Initial

Application

Part I

Received 6/29/21

RECEIVED: 6/29/21 REVIEWER: TYPE: SWD APP NO: pBL2118136188

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



1220 300111 31. Fidiles Dilve, 3	Sullid Fe, NW 87303
ADMINISTRATIVE APPLIC	
THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE A REGULATIONS WHICH REQUIRE PROCESSING	
Applicant: <u>Anthem Water Solutions, LLC</u>	OGRID Number: <u>330069</u>
Vell Name: <u>Coati 362534 State SWD 1</u>	API: <u>30-025-XXXXX</u>
ool: SWD; Devonian-Silurian	Pool Code: <u>97869</u>
SUBMIT ACCURATE AND COMPLETE INFORMATION RI	
1) TYPE OF APPLICATION: Check those which apply f A. Location – Spacing Unit – Simultaneous Dedic NSL NSP _(PROJECT AREA)	
B. Check one only for [1] or [1] [1] Commingling – Storage – Measurement DHC DTB PLC PC [11] Injection – Disposal – Pressure Increase – WFX PMX SWD IPI	OLS OLM Enhanced Oil Recovery FOR PPR
	FOR OCD ONLY
2) NOTIFICATION REQUIRED TO: Check those which o	pply. Notice Complete
 A. X Offset operators or lease holders B. Royalty, overriding royalty owners, revenue 	
C. X Application requires published notice	
D. X Notification and/or concurrent approval to	content Complete
E. $\overline{\mathbf{X}}$ Notification and/or concurrent approval k	
 F. X Surface owner G.X For all of the above, proof of notification of the control of the con	or publication is attached, and/or,
3) CERTIFICATION: I hereby certify that the information administrative approval is accurate and complete understand that no action will be taken on this approval notifications are submitted to the Division.	to the best of my knowledge. I also
Note: Statement must be completed by an individue	al with managerial and/or supervisory capacity.
	6/29/2021
Marshall Tippen	Date
Print or Type Name	(972) 795-4201
	Phone Number
Marwalan	mtippen@anthemwsllc.com
Signature	e-mail Address



6/29/2021

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

Re: Application of Anthem Water Solutions, LLC to drill and permit the saltwater disposal well Coati 362534 State SWD 1 located in Unit L, Section 36, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico.

To Whom it May Concern:

Please find the enclosed C-108 Application for Authority to Inject, supporting the above-referenced request for saltwater disposal. The well will be operated as a commercial endeavor offering operations in the area additional options for produced water disposal. Please find the enclosed C-108 Application for Authority to Inject along with supporting documents.

I would like to point out that this application for a proposed Devonian-Silurian SWD interval includes the following: Published legal notice ran 6/17/2021 in The Lovington Leader and all offset operators and other interested parties have been notified individually. The legal notice affidavit is included herein. This application also all information required for a completed Form C-108, as well as a wellbore schematic, area of review maps, affected party plat and other required and pertinent information. This well is located on state land and state minerals; a copy of the application has been sent to the appropriate regulatory bodies.

I respectfully request that the approval of this saltwater disposal well proceed swiftly and if your staff requires additional information or has any questions, please do not hesitate to call or email me.

Sincerely,

Marshall Tippen

Anthem Water Solutions

mtippen@anthemwsllc.com | (972) 795-4201

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 X Disposal Storage Application qualifies for administrative approval? Yes No
II.	OPERATOR: Anthem Water Solutions, LLC
	ADDRESS: 5914 W. Courtyard Drive, Suite 320, Austin TX 78730
	CONTACT PARTY: Marshall Tippen PHONE: (979) 795-4201
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? YesYes
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: Marshall Tippen TITLE: Director of Engineering
	SIGNATURE:DATE: 6/29/2021
*	E-MAIL ADDRESS:mtippen@anthemwsllc.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.

Item III - Subject Well Data (Attachment 1)

A. Well Data

1) General Well Data

Operator: Anthem Water Solutions, LLC

<u>Lease Name and Well Number:</u> Coati 362534 State SWD 1 <u>Location Footage Calls:</u> 1699' from FSL, 203' from FWL

Legal Location: Unit L, Section 36, Township 25 South, Range 34 East, NMPM

Ground Elevation: 3309 feet

Proposed Injection Interval: 17,230 - 18,283 (open hole)

County: Lea

2) - 3) Casing, Tubing & Cement Information

	Casing Information									
Туре	Conductor (1)	Surface (2)	Intermediate (3)	Production (4)	Liner (5)	Open Hole (6)				
OD	30"	16"	13 3/8"	9 5/8"	7 5/8"	N/A				
Weight	N/A	84 lb / ft	68 lb / ft	53.5 lb / ft	39 lb / ft	N/A				
Grade	N/A	J-55 BTC	L-80 EZ-GO FJ3	HCP-110 BTC	HCP-110 EZ- GO FJ3	N/A				
Hole Size	N/A	18 1/8"	14 3/4"	12 1/4"	8 1/2"	6 1/2"				
Depth Set Top	-	-	-	-	13,480	17,230				
Depth Set Bottom	120	996	5,414	13,680	17,230	18,283				
тос	Surf	Surf	Surf	Surface	0	0				
TOC Method	Circ	Circ	Circ	Circ	CBL	0				
Volume (Sacks)	250	500	965	4,031	622	N/A				
DV Tool 1	N/A	N/A	N/A	5,514	N/A	N/A				
DV Tool 2	N/A	N/A	N/A	11,013	N/A	N/A				

Tubing Information								
Туре	Upper String (7)	Lower String (8)						
OD	5 1/2"	4 1/2"						
Weight	20 lb / ft	18 lb / ft						
Grade	HCL-80 BTC	HCL-80 LTC						
Hole Size	N/A	N/A						
Depth Set Top	-	13,380						
Depth Set Bottom	13,380	17,180						

^{*}Wellbore Diagram Attached

4) Packer Information:

Arrowset AS1-X or equivalent packer set at approximately 17180 feet *Packer Schematic Attached

B. Completion Information

1) Injection Formation Name: Devonian-Silurian

Pool Name: SWD; Devonian-Silurian

Pool Code: 97869

2) **Injection Interval:** 17,230 - 18,283 (open hole)

3) **Drilling Purpose:** Drilled for injection

4) **Overlying Oil and Gas Zones:** Below are approximate tops for known oil and gas producing zones in the area.

Delaware: 5364'Bone Spring: 10415'Wolfcamp: 12556'Strawn: 13937'

Atoka: 14420'Morrow: 15509'

5) **Underlying Oil and Gas Zones:** No underlying oil and gas zones exist.

Item V – Well and Lease Maps (Attachment 2)

- 1) 2-mile oil & Gas Well Map
- 2) 1-mile Well Detail List
- 3) 2-Mile Lease Map
- 4) 2-Mile Mineral Ownership Map
- 5) 2-Mile Surface Ownership map
- 6) 1.5-Mile Deep SWD Map (Devonian-Silurian)
- 7) Potash Lease Map

Item VI – AOR Well List (Attachment 2)

There have been 19 wells drilled within the 1-mile AOR. None of these wells nor any new or permitted wells penetrate the injection zone.

Item VII – Proposed Operation (Attachment 3)

- 1) Proposed Maximum Injection Rate: 30,000 bwpd Proposed Average Injection Rate: 15,000 bwpd
- 2) A closed system will be used.
- 3) **Proposed Maximum Injection Pressure:** 3446 psi (surface)
- 4) **Proposed Average Injection Pressure:** 2067 psi (surface)
- 5) **Source Water Analysis:** It is expected that the injected fluid will consist of water produced from the Wolfcamp and Bone Springs formations. Water samples from these formations are included in Attachment 3.
- 6) **Injection Formation Water Analysis:** The proposed SWD will be injecting water into the Devonian-Silurian formation which is a non-productive zone known to be compatible with formation water from the Wolfcamp and Bone Springs formations. Water analyses from the Devonian-Silurian formation in the area are included in attachment 3.

Item VIII - Geologic Description

The proposed injection interval includes the Devonian–Silurian formation from 17,230 feet to 18,283 feet. This formation consists of interbedded carbonate rocks consisting of dolomites and limestones with some interbedded siltstones and shales. Several thick sections of porous and permeable intervals capable of taking water are present within the subject formations in the area.

The base of the lowermost Underground Source of Drinking Water (USDW) is at a depth of approximately 946 feet. The USDW is covered by 16-inch casing set at 996 feet and cemented to surface, additionally the USDW is covered by intermediate casing set at 5414 feet and cemented to surface. Geophysical log assessment was conducted to accurately determine the top of the Rustler formation, as well as the top and base of the Salado formation in the area.

Item IX – Proposed Stimulation

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

Item X – Logging and Test Data

Log data will be submitted to the OCD upon completion of this well.

Item XI – Fresh Groundwater Samples (Attachment 4)

Based on a review of the data from the New Mexico Office of State Engineer there are no fresh water wells within a 1-mile radius of the proposed location. As a result, no groundwater samples were obtained.

XII - No Hydrologic Connection Statement (Attachment 5)

Anthem has examined available geologic and engineering data, and has found no evidence of faulting present in the area that would provide a hydrologic connection between the injection interval and overlying USDWs. Additionally, the casing and cementing progam has been designed to further insure there will be no hydrologic connection between the injection interval and overlying USDWs. A letter from a knowledgeable and qualified expert stating that there is a low risk of seismic activity from the proposed injection activities is included in Attachment 5.

XIII - Proof of Notice (Attachment 6)

A Public Notice was filed with The Lovington Leader and an affidavit is included in Attachment 6.

A copy of the application was mailed to the OCD District Office, landowners, appropriate regulatory bodies, and leasehold operators within a 1-mile radius of the proposed SWD location. A list of recipients, as well as delivery confirmations, is included in Attachment 6.

Attachments Table of Content:

Attachment 1:

C-102

Proposed Wellbore Diagram

Packer Schematic

Attachment 2:

2-mile Oil & Gas Well Map

1-mile Well Detail List

2-Mile Lease Map

2-Mile Mineral Ownership Map

2-Mile Surface Ownership map

1.5-Mile Deep SWD Map (Devonian-Silurian)

Potash Lease Map

Attachment 3:

Source Water Analysis

Formation Water Analysis

Attachment 4:

1-Mile Fresh Ground Water Map

Fresh Ground Water Samples

Attachment 5:

Letter of Seimic Activity

Attachment 6:

Public Notice Affidavit

List of Notification Applicants & Delivery Confirmations

Attachment 1: Form C-102

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 Phone: (575) 393-6161 Fax: (575) 393-0720 <u>District II</u> 811 S. First St., Artesia, NM 88210

Phone: (575) 748-1283 Fax: (575) 748-9720 <u>District IIII</u> 1000 Rio Brazos Road, Aztec, NM 87410 Phone: (505) 334-6178 Fax: (505) 334-6170

District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3460 Fax: (505) 476-3462 State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

☐ AMENDED REPORT

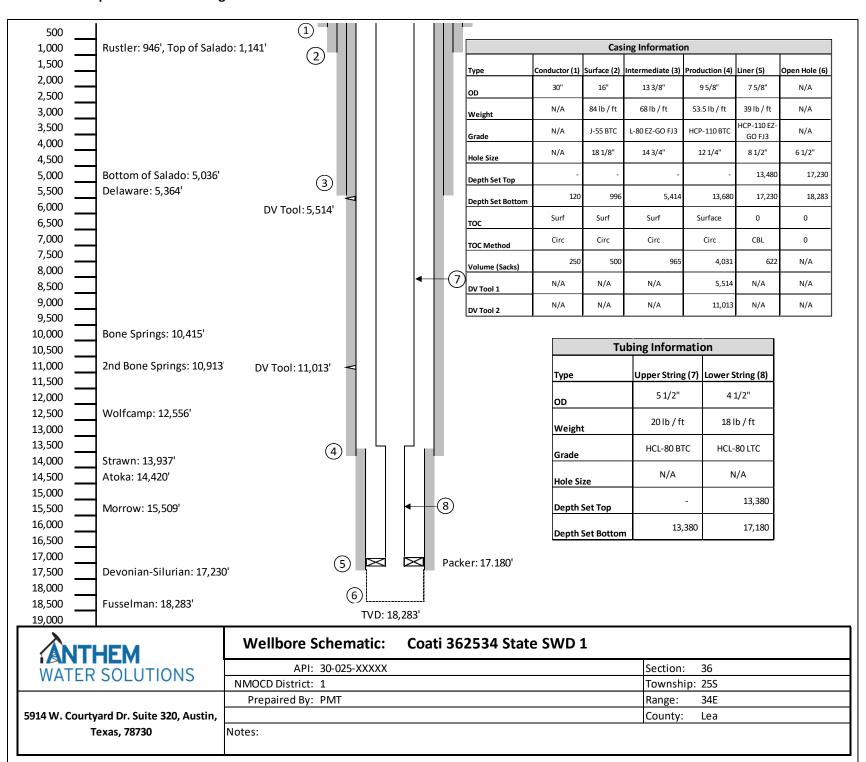
WELL LOCATION AND ACREAGE DEDICATION PLAT

1	API Numb	er		² Pool Cod	le	³ Pool Name					
30-0)25-XXX	XX		97869		SWD; Devonian-Silurian					
⁴ Property	⁴ Property Code ⁵ Property Name						⁶ Well Number				
		Coati 3	62534 St	ate SWD					1		
7 OGRID	No.				⁸ Operator	Name				⁹ Elevation	
330069		Anthen	n Water S	Solutions, Ll	LC				3309	,	
					¹⁰ Surface L	ocation					
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/V	West line		County
L	36	25S	34E		1699	South	203	We	st	Lea	
		'	11 Bot	ttom Hole	e Location If	Different From	Surface		-		
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/V	West line		County
12 Dedicated Acres	13 Joint or	r Infill 14 Co	nsolidation	Code 15 Or	der No.		·				

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

Ш	LAT = 32.0843150 N LONG = -103.4315200 W		С	В	Α	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.
	E		F <u>GEODETI</u> NAD 83 GRID	-	Н	Signature Date Printed Name E-mail Address
203′	L 5		LAT = 32.	4 State SWD 1 .0843150 N .3.4315200 W	l	INSURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.
	1699' M N		O	Р	Date of Survey Signature and Seal of Professional Surveyor: PRELIMINARY Certified survey to be conducted and submitted upon C-108 approval. Certificate Number	

Attachment 1: Proposed Wellbore Diagram



AS1-X MECHANICAL PACKER



The ACT AS1-X Packer is the most versatile of the mechanically set retrievable packers and may be used in any production application. Treating, testing, injecting, pumping wells, flowing wells, deep or shallow, the AS1-X is suited for all. The packer can be left in tension or compression, depending on well conditions and the required application. A large internal by-pass reduces swabbing when running and retrieving. The by-pass closes when the packer is set and opens prior to releasing the upper slips when retrieving to allow pressure equalization.

The J-slot design allows easy setting and releasing; 1/4 turn right-hand set, right-hand release. A patented upper-slip releasing system reduces the force required to release the packer. A non directional slip is released first, making it easier to release the other slips. The AS1-X packer can withstand 7,000 psi (48 MPa) of differential pressure above or below.

FEATURES, ADVANTAGES AND BENEFITS:

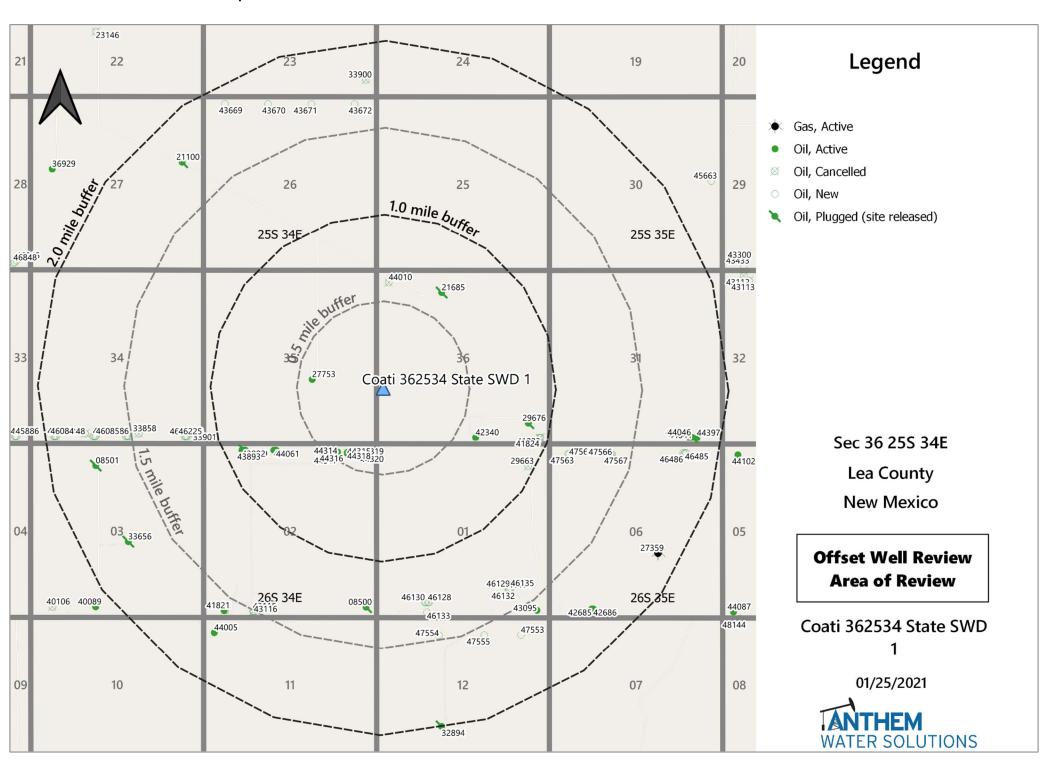
- The design holds high differential pressure from above or below, enabling the packer to meet most production, stimulation, and injection needs
- The packer can be set with compression, tension, or wire line, enabling deployment in shallow and deep applications
- . The packer can be set and released with only a one-quarter turn of the tubing
- The bypass valve is below the upper slips so that debris are washed from the slips when the valve is opened, reducing the times for circulation and total retrieval

- The full opening enables unrestricted flow and the passage of wire line tools and other packer systems
- The packer can be run with the T-2 on-off tool, which enables the tubing to be disconnected and retrieved without retrieving the
 packer

OPTIONS:

- Elastomer options are available for hostile environments
- · Optional safety releases are available

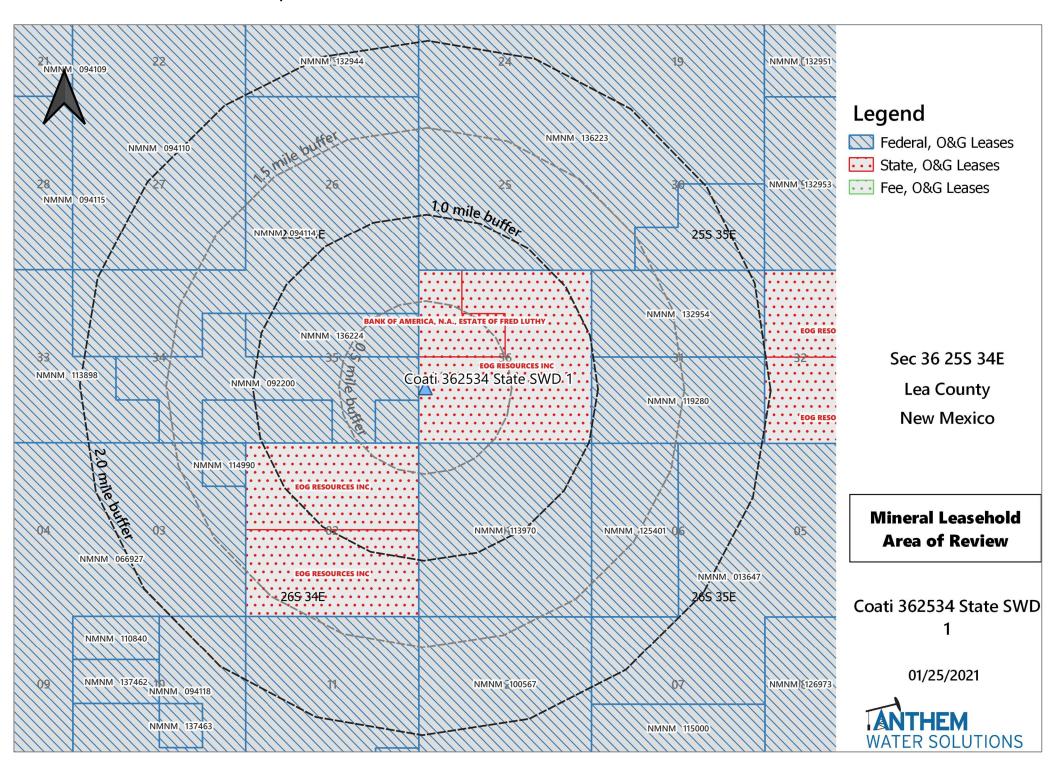
Attachment 2: 2-Mile Oil & Gas Map



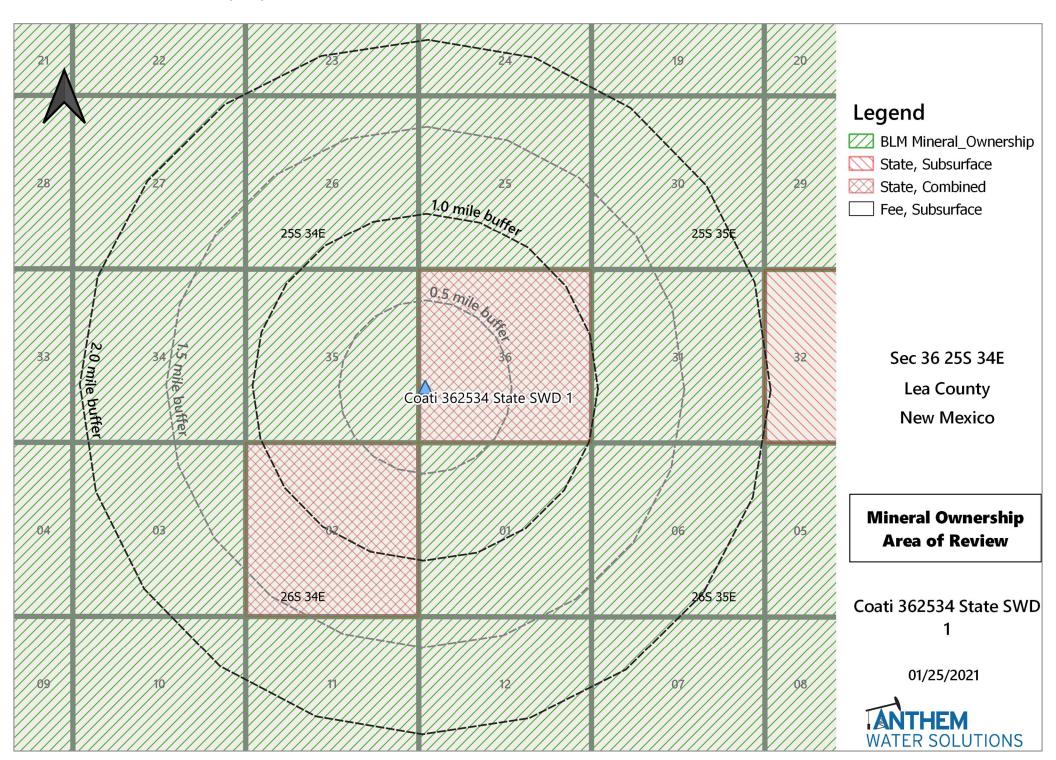
Attachment 2: 1-mile Well Detail List

AOR Tabulation for Coati 362534 State SWD 1 (Top of Injection Interval: 17,230')										
Well Name	API#	Well Type	Well Status	Operator	Spud Date	Location (Sec, Tn, Rg)	Total Vertical Depth	Penetrate Inj Zone		
RUBY 2 STATE COM #602H	30-025-44060	Oil	Active	EOG RESOURCES INC	10/5/2017	D-02-26S-34E	12,536	No		
RUBY 2 STATE COM #601Y	30-025-44103	Oil	Active	EOG RESOURCES INC	10/26/2017	D-02-26S-34E	12,550	No		
RUBY 2 STATE COM #601	30-025-44059	Oil	Plugged (site released)	EOG RESOURCES INC	10/3/2017	D-02-26S-34E	967	No		
PITCHBLENDE FEDERAL UNIT #002	30-025-27753	Oil	Active	EOG RESOURCES INC		J-35-25S-34E	15,997	No		
RUBY 2 STATE COM #707H	30-025-44317	Oil	Active	EOG RESOURCES INC	2/17/2018	A-02-26S-34E	12,937	No		
RUBY 2 STATE COM #705H	30-025-43933	Oil	Active	EOG RESOURCES INC	8/22/2017	C-02-26S-34E	12,764	No		
RUBY 2 STATE COM #702H	30-025-43892	Oil	Active	EOG RESOURCES INC	8/6/2017	D-02-26S-34E	12,743	No		
RUBY 2 STATE COM #703H	30-025-43893	Oil	Active	EOG RESOURCES INC	8/9/2017	D-02-26S-34E	12,789	No		
RUBY 2 STATE COM #704H	30-025-43894	Oil	Active	EOG RESOURCES INC	8/19/2017	C-02-26S-34E	12,710	No		
RUBY 2 STATE COM #706H	30-025-44316	Oil	Active	EOG RESOURCES INC	2/10/2018	A-02-26S-34E	12,760	No		
RUBY 2 STATE COM #710H	30-025-44320	Oil	Active	EOG RESOURCES INC	3/1/2018	A-02-26S-34E	12,688	No		
RUBY 2 STATE COM #709H	30-025-44319	Oil	Active	EOG RESOURCES INC	3/3/2018	A-02-26S-34E	12,925	No		
RUBY 2 STATE COM #603H	30-025-44061	Oil	Active	EOG RESOURCES INC	10/19/2017	C-02-26S-34E	12,491	No		
RUBY 2 STATE COM #604H	30-025-44314	Oil	Active	EOG RESOURCES INC	2/14/2018	A-02-26S-34E	12,056	No		
RUBY 2 STATE COM #605H	30-025-44315	Oil	Active	EOG RESOURCES INC	2/21/2018	A-02-26S-34E	12,498	No		
RUBY 2 STATE COM #708H	30-025-44318	Oil	Active	EOG RESOURCES INC	2/24/2018	A-02-26S-34E	12,774	No		
PRE-ONGARD WELL #001	30-025-21685	Oil	Plugged (site released)	PRE-ONGARD WELL OPERATOR (Pauley Petroluem Inc)	3/6/1966	C-36-25S-34E	5,795	No		
OPAL 36 STATE #301H	30-025-42340	Oil	Active	EOG RESOURCES INC		O-36-25S-34E	10,270	No		
PRE-ONGARD WELL #001	30-025-29676	Oil	Plugged (site released)	PRE-ONGARD WELL OPERATOR (CIL Petroleum Inc)	5/15/1986	P-36-25S-34E	5,520	No		
Notes: No Wells within a 1-mile radius per										

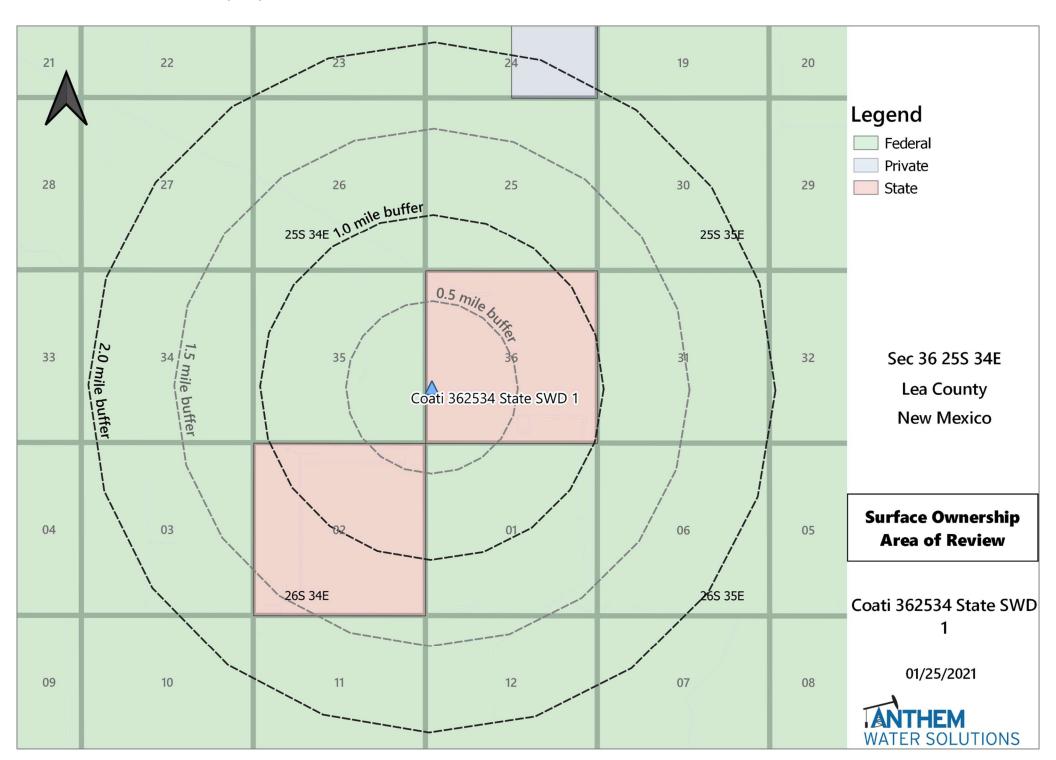
Attachment 2: 2-Mile Oil & Gas Lease Map



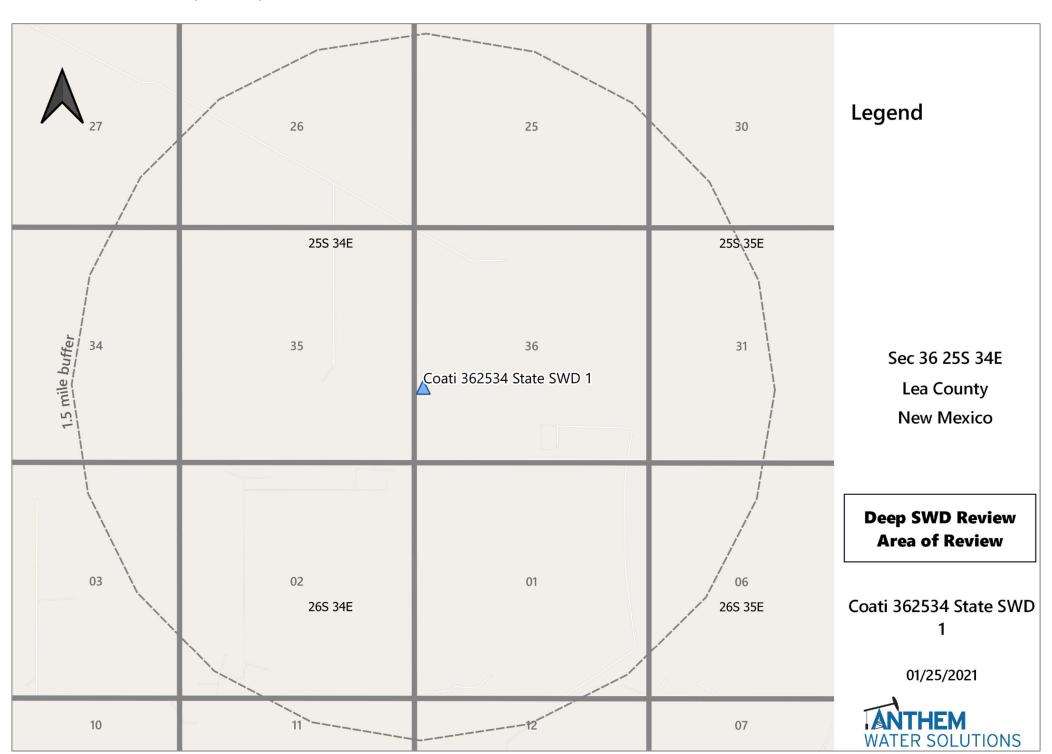
Attachment 2: Mineral Ownership Map



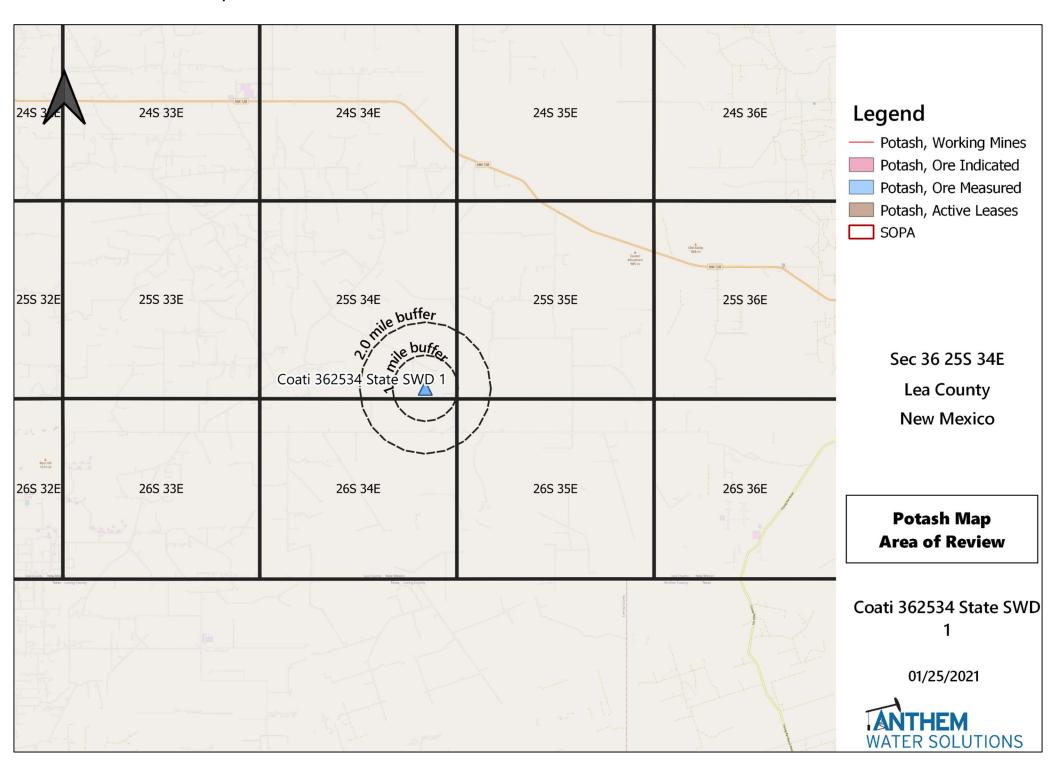
Attachment 2: Surface Ownership Map



Attachment 2: 1.5 Mile Deep SWD Map



Attachment 2: Potash Lease Map



Attachment 3: Formation & Source Water Analysis

Injection Formation Water Analysis													
Anthem Water Solutions, LLC													
Well Name	API	Latitude	Longitude	Section	Township	Range	County	State	Field	Formation	TDS (Mg/L)	Bicarbonate (MG/L)	Sulfate (Mg/L)
RIO BLANCO 33 FEDERAL #002	30-025-36360	32.3499985	-103.4771576	33	225	34E	Lea	NM	BELL LAKE	DEVONIAN	69,797	456	1,074
RIO BLANCO 9 STATE #001	30-025-36302	32.3246078	-103.4733582	9	23S	34E	Lea	NM	BELL LAKE	DEVONIAN	192,154	122	943
RIO BLANCO 33 FEDERAL #001	30-025-36359	32.3436928	-103.4783325	33	225	34E	Lea	NM	BELL LAKE	DEVONIAN	77,881	366	1,941
MAD DOG 15 FEDERAL COM #001	30-025-36778	32.2992020	-103.4514999	15	235	34E	Lea	NM	ANTELOPE RIDGE	DEVONIAN	72,188	332	1,198
ANTELOPE RIDGE UNIT #003	30-025-21082	32.2593155	-103.4610748	34	235	34E	Lea	NM	APACHE RIDGE	DEVONIAN	80,187	476	900
LEA UNIT #009	30-025-02432	32.5785980	-103.5121155	13	20S	34E	Lea	NM	LEA	DEVONIAN	45,778	1,145	729
LEA UNIT #008	30-025-02431	32.5927162	-103.5116730	12	20S	34E	Lea	NM	SWD	DEVONIAN	35,094	1,272	1,096
KING SWD #001	30-015-20257	32.5933838	-104.4920578	9	205	25E	Lea	NM	SWD	DEVONIAN	7,989	808	1,748
BELL LAKE UNIT #006	30-025-08483	32.3282585	-103.5071030	6	235	34E	Lea	NM	BELL LAKE	DEVONIAN	71,078	500	1,000
STATE B COM #001	30-025-09716	32.1794052	-103.2212524	36	24S	36E	Lea	NM	CUSTER	DEVONIAN	176,234	128	1,004
WEST DOLLARHIDE DEVONIAN UNIT #104	30-025-12297	32.1720123	-103.0761032	32	24S	38E	Lea	NM	DOLLARHIDE	DEVONIAN	50,858	183	980
E C HILL B FEDERAL #001	30-025-10945	32.2658463	-103.1443634	34	235	37E	Lea	NM	TEAGUE	DEVONIAN	112,959	288	2,765
E C HILL D FEDERAL #004	30-025-10950	32.2653503	-103.1443634	34	235	37E	Lea	NM	TEAGUE	DEVONIAN	236,252	129	781
STATE NJ A #001	30-025-11398	32.1647491	-103.1273346	2	25S	37E	Lea	NM	JUSTIS	DEVONIAN	105,350	660	4,950
PRE-ONGARD WELL #001	30-025-10717	32.3025551	-103.1358261	14	235	37E	Lea	NM	CLINE	DEVONIAN	118,979	462	2,593
PRE-ONGARD WELL #001	30-025-11818	32.0994835	-103.1656723	28	25S	37E	Lea	NM	CROSBY	DEVONIAN	27,506	1,089	1,079
PRE-ONGARD WELL #006	30-025-11950	32.0777245	-103.1624680	4	26S	37E	Lea	NM	CROSBY	DEVONIAN	31,931	302	591
					Source V	Water	Δnalysi	S					
					them Wa								
Well Name	API	Latitude	Longitude		Township	_		State	Field	Formation	TDS (Mg/L)	Bicarbonate (MG/L)	Sulfate (Mg/I)
THISTLE UNIT #004	30-025-34456	32.2557449	-103.562294		235	33E	country	State	riciu	Torridation	21,758		Surface (IMB/ L)
THISTLE UNIT #005	30-025-34580	32.2630043	0.010-213-10.01				Lea	NM	IOHNSON RANCH	WOLFCAMP	21,,00	163	150
FLAGLER FEDERAL #001	30-025-30599		-103.562302	34			Lea	NM	JOHNSON RANCH		74 186	163	150 269
THYME APY FEDERAL #002		32.1505394	-103.562302 -103.596481		235	33E	Lea	NM	JOHNSON RANCH	WOLFCAMP	74,186 40,770	386	269
		32.1505394 32.3364449	-103.596481	8	23S 25S	33E 33E	Lea Lea	NM NM	JOHNSON RANCH	WOLFCAMP WOLFCAMP	40,770	386 122	269 6
DIAMONDTAIL 24 FEDERAL #001	30-025-33529	32.3364449	-103.596481 -103.625145	8	23S 25S 23S	33E 33E 32E	Lea Lea Lea	NM NM NM	JOHNSON RANCH JOHNSON RANCH RED TANK	WOLFCAMP WOLFCAMP BONE SPRING	40,770 172,896	386 122 781	269 6 1,150
DIAMONDTAIL 24 FEDERAL #001 MESA VERDE 6 FEDERAL #014	30-025-33529 30-025-33344	32.3364449 32.288414	-103.596481 -103.625145 -103.634743	8 1 24	23S 25S 23S 23S	33E 33E 32E 32E	Lea Lea Lea Lea	NM NM NM	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL	WOLFCAMP WOLFCAMP BONE SPRING BONE SPRING	40,770 172,896 172,490	386 122 781 199	269 6 1,150 2
MESA VERDE 6 FEDERAL #014	30-025-33529 30-025-33344 30-025-32753	32.3364449 32.288414 32.252753	-103.596481 -103.625145 -103.634743 -103.717583	8 1 24 6	23S 25S 23S 23S 24S	33E 33E 32E 32E 32E	Lea Lea Lea Lea	NM NM NM NM	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE	WOLFCAMP WOLFCAMP BONE SPRING BONE SPRING BONE SPRING	40,770 172,896 172,490 254,344	386 122 781 199 83	269 6 1,150 2 1,128
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002	30-025-33529 30-025-33344 30-025-32753 30-025-32754	32.3364449 32.288414 32.252753 32.2763062	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485	8 1 24 6 30	23S 25S 23S 23S 24S 23S	33E 33E 32E 32E 32E 32E 32E	Lea Lea Lea Lea Lea	NM NM NM NM NM	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU	WOLFCAMP WOLFCAMP BONE SPRING BONE SPRING BONE SPRING BONE SPRING	40,770 172,896 172,490 254,344 274,347	386 122 781 199 83 83	269 6 1,150 2 1,128 1,202
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002 MESA VERDE 6 FEDERAL #006	30-025-33529 30-025-33344 30-025-32753 30-025-32754 30-025-32397	32.3364449 32.288414 32.252753	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485 -103.71629	8 1 24 6 30 6	23S 25S 23S 23S 24S	33E 33E 32E 32E 32E	Lea Lea Lea Lea Lea Lea	NM NM NM NM	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU MESA VERDE	WOLFCAMP WOLFCAMP BONE SPRING BONE SPRING BONE SPRING BONE SPRING BONE SPRING	40,770 172,896 172,490 254,344 274,347 147,698	386 122 781 199 83 83 933	269 6 1,150 2 1,128 1,202 3,804
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002 MESA VERDE 6 FEDERAL #006 MESA VERDE 6 FEDERAL #005	30-025-33529 30-025-33344 30-025-32753 30-025-32754 30-025-32397 30-025-32504	32.3364449 32.288414 32.252753 32.2763062 32.244917 32.2482376	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485 -103.71629 -103.711617	8 1 24 6 30 6	23S 25S 23S 23S 24S 24S 24S 24S 24S	33E 33E 32E 32E 32E 32E 32E 32E	Lea Lea Lea Lea Lea	NM NM NM NM NM	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU MESA VERDE MESA VERDE	WOLFCAMP WOLFCAMP BONE SPRING BONE SPRING BONE SPRING BONE SPRING BONE SPRING BONE SPRING	40,770 172,896 172,490 254,344 274,347 147,698 263,977	386 122 781 199 83 83	269 6 1,150 2 1,128 1,202 3,804 567
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002 MESA VERDE 6 FEDERAL #006 MESA VERDE 6 FEDERAL #005 RED BULL 31 STATE #001	30-025-33529 30-025-33344 30-025-32753 30-025-32754 30-025-32397 30-025-32504 30-025-36798	32.3364449 32.288414 32.252753 32.2763062 32.244917 32.2482376 32.2574569	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485 -103.71629 -103.711617 -103.405709	8 1 24 6 30 6 6 31	23S 25S 23S 23S 24S 24S 24S 24S 24S 24S 23S	33E 33E 32E 32E 32E 32E 32E 32E 32E 32E	Lea Lea Lea Lea Lea Lea Lea Lea	NM NM NM NM NM NM NM NM	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU MESA VERDE MESA VERDE ANTELOPE RIDGE	WOLFCAMP WOLFCAMP BONE SPRING	40,770 172,896 172,490 254,344 274,347 147,698 263,977 280,094	386 122 781 199 83 83 933 104	269 6 1,150 2 1,128 1,202 3,804 567 385
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002 MESA VERDE 6 FEDERAL #006 MESA VERDE 6 FEDERAL #005	30-025-33529 30-025-33344 30-025-32753 30-025-32754 30-025-32397 30-025-32504 30-025-36798 30-025-41340	32.3364449 32.288414 32.252753 32.2763062 32.244917 32.2482376	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485 -103.71629 -103.711617 -103.405709 -103.558234	8 1 24 6 30 6 6 31 22	23S 25S 23S 23S 24S 24S 24S 24S 24S	33E 33E 32E 32E 32E 32E 32E 32E 32E	Lea Lea Lea Lea Lea Lea Lea	NM NM NM NM NM NM	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU MESA VERDE MESA VERDE	WOLFCAMP WOLFCAMP BONE SPRING	40,770 172,896 172,490 254,344 274,347 147,698 263,977 280,094 135,196	386 122 781 199 83 83 933 104 87	269 6 1,150 2 1,128 1,202 3,804 567 385 765
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002 MESA VERDE 6 FEDERAL #006 MESA VERDE 6 FEDERAL #005 RED BULL 31 STATE #001 THISTLE UNIT #056H	30-025-33529 30-025-33344 30-025-32753 30-025-32754 30-025-32397 30-025-32504 30-025-36798 30-025-41340 30-025-20377	32.3364449 32.288414 32.252753 32.2763062 32.244917 32.2482376 32.2574569 32.2693145 32.5750008	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485 -103.71629 -103.711617 -103.405709	8 1 24 6 30 6 6 31 22	23S 25S 23S 23S 24S 24S 24S 24S 24S 24S 24S 24S 23S	33E 33E 32E 32E 32E 32E 32E 32E 32E 35E 35E	Lea Lea Lea Lea Lea Lea Lea Lea Lea	NM NM NM NM NM NM NM NM NM	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU MESA VERDE MESA VERDE ANTELOPE RIDGE TRIPLE X	WOLFCAMP WOLFCAMP BONE SPRING	40,770 172,896 172,490 254,344 274,347 147,698 263,977 280,094 135,196 173,141	386 122 781 199 83 83 933 104	269 6 1,150 2 1,128 1,202 3,804 567 385 765 7,916
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002 MESA VERDE 6 FEDERAL #006 MESA VERDE 6 FEDERAL #005 RED BULL 31 STATE #001 THISTLE UNIT #056H APPLESEED FEDERAL COM #001	30-025-33529 30-025-33344 30-025-32753 30-025-32754 30-025-32397 30-025-32504 30-025-36798 30-025-41340 30-025-20377 30-025-27250	32.3364449 32.288414 32.252753 32.2763062 32.244917 32.2482376 32.2574569 32.2693145	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485 -103.71629 -103.711617 -103.405709 -103.558234 -103.473038	8 1 24 6 30 6 6 31 22 17	23S 25S 23S 23S 24S 24S 24S 24S 24S 24S 23S 24S 23S 20S	33E 33E 32E 32E 32E 32E 32E 32E 35E 35E 35E 35E	Lea	NM	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU MESA VERDE MESA VERDE ANTELOPE RIDGE TRIPLE X LYNCH	WOLFCAMP WOLFCAMP BONE SPRING	40,770 172,896 172,490 254,344 274,347 147,698 263,977 280,094 135,196	386 122 781 199 83 83 933 104 87 500	269 6 1,150 2 1,128 1,202 3,804 567 385 765 7,916 1,723
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002 MESA VERDE 6 FEDERAL #006 MESA VERDE 6 FEDERAL #005 RED BULL 31 STATE #001 THISTLE UNIT #056H APPLESEED FEDERAL COM #001 BERRY APN STATE #001	30-025-33529 30-025-33344 30-025-32753 30-025-32754 30-025-32397 30-025-32504 30-025-36798 30-025-41340 30-025-20377 30-025-27250 30-025-27135	32.3364449 32.288414 32.252753 32.2763062 32.244917 32.2482376 32.2574569 32.2693145 32.5750008 32.5060349	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485 -103.71629 -103.711617 -103.405709 -103.558234 -103.473038 -103.498344	8 8 1 1 24 6 6 30 6 6 31 22 177 5 4	23S 25S 23S 23S 24S 24S 24S 24S 24S 23S 23S 23S 20S 21S	33E 33E 32E 32E 32E 32E 32E 32E 35E 35E 35E 34E	Lea	NM N	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU MESA VERDE MESA VERDE ANTELOPE RIDGE TRIPLE X LYNCH BERRY	WOLFCAMP WOLFCAMP BONE SPRING	40,770 172,896 172,490 254,344 274,347 147,698 263,977 280,094 135,196 173,141 128,117	386 122 781 199 83 83 933 104 87 500 5,174	269 6 1,150 2 1,128 1,202 3,804 567 385 765 7,916 1,723 403
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002 MESA VERDE 6 FEDERAL #006 MESA VERDE 6 FEDERAL #005 RED BULL 31 STATE #001 THISTLE UNIT #056H APPLESEED FEDERAL COM #001 BERRY APN STATE #001 HUNT APO STATE #001 LEA UNIT #005	30-025-33529 30-025-33344 30-025-32753 30-025-32754 30-025-32397 30-025-32504 30-025-36798 30-025-41340 30-025-20377 30-025-27250 30-025-27135 30-025-02429	32.3364449 32.288414 32.252753 32.2763062 32.244917 32.2482376 32.2574569 32.2693145 32.5750008 32.5060349 32.5070038 32.5858536	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485 -103.71629 -103.711617 -103.405709 -103.558234 -103.473038 -103.498344 -103.481232 -103.51165	8 1 1 24 6 6 30 6 6 31 22 17 5 4 12	23S 25S 23S 23S 24S 24S 24S 24S 24S 23S 23S 20S 21S 20S	33E 33E 32E 32E 32E 32E 32E 32E 35E 35E 35E 34E 34E	Lea	NM N	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU MESA VERDE MESA VERDE ANTELOPE RIDGE TRIPLE X LYNCH BERRY GRAMA RIDGE	WOLFCAMP WOLFCAMP BONE SPRING	40,770 172,896 172,490 254,344 274,347 147,698 263,977 280,094 135,196 173,141 128,117 294,627 202,606	386 122 781 199 83 83 933 104 87 500 5,174 567	269 6 1,150 2 1,128 1,202 3,804 567 385 765 7,916 1,723 403 992
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002 MESA VERDE 6 FEDERAL #006 MESA VERDE 6 FEDERAL #005 RED BULL 31 STATE #001 THISTLE UNIT #056H APPLESEED FEDERAL COM #001 BERRY APN STATE #001 HUNT APO STATE #001	30-025-33529 30-025-33344 30-025-32753 30-025-32754 30-025-32397 30-025-32504 30-025-36798 30-025-41340 30-025-20377 30-025-27250 30-025-27135	32.3364449 32.288414 32.252753 32.2763062 32.244917 32.2482376 32.2574569 32.2693145 32.5750008 32.5060349 32.5070038	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485 -103.711617 -103.405709 -103.558234 -103.473038 -103.498344 -103.481232 -103.636131	8 1 1 24 6 6 30 6 6 31 22 177 5 4 12 14	23S 25S 23S 23S 24S 24S 24S 24S 24S 23S 23S 23S 20S 21S	33E 33E 32E 32E 32E 32E 32E 32E	Lea	NM N	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU MESA VERDE MESA VERDE ANTELOPE RIDGE TRIPLE X LYNCH BERRY GRAMA RIDGE LEA	WOLFCAMP WOLFCAMP BONE SPRING	40,770 172,896 172,490 254,344 274,347 147,698 263,977 280,094 135,196 173,141 128,117 294,627 202,606 28,079	386 122 781 199 83 83 933 104 87 500 5,174 567 74 5,196	269 6 1,150 2 1,128 1,202 3,804 567 385 765 7,916 1,723 403 992 1,885
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002 MESA VERDE 6 FEDERAL #006 MESA VERDE 6 FEDERAL #005 RED BULL 31 STATE #001 THISTLE UNIT #056H APPLESEED FEDERAL COM #001 BERRY APN STATE #001 HUNT APO STATE #001 LEA UNIT #005 MAHAFFEY ARC FEDERAL #001 LEA UNIT #004H	30-025-33529 30-025-33344 30-025-32754 30-025-32575 30-025-32397 30-025-32504 30-025-36798 30-025-41340 30-025-20377 30-025-27250 30-025-27135 30-025-02429 30-025-01735 30-025-02424	32.3364449 32.288414 32.252753 32.2763062 32.244917 32.2482376 32.2574569 32.5750008 32.5060349 32.5070038 32.5858536 32.5785904 32.5772604	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485 -103.711617 -103.405709 -103.558234 -103.473038 -103.498344 -103.481232 -103.51165 -103.636131 -103.524571	8 1 1 24 6 30 6 6 31 22 17 5 4 12 14 11	23S 25S 23S 24S 24S 24S 24S 24S 23S 20S 21S 21S 20S 20S 20S 20S	33E 33E 32E 32E 32E 32E 32E 32E	Lea	NM N	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU MESA VERDE MESA VERDE ANTELOPE RIDGE TRIPLE X LYNCH BERRY GRAMA RIDGE LEA TEAS LEA	WOLFCAMP WOLFCAMP BONE SPRING	40,770 172,896 172,490 254,344 274,347 147,698 263,977 280,094 135,196 173,141 128,117 294,627 202,606 28,079 29,436	386 122 781 199 83 83 933 104 87 500 5,174 567 74 5,196 791 634	269 6 1,150 2 1,128 1,202 3,804 567 385 765 7,916 1,723 403 992 1,885 1,142
MESA VERDE 6 FEDERAL #014 TRESNOR MITCHELL 30 FEDERAL #002 MESA VERDE 6 FEDERAL #006 MESA VERDE 6 FEDERAL #005 RED BULL 31 STATE #001 THISTLE UNIT #056H APPLESEED FEDERAL COM #001 BERRY APN STATE #001 HUNT APO STATE #001 LEA UNIT #005 MAHAFFEY ARC FEDERAL #001	30-025-33529 30-025-33344 30-025-32753 30-025-32754 30-025-32397 30-025-32504 30-025-36798 30-025-41340 30-025-20377 30-025-27250 30-025-27135 30-025-02429 30-025-01735	32.3364449 32.288414 32.252753 32.2763062 32.244917 32.2482376 32.2574569 32.2693145 32.5750008 32.5060349 32.5070038 32.5858536 32.5785904	-103.596481 -103.625145 -103.634743 -103.717583 -103.715485 -103.711617 -103.405709 -103.558234 -103.473038 -103.498344 -103.481232 -103.636131	8 1 1 24 6 30 6 6 31 22 17 5 4 12 14 11 12	23S 25S 23S 23S 24S 23S 24S 24S 23S 23S 20S 21S 21S 20S 20S	33E 33E 32E 32E 32E 32E 32E 32E	Lea	NM N	JOHNSON RANCH JOHNSON RANCH RED TANK DIAMONDTAIL MESA VERDE SAND DUNES SOU MESA VERDE MESA VERDE ANTELOPE RIDGE TRIPLE X LYNCH BERRY GRAMA RIDGE LEA TEAS	WOLFCAMP WOLFCAMP BONE SPRING	40,770 172,896 172,490 254,344 274,347 147,698 263,977 280,094 135,196 173,141 128,117 294,627 202,606 28,079	386 122 781 199 83 83 933 104 87 500 5,174 567 74 5,196	269 6 1,150 2 1,128 1,202 3,804 567

Attachment 4: 1-mile Fresh Water Map and Tabular List



		Coati 362534 State SWD 1			
Water Wells	Owner	Available Contact Information	Use	Sampling Required	Notes
There are no fr	esh water wells within a 1-mile r	adius			



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

Re: Geology Statement
Anthem Water Solutions, LLC
Coati 362534 State SWD No. 1
Section 36, T. 25S, R. 34E
Lea County, New Mexico

To whom it may concern:

Publicly available geologic and engineering data related to the proposed well have been thoroughly reviewed, and no evidence for open faults or any other hydrologic connection between the proposed Devonian-Silurian injection zone and any underground sources of drinking water has been found. Please see the attached seismic risk assessment for additional information.

Sincerely,

Cory Walk Geologist

Seismic Risk Assessment

Anthem Water Solutions, LLC

Coati 362534 State SWD No. 1

Section 36, Township 25 South, Range 34 East

Lea County, New Mexico

Cory Walk, M.S.

Cory Walk

Geologist

Permits West Inc.

May 24, 2021

GENERAL INFORMATION

Coati 362534 State SWD No. 1 is located in the SW 1/4, section 36, T25S, R34E, about 14 miles west of Jal, NM in the Permian Basin. Anthem Water Solutions proposes the injection zone to be within the Devonian-Silurian formation through an open hole from 17,230'-18,283' below ground surface. This report assesses concerns relating to induced seismicity along deep penetrating Precambrian faults or the connection between the injection zone and known underground potable water sources.

SEISMIC RISK ASSESSMENT

Historical Seismicity

Searching the USGS earthquake catalog resulted in no (0) earthquakes above a magnitude 2.5 within 6 miles (9.7 km) of the proposed deep disposal site since 1970 (Fig. 1). The nearest earthquake occurred on October 21, 2019 about 12.6 miles (~20.3 km) north of the proposed SWD site and had a magnitude of 2.7.

Basement Faults and Subsurface Conditions

A structure contour map (Fig. 1) of the Precambrian basement shows the Coati 362534 State SWD #1 is approximately 5.3 miles from the nearest basement-penetrating fault inferred by Ewing et al (1990). **Information about nearby faults is listed in Table 1**.

Snee and Zoback (2018) state, "In the western part of Eddy County, New Mexico, S_{Hmax} is ~north-south (consistent with the state of stress in the Rio Grande Rift; Zoback and Zoback, 1980) but rotates to ~east-northeast-west-southwest in southern Lea County, New Mexico and the northernmost parts of Culberson and Reeves counties, Texas." Around the Coati 362534 State SWD site, Snee and Zoback indicate a S_{Hmax} direction of N075°E and an A_{ϕ} of 0.60, indicating an extensional (normal) stress regime.

Induced seismicity is a growing concern of deep SWD wells. Software developed by the Stanford Center for Induced and Triggered Seismicity allows for the probabilistic screening of deeply penetrating faults near the proposed injection zone (Walsh et al., 2016; Walsh et al., 2017). This software uses parameters such as stress orientations, fault strike/dip, injection rates, fault friction coefficients, etc. to estimate the potential for fault slip. Using this software, Snee and Zoback (2018) indicate that the nearest fault (5 miles to the northwest) has a 0% probability of fault slip (Fig. 2). Other nearby faults inferred by Todd Reynolds (NMOCD case numbers 20141 and 21090) have similar strikes to those inferred by Ewing et al (1990) and therefore are expected to have similar low Fault Slip Potential (FSP) probabilities.

GROUNDWATER SOURCES

Three principal aquifers are used for potable groundwater in Lea County; these geologic units include the Triassic Santa Rosa formation, Tertiary Ogallala formation, and Quaternary alluvium. Nicholson and Clebsch (1961) state, "Potable ground water is not available below the Permian and Triassic unconformity but, because this boundary is not easily defined, the top of the Rustler anhydrite formation is regarded as the effective lower limit of 'potable' ground water." Around the Coati 362534 State SWD #1, the top of the Rustler Formation lies at a depth of approximately 946' bgs.

VERTICAL MIGRATION OF FLUIDS

Permeability barriers exist above (Woodford shale; 260 ft thick) and below (Simpson Group; 1005 ft thick) the targeted Devonian-Silurian injection zone (Plate 2, Comer et al., 1991; Fig. 8, Frenzel et al., 1988). Precambrian structure contours (Ruppel, 2009) show the basement to be at a depth of approximately 22,260' in this area. Therefore, the injection zone lies approximately 3,980' above the Precambrian basement and approximately 16,280' below the previously stated lower limit of potable water at the top of the Rustler anhydrite formation. The stratigraphy suggests that the Woodford Shale and Simpson Group are adequate confining barriers that would prevent the vertical migration of injected fluids.

CONCLUSION

After examination of publicly available geologic and engineering data, there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

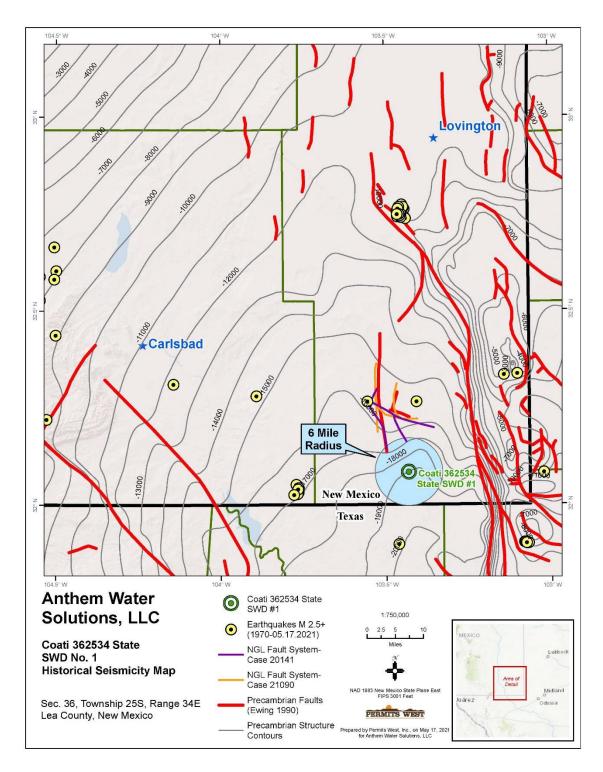


Figure 1. Structural contour map of the Precambrian basement in feet below sea level. Red lines represent the locations of Precambrian basement-penetrating faults (Ewing et al., 1990). Purple and orange lines represent the locations of basement-penetrating faults inferred by Todd Reynolds representing NGL in NMOCD Case Nos. 20141 and 21090. The Coati 362534 State SWD #1 well lies ~5.3 miles southeast of the closest deeply penetrating fault and ~12.6 miles south of the closest historic earthquake.

Table 1: Nearby Fault Information

Fault Number (Fig. 2)	Distance to proposed SWD (mi)	Strike (°)	Dip (°)	FSP (%)
1	5.3	348	50-90	0

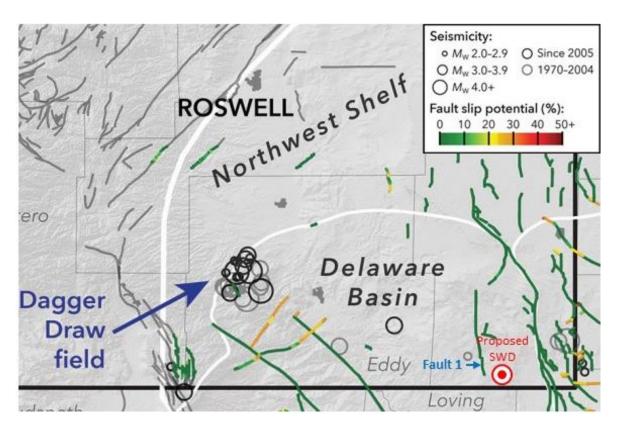


Figure 2. Modified Figure 3 from Snee and Zoback (2018). Map showing proposed location of Coati 362534 State SWD #1 in relation to Snee and Zoback's results of their FSP analysis.

References Cited

- Comer, J. B., 1991, Stratigraphic Analysis of the Upper Devonian Woodford Formation, Permian Basin, West Texas and Southeastern New Mexico: The University of Texas at Austin, Bureau of Economic Geology, Report of Investigations No. 201, 63 p.
- Ewing, T. E., 1990, The tectonic map of Texas: Austin, Bureau of Economic Geology, The University of Texas at Austin.
- Frenzel, H. N., Bloomer, R. R., Cline, R. B., Cys, J. M., Galley, J. E., Gibson, W. R., Hills, J. M., King, W. E., Seager, W. R., Kottlowski, F. E., Thompson, S., III, Luff, G. C., Pearson, B. T., and Van Siclen, D. C., 1988, The Permian Basin region, in Sloss, L. L., ed., Sedimentary cover—North American Craton, U.S.: Boulder, Colorado, Geological Society of America, The Geology of North America, v. D-2, p. 261–306.
- Hendrickson, G. E., and Jones, R. S., 1952, Geology and Ground-Water Resources of Eddy County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Ground-Water Report 3, 179 pp., 6 plates.
- Hurd, O; Zoback, MD, 2012, Intraplate earthquakes, regional stress and fault mechanics in the Central and Eastern U.S. and Southeastern Canada. Tectonophysics, 581:182-92.
- Nicholson, A., Jr., and Clebsch, A., Jr., 1961, Geology and ground-water conditions in southern Lea County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Ground-Water Report 6, 123 pp., 2 plates.
- Ruppel, S.C., 2009, Integrated synthesis of the Permian basin: data and models for recovering existing and undiscovered oil resources from the largest oil-bearing basin: U.S. Oil & Natural Gas Technology, Bureau Economic Geology, The University of Texas at Austin, p. 1-959.
- Snee, J.-E.L., Zoback, M.D., 2018, State of stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity: Leading Edge, v. 37, p. 127–134.
- Walsh, F. R., and Zoback, M. D., (2016) Probabilistic assessment of potential fault slip related to injection induced earthquakes: Application to north central Oklahoma, USA, Geology, Data Repository item 2016334, doi:10.1130/G38275.1
- Walsh, F. R., Zoback, M. D., Pais, D., Weingarten, M., and Tyrrell, T. (2017) FSP 1.0: A Program for Probabilistic Estimation of Fault Slip Potential Resulting From Fluid Injection, User Guide from the Stanford Center for Induced and Triggered Seismicity, available at SCITS.Stanford.edu/software
- Zoback, M. L., and M. D. Zoback, 1980, State of stress in the conterminous United States: Journal of Geophysical Research, 85, no. B11, 6113–6156, https://doi.org/10.1029/JB085iB11p06113.

Affidavit of Publication

STATE OF NEW MEXICO) ss. COUNTY OF LEA

Joyce Clemens being first duly sworn on oath deposes and says that she is Advertising Manager of THE LOVINGTON LEADER, a once a week newspaper of general paid circulation published in the English language at Lovington, Lea County, New Mexico; that said newspaper has been so published in such county continuously and uninterruptedly for a period in excess of Twenty-six (26) consecutive weeks next prior to the first publication of the notice hereto attached as hereinafter shown; and that said newspaper is in all things duly qualified to publish legal notices within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico.

That the notice which is hereto attached, entitled Legal Notice was published in a regular and entire issue of THE LOVINGTON LEADER and not supplement thereof, for one (1) day(s), beginning with the issue of June 17, 2021 and ending with the issue of June 17, 2021.

And that the cost of publishing said notice is the sum of \$ 48.13 which sum has been (Paid) as Court Costs.

emons Joyce Clemens, Advertising Manager Subscribed and sworn to before me this 21st day of June, 2021.

Gina Fort

Notary Public, Lea County, New Mexico My Commission Expires June 30, 2022

Official Seal GINA FORT Notary Public State of New Mexic My Comm. Expires 4 30/22

APPLICATION FOR AUTHORITY TO INJECT To Whom it May Con-NOTICE IS HEREBY

GIVEN; That Anthem Water Solutions, LLC, 5914 W. Courtyard Dr., Suite 320. Texas, 78730, is requesting that the New Mexico Oil Conservation Division administratively approve the APPLICATION FOR AUTHORITY TO IN-JECT as follows: PURPOSE: The in-

tended purpose of the injection well is to dispose of salt water produced from permitted oil and gas wells. WELL NAME AND LO-CATION: Coati 362534 State SWD 1 located 14 miles southwest of Jal. NW 1/4 of the SW

1/4 Section 36, Township 25S, Range 34E, 1699' from South Line & 203' from West Line, Lea County, New Mex-NAME AND DEPTH

OF DISPOSAL ZONE: Devonian-Silurian (17,230' - 18,283') EXPECTED MAXI-

MUM INJECTION RATE: 30,000 barrels/day

EXPECTED MUM INJECTION PRESSURE: 3446 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objections or requests 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 Marshall Tippen (972) 795-4201.

Published in the Lovington Leader June 17,

Attachment 6: List of Notification Applicants & Delivery Confirmations

Coati 362534 State SWD 1 - Notice of Application Receipts										
Entity Address City State 2										
	Landowner and Mineral Owner	·		•						
New Mexico State Land Office	310 Old Santa Fe Trail	Santa Fe	NM	87501						
OCD District										
NMOCD District 1	1625 N. French Drive	Hobbs	NM	88240						
	Leasehold Operators (1-mile)									
EOG RESOURCES INC	PO BOX 2267	MIDLAND	TX	79702						
DEVON ENERGY CO LP	333 W SHERIDAN AVE	OKLAHOMA CIT	ОК	73102						
OXY USA INC	PO BOX 27570	HOUSTON	TX	77227						
COG PRODUCTION LLC	600 W ILLINOIS AVE	MIDLAND	TX	79701						
BANK OF AMERICA, N.A., ESTATE OF FRED LUTHY	303 W WALL ST	MIDLAND	TX	79701						

Notes: The table above shows the Entities who were idenfified as parties of interest requiring notification on either the 1-mile well detail list (Attachment 2) or on the 2-mile Mineral Lease Map (Attachment 2).



New Mexico State Land Office 310 Old Santa Fe Trail Santa Fe, NM 87501

APPLICATION FOR AUTHORITY TO INJECT

To Whom it May Concern,

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

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: Coati 362534 State SWD 1 located 14 miles southwest of Jal. NW 1/4 of the SW 1/4 Section 36, Township 25S, Range 34E, 1699' from South Line & 203' from West Line, Lea County, New Mexico.

NAME AND DEPTH OF DISPOSAL ZONE: Devonian-Silurian (17,230' – 18,283')

EXPECTED MAXIMUM INJECTION RATE: 30,000 barrels/day

EXPECTED MAXIMUM INJECTION PRESSURE: 3446 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objections or requests 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 Marshall Tippen (972) 795-4201.

Regards,

Marshall Tippen

Marmillan



NMOCD District 1 1625 N. French Drive Hobbs, NM 88240

APPLICATION FOR AUTHORITY TO INJECT

To Whom it May Concern,

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

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: Coati 362534 State SWD 1 located 14 miles southwest of Jal. NW 1/4 of the SW 1/4 Section 36, Township 25S, Range 34E, 1699' from South Line & 203' from West Line, Lea County, New Mexico.

NAME AND DEPTH OF DISPOSAL ZONE: Devonian-Silurian (17,230' – 18,283')

EXPECTED MAXIMUM INJECTION RATE: 30,000 barrels/day

EXPECTED MAXIMUM INJECTION PRESSURE: 3446 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objections or requests 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 Marshall Tippen (972) 795-4201.

Regards,

Marshall Tippen

Marmillan



EOG RESOURCES INC PO BOX 2267 MIDLAND, TX 79702

APPLICATION FOR AUTHORITY TO INJECT

To Whom it May Concern,

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

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: Coati 362534 State SWD 1 located 14 miles southwest of Jal. NW 1/4 of the SW 1/4 Section 36, Township 25S, Range 34E, 1699' from South Line & 203' from West Line, Lea County, New Mexico.

NAME AND DEPTH OF DISPOSAL ZONE: Devonian-Silurian (17,230' – 18,283')

EXPECTED MAXIMUM INJECTION RATE: 30,000 barrels/day

EXPECTED MAXIMUM INJECTION PRESSURE: 3446 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objections or requests 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 Marshall Tippen (972) 795-4201.

Regards,

Marshall Tippen

Marmalin



DEVON ENERGY CO LP 333 W SHERIDAN AVE OKLAHOMA CITY, OK 73102

APPLICATION FOR AUTHORITY TO INJECT

To Whom it May Concern,

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

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: Coati 362534 State SWD 1 located 14 miles southwest of Jal. NW 1/4 of the SW 1/4 Section 36, Township 25S, Range 34E, 1699' from South Line & 203' from West Line, Lea County, New Mexico.

NAME AND DEPTH OF DISPOSAL ZONE: Devonian-Silurian (17,230' – 18,283')

EXPECTED MAXIMUM INJECTION RATE: 30,000 barrels/day

EXPECTED MAXIMUM INJECTION PRESSURE: 3446 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objections or requests 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 Marshall Tippen (972) 795-4201.

Regards,

Marshall Tippen

Marunden



OXY USA INC PO BOX 27570 HOUSTON, TX 77227

APPLICATION FOR AUTHORITY TO INJECT

To Whom it May Concern,

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

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: Coati 362534 State SWD 1 located 14 miles southwest of Jal. NW 1/4 of the SW 1/4 Section 36, Township 25S, Range 34E, 1699' from South Line & 203' from West Line, Lea County, New Mexico.

NAME AND DEPTH OF DISPOSAL ZONE: Devonian-Silurian (17,230' – 18,283')

EXPECTED MAXIMUM INJECTION RATE: 30,000 barrels/day

EXPECTED MAXIMUM INJECTION PRESSURE: 3446 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objections or requests 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 Marshall Tippen (972) 795-4201.

Regards,

Marshall Tippen

Manuella



COG PRODUCTION LLC 600 W ILLINOIS AVE MIDLAND, TX 79701

APPLICATION FOR AUTHORITY TO INJECT

To Whom it May Concern,

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

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: Coati 362534 State SWD 1 located 14 miles southwest of Jal. NW 1/4 of the SW 1/4 Section 36, Township 25S, Range 34E, 1699' from South Line & 203' from West Line, Lea County, New Mexico.

NAME AND DEPTH OF DISPOSAL ZONE: Devonian-Silurian (17,230' – 18,283')

EXPECTED MAXIMUM INJECTION RATE: 30,000 barrels/day

EXPECTED MAXIMUM INJECTION PRESSURE: 3446 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objections or requests 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 Marshall Tippen (972) 795-4201.

Regards,

Marshall Tippen

Manualin



BANK OF AMERICA, ESTATE OF FRED LUTHY 303 W WALL ST MIDLAND, TX 79701

APPLICATION FOR AUTHORITY TO INJECT

To Whom it May Concern,

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

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: Coati 362534 State SWD 1 located 14 miles southwest of Jal. NW 1/4 of the SW 1/4 Section 36, Township 25S, Range 34E, 1699' from South Line & 203' from West Line, Lea County, New Mexico.

NAME AND DEPTH OF DISPOSAL ZONE: Devonian-Silurian (17,230' – 18,283')

EXPECTED MAXIMUM INJECTION RATE: 30,000 barrels/day

EXPECTED MAXIMUM INJECTION PRESSURE: 3446 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objections or requests 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 Marshall Tippen (972) 795-4201.

Regards,

Marshall Tippen

Marmillan

Certified Mail® Labels

Jack Ball Anthem Water Solutions 5914 W. Courtyard Dr., Ste 320 Austin TX 78730-4924

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

\$4.110 US POSTAGE \$4.110 US POSTAGE SEIRST-CLASS SEIFROM 78730 06/17/2021 stamps endicia FIRST-CLASS stamps endicia



Top of the page

Anthem Water Solutions 5914 W. Courtyard Dr., Ste 320 Austin TX 78730-4924

Print postage using Stamps.com Template SDC-3610

POSTAGE ROT-CLASS ROM 78730 06/17/2021 stamps endicia

\$4.110 US POSTAGE FIRST-CLASS FROM 78730 Place label at top of the center of the envelope and fold at dotted line.

CERTIFIED MAIL® CERTIFIED MAIL®



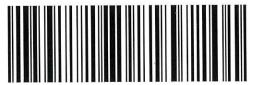
BANK OF AMERICA, N.A FRED LUTHY NCNB 303 W WALL ST Midland TX 79701-5122

Jack Ball Anthem Water Solutions 5914 W. Courtyard Dr., Ste 320 Austin TX 78730-4924

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

S4.110 US POSTAGE FIRST-CLASS FROM 78730 06/17/2021 stamps endicia stamps endicia

OERTIFIED MAIL® CERTIFIED MAIL®



DEVON ENERGY PRODUCTION CO, LP 333 West Sheridan Ave Oklahoma City OK 73102-5010

CERTIFIED MAIL® CERTIFIED MAIL®



COG PRODUCTION LLC 600 WILLINOIS AVE MIDLAND TX 79701-4882

Jack Ball Anthem Water Solutions 5914 W. Courtyard Dr., Ste 320 Austin TX 78730-4924

\$4.110 US POSTAGE FIRST-CLASS FROM 78730 06/17/2021 stamps endicia

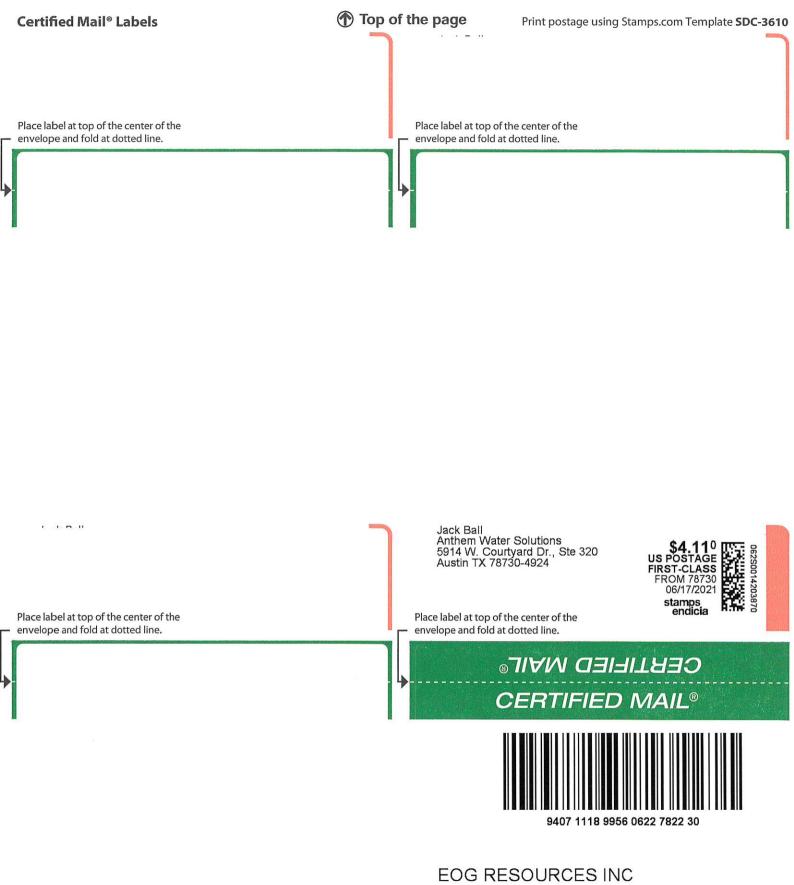
062S0014203870

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

> CERTIFIED MAIL® CERTIFIED MAIL®



EOG Resources Inc P.O Box 4362 Houston TX 77210-4362



EOG RESOURCES INC PO BOX 2267 Midland TX 79702-2267

Certified Mail® Labels

Jack Ball Anthem Water Solutions 5914 W. Courtyard Dr., Ste 320 Austin TX 78730-4924

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



Top of the page

Jack Ball Anthem Water Solutions 5914 W. Courtyard Dr., Ste 320 Austin TX 78730-4924

\$4.110 US POSTAGE

stamps endicia

Print postage using Stamps.com Template SDC-3610

\$4.110 US POSTAGE FIRST-CLASS FROM 78730 06/17/2021 stamps endicia

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

CERTIFIED MAIL® CERTIFIED MAIL®



New Mexico State Land Office 310 Old Santa Fe Trail Santa Fe NM 87501-2708

CERTIFIED MAIL® CERTIFIED MAIL®



OXY USA INC PO BOX 27570 HOUSTON TX 77227-7570

Jack Ball Anthem Water Solutions 5914 W. Courtyard Dr., Ste 320 Austin TX 78730-4924

\$4.110 US POSTAGE FIRST-CLASS FROM 78730 06/17/2021 stamps endicia

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

> ©ERTIFIED MAIL® CERTIFIED MAIL®



NMOCD District 1 1625 N. French Drive Hobbs NM 88240-9273 Place label at top of the center of the envelope and fold at dotted line.

> CERTIFIED MAIL® **CERTIFIED MAIL®**