Initial

Application

Part I

Received 10/14/20



October 14, 2020

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

Subject: Anthem Water Solutions, LLC – Munoz SWD #1
Application for Authorization to Inject

To whom it may concern:

On behalf of Anthem Water Solutions, LLC, ALL Consulting (ALL) has prepared and is submitting an application for the Munoz SWD #1 to convert an existing plugged and abandoned well for the purpose of saltwater disposal into the Bell Canyon and upper Cherry Canyon formations.

This re-open and re-completion is for API No. 30-015-33518, which was drilled and completed by CHI Operating, Inc (CHI) in 2004. The surface and intermediate casing were cemented to the surface, and the production casing was cemented to 8,300 feet with an original total depth of 12,540 feet. This well was properly plugged and abandoned by CHI in June of 2008 and a copy of the Sundry Notice plugging report C-103 is included with this application package.

If you have any questions regarding this application, please contact me at (918) 382-7581 or e-mail me at nalleman@all-llc.com.

Sincerely, ALL Consulting

Nathan Alleman

Sr. Regulatory Specialist

Attachment

LTPRP-201014-C-1080

RECEIVED: 10/14/20 REVIEWER:

APP NO:

pBL2029342480

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Geological & Engineering Bureau – 1220 South St. Francis Drive, Santa Fe, NM 87505



Applicant:	OGRID Number:
Vell Name:	
Pool:	Pool Code:
SUBMIT ACCURATE AND COMPLETE INFORMATION REC	
1) TYPE OF APPLICATION: Check those which apply fo A. Location – Spacing Unit – Simultaneous Dedica NSL NSP(PROJECT AREA)	
[II] Injection – Disposal – Pressure Increase – E	☐OLS ☐OLM nhanced Oil Recovery ☐EOR ☐ PPR FOR OCD ONLY
2) NOTIFICATION REQUIRED TO: Check those which ap A. Offset operators or lease holders B. Royalty, overriding royalty owners, revenue C. Application requires published notice D. Notification and/or concurrent approval by E. Notification and/or concurrent approval by F. Surface owner G. For all of the above, proof of notification or H. No notice required	Notice Complete owners Application Content Complete Complete
3) CERTIFICATION: I hereby certify that the information administrative approval is accurate and complete understand that no action will be taken on this app notifications are submitted to the Division.	to the best of my knowledge. I also
Note: Statement must be completed by an individual	with managerial and/or supervisory capacity.
	Date
Print or Type Name	
Signature sdf	Phone Number
Signature	e-mail Address

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 RecoveryPressure MaintenanceXDisposalStorage Application qualifies for administrative approval?XYesNo
II.	OPERATOR: Anthem Water Solutions, LLC
	ADDRESS: 5914 W. Courtyard Dr. Suite 320, Austin, TX, 78730
	CONTACT PARTY: Nathan Alleman PHONE: 918-382-7581
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?YesXNo 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:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, 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: Nathan Alleman TITLE: Sr. Regulatory Specialist
	SIGNATURE: Notice Allera DATE: 10/14/2020
*	E-MAIL ADDRESS: nalleman@all-llc.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:

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.

Application for Authorization to Inject

Well Name: Munoz SWD #1

III - Well Data (The Wellbore Diagram is included as Attachment 1)

A.

(1) General Well Information:

Operator: Anthem Water Solutions, LLC (OGRID No. 330069)

Lease Name & Well Number: Munoz SWD #1 Location Footage Calls: 660 FNL & 660 FEL

Legal Location: Lot 1, S1 T23S R27E

Ground Elevation: 3,057'

Proposed Injection Interval: 2,730' - 3,600'

County: Eddy

(2) Casing Information:

Туре	Hole Size	Casing Size	Casing Weight	Setting Depth	Sacks of Cement	Estimated TOC	Method Determined
Surface	17.5"	13.375"	68.0 lb/ft	325'	400	Surface	Circulation
Intermediate	12.25"	9.625"	36 & 40 lb/ft	5,842'	1,420	Surface	Circulation
Production: Hole	size: 8.75" Ca	sing Size: 5.5	5" Casing Weig	ht: 17 & 20	lb/ft Setting I	Depth: 12.540 Sa	icks of

Cement: 925 Estimated TOC: 8,300 Method Determined: CBL

Note: 5.5" production casing cut off at 8,000' during previous plugging operations. 4.5" 11.6 lb/ft Tubing 2,630'

(3) Tubing Information:

4.5" (11.6# N80 IPC) fiberglass-coated tubing with setting depth of 2,630'

(4) Packer Information: Baker Hughes Hornet or equivalent packer set at 2,630'

В.

(1) Injection Formation Name: Bell Canyon and upper Cherry Canyon

Pool Name: SWD; BELL CANYON - CHERRY CANYON

Pool Code: 96802

- (2) Injection Interval: Perforated injection between 2,730′ 3,600′
- (3) Drilling Purpose: Re-Completion for Salt Water Disposal
- (4) Other Perforated Intervals: All other perforations are separated from the injection zone by both CIBP and multiple cements plugs:
 - 12,089' 12,365'
- (5) Overlying Oil and Gas Zones: No overlying oil and gas zones exist.
 - Upper Bell Canyon (2,460')
- (6) Underlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.
 - Bone Springs (5,850')
 - Wolfcamp (9,270')
 - Morrow (11,910')

V - Well and Lease Maps

The following maps are included in **Attachment 2**:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1/2-mile Well Detail List with Casing Information for Penetrating Wells
- Potash Lease Map

VI – AOR Well List

A list of the wells within the 1/2-mile AOR is included in **Attachment 2**.

There are three (3) wells that penetrate the injection zone; One (1) of the wells that will penetrate the injection zone is proposed, and, based on application information it will be properly cased and cemented to isolate the injection zone. Additionally, there is one (1) active well that penetrates the injection zone that has been properly cased and cemented to isolate the injection zone, and one (1) well that has been plugged & abandoned. Wellbore diagrams and casing & cementing information for these wells are included in **Attachment 2**.

VII – Proposed Operation

- (1) Proposed Maximum Injection Rate: 10,000 bpd Proposed Average Injection Rate: 8,000 bpd
- (2) A closed system will be used.
- (3) Proposed Maximum Injection Pressure: 546 psi (based on 0.2 psi per foot)
 Proposed Average Injection Pressure: approximately 300 250 psi
- (4) Source Water Analysis: It is expected that the injectate will consist of produced water from production wells completed in the Wolfcamp and Bone Springs formations. Analysis of water from these formations is included in *Attachment 3*.
- (5) Injection Formation Water Analysis: The proposed SWD will be injecting water into the Bell Canyon and upper Cherry Canyon formations which are a non-productive zone known to be compatible with formation water from the Wolfcamp and Bone Springs formations. Water analyses results were selected from intervals comparable to that of the injection zone in the Bell Canyon and upper Cherry Canyon Formations Delaware Mountain Group. Water analysis from in the area are included in *Attachment 4*.

VIII – Geologic Description

The proposed injection interval includes the Bell and upper Cherry Canyon formation from 2,730 - 3,600 feet. This formation consists of interbedded sandstones with interbedded siltstones and shales members. Several thick sections of porous and permeable intervals capable of taking water are present within the subject formation in the area.

The base of the deepest Underground Source of Drinking Water (USDW) is at a depth of approximately 402 feet which is covered by casing set at 5,842 feet, which is cemented to

surface and isolates the USDW. Geophysical log assessment was conducted to accurately determine the top of the Rustler formation, as well as, the top and the base of the Salado formation in this area. Water well depths in the area range from approximately 340 - 560 feet below ground surface.

IX – Proposed Stimulation Program

A small cleanup acid job may be used to remove mud and drill cuttings from the formation. However, no other formation stimulation is currently planned.

X – Logging and Test Data

Logs will be submitted to the Division upon completion of the well.

XI – Fresh Groundwater Samples

Based on a review of data from the New Mexico Office of the State Engineer, there are 44 groundwater wells located within 1-mile of the proposed SWD location; Two (2) water samples were collected for this application. One (1) sample was collected on April 29th, 2020 (C-01286), and one (1) was collected on September 17, 2020 (C-03371 Pod 1). Sampling results for water wells C-01286 and C-03371 Pod 1 are included in *Attachment 5*.

A water well map of the area is included in **Attachment 5**.

XII – No Hydrologic Connection Statement

No faulting is present in the area that would provide a hydrologic connection between the injection interval and overlying USDWs. Additionally, the casing program has been designed to ensure there will be no hydrologic connection between the injection interval and overlying USDWs.

XIII – Proof of Notice

A Public Notice was filed with the Carlsbad Current-Argus newspaper and an affidavit is included in **Attachment 6**.

A copy of the application was mailed to the OCD District Office, landowner, and leasehold operators within 1/2-mile of the proposed SWD location. A list of the recipients, as well as delivery confirmations, are included in **Attachment 6**.

Attachments

Attachment 1:

- C-102
- Existing Wellbore Diagram
- Proposed Wellbore Diagram
- C-103

Attachment 2: Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1/2-mile Well Detail List with Casing Information for Penetrating Wells
- Potash Lease Map

Attachment 3: Source Water Analyses

Attachment 4: Injection Formation Water Analyses

Attachment 5: Water Well Map and Well Data

Attachment 6: Public Notice Affidavit and Notice of Application Confirmations

Attachment 1

- C-102
- Existing Wellbore DiagramProposed Wellbore Diagram
- C-103

District | 1625 N. French Dr. Hobbs, NM 88240

District || 811 South First, Artesia, NM 86210

District III 1000 Rio Brazos Rd., Aztec NM 87410

District IV 2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy, Minerals & Natural Resources

OIL CONSERVATION DIVISION

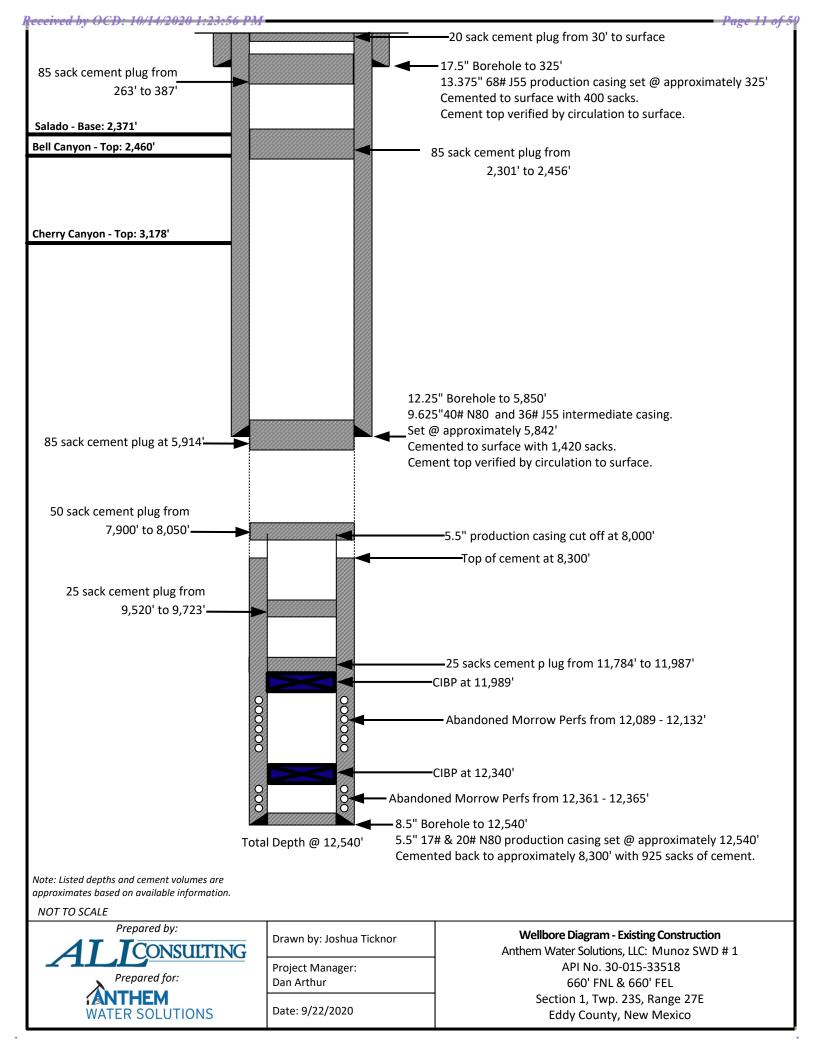
2040 South Pacheco Santa Fe, N M 87505

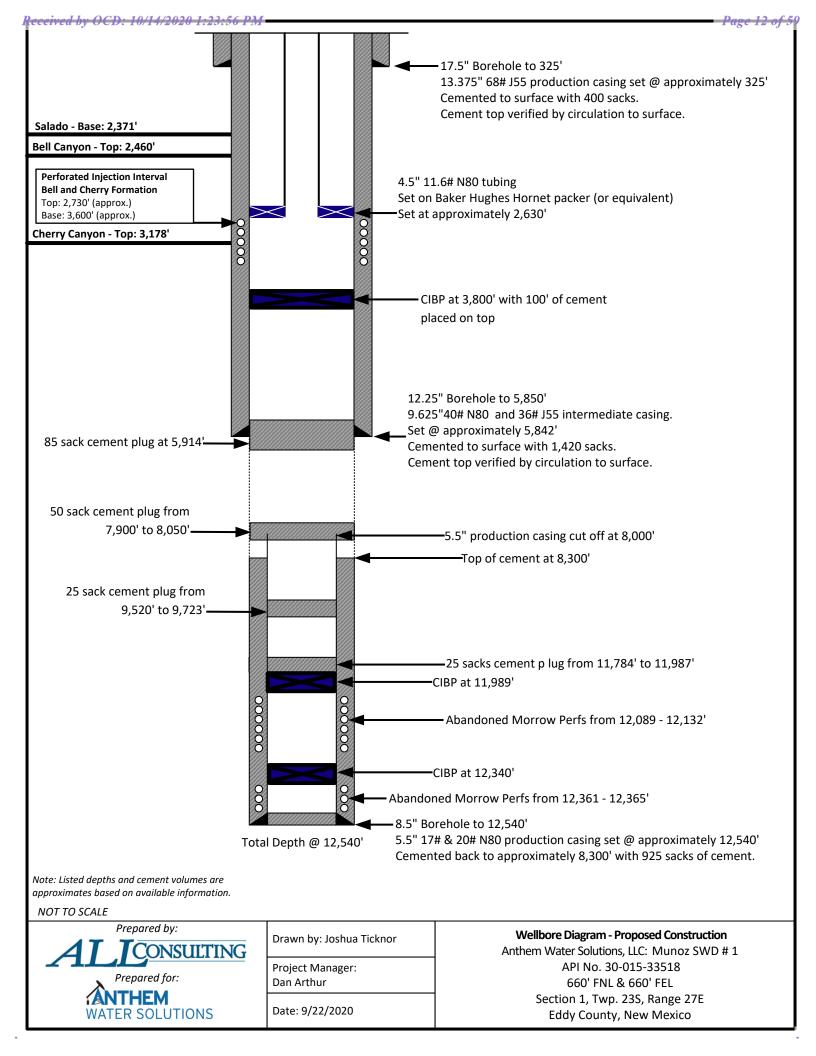
Revised March 17, 1999 Submit to Appropriate District Office

State Lease — 4 Copies Fee Lease — 3 Copies

AMENDED REPORT WELL LOCATION AND ACREAGE DEDICATION PLAT

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District II	IL CONSERVATION DIVIS	20 015 22519
1301 W. Grand Ave , Artesia, NM 88210 District III	1220 South St. Francis Dr	5. Indicate Type of Lease
1000 Rio Brazos Rd., Aztec, NM 87410	Santa Fe, NM 87505	STATE FEE
<u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM	Santa Pe, NWI 87303	6. State Oil & Gas Lease No.
87505		
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· —	ll XOther P&A	8. Well Number #1
2. Name of Operator CHI OPERATING, INC	MAR 27 200	9. OGRID Number 004378
3. Address of Operator PO BOX 1799 MIDLAND, TX 79702	OCD-ARTES	10. Pool name or Wildcat
4. Well Location		Loving Morrow, Notti
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	Range 27E	NMPM County EDDY
	evation (Show whether DR, RKB, R	· · · · · · · · · · · · · · · · · · ·
Pit or Below-grade Tank Application ☐ or Closure	GL 3,057	
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12. Check Appropri	riate Box to Indicate Nature o	of Notice, Report or Other Data
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		details, and give pertinent dates, including estimated date eletions: Attach wellbore diagram of proposed completion
or recompletion.	E ROLE 1103. For Multiple Collip	netions: Attach wembore diagram of proposed completion
	Tool @ 2389'; 9 5/8" csg @ 5850'	w/1420sx, circ 102sx; TOC @ 8300'; 2 3/8" tbg & pkr
@ 11,888'; Open perfs 12,089-094, 12097-19		40'; Perf 12361-365; 5 ½" csg @ 12,540' w/925sx;
PBTD @ 12,340'; TD @ 12,540.		
3/10/08 MIRU, NU BOP, POOH production	equipment.	
·		
3/12/08 Set CIBP @ 11,989'. SDFN 3/13/08 Circ hole w/mud: spot 25sx CBP @	11,987-784' WOC: snot 25cv CRE	@ 9723-9520' WOC, start out of hole w/5 ½" csg.
SDFN	11,701 101 11 OC, spot 2381 CBF	C 7723-7520 HOC, start out of note w/3 72 esg.
3/17/08 Finished POOH & cut 5 1/2" csg @ 8		
3/19/08 RIH w/tbg to 8050'(50' inside csg s		000' WOC. SDFN
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		knowledge and belief. I further certify that any pit or belowal permit ☐ or an (attached) alternative OCD-approved plan ☐.
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HORNET Packer

Product Family No. H64682

HORNET EL Packer

Product Family No. H64683

The mechanically set HORNET[™] packer offers ease of operation with quarter-turn right to set and release. Converting it for wireline-setting applications is simple and inexpensive. The HORNET packer provides for landing in compression, tension, or neutral positions. Every component from the jay track, to the internal bypass, to the packing-element system and the upper slip assembly has been developed to ensure the HORNET's setting and releasing reliability.

The HORNET EL packer is run and set on electric line using an E-4[™] (Product Family No. H43702) with a slow-set power charge or a J[™] setting tool (Product Family No. H41371) and a special wireline adapter kit. An L-10[™] type on/off seal nipple is run on top of the packer to connect the tubing to the packer and to house a blanking plug when the packer is used as a temporary bridge plug.

Features and Benefits

- Upper Slip Assembly:
 - Thoroughly tested across API minimum to maximum casing ID tolerances for each specified casing weight, for setting and releasing reliability
 - Slip-wicker configuration providing bidirectional-load support with solid upper cone to support highest tensile loads
 - Staged-release action eliminates high-overpull requirement
 - Minimal set-down weight required to anchor slips
- Internal Bypass Seal:
 - Durable bypass seal design provides sealing after unloading, under differential pressures
 - No O-ring sealing system
- Packing Element System:
 - Fully tested to combined ratings at the API's maximum ID tolerance

- Patented enhancements to control overboost
- High-performance, three-piece element system
- Lower Slip and Jay Assembly:
 - Slips and drag blocks tested to maximum API tolerance ID for positive set and ease of release
 - One-quarter-turn right setting and releasing action
 - Packoff of packing elements with applied tension or compression
 - Spacing in jay ensures opening of internal bypass, before slip releasing action beginsimportant to both ease of release and safety
 - Automatically returns to running position



No. H64682

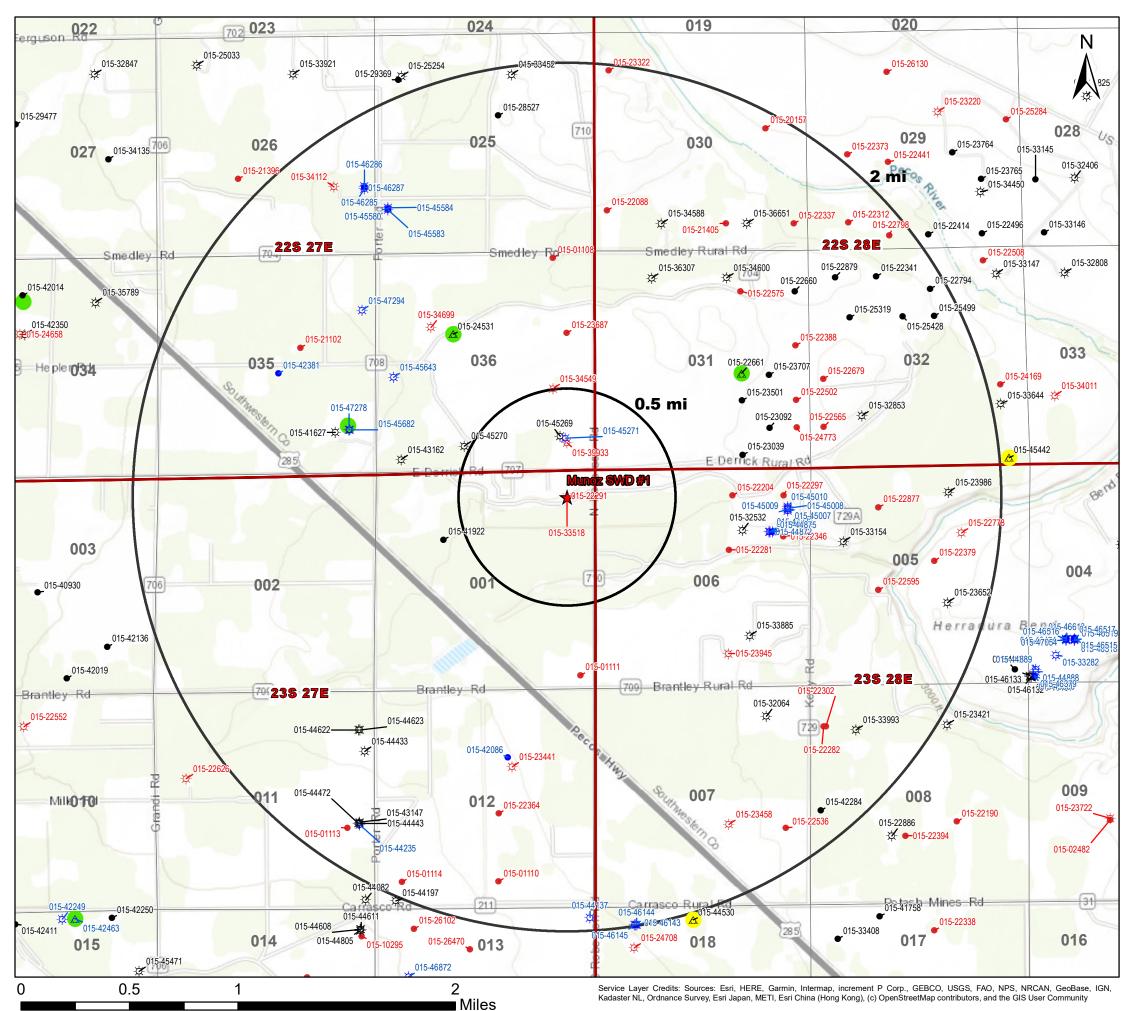
HORNET EL Packer Product Family No. H64683

Attachment 2

Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1/2-mile Well Detail List with Casing Information for Penetrating Wells
- Potash Lease Map

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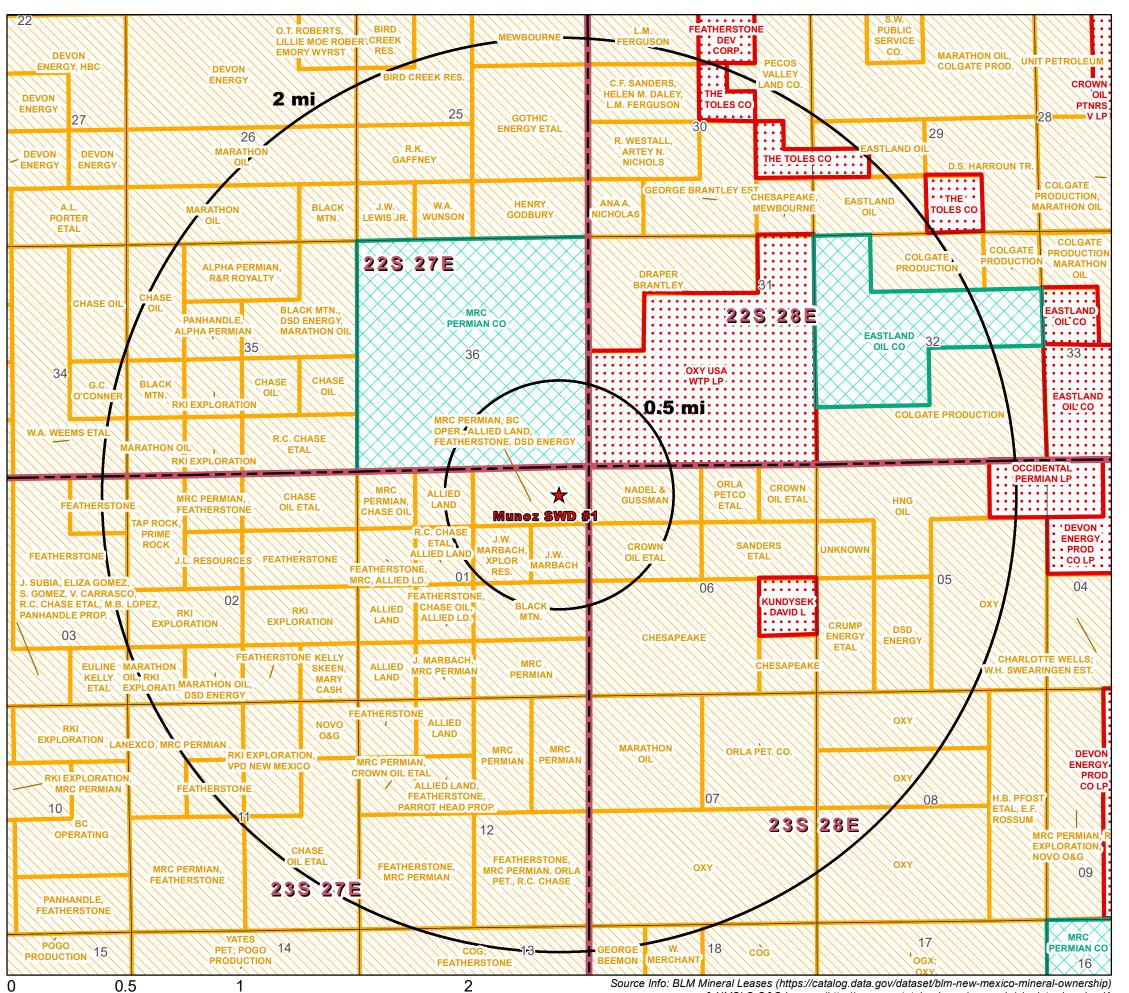
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- ★ Proposed SWD
- ⇔ Gas, Active (47)
- Gas, New (32)
- Gas, Plugged (16)
- Oil, Active (32)
- Oil, New (9)
- Oil, Plugged (47)
- △ Salt Water Injection, Active (4)
- △ Salt Water Injection, New (1)
- Deep Injection Zone (2)
- Shallow Injection Zone (5)

Source Info: NMOCD O&G Wells updated 8/3/2020 (http://www.emnrd.state.nm.us/OCD/ocdgis.html)



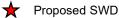
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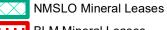


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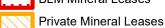
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BLM Mineral Leases



Unleased Minerals - Private Owned

Mineral Lease Area of Review

Munoz SWD #1

Eddy County, New Mexico

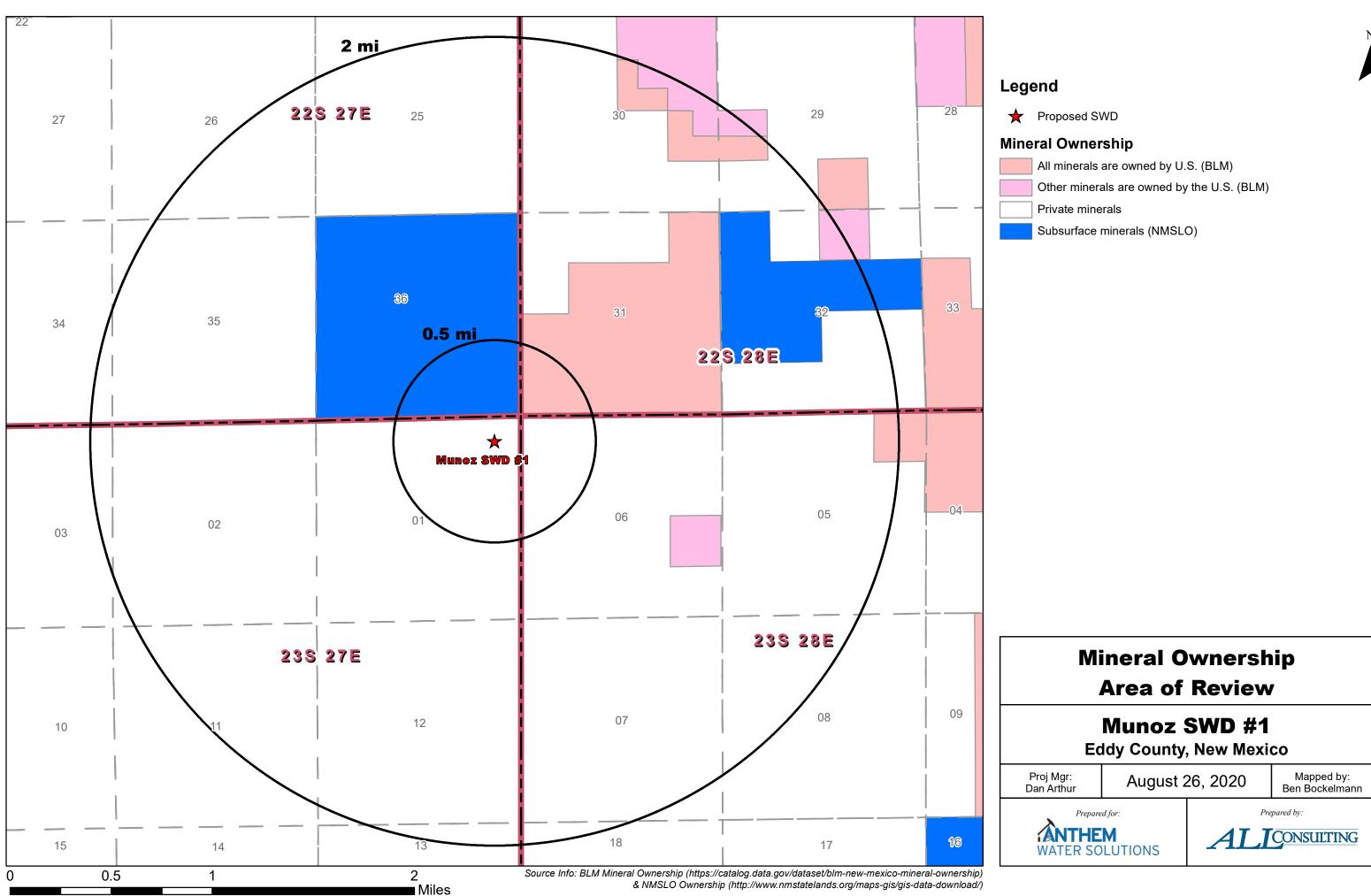
Proj Mgr: Dan Arthur September 01, 2020

Mapped by: Ben Bockelmann

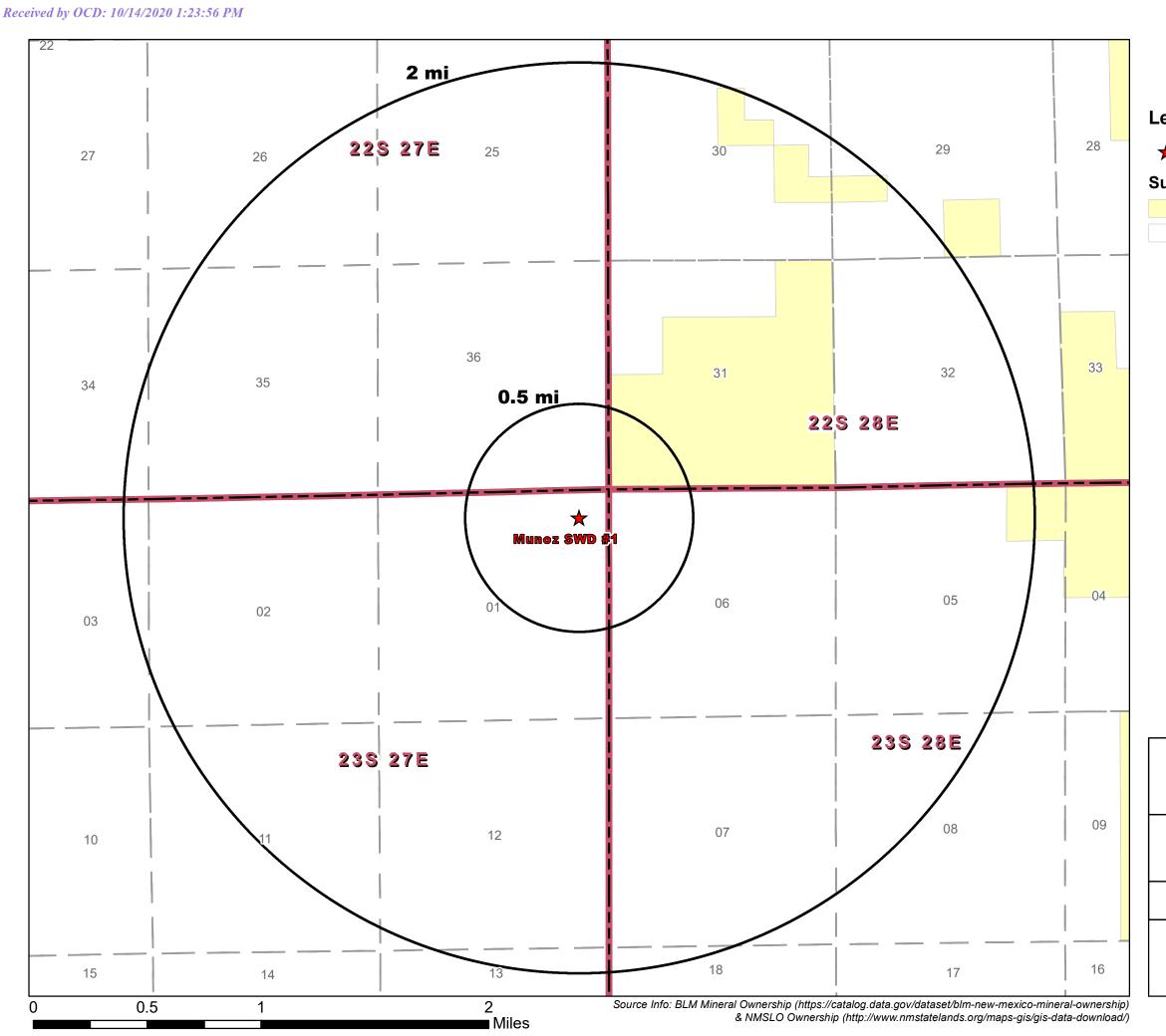




Source Info: BLM Mineral Leases (https://catalog.data.gov/dataset/blm-new-mexico-mineral-ownership) & NMSLO O&G Leases (http://www.nmstatelands.org/maps-gis/gis-data-download/) Received by OCD: 10/14/2020 1:23:56 PM



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Surface Ownership

BLM

Private

Surface Ownership Area of Review

Munoz SWD #1

Eddy County, New Mexico

Proj Mgr: Dan Arthur August 26, 2020

Mapped by: Ben Bockelmann Prepared by:







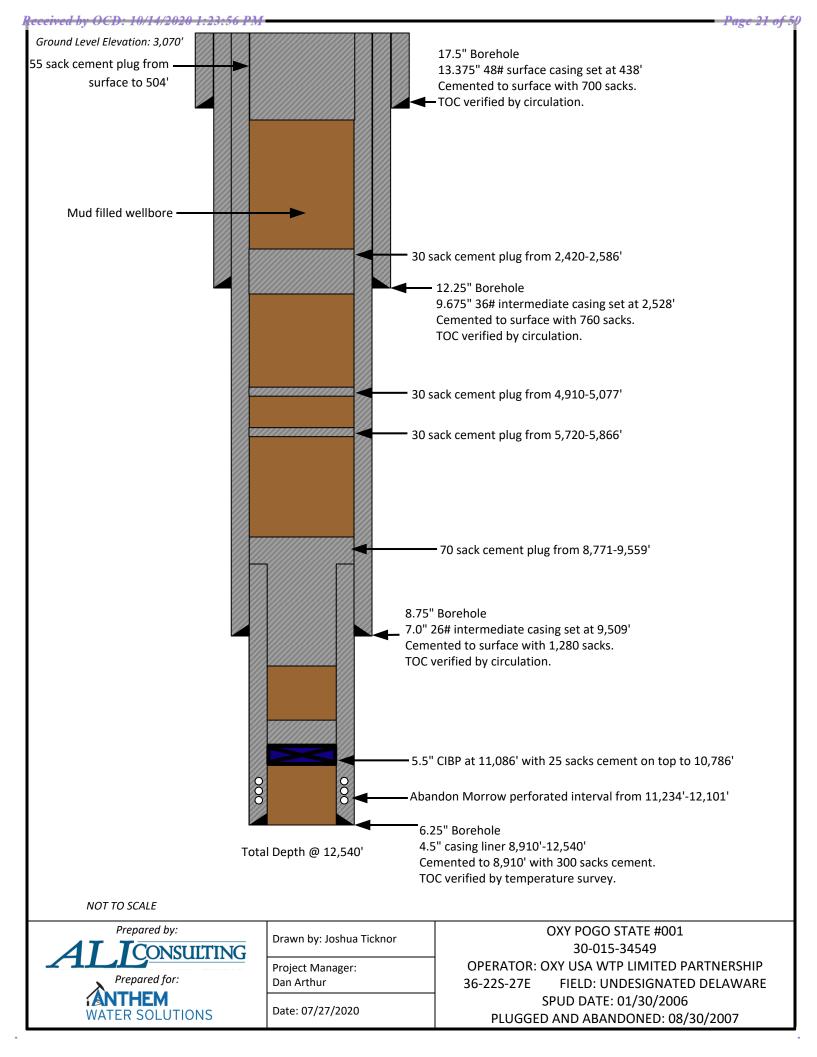
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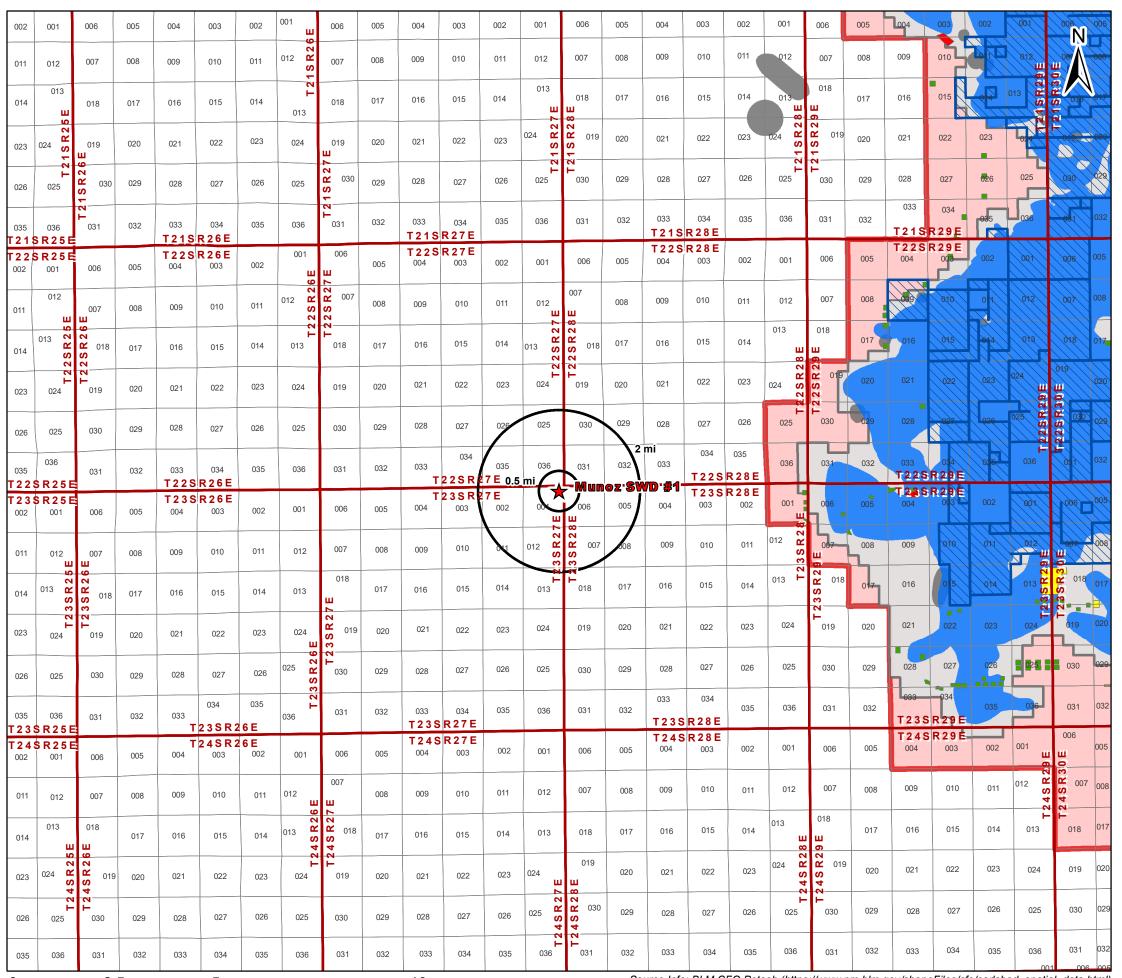
AOR Tabulati	on for Munoz S	WD #1 (Bell C	anyon and upper Cherry	Canyon Injection	Interval: 2730'	- 3600')	
Well Name	API#	Well Type	Operator	Spud Date	Location (Sec., Tn., Rng.)	Total Vertical Depth (feet)	Penetrate Inj. Zone?
PRE-ONGARD WELL #001	30-015-22291	Plugged	PRE-ONGARD WELL OPERATOR (Orla Petco, Inc)	9/13/1977	A-1-23S-27E	Plugged (2700')	No
RIVERSAND 36 STATE COM #001H	30-015-39933	Plugged	DEVON ENERGY PRODUCTION COMPANY, LP	2/14/2012	P-36-22S-27E	58'	No
LARRY WOLFISH 01 23S 27E RB #224H	30-015-45271	Gas	MATADOR PRODUCTION COMPANY	9/27/2018	G-4-22S-27E	Proposed (14900')	No (not yet drilled)
LARRY WOLFISH 01 23S 27E RB #204H	30-015-45269	Gas	MATADOR PRODUCTION COMPANY	9/27/2018	P-36-22S-27E	9750'	Yes
OXY POGO STATE #001	30-015-34549	Plugged	OXY USA WTP LIMITED PARTNERSHIP	1/20/2006	I-36-22S-27E	Plugged (11096')	Yes

			C	asing Information	n for Wells Penet	rating the Munoz	SWD #1 Injec	ction Zone (2730' - 3600')					
	Surface Casing					Intermediate Casing							
Well Name	Set Depth	Casing Size	тос	TOC Method Determined	Sks of Cement	Hole size	Set Depth	Casing Size	тос	TOC Method Determined	Sks of Cement	Hole Size	
LARRY WOLFISH 01 23S 27E RB #204H 30-015-45269	406	13 3/8	Surface	Circulation	768	17 1/2	2415	9 5/8	Surface	Circulation	819	12 1/4	
OXY POGO STATE #001 30-015-34549	438	13 3/8	Surface	Circulation	700	17 1/2	2528	9 5/8	Surface	Circulation	760	12 1/4	

	Casing Information for Wells Penetrating the Munoz SWD #1 Injection Zone											
			Intermediate II/	Production Casing	g			Production Casing/ Liner Rec	ord			
Well Name	Set Depth	Casing Size	тос	TOC Method Determined	Sks of Cement	Hole Size	Set Depth	Casing Size	тос	TOC Method Determined	Sks of Cement	Hole Size
LARRY WOLFISH 01 23S 27E RB #204H 30-015-45269	8682; 8682 - 9572	7.625; 7	Surface	Circulation	1620; 810	8 3/4	8504; 14481	5.5; 4 1/2	*Unknown	*Unknown	552; 552	6 1/8



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Legend

Proposed SWD

Potash Leases

Ore Type - Measured

Ore Type - Indicated

KPLA

SOPA

Status

Drill Islands

Approved
Denied
Nominated
Withdrawn

Potash Leases Area of Review

Munoz SWD #1

Eddy County, New Mexico

Proj Mgr: Dan Arthur August 28, 2020

Mapped by: Ben Bockelmann





0 2.5 5 10 Miles

Source Info: BLM CFO Potash (https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html)

Attachment 3

Source Water Analyses



Water Analysis

Date: 23-Aug-11

2708 West County Road, Hobbs NM 88240 Phone (575) 392-5556 Fax (575) 392-7307

Analyzed For Broshu Well Name County State Company New Mexico BD Lea-1-265-296 Sample # Sample Source Swab Sample Formation Depth 1.170 SG @ 60 °F 1.172 Specific Gravity 6.30 Sulfides **Absent** 70 Temperature (*F) Reducing Agents Cations in PPM Sodium (Calc) in Mg/L 77,962 66,520 Calcium in Mg/L 4,000 in PPM 3,413 Magnesium in Mg/L 1,200 in PPM 1,024 Soluable from (FE2) in Mg/L 10.0 in PPM Anions Chlorides in Mg/L 130,000 in PPM 110,922 in Mg/L 250 in PPM Suttates 213 in Mg/L in PPM 108 **Bicarbonates** 127 in PPM Total Hardness (as CaCO3) in Mg/L 15,000 12,799 213,549 in PPM 182,209 Total Dissolved Solids (Calc) in Mg/L 182,868 in PPM 156,031 Equivalent NaCi Concentration in Mg/L **Scaling Tendencies** 507,520 *Calcium Carbonate Index Below 500,000 Remote / 500,000 - 1,000,000 Possible / Above 1,000,000 Probable *Calcium Sulfate (Gyp) Index 1,000,000 Below 500,000 Remote / 500,000 - 10,000,00 Passible / Above 10,000,000 Probable "This Calculation is only an approximation and is only valid before treatment of a well or several weaks after treatment

Remarks R

RW=.048@70F

Sec 22, T25,5,R28E

North Permian Basin Region P.O. Box 740 Sundown, TX 79372-0740 (806) 229-8121 Lab Team Leader - Shella Hernandez

(432) 495-7240

Bone Spring

Water Analysis Report by Baker Petrolite

Company:

Sales RDT:

33514.1

Region:

PERMIAN BASIN

Account Manager:

TONY HERNANDEZ (575) 910-7135

Area:

ARTESIA, NM

Sample #:

534665

Lease/Platform:

PINOCHLE 'BPN' STATE COM

Analysis ID #: Analysis Cost:

106795 \$90.00

Entity (or well #):

Formation:

UNKNOWN

Sample Point:

WELLHEAD

Summary		A	alysis of Sa	mple 534665 @ 75	F	
Sampiling Date: 03/16	/11 Anions	mg/l	meq/I	Cations	mg/l	Npem
Analysis Date: 03/11	/11 Chloride:	109618.0	3091.92	Sodium:	70275.7	3056.82
Analyst: SANDRA GOA	EZ Bicarbonate:	2135.0	34.99	Magnesium:	195.0	18.04
TDS (ma/l or a/m3): 18491	Carbonate:	0.0	٥.	Calcium:	844.0	42.12
and the private	Sulfate:	747.0	15.55	Strontium:	220.0	5.02
Density (g/cm3, tonne/m3): 1. Anion/Cation Ratio:	Phosphale:			Barlum:	0.8	0.01
Anion/Cation Ratio:	Borate:			Iron:	6.5	0.23
	Silicate:			Polassium:	869.0	22.22
	-			Aluminum:		
Carbon Dioxide: 0 50 PP	Hydrogen Sulfide:		0 PPM	Chromlum:		
Oxygen:	all at time of some	aliaa.	,	Copper:		
Comments:	pH at time of samp	•	′ [Lead:		
	pH at time of analy	/ais:		Manganese:	0.100	0.
	pH used in Calcu	lation:	7	Nickel:		
	[- 1			

Cond	tions	Values Calculated at the Given Conditions - Amounts of Scale in Ib/1000 bbi												
	Gauge Press.	(Calcite CaCO ₃		Gypsum CaSO ₄ 2H ₂ 0		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄			
F	psi	index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi		
80	0	1.08	188.52	-1.20	0.00	-1.18	0.00	-0.11	0.00	0.58	0.29	1.72		
100	0	1.10	206.05	-1.29	0.00	-1.20	0.00	~0.15	0.00	0.35	0.29	2.35		
120	0	1.12	224.17	-1.36	0.00	-1.19	0.00	-0.17	0.00	0.16	0.00	3,17		
140	0	1.13	243.17	-1.42	0.00	-1.18	0.00	-0.18	0.00	0.00	0.00	4,21		

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

Attachment 4

Injection Formation Water Analyses

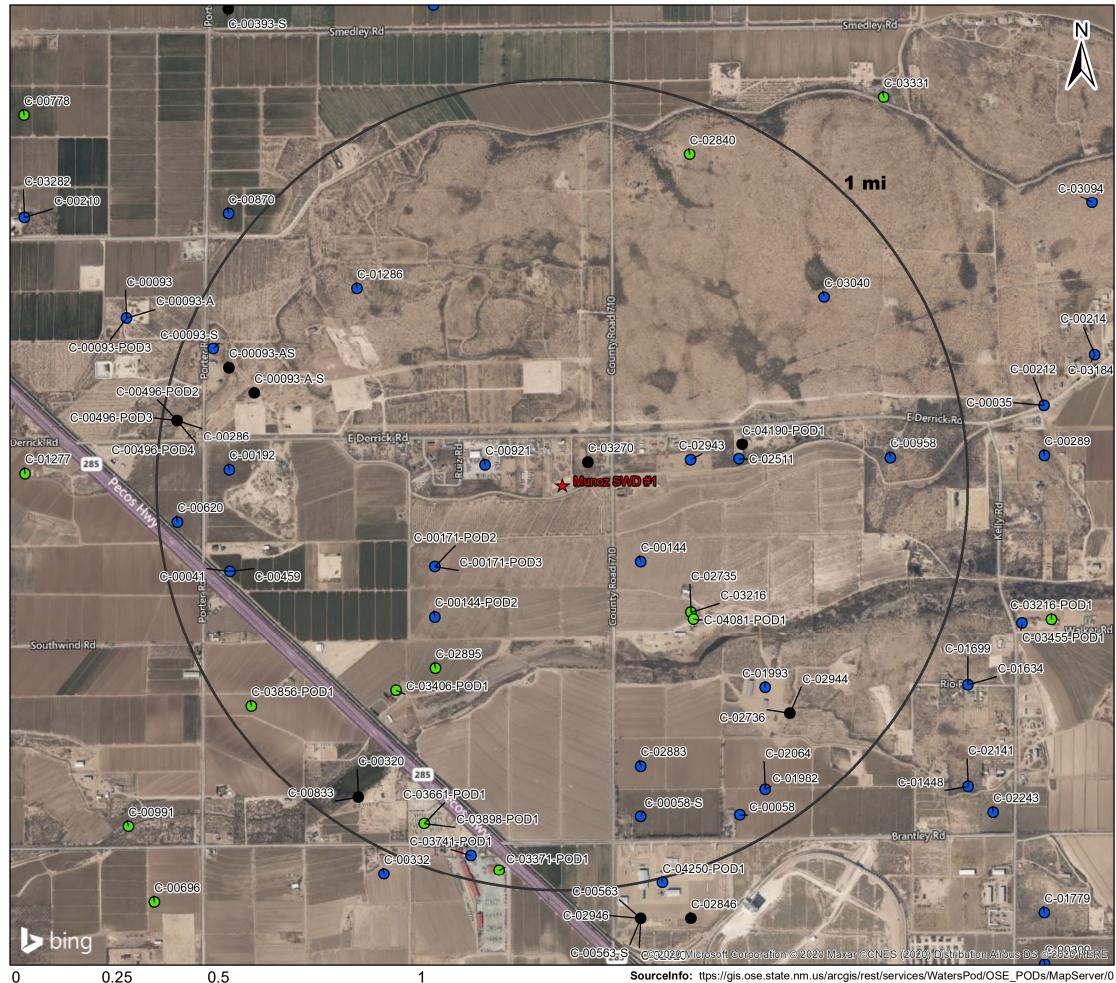
	Injection Formation Analysis																		
	Anthem Water Solutions, LLC - Delaware Mountain Group Formation																		
Wellname	API	Latitude	Longitude	Section	Township	Range	Unit	tgns	ftgew	County	State	Company	Field	Formation	Depth	Tds_mgL	Chloride_mgL	Bicarbonate_mgL	Sulfate_mgL
GOMEZ #001	3001522595	32.3335838	-104.1125488	5	235	28E	K	23105	1650W	EDDY	NM		HERRADURA BEND	DELAWARE		133,440	80,500	303.00	2,100.00
PARDUE #001	3001501114	32.3143272	-104.1502228	12	235	27E	M	660S	660W	EDDY	NM		CASS DRAW	DELAWARE		129,765	79,570	101.00	175.00
KIM #001	3001524589	32.297123	-104.0955887	21	235	28E	С	330N	1650W	EDDY	NM	DAKOTA		DELAWARE		202,807	143,136	38.62	213.57
OLD INDIAN DRAW UNIT #003	3001521504	32.3836327	-104.1248856	19	225	28E	В	660N	1980E	EDDY	NM		INDIAN DRAW	DELAWARE		127,652	76,200	415.00	2,600.00
OLD INDIAN DRAW UNIT #005	3001521618	32.3946304	-104.1249771	18	225	28E	G	1980N	1980E	EDDY	NM		INDIAN DRAW	DELAWARE		129,878	77,300	439.00	2,600.00
OLD INDIAN DRAW UNIT #006	3001521619	32.3910103	-104.1290131	18	225	28E	K	20025	1721W	EDDY	NM		INDIAN DRAW	DELAWARE		126,911	74,800	525.00	3,300.00
OLD INDIAN DRAW UNIT #008	3001521766	32.3882904	-104.1282043	18	225	28E	N	10175	1973W	EDDY	NM		INDIAN DRAW	DELAWARE		123,893	74,100	671.00	2,000.00
OLD INDIAN DRAW UNIT #007		32.3937187	-104.1281815	18	225	28E	F	2323N	1974W	EDDY	NM		INDIAN DRAW	DELAWARE		124,756	74,500	342.00	2,200.00
OLD INDIAN DRAW UNIT #001	3001520918	32.390892	-104.1249695	18	225	28E	J	19805	1980E	EDDY	NM		INDIAN DRAW	DELAWARE		128,431	76,200	98.00	3,200.00
OLD INDIAN DRAW UNIT #003	3001521504	32.3836327	-104.1248856	19	225	28E	В	660N	1980E	EDDY	NM		INDIAN DRAW	DELAWARE		122,782	73,800	120.00	2,100.00
OLD INDIAN DRAW UNIT #011	3001521844	32.3844833	-104.1206665	19	225	28E	Α	330N	668E	EDDY	NM		INDIAN DRAW	DELAWARE		130,991	78,000	586.00	1,800.00
OLD INDIAN DRAW UNIT #016	3001521959	32.4010544	-104.1319809	7	225	28E	М	330S	794W	EDDY	NM		INDIAN DRAW	DELAWARE		118,293	69,100	134.00	3,800.00
OLD INDIAN DRAW UNIT #016	3001521959	32.4010544	-104.1319809	7	225	28E	M	3305	794W	EDDY	NM		INDIAN DRAW	DELAWARE		124,945	73,100	139.00	3,900.00
BASS 10 FEDERAL #003	3001524933	32.4028931	-104.0732117	10	225	28E	0	990S	1980E	EDDY	NM	BASS ENTERPRISES	INDIAN DRAW EAST	DELAWARE		164,679	112,250	271.08	1,106.56
BASS 10 FEDERAL #005	3001525303	32.4056282	-104.0700073	10	225	28E	- 1	1980S	990E	EDDY	NM	BASS ENTERPRISES	INDIAN DRAW EAST	DELAWARE		116,788	74,967	394.55	1,622.39
BASS 3 FEDERAL #002	3001527528	32.4199486	-104.0732498	3	225	28E	J	1880S	2080E	EDDY	NM	BASS ENTERPRISES	INDIAN DRAW EAST	DELAWARE		162,875	109,783	416.56	1,671.73
BASS 3 FEDERAL #004	3001528736	32.4202232	-104.0675583	3	225	28E	- 1	1980S	330E	EDDY	NM	BASS ENTERPRISES	INDIAN DRAW EAST	DELAWARE		158,759	107,057	269.62	1,465.23
TRACY #001	3001520204	32.412735	-104.1798248	10	225	27E	C	660N	1980W	EDDY	NM		ESPERANZA	DELAWARE		158,000	96,200	572.00	1,400.00
TRACY #001	3001520204	32.412735	-104.1798248	10	225	27E	С	660N	1980W	EDDY	NM		ESPERANZA	DELAWARE		157,000	95,000	574.00	1,400.00
INDIAN FLATS BASS FEDERAL #002	3001521715	32.438549	-104.0594788	35	215	28E	F	1980N	1980W	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		149,252	99,299	267.18	2,081.59
INDIAN FLATS BASS FEDERAL #003	3001521853	32.4340134	-104.0648575	35	215	28E	L	1650S	330W	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		146,197	96,177	400.40	1,763.53
INDIAN FLATS BASS FEDERAL #004	3001522229	32.435833	-104.0605698	35	215	28E	K	23105	1650W	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		148,805	99,247	335.20	1,728.73
INDIAN FLATS BASS FEDERAL #005	3001522671	32.4303894	-104.0584564	35	215	28E	N	330S	2310W	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		144,959	95,968	200.20	1,882.77
INDIAN FLATS BASS FEDERAL #006	3001522673	32.4303932	-104.0561905	35	215	28E	0	330S	2310E	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		163,756	110,195	134.57	1,662.22
INDIAN FLATS BASS FEDERAL #001	3001524968	32.438549	-104.0637589	35	215	28E	E	1980N	660W	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		136,419	89,021	397.84	1,681.59
BIG EDDY FEDERAL #098	3001524707	32.4960899	-104.1280518	7	215	28E	F	2180N	1980W	EDDY	NM	DAKOTA	FENTON NORTHWEST	DELAWARE		153,408	103,522	718.90	247.74

Attachment 5

Water Well Map and Well Data

Water Wells	Owner	Water Well Sampling Rationale - Anthem Wa		Notes
Water Wells	Owner	Available Contact Information 1203 Navajo Rd.	Use	Notes
C 00171 POD3	John W. Bain	Carlsbad, NM 88220	Irrigation	
C 00958	Jeffery Ballard	RT. 1 Box 1516, Carlsbad NM	Domestic One Household	
C 02840	Brantley Brothers	John Draper Brantley Jr. Phone: 575-706-3169 510 N. Halagueno, Carlsbad NM 88220	Exploration	
C 04081 POD1	Brantley Brothers	John Draper Brantley Jr. Phone: 575-706-3169	Domestic and Livestock	
C 03040	Brantley Farms	510 N. Halagueno, Carlsbad NM 88220 George Brantley Brantley Farms 1304 W. Riverside,	Domestic and Livestock	
C 04190 POD1	April Hallman	Carlsbad, NM 88220 April Hallman R 693 E. Derrick Rd. Carlsbad, NM 88220	Domestic One Household	
C 02511	Daniel Hernandez	Phone: 903-975-4415 Daniel Hernandez	Domestic One Household	
C 02511	Daniel Hernandez	P.O. Box 5036 Carlsbad, NM 88221-5036	Domestic One Household	
C 01286	K&W Farms	David Faulk (K&W Farms) 575-361-6317 Well Operator: John Boyde	Live Stock Watering	Sample collected 05/07/2020. Analysis included in application package.
C 00496 POD2	John Methola	Austine Munoz John Methola Route 1. Box 188 Carlsbad, NM	Irrigation	
C 00496 POD3	John Methola	Austine Munoz John Methola Route 1. Box 188 Carlsbad, NM	Irrigation	
C 00496 POD4	Augustine Munoz	Austine Munoz John Methola Route 1. Box 188 Carlsbad, NM	Irrigation	
C 00286	Augustine Munoz	Austine Munoz John Methola Route 1. Box 188 Carlsbad, NM	Closed File	
C 02895	Boe Norton	Work Phone: 505-706-2675 Home phone: 505-236-6444	Expired Domestic and Livestock Watering	
C 03270	Oxy Partners	Contact: Scott Gregory Phone: 505-885-4195	Prospecting or Development of Natural Resources	
C 03216	Judy Parker	Home Phone: 575-236-6529 Work Phone: 575-302-9257	Expired Domestic and Livestock Watering	
C 02943	William J. Redfearn	Work Phone: 575-887-0551	Domestic One Household	
C 02735	Julius Roberson	P.O. Box 416 Carlsbad, NM 88220	Domestic and Livestock	
C 00144 C 00144 POD2	Julius Roberson Julius Roberson	P.O. Box 416 Carlsbad, NM 88221 P.O. Box 416 Carlsbad, NM 88222	Irrigation Irrigation	
C 00171 POD2	Julius Roberson	P.O. Box 416 Carlsbad, NM 88223	Irrigation	
C 00192 C 00921	Ben or Lino Rodriguez Louis Sarabia	Unavailable 1404 W. Stevens, Carlsbad NM	Irrigation Domestic One Household	
C 00093 S	Jack H. White Sr.	Unavailable	Irrigation	
C 00093 AS	Jack H. White Sr.	Unavailable	Irrigation	
C 00093 A-S	Jack H. White Sr.	Unavailable	Irrigation	
C 00058 C 00833	Julius Roberson Jr. T. Lane Grau	P.O. Box 416 Carlsbad, NM 88220 Unavailable	Irrigation Live Stock Watering	
C 02736	Julius Roberson	P.O. Box 416 Carlsbad, NM 88220	Live Stock Watering Live Stock Watering	
C 01982	Justin Magby	RT.1 Box 197-A Carlsbad, NM 88220	Irrigation	
C 02883	Julius Roberson	P.O. Box 416 Carlsbad, NM 88220	Exploration	
C 02064	Justin Magby	RT.1 Box 197-A Carlsbad, NM 88220	Domestic and Livestock	
C 03406 POD1	Boe Norton	2556 Pecos Highway Carlsbad, NM 88220 Work Phone: 505-706-2675	Domestic and Livestock	
C 03741 POD1	Steve Ellyson	Home phone: 505-236-6444 P.O. Box 477 Carlsbad, NM 88221	Domestic and Livestock	
C 03661 POD1	Boe Norton	2556 Pecos Highway Carlsbad, NM 88220 Work Phone: 505-706-2675 Home phone: 505-236-6444	Exploration	
C 00459	Judy Parker	P.O. Box 329 Loving, NM 88256 Home Phone: 575-236-6529 Work Phone: 575-302-9257	Irrigation	
C 03856 POD1	Henry T. Castaneda	6228 Porter Rd. Carlsbad, NM 88220	Multiple Domestic Housholds	
C 02944	Nadel & Gussman Permian, LLC	601 N. Marienfeld, Suite 508 Midland, TX 79701 RT. 1 Box 175	Prospecting or Development of Natural Resources	
C 00041	Juan T. Hensley	Carlsbad, NM 88220	Domestic and Livestock	
C 03898 POD1	Boe Norton	2556 Pecos Highway Carlsbad, NM 88220 Work Phone: 505-706-2675 Home phone: 505-236-6444	Exploration	
C 00620	Jim Derrick	1002 N. Richard Carlsbad, NM 88220	Domestic One Household	
C 00320	Ursolo Sapien	P.O. Box 941 Carlsbad, NM 88220	Domestic One Household	
C 01993	Read & Stevens	P.O. Box 692 Tatum, NM 88267	Prospecting or Development of Natural Resources	
C 03371 POD1	Steve Ellyson	P.O. Box 477 Carlsbad, NM 88221	Domestic and Livestock	Sample collected 09/17/2020. Analysis included in application package.
C 033711 OD1		Carisbad, NW 66221		application package.

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■ Miles

Legend

★ Proposed SWD

NMOSE Points of Diversion

- Active (43)
- Pending (17)
- Change Location of Well (0)
- Capped (0)
- Plugged (0)
- Incomplete (0)
- Unknown (21)

Water Wells Area of Review

Munoz SWD #1

Eddy County, New Mexico

Proj Mgr: Dan Arthur

August 24, 2020

Mapped by: Ben Bockelmann



Prepared by:

SourceInfo: ttps://gis.ose.state.nm.us/arcgis/rest/services/WatersPod/OSE_PODs/MapServer/0

Water Well Sampling Results - Summary Table											
Anthem Water Solutions, LLC - Munoz SWD #1											
Water Well	Sampling Date	Alkaliunity - Bicarbonate (mg/L)	Alkalinity - Carbonate (mg/L)	Total Hardness (mg/L as CaCO3)	Calcium (mg/L)	Magnesium (mg/L)	Chlorides (mg/L)	РН	Conductivity	TDS (mg/L)	
C 01286	5/7/2020	249	0	2850	664	289	2030	6.94	6840 uS/cm	6460	
C 03371 POD1	9/17/2020	268	0	3080	781	275	2700	6.87	11000 umhos/cm @25°C	8450	
Notes: Water sampling results are included in Attachment 5 .											



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

May 07, 2020

OLIVER SEEKINS
ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA, OK 74119

RE: FAULK C-01286

Enclosed are the results of analyses for samples received by the laboratory on 04/28/20 16:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accred certif.html.

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

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

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

Method SM 9223-B Total Coliform and E. coli (Colilert MMO-MUG)

Method EPA 524.2 Regulated VOCs and Total Trihalomethanes (TTHM)

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Celey D. Keene

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

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

Reported:

07-May-20 13:44



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

Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119

Project: FAULK C-01286 Project Number: 32.347064-104.145573 Project Manager: OLIVER SEEKINS

Fax To: NA

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WATER SAMPLE	H001204-01	Water	28-Apr-20 00:00	28-Apr-20 16:45

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence ar any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether su 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

Celey D. Keene, Lab Director/Quality Manager

Notes



Result

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

Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119

Analyte

Project: FAULK C-01286
Project Number: 32.347064-104.145573
Project Manager: OLIVER SEEKINS

Dilution

Batch

Analyst

07-May-20 13:44

Analyzed

Reported:

Method

Fax To: NA

WATER SAMPLE H001204-01 (Water)

Units

Reporting Limit

MDL

			Cardi	nal Laborato	ries					
Inorganic Compounds										
Alkalinity, Bicarbonate	249		5.00	mg/L	1	0022609	AC	29-Apr-20	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	0022609	AC	29-Apr-20	310.1	
Chloride*	2030		4.00	mg/L	1	0041507	AC	29-Apr-20	4500-Cl-B	
Conductivity*	6840		1.00	uS/cm	1	0042904	GM	29-Apr-20	120.1	
pH*	6.94		0.100	pH Units	1	0042904	GM	29-Apr-20	150.1	
Resistivity	1.46			Ohms/m	1	0042904	GM	29-Apr-20	120.1	
Sulfate*	2210		500	mg/L	50	0043004	AC	30-Apr-20	375.4	QM-07
TDS*	6460		5.00	mg/L	1	0041411	GM	01-May-20	160.1	
Alkalinity, Total*	204		4.00	mg/L	1	0022609	AC	29-Apr-20	310.1	
TSS*	10.0		2.00	mg/L	1	0042905	GM	01-May-20	160.2	
			Green Ana	alytical Labo	ratories					
Total Recoverable Metals by	ICP (E200.7)									
Barium*	< 0.500		0.500	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Calcium*	664		1.00	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Hardness as CaCO3	2850		6.62	mg/L	10	[CALC]	AES	05-May-20	2340 B	
Iron*	6.17		0.500	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Magnesium*	289		1.00	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Potassium*	6.77	1.52	10.0	mg/L	10	B200724	AES	05-May-20	EPA200.7	J
Sodium*	856		10.0	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Strontium*	9.90		1.00	mg/L	10	B200724	AES	05-May-20	EPA200.7	

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119 Project: FAULK C-01286
Project Number: 32.347064-104.145573
Project Manager: OLIVER SEEKINS

Fax To: NA

Reported: 07-May-20 13:44

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes			
Batch 0022609 - General Prep - Wet Chem													
Blank (0022609-BLK1)					Prepared & Analyzed: 26-Feb-20								
Alkalinity, Carbonate	ND	1.00	mg/L										
Alkalinity, Bicarbonate	5.00	5.00	mg/L										
Alkalinity, Total	4.00	4.00	mg/L										
LCS (0022609-BS1)	Prepared & Analyzed: 26-Feb-20												
Alkalinity, Carbonate	ND	2.50	mg/L				80-120						
Alkalinity, Bicarbonate	292	12.5	mg/L				80-120						
Alkalinity, Total	240	10.0	mg/L	250		96.0	80-120						
LCS Dup (0022609-BSD1)				Prepared & Analyzed: 26-Feb-20									
Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20				
Alkalinity, Bicarbonate	280	12.5	mg/L				80-120	4.37	20				
Alkalinity, Total	230	10.0	mg/L	250		92.0	80-120	4.26	20				
Batch 0041411 - Filtration													
elank (0041411-BLK1)				Prepared: 14-Apr-20 Analyzed: 17-Apr-20									
TDS	ND	5.00	mg/L										
LCS (0041411-BS1)	CS (0041411-BS1)			Prepared: 14-Apr-20 Analyzed: 17-Apr-20									
TDS	531		mg/L	500	*	106	80-120						
Duplicate (0041411-DUP1)	olicate (0041411-DUP1) Source: H001076-01			Prepared: 14-Apr-20 Analyzed: 17-Apr-20									
TDS	59.0	5.00	mg/L	*	49.0	-	•	18.5	20				
Batch 0041507 - General Prep - Wet Chem													
Blank (0041507-BLK1)				Prepared &	Analyzed:	15-Apr-20							
Chloride	ND	4.00	mg/L										
			ū										

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Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119

Project: FAULK C-01286 Project Number: 32.347064-104.145573

Project Manager: OLIVER SEEKINS

Fax To: NA

Reported:

07-May-20 13:44

Inorganic Compounds - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 0041507 - General Prep - Wet Chem										
LCS (0041507-BS1)				Prepared &	Analyzed:	15-Apr-20				
Chloride	104	4.00	mg/L	100		104	80-120			
LCS Dup (0041507-BSD1)				Prepared &	k Analyzed:	15-Apr-20				
Chloride	104	4.00	mg/L	100		104	80-120	0.00	20	
Batch 0042904 - General Prep - Wet Chem										
LCS (0042904-BS1)				Prepared &	analyzed:	29-Apr-20				
Conductivity	518		uS/cm	500		104	80-120			
pH	7.11		pH Units	7.00		102	90-110			
Duplicate (0042904-DUP1)	Sou	rce: H001204	-01	Prepared &	k Analyzed:	29-Apr-20				
рН	6.95	0.100	pH Units		6.94			0.144	20	
Conductivity	6960	1.00	uS/cm		6840			1.74	20	
Resistivity	1.44		Ohms/m		1.46			1.74	20	
Batch 0042905 - Filtration										
Blank (0042905-BLK1)				Prepared: 2	29-Apr-20 A	nalyzed: 01	1-May-20			
TSS	ND	2.00	mg/L							
Duplicate (0042905-DUP1)	Sou	rce: H001204	-01	Prepared: 2	29-Apr-20 A	nalyzed: 01	1-May-20			
TSS	15.0	2.00	mg/L		10.0			40.0	52.7	
Batch 0043004 - General Prep - Wet Chem										
Blank (0043004-BLK1)				Prepared &	analyzed:	30-Apr-20				
Sulfate	ND	10.0	mg/L							

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Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119 Project: FAULK C-01286
Project Number: 32.347064-104.145573
Project Manager: OLIVER SEEKINS

Reported: 07-May-20 13:44

Fax To: NA

Inorganic Compounds - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 0043004 - General Prep - Wet Chem

LCS (0043004-BS1)				Prepared & Anal	yzed: 30-Apr-20			
Sulfate	17.7	10.0	mg/L	20.0	88.4	80-120		
LCS Dup (0043004-BSD1)				Prepared & Anal	yzed: 30-Apr-20			

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Batch B200724 - Total Rec. 200.7/200.8/200.2



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

Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119 Project: FAULK C-01286
Project Number: 32.347064-104.145573
Project Manager: OLIVER SEEKINS

Reported: 07-May-20 13:44

Fax To: NA

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

Green Analytical Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Blank (B200724-BLK1)				Prepared: 01-Ma	ay-20 Analyzed: (05-May-20			
Magnesium	ND	0.100	mg/L						
Barium	ND	0.050	mg/L						
Strontium	ND	0.100	mg/L						
Calcium	ND	0.100	mg/L						
Sodium	ND	1.00	mg/L						
Iron	ND	0.050	mg/L						
Potassium	0.174	1.00	mg/L						J
LCS (B200724-BS1)				Prepared: 01-Ma	ay-20 Analyzed: (05-May-20			
Strontium	4.12	0.100	mg/L	4.00	103	85-115			
Sodium	3.67	1.00	mg/L	3.24	113	85-115			
Potassium	8.51	1.00	mg/L	8.00	106	85-115			
Magnesium	20.4	0.100	mg/L	20.0	102	85-115			
Iron	3.85	0.050	mg/L	4.00	96.2	85-115			
Calcium	3.98	0.100	mg/L	4.00	99.6	85-115			
Barium	1.94	0.050	mg/L	2.00	97.1	85-115			
LCS Dup (B200724-BSD1)				Prepared: 01-Ma	ay-20 Analyzed: (05-May-20			
Magnesium	20.3	0.100	mg/L	20.0	101	85-115	0.669	20	
Strontium	4.09	0.100	mg/L	4.00	102	85-115	0.553	20	

							0.000		
Potassium	8.49	1.00	mg/L	8.00	106	85-115	0.262	20	
Calcium	3.95	0.100	mg/L	4.00	98.8	85-115	0.843	20	
Sodium	3.52	1.00	mg/L	3.24	109	85-115	4.09	20	
Barium	1.90	0.050	mg/L	2.00	94.8	85-115	2.32	20	
Iron	3.79	0.050	mg/L	4.00	94.9	85-115	1.35	20	

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Celeg D. Freene



Notes and Definitions

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS

recovery.

J Estimated conentration. Analyte concentration between MDL and RL.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keine

Relinquished By:

Date: Time:

Received By:

Received By

Verbal Result:

Verbal Result: ☐ Yes ☐ No Add'I Phone #: All Results are emailed. Please provide Email address:

Sampler - UPS - Bus - Other: Delivered By: (Circle One)

Observed Temp. °C/4./ Corrected Temp. °C

Sample Condition
Cool Intact
Yes Yes
No No No

Relinquished By:



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(575) 393-2326 FAX (575) 393-2476

company warne:	Jel Consul	たか。	BILL TO	ANALYSIS REQUEST
Project Manager:	Miver Seu	K1750	P.O. #:	
Address:	2402		Company:	
City:	State:	Zip:	Attn:	
Phone #:	Fax #:		Address:	25
Project #:	Project Owner:	ar:	City:	
Project Name:	Fau CR	-01286	State: Zip:	
Project Location:	4901hg BE	- 104 145573 Phone #:		
Sampler Name:	Dusta A		Fax #:	
FOR LAB USE ONLY	,	MATRIX	PRESERV. SAMPLING	- /
Lab I.D. <i>H00/204</i>	Sample I.D.	G)RAB OR (C)OMP. J # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE	OTHER: ACID/BASE: ICE / COOL OTHER: DATE	Cation Besis THand Ba, Fe TSS
	Water Sample	Cu	438:30	
PLEASE NOTE: Liability and Dinalyses. All claims including the provide. In no event shall Cardi	**************************************	any claim arising whether based in contrac edeemed waived unless made in writing an g without limitation, business interruptions,	t or tort, shall be limited to the amount paid by the client for derewived by Cardinal within 30 days after completion of toos of use, or loss of profits incurred by client, its subsidial loss of use.	the applicable

4,0

Thermometer ID #97 Correction Factor + 0.4 °C

CHECKED BY: (Initials)

Turnaround Time:

Standard Rush

Corrected Temp. °C

REMARKS:

[†] Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



October 07, 2020

DANIEL ARTHUR
ALL CONSULTING, LLC
1718 S. CHEYENNE AVE.
TULSA, OK 74119

RE: ANTHEM - WATER SAMPLING

Enclosed are the results of analyses for samples received by the laboratory on 09/18/20 8:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accred certif.html.

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

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

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

Method SM 9223-B Total Coliform and E. coli (Colilert MMO-MUG)

Method EPA 524.2 Regulated VOCs and Total Trihalomethanes (TTHM)

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Celey D. Keine

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

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119 Project: ANTHEM - WATER SAMPLING
Project Number: 32.3267109691,-104.140972427

Reported: 07-Oct-20 11:35

Project Manager: DANIEL ARTHUR

Fax To: NA

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
C O3371 - POD 1	H002474-01	Water	17-Sep-20 13:30	18-Sep-20 08:20

10/07/20 - Sample ID was incorrect and revised as per the client. This is the revised report and will replace the one sent on 10/06/20.

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Celey D. Keine



Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119 Project: ANTHEM - WATER SAMPLING
Project Number: 32.3267109691,-104.140972427

Reported: 07-Oct-20 11:35

Project Manager: DANIEL ARTHUR

Fax To: NA

C O3371 - POD 1 H002474-01 (Water)

Analyte	Result	MDL Ĺii	nit Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
		(Cardinal Laborat	ories					
Inorganic Compounds									
Alkalinity, Bicarbonate	268	5.	00 mg/L	1	0082102	GM	18-Sep-20	310.1	
Alkalinity, Carbonate	<1.00	1.	00 mg/L	1	0082102	GM	18-Sep-20	310.1	
Chloride*	2700	4.	00 mg/L	1	0091602	GM	18-Sep-20	4500-Cl-B	
Conductivity*	11000	1.	00 umhos/cm @ 25°C	1	0091805	GM	18-Sep-20	120.1	
pH*	6.87	0.1	00 pH Units	1	0091805	GM	18-Sep-20	150.1	
Temperature °C	22.6		pH Units	1	0091805	GM	18-Sep-20	150.1	
Resistivity	0.907		Ohms/m	1	0091805	GM	18-Sep-20	120.1	
Sulfate*	2250	50	00 mg/L	50	0092103	AC	21-Sep-20	375.4	
TDS*	8450	5.	00 mg/L	1	0091706	GM	21-Sep-20	160.1	
Alkalinity, Total*	220	4.	00 mg/L	1	0082102	GM	18-Sep-20	310.1	
TSS*	8.00	2.	00 mg/L	1	0091804	GM	21-Sep-20	160.2	

Green Analytical Laboratories

Total Recoverable Metals by	/ ICP (E200.7)							
Barium*	< 0.050	0.050	mg/L	1	B202034	JDA	29-Sep-20	EPA200.7
Calcium*	781	2.00	mg/L	20	B202034	JDA	29-Sep-20	EPA200.7
Hardness as CaCO3	3080	13.2	mg/L	20	[CALC]	JDA	29-Sep-20	2340 B
Iron*	< 0.050	0.050	mg/L	1	B202034	JDA	29-Sep-20	EPA200.7
Magnesium*	275	2.00	mg/L	20	B202034	JDA	29-Sep-20	EPA200.7
Potassium*	6.32	1.00	mg/L	1	B202034	JDA	29-Sep-20	EPA200.7
Sodium*	1480	20.0	mg/L	20	B202034	JDA	29-Sep-20	EPA200.7
Strontium*	15.3	0.100	mg/L	1	B202034	JDA	29-Sep-20	EPA200.7

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Celey D. Keine



Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119 Project: ANTHEM - WATER SAMPLING

Project Number: 32.3267109691,-104.140972427

Project Manager: DANIEL ARTHUR

Fax To: NA

Reported: 07-Oct-20 11:35

Inorganic Compounds - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 0082102 - General Prep - Wet Chem	1									
Blank (0082102-BLK1)				Prepared &	Analyzed:	21-Aug-20	ı			
Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	5.00	5.00	mg/L							
Alkalinity, Total	4.00	4.00	mg/L							
LCS (0082102-BS1)				Prepared &	Analyzed:	21-Aug-20	ı			
Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	305	12.5	mg/L				80-120			
Alkalinity, Total	250	10.0	mg/L	250		100	80-120			
LCS Dup (0082102-BSD1)				Prepared &	Analyzed:	21-Aug-20	ı			
Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	342	12.5	mg/L				80-120	11.6	20	
Alkalinity, Total	280	10.0	mg/L	250		112	80-120	11.3	20	
Batch 0091602 - General Prep - Wet Chem	1									
Blank (0091602-BLK1)				Prepared &	: Analyzed:	16-Sep-20				
Chloride	ND	4.00	mg/L							
LCS (0091602-BS1)				Prepared &	: Analyzed:	16-Sep-20				
Chloride	96.0	4.00	mg/L	100	-	96.0	80-120			
LCS Dup (0091602-BSD1)				Prepared &	: Analyzed:	16-Sep-20				
Chloride	100	4.00	mg/L	100	-	100	80-120	4.08	20	
Batch 0091706 - Filtration										
Butten 00>1700 Therution					•	•	•	•	•	
Blank (0091706-BLK1)				Prepared: 1	7-Sep-20 A	analyzed: 22	2-Sep-20			

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Celey D. Keine



Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119

Project: ANTHEM - WATER SAMPLING

Callea

Project Number: 32.3267109691,-104.140972427

Reported: 07-Oct-20 11:35

Project Manager: DANIEL ARTHUR

Fax To: NA

Inorganic Compounds - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 0091706 - Filtration										
LCS (0091706-BS1)				Prepared: 1	17-Sep-20 A	analyzed: 2	1-Sep-20			
TDS	827		mg/L	1000		82.7	80-120			
Duplicate (0091706-DUP1)	Sour	ce: H002447	-02	Prepared: 1	17-Sep-20 A	analyzed: 2	2-Sep-20			
TDS	278	5.00	mg/L		353			23.8	20	QR-03
Batch 0091804 - Filtration										
Blank (0091804-BLK1)				Prepared: 1	18-Sep-20 A	analyzed: 2	1-Sep-20			
TSS	ND	2.00	mg/L							
Duplicate (0091804-DUP1)	Sour	ce: H002457	-01	Prepared: 1	18-Sep-20 A	analyzed: 2	1-Sep-20			
TSS	253	2.00	mg/L		243			4.03	52.7	
Batch 0091805 - General Prep - Wet Chem										
LCS (0091805-BS1)				Prepared &	Analyzed:	18-Sep-20				
pH	7.11		pH Units	7.00		102	90-110			
Conductivity	51600		uS/cm	50000		103	80-120			
Duplicate (0091805-DUP1)	Sour	се: Н002474	-01	Prepared &	Analyzed:	18-Sep-20				
pH	6.96	0.100	pH Units		6.87			1.30	20	
Conductivity	11300	1.00 u	umhos/cm @ 25°C	}	11000			2.42	20	
Resistivity	0.878		Ohms/m		0.907			3.15	20	
Temperature °C	22.5		pH Units		22.6			0.443	200	

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Celey D. Keene



%REC

Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119

Project: ANTHEM - WATER SAMPLING

Spike

Project Number: 32.3267109691,-104.140972427

Source

Reported: 07-Oct-20 11:35

RPD

Project Manager: DANIEL ARTHUR

Fax To: NA

Inorganic Compounds - Quality Control

Cardinal Laboratories

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 0092103 - General Prep - Wet Chem										
Blank (0092103-BLK1)				Prepared &	: Analyzed:	21-Sep-20				
Sulfate	ND	10.0	mg/L							
LCS (0092103-BS1)				Prepared &	Analyzed:	21-Sep-20				
Sulfate	20.5	10.0	mg/L	20.0		102	80-120			
LCS Dup (0092103-BSD1)				Prepared &	Analyzed:	21-Sep-20				
Sulfate	22.2	10.0	mg/L	20.0		111	80-120	8.02	20	

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Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119 Project: ANTHEM - WATER SAMPLING

Project Number: 32.3267109691,-104.140972427

Reported: 07-Oct-20 11:35

Project Manager: DANIEL ARTHUR

Fax To: NA

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

Green Analytical Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Daten D202054 Total Rec. 200.7/200.0/200.2	Batch B202034 -	Total Rec.	. 200.7/200.8/200.2
--	-----------------	------------	---------------------

ND 0.050 mg/L	Blank (B202034-BLK1)				Prepared: 28-Se	p-20 Analyzed: 29	9-Sep-20			
Strontium ND 0.100 mg/L	Sodium	ND	1.00	mg/L						
ND 1.00 mg/L	Barium	ND	0.050	mg/L						
ND ND ND ND ND ND ND ND	Strontium	ND	0.100	mg/L						
ND ND ND ND ND ND ND ND	Potassium	ND	1.00	mg/L						
Prepared: 28-Sep-20 Analyzed: 29-Sep-20 Sodium Sodi	Iron	ND	0.050	mg/L						
Prepared: 28-Sep-20 Analyzed: 29-Sep-20 Sodium 3.10 1.00 mg/L 3.24 95.8 85-115 Strontium 3.76 0.100 mg/L 4.00 94.1 85-115 Strontium 3.86 0.100 mg/L 2.00 93.1 85-115 Strontium 3.87 0.050 mg/L 4.00 94.1 85-115 Strontium 3.57 0.050 mg/L 4.00 92.3 85-115 Strontium 3.57 0.050 mg/L 4.00 89.2 85-115 Strontium 3.64 0.100 mg/L 4.00 89.2 85-115 Strontium 3.64 0.100 mg/L 4.00 91.0 85-115 Strontium 3.64 0.100 mg/L 4.00 91.0 85-115 Strontium 3.57 0.050 mg/L 4.00 95.2 85-115 0.257 20 Strontium 3.57 0.050 mg/L 4.00 89.3 85-115 0.137 20 Strontium 3.07 1.00 mg/L 3.24 94.6 85-115 1.19 20 Strontium 3.63 0.100 mg/L 4.00 90.7 85-115 0.366 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 3.29 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 3.29 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 3.29 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 mg/L 4.00 99.7 85-115 0.408 20 Strontium 3.75 0.100 m	Magnesium	ND	0.100	mg/L						
Strontium Signature Sign	Calcium	ND	0.100	mg/L						
Potassium 7.60 1.00 mg/L 8.00 95.0 85-115 Strontium 3.76 0.100 mg/L 4.00 94.1 85-115 Magnesium 18.6 0.100 mg/L 20.0 93.1 85-115 Barium 1.85 0.050 mg/L 2.00 92.3 85-115 Fron 3.57 0.050 mg/L 4.00 89.2 85-115 Calcium 3.64 0.100 mg/L 4.00 91.0 85-115 Cotassium 7.62 1.00 mg/L 8.00 95.2 85-115 0.257 20 Pron 3.57 0.050 mg/L 4.00 89.3 85-115 0.137 20 Sodium 3.07 1.00 mg/L 3.24 94.6 85-115 1.19 20 Calcium 3.63 0.100 mg/L 4.00 90.7 85-115 0.366 20 Barium 1.91 0.050	LCS (B202034-BS1)				Prepared: 28-Se	p-20 Analyzed: 29	9-Sep-20			
Strontium 3.76 0.100 mg/L 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 94.1 85-115 4.00 89.2 85-115 4.00 89.2 85-115 4.00 85-11	Sodium	3.10	1.00	mg/L	3.24	95.8	85-115			
Magnesium 18.6 0.100 mg/L 2.00 93.1 85-115 Barium 1.85 0.050 mg/L 2.00 92.3 85-115 ron 3.57 0.050 mg/L 4.00 89.2 85-115 Calcium 20.0 85-115 Calcium 20.0 85-115 Calcium 20.0 89.2 85-115 Calcium 20.0 89.2 85-115 Calcium 20.0 89.2 85-115 Calcium 20.0 89.2 85-115 Calcium 3.57 0.050 mg/L 4.00 89.3 85-115 0.137 20 Calcium 3.63 0.100 mg/L 4.00 89.3 85-115 0.137 20 Calcium 3.63 0.100 mg/L 4.00 90.7 85-115 0.366 20 Calcium 3.75 0.100 mg/L 4.00 93.7 85-115 0.408 20 Calcium 3.75 0.100 mg/L 4.00 93.7 85-115 0.408 20	Potassium	7.60	1.00	mg/L	8.00	95.0	85-115			
Barium 1.85 0.050 mg/L 2.00 92.3 85-115 ron 3.57 0.050 mg/L 4.00 89.2 85-115 Calcium 2.00 91.0 85-115 Calcium 2.00 92.3 85-115 Calcium 3.64 0.100 mg/L 4.00 91.0 85-115 CACS Dup (B202034-BSD1) CACS Dup (B202034-BSD1) Prepared: 28-Sep-20 Analyzed: 29-Sep-20 Calcium 3.57 0.050 mg/L 4.00 89.3 85-115 0.257 20 Calcium 3.57 0.050 mg/L 4.00 89.3 85-115 0.137 20 Calcium 3.07 1.00 mg/L 3.24 94.6 85-115 1.19 20 Calcium 3.63 0.100 mg/L 4.00 90.7 85-115 0.366 20 Sarium 1.91 0.050 mg/L 2.00 95.4 85-115 3.29 20 Strontium 3.75 0.100 mg/L 4.00 93.7 85-115 0.408 20	Strontium	3.76	0.100	mg/L	4.00	94.1	85-115			
Strontium 3.57 0.050 mg/L 4.00 89.2 85-115	Magnesium	18.6	0.100	mg/L	20.0	93.1	85-115			
Calcium 3.64 0.100 mg/L 4.00 91.0 85-115 LCS Dup (B202034-BSD1) Prepared: 28-Sep-20 Analyzed: 29-Sep-20 Protassium 7.62 1.00 mg/L 8.00 95.2 85-115 0.257 20 ron 3.57 0.050 mg/L 4.00 89.3 85-115 0.137 20 Sodium 3.07 1.00 mg/L 3.24 94.6 85-115 1.19 20 Calcium 3.63 0.100 mg/L 4.00 90.7 85-115 0.366 20 Barium 1.91 0.050 mg/L 2.00 95.4 85-115 3.29 20 Strontium 3.75 0.100 mg/L 4.00 93.7 85-115 0.408 20	Barium	1.85	0.050	mg/L	2.00	92.3	85-115			
Prepared: 28-Sep-20 Analyzed: 29-Sep-20 Potassium 7.62 1.00 mg/L 8.00 95.2 85-115 0.257 20 Potassium 3.57 0.050 mg/L 4.00 89.3 85-115 0.137 20 Potassium 3.07 1.00 mg/L 3.24 94.6 85-115 1.19 20 Potassium 3.63 0.100 mg/L 4.00 90.7 85-115 0.366 20 Potassium 1.91 0.050 mg/L 2.00 95.4 85-115 3.29 20 Potassium 3.75 0.100 mg/L 4.00 93.7 85-115 0.408 20	Iron	3.57	0.050	mg/L	4.00	89.2	85-115			
Potassium 7.62 1.00 mg/L 8.00 95.2 85-115 0.257 20 oron 3.57 0.050 mg/L 4.00 89.3 85-115 0.137 20 Sodium 3.07 1.00 mg/L 3.24 94.6 85-115 1.19 20 Calcium 3.63 0.100 mg/L 4.00 90.7 85-115 0.366 20 Barium 1.91 0.050 mg/L 2.00 95.4 85-115 3.29 20 Strontium 3.75 0.100 mg/L 4.00 93.7 85-115 0.408 20	Calcium	3.64	0.100	mg/L	4.00	91.0	85-115			
ron 3.57 0.050 mg/L 4.00 89.3 85-115 0.137 20 Sodium 3.07 1.00 mg/L 3.24 94.6 85-115 1.19 20 Calcium 3.63 0.100 mg/L 4.00 90.7 85-115 0.366 20 Sarium 1.91 0.050 mg/L 2.00 95.4 85-115 3.29 20 Strontium 3.75 0.100 mg/L 4.00 93.7 85-115 0.408 20	LCS Dup (B202034-BSD1)				Prepared: 28-Se	p-20 Analyzed: 29	9-Sep-20			
Sodium 3.07 1.00 mg/L 3.24 94.6 85-115 1.19 20 Calcium 3.63 0.100 mg/L 4.00 90.7 85-115 0.366 20 Barium 1.91 0.050 mg/L 2.00 95.4 85-115 3.29 20 Strontium 3.75 0.100 mg/L 4.00 93.7 85-115 0.408 20	Potassium	7.62	1.00	mg/L	8.00	95.2	85-115	0.257	20	_
Calcium 3.63 0.100 mg/L 4.00 90.7 85-115 0.366 20 Barium 1.91 0.050 mg/L 2.00 95.4 85-115 3.29 20 Strontium 3.75 0.100 mg/L 4.00 93.7 85-115 0.408 20	Iron	3.57	0.050	mg/L	4.00	89.3	85-115	0.137	20	
Barium 1.91 0.050 mg/L 2.00 95.4 85-115 3.29 20 Strontium 3.75 0.100 mg/L 4.00 93.7 85-115 0.408 20	Sodium	3.07	1.00	mg/L	3.24	94.6	85-115	1.19	20	
Strontium 3.75 0.100 mg/L 4.00 93.7 85-115 0.408 20	Calcium	3.63	0.100	mg/L	4.00	90.7	85-115	0.366	20	
	Barium	1.91	0.050	mg/L	2.00	95.4	85-115	3.29	20	
Magnesium 18.6 0.100 mg/L 20.0 92.8 85-115 0.275 20	Strontium	3.75	0.100	mg/L	4.00	93.7	85-115	0.408	20	
	Magnesium	18.6	0.100	mg/L	20.0	92.8	85-115	0.275	20	

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Notes and Definitions

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch

accepted based on LCS and/or LCSD recovery and/or RPD values.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keine

028QL Date:

Received By:

9-18-20

Received By:

Sampler - UPS - Bus - Other: Delivered By: (Circle One)

Observed Temp. °C Corrected Temp. °C

1.6

Sample Condition
Cool Intact
Pres Pres
No No

CHECKED BY: (Initials) 10

Turnaround Time:

Standard Rush

Bacteria (only) Sample Condition
Cool Intact Observed Temp.

yes Yes
No Corrected Temp.

Observed Temp. °C Corrected Temp. °C

Thermometer ID #113
Correction Factor None

REMARKS

* Sample ID rivised as per David. All Results are emailed. Please provide Email address:

idarthur 5 @ all elle. com

Verbal Result: ☐ Yes

☐ No Add'l Phone #:

Time:

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST



(575) 393-23	(575) 393-2326 FAX (575) 393-2476		
Company Name: Accept	Montalting	BILL TO	ANALTOIS REGOEST
	aniel arthan	P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
ame:	Anthon - Water Sample	State: Zip:	1
on:		Phone #:	
J	Jet+	Fax #:	5
FOR LAB USE ONLY	MATRIX	PRESERV. SAMPLING	re
3	(G)RAB OR (C)OMP # CONTAINERS GROUNDWATER WASTEWATER SOIL	OIL SLUDGE OTHER: ACID/BASE: ICE / COOL OTHER: DATE	Cation Ba Fe Hards Se TSS Resist
1 (CO37	-Pal GaV		
Cardinal's li	DI EASE NOTE: Liability and Damanes. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or fort, shall be limited to the amount paid by the client for the	ing whether based in contract or tort, shall be limited to the amount paid by the client for the	or the

Attachment 6

Public Notice Affidavit and Notice of Application Confirmations

Carlsbad Current Argus.

Affidavit of Publication Ad # 0004356238 This is not an invoice

ALL CONSULTING- CARL SBAD 1718 SOUTH CHEYENNE AVENUE

TULSA, OK 74119

I, a legal clerk of the Carlsbad Current Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

09/02/2020

Legal Clerk

Subscribed and sworn before me this September 2,

2020:

State of WI, County of Brown

My commission expires

Ad # 0004356238 PO #: Munoz SWD #1 # of Affidavits 1

This is not an invoice



APPLICATION FOR AUTHORIZATION TO INJECT

NOTICE IS HEREBY GIVEN: That Anthem Water Solutions, LLC, 5914 W. Courtyard Dr, Suite 320, Austin, TX, 78730, is requesting that the New Mexico Oil Conservation Division administratively approve the APPLICATION FOR AUTHORIZATION TO INJECT as follows:

PURPOSE: The intended purpose of the injection well is to dispose of salt water produced from permitted oil and gas wells.

WELL NAME AND LOCATION: Munoz SWD #1 Located 4.4 miles northwest of Loving, NM NE ¼ NE ¼, Section 1, Township 23S, Range 27E 660' FNL & 660' FEL Eddy County, NM

NAME AND DEPTH OF DISPOSAL ZONE: Bell & Cherry Canyon (2,730' – 3,600') EXPECTED MAXIMUM INJECTION RATE: 10,000 Bbls/day EXPECTED MAXIMUM INJECTION PRESSURE: 546 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objection or request for hearing should be mailed to the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505.

Additional information may be obtained by contacting Nate Alleman at 918-382-7581. #4356238, Current Argus, September 2, 2020

APPLICATION FOR AUTHORIZATION TO INJECT

NOTICE IS HEREBY GIVEN: That Anthem Water Solutions, LLC, 5914 W. Courtyard Dr, Suite 320, Austin, TX, 78730, is requesting that the New Mexico Oil Conservation Division administratively approve the APPLICATION FOR AUTHORIZATION TO INJECT as follows:

PURPOSE: The intended purpose of the injection well is to dispose of salt water produced from permitted oil and gas wells.

WELL NAME AND LOCATION: Munoz SWD #1

Located 4.4 miles northwest of Loving, NM

NE ¹/₄ NE ¹/₄, Section 1, Township 23S, Range 27E

660' FNL & 660' FEL Eddy County, NM

NAME AND DEPTH OF DISPOSAL ZONE: Bell & Cherry Canyon (2,730' – 3,600')

EXPECTED MAXIMUM INJECTION RATE: 10,000 Bbls/day

EXPECTED MAXIMUM INJECTION PRESSURE: 546 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objection or request for hearing should be mailed to the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505.

Additional information may be obtained by contacting Nate Alleman at 918-382-7581.

Munoz SV	VD #1 - Notice of Application Recipients			
Entity Address		City	State	Zip Code
	Landowner & Mineral Owner			
John Munoz	4507 E. Derrick Rd.	Carlsbad	NM	88220
	OCD District			
NMOCD District 2	811 S. 1st St.	Artesia	NM	88210
	Leasehold Operators			
Allied Land Services, LLC (ALLIED LAND) (ALLIED LD.)	119 South Roselawn, Suite 304	Artesia	NM	88210
BC Operating, Inc. (BC OPER.)	4000 N. Big Spring, Suite 310	Midland	TX	79701
Black Mountain Exploration (BLACK MTN.)	500 Main St., Suite 1200	Fort Worth	TX	76102
Chesapeake Operating, Inc.	P.O. Box 18496	Oklahoma City	OK	73154-049
Commission of Public Lands - State Land Office (Mineral Owner)	310 Old Santa Fe Trail	Santa Fe	NM	87501
Crown Oil Partner, LP. (CROWN OIL ETAL)	P.O. Box 50820	Midland	TX	79710
DSD Energy Resources, LLC (DSD ENERGY)	P.O. Box 229	Fort Worth	TX	76101
Exploration Resources, LLC. (XPLOR RES.)	P.O. Box 131	Leggett	TX	77350
Featherstone Development Corporation	P.O. Box 429	Roswell	NM	88202
(Featherstone)				
James W. Marbach (J.W. MARBACH)	1762 Queen HW.	Carlsbad	NM	88220
Matador Production Company	5400 LBJ Freeway, Suite 1500	Dallas	TX	75240
MRC Permian Company	5400 LBJ Freeway, Suite 1500	Dallas	TX	75240
(MRC PERMIAN) (MRC PERMIAN CO)	5 100 255 1 Teemay, Sainte 2500	Danas		752.10
Nadel And Gussman Generations of Energy	First National Bank Building, 15 E. 5th St., #3300	Tulsa	ОК	74103
(NADEL & GUSSMAN)	Thist National Bank Building, 13 E. Stil St., #3500	ruisa	OK	74103
New Mexico BLM	620 E Greene St.	Carlsbad	NM	88220
Oxy USA Inc. (OXY USA WTP LP)	P.O. Box 27570	Houston	TX	77227
Ricahrd C. Chase (R.C. CHASE ETAL)	P.O. Box 359	Artesia	NM	88211

Notes: The table above shows the Entities who were identified as parties of interest requiring notification on either the 1/2-mile well detail list (Attachment 2) or on the 2-mile Mineral Lease Map (Attachment 2). The names listed above in parenthesis, are the abbreviated entity names used on either the 1/2-mile well detail list (Attachment 2) or on the 2-mile Mineral Lease Map (Attachment 2).

Certified Mail® Labels

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Place label at top of the center of the envelope and fold at dotted line.



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Top of the page

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\$5.750 the US POSTAGE FIRST-CLASS FROM 74119 OCT 13 2020 stamps endicia

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\$5.750 H FIRST-CLASS FROM 74119 3 OCT 13 2020 stamps endicia

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New Mexico BLM 620 East Greene Street Carlsbad NM 88220-6292

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