

**BW - 38**

**UIC CLASS III  
BRINE WELL  
RENEWAL  
APPLICATION**

**2023**

Llano Disposal, LLC  
P.O. Box 250  
Lovington, NM 88260

Date: October 27, 2023

To: Jim Griswold -Environmental Bureau Chief  
Carl Chavez -Environmental Engineer  
1220 South St. Francis  
Santa Fe, New Mexico 87505

Re: NOTICE OF INTENT TO DISCHARGE  
WQCC 20.6.2.1201 NMAC

Dear Sirs:

I, Darr Angell, Owner, Llano Disposal, LLC, am formally notifying the New Mexico Oil Conservation Division of Llano's intent to renew the permit for a Class III brine well located in Lea County, New Mexico. Pursuant to the Water Quality Control Commission Regulations 0/VQCC)

20.6.2.1201.B and C. NMAC, the following information is provided:

- 1) The name of the person making the discharge:  
Llano Disposal, LCC, Mr. Darr Angell, owner
- 2) The address of the person making the discharge:  
P.O. Box 250 (798 Highway 483)  
Lovington, NM 88260
- 3) The location of the discharge:  
Brine Well Location: NW/4 SW/4, UL 'L', Section 27, T16S, R33E  
Brine Station Location: NW/4 SW/4, UL 'L', Section 28, T16S, R3E
- 4) An estimate of the concentration of water contaminants in the discharge:  
Injection Water: fresh water from nearby fresh water well with approximately 400 mg/l  
TDS Produced Brine Water: approximately 320,000 mg/l TDS
- 5) The quantity of the discharge:  
Estimated Instantaneous Flow Rate: 1 -3 barrels per minute  
Estimated Monthly Total: 0 -58,000 barrels per month

Pursuant to 20.6.2.3114 NMAC attached is Llano's check number 4532 in the amount of \$100 made payable to the "Water Quality Management Fund" as filing fee for the discharge permit application. The discharge permit application along with pertinent attachments and a completed form C108 have been submitted online.

If OCD requires additional information concerning this notice of intent or discharge permit application, please contact me at 575-704-2777 or email [darrangell@gmail.com](mailto:darrangell@gmail.com). Thank you for your consideration for renewal of this brine well application.

Sincerely,



Darr Angell  
Llano Disposal, LLC  
575-704-2777

Attachments & Letter sent via email

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Revised August 1, 2011

Submit Original  
Plus 1 Copy  
to Santa Fe  
1 Copy to Appropriate  
District Office

## DISCHARGE PLAN APPLICATION FOR BRINE EXTRACTION FACILITIES

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☒ Renewal

- I. Facility Name: Hummingbird Brine Station - State 27 # 1
- II. Operator: Llano Disposal, LLC  
Address: P.O. Box 250 Lovington, NM 88260  
Contact Person: Marvin Burrows Phone: 575-631-8067
- III. Location: NW /4 SW /4 Section 27 Township 16S Range 33E  
Submit large scale topographic map showing exact location.
- IV. Attach the name and address of the landowner of the facility site.
- V. Attach a description of the types and quantities of fluids at the facility.
- VI. Attach a description of all fluid transfer and storage and fluid and solid disposal facilities.
- VII. Attach a description of underground facilities (i.e. brine extraction well).
- VIII. Attach a contingency plan for reporting and clean-up of spills or releases.
- IX. Attach geological/hydrological evidence demonstrating that brine extraction operations will not adversely impact fresh water.
- X. Attach such other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
- XI. CERTIFICATION:

*I hereby certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.*

Name: Darr Angell Title: Owner

Signature: Darr Angell Date: 10/27/2023

E-mail Address: darrangell@gmail.com

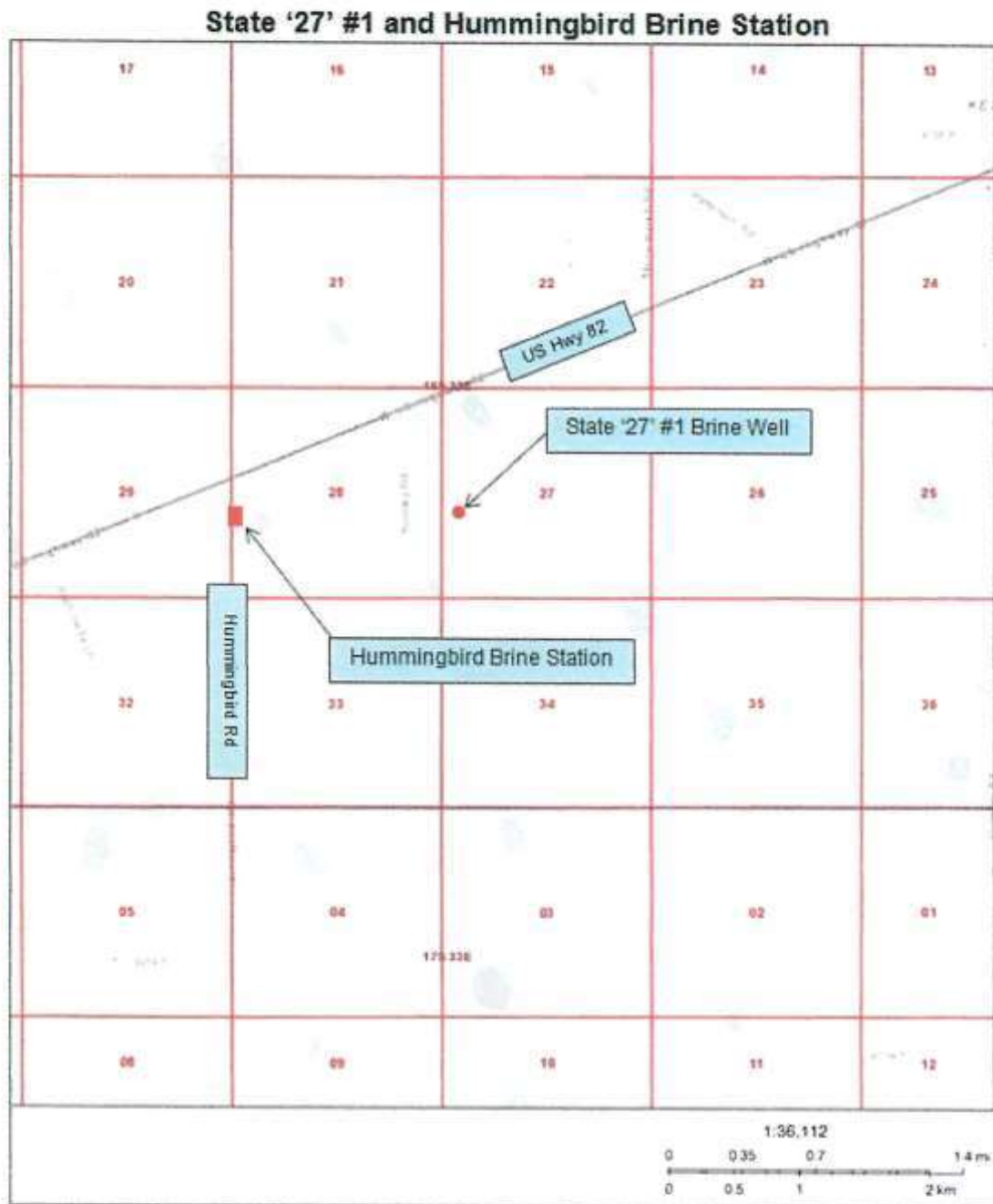


**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

- I. Facility Name: This is a renewal application for an existing facility. The brine well name is State '27' BSW #1 and the surface facility name is Hummingbird Brine Station.
- II. Operator: The operator is Llano Disposal, LLC, P. O. Box 250, Lovington, NM 88260. The operator's OGRID number is 370661. Llano Disposal, LLC is the owner of all the surface lands at the brine well and brine station. The contact person is Mr. Marvin Burrows at 575-631- 8067.
- III. Location: The brine supply well is located 1,980 FSL, and 660 FWL, Unit Letter L (NW/4 SW/4) of Section 27, Township 16 South, Range 33 East (Lat. 32.89096°, Long. -103.65762°), NMPM, Lea County, New Mexico. The brine well is located approximately 17.8 miles west of Lovington, New Mexico on US Highway 82, then south 0.62 miles on Rooney Rd, then east 0.3 miles on lease road to well location. The Hummingbird brine station location is NM/4 SW/4, UL L, Section 28, T16S, R33E. The freshwater supply well is located 75 ft southeast (Lat. 32.890782° Long. -103.657470° ) of the brine well.
- IV. Attach the name and address of the landowner of the facility site: See **Attachment B.**
- V. Attach a description of the types and quantities of fluids at the facility: See **Attachment C.**
- VI. Attach a description of all fluid transfer and storage and fluid and solid disposal facilities: **See Attachment D.**
- VII. Attach a description of underground facilities (i.e. brine extraction well): See **Attachment E.**
- VIII. Attach a contingency plan for reporting and cleanup of spills or releases: See **Attachment F.**
- IX. Attach geological/hydrological evidence demonstrating that brine extraction operations will not adversely impact fresh water: See **Attachment G.**
- X. Attach such other information as is necessary to demonstrate compliance with any other OCD rules, regulations, and/or orders: See **Attachment H.**

Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

Attachment A – Location/Schematics



T16S, R33E  
Lea County, New Mexico

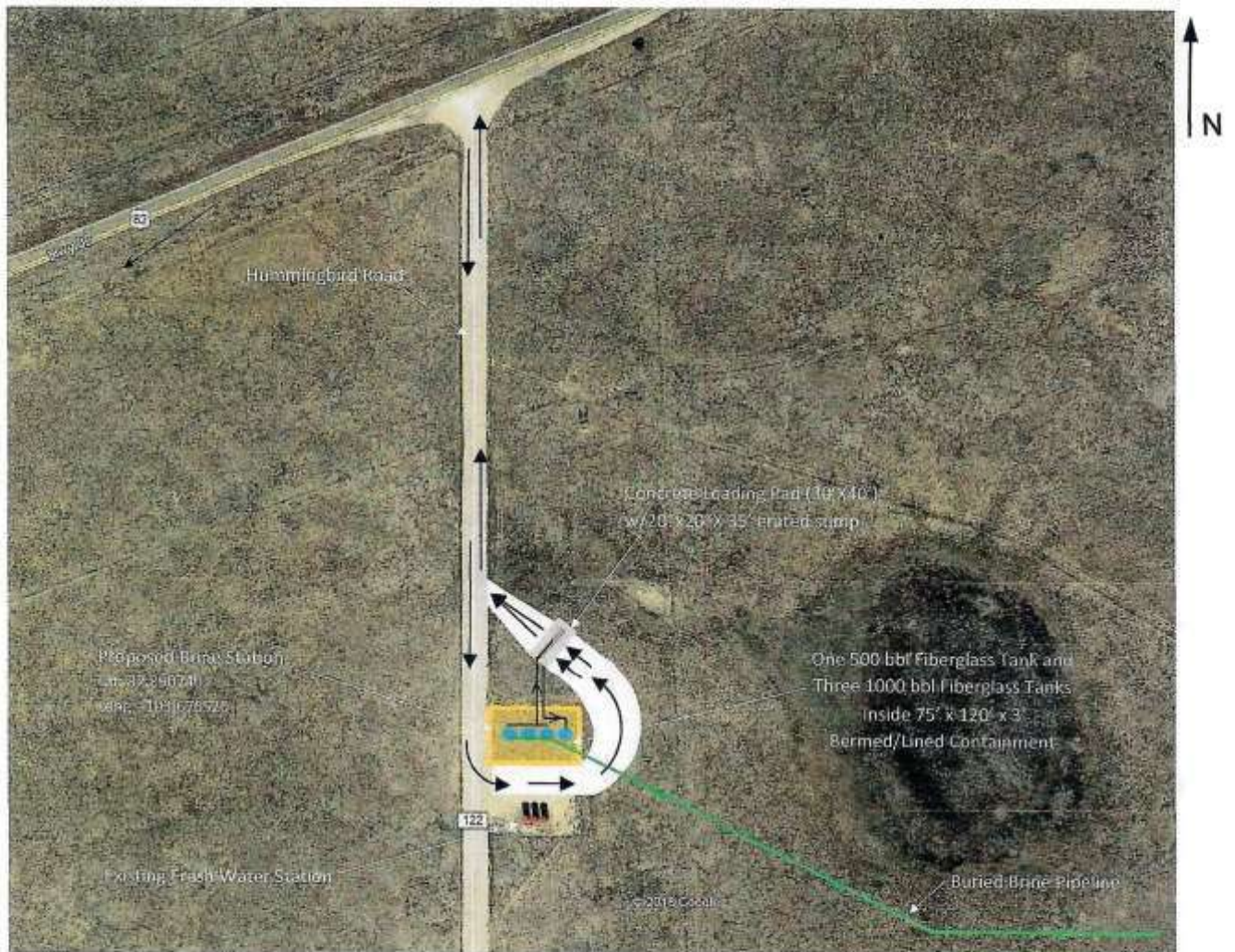
**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**



Sections 27 and 28, T16S, R33E  
Lea County, New Mexico



**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**



Section 28, T16S, R33E  
Lea County, New Mexico



**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**



Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592



Monitor well location enlarged.



**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment B - Landowner**

The landowner for the site of the brine well, water source well and brine station location is the applicant, Llano Disposal, LLC, P. O. Box 250 (798 Highway 483), Lovington, NM 88260. Mr. Darr Angell is the principal owner of Llano Disposal, LLC.



**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment C - Fluids**

In the freshwater source well, there is an electric submersible pump which pumps fresh water from the well. That water is then transported approximately 75 feet north through a buried 3" SDR-11 polyethylene pipeline, to a 500-barrel holding tank. From that tank, the fresh water is then pumped down the well tubing at a rate of approximately 30 to 40 GPM, and a normal operating pressure of 200 to 260 psi. Brine water generated is then circulated up the well casing. Brine water is then transported via 3" SDR-11 polyethylene pipeline approximately 5928' feet west, to 3,1000-barrel fiberglass storage tanks for commercial sale.

Average daily volumes produced are 1500 BWPD of brine water and 1650 BWPD of fresh water. Approximate volumes stored will be 2500 bbls of brine water.

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment D – Fluid Transfer and Storage**

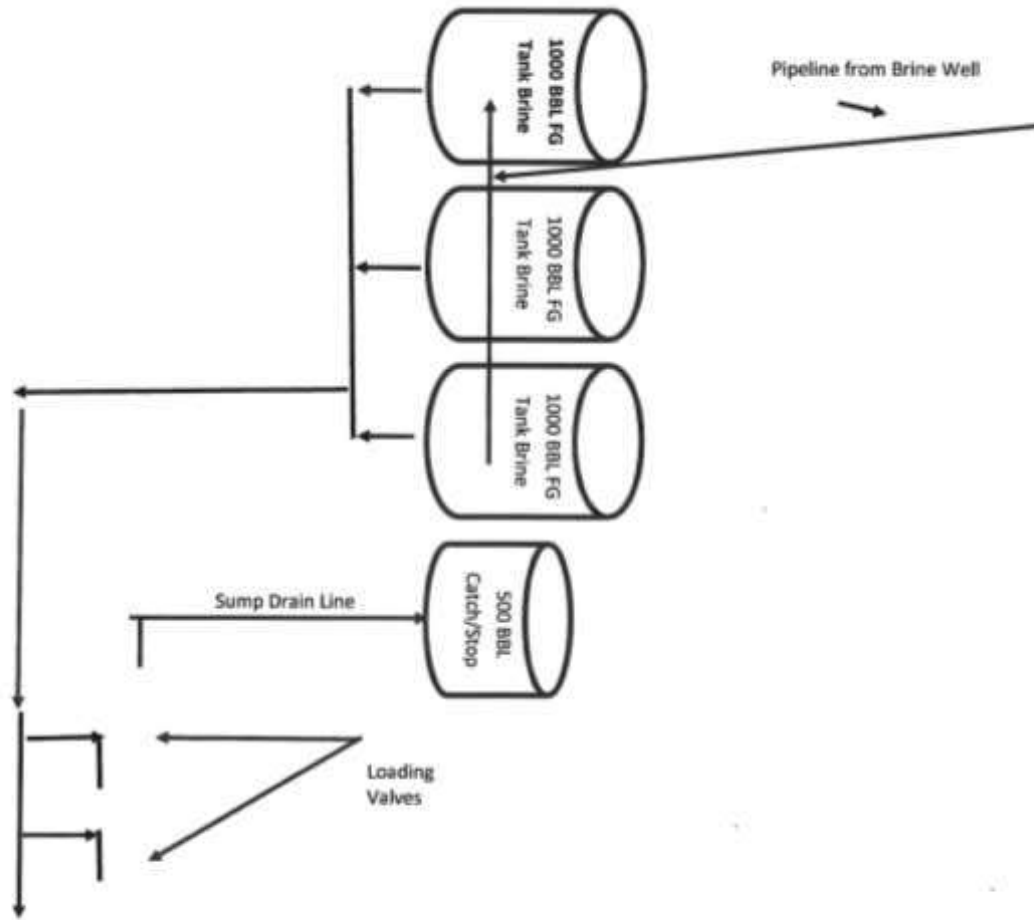
This facility includes approximately 5928 feet of 3" SDR-11 HDPE pipeline for transportation of brine water between the brine well and the brine station. This SDR-11 HDPE pipe has a 160-psi rating, 0.318" minimum wall thickness, 2.825" ID and 3.500" OD. It is seamless pipe that is thermally fused at the ends. This pipeline is hydrostatically pressure tested per the NMOCD's HST Guidelines. Testing frequency includes the initial test at 100% of manufacturer's MAOP during the installation and subsequent tests on an annual basis or sooner if leakage is ever suspected. An NMOCD representative can be notified to witness all tests.

At the brine station, there are three interconnected 1000-bbl fiberglass brine water storage tanks and one 500-bbl fiberglass catch/flush tank. All four tanks are located within a common secondary containment berm. Each tank will have an isolation valve and will remain unpressured. The secondary containment consists of an earthen berm with a 20-mil string reinforced LLDPE liner capable of holding a minimum of 4800 bbls. There is a 30' X 40' concrete loading pad with a 20" X 20" X 35' concrete sump that is situated on top of the concrete loading pad. Any fluids entering the sump will be pumped to the 500-bbl catch/flush tank inside the lined secondary containment. There is a buried 3" SDR-11 polyethylene freshwater pipeline between a water supply well and the brine well location. There is also a 3" SDR-11 polyethylene pipeline between the brine well and the brine station. Both pipelines will remain unpressured while pump is not running.

Routine domestic household type trash or other similar non-domestic waste pursuant to 19.15.35.8 NMAC are in common trash dumpsters that are supplied and picked up routinely by the local waste management trucking company. This waste will be disposed of at a New Mexico Environmental Department permitted solid waste disposal facility.

Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

Attachment E – Brine Station Schematic



Drawing not to scale

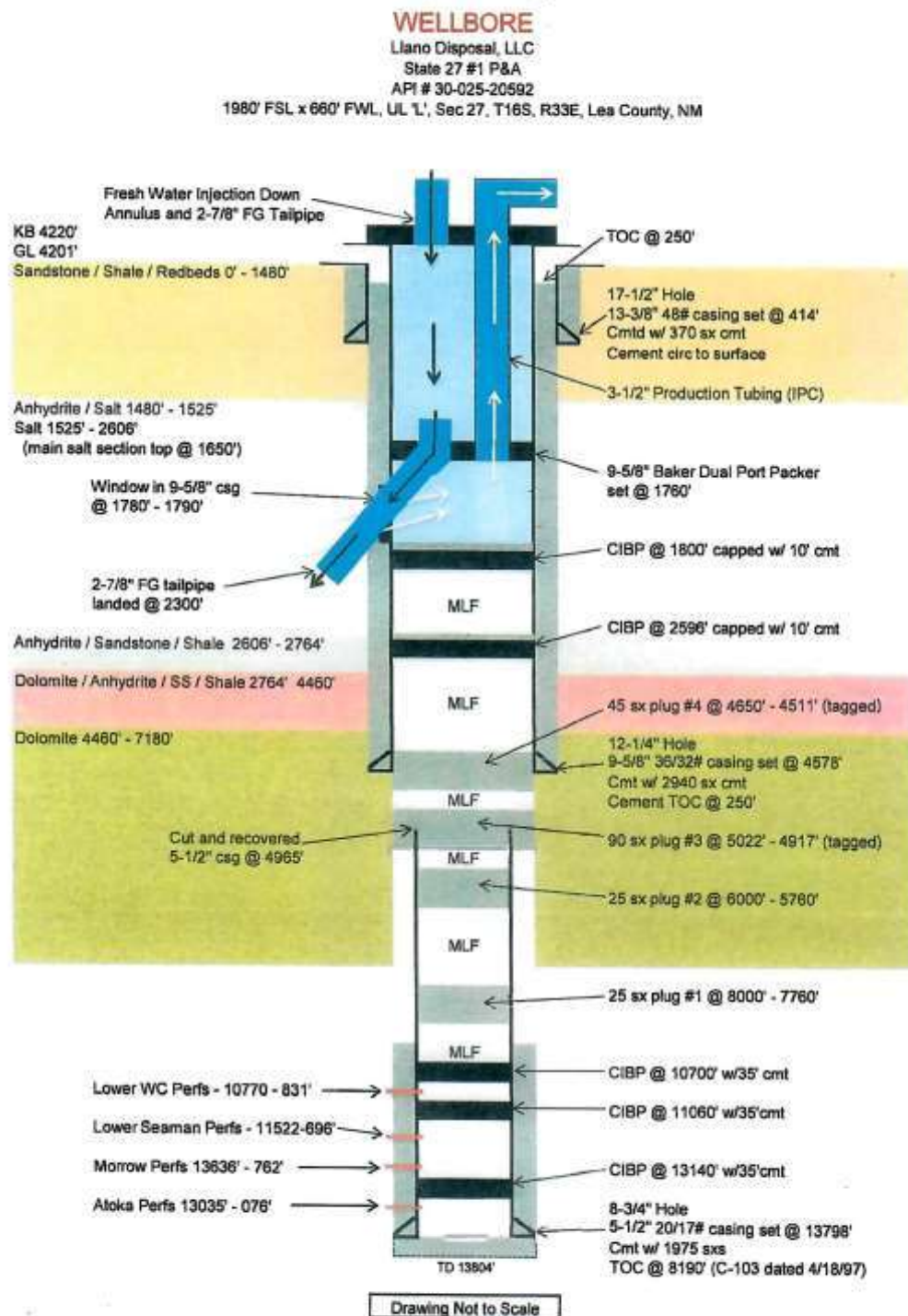
**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment E – Underground Facilities**

This facility includes approximately 75 feet of new 3" SDR-11 HDPE pipeline for transportation of fresh water, installed a minimum of 36" underground between the fresh water source well and the brine well. No fluids other than fresh water are planned to be used in this pipeline.

The pipeline has been designed to minimize the use of 90-degree fittings by making turns via long radius sweeps where possible.

# **Discharge Plan Application for Brine Extraction Facilities** **Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**



**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment F – Contingency and Emergency Response Plan**

Routine visual inspections of surface equipment and automation systems occur daily by onsite facility personnel. Inspection logs are documented and maintained to ensure any necessary repairs are completed and for subsequent review. The 5928-foot SDR-11 polyethylene brine pipeline will be hydrostatically retested annually as long as no leakage is suspected. If leakage is ever suspected, the pipeline would be removed from service and tested. All pipeline tests will be logged into the inspection logs onsite. Storage tanks are visually inspected internally when emptied for maintenance. Tanks are visually inspected externally during daily routine inspections.

If a spill did occur, it would be contained by secondary containments around the brine station tanks. Spills at the loading pad would be contained in the concrete sump then pumped to a catch/flush tank located inside the lined secondary containment. The concrete loading pad will be curbed to direct flow of spills to the sump. The liquid spills recovered in the catch/flush tank will be trucked to a Class II disposal well permitted by the NMOCD.

The NMOCD would be notified via Form C-141 upon discovery of a leak detection or failure of the discharge system. The brine well would be shut in pending evaluation and correction of the failure or leak.

See the Emergency Contingency and Response plan on the following page for additional information.



# Discharge Plan Application for Brine Extraction Facilities

## Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

### Location of Facilities:

Both the State '27' Brine Well #1 and the Hummingbird Brine Station are located approximately 4.4 miles northeast of Maljamar, New Mexico via US 82 then south on Hummingbird county road. See attached map.

Facility	Latitude	Longitude	UL, S, T, N
State '27' BSW #1	32.890782°	-103.657470°	L-27-16S-33E
Hummingbird Brine Station	32.890740°	-103.676520°	L-28-16S-33E

Emergency Response Agencies	Emergency	Direct Number
Maljamar Volunteer Fire Dept	911	575-676-4100
Lovington Fire and EMS	911	575-396-2359
Lea County Sheriff's Dept	911	575-396-3611
New Mexico State Police	911	575-392-5588

Llano Responder	Cell Phone	Home Phone
Marvin Burrows – Fac Mgr	575-631-8067	
Darr Angell - Owner	575-704-2777	575-396-4418

Reporting Agencies	Phone
NMOCD – Santa Fe	505-476-3440
NMOCD – Hobbs (Emergency Cell)	575-370-3186
National Response Center	800-424-8802
EPA Region 6 Emergency Response	214-665-6428
Chemtrec	800-424-9300

Materials Stored or Transferred Onsite	Location of Anticipated Leaks/Spills
Fresh and brine water (Non-hazardous)	Brine station inside secondary containment, concrete loading pad, pipelines, and at brine well
Contaminated Soil (Non-hazardous)	Sealed drums at brine station
Trash (Non-hazardous)	Trash bins at brine station

### Leak/Spill Prevention Actions

Brine water storage tanks have a synthetic liner secondary containment and level controls
Concrete loading pad has curbs and an automated concrete sump
Buried brine polyethylene pipeline will be pressure tested annually to insure mechanical integrity

### Containment and Clean up Actions

1) Incidental drips, leaks and spills will be picked up routinely and placed back into the system or in waste containers by the facility operator.
2) Releases of more than 5 bbls of brine water or 1 bbl of waste outside secondary containment will be handled per the Emergency Procedures/Notification listed below.

### Emergency Procedures and Notification

1) Assess the situation (if it is safe to do so) and notify Llano Supervisor for assistance and additional personnel, if needed. Stop the leak/spill as directed by the Llano Supervisor (if it is safe to do so).
2) Notify one of the Emergency Response Agencies noted above if there is a life threatening situation.
3) Provide assistance to Emergency Responders and/or Llano Supervisor.
4) Barricade any spill area to protect the public, if necessary and if it is safe to do so.
5) Llano Supervisor will direct all available resources to stop, contain and mitigate the emergency situation.
6) Llano Supervisor will notify NMOCD District Office by phone and form C-141 for brine spills <25 bbls.
7) Llano Supervisor will verbally notify NMOCD Director (Santa Fe) for brine spill >25 bbls.



## Emergency Response Map



**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment G – Geological/Hydrological Evidence**

Due to the relatively flat nature of the terrain within the 1-mile area of review, there are no bodies of water, streams, arroyos, canals, drains, seeps, springs, marshes, or swamps evident. Fifteen freshwater wells have been identified on the ground and via the OSE data base. About half of them are utilized for cattle production and the other half are used for domestic household supply. See the table on the following pages.

The soil types are sand, clay, loam, and caliche; the aquifers are Ogallala and Quaternary Alluvium formations. The composition of aquifer material (e.g. alluvium, sandstone, basalt, etc.). The aquifer is generally located at a depth of 140—190 feet in this area. There is an underlying impermeable red bed layer that prevents further vertical movement within the aquifer. Red beds are evident immediately below the aquifer and extend for a depth of about 1350' across the area of review.

The area of review is not listed as a Flood Plain by FEMA. Average annual rainfall for this site is 10"-12" per year. There is a very slight slope northwest to southeast across the area of review. The area could be occasionally inundated with locally heavy rainfall, but it is very unlikely that storm water runoff events from other areas would impact the proposed site. New Mexico Highway 82 runs east/west of the proposed site. This highway with developed barrow ditches, helps control runoff events coming from the west and northwest.

The brine station has a storm water runoff berm installed on the northern and western edges of the site. This berm should direct any approaching runoff events away from the station. The brine well location is graded so that rainwater will not pond around the well head.



**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**



## New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,  
O=orphaned,  
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)  
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD		County	Q	Q	Q	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column	
	Sub-Code	basin		64	16	4									
<a href="#">L 01391 POD5</a>	L	LE		1	1	1	33	16S	33E	623792	3639333	100	62	38	
<a href="#">L 03527 S2</a>	L	LE		3	4	3	35	16S	33E	627508	3637911*	275	138	137	
<a href="#">L 03527 S3</a>	L	LE		2	3	3	35	16S	33E	627305	3638104*	240	155	85	
<a href="#">L 03576</a>	L	LE			2	4	34	16S	33E	626799	3638401*	212	160	52	
<a href="#">L 03599</a>	L	LE		1	1	3	28	16S	33E	623854	3640075				
<a href="#">L 03599 S</a>	L	LE		4	4	4	33	16S	33E	625293	3637871	287	175	112	
<a href="#">L 03599 S2</a>	L	LE		1	1	1	34	16S	33E	625480	3639285	290	168	122	
<a href="#">L 03599 S3</a>	L	LE		2	2	2	27	16S	33E	626858	3640918	280	160	120	
<a href="#">L 03712</a>	L	LE			2	2	26	16S	33E	628377	3640841*	170	135	35	
<a href="#">L 03751</a>	L	LE			2	2	26	16S	33E	628377	3640841*	175			
<a href="#">L 03789</a>	L	LE					26	16S	33E	627798	3640216*	223	145	78	
<a href="#">L 05419</a>	L	LE			1	3	27	16S	33E	625570	3639990*	240	130	110	
<a href="#">L 06072</a>	L	LE			3	4	23	16S	33E	627968	3641236*	163	80	83	
<a href="#">L 06222</a>	L	LE			2	3	26	16S	33E	627582	3640022*	205	154	51	
<a href="#">L 06594</a>	L	LE			1	1	2	34	16S	33E	626284	3639297*	230	160	70
<a href="#">L 06611</a>	L	LE			3	3	3	23	16S	33E	627063	3641121*	230	160	70
<a href="#">L 06724</a>	L	LE			1	1	1	28	16S	33E	623849	3640869*	243	190	53
<a href="#">L 10288</a>	L	ED			2	1	27	16S	33E	625962	3640800*	200			
<a href="#">L 13233 POD1</a>	L	LE			1	1	1	34	16S	33E	625422	3639335	260		

There are 19 fresh water wells located within 9 square miles of the proposed brine well.

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

4/12/18 10:05 AM

WATER COLUMN/ AVERAGE  
DEPTH TO WATER

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

Average Depth to Water: 144 feet  
Minimum Depth: 62 feet  
Maximum Depth: 190 feet

**Record Count: 19**

**PLSS Search:**

**Section(s):** 21, 22, 23, 26,  
27, 28, 33, 34,  
35      **Township:** 16S      **Range:** 33E

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

In the initial 2018 filing, water samples were obtained from two water wells within the area and are listed on the following page. OSE data base indicates the average depth to water in the area of review is 40 - 80 feet.

Presently, water samples are obtained quarterly from the onsite monitor well.

See the following page for results.

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**



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

**Analytical Results For:**

LLANO DISPOSAL, LLC 125 W. ST. ANNE HOBBS NM, 88240	Project: CAPROCK BSW Project Number: NONE GIVEN Project Manager: MARVIN BURROWS Fax To: NONE	Reported: 16-Jul-18 09:40
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Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SAMPLE A	H801855-01	Water	09-Jul-18 14:45	09-Jul-18 15:30
SAMPLE B	H801855-02	Water	09-Jul-18 14:45	09-Jul-18 15:30

Cardinal Laboratories

\*=Accredited Analyte

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*Celey D. Keene*  
Celey D. Keene, Lab Director/Quality Manager

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**



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**SAMPLE A  
H801855-01 (Water)**

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

**Inorganic Compounds**

Alkalinity, Bicarbonate	190		5.00	mg L	1	8062505	AC	10-Jul-18	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg L	1	8062505	AC	10-Jul-18	310.1	
Chloride*	36.0		4.00	mg L	1	8070501	AC	10-Jul-18	4500-Cl-B	
Conductivity*	480		1.00	uS/cm	1	8071001	AC	10-Jul-18	120.1	
pH*	7.73		0.100	pH Units	1	8071001	AC	10-Jul-18	150.1	
Sulfate*	34.3		10.0	mg L	1	8071002	AC	10-Jul-18	375.4	
TDS*	324		5.00	mg L	1	8070311	AC	11-Jul-18	160.1	
Alkalinity, Total*	156		4.00	mg L	1	8062505	AC	10-Jul-18	310.1	

**Green Analytical Laboratories**

**Total Recoverable Metals by ICP (E200.7)**

Calcium*	70.9		1.00	mg L	10	B807085	JDA	12-Jul-18	EPA200.7	
Magnesium*	8.93		1.00	mg L	10	B807085	JDA	12-Jul-18	EPA200.7	
Potassium*	2.86	0.677	10.0	mg L	10	B807085	JDA	12-Jul-18	EPA200.7	
Sodium*	15.2		10.0	mg L	10	B807085	JDA	12-Jul-18	EPA200.7	

**Sample A – Fresh water well at ranch house in  
A-33-16S-33E (0.48 miles SW of State 27 #1)**

Cardinal Laboratories

\* = Accredited Analyte

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Coley D. Keene, Lab Director/Quality Manager



**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**



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

**Analytical Results For:**

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---	---	------------------------------

**SAMPLE B**  
**H801855-02 (Water)**

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

**Cardinal Laboratories**

**Inorganic Compounds**

Alkalinity, Bicarbonate	181		5.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Chloride*	48.0		4.00	mg/L	1	8070501	AC	10-Jul-18	4500-CL-B	
Conductivity*	468		1.00	uS/cm	1	8071001	AC	10-Jul-18	120.1	
pH*	7.86		0.100	pH Units	1	8071001	AC	10-Jul-18	150.1	
Sulfate*	34.0		10.0	mg/L	1	8071002	AC	10-Jul-18	375.4	
TDS*	310		5.00	mg/L	1	8070311	AC	11-Jul-18	160.1	
Alkalinity, Total*	148		4.00	mg/L	1	8062505	AC	10-Jul-18	310.1	

**Green Analytical Laboratories**

**Total Recoverable Metals by ICP (E200.7)**

Calcium*	47.0		1.00	mg/L	10	H807085	JDA	12-Jul-18	EPA200.7	
Magnesium*	9.14		1.00	mg/L	10	H807085	JDA	12-Jul-18	EPA200.7	
Potassium*	2.49	0.677	10.0	mg/L	10	H807085	JDA	12-Jul-18	EPA200.7	
Sodium*	38.4		10.0	mg/L	10	H807085	JDA	12-Jul-18	EPA200.7	

**Sample B – Fresh water well at proposed Brine Station  
in L-28-16S-33E (1.08 miles W of State 27 #1)**

Cardinal Laboratories

\*=Accredited Analyte

LABORATORY LIABILITY AND DAMAGES: Cardinal's liability and clients' exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by client for services. All claims, including those for negligence or any other claim 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 damages including, without limitation, business interruption, loss of data, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services furnished 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

Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

Report to:

Elizabeth Pickerel



5796 U.S. Hwy 64  
Farmington, NM 87401

Phone: (505) 632-1881  
Envirotech-inc.com



# envirotech

*Practical Solutions for a Better Tomorrow*

## Analytical Report

Llano Disposal LLC

Project Name: Hummingbird Brine Station

Work Order: E310020

Job Number: 22117-0001

Received: 10/4/2023

Revision: 2

Report Reviewed By:

Walter Hinchman  
Laboratory Director  
10/11/23

Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.  
Statement of Data Authenticity: Envirotech Inc. attests the data reported has not been altered in any way.  
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.  
Envirotech Inc. holds the Utah TNI certification NM00979 for data reported.  
Envirotech Inc. holds the Texas TNI certification T104704557 for data reported.

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Sample Data**

Llano Disposal LLC PO Box 250 Lovington NM, 88260	Project Name: Hummingbird Brine Station Project Number: 22117-0001 Project Manager: Elizabeth Pickarel	<b>Reported:</b> 10/11/2023 4:50:19PM
---	--	--

**Monitor Well**

**E310020-03**

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Wet Chem/Gravimetric by SM2540C</b>						
Total Dissolved Solids	320	10.0	1	10/06/23	10/06/23	Batch: 2340083
<b>Wet Chemistry by 9040C/4500H+B</b>						
pH @25°C	7.74		1	10/05/23 09:47	10/05/23 16:54	Batch: 2340080 H5
<b>Wet Chemistry by SM2710F**</b>						
Specific Gravity	0.994	N/A	1	10/05/23	10/05/23	Batch: 2340077
<b>Anions by EPA 300.0/9056A</b>						
Chloride	43.2	2.00	1	10/10/23	10/10/23	Batch: 2341045

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Sample Data**

Llano Disposal LLC	Project Name:	Hummingbird Brine Station	<b>Reported:</b> 10/11/2023 4:50:19PM
PO Box 250	Project Number:	22117-0001	
Lovington NM, 88260	Project Manager:	Elizabeth Pickrel	

**Fresh Well**

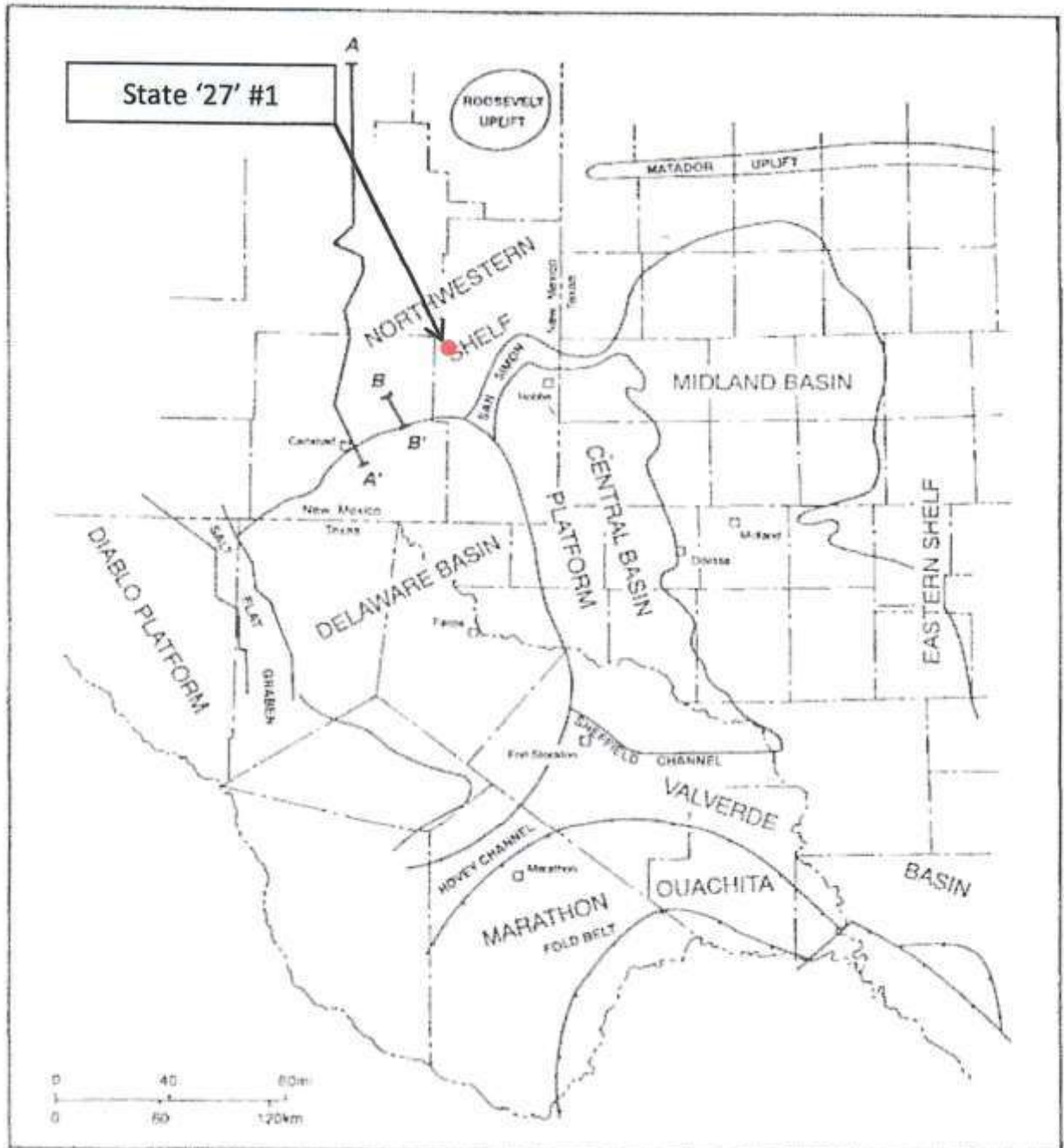
**E310020-02**

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Wet Chem/Gravimetric by SM2540C</b>						
	mg/L	mg/L				Batch: 2340083
Total Dissolved Solids	<b>1340</b>	10.0	1	10/06/23	10/06/23	
<b>Wet Chemistry by 9040C/4500H+B</b>						
	pH Units	pH Units				Batch: 2340080
pH @25°C	<b>7.80</b>		1	10/05/23 09:47	10/05/23 16:54	H5
<b>Wet Chemistry by SM2710F**</b>						
	N/A	N/A				Batch: 2340077
Specific Gravity	<b>0.993</b>		1	10/05/23	10/05/23	
<b>Anions by EPA 300.0/9056A</b>						
	mg/L	mg/L				Batch: 2341045
Chloride	<b>43.2</b>	2.00	1	10/10/23	10/10/23	

Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

Geological Data

BROADHEAD and





**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

***Stratigraphy of the Northwest Shelf of the Permian Basin***

PERIOD	EPOCH	FORMATION		GENERAL LITHOLOGY	APPROXIMATE THICKNESS (ft)
Permian	Ochoan	Dewey Lake		Redbeds/Anhydrite	200-400
		Rustler		Halite	100
		Salado		Halite/Anhydrite	1000
	Guadalupian				
		Tansil		Anhydrite/Dolomite	200
		Yates		Anhydrite/Dolomite Anhydrite	200
		Seven Rivers		Dolomite/Anhydrite	500
		Queen		Sandy Dolomite/ Anhydrite/Sandstone	200-500
		Grayburg		Dolomite/Anhydrite/ Shale/Sandstone	300
		San Andres		Dolomite/Anhydrite	1500
	Leonardian	Glorieta		Sandy Dolomite	100
		Yeso	Paddock	Dolomite/Anhydrite/ Sandstone	1500
			Blinebry		
			Tubb		
			Drinkard		
	Abo		Dolomite/Anhydrite/ Shale	1000	
Pennsylvanian	Wolfcampian	Wolfcamp	Limestone/Dolomite	0-1500	
	Virgilian	Cisco	Limestone/Sandstone	0-1250	
	Missourian	Canyon	Limestone/Shale		
	Des Moinesian	Strawn	Limestone/Sandstone	0-750	
	Atokan	Bend	Limestone/Sandstone /Shale	0-1250	
	Morrowan	Morrow			
Mississippian		----	Limestone/Shale	0-800	
Devonian		----	Dolomite/Chert	0-1200	
Silurian		Fusselman			
Ordovician	Upper	Montoya	Dolomite/Chert	0-400	
	Middle	Simpson	Limestone/Sandstone /Shale	0-200	
	Lower	Ellenburger	Dolomite	0-400	
Cambrian		----	Sandstone	----	

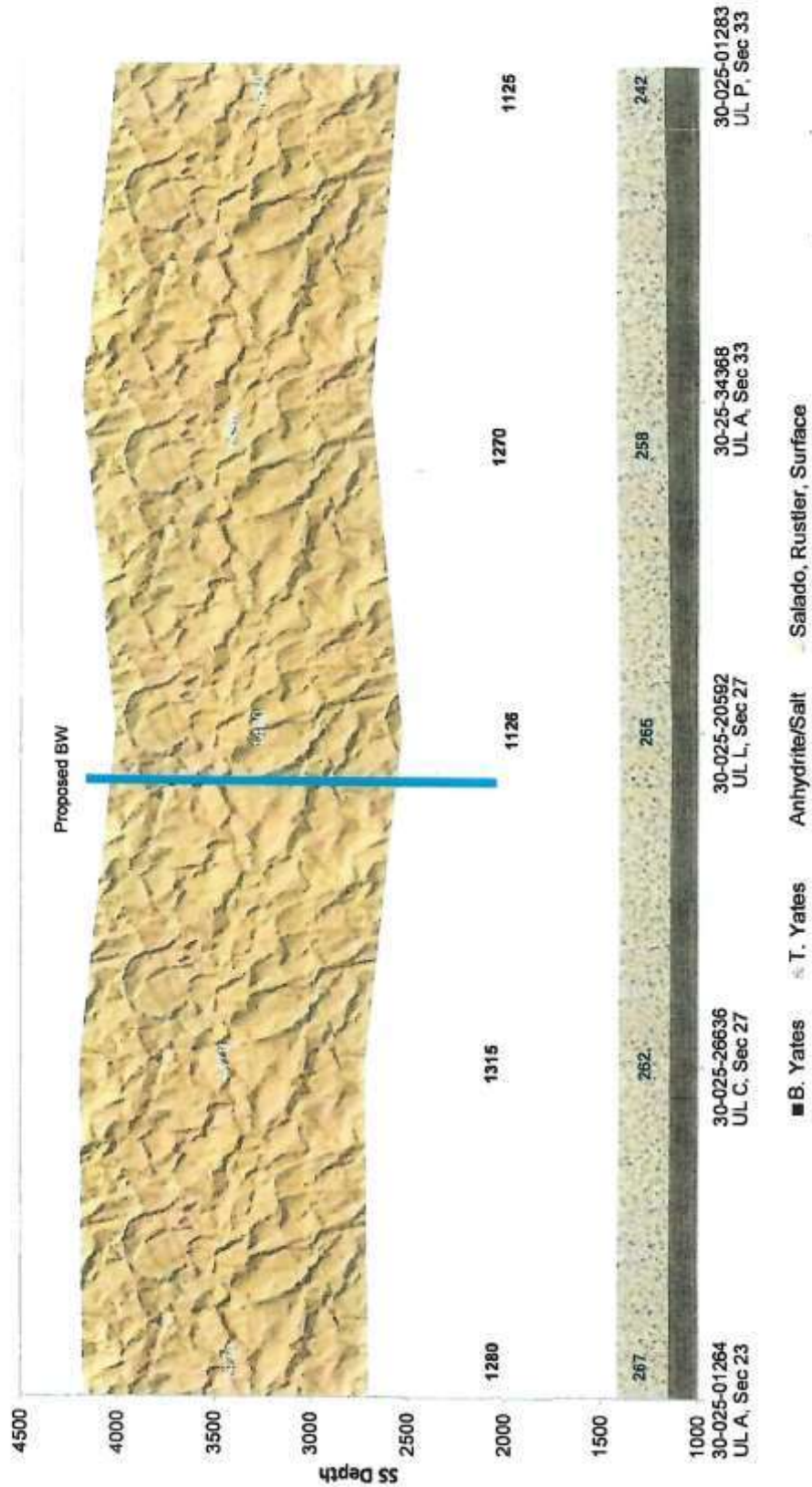
Stratigraphy of the Northwest Shelf of the Permian Basin. General lithology and approximate stratigraphic thickness for each formation are indicated. Modified from Pranter (1999) by Cabrera-Garzon, Raul, 2001, Ph.D., Thesis (2001)  
Redrawn by Nassir Alnaji, 2001

Source: Pranter (1999).

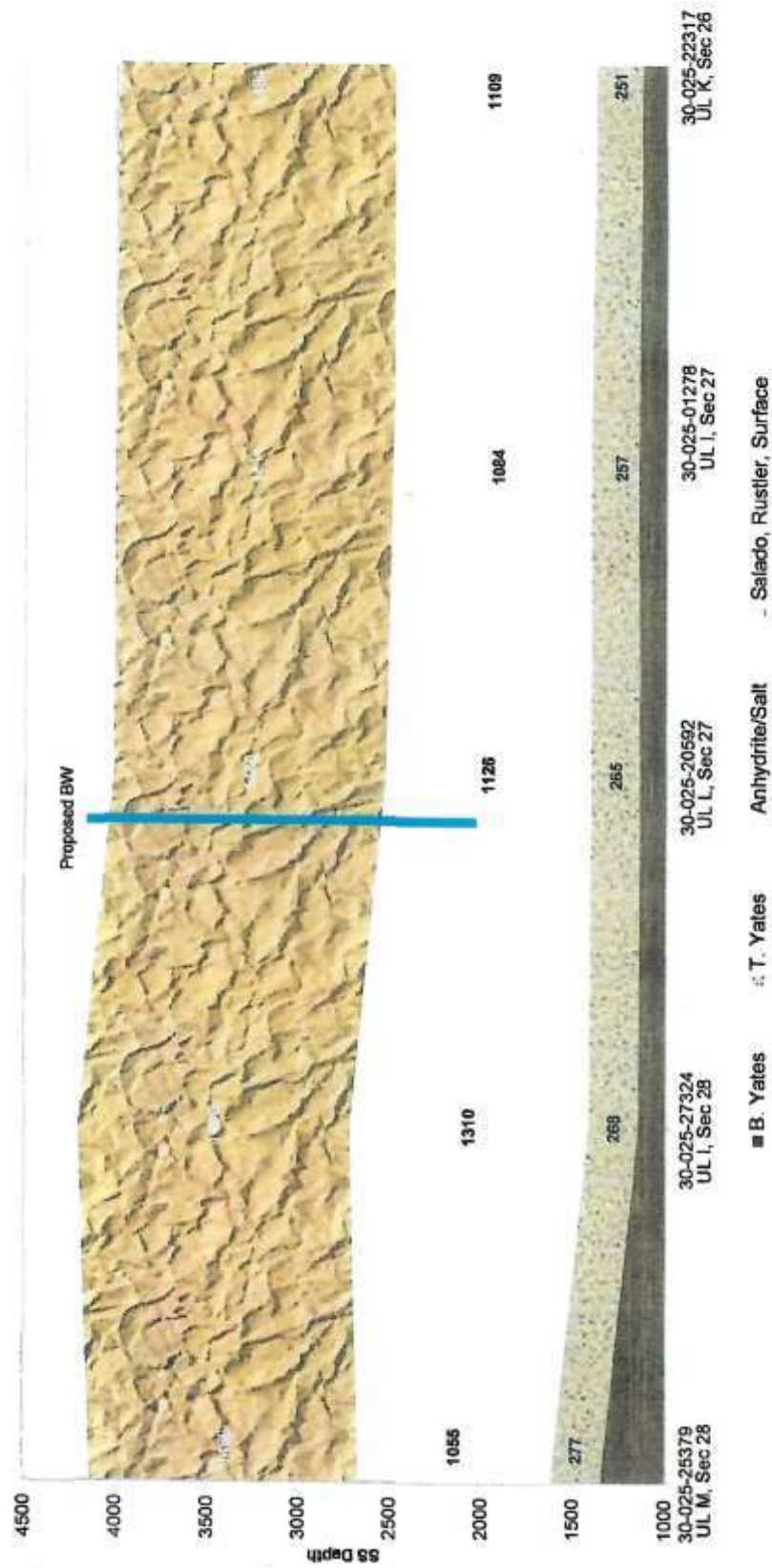




**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

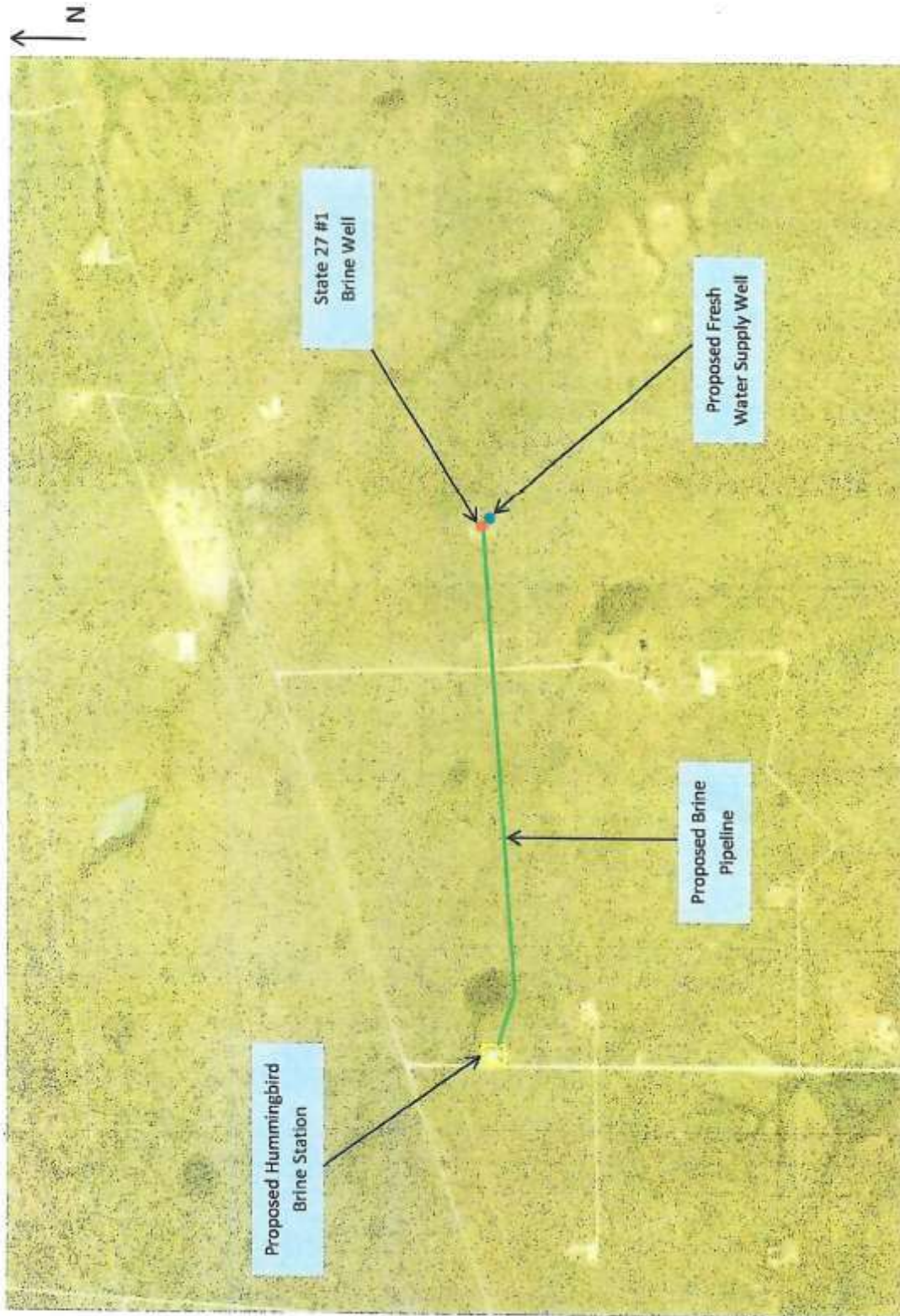


**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**





Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592



Attachment O – USGS Drainage Map of Project Area

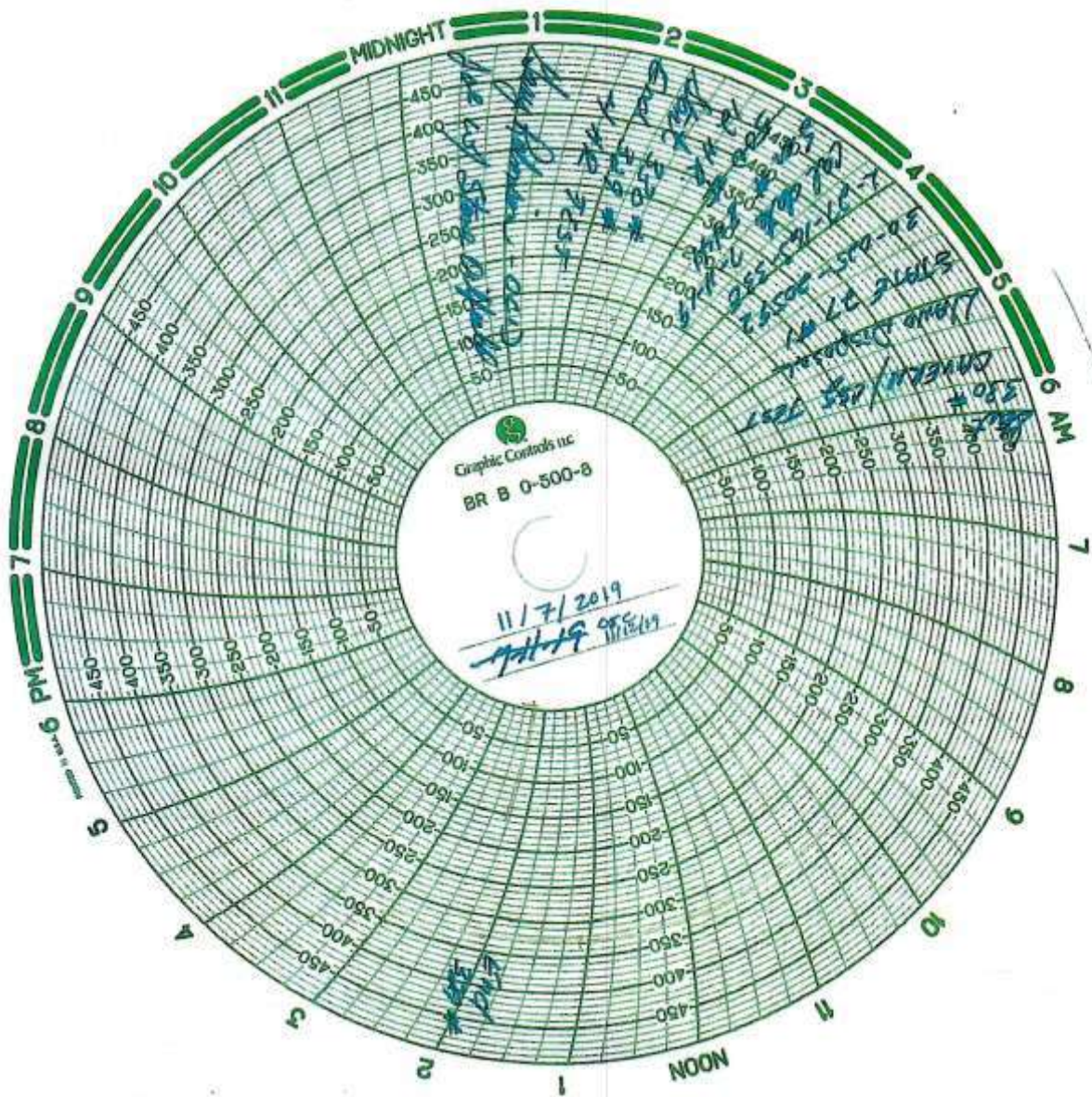
**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment H – Other Information**



Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

5-Year MIT Requirement





**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

Submit 1 Copy To Appropriate District Office  
**District I** – (575) 393-6161  
 1625 N. French Dr., Hobbs, NM 88240  
**District II** – (575) 748-1263  
 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

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (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.) 1. Type of Well: Oil Well    Gas Well    Other    BSW		WELL API NO. 30-025-20592
2. Name of Operator Llano Disposal, LLC		5. Indicate Type of Lease STATE    x    FEE
3. Address of Operator PO Box 250, Lovington NM 88260		6. State Oil & Gas Lease No. Salt lease w/ SLO
4. Well Location Unit Letter    I    :    1980    feet from the    S    line and    660    feet from the    W    line Section    27    Township    16S    Range    33E    NMPM    County Lea		7. Lease Name or Unit Agreement Name State 27
11. Elevation (Show whether DR, RKB, RT, GR, etc.)		8. Well Number 1
9. OGRID Number 370661		10. Pool name or Wildcat Salado brine generation lease.

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK	PLUG AND ABANDON	REMEDIAL WORK	ALTERING CASING
TEMPORARILY ABANDON	CHANGE PLANS	COMMENCE DRILLING OPNS.	P AND A
PULL OR ALTER CASING	MULTIPLE COMPL	CASING/CEMENT JOB	
DOWNHOLE COMMINGLE			
CLOSED-LOOP SYSTEM			
OTHER:		OTHER:	Casing and brine cavity pressure test.

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.

On 11/7/19, met on location w/ OCD Dist I rep Gary Hamilton to perform scheduled casing/brine cavity test on this well. Connected truck and chart pressure recorder (recorder w/ valid cal date) to perform 4 hour static pressure test. Ran test for 4+ hours. Well lost 1 psi according to chart. Per direction from Santa Fe OCD and Dist I rep, we returned the well to brine production immediately after conclusion of this test.

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 Marvin Burrows TITLE \_\_\_\_\_ Agent for \_\_\_\_\_ DATE 11/08/19  
 Type or print name Marvin Burrows Email address: burrowsmarvin@gmail.com PHONE 575-631-8067  
**For State Use Only**  
 APPROVED BY: Emily Ching TITLE Environmental Engineer DATE 11/12/2019  
 Conditions of Approval (if any): \_\_\_\_\_

Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

CALIBRATION CERTIFICATE	
Cert Date:	7/11/2019
Due Date:	7/11/2020

**CHARIS Ltd.**  
GAS MEASUREMENT

Customer: AMERICAN VALVE & METER INC  
Model: BULLFROG 8"  
Serial: 8441

This is to certify that this instrument has been inspected and tested against  
ADDITEL Digital Gauge ADT680-GP30K, SN: 218183B0028 Calibrated  
(04/25/2019) Due Date (04/25/2020) Reference Standard used in this calibration  
are traceable to the SI Units through NIST. This calibration is compliant to  
ISO/IEC 17025:2017 and ANSI/NCCL Z540-1:R2002.

This instrument is certified to be accurate within +/- 1% of Full Scale

Input Type/ Range: 500#		Color: RRED	
Pen Number: 2			
Ascending	Applied	Reading	Reading
	0	0	499
	99	100	500
	248	250	398
	398	400	249
	499	500	100
			0

2031 TRADE DR.  
MIDLAND, TX 79706  
(432) 697-7801 (482) 520-3564

Technician:

*Suanna Lopez*

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**PERFORMING BRADENHEAD TEST**

**General Procedure for Bradenhead Test**

- Identify: All valves prior to testing
- Gauges: Install on each casing string to record pressure.
- Assure: That all valves are in good working condition and closed at least 24 hours prior to testing.
- Open: Each valve (Bradenhead, intermediate and casing valves) is to be opened separately.
- Check Gauges: Record pressure on each gauge and casing string on BHT form. Open valves to atmosphere and record results on BHT form.
- Designate what applies to the result of opening the valves for each string:
- |                        |           |
|------------------------|-----------|
| • Blow or Puff         | Yes or No |
| • Bled down to Nothing | Yes or No |
| • Steady Flow          | Yes or No |
| • Oil or Gas           | Yes or No |
| • Water                | Yes or No |
- Start: Injection or SWD pump so tubing pressure can be read.

Instructions below apply to the District 1 Hobbs office since this must be reported on a form.

**In case of pressure:**

1. Record pressure reading on gauge
2. Bleed and note time elapsed to bleed down.
3. Leave valve open for additional observation
4. Note any fluids expelled.

**In absence of Pressure**

1. Leave valve open for additional observation
2. Note types of fluids expelled.
3. Note if fluids persist throughout test.

**Note:** Tubing pressure on injection or SWD wells.

Test will be signed by person performing test with a contact phone number.



**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

Division 1  
 6425 W. French Dr., Hobbs, NM 88240  
 Phone (505) 393-6165 Fax (505) 393-6120

**State of New Mexico**  
**Energy, Minerals and Natural Resources Department**  
**Oil Conservation Division Hobbs District Office**

**BRADENHEAD TEST REPORT**

Operator Name <b>L/And Disposal</b>		API Number <b>30-25-20592</b>	
Property Name <b>STATE 27</b>		Well No. <b>1</b>	

1. Surface Location									
UL - Lot <b>L</b>	Section <b>27</b>	Township <b>16S</b>	Range <b>33E</b>	Feet from <b>1980</b>	NS Line <b>S</b>	Feet from <b>660</b>	E/W Line <b>W</b>	County <b>LEA</b>	

Well Status										
YES	NO	YES	NO	INJ	INJECTOR	SWD	OIL	PRODUCER	GAS	DATE <b>11-7-19</b>

**BRINE WELL**

**OBSERVED DATA**

	(A)Surface	(B)Interm(1)	(C)Interm(2)	(D)Prod Cng	(E)Tubing
Pressure	<b>Cemented</b>			<b>0</b>	<b>0</b>
Flow Characteristics					
Puff	Y / N	Y / N	Y / N	Y / <b>(N)</b>	CO2
Steady Flow	Y / N	Y / N	Y / N	Y / <b>(N)</b>	WTR
Surges	Y / N	Y / N	Y / N	Y / <b>(N)</b>	GAS
Down to nothing	Y / N	Y / N	Y / N	<b>(N)</b> / N	Type of fluid reported for wellhead & spool
Gas or Oil	Y / N	Y / N	Y / N	Y / <b>(N)</b>	
Water	Y / N	Y / N	Y / N	Y / <b>(N)</b>	

Remarks - Please state for each string (A,B,C,D,E) pertinent information regarding bleed down or continuous build up if applies.	
<b>BRINE WELL</b> <b>MIT</b>	<b>C-103</b> <b>chart</b> <b>CAL. papers</b> <b>B4T</b> → <b>send to Carl</b> <b>and</b> <b>Hobbs office</b>

Signature:		OIL CONSERVATION DIVISION	
Printed name:		Entered into RBDMS	
Title:		Re-test	
E-mail Address:			
Date:	Phone:		
Witness:	<b>Shay Robinson</b>		

INSTRUCTIONS ON BACK OF THIS FORM



**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Closure Plan**

Upon cease of operations and after regulatory approval, Llano will plug and abandon the brine well, remove all surface equipment, restore the surface to original contour and reseed it with native grasses. In addition, Llano will continue surface subsidence monument surveys for a minimum of 5 years after well plugging.

**1. Well Plug and Abandonment**

The brine well will be plugged and abandoned per WQCC regulations section 5- 209 and NMOCD rules in place at that time. As discussed in Section VII.A.11 above, the plugging plan includes swabbing approximately one foot of water out of the cavern, removing the tubing string, setting a cast iron bridge plug at 10 feet above the 8-5/8" casing window and filling the casing with a Class C high strength salt resistant cement. The wellhead will be cut off and a dry hole marker installed. Over time, large portions of the resulting salt cavern will re-solidify.

**2. Surface Restoration**

All surface equipment at the brine well location and brine station will be emptied, decommissioned and removed either through recycle, scrapping, sale or used by the owner elsewhere. The disturbed surface at the well location and brine station will be reclaimed and re-contoured to near original condition. The disturbed area will be reseeded with a BLM grass seed mixture to establish 70% minimum regrowth coverage.

**3. Surface Subsidence Monitoring**

The annual surface subsidence monitoring program discussed in section X.A.2 above will be continued for a minimum of 5 years following plugging and abandonment of the brine well.

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Financial Assurance Plan**

Llano Disposal, LLC has provided financial assurance for the State '27' #1 Brine Well and Hummingbird Brine Station via an irrevocable letter of credit in the amount of \$108,000 covering well plugging and abandonment, surface restoration and surface subsidence monitoring for 5 years after ceasing operations as detailed below.

**1. Well Plugging - \$50,732.31**

See cost breakdown below.

	Units	Quantity	Unit Cost	Extension
A1 Supervisor	\$/day	4	\$750.00	\$3,000.00
A7 Double Derrick Rig	\$/hour	48	\$325.00	\$15,600.00
B1 Cement Equipment	\$/well	1	\$2,950.00	\$2,950.00
B5 Class C Cement	\$/sack	570	\$27.50	\$15,675.00
C1 Wireline Unit on Location	\$/day	1	\$750.00	\$750.00
C18.5 9 5/8" CIBP	\$/event	1	\$3,250.00	\$3,250.00
E11 BOP with Delivery	\$/well	1	\$750.00	\$750.00
E13 Tubing Tongs	\$/day	4	\$150.00	\$600.00
E13 Blow Down Tank	\$/day	4	\$95.00	\$380.00
F1 Tandem Rig Up Truck	\$/hour	8	\$125.00	\$1,000.00
F4 1 Ton Truck & Driver	\$/hour	16	\$65.00	\$1,040.00
F9 Backhoe	\$/hour	8	\$95.00	\$760.00
F10 Welder	\$/hour	6	\$85.00	\$510.00
F12 P&A Marker	\$/well	1	\$150.00	\$150.00
H12 Vacuum Truck	\$/hour	8	\$95.00	\$760.00
V1 Rig Mats	\$/5 days	1	\$350.00	\$350.00
V5 Fresh Water	\$/bbl	250	\$1.25	\$312.50
M Fluid to SWD	\$/bbl	250	\$1.00	\$250.00
Sub Total				\$48,087.50
5.5 % Sales Tax				\$2,644.81
Total				\$50,732.31

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**2. Surface Restoration - \$46,260.10**

See cost breakdown below:

<b>Cost</b>	<b>Description</b>
\$4,500.00	Equipment (Trucks for hauling fluids - Llano will provide its own labor)
\$2,640.00	Backhoe/Labor - 2 days to crush fiberglass tanks and PVC components at brine station
\$3,024.00	35 Ys Roll-off Dumpsters - delivery, rental and hauling to landfill
\$661.20	Lea County Landfill Charges
\$0.00	Llano will provide on-site supervision at no additional charges
\$22,064.90	Equipment/Labor -pull all fencing, remove all concrete, disassemble all metal components, re-contour land to original grade, rebuild barbed wire fence to original ranch configuration, remove underground piping, electrical conduit, winch, high line poles, winch and signage
\$2,760.00	Trucking/Disposal - of concrete to Lea County Landfill
\$4,440.00	Trucking - haul metal components to Hobbs Iron & Metal for recycle
\$5,670.00	Decommission buried polyethylene brine pipeline - costs include fresh water, trucking and pumping to wash pipeline clean and disposal of brine and wash water, then leave pipeline in place for ranching, and or fresh water sales use
<u>\$500.00</u>	Reseeding BLM mix grasses will be done by Llano personnel
<b>\$46,260.10</b>	

**3. Surface Subsidence Monitoring - \$6,034.05**

Based on current surface subsidence survey cost quotes, these costs total \$6,034.05 for 5 years of follow-on subsidence monument monitoring. Current cost is \$1206.81 per year per year.

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**C-108**

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL  
RESOURCES DEPARTMENT

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

FORM C-108  
Revised June 10, 2003

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage  
Application qualifies for administrative approval? ☒ Yes ☐ No
- II. OPERATOR: Llano Disposal, LLC  
ADDRESS: P.O. Box 250, Lovington, NM 88260  
CONTACT PARTY: Marvin Burrows PHONE: 575-631-8067
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☐ Yes ☒ No  
If yes, give the Division order number authorizing the project: \_\_\_\_\_
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- \*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- \*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: Darr Angell TITLE: Owner  
SIGNATURE: *Darr Angell* DATE: 10/27/2023  
E-MAIL ADDRESS: darrangell@gmail.com
- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: March 2018

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office



**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

Side 2

**III. WELL DATA**

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

**XIV. PROOF OF NOTICE**

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

---

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**INJECTION WELL DATA SHEET**

Side 1

OPERATOR: Llano Disposal, LLC

WELL NAME & NUMBER: Hummingbird Brine Station State 27 #1

WELL LOCATION: 1980 FNL 660 FWL

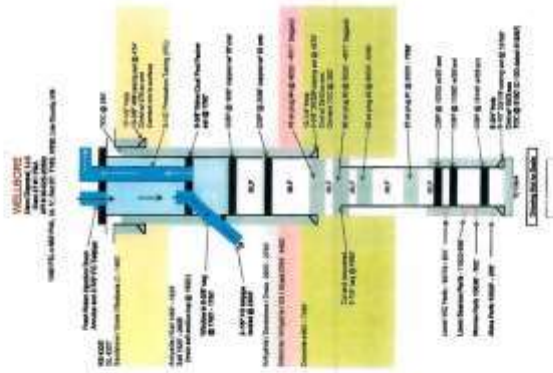
UNIT LETTER: L

SECTION: 27

TOWNSHIP: 16S

RANGE: 33E

**WELLBORE SCHEMATIC**



**WELL CONSTRUCTION DATA**  
 Surface Casing

Hole Size: 17 1/2" Casing Size: 13 3/8"

Cemented with: 370 sx, or ft<sup>3</sup>

Top of Cement: Surface - In Place Method Determined:

**Intermediate Casing**

Hole Size: 12 1/4" Casing Size: 9 5/8"

Cemented with: 2940 sx, or ft<sup>3</sup>

Top of Cement: Surface - In Place Method Determined:

**Production Casing**

Hole Size: 8 3/4" Casing Size: 5 1/2"

Cemented with: 700 sx, or ft<sup>3</sup>

Top of Cement: Surface - In Place Method Determined:

Total Depth: 700

**Injection Interval**

feet to

(Perforated or Open Hole; indicate which)

Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

Side 2

**INJECTION WELL DATA SHEET**

Tubing Size: 3.5" IPC Lining Material: \_\_\_\_\_  
Type of Packer: \_\_\_\_\_  
Packer Setting Depth: \_\_\_\_\_  
Other Type of Tubing/Casing Seal (if applicable): N/A

**Additional Data**

1. Is this a new well drilled for injection? Yes ☒ No ☐  
If no, for what purpose was the well originally drilled? \_\_\_\_\_  
Oil and gas production. \_\_\_\_\_
2. Name of the Injection Formation: Salado
3. Name of Field or Pool (if applicable): Pool Code 96173
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. \_\_\_\_\_  
See schematic
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: \_\_\_\_\_  
None productive  
\_\_\_\_\_  
\_\_\_\_\_

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

- I. Purpose: Llano Disposal, LLC seeks administration approval to renew the existing application for Hummingbird Brine Station State 27 BSW #1.
- II. Operator: The operator is Llano Disposal, LLC, P. O. Box 250, Lovington, NM 88260. The operator's OGRID number is 370661. Llano Disposal, LLC is the owner of all the surface lands at the brine well and brine station. The contact person is Mr. Marvin Burrows at 575-631-8067.
- III. Well Data: See **Attachment I**.
- IV. Is this an expansion of an existing project: No
- V. Attach a map that identifies all wells and leases within two miles of the proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the area of review: See **Attachment J**.
- VI. Attach a tabulation of data on all wells of public record within the area of review: See **Attachment K**.
- VII. Attach data on the proposed operation: See **Attachment L**.
- VIII. Geological data: See **Attachment G** and data previously submitted on 7/16/2018.
- IX. Describe the proposed stimulation program if any: NA
- X. Attach appropriate logging and test data on the well: Previously submitted on 10/20/2020
- XI. Attach a chemical analysis of fresh water from two wells: Previously submitted in 2018 with initial application. See **Attachment M**.
- XII. This is not a disposal well. However, available geologic and engineering data has been examined and there is no evidence for an open fault or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Proof of Notice: See **Attachment N**.



**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment I – Well Data**

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

Holcomb Consultants  
6900 Spring Cherry Lane  
Amarillo, Texas 79124

July 16, 2018

NMOCD Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, NM 87505  
Attn: Mr. Carl Chavez

Re: State 27 #1 (30-025-20592)  
UL 'L', Section 27, T16S, R33E, Lea County, New Mexico

Per the rules and regulations of the New Mexico Oil Conservation Division, please find enclosed a copy of NMOCD form C-108 for the above referenced well. This C-108 is being submitted with a WQCC Discharge Plan Application.

Llano Disposal, LLC, P. O. Box 190, Lovington, NM 88260 hereby submits a form C-108 (Application for Authorization to Inject) to the New Mexico Oil Conservation Division seeking administrative approval to convert the State '27' #1, API 30-025-20592, 1980 FSL x 660 FWL, Unit Letter "L", Section 27, T16S, R33E, Lea County, New Mexico from a plugged and abandoned well to a commercial brine service well. The proposed production interval would be the Salado formation through cased hole completion between 1780' – 2400'. Injection fluid will be fresh water from a newly drilled water well. Anticipated average daily injection volume is 1550 BWPD with a maximum daily injection volume of 1900 BWPD. Anticipated average injection pressure is 250 psi with a maximum injection pressure of 475 psi. The well is located approximately 18.5 miles west of Lovington, New Mexico.

No notices of this C-108 application were made since WQCC rules (20.6.2.3108 NMAC) will determine notice requirements once a discharge plan is considered "Administratively Complete" by the OCD.

Sincerely,



Danny J. Holcomb  
Agent for Llano Disposal, LLC  
Email: [danny@pwllc.net](mailto:danny@pwllc.net)  
Cell: 806-471-5628

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

Llano Disposal, LLC  
State '27' #1  
API # 30-025-20592  
1980 FSL x 660 FWL  
Unit Letter 'L', Section 27, T16S, R33E  
Lea County, New Mexico  
C108 Application for Authorization to Inject

I.

The purpose of this application is seeking administrative approval for authorization to convert the State '27' #1 from a plugged and abandoned well to a commercial brine production well. This C-108 application is submitted in conjunction with a WQCC discharge plan application.

II.

Operator: Llano Disposal, LLC  
Address: P.O. Box 190, Lovington, New Mexico 88260  
Contact Party: Marvin Burrows phone: 575-631-8067 email: [burrowsmarvin@gmail.com](mailto:burrowsmarvin@gmail.com)

III.

Well Name: State '27' #1  
API Number: 30-025-20592  
Location: Unit Letter 'L', Section 27, T16S, R33E, Lea County, New Mexico  
Operator: Llano Disposal, LLC OGRID: 370661  
Proposed Formation: BSW; Salado (Pool Code: 96173)  
Please see Exhibit "A" for additional well data.

IV.

This is not an expansion of an existing project.

V.

Please see Exhibit "B" for lease map.

VI.

There is one offset well located within the 0.5 mile Area of Review and an additional 6 offset wells located outside the 0.5 mile AOR, but within the 1 mile AOR. See Exhibit "C" for map with 0.5 mile and 1 mile AORs, offset well lists and offset wellbore diagram.

VII.

1. Anticipated daily injection volume – 1550 BWPD with a maximum of 1900 BWPD.
2. System will be closed. Brine will be pipelined into the brine station and trucked out.
3. Anticipated disposal pressure: Average 250 psig, Maximum 475 psig.
4. Please see Exhibit "D" for fresh water analysis of water injected for brine production.

VIII.

The proposed injection interval is the Salado (salt) formation between 1780' – 2400'.

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

Llano Disposal, LLC  
State '27' #1  
API # 30-025-20592  
1980 FSL x 660 FWL  
Unit Letter 'L', Section 27, T16S, R33E  
Lea County, New Mexico  
C108 Application for Authorization to Inject

IX.

Proposed Completion Procedure: After drilling out cement plugs from surface to 4511' in 9-5/8" casing, circulate out mud laden fluid, fill casing with fresh water, run CBL, CNL and caliper log from 4511' to surface and submit to OCD for review. If approved, set a 9-5/8" CIBP on wireline at 2596' capped with 10' of cement at BOS. Set a CIBP ~1800' capped with 10' of cement for Whipstock seat. Cut a window in the 9-5/8" casing at 1780'-1790', drill through salt to 2400'. Run a dual port 9-5/8" packer set at 1760' with 2-7/8' fiberglass tail pipe landed at 2300' and 3-1/2" IPC production tubing to surface. No stimulation will be performed. Note: Depths for casing window, packer and tailpipe were agreed upon during consultations with OCD personnel after log evaluations.

X.

Copies of any logs performed will be submitted to OCD.

XI.


NM OSE records indicate that there are 19 fresh water wells located within a nine square mile Area of Review. There are only 5 fresh water wells located within the 1 mile AOR. See Exhibit "E" for OSE data base query and water sample test results on two of the wells.

XII.

Available geological and engineering data have been examined and no evidence of open faults or hydrological connection between the proposed salt formation and any underground sources of drinking water has been found.

XIII.

This C-108 is for OCD general use. No notifications of this C-108 have been made. Notifications will be made per WQCC rules (20.3.2.3108 NMAC) following OCD determination that the proposed associated discharge plan is "Administratively Complete".

Danny J. Holcomb:   
Agent for Llano Disposal, LLC

Date: 7/16/2018



# Discharge Plan Application for Brine Extraction Facilities

## Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

Llano Disposal, LLC  
 State '27' #1  
 API # 30-025-20592  
 1980 FSL x 660 FWL  
 Unit Letter 'L', Section 27, T16S, R33E  
 Lea County, New Mexico  
Well Data

Atlantic Refining Company drilled and abandoned this well as a Penn test in 1964.

Drilled 17-1/2" hole to 420', ran 13-3/8" 48# surface casing to 414', cemented with 370 sacks cement. Circulated cement to surface.

Drilled 12-1/4" hole to 4581', ran 9-5/8" 32.3/36# intermediate casing to 4578', cemented with 2940 sacks cement. Circulated cement to surface.

Drilled 8-3/4" hole to 11647', performed multiple DSTs and ran logs, plugged and abandoned as a dry hole in 1964. Set cement plugs as follows:

Plug #1	40 sx	11469'-11579'
Plug #2	45 sx	10765'-10891'
Plug #3	40 sx	9684'-9796'
Plug #4	25 sx	7940'-8010'
Plug #5	25 sx	4523'-4593'
Surface Plug	10 sx	30'-surface

In 1977, W. A. Moncrief, Jr. re-entered the well to deepen it to 13900' as a Lower Seamen, Atoka and Morrow test.

Drilled 8-3/4" hole to 13804', ran 5-1/2" 20/17# production casing to 13798', cemented with 1975 sacks cement. Top of cement at 8190' per temperature survey (reported in C-103 dated 4/18/97).

Well produced for a short time from Morrow and Kemnitz perms before isolating them and recompleting the well into the lower Wolfcamp in 1980. The well produced from the lower Wolfcamp until 1995 and was plugged and abandoned by Moncrief in 1997. Cement plugs were set as follows:

Plug #1	CIBP w/ 35' cmt	10700'
Plug #2	25 sx	7760'-8000'
Plug #3	25 sx	5760'-6000'
Cut and pull 5-1/2" casing at 4965'		
Plug #4	45 sx	4917'-5022'
Plug #5	45 sx	4505'-4650'
Plug #6	45 sx	1465'-1600'
Plug #7	50 sx	315'-465'
Surface Plug	10 sx	30'-surface

EXHIBIT "A"

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

Llano Disposal, LLC  
State '27' #1  
API # 30-025-20592  
1980 FSL x 660 FWL  
Unit Letter 'L', Section 27, T16S, R33E  
Lea County, New Mexico  
Well Data (cont'd)

In May, 2018, Llano Disposal worked with the OCD District 1 and Environmental Bureau staffs for approval to drill out the top 3 cement plugs to evaluate the well as a possible brine supply well. Cement plugs were drilled out to 4511' and CBL, CNL and casing inspection logs were run. After consulting with the OCD, the decision was made to move forward with WQCC discharge plan permitting.

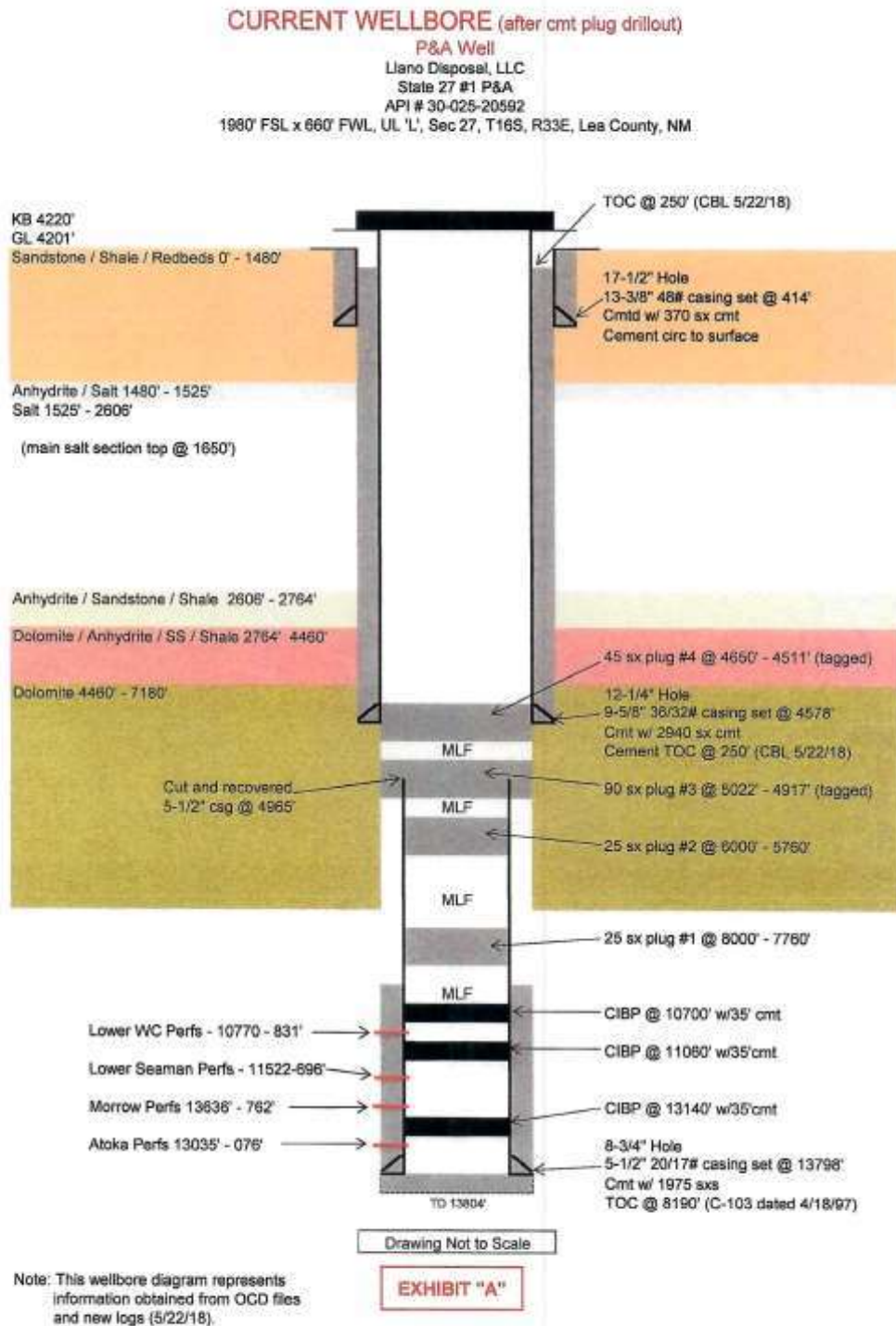
<u>Reported Formation Tops</u>	<u>Depths (ft)</u>
Anhydrite	1480
Salt	1593
B. Salt	2606
Yates	2764
Queen	3714
Grayburg	4120
San Andres	4460
Glorieta	5936
Tubb	7180
Drinkard	7305
Abo	7856
Wolfcamp	9720
Kemnitz	10770
Cisco	11486
Canyon	12023
Strawn	12336
Atoka	12470
Morrow	13640
Chester	13767

Information obtained from NMOCD well file.

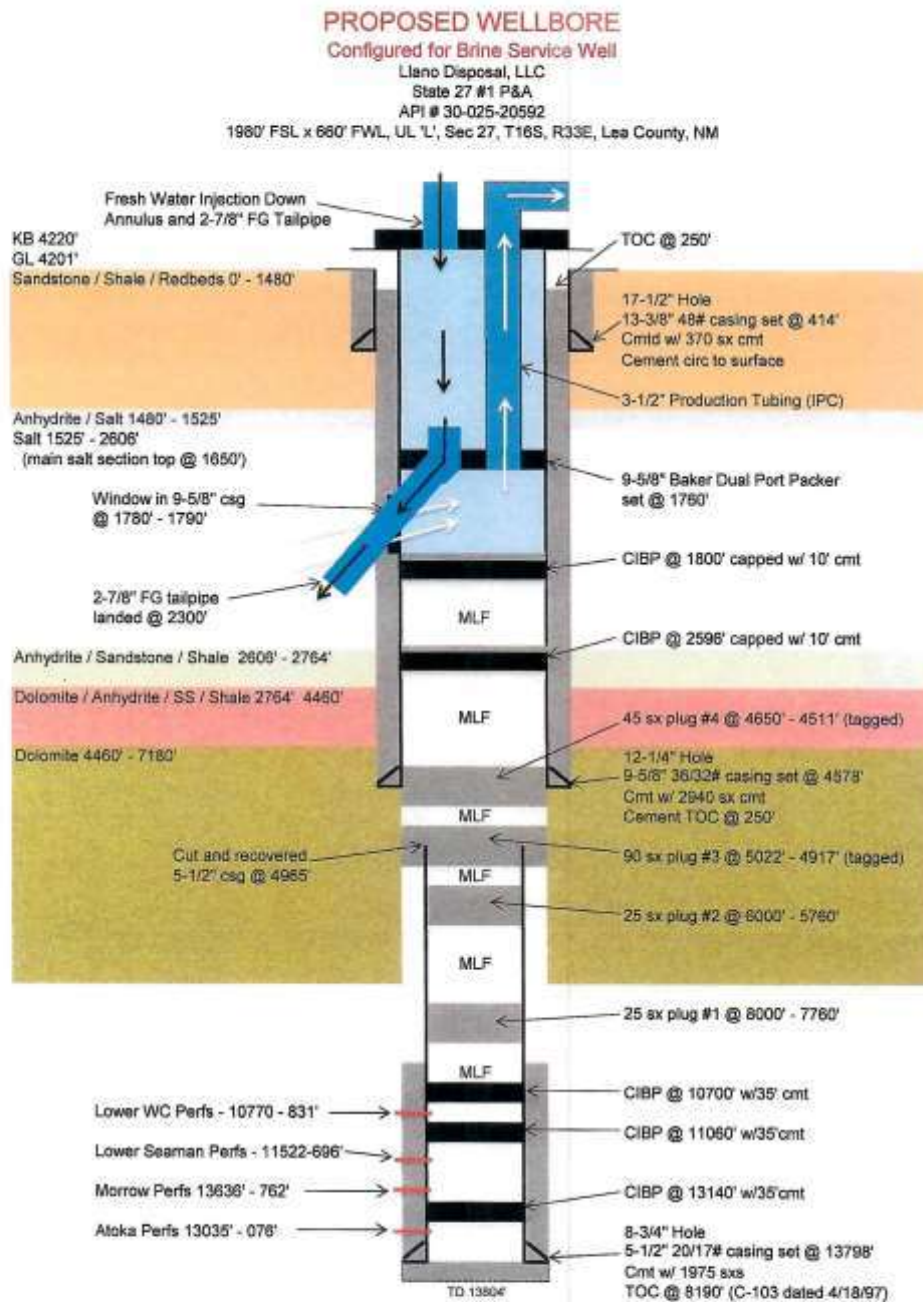
EXHIBIT "A"

4

# **Discharge Plan Application for Brine Extraction Facilities** **Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**



# **Discharge Plan Application for Brine Extraction Facilities** **Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**



Note: This wellbore diagram represents information obtained from OCD files and new logs (5/22/18).

**EXHIBIT "A"**



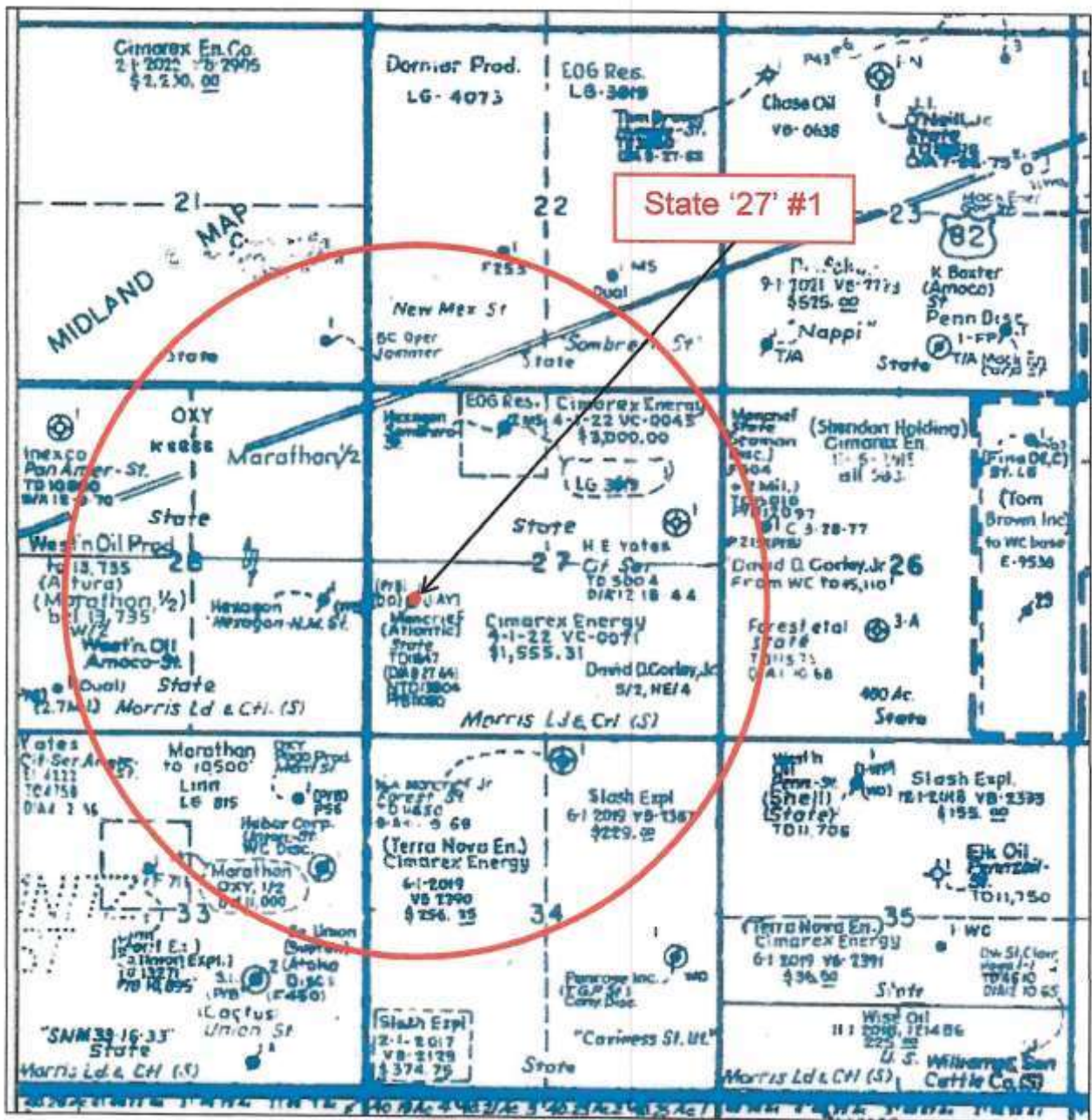
**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment J – Area of Review**

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Area of Review Update Summary**

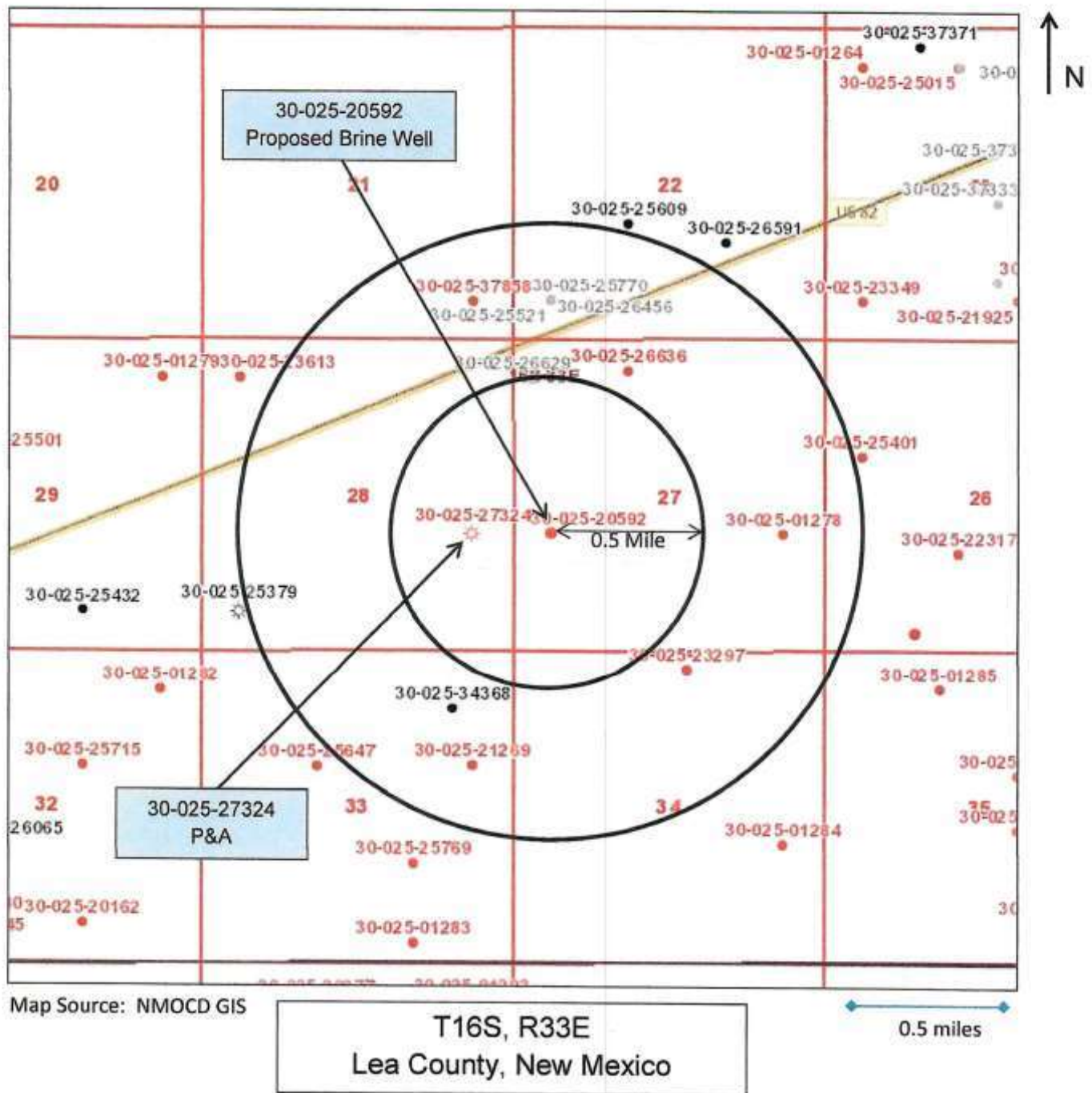
Please see below, the original AOR document that was submitted as part of the original application for BW-38. A current, location-by-location review of this brine permit has been completed, and it was found that there has been no oil or gas well development in the area since the original AOR document was created and submitted to NMOCD as part of the original brine permit.



Map Source: Midland Map Co.

**T16S, R33E**

Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592



**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**K – Well Tabulation**



**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

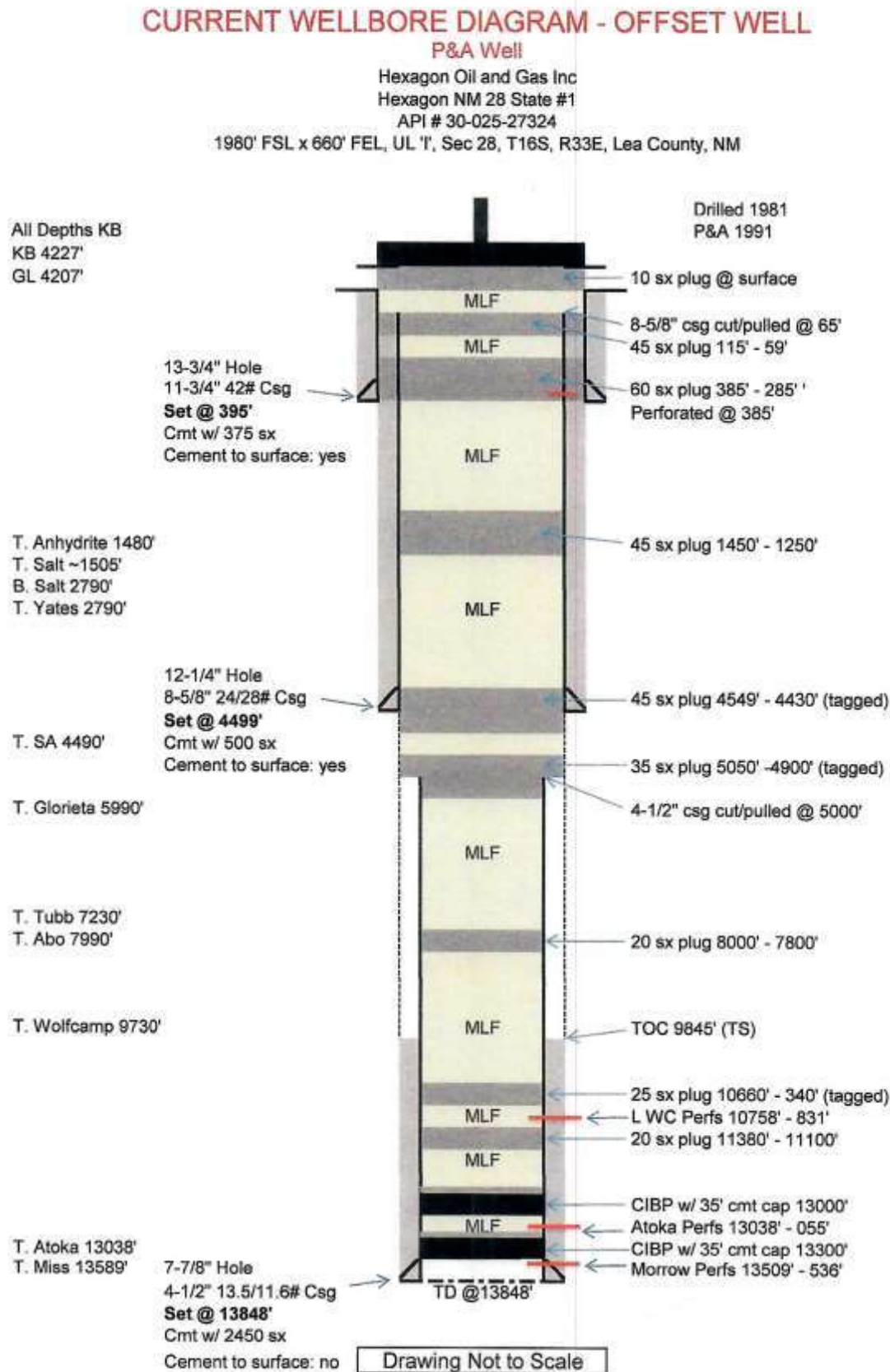
There is only one offset well located within the 0.5 mile AOR.

UL, Sec, T, R	API Well No.	Well Name	TVD	Operator	Status	Salt Plugs or Covered with Casing/Cement
I-28-16S-33E	30-025-27324	Hexagon NM 28 State #1	13848'	Hexagon Oil & Gas Inc	Drilled 1981, P&A 1991	Cmt plug @ TOS and below salt, 8-5/8" csg/cmt cover salt

There are six additional offset wells located outside the 0.5 mile AOR, but within the 1 mile AOR.

UL, Sec, T, R	API Well No.	Well Name	TVD	Operator	Status	Salt Plugs or Covered with Casing/Cement
P-21-16S-33E	30-025-37858	Jammer #1	10902'	Legacy Reserves Operating, LP	Drilled 2006, P&A 2010	Cmt plugs @ TOS and below salt, 8-5/8" csg/cmt cover salt
C-27-16S-33E	30-025-26636	Sombrero MS State #2	11730'	I&W Inc	Drilled 1980, P&A 1998	Cmt plugs @ TOS and below salt, 8-5/8" csg/cmt cover salt
I-27-16S-33E	30-025-01278	Cities Service State #1	5004'	Harvey E. Yates	Drilled 1944, P&A 1946	Bridge plugs at TOS and at BOS, no csg/cmt cover salt
A-33-16S-33E	30-025-34368	Merit 33 State #1	15094'	Oxy USA Inc	Drilled 1998, active WC producer	9-5/8" csg/cmt cover salt
H-33-16S-33E	30-025-21269	Union State #1	11650'	J. M. Huber Corp	Drilled 1965, P&A 1972	Cmt plugs above and below salt, 8-5/8" csg covers salt
B-34-16S-33E	30-025-23297	Apple State #1	11650'	Manzano Oil Corp	D&A 1969, Re-entered 1986, P&A 1987	Cmt plugs above and below salt, 8-5/8" csg covers salt

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**



**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment L – Operation**

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

1. Anticipated daily injection volume – 1550 BWPD with a maximum of 1900 BWPD.
2. System will be closed. It includes a brine station and brine will be trucked out.
3. Disposal pressure: Average 250 psig, maximum 475 psig.
4. Please see freshwater analysis below:

**Sample Data**

Llano Disposal LLC PO Box 250 Lovington NM, 88260	Project Name: Hummingbird Brine Station Project Number: 22117-0001 Project Manager: Elizabeth Pickercel	Reported: 10/11/2023 4:50:19PM
---	---	-----------------------------------

Fresh Well E310020-02						
Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Wet Chem/Gravimetric by SM2540C	mg/L	mg/L	Analyst: KF		Batch: 2340083	
Total Dissolved Solids	1340	10.0	1	10/06/23	10/06/23	
Wet Chemistry by 9040C/4500H+B	pH Units	pH Units	Analyst: BA		Batch: 2340080	
pH @25°C	7.80		1	10/05/23 09:47	10/05/23 16:54	HS
Wet Chemistry by SM2710F**	N/A	N/A	Analyst: KH		Batch: 2340077	
Specific Gravity	0.993		1	10/05/23	10/05/23	
Anions by EPA 300.0/9056A	mg/L	mg/L	Analyst: IV		Batch: 2341045	
Chloride	43.2	2.00	1	10/10/23	10/10/23	



**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment M – Chemical Analysis**

Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

Report to:  
Elizabeth Pickerel



5796 U.S. Hwy 64  
Farmington, NM 87401

Phone: (505) 632-1881  
Envirotech-inc.com



# envirotech

*Practical Solutions for a Better Tomorrow*

## Analytical Report

Llano Disposal LLC

Project Name: Hummingbird Brine Station

Work Order: E310020

Job Number: 22117-0001

Received: 10/4/2023

Revision: 2

Report Reviewed By:

Walter Hinchman  
Laboratory Director  
10/11/23

Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.  
Statement of Data Authenticity: Envirotech Inc. attests the data reported has not been altered in any way.  
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.  
Envirotech Inc. holds the Utah TNI certification NM00979 for data reported.  
Envirotech Inc. holds the Texas TNI certification T104704557 for data reported.

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

Date Reported: 10/11/23

Elizabeth Pickerel  
PO Box 250  
Lovington, NM 88260



Project Name: Hummingbird Brine Station  
Workorder: E310020  
Date Received: 10/4/2023 8:20:00AM

Elizabeth Pickerel,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 10/4/2023 8:20:00AM, under the Project Name: Hummingbird Brine Station.

The analytical test results summarized in this report with the Project Name: Hummingbird Brine Station apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

**Walter Hinchman**  
Laboratory Director  
Office: 505-632-1881  
Cell: 775-287-1762  
[whinchman@envirotech-inc.com](mailto:whinchman@envirotech-inc.com)

**Raina Schwanz**  
Laboratory Administrator  
Office: 505-632-1881  
[rainaschwanz@envirotech-inc.com](mailto:rainaschwanz@envirotech-inc.com)

**Alexa Michaels**  
Sample Custody Officer  
Office: 505-632-1881  
[labadmin@envirotech-inc.com](mailto:labadmin@envirotech-inc.com)

Field Offices:

**Southern New Mexico Area**  
**Lynn Jarboe**  
Laboratory Technical Representative  
Office: 505-421-LABS(5227)  
Cell: 505-320-4759  
[ljjarboe@envirotech-inc.com](mailto:ljjarboe@envirotech-inc.com)

**Michelle Golzales**  
Technical Representative  
Office: 505-421-LABS(5227)  
Cell: 505-947-8222  
[mgonzales@envirotech-inc.com](mailto:mgonzales@envirotech-inc.com)

Envirotech Web Address: [www.envirotech-inc.com](http://www.envirotech-inc.com)

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

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**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Sample Summary**

Llano Disposal LLC PO Box 250 Lovington NM, 88260	Project Name: Hummingbird Brine Station Project Number: 22117-0001 Project Manager: Elizabeth Pickeret	Reported: 10/11/23 16:50
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Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Brine Well	E310020-01A	Aqueous	10/03/23	10/04/23	Poly 500mL
Fresh Well	E310020-02A	Aqueous	10/03/23	10/04/23	Poly 500mL
Monitor Well	E310020-03A	Aqueous	10/03/23	10/04/23	Poly 500mL

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Sample Data**

Llano Disposal LLC PO Box 250 Lovington NM, 88260	Project Name: Hummingbird Brine Station Project Number: 22117-0001 Project Manager: Elizabeth Pickersel	Reported: 10/11/2023 4:50:19PM
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**Brine Well**

**E310020-01**

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Wet Chem/Gravimetric by SM2540C</b>						
	mg/L	mg/L				Batch: 2341013
Total Dissolved Solids	326000	200	1	10/10/23	10/11/23	T19
<b>Wet Chemistry by 9040C/4500H+B</b>						
	pH Units	pH Units				Batch: 2340080
pH @25°C	6.80		1	10/05/23 09:47	10/05/23 16:54	H5
<b>Wet Chemistry by SM2710F**</b>						
	N/A	N/A				Batch: 2340077
Specific Gravity	1.202		1	10/05/23	10/05/23	
<b>Total Metals by EPA 6010C</b>						
	mg/L	mg/L				Batch: 2341012
Sodium	96400	2000	1000	10/09/23	10/10/23	
<b>Anions by EPA 300.0/9056A</b>						
	mg/L	mg/L				Batch: 2341045
Chloride	374000	4000	2000	10/10/23	10/10/23	

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Sample Data**

Llano Disposal LLC PO Box 250 Lovington NM, 88260	Project Name: Project Number: Project Manager:	Hummingbird Brine Station 22117-0001 Elizabeth Pickrell	Reported: 10/11/2023 4:50:19PM
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**Fresh Well**

**E310020-02**

Analyte	Result	Reporting Limit	Dilution	Prepared	Analysed	Notes
<b>Wet Chem/Gravimetric by SM2540C</b>						
Total Dissolved Solids	1340	10.0	1	10/06/23	10/06/23	Batch: 2340083
<b>Wet Chemistry by 9040C/4500H+B</b>						
pH @25°C	7.80		1	10/05/23 09:47	10/05/23 16:54	Batch: 2340080
<b>Wet Chemistry by SM2710F**</b>						
Specific Gravity	0.993		1	10/05/23	10/05/23	Batch: 2340077
<b>Anions by EPA 300.0/9056A</b>						
Chloride	43.2	2.00	1	10/10/23	10/10/23	Batch: 2341045

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Sample Data**

Llano Disposal LLC PO Box 250 Lovington NM, 88260	Project Name: Hummingbird Brine Station Project Number: 22117-0001 Project Manager: Elizabeth Pickercel	Reported: 10/11/2023 4:50:19PM
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**Monitor Well**  
**E310020-03**

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Wet Chem/Gravimetric by SM2540C</b>	mg/L	mg/L				Batch: 2340083
Total Dissolved Solids	320	10.0	1	10/06/23	10/06/23	
<b>Wet Chemistry by 9040C/4500H+B</b>	pH Units	pH Units				Batch: 2340080
pH @25°C	7.74		1	10/05/23 09:47	10/05/23 16:54	H5
<b>Wet Chemistry by SM2710R**</b>	N/A	N/A				Batch: 2340077
Specific Gravity	0.994		1	10/05/23	10/05/23	
<b>Anions by EPA 300.0/9056A</b>	mg/L	mg/L				Batch: 2341045
Chloride	43.2	2.00	1	10/10/23	10/10/23	



**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**QC Summary Data**

Llano Disposal LLC. PO Box 250 Lovington NM, 88260	Project Name: Hummingbird Brine Station Project Number: 22117-0001 Project Manager: Elizabeth Pickercel	Reported: 10/11/2023 4:50:19PM
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**Wet Chem/Gravimetric by SM2540C**

Analyst: KF

Analyte	Result mg/L	Reporting Limit mg/L	Spike Level mg/L	Source Result mg/L	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
<b>Blank (2340083-BLK1)</b>									
Total Dissolved Solids	ND	10.0							Prepared: 10/06/23 Analyzed: 10/06/23
<b>LCS (2340083-BS1)</b>									
Total Dissolved Solids	117	10.0	100		117	55-134			Prepared: 10/06/23 Analyzed: 10/06/23
<b>Duplicate (2340083-DUP1)</b>									
Total Dissolved Solids	414	10.0		425			2.62	5	Source: E310023-01 Prepared: 10/06/23 Analyzed: 10/06/23

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**QC Summary Data**

Llano Disposal LLC PO Box 250 Lovington NM, 88260	Project Name: Project Number: Project Manager:	Hummingbird Brine Station 22117-0001 Elizabeth Pickersel	Reported:  10/11/2023 4:50:19PM
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**Wet Chem/Gravimetric by SM2540C**

Analyst: KP

Analyte	Result mg/L	Reporting Limit mg/L	Spike Level mg/L	Source Result mg/L	Rec % %	Rec Limits %	RPD %	RPD Limit %	Notes
<b>Blank (2341013-BLK1)</b>									
Total Dissolved Solids	ND	10.0							Prepared: 10/09/23 Analyzed: 10/11/23
<b>LCS (2341013-BS1)</b>									
Total Dissolved Solids	102	10.0	100		102	55-134			Prepared: 10/09/23 Analyzed: 10/11/23
<b>LCS Dup (2341013-BSD1)</b>									
Total Dissolved Solids	98.0	10.0	100		98.0	55-134	4.00	5	Prepared: 10/09/23 Analyzed: 10/11/23

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**QC Summary Data**

Llano Disposal LLC PO Box 250 Lovington NM, 88260	Project Name: Project Number: Project Manager:	Hummingbird Brine Station 22117-0001 Elizabeth Pickarel	Reported:  10/11/2023 4:50:19PM
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**Wet Chemistry by 9040C/4500H+B**

Analyst: BA

Analyte	Result pH Units	Reporting Limit pH Units	Spike Level pH Units	Source Result pH Units	Rec % %	Rec Limits %	RPD %	RPD Limit %	Notes
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**LCS (2340080-BS1)**

Prepared: 10/05/23 Analyzed: 10/05/23

pH 7.99 8.00 99.9 98.75-101.25

**Duplicate (2340080-DUP1)**

Source: E310020-01

Prepared: 10/05/23 Analyzed: 10/05/23

pH 6.85 6.80 6.713 30

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**QC Summary Data**

Llano Disposal LLC PO Box 250 Lovington NM, 88260	Project Name: Project Number: Project Manager:	Hummingbird Brine Station 22117-0001 Elizabeth Pickrel	Reported:  10/11/2023 4:50:19PM
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**Total Metals by EPA 6010C**

Analyst: JL

Analyte	Result mg/L	Reporting Limit mg/L	Spike Level mg/L	Source Result mg/L	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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**Blank (2341012-BLK1)**

Prepared: 10/09/23 Analyzed: 10/09/23

Sodium ND 2.00

**LCS (2341012-BS1)**

Prepared: 10/09/23 Analyzed: 10/09/23

Sodium 17.5 2.00 20.0 87.7 80-120

**Matrix Spike (2341012-MS1)**

Source: E310013-04

Prepared: 10/09/23 Analyzed: 10/09/23

Sodium 1590 2.00 20.0 1590 NR 75-125 64

**Matrix Spike Dup (2341012-MSD1)**

Source: E310013-04

Prepared: 10/09/23 Analyzed: 10/09/23

Sodium 1590 2.00 20.0 1590 NR 75-125 0.828 30 64

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**QC Summary Data**

Llano Disposal LLC	Project Name:	Hummingbird Brine Station	Reported:
PO Box 250	Project Number:	22117-0001	
Lovington NM, 88260	Project Manager:	Elizabeth Pickarel	10/11/2023 4:50:19PM

**Anions by EPA 300.0/9056A**

Analyst: TY

Analyte	Result mg/L	Reporting Limit mg/L	Spike Level mg/L	Source Result mg/L	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
<b>Blank (2341045-BLK1)</b>					Prepared: 10/10/23 Analyzed: 10/10/23				
Chloride	ND	2.00							
<b>LCS (2341045-BS1)</b>					Prepared: 10/10/23 Analyzed: 10/10/23				
Chloride	24.7	2.00	25.0		98.7	96-110			
<b>LCS Dup (2341045-BS1)</b>					Prepared: 10/10/23 Analyzed: 10/10/23				
Chloride	24.7	2.00	25.0		98.8	96-110	0.0701	20	

**QC Summary Report Comment:**

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



# Discharge Plan Application for Brine Extraction Facilities

## Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

### Definitions and Notes

Llano Disposal LLC	Project Name:	Hummingbird Brine Station	
PO Box 250	Project Number:	22117-0001	Reported:
Lovington NM, 88260	Project Manager:	Elizabeth Pickarel	10/11/23 16:50

H5	pH is specified to be performed in the field within 15 minutes of sampling. The sample analysis was performed as quickly as possible.
M4	Matrix spike recovery value is suspect since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS spike recovery was acceptable.
T19	The sample matrix was not a typical aqueous matrix and took a significant amount of time to evaporate. The Final weight measured was past the prescribed holding time.
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference
DNI	Did Not Ignite

Note (1): Methods marked with \*\* are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.

## Page 1 of 1

### Project Information

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**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

# Discharge Plan Application for Brine Extraction Facilities

## Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592

### Envirotech Analytical Laboratory

Printed: 10/4/2023 9:58:31AM

#### Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: <u>Umo Disposal LLC</u>	Date Received: <u>10/04/23 08:20</u>	Work Order ID: <u>E310020</u>
Phone: <u>575-605-6490</u>	Date Logged In: <u>10/04/23 09:53</u>	Logged In By: <u>Caitlin Mars</u>
Email: <u>service.umo@comcast.net</u>	Due Date: <u>10/10/23 17:00 (4 day TAT)</u>	

#### Chain of Custody (COC)

1. Does the sample ID match the COC? Yes
2. Does the number of samples per sampling site location match the COC? Yes
3. Were samples dropped off by client or carrier? Yes
4. Was the COC complete, i.e., signatures, dates/times, requested analyses? Yes
5. Were all samples received within holding time? Yes

Carrier: Courier

Note: Analysis, such as pH which should be conducted in the field, i.e., 15 minute hold time, are not included in this discussion.

#### Sample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT? Yes

#### Sample Cooler

7. Was a sample cooler received? Yes
8. If yes, was cooler received in good condition? Yes
9. Was the sample(s) received intact, i.e., not broken? Yes
10. Were custody/security seals present? No
11. If yes, were custody/security seals intact? NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Yes

Note: Thermal preservation is not required, if samples are received w/in 15 minutes of sampling

13. If no visible ice, record the temperature. Actual sample temperature: 4°C

#### Sample Container

14. Are aqueous VOC samples present? No
15. Are VOC samples collected in VOA Vials? NA
16. Is the head space less than 6-8 mm (pea sized or less)? NA
17. Was a trip blank (TB) included for VOC analyses? NA
18. Are non-VOC samples collected in the correct containers? Yes
19. Is the appropriate volume/weight or number of sample containers collected? Yes

#### Field Label

20. Were field sample labels filled out with the minimum information:
  - Sample ID? Yes
  - Date/Time Collected? No
  - Collector's name? No

#### Sample Preservation

21. Does the COC or field labels indicate the samples were preserved? No
22. Are sample(s) correctly preserved? NA
24. Is lab filtration required and/or requested for dissolved metals? No

#### Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase? No
27. If yes, does the COC specify which phase(s) is to be analyzed? NA

#### Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory? No
29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

#### Client Instruction

#### Comments/Resolution

Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Attachment N – Public Notice**



**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Public Notice**

**Legal notification for offsite Public Notice**

**per Water Quality Control Commission Regulations 20.6.2.3108.B.1 NMAC**

Llano Disposal, L.L.C. (Mr. Darr Angell), 783 Highway 483, Lovington, NM 88260 has submitted a renewal application to the New Mexico Oil Conservation Division (NMOCD) for continued operation of a Class III brine well, located in Unit Letter L of Section 27, Township 16 South, Range 33 East (Lat. 32.8909645°, Long. -103.6576157°), Lea County, New Mexico. The brine injection well is located approximately 17.8 miles west of Lovington, New Mexico on US Highway 82, then south 0.62 miles on Rooney Rd, then east 0.3 miles on lease road to well location. The brine well is named State 27 #1 and is in the Salado (Salt) formation and is identified as BW-38, Facility ID is **FCJC2135034752**.

In the freshwater source well, there is an electric submersible pump which pumps fresh water from the well. That water is then transported approximately 75 feet north through a buried 3" SDR-11 polyethylene pipeline, to a 500-barrel holding tank. From that tank, the fresh water is then pumped down the well tubing at a rate of approximately 30 to 40 GPM, and a normal operating pressure of 200 to 260 psi. Brine water generated is then circulated up the well casing. Brine water is then transported via 3" SDR-11 polyethylene pipeline approximately 5928' feet west, to 3,1000-barrel fiberglass storage tanks for commercial sale.

The produced brine water is metered then transported via a second polyethylene pipeline approximately 5928 feet west to 3, 1000-barrel fiberglass storage tanks at the Hummingbird Brine Station located in Unit Letter L of Section 28, Township 16 South, Range 33 East (Lat. 32.890740°, Long. -103.676520°), Lea County, New Mexico. This brine station is located approximately 18.7 miles west of Lovington, New Mexico or 0.2 miles south of the intersection of US Hwy 82 and County Road L-122 (Hummingbird Rd).

The brine water is transferred/sold by delivery into water trucks on a concrete loading pad with containment curbing and a sump to prevent spills. There is a synthetic liner and secondary containment underneath the brine storage tanks. The entire infrastructure is located on private land owned by the applicant.

Brine water is used in the oil and gas industry to supply concentrated salt water (i.e., brine water) with a total dissolved concentration of approximately 320,000 mg/l and a density that is 20% higher than fresh water. Typical brine water is 10 pounds per gallon (ppg) with the increased weight due to dissolved NaCl. Heavy brine water is essential in preventing blow-outs in high pressure gas wells and prevents loss of circulation when drilling through salt zones typically found in southeastern New Mexico.

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

The brine well has been designed to produce approximately 13 million barrels of brine water over a 20-year life period. The anticipated cavern radius will not exceed 150 feet. The well has been located on private land and provides a minimum of 2150 feet separation from any significant features, such as houses, water supplies, buildings, schools, businesses, etc.

Groundwater possibly affected by an unintentional spill or leak is located at a depth of approximately 140 - 190 feet below ground level. Typical groundwater in this area has a total dissolved solids concentration of approximately 400 mg/l. According to the Office of the State Engineer, average water well depth in the area is 223 feet below ground level. The brine facility has been designed and permitted to have no intentional water contaminants discharged to the surface or subsurface for the protection of groundwater. The brine station has a concrete loading pad for trucks and a synthetic liner underneath tanks areas to prevent any spills or leaks from reaching the ground surface. The brine well has cemented casing and tubing strings to protect groundwater.

The owner and operator of the facility is:

Llano Disposal, LLC  
498 Highway 483  
Lovington, NM 88260

Comments and inquiries about the application may be directed to Llano Disposal, LLC c/o Mr. Marvin Burrows 575-631-8067 or email [ch2o.fresh@gmail.com](mailto:ch2o.fresh@gmail.com). Mr. Burrows is a consultant to Llano Disposal, LLC providing assistance for this project.

The New Mexico Oil Conservation Division (OCD) will accept comments and statements of interest regarding this application and will create a facility-specific mailing list for persons who wish to receive future notices. Persons interested in obtaining further information, submitting comments, or requesting to be on a facility-specific mailing list for future notices may contact:

Environmental Bureau Chief  
New Mexico Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, NM 87505  
Telephone: 505-476-3440

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

**Aviso Público**  
**Notificación legal para el aviso público externo**

**según las Regulaciones de la Comisión de Control de la Calidad del Agua**  
**20.6.2.3108.B.1 NMAC**

Llano, L.L.C. (Sr. Darr Angell), 783 Highway 483, Lovington, NM 88260 ha presentado una solicitud de renovación a la División de Conservación de Petróleo de Nuevo México (NMOCD) para continuar la operación de un pozo de salmuera Clase III, ubicado en la Unidad Letra L de la Sección 27, Municipio 16 Sur, Rango 33 Este (Lat. 32.8909645°, Long. -103.6576157°), Condado de Lea, Nuevo México. El pozo de inyección de salmuera se encuentra aproximadamente a 17.8 millas al oeste de Lovington, Nuevo México, en la autopista US 82, luego al sur 0.62 millas en Rooney Rd, luego 0.3 millas hacia el este en el camino de arrendamiento hasta la ubicación del pozo. El pozo de salmuera se denomina Estado 27 #1 y se encuentra en la formación Salado y se identifica como BW-38, la identificación de la instalación es **FCJC2135034752**.

En el pozo fuente de agua dulce, hay una bomba eléctrica sumergible que bombea agua dulce desde el pozo. Luego, esa agua se transporta aproximadamente 75 pies hacia el norte a través de una tubería de polietileno SDR-11 de 3" enterrada, hasta un tanque de retención de 500 barriles. Desde ese tanque, el agua dulce se bombea por la tubería del pozo a una velocidad de aproximadamente 30 a 40 GPM y una presión de operación normal de 200 a 260 psi. El agua salada generada circula por el revestimiento del pozo. Luego, el agua salada se transporta a través de una tubería de polietileno SDR-11 de 3" aproximadamente a 5928 pies al oeste, a tanques de almacenamiento de fibra de vidrio de 3,1000 barriles para su venta comercial.

El agua salada producida se mide y luego se transporta a través de una segunda tubería de polietileno aproximadamente a 5928 pies al oeste a 3 tanques de almacenamiento de fibra de vidrio de 1000 barriles en la Estación de Salmuera Hummingbird ubicada en la Unidad Letra L de la Sección 28, Municipio 16 Sur, Rango 33 Este (Lat. 32.890740°, Long. -Artículo 103.676520°), Condado de Lea, Nuevo México. Esta estación de salmuera se encuentra aproximadamente a 18.7 millas al oeste de Lovington, Nuevo México o 0.2 millas al sur de la intersección de US Hwy 82 y County Road L-122 (Hummingbird Rd).

El agua salada se transfiere/vende mediante entrega en camiones cisterna en una plataforma de carga de hormigón con bordillo de contención y un sumidero para evitar derrames. Hay un revestimiento sintético y una contención secundaria debajo de los tanques de almacenamiento de salmuera. Toda la infraestructura se encuentra en terrenos privados propiedad del solicitante.

El agua salada se utiliza en la industria del petróleo y el gas para suministrar agua salada concentrada (es decir, agua salada) con una concentración total disuelta de aproximadamente 320.000 mg/l y una densidad que es un 20% mayor que el agua

**Discharge Plan Application for Brine Extraction Facilities**  
**Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**

dulce. El agua salada típica es de 10 libras por galón (ppg) con el aumento de peso debido al NaCl disuelto. El agua salada pesada es esencial para prevenir explosiones en pozos de gas de alta presión y evita la pérdida de circulación cuando se perfora a través de zonas salinas que normalmente se encuentran en el sureste de Nuevo México.

El pozo de salmuera ha sido diseñado para producir aproximadamente 13 millones de barriles de agua de salmuera durante un período de vida útil de 20 años. El radio anticipado de la caverna no excederá los 150 pies. El pozo se ha ubicado en un terreno privado y proporciona un mínimo de 2150 pies de separación de cualquier característica significativa, como casas, suministros de agua, edificios, escuelas, negocios, etc.

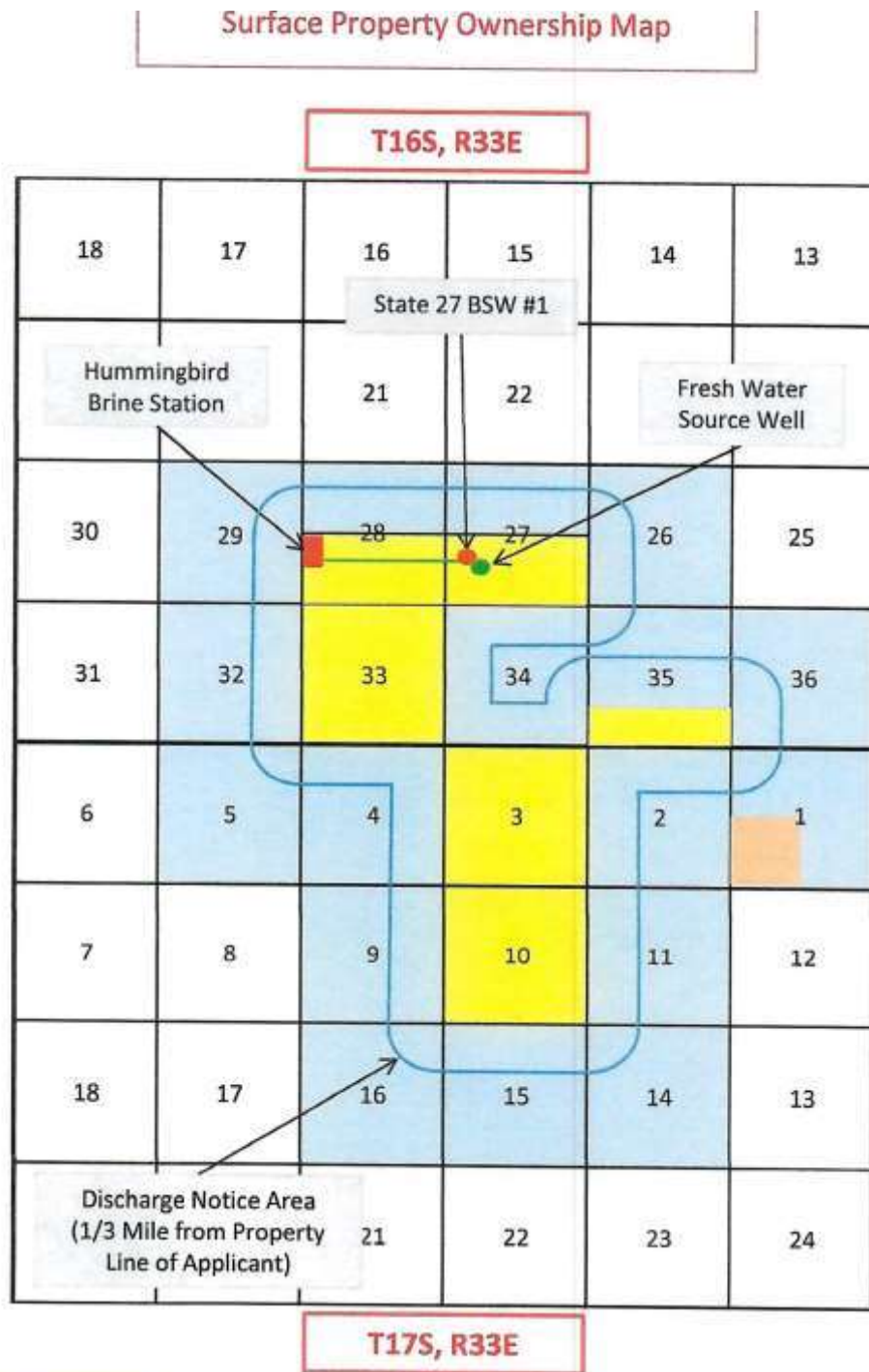
El agua subterránea posiblemente afectada por un derrame o fuga no intencional se encuentra a una profundidad de aproximadamente 140 a 190 pies por debajo del nivel del suelo. El agua subterránea típica en esta área tiene una concentración total de sólidos disueltos de aproximadamente 400 mg/l. Según la Oficina del Ingeniero del Estado, la profundidad promedio de los pozos de agua en el área es de 223 pies por debajo del nivel del suelo. La instalación de salmuera ha sido diseñada y autorizada para que no se descarguen contaminantes intencionales del agua a la superficie o al subsuelo para la protección de las aguas subterráneas. La estación de salmuera tiene una plataforma de carga de concreto para camiones y un revestimiento sintético debajo de las áreas de los tanques para evitar que cualquier derrame o fuga llegue a la superficie del suelo. El pozo de salmuera tiene una tubería de revestimiento cementada y cuerdas para proteger el agua subterránea. El propietario y operador de la instalación es:

Llano, Disposición de Llano, LLC  
498 Carretera 483  
Lovington, NM 88260

Los comentarios y consultas sobre la solicitud pueden dirigirse a Llano Disposal, LLC c/o Mr. Marvin Burrows 575-631-8067 o enviar un correo electrónico a [ch2o.fresh@gmail.com](mailto:ch2o.fresh@gmail.com). El Sr. Burrows es consultor de Llano Disposal, LLC y brinda asistencia para este proyecto. La División de Conservación de Petróleo de Nuevo México (OCD, por sus siglas en inglés) aceptará comentarios y declaraciones de interés con respecto a esta solicitud y creará una lista de correo específica de la instalación para las personas que deseen recibir avisos futuros. Las personas interesadas en obtener más información, enviar comentarios o solicitar estar en una lista de correo específica de la instalación para futuros avisos pueden comunicarse con:

Jefe de la Oficina de Medio Ambiente  
División de Conservación de Petróleo de Nuevo México  
1220 South Saint Francis Drive  
Santa Fe, NM 87505  
Teléfono: 505-476-3440

**Discharge Plan Application for Brine Extraction Facilities  
Hummingbird Brine Station – State 27 BSW #1, API 30-25-20592**





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**NOTIFICATION LIST - ADJOINING PROPERTY OWNERS**

#	NAME	ADDRESS	CITY STATE ZIP	TYPE
	Angell #2 Family LP c/o Mr. Darr Angell	P. O. Box 190	Lovington, NM 88260	Surface Owner/Applicant

#	NAME	ADDRESS	CITY STATE ZIP	TYPE
1	State of New Mexico Commissioner of Public Land	P. O. Box 1148	Santa Fe, NM 87504	Adjoining Property Owner

**NOTIFICATION LIST - MINERAL OWNER AND LESSEE**

#	NAME	ADDRESS	CITY STATE ZIP	TYPE
	State of New Mexico Commissioner of Public Land	P. O. Box 1148	Santa Fe, NM 87504	Mineral Owner
2	Cimarex Energy Company	600 N. Marientfeld St, Suite 600	Midland, TX 79701	Mineral Lessee (VC-0071-0000)

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**Public Notice Letter**

**Via Certified Mail**

Date: October 27, 2023

To: State of New Mexico  
Commissioner of Public Lands  
P.O. Box 1148  
Santa Fe, NM 87504

From: Laura Angell  
Llano Disposal, LLC

RE: Legal Notification for offsite Public Notice

Llano Disposal, L.L.C. (Mr. Darr Angell), 783 Highway 483, Lovington, NM 88260 has submitted a renewal application to the New Mexico Oil Conservation Division (NMOCD) for continued operation of a Class III brine well, located in Unit Letter L of Section 27, Township 16 South, Range 33 East (Lat. 32.8909645°, Long. -103.6576157°), Lea County, New Mexico. The brine injection well is located approximately 17.8 miles west of Lovington, New Mexico on US Highway 82, then south 0.62 miles on Rooney Rd, then east 0.3 miles on lease road to well location. The brine well is named State 27 #1 and is in the Salado (Salt) formation and is identified as BW-38, Facility ID is **FCJC2135034752**.

In the freshwater source well, there is an electric submersible pump which pumps fresh water from the well. That water is then transported approximately 75 feet north through a buried 3" SDR-11 polyethylene pipeline, to a 500-barrel holding tank. From that tank, the fresh water is then pumped down the well tubing at a rate of approximately 30 to 40 GPM, and a normal operating pressure of 200 to 260 psi. Brine water generated is then circulated up the well casing. Brine water is then transported via 3" SDR-11 polyethylene pipeline approximately 5928' feet west, to 3,1000-barrel fiberglass storage tanks for commercial sale.

The produced brine water is metered then transported via a second polyethylene pipeline approximately 5928 feet west to 3, 1000-barrel fiberglass storage tanks at the Hummingbird Brine Station located in Unit Letter L of Section 28, Township 16 South, Range 33 East (Lat. 32.890740°, Long. -103.676520°), Lea County, New Mexico. This brine station is located approximately 18.7 miles west of Lovington, New Mexico or 0.2 miles south of the intersection of US Hwy 82 and County Road L-122 (Hummingbird Rd).

The brine water is transferred/sold by delivery into water trucks on a concrete loading pad with containment curbing and a sump to prevent spills. There is a synthetic liner and secondary containment underneath the brine storage tanks. The entire infrastructure is located on private land owned by the applicant.

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Brine water is used in the oil and gas industry to supply concentrated salt water (i.e., brine water) with a total dissolved concentration of approximately 320,000 mg/l and a density that is 20% higher than fresh water. Typical brine water is 10 pounds per gallon (ppg) with the increased weight due to dissolved NaCl. Heavy brine water is essential in preventing blow-outs in high pressure gas wells and prevents loss of circulation when drilling through salt zones typically found in southeastern New Mexico.

The brine well has been designed to produce approximately 13 million barrels of brine water over a 20-year life period. The anticipated cavern radius will not exceed 150 feet. The well has been located on private land and provides a minimum of 2150 feet separation from any significant features, such as houses, water supplies, buildings, schools, businesses, etc.

Groundwater possibly affected by an unintentional spill or leak is located at a depth of approximately 140 - 190 feet below ground level. Typical groundwater in this area has a total dissolved solids concentration of approximately 400 mg/l. According to the Office of the State Engineer, average water well depth in the area is 223 feet below ground level. The brine facility has been designed and permitted to have no intentional water contaminants discharged to the surface or subsurface for the protection of groundwater. The brine station has a concrete loading pad for trucks and a synthetic liner underneath tanks areas to prevent any spills or leaks from reaching the ground surface. The brine well has cemented casing and tubing strings to protect groundwater. The owner and operator of the facility is:

Llano Disposal, LLC  
498 Highway 483  
Lovington, NM 88260

Comments and inquiries about the application may be directed to Llano Disposal, LLC c/o Mr. Marvin Burrows 575-631-8067 or email [ch2o.fresh@gmail.com](mailto:ch2o.fresh@gmail.com). Mr. Burrows is a consultant to Llano Disposal, LLC providing assistance for this project.

The New Mexico Oil Conservation Division (OCD) will accept comments and statements of interest regarding this application and will create a facility-specific mailing list for persons who wish to receive future notices. Persons interested in obtaining further information, submitting comments, or requesting to be on a facility-specific mailing list for future notices may contact:

Environmental Bureau Chief  
New Mexico Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, NM 87505  
Telephone: 505-476-3440