pH*	7.74		0.100	pH Units	1	7111001	AC	10-Nov-17	150.1	
Sulfate*	103		25.0	mg/L	2.5	7110903	AC	09-Nov-17	375.4	
TDS*	344		5.00	mg/L	1	7110809	AC	10-Nov-17	160.1	
Alkalinity, Total*	168		4.00	mg/L	1	7110705	AC	10-Nov-17	310.1	

Green Analytical Laboratories**Total Recoverable Metals by ICP (E200.7)**

Calcium*	58.2		1.00	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Magnesium*	11.5		1.00	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Potassium*	<10.0		10.0	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Sodium*	39.7		10.0	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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Mechanical Integrity Test

A MIT was performed on 1/4/19: Llano scheduled, then ran a MIT on BW37 using a calibrated chart recorder. Subsequent pressure test was successful to 320 psi. See the chart in **APPENDIX A**.

Deviations from normal Operations

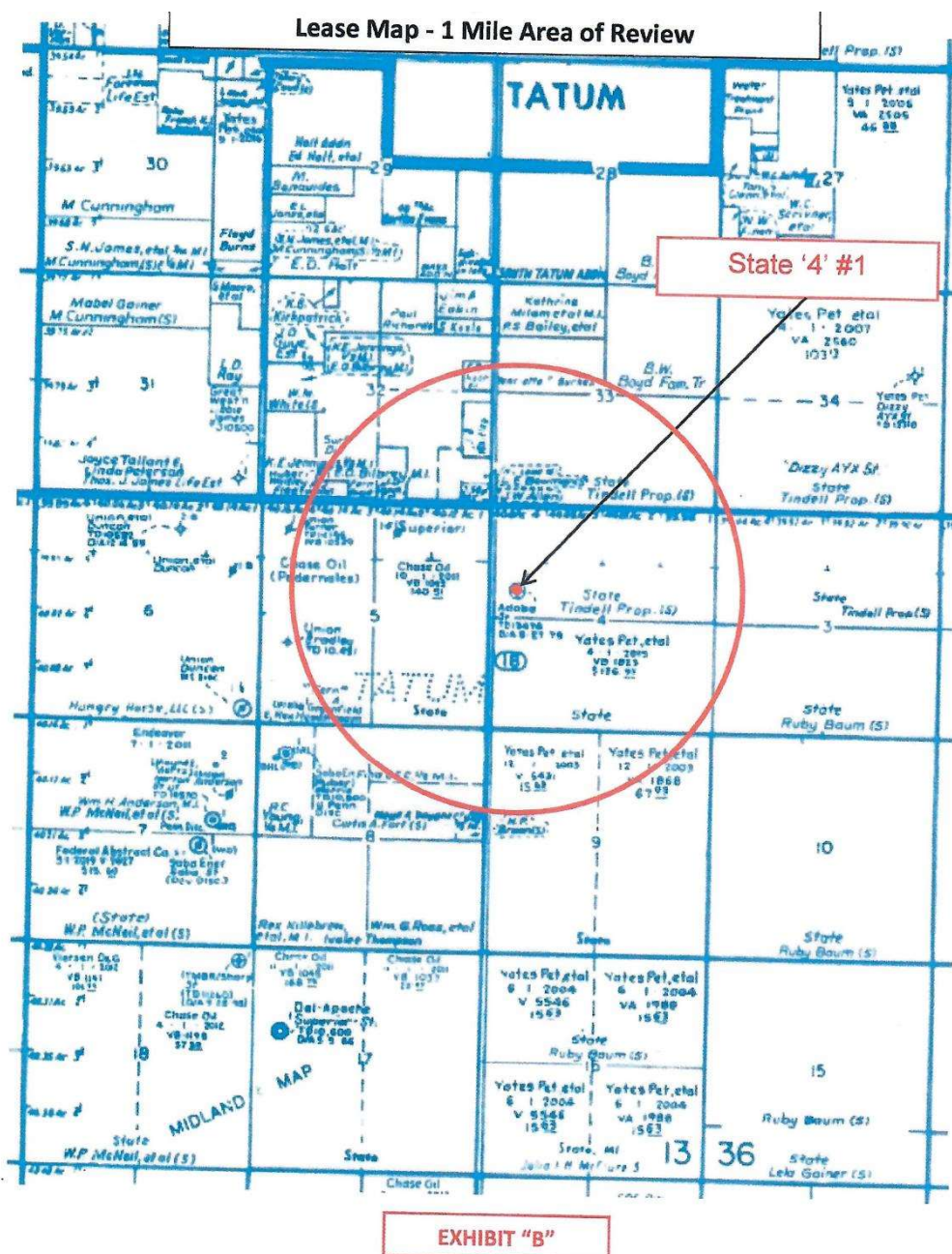
Surface Subsidence Monitoring Plan Data Results

Other than the initial survey and plan creation, there was no other survey done, since the well had only been in operation for a very short period.

Leaks and Spills Corrective Action Reports

There were no leaks, spills, or corrective action during this period.

Please see below, the original AOR document that was submitted as part of the original application for BW-37. A current, location-by-location review of this brine permit has been completed, and it was found that there has been no oil or gas well development in the area since the original AOR document was created and submitted to NMOCD as part of the original brine permit.



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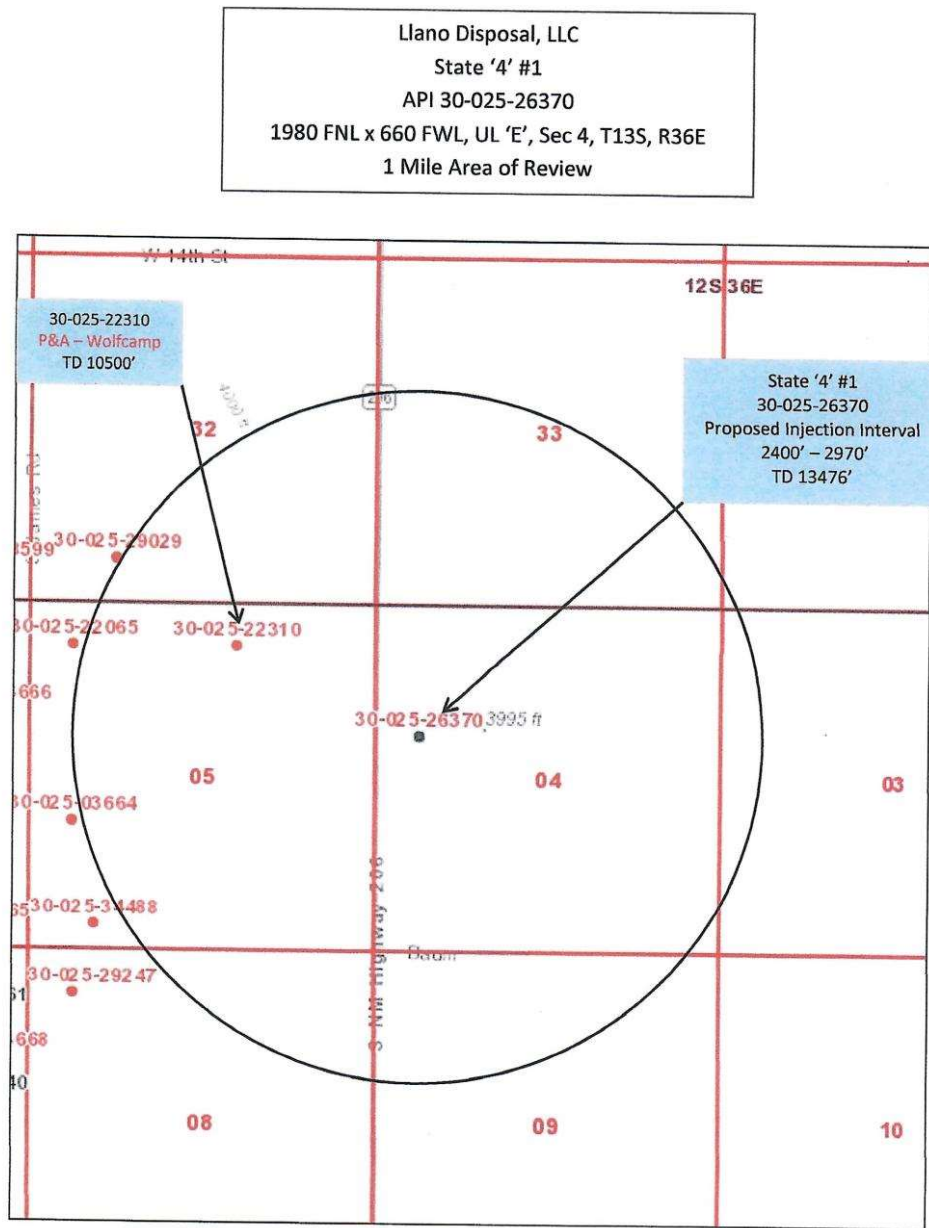


EXHIBIT "C"

7

Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018

Llano Disposal, LLC

State '4' #1

API # 30-025-26370

Offset Wells Located within 1 Mile Area of Review

There is only one offset well within the 1 mile AOR.

UL, Sec, T, R	API Well No.	Well Name	TVD	Operator	Status
B-5-13S-36E	30-025-22310	State 'F' #1	10500'	Superior Oil Company	Plugged and abandoned 1969

This well was drilled in 1967 as a Wolfcamp test. It was plugged and abandoned in 1969.

Summary MITs, Surface Subsidence Surveys, Cavern Size & Shape, Cavern Volume and Geometry Measurements with Conclusion(s) and Recommendation(s)

There were no MITs issued thru 12/31/18. A MIT was performed on 1/4/19: Llano scheduled, then ran a MIT on BW37 using a calibrated chart recorder. Subsequent pressure test was successful to 320 psi. See the chart in **APPENDIX A**.

Please find the Subsidence Plan and Report in **APPENDIX C** at the end of this report, that was prepared for us by Pettigrew and Associates out of their Hobbs, NM office. The importance and purpose of the report is to closely monitor any geological shifting, either vertically or horizontally, in the earth surrounding the brine well. All parameters of Pettigrew's investigation are included in the report, along with a review of the monitoring points as installed and archived during the initial development of the well. The full report/plan is included in **APPENDIX C**.

A description of the Cavern Size & Shape, Cavern Volume and Geometry Measurements, are in **APPENDIX B** at the end of this report.

In conclusion, the operational history of BW37 could be described as "good", meaning that the well has performed very well in producing 10# brine. There are no recommendations at this time.

Injected Fluids to Brine Ratio

Total Brine for the year	26,228
Total Fresh for the year	28,865
Ratio of Fresh to Brine	1.10

Summary of Major Facility Activities

There were no major activities during this period. However, this is the first annual report for the well. All the startup C103s and their descriptions are included in **Appendix D** at the end of this report.

Surface Subsidence Monitoring Plan Data Results

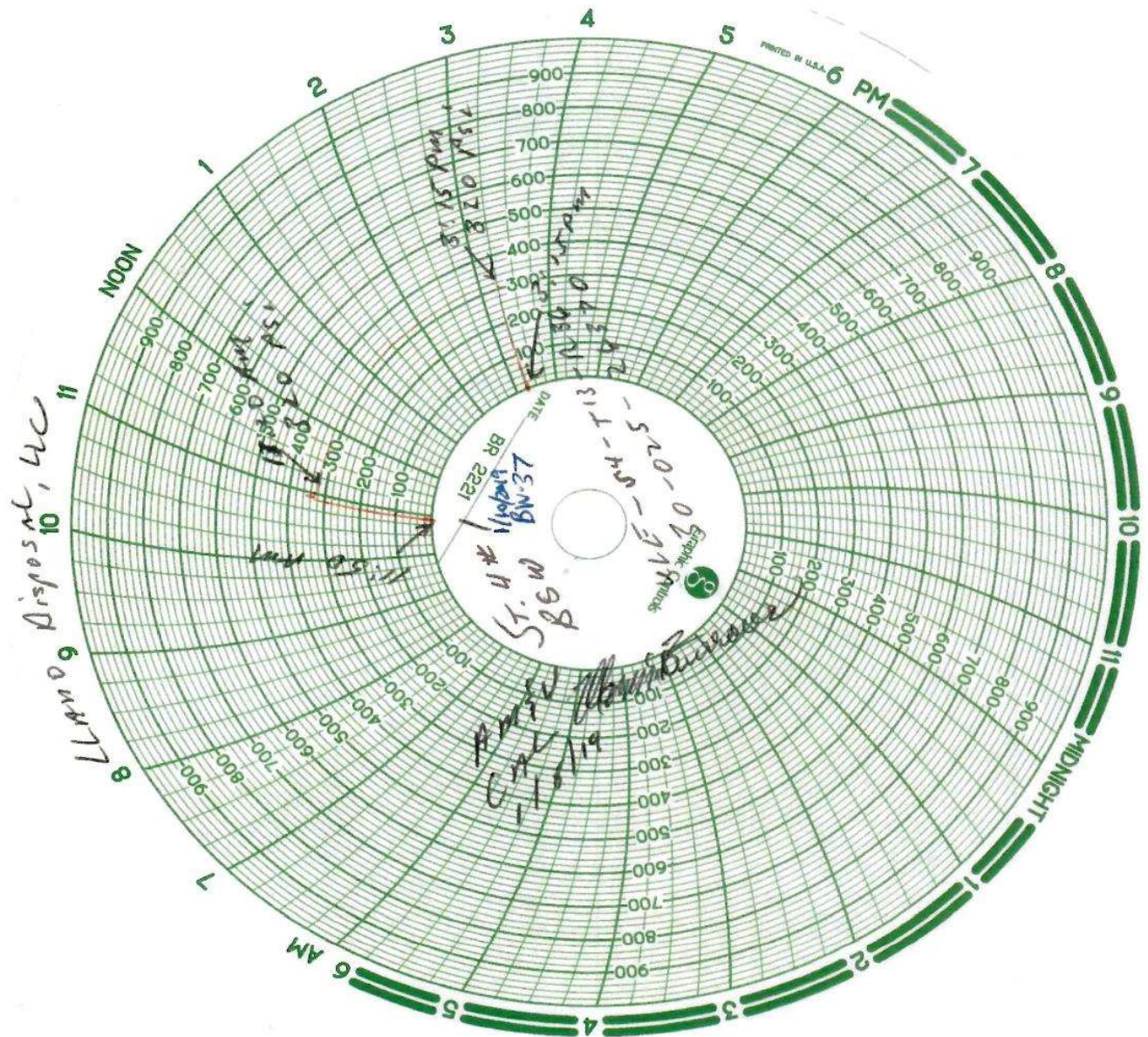
The initial plan and survey were done and are included in **Appendix C** at the end of this report.

Solution Cavern Characterization Data Results

Please see **APPENDIX B** at the end of this report for a full description.

APPENDIX A

MITs



Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018

American Valve & Meter, Inc.

1113 W. BROADWAY

P.O. BOX 166 HOBBS, NM 88240

T0:Rental

DATE: 01/08/2019

This is to certify

I, Stephen Waskas, Technician for American Valve & Meter Inc. has checked the calibration of the following instrument.

8" Pressure recorder

Ser# 3399

at these points:

Pressure #1000			Temperature *or Pressure #		
Test	Found	Left	Test	Found	Left
- 0	-	- 0	-	-	-
- 500	-	- 500	-	-	-
- 700	-	- 700	-	-	-
- 1000	-	- 1000	-	-	-
- 200	-	- 200	-	-	-
- 0	-	- 0			

Remarks: _____

Signature: 

APPENDIX B

Cavern Characterization

Cavern Characterization

For 2018, 28,865 bbls of fresh water have been injected into salt strata for the purpose of brine generation (1,212,330 gallons). Well production history has shown that the well reliably produces 10.0 + pound quality brine water. It therefore follows that each gallon of fresh water (testing 8.34 pounds per gallon) has dissolved 1.66 pounds of halite. By simple calculation, 2,012,467 pounds of halite have gone into solution this year. Halite has a SG of 2.17 (compared to fresh water), so is calculated and known to weigh 137.47 pounds per cubic foot. It follows then, that 14,439 cubic feet of halite has gone into solution this year. The amount of fresh water injected (28,865 bbls) as compared to the amount of brine produced (26,228 bbls) shows that water is being used to fill the cavity as the cavity increases in volume:

26,228 bbls / 28,865 bbls = 90.8% of water is being recovered as brine, 9.2% is being used to fill the brine cavity.

Since it is impossible to know the exact dimensions of the cavity, some assumptions are reasonably made. OCD regulations require that fresh water be injected down a tubing string so that brine may be produced up the tubing/casing annulus. Therefore, brine generation begins at total tubing depth, and by the time water so circulated reaches that annulus, it has become saturated brine (or "10# brine"). It is logical then, that dissolution will be rapid at first, then tapers off as saturation is achieved. Such action would imply a cone shaped (inverted cone) cavity.

The formula to calculate the volume of a truncated cone is :

$$\text{Volume} = (1/3) \times \pi (R^2 + (R \times r) + r^2) H$$

Where :

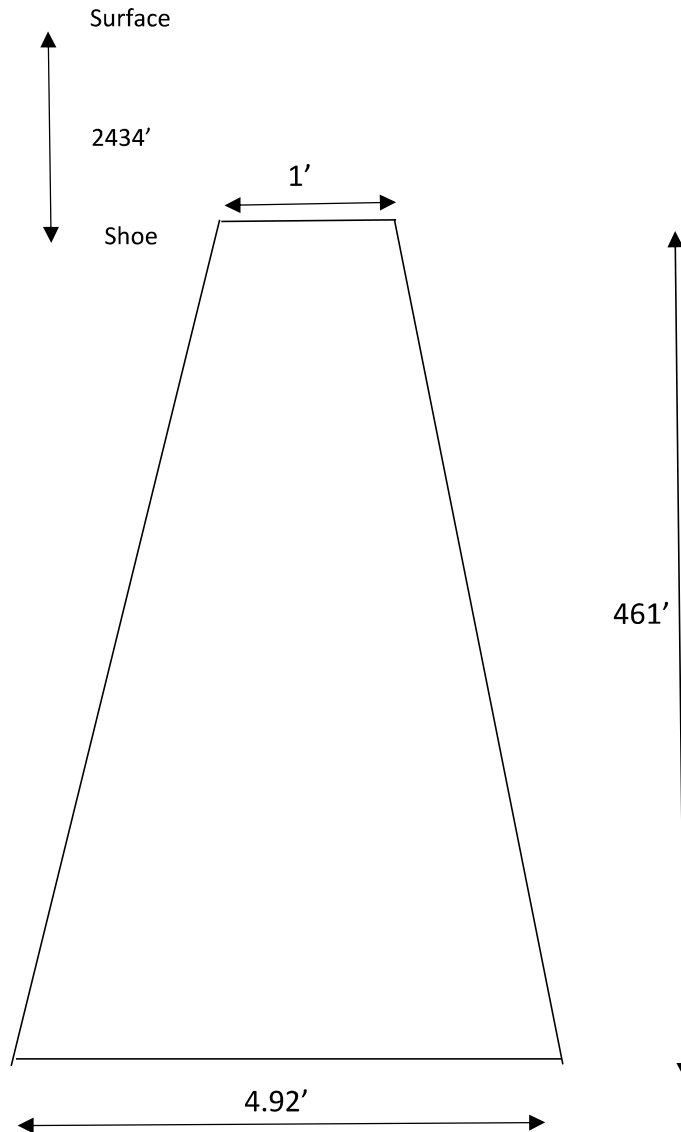
- 1) r equals the radius of the small end cone diameter in feet
- 2) R equals the radius of the large end cone diameter in feet
- 3) R^2 is "R squared". r^2 is "r squared".
- 4) H is depth in feet from tubing depth to top of salt (casing shoe).

Fresh water used at BW37 for the purpose of brine generation is known to weigh 8.4 lbs. per gallon. Therefore 1.6 lbs. of salt must be taken up by each gallon of fresh water so injected to result in 10 ppg brine water, which is the known industry standard. It follows then that each barrel of brine water (one API barrel = 42 gallons) contains 42 x 1.6 lbs. of salt, or 67.2 lbs. of salt. One cubic foot of salt weighs 137.47 lbs. Continuing, the cubic feet of salt consumed in one year is equal to the total amount of salt that is calculated to have gone into solution divided by 137.47 lbs.

The illustration on the following page, with dimensions shown, satisfies the number of cubic feet of halite in solution since operations began, hence the size of cavern.

Cavern Size, Shape, & Volume Estimate

State 4 # 1 (BW-37)
EOY 2018 Brine Cavity Characterization



Estimated height (H) to Casing Shoe is 2434'

Estimated cavern floor diameter (D) is 4.92'

Estimated * Cavern Collapse Ratio is **.002** where $4.92/2434 = .002$

Inserted formula values: $.3330 \times 3.1415(24.206 + 4.921 + 1) 461$ or 14,443 cu ft of halite solution mined (by rounding to the third decimal).

* Per the OCD, the Cavern Collapse Ratio is D/H

APPENDIX C

Subsidence Survey Results

Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018



Marvin Burrows
Llano Disposal LLC
Lovington, New Mexico, 88260
806-471-5628

January 9, 2019

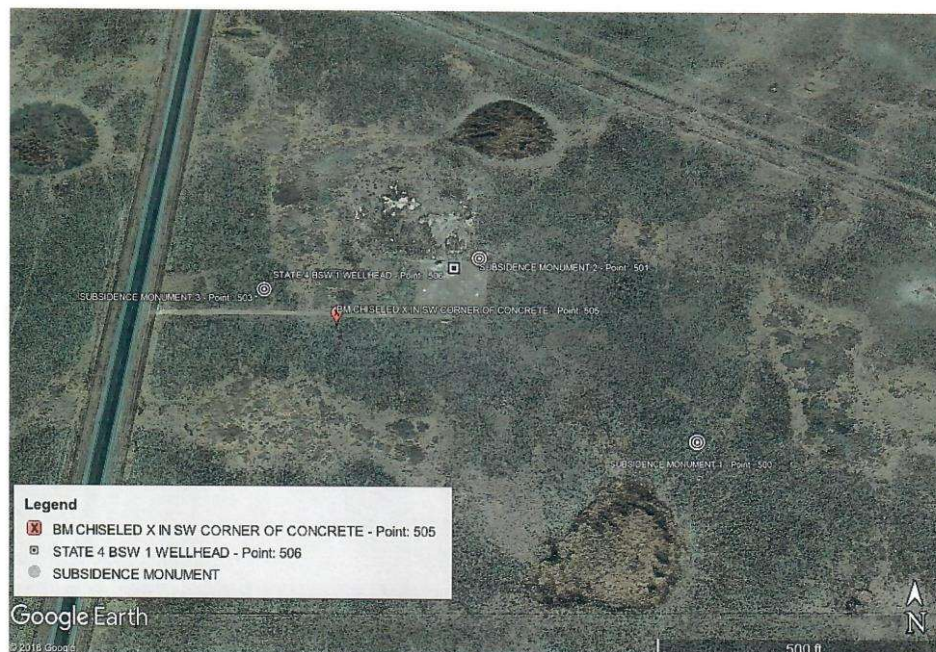
RE: Survey Report
Llano Disposal LLC'S State 4 BSW #1 (BW037) Project
2018.1328

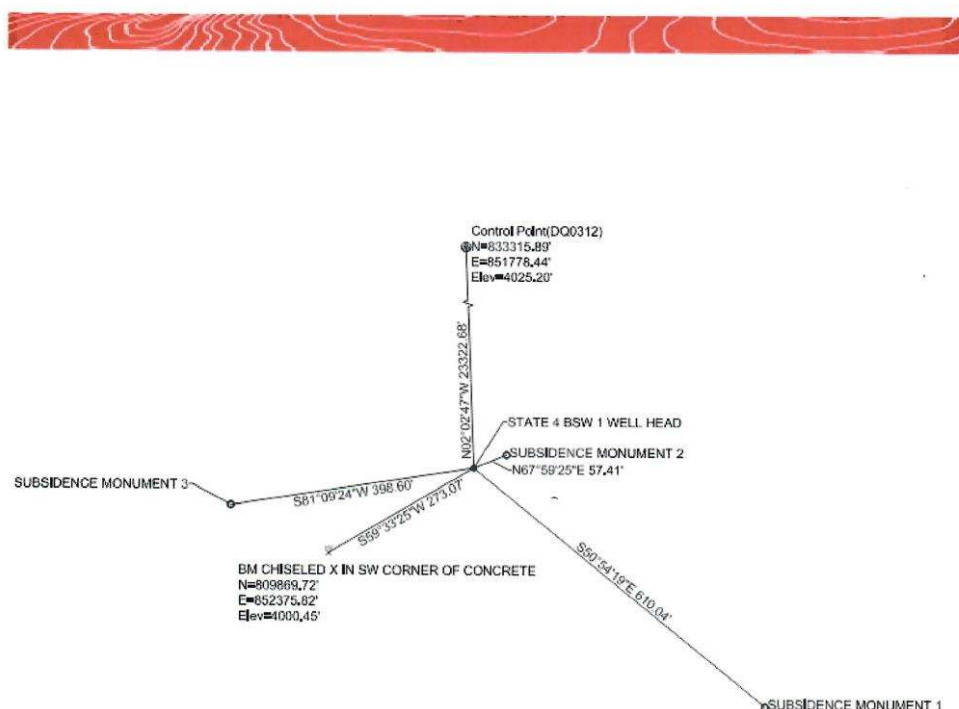
100 E. Navajo Drive Suite 100 Hobbs NM 88240 T 575 393 9827 F 575 393 1543 Pettigrew.us

SUBSIDENCE MONUMENT SURVEY

On December 27, 2018 a field survey was conducted to set and observe positions of three new subsidence monuments for the State 4 BSW #1 (BW-37) Llano Wellhead located at: N33°13'21.03893", W103°18'55.69480". The well location and associated subsidence monuments can be accessed from NM 206, just south of Tatum, NM in Lea County.

The Google Earth image and the sketch below illustrate locations of the monuments:





The discussion was to set at least three monuments at varying distances from the well head. The three monuments were set at differing distances in three separate directions.

This survey was conducted using Trimble R10 GNSS Receivers and a Trimble DiNi digital level. The GNSS Receivers were used to establish the locations of the monuments and the well head through Differential GNSS observations. In an effort to tie into an existing published control point, the National Geodetic Survey website was reference to find the nearest published benchmark. Vertical Control point DQ0312 is located approximately 23,322.68 feet or 4.42 miles northwest of the well site. Once the monument was recovered, a GNSS base was setup over the point and static data was observed for nearly two hours. The data was then submitted to an online positioning service to firmly establish the horizontal coordinates: Latitude: N33°17'11.66161", Longitude: W103°19'02.82827". The published elevation of 4025.20 feet was held.

While, the published/accepted elevation for the point was used. The Trimble DiNi was then used to accurately establish the elevation of the monuments and the wellhead in relation to the NGS control point featured above in the Google Maps screenshot. The DiNi reads a barcode off of a special rod in order to determine difference in elevation from a known control point. The accuracy of this level helps to eliminate human reading errors. The data is



stored onboard and may be transferred directly into the computer software at the office for analysis of results, ensuring greater accuracy.

SUBSIDENCE MONITORING PLAN

The NGS Control Point DQ0312, with an elevation of 4025.20 feet above mean sea level (MSL), will be used as the Reference Control Point for determining the elevations of the newly placed Subsidence Monuments. The elevations of these monuments will be observed semi-annually by a level loop run with the DiNi level to ensure accuracy and precision.

Future observations made on all available points and tabulated to compare the elevations to the base elevations were established on December 27, 2018. The results will be graphically represented by trend lines representing measurements made on each monument. The continual change will be monitored by P.A. and presented to you semi-annually.





MONUMENT DESCRIPTIONS

Each of the monuments set and observed are shown below with a description and images of the point.

X95 – DQ0312

NGS Control Point DQ0312 is a brass U.S. Coast & Geodetic Survey Benchmark set in concrete. It is stamped with an X and with the year it was set as shown below, followed by the NGS datasheet:





Llano Disposal LLC'S State 4 BSW #1 (BW037)

The existing wellhead was measured on the top screw of a brass clamp; leaving the wellhead on a horizontal plane.



**Subsidence Monument 1**

A Berntsen three quarter inch Aluminum Top Security Sleeve Monument was set. It consists of a rod driven till refusal into a pre drilled three-foot deep hole with a twelve inch diameter. The sleeved rod is encased in six-inch PVC filled with sand, then topped with a Datum Point and an Aluminum Floating Datum Cap. It is then capped with an Access Cover that must be removed with a flathead screw driver or similar tool. The Monument is pictured below:



**Subsidence Monument 2**

A Berntsen three quarter inch Aluminum Top Security Sleeve Monument was set. It consists of a rod driven till refusal into a pre drilled three-foot deep hole with a twelve inch diameter. The sleeved rod is encased in six-inch PVC filled with sand, then topped with a Datum Point and an Aluminum Floating Datum Cap. It is then capped with an Access Cover that must be removed with a flathead screw driver or similar tool. The Monument is pictured below:



**Subsidence Monument 3**

A Berntsen three quarter inch Aluminum Top Security Sleeve Monument was set. It consists of a rod driven till refusal into a pre drilled three-foot deep hole with a twelve inch diameter. The sleeved rod is encased in six-inch PVC filled with sand, then topped with a Datum Point and an Aluminum Floating Datum Cap. It is then capped with an Access Cover that must be removed with a flathead screw driver or similar tool. The Monument is pictured below





STATE PLANE POINT REPORT FROM TRIMBLE BUSINESS CENTER

Project file data		Coordinate System	
Name:	Z:\2018.1328\Field Data \State4BSW1_SubsidenceMonuments.vce	Name:	United States/State Plane 1983
Size:	54 KB	Datum:	NAD 1983 (Conus)
Modified:	12/27/2018 6:22:14 PM (UTC:-7)	Zone:	New Mexico East 3001
Time zone:	Mountain Standard Time	Geoid:	GEOID12B (Conus)
Reference number:		Vertical datum:	
Description:		Calibrated site:	Default
Comment 1:			
Comment 2:			
Comment 3:			

Additional Coordinate System Details

Local Site Settings			
Project latitude:	N33°13'21.24663"	Ground scale factor:	1.00016788873455
Project longitude:	W103°18'55.06593"	False northing offset:	0.000
Project height:	3928.198	False easting offset:	0.000

Point List

ID	Northing (US survey foot)	Easting (US survey foot)	Elevation (US survey foot)	Feature Code
104	833315.893	851778.444	4025.200	X95 DQ0312
500	809623.387	853084.695	3996.984	SUBSIDENCE MONUMENT 1
501	810029.598	852664.466	4000.084	SUBSIDENCE MONUMENT 2
503	809946.803	852217.376	3999.785	SUBSIDENCE MONUMENT 3
505	809869.722	852375.815	4000.454	BM CHISELED X IN SW CORNER OF CONCRETE
506	810008.082	852611.238	4000.690	STATE 4 BSW 1 WELL HEAD

1/9/2019 8:28:05 AM	Z:\2018.1328\Field Data \State4BSW1_SubsidenceMonuments.vce	Trimble Business Center
---------------------	--	-------------------------



LAT/LONG POINT REPORT FROM TRIMBLE BUSINESS CENTER

Project file data		Coordinate System	
Name:	Z:\2018.1328\Field Data \State4BSW1_SubsidenceMonuments.vce	Name:	United States/State Plane 1983
Size:	54 KB	Datum:	NAD 1983 (Conus)
Modified:	1/9/2019 12:56:53 PM (UTC:-7)	Zone:	New Mexico East 3001
Time zone:	Mountain Standard Time	Geoid:	GEOID12B (Conus)
Reference number:		Vertical datum:	
Description:		Calibrated site:	Default
Comment 1:			
Comment 2:			
Comment 3:			

Additional Coordinate System Details

Local Site Settings			
Project latitude:	N33.22257	Ground scale factor:	1.00016788873455
Project longitude:	W103.31530	False northing offset:	0.000
Project height:	3928.19777	False easting offset:	0.000

Point List

ID	Latitude (Global)	Longitude (Global)	Height (Global) (US survey foot)	Feature Code
104	N33.28667	W103.31745	3953.46666	X95 DQ0312
500	N33.22144	W103.31394	3925.14681	SUBSIDENCE MONUMENT 1
501	N33.22267	W103.31530	3928.20725	SUBSIDENCE MONUMENT 2
503	N33.22235	W103.31676	3927.94538	SUBSIDENCE MONUMENT 3
505	N33.22214	W103.31624	3928.56728	BM CHISELED X IN SW CORNER OF CONCRETE
506	N33.22251	W103.31547	3919.03566	STATE 4 BSW 1 WELL HEAD

1/9/2019 2:53:08 PM	Z:\2018.1328\Field Data \State4BSW1_SubsidenceMonuments.vce	Trimble Business Center
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NATIONAL GEODETIC SURVEY DATA SHEET:

Disclaimer: The National Oceanic and Atmospheric Administration (NOAA) website, operated by the U.S. Department of Commerce, was unavailable due to a lapse in appropriation. The information used in this report was obtained using the benchmark search engine

<http://benchmarks.scaredycatfilms.com/index.php##> to locate the benchmark and the

<https://www.geocaching.com/play> website to generate a pdf copy of the original datasheet shown below.

```

DQ0312
*****
DQ0312 DESIGNATION - X 95 RESET
DQ0312 PID - DQ0312
DQ0312 STATE/COUNTY- NM/LEA
DQ0312 USGS QUAD - TATUM NORTH (1972)
DQ0312
DQ0312 *CURRENT SURVEY CONTROL
DQ0312
DQ0312* NAD 83(1986)- 33 17 12. (N) 103 19 01. (W) SCALED
DQ0312* NAVD 88 - 1226.88 (meters) 4025.2 (feet) RESET
DQ0312
DQ0312 GEOID HEIGHT- -21.91 (meters) GEOID99
DQ0312
DQ0312 VERT ORDER - THIRD
DQ0312
DQ0312.The horizontal coordinates were scaled from a topographic map and have
DQ0312.an estimated accuracy of +/- 6 seconds.
DQ0312
DQ0312.The orthometric height was computed from unverified reset data.
DQ0312
DQ0312.The geoid height was determined by GEOID99.
DQ0312
DQ0312; North East Units Estimated Accuracy
DQ0312;SPC NM E - 254,010. 259,670. MT (+/- 180 meters
DQ0312 Scaled)
DQ0312
DQ0312 SUPERSEDED SURVEY CONTROL
DQ0312
DQ0312.No superseded survey control is available for this station.
DQ0312
DQ0312 MARKER: DB = BENCH MARK DISK
DQ0312 SETTING: 66 = SET IN ROCK OUTCROP
DQ0312 STAMPING: X 95 RESET 1972
DQ0312 STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
DQ0312+STABILITY: POSITION/ELEVATION WELL
DQ0312
DQ0312 HISTORY - Date Condition Recov. By
DQ0312 HISTORY - 1972 MONUMENTED NGS
DQ0312
DQ0312 STATION DESCRIPTION
DQ0312
DQ0312'DESCRIBED BY NATIONAL GEODETIC SURVEY 1972
DQ0312''2 MI N FROM TATUM.
DQ0312''FROM THE INTERSECTION OF U.S. HIGHWAY 380 AND STATE HIGHWAY 18 IN
DQ0312''TATUM, GO NORTH ON STATE HIGHWAY 18 FOR 2.0 MILES TO MARK ON THE
DQ0312''RIGHT. A STANDARD BENCH MARK DISK, SET IN A DRILL HOLE IN BEDROCK,
DQ0312''THAT IS FLUSH WITH THE GROUND AND IS STAMPED X 95 RESET 1972. IT IS
DQ0312''101 PACES NORTH OF WHERE A PIPE-LINE CROSSES UNDER THE HIGHWAY, 64
DQ0312''PACES NORTH OF A FENCE-CORNER, 55 FEET EAST OF THE CENTER OF HIGHWAY
DQ0312''AND 10 FEET WEST OF FENCE-LINE.

```

Top Security Sleeve Rod Monuments

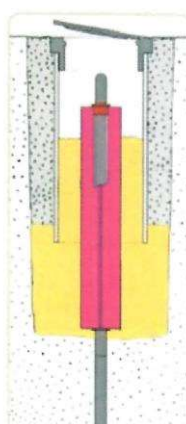


Berntsen Sectional Rod Monument with Floating Sleeve

Berntsen's exclusive Top Security™ Sleeve 3-Dimensional Rod Monument System is specifically designed for high-precision geodetic and GPS surveys. Its patented design helps protect against excessive movements in the control monument. The Berntsen extendible rods, when driven to refusal, provide excellent vertical stability. The unique Y-shaped design of the Top Security Sleeve adds the second and third dimension to provide the most stable 3-D survey monument available.



Eliminate most common and unexpected shifts in stability by eliminating most of the direct transfer of shifts in movement from ground level or surface movement. Here's how: Rod markers (driven to refusal) have good vertical stability but can be disturbed by the natural phenomenon known as frost heave. Rod markers, installed with a greased-filled PVC pipe surrounding the upper three or four feet (900 or 1200 mm) (or more) of rod, are known to be effective in combating movement caused by frost heave but offer little protection against possible horizontal movement of surrounding earth (another major cause of differences in readings on rod markers). For the first time, Berntsen's Top Security Sleeve™ with the horizontal stability of the original Berntsen Top Security™ finned rod marker system, this is now available in a commercially available survey monument.



It's even extendible! 3' (914mm) lengths of Top Security Sleeves can also be connected together by Berntsen's exclusive End Cap

Alignment Bushings and a little PVC Cement. When used in combination(s), nearly any even-foot length over six feet long (1.83m) of support for the rod marker is possible. That's innovative and flexible design at work for you.

More good news! The Top Security Sleeves' greatest advantage at installation time is speed. Simply drive standard Berntsen round rods to refusal, slip on the grease-filled finned Top Security Sleeve (recommended sleeve length greater than maximum recorded local frost depth), back-fill around the fins with sand, tamp firmly. The color coded End Cap Alignment Bushings follow Berntsen's long established universal color codes for rod marker systems and tell other surveyor's at a glance what size rod is installed - 9/16" (14 mm) Yellow; 3/4" (19 mm) Blue. We recommend NO-TOX lubricating grease to fill the Top Security Sleeve. It is specially formulated to be non-toxic and environmentally safe. It is available in an easy to use cartridge that fits a standard "grease gun". One cartridge should be used for each 36" (915mm) long Top Security Sleeve.

APPENDIX D

Sundries

Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018

Submit 1 Copy To Appropriate District Office
 District I - (575) 393-6161
 1625 N. French Dr., Hobbs, NM 88240
 District II - (575) 748-1283
 811 S. First St., Artesia, NM 88210
 District III - (505) 334-6178
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV - (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
 Energy, Minerals and Natural Resources

Form C-103
 Revised July 18, 2013

OIL CONSERVATION DIVISION
 1220 South St. Francis Dr.
 Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-025-26370
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other - PxA Well <input type="checkbox"/>		5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
2. Name of Operator Llano Disposal, LLC		6. State Oil & Gas Lease No.
3. Address of Operator P.O. Box 190, Lovington, NM 88260		7. Lease Name or Unit Agreement Name State '4'
4. Well Location Unit Letter <u>E</u> : 1980 feet from the North line and 660 feet from the West line Section <u>13S</u> Range <u>36E</u> NMPM Lea Count:		8. Well Number <u>1</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3997' GL		9. OGRID Number 370661
		10. Pool name or Wildcat BSW; Salado

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input checked="" type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
DOWNHOLE COMMINGLE <input type="checkbox"/>			
CLOSED-LOOP SYSTEM <input checked="" type="checkbox"/>			
OTHER: Run CBL, CNL and caliper log <input checked="" type="checkbox"/>		OTHER: <input type="checkbox"/>	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

In accordance with discussions with OCD Environmental Bureau, Llano Disposal LLC proposes to re-entry this P&A well to inspect casing for possible conversion to brine supply well service pending WQCC Discharge Permit approval:

- 1) Back drag/level location, set anchors, dig out around existing PxA marker, MI welder, cut off PxA marker, reveal good 13-3/8" and 8-5/8" casing, install new casing (if necessary) and well head at ground level.
- 2) MIRU pulling unit, NU BOP, unload and tally 2-7/8" workstring, set 2 frac tanks and fill one with FW. MIRU reverse unit, swivel and stripping head, RIH with 7-7/8" skirted MT bit, bit sub, four 4-3/4" DCs and 2-7/8" workstring, drill cement plug #8 (surface to 30") and plug # 7 (1700' - 1900') utilizing closed loop system.
- 3) Tag plug #6 at 4550', circulate hole clean, close BOP, test casing to 300#, POOH & LD 2-7/8" workstring, DCs, bit sub and bit.
- 4) MIRU WL, run CBL, CNL and casing caliper log from PBTD at 4550' to surface, RDMO WL.
- 5) ND BOP, install B-1 adaptor, secure and close in well, RDMO pulling unit, reverse unit and tanks.
- 6) Submit CBL, CNL and caliper log to OCD Environmental Bureau (SF) and OCD District 1 (Hobbs) to make a better determination on proposed window depth and tubing depth. Suspend further well work until additional permitting is approved.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE DJ Holcomb TITLE Agent for Llano Disposal, LLC DATE 1/5/2018

Type or print name Danny J. Holcomb E-mail address: danny@pwhc.com PHONE: 806-471-5628

For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____
 Conditions of Approval

This C-103 was a notice of intention, informing NMOC of Llano's intention to prepare the wellhead and location for re-entry work. This included intention to level and back drag location, reopen the wellhead cellar, remove the P & A marker, remove the welded P & A plate, weld on new wellhead equipment, add wellhead valve risers, refill cellar, and temporarily cap

off new wellhead. A NM One Call will be initiated, new rig anchors dilled in, set and tested. The existing roadway (well was initially Adobe Oil) will be returned to service. The procedure and equipment to accomplish this was so outlined.

Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018

Submit 1 Copy To Appropriate District Office
 District I - (575) 393-6161
 1625 N. French Dr., Hobbs, NM 88240
 District II - (575) 748-1283
 811 S. First St., Artesia, NM 88210
 District III - (505) 334-6178
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV - (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
 Energy, Minerals and Natural Resources

Form C-103
 Revised July 18, 2013

OIL CONSERVATION DIVISION
 1220 South St. Francis Dr.
 Santa Fe, NM 87505
 MAR 05 2018

WELL API NO.
 30-025-26370

5. Indicate Type of Lease
 STATE ☒ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name
 State '4'

8. Well Number 1

9. OGRID Number
 370661

10. Pool name or Wildcat
 BSW; Salado

SUNDRY NOTICES AND REPORTS ON WELLS
 (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN WELLS OR TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☒ Other - PxA Well

2. Name of Operator
 Llano Disposal, LLC

3. Address of Operator
 P.O. Box 190, Lovington, NM 88260

4. Well Location
 Unit Letter E : 1980 feet from the North line and 660 feet from the West line
 Section 4 Township 13S Range 36E NMPM Lea County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
 3997' GL

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
 TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
 PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
 DOWNHOLE COMMINGLE ☐
 CLOSED-LOOP SYSTEM ☐
 OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☒ ALTERING CASING ☐
 COMMENCE DRILLING OPNS. ☒ P AND A ☐
 CASING/CEMENT JOB ☐
 OTHER: Run CBL, CNL and caliper logs ☒

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

In accordance with approved C-103 NOI, Llano Disposal LLC re-entered this P&A well to inspect casing for possible conversion to brine supply well service pending WQCC Discharge Permit approval:

1/24/2018 - Leveled location, set anchors, dug out around existing PxA marker, MI welder, cut off PxA marker, revealed good 13-3/8" and 8-5/8" casing, installed new casing risers and well head at ground level.
 1/26/2018 - MIRU pulling unit, NU BOP, unloaded and tallied 2-7/8" workstring, set 2 frac tanks and filled one with FW.
 1/29/2018 - MIRU reverse unit, swivel and stripping head, RIH with 7-7/8" skirted MT bit, bit sub, four 4-3/4" DCs and 2-7/8" workstring, drilled cement plug #8 (surface to 30') utilizing closed loop system, SDON.
 1/30/2018 - Drilled cement plug # 7 (1700' - 1900'), tagged plug #6 at 4550', circulated hole clean, closed BOP, tested casing to 500# for 30 minutes, ok, POOH & LD 2-7/8" workstring, DCs, bit sub and bit, ND BOP, hooked up wellhead, secured well for night.
 1/31/2018 - RDMO pulling unit, reverse unit, swivel and frac tanks, clean location.
 2/2/2018 - MIRU WL, run CBL, CNL and casing caliper log on 8-5/8" casing from 3292' to surface, RDMO WL.
 2/6/2018 - Submitted CBL, CNL and caliper logs to OCD Environmental Bureau (SF) and OCD District 1 (Hobbs). Suspended further well work until additional permitting is approved.

Re-entry

Spud Date:

1/29/2018

Rig Release Date:

1/31/2018

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE D. Holcomb TITLE Agent for Llano Disposal, LLC DATE 2/27/2018

Type or print name Danny J. Holcomb E-mail address: danny@pwllc.net PHONE: 806-471-5628

For State Use Only

APPROVED BY: Malay Brown TITLE AO/II DATE 3/6/2018

This C103 was to report the results of re-entry work (a subsequent report). The drill-out of cement plugs as placed by Adobe, was accomplished as planned. The 8 5/8" casing was cleaned 4500', then the casing was tested to 5002 psi OK with no leak off. Per permit requirement, ran casing logs for reporting to NMOCD to determine usability of wellbore. Logs looked good and casing tested OK. Rigged down pending continuation of permitting process.

Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018

Submit 1 Copy To Appropriate District Office
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 District III - (505) 334-6178
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV - (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
 Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
 1220 South St. F. HOBBS OCD
 Santa Fe, NM 87505
 MAY 15 2018

Form C-103
 Revised July 18, 2013

WELL API NO. 30-025-26370	
Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>	
6. State Oil & Gas Lease No.	
7. Lease Name or Unit Agreement Name State '4'	
8. Well Number 1	
9. OGRID Number 370661	
10. Pool name or Wildcat BSW; Salado	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3997' GL	

SUNDRY NOTICES AND REPORTS ON WELLS
 (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☒ Other - Proposed Brine Well

2. Name of Operator
Llano Disposal, LLC

3. Address of Operator
P.O. Box 190, Lovington, NM 88260

4. Well Location
 Unit Letter E : 1980 feet from the North line and 660 feet from the West line
 Section 4 Township 13S Range 36E NMPM Lea County

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input checked="" type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
DOWNHOLE COMMINGLE <input type="checkbox"/>			
CLOSED-LOOP SYSTEM <input checked="" type="checkbox"/>			
OTHER: Prep well to convert to BSW <input checked="" type="checkbox"/>		OTHER: <input type="checkbox"/>	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

In accordance with discussions with OCD Environmental Bureau, Llano Disposal LLC proposes the following procedure to convert this well to brine well service after WQCC Discharge Permit approval:

- 1) MIRU WL., run 8-5/8" CIBP on WL., set at 2450' capped with 10' cement via WL dump bailer. RDMO WL.
- 2) MIRU pulling unit, reverse unit/swivel and Whipstock assembly, NU BOP, unload and tally 2-7/8" workstring, set 2 frac tanks (closed loop system) and fill one tank with BW. Perform casing MIT to 300 psi for 30 minutes. RIH with Whipstock anchor on workstring, tag CIBP cement cap at 2440', set anchor at 2440', pull workstring.
- 3) RIH with casing cutter assembly, four 4-3/4" DCs and workstring to Whipstock anchor, mill 10' casing side window in 8-5/8" casing at 2400' - 2410'. POH with workstring, DCs, casing cutter, pick up bit. RIH with workstring and bit assembly, drill through salt to 2920', circulate hole clean. POH with workstring, DCs and BHA.
- 4) RIH with 8-5/8" Baker dual port packer on 3-1/2" IPC production tubing, set packer at 2300', land 2-7/8" fiberglass tailpipe at 2900'.
- 5) ND BOP, hook up wellhead, perform open-hole pressure test to 300 psi for 4 hours. RDMO pulling unit, reverse unit, frac tanks.
- 6) Circulate FW to test brine service well. Install surface equipment. Begin brine water production.

Re-entry

Spud Date:

1/29/2018

Rig Release Date:

1/31/2018

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE DJ Holcomb TITLE Agent for Llano Disposal, LLC DATE 3/1/2018

Type or print name Danny J. Holcomb E-mail address: danny@pwllc.net PHONE: 806-471-5628

For State Use Only

APPROVED BY: [Signature] TITLE _____ DATE 03/15/18

Conditions of Approval (if any):

The C103 was a notice of intention to rig back up on this well, run whipstock equipment, cut a window in the 8 5/8" casing, then drill Salado to anticipated (by log interpretation) BOS. Anticipated production tubing string construction was described. (Well re-entry and completion activities were reported on form C-105 as required).

APPENDIX E

Well Diagrams

Annual Report

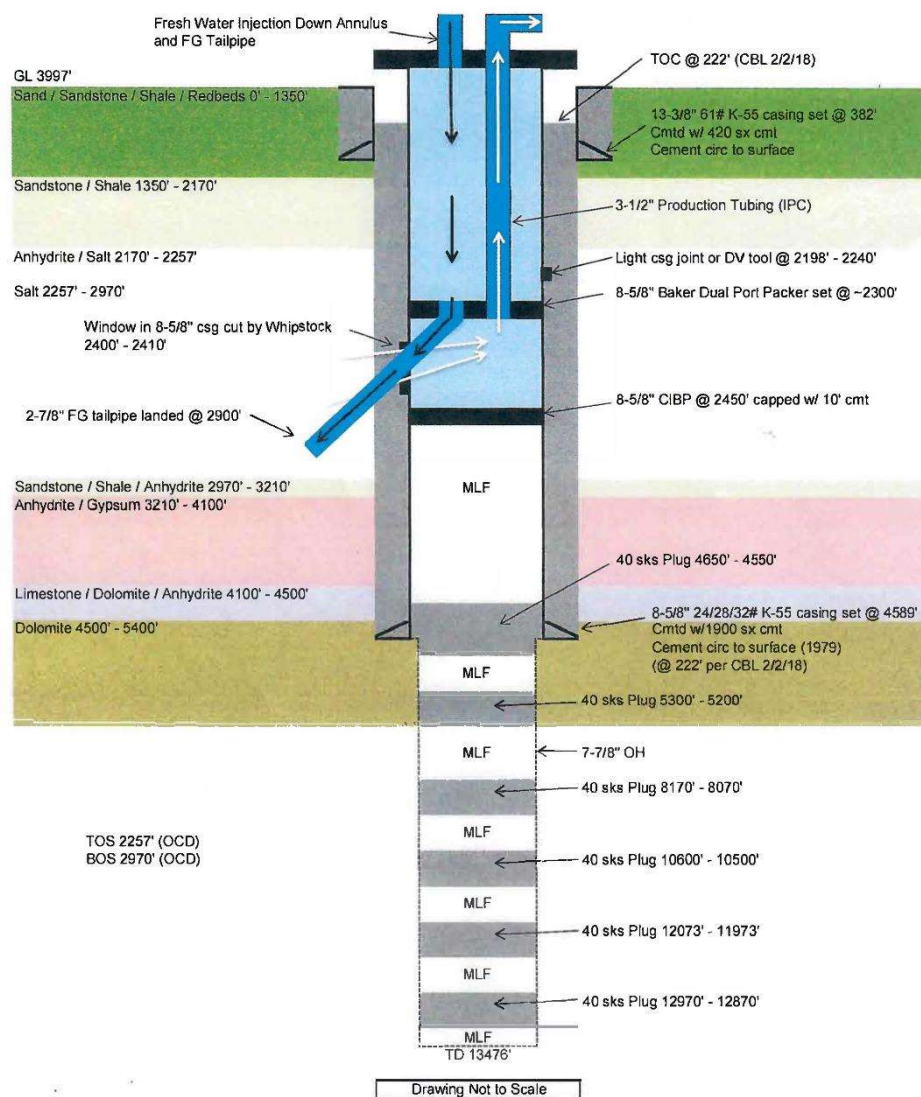
Llano Disposal, LLC BW-37 API 30-025-26370

2018

WELLBORE DIAGRAM

Llano Disposal, LLC
State '4' BSW #1
API # 30-025-26370

1980' FNL x 660' FWL, UL 'E', Sec 4, T13S, R36E, Lea County, NM



APPENDIX F

Chemical Analysis

Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

November 28, 2017

MARVIN BURROWS

LLANO DISPOSAL, LLC

125 W. ST. ANNE

HOBBS, NM 88240

RE: TATUM BRINE

Enclosed are the results of analyses for samples received by the laboratory on 11/08/17 14:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-9. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

LLANO DISPOSAL, LLC 125 W. ST. ANNE HOBBS NM, 88240	Project: TATUM BRINE Project Number: SE CORNER OF TATUM Project Manager: MARVIN BURROWS Fax To: NONE	Reported: 28-Nov-17 17:15
---	---	------------------------------

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EAST FRESH WATER WELL	H703118-01	Water	07-Nov-17 13:00	08-Nov-17 14:45
WEST FRESH WATER WELL	H703118-02	Water	07-Nov-17 13:00	08-Nov-17 14:45

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analysis. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager

Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

LLANO DISPOSAL, LLC
125 W. ST. ANNE
HOBBS NM, 88240

Project: TATUM BRINE
Project Number: SE CORNER OF TATUM
Project Manager: MARVIN BURROWS
Fax To: NONE

Reported:
28-Nov-17 17:15

EAST FRESH WATER WELL**H703118-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Alkalinity, Bicarbonate	200		5.00	mg/L	1	7110705	AC	10-Nov-17	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	7110705	AC	10-Nov-17	310.1	
Chloride*	88.0		4.00	mg/L	1	7110601	AC	10-Nov-17	4500-Cl-B	
Conductivity*	825		1.00	uS/cm	1	7111001	AC	10-Nov-17	120.1	
pH*	7.63		0.100	pH Units	1	7111001	AC	10-Nov-17	150.1	
Sulfate*	140		25.0	mg/L	2.5	7110903	AC	09-Nov-17	375.4	
TDS*	410		5.00	mg/L	1	7110809	AC	10-Nov-17	160.1	
Alkalinity, Total*	164		4.00	mg/L	1	7110705	AC	10-Nov-17	310.1	

Green Analytical Laboratories**Total Recoverable Metals by ICP (E200.7)**

Calcium*	75.1		1.00	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Magnesium*	16.6		1.00	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Potassium*	<10.0		10.0	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Sodium*	61.2		10.0	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

LLANO DISPOSAL, LLC
125 W. ST. ANNE
HOBBS NM, 88240

Project: TATUM BRINE
Project Number: SE CORNER OF TATUM
Project Manager: MARVIN BURROWS
Fax To: NONE

Reported:
28-Nov-17 17:15

WEST FRESH WATER WELL**H703118-02 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Alkalinity, Bicarbonate	205		5.00	mg/L	1	7110705	AC	10-Nov-17	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	7110705	AC	10-Nov-17	310.1	
Chloride*	56.0		4.00	mg/L	1	7110601	AC	10-Nov-17	4500-Cl-B	
Conductivity*	607		1.00	uS/cm	1	7111001	AC	10-Nov-17	120.1	
pH*	7.74		0.100	pH Units	1	7111001	AC	10-Nov-17	150.1	
Sulfate*	103		25.0	mg/L	2.5	7110903	AC	09-Nov-17	375.4	
TDS*	344		5.00	mg/L	1	7110809	AC	10-Nov-17	160.1	
Alkalinity, Total*	168		4.00	mg/L	1	7110705	AC	10-Nov-17	310.1	

Green Analytical Laboratories**Total Recoverable Metals by ICP (E200.7)**

Calcium*	58.2		1.00	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Magnesium*	11.5		1.00	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Potassium*	<10.0		10.0	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	
Sodium*	39.7		10.0	mg/L	10	B711128	JDA	17-Nov-17	EPA200.7	

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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125 W. ST. ANNE
HOBBS NM, 88240

Project: TATUM BRINE
Project Number: SE CORNER OF TATUM
Project Manager: MARVIN BURROWS
Fax To: NONE

Reported:
28-Nov-17 17:15

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110601 - General Prep - Wet Chem										
Blank (7110601-BLK1)				Prepared & Analyzed: 06-Nov-17						
Chloride	ND	4.00	mg/L							
LCS (7110601-BS1)				Prepared & Analyzed: 06-Nov-17						
Chloride	100	4.00	mg/L	100		100	80-120			
LCS Dup (7110601-BSD1)				Prepared & Analyzed: 06-Nov-17						
Chloride	100	4.00	mg/L	100		100	80-120	0.00	20	
Batch 7110705 - General Prep - Wet Chem										
Blank (7110705-BLK1)				Prepared & Analyzed: 07-Nov-17						
Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	5.00	5.00	mg/L							
Alkalinity, Total	4.00	4.00	mg/L							
LCS (7110705-BS1)				Prepared & Analyzed: 07-Nov-17						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	330	12.5	mg/L				80-120			
Alkalinity, Total	270	10.0	mg/L	250		108	80-120			
LCS Dup (7110705-BSD1)				Prepared & Analyzed: 07-Nov-17						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	355	12.5	mg/L				80-120	7.30	20	
Alkalinity, Total	290	10.0	mg/L	250		116	80-120	7.14	20	
Batch 7110809 - Filtration										
Blank (7110809-BLK1)				Prepared: 07-Nov-17 Analyzed: 09-Nov-17						
TDS	ND	5.00	mg/L							

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* = Accredited Analyte

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Celestine D. Keene, Lab Director/Quality Manager

Annual Report

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2018



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Analytical Results For:

LLANO DISPOSAL, LLC
125 W. ST. ANNE
HOBBS NM, 88240

Project: TATUM BRINE
Project Number: SE CORNER OF TATUM
Project Manager: MARVIN BURROWS
Fax To: NONE

Reported:
28-Nov-17 17:15

Inorganic Compounds - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110809 - Filtration										
LCS (7110809-BS1)										
TDS	235	5.00	mg/L	213		110	80-120			Prepared: 07-Nov-17 Analyzed: 08-Nov-17
Duplicate (7110809-DUP1)										
TDS	140000	5.00	mg/L		139000			0.821	20	Source: H703059-02 Prepared: 07-Nov-17 Analyzed: 08-Nov-17
Batch 7110903 - General Prep - Wet Chem										
Blank (7110903-BLK1)										
Sulfate	ND	10.0	mg/L							Prepared & Analyzed: 09-Nov-17
LCS (7110903-BS1)										
Sulfate	23.6	10.0	mg/L	20.0		118	80-120			Prepared & Analyzed: 09-Nov-17
LCS Dup (7110903-BSD1)										
Sulfate	23.6	10.0	mg/L	20.0		118	80-120	0.00	20	Prepared & Analyzed: 09-Nov-17
Batch 7111001 - General Prep - Wet Chem										
LCS (7111001-BS1)										
Conductivity	506		uS/cm	500		101	80-120			Prepared & Analyzed: 10-Nov-17
pH	7.07		pH Units	7.00		101	90-110			
Duplicate (7111001-DUP1)										
Conductivity	819	1.00	uS/cm		825			0.730	20	Source: H703118-01 Prepared & Analyzed: 10-Nov-17
pH	7.68	0.100	pH Units		7.63			0.653	20	

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Celey D. Keene, Lab Director/Quality Manager

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Analytical Results For:

LLANO DISPOSAL, LLC
125 W. ST. ANNE
HOBBS NM, 88240

Project: TATUM BRINE
Project Number: SE CORNER OF TATUM
Project Manager: MARVIN BURROWS
Fax To: NONE

Reported:
28-Nov-17 17:15

Total Recoverable Metals by ICP (E200.7) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B711128 - Total Rec. 200.7/200.8/200.2										
Blank (B711128-BLK1)										
Prepared: 14-Nov-17 Analyzed: 16-Nov-17										
Magnesium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							
Potassium	ND	1.00	mg/L							
Calcium	ND	0.100	mg/L							
LCS (B711128-BS1)										
Prepared: 14-Nov-17 Analyzed: 16-Nov-17										
Calcium	3.99	0.100	mg/L	4.00		99.8	85-115			
Potassium	8.14	1.00	mg/L	8.00		102	85-115			
Magnesium	20.0	0.100	mg/L	20.0		100	85-115			
Sodium	6.36	1.00	mg/L	6.48		98.2	85-115			
LCS Dup (B711128-BSD1)										
Prepared: 14-Nov-17 Analyzed: 16-Nov-17										
Magnesium	20.5	0.100	mg/L	20.0		103	85-115	2.35	20	
Potassium	8.30	1.00	mg/L	8.00		104	85-115	1.93	20	
Calcium	4.07	0.100	mg/L	4.00		102	85-115	1.97	20	
Sodium	6.45	1.00	mg/L	6.48		99.5	85-115	1.31	20	

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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

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Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Alamo Kiospos, LLC Project Manager: MARVIN BURROWS Address: P.O. Box 250 City: Levinston State: NY Zip: 88? Phone #: 5725-631-8067 Fax #: Project #: TITUM Baine Project Location: SE Corner of Titum Sampler Name: ONE Angel		P.O. #: Company: Address: City: State: Zip: Phone #: Fax #: 	
		BILL TO ANALYSIS REQUEST	
FOR LAB USE ONLY Lab I.D. H703118 Sample I.D. East Freshwater 111 (G)RAB OR (C)OMP. ✓ # CONTAINERS 1 GROUNDWATER ✓ WASTEWATER SOIL OIL SLUDGE OTHER: ACID/BASE: ICE / COOL OTHER: 		MATRIX PRESERV SAMPLING 	
DATE TIME 11-7-17 1:00 ✓		Cations Anions (Dissolved)	

PLEASE NOTE: Liability and Damages. Carefully label and clearly indicate exactly for any item being analyzed, based on contract or test. Label was used by the client for the analysis. All claims, including those for negligence and any other claims whatsoever shall be deemed waived unless made in writing and received by Client within 30 days of applicable service. In no event shall liability be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services provided by Client. Limitations of liability and claims shall apply to any of the above stated regions or otherwise.

Relinquished By: Marvin Burrows Date: 11-8-17 Time: 8:45 Reminquired By: Marvin Burrows Date: Time: 	Received By: Marvin Burrows Date: Time: 	Sample Condition Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Checked BY: TO #75
--	--	--

Delivered By: (Circle One) 13.30 Sampler - UPS - Bus - Other: Consent 13.30	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Fax #:
--	--

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APPENDIX G

Certification

Annual Report

Llano Disposal, LLC BW-37 API 30-025-26370

2018

Llano Disposal, LLC certifies that continued salt solution mining will not cause cavern collapse, surface subsidence, property damage, or otherwise threaten public health and the environment, based on geologic and engineering data provided herein.

Darr Angell

Name

Owner/Permittee Holder

Title

Darr Angell

Signature

10/11/22

Date

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 150279

COMMENTS

Operator: LLANO DISPOSAL, L.L.C. P.O. Box 250 Lovington, NM 88260	OGRID: 370661
	Action Number: 150279
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

COMMENTS

Created By	Comment	Comment Date
cchavez	Annual Report 2018	10/19/2022

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 150279

CONDITIONS

Operator: LLANO DISPOSAL, L.L.C. P.O. Box 250 Lovington, NM 88260	OGRID: 370661
	Action Number: 150279
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
cchavez	Tag and record depth to base of cavern during well workovers.	10/19/2022