BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF VISTA DISPOSAL SOLUTIONS LLC, FOR A SALT WATER DISPOSAL WELL, IN EDDY COUNTY, NEW MEXICO.

Case No.

APPLICATION FOR SALT WATER DISPOSAL

Vista Disposal Solutions LLC, by and through its undersigned attorney, applies for an order approving a salt water disposal well, and in support thereof, states:

- 1. Applicant seeks an order proposing a salt water disposal well for its Boone Federal SWD #1, (Pool Code 97869) to be drilled at a location 1,067' FSL and 1,405' FWL, Unit N, Section 26, Township 24 South, Range 31 East, N.M.P.M., Eddy County, New Mexico.
- 2. Applicant proposes to set a packer at 18,067' feet below the surface of the earth and then inject into the Devonian-Silurian formation at depths between 18,087' through 19,587' open hole, as stated in the attached C-108.
 - 3. Attached hereto as Exhibit A is the C-108.
 - 4. The granting of this application will prevent waste and protect correlative rights.

WHEREFORE, Applicant requests that, after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

PADILLA LAW FIRM, P.A.

/s/ ERNEST L. PADILLA

ERNEST L. PADILLA, Attorney for Vista Disposal Solutions, LLC PO Box 2523 Santa Fe, New Mexico 87504 505-988-7577 padillalaw@qwestoffice.net 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?YesNo
II.	OPERATOR: Vista Disposal Solutions, LLC
	ADDRESS: 12444 NM 10th St., Building G, Suite 202-512, Yukon, OK 73099
	CONTACT PARTY Nate 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? Yes X No If yes, give the Division order number authorizing the project:
V.	Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
VI.	Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Suc data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schemation 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.).
*VI	II. 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: Dan Arthur, P.E., SPEC SIGNATURE: DATE: 11/26/2019 Garthur@all-llc.com
XV.	E-MAIL ADDRESS: If the information required under Sections VI, V Please show the date and circumstances of the earlier submittal:
DIST	TRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Side 2

III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
 - (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
 - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
 - (3) A description of the tubing to be used including its size, lining material, and setting depth.
 - (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

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

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
 - (1) The name of the injection formation and, if applicable, the field or pool name.
 - (2) The injection interval and whether it is perforated or open-hole.
 - (3) State if the well was drilled for injection or, if not, the original purpose of the well.
 - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
 - (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

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

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

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

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

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

Application for Authorization to Inject Well Name: Boone Federal SWD #1

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

A.

(1) General Well Information:

Operator: Vista Disposal Solutions, LLC (OGRID No. 329051) Lease Name & Well Number: Boone Federal SWD #1 Location Footage Calls: 1,067' FSL & 1,405' FWL Legal Location: Unit Letter N, S26 T24S R31E

Ground Elevation: 3,511'

Proposed Injection Interval: 18,087' - 19,587'

County: Eddy

(2) Casing Information:

Туре	Hole Size	Casing Size	Casing Weight	Setting Depth	Sacks of Cement	Estimated TOC	Method Determined
Surface	24"	20"	133.0 lb/ft	733'	720	Surface	Circulation
Intermediate 1	14-3/4"	13-3/8"	68.0 lb/ft	4,441'	990	Surface	Circulation
Intermediate 2	12-1/4"	9-5/8"	53.5 lb/ft	13,601'	4,510	Surface	Circulation
Liner	8-1/2"	7-5/8"	39.0 lb/ft	18,087'	380	13,401'	CBL

Note: A DV Tool will be set at 5,000'.

(3) Tubing Information:

4.5" (composite weight string) of fiberglass-coated tubing with setting depth of 18,067'

(4) Packer Information: Baker SC-2 or equivalent packer set at 18,067'

В.

(1) Injection Formation Name: Devonian and Silurian formations

Pool Name: SWD; DEVONIAN - SILURIAN

Pool Code: 97869

- (2) Injection Interval: Open-hole injection between 18,087' 19,587'
- (3) Drilling Purpose: New Drill for Salt Water Disposal
- (4) Other Perforated Intervals: No other perforated intervals exist.
- (5) Overlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.
 - Permian Delaware Mountain Group (4,441')
 - Bone Springs (8,254')
 - Wolfcamp (11,633')
 - Atoka (13,747')
 - Morrow (14,441')

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

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 Owernship Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List
- Potash Lease Map

VI – AOR Well List

There are no wells within the 1-mile AOR that penetrate the proposed injection zone.

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

VII - Proposed Operation

- (1) Proposed Maximum Injection Rate: 40,000 bpd Proposed Average Injection Rate: 20,000 bpd
- (2) A closed system will be used.
- (3) Proposed Maximum Injection Pressure: 3,617 psi (based on 0.2 psi per foot) Proposed Average Injection Pressure: approximately 1,500 – 2,000 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 Devonian and Silurian formations 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 4**.

VIII - Geologic Description

The proposed injection interval includes the Devonian and Silurian formations from 18,087 – 19,587 feet. These formations consist of carbonates including light colored dolomite and chert intervals interspersed with some tight limestone intervals. Several thick sections of porous dolomite capable of taking water are present within the subject formations in the area.

The base of the deepest Underground Source of Drinking Water (USDW) is at a depth of approximately 708 feet. Surface casing will be set at a depth of 733 feet, which is 25 feet below the top of the Rustler formation, which isolates the USDW. Geophysical log assessment was conducted to accurately determine the top of the Rustler formation, and the top and the base of the Salado formation in this area. Water well depths in the area range from approximately 160 - 205 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

Geophysical 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 no groundwater well located within 1-mile of the proposed SWD location; therefore, no groundwater samples were collected in association with this application.

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

XII - No Hydrologic Connection Statement

ALL Consulting 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 program has been designed to further ensure 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 6*.

XIII - Proof of Notice

A Public Notice was filed with the Carlsbad Current Argus newspaper and an affidavit is included in **Attachment 7**.

A copy of the application was mailed to the OCD District Office, landowner, and leasehold operators within 1-mile of the proposed SWD location. A list of the recipients, as well as delivery confirmations, are included in *Attachment 7*.

Attachments

Attachment 1:

- C-102
- Wellbore Diagram

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
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List
- Potash Lease Map

Attachment 3: Source Water Analyses

Attachment 4: Injection Formation Water Analyses

Attachment 5: Water Well Map and Well Data

Attachment 6: Induced Seismicity Assessment Letter

Attachment 7: Public Notice Affidavit and Notice of Application Confirmations

Attachment 1

- C-102
- Wellbore Diagram

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos 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

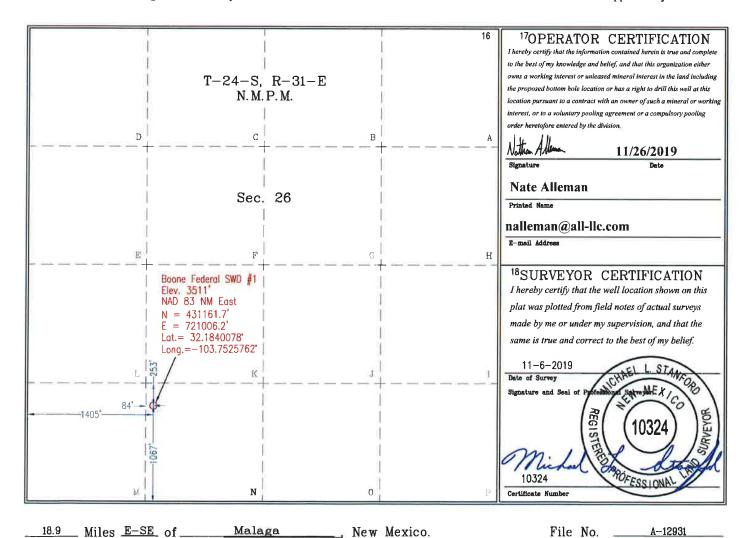
Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

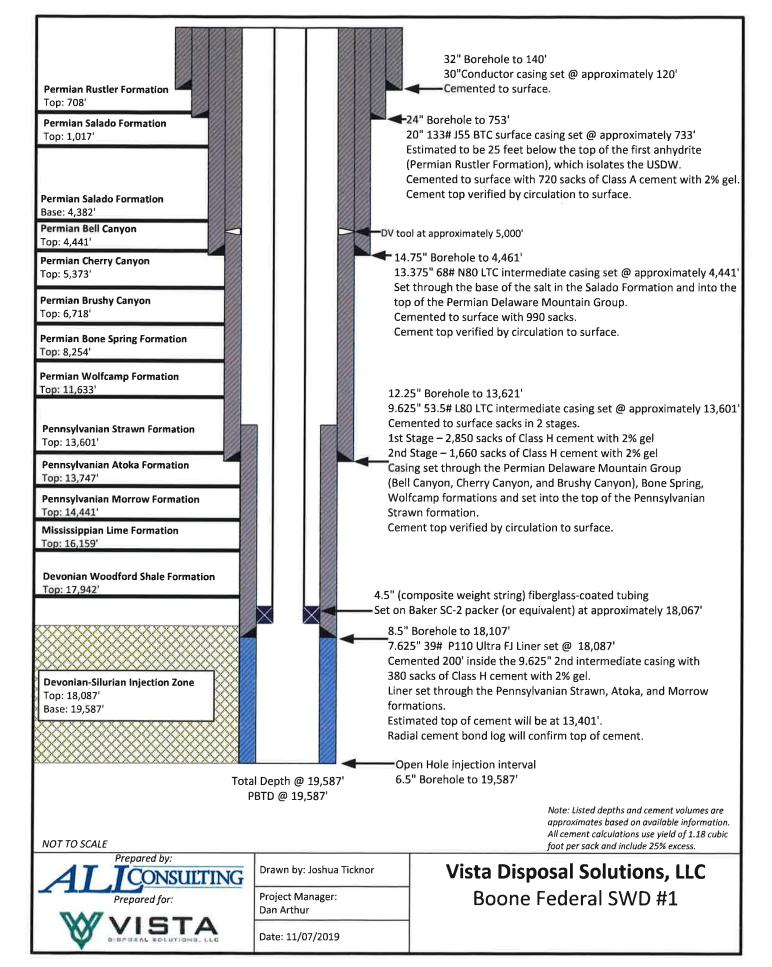
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

	WLLL			ACITE AGE D	EDICATION	LLAI	
¹ API Number			ol Code			³ Pool Name	
		97869		SWD; Devo	nian - Siluri	an	
*Property Code				perty Name		Well Number	
	Boone	Federal	SWD				1
OGRID No.				rator Name	^g Elevation		
329051	Vista Dis	sposal Sol	utions, LLC				3511'
			¹⁰ Surface	Location			
JL or lot no. Section To	ownship Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N 26 2	24-S 31-E		1067'	South	1405	West	Eddy
	¹¹ Bc	ttom Ho	le Location	If Different F	rom Surface);	
UL or lot no. Section To	ownship Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
					l _i		
Dedicated Acres 13 Joint or Inf	ill ¹⁴ Consolidatio	n Code 150	rder No.	4		l	

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.





TU 5632 Rev. M Effective Date: 11 Apr 2019

5C-2 Packer

1 Introduction

The SC-2TM packer is Baker Hughes, a GE company (BHGE)' primary packer for cased hole gravel pack and frac pack applications where a high performance retrievable packer is required.

2 Description

The SC-2 packer is a fully retrievable, highperformance retainer production packer. Although the packer was originally designed for premium gravel pack applications, it may also be used as a standard completion packer in wells where a premium retrievable production packer is required.

The SC-2 packer is fully compatible with standard BHGE sealing accessories, including retrievable and expendable plugs.

Refer to the specifications guide in the Packer Size/Model Availability Guide, Specification Guide, and Packer/Accessory Guide for SC™ and HP™ Packers (Product Family H48861), Unit 5750 under Sand Control Tools for packer/accessory size and packer size/model availability.

3 Application

The SC-2 packer is primarily used in gravel pack or frac pack applications where a higher differential pressure production rating, treating pressure rating and temperature are required. The SC-2 may also be used as a production packer.

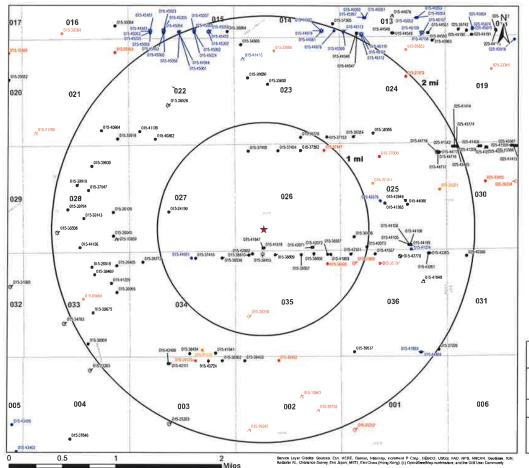


Drawing 662-476-1

Attachment 2

Area of Review Information:

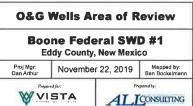
- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List
- Potash Lease Map

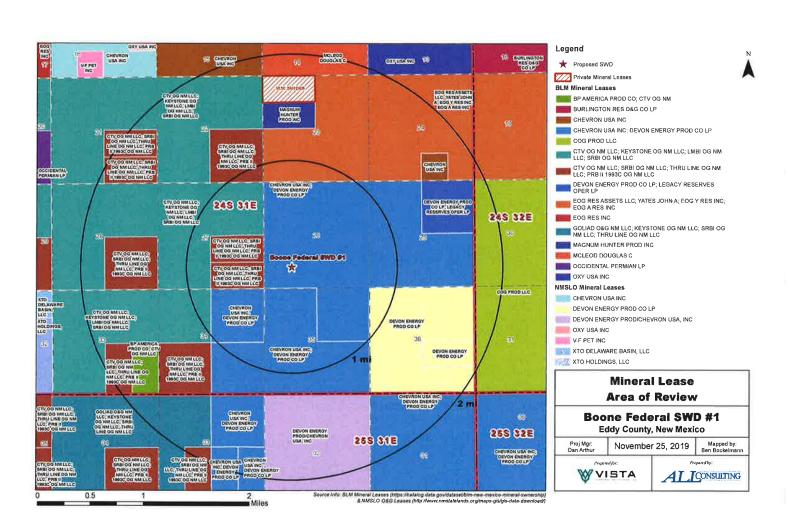


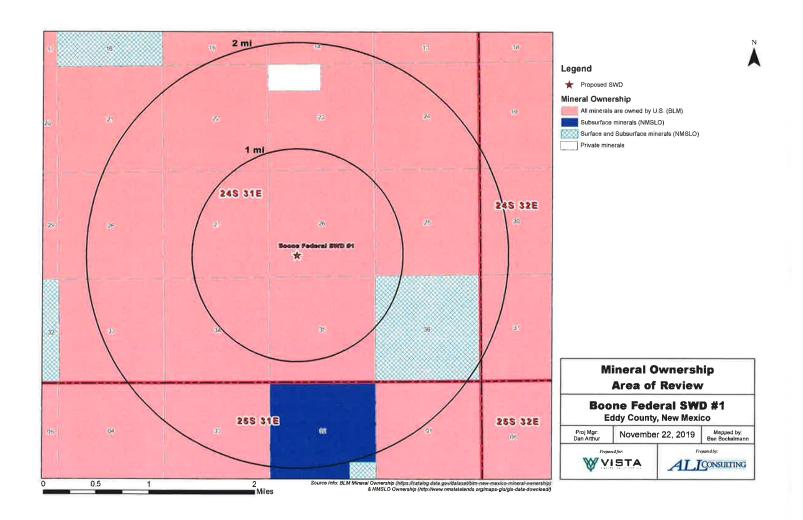
Legend

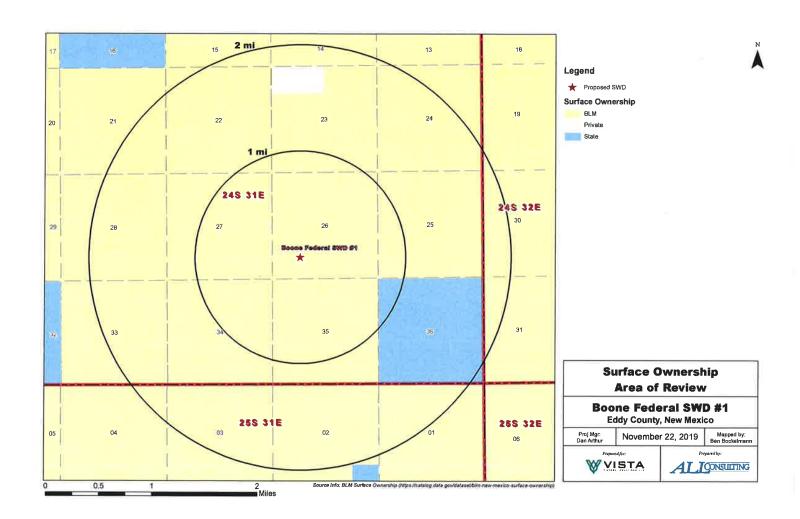
- ★ Proposed SWD
- Miscellaneous (1)
- Gas, Active (9)
 - Gas, New (22)
- Gas, Plugged (4)
- Oil, Active (98)
- Oil, New (27)
- Oil, Plugged (16)
- Oil, Temporarily Abondoned (2)
- △ Salt Water Injection, Active (3)
- △ Salt Water Injection, New (1)
- Salt Water Injection, Plugged (4)

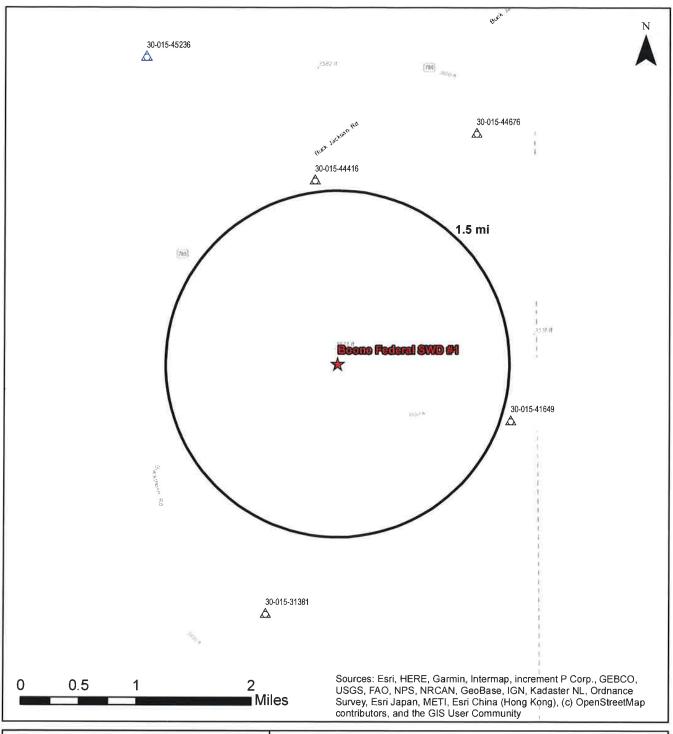
Source Info: NMOCD O&G Wells updated 7/30/2019 (http://www.emnrd.state.nm.us/OCD/ocdais.html)

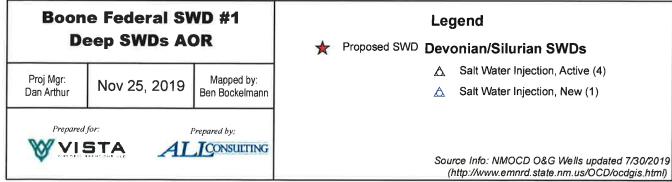




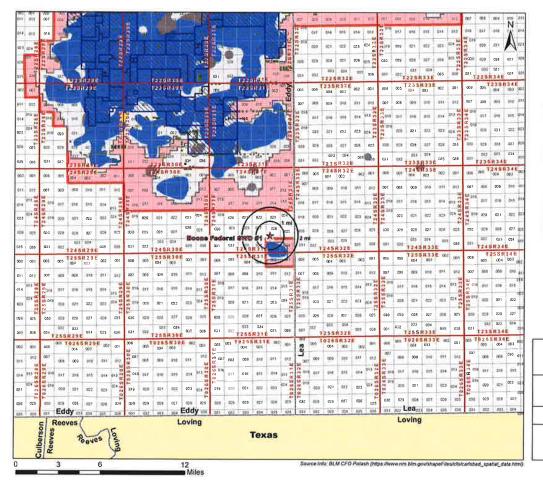




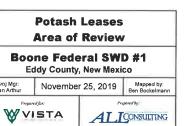




Well Name	API# Well Type		Operator	Spud Date	Location (Sec., Tn., Rng.)	Total Vertical Depth (feet)	Penetrate Inj. Zone?	
COTTON DRAW UNIT #518H	30-015-44651	0	DEVON ENERGY PRODUCTION COMPANY, LP	Not Drilled	B-34-24S-31E	Proposed (11179)	No	
HARACZ AMO FEDERAL #008H	30-015-36778	0	EOG RESOURCES INC	12/26/2008	O-23-24S-31E	8323	No	
OTTON DRAW UNIT #119H	30-015-37447	Plugged	DEVON ENERGY PRODUCTION COMPANY, LP	7/27/2010	A-26-24S-31E	Plugged (12686)	No	
POKER LAKE UNIT #058	30-015-24190	0	XTO PERMIAN OPERATING LLC	7/27/1982	K-27-24S-31E	12700	No	
OTTON DRAW UNIT #213H	30-015-41869	0	DEVON ENERGY PRODUCTION COMPANY, LP	7/5/2014	A-35-24S-31E	10388	No	
COTTON DRAW UNIT #204H	30-015-41818	0	DEVON ENERGY PRODUCTION COMPANY, LP	2/21/2014	N-26-24S-31E	10396	No	
COTTON DRAW UNIT #110H	30-015-36406	0	DEVON ENERGY PRODUCTION COMPANY, LP	10/2/2010	M-25-24S-31E	8295	No	
COTTON DRAW UNIT #122H	30-015-38453	G	DEVON ENERGY PRODUCTION COMPANY, LP	1/3/2013	C-35-24S-31E	10363	No	
OTTON DRAW UNIT #203H	30-015-41847	0	DEVON ENERGY PRODUCTION COMPANY, LP	1/14/2014	N-26-24S-31E	10406	No	
OTTON DRAW UNIT #067	30-015-20210	Plugged	DEVON ENERGY PRODUCTION COMPANY, LP	3/21/1969	L-35-24S-31E	Plugged (15060)	No	
OTTON DRAW UNIT #125H	30-015-38608	0	DEVON ENERGY PRODUCTION COMPANY, LP	5/1/2013	B-35-24S-31E	10394	No	
OTTON DRAW UNIT #121H	30-015-37409	0	DEVON ENERGY PRODUCTION COMPANY, LP	9/15/2010	D-26-24S-31E	8277	No	
OTTON DRAW UNIT #212H	30-015-42892	0	DEVON ENERGY PRODUCTION COMPANY, LP	2/10/2015	D-35-24S-31E	10390	No	
OTTON DRAW UNIT #244H	30-015-42331	0	DEVON ENERGY PRODUCTION COMPANY, LP	9/30/2014	D-36-24S-31E	11586	No	
OTTON DRAW UNIT #120H	30-015-37404	0	DEVON ENERGY PRODUCTION COMPANY, LP	8/28/2010	C-26-24S-31E	8285	No	
OTTON DRAW UNIT #114	30-015-37410	0	DEVON ENERGY PRODUCTION COMPANY, LP	8/11/2010	B-34-24S-31E	8215	No	
OTTON DRAW UNIT #118H	30-015-37362	0	DEVON ENERGY PRODUCTION COMPANY, LP	1/30/2010	B-26-24S-31E	8054	No	
OTTON DRAW UNIT #206H	30-015-42072	0	DEVON ENERGY PRODUCTION COMPANY, LP	11/22/2014	O-26-24S-31E	10496	Nο	
OTTON DRAW UNIT #207H	30-015-42073	0	DEVON ENERGY PRODUCTION COMPANY, LP	1/28/2015	M-25-24S-31E	10478	No	
OTTON DRAW UNIT #205H	30-015-42071	0	DEVON ENERGY PRODUCTION COMPANY, LP	10/30/2014	O-26-24S-31E	10474	No	
OTTON DRAW #090	30-015-31889	Plugged	DEVON ENERGY PRODUCTION COMPANY, LP	9/12/2002	D-36-24S-31E	Plugged (15200)	No	
OTTON DRAW #112	30-015-36435	Plugged	DEVON ENERGY PRODUCTION COMPANY, LP	9/15/2008	A-35-24S-31E	Plugged (9018)	No	
OTTON DRAW UNIT #155H	30-015-38607	0	DEVON ENERGY PRODUCTION COMPANY, LP	5/27/2011	B-35-24S-31E	8259	No	
OTTON DRAW UNIT #151H	30-015-38610	0	DEVON ENERGY PRODUCTION COMPANY, LP	6/9/2011	D-35-24S-31E	8249	No	
OTTON DRAW UNIT #156H	30-015-38557	0	DEVON ENERGY PRODUCTION COMPANY, LP	3/22/2011	A-35-24S-31E	8261	No	
OTTON DRAW UNIT #152H	30-015-38609	0	DEVON ENERGY PRODUCTION COMPANY, LP	7/11/2011	C-35-24S-31E	8264	No	
OTTON DRAW UNIT #150H	30-015-38536	0	DEVON ENERGY PRODUCTION COMPANY, LP	7/16/2011	A-34-24S-31E	8248	No	



Proposed SWD Potash Leases Ore Type - Measured Ore Type - Indicated KPLA SOPA Drill Islands Status Approved Denied Nominated Withdrawn



Attachment 3

Source Water Analyses



Water Analysis

Date: 23-Aug-11

2768 West County Road, Hobbs NM 88240 Phone (575) 392-5556 Fax (575) 392-7307

Company		Well Name	Draw 1th	ounty	State
		BD		rea.	New Mexico
Sample Source	Swab S	imple	Sample #	ddy	1-265-29
Formation			Depth		
Specific Gravity	1.170		SG @	60 °F	1.172
pН	6.30		S	ulfides	Absent
Temperature (*F)	70		Reducing /	Agents	
Cations					
Sodium (Calc)		in Mg/L	77,962	in PPM	66,520
Celcium		in Mg/L	4,000	in PPM	3,413
Magnesium		in Mg/L	1,200	in PPM	1,024
Soluable Iron (FE2)		in Mg/L	10.0	in PPM	9
Anions					
Chlorides		in Mg/L	130,000	in PPM	110,922
Sulfates		in Mg/L	250	in PPM	213
Bicarbonates		in Mg/L	127	in PPM	108
Total Hardness (as CaCO:	3)	in Mg/L	15,000	in PPM	12,799
Total Dissolved Solids (Ca	lc)	in Mg/L	213,549	in PPM	182,209
Equivalent NaCl Concentra	tion	in Mg/L	182,868	in PPM	156,031
Scaling Tendencies					
Calcium Carbonate Index					507,520
ייטע,עט אינטטע אינטטע Calcium Sulfate (Gyp) Inde	-	VVV- 1,UOU,UOU	Possible / Above 1,		
		200 - 10 000 00	Pozable / Above 10		1,000,000
This Calculation is only an appro- restment.				560000000000000000000000000000000000000	

Report #

3188

Sec 22, T25,5,R28E

Bone Spring

North Permian Basin Region P.O. Box 740 Sundown, TX 79372-0740 (806) 228-6121 Lab Team Leader - Sheliz Hernandez (432) 495-7240

Water Analysis Report by Baker Petrolite

Company: Sales RDT: 33514.1 Account Manager: TONY HERNANDEZ (575) 910-7135 Region: **PERMIAN BASIN** ARTESIA, NM 534665 Area: Sample #: Lease/Platform: PINOCHLE BPN' STATE COM Analysis ID #: 106795 Entity (or well #): Analysis Cost: \$90.00

Formation: UNKNOWN
Sample Point: WELLHEAD

Summar	y	Analysis of Sample 534665 @ 75 F								
Sampling Date:	03/10/11	Anlens	mg/l	Typem	Cetions	mg/l	meq/i			
Analysis Date:	03/18/11	Chloride;	109618.6	3081.92	Sodium:	70275.7	3056.82			
Analyst: EAI	NDRA GOMEZ	Bloarbonate:	2135.0	34.99	Hognesium:	195.0	16.04			
TD6 (mg/l or g/m3):	184911.1	Carbonate:	0.0	a.	Calcium:	844.0	42.12			
Density (g/cm3, tonne/m3): 1.113 Anion/Cation Ratio: 1		Suifete:	747.0	15.55	Strontium:	220.0	5.02			
	13)6 1.113	Phosphale:		- 1	Badum:	8.0	0.01			
	Bornte:			Iron:	6.5	0.23				
	i i	Skicate:		į	Polssslum:	889,0	22.22			
5 6 745 50					Aluminum:					
Carbon Dloxide:	0 50 PPM	Hydrogen Sulfide:		0 PPM	Chromium:					
Oxygen:	1	pH at time of sampling:		,	Соррег:					
Comments:	1			- 1	Lead:					
===	1	pH at time of analysis:		1	Manganese:	0.100	0.			
	ı	pH used in Calculation	1:	7	Nickel:					

Cond	itions		Values C	alculated	at the Give	n Conditi	one - Amou	ints of Sc	ale in lb/10	00 PPI		
Teme	Gauge Press.		elcite CeCO ₃		=um 42H ₂ 0		ydrite a30 ₄	1000	rSO ₄		rite 30 4	CO ₂ Press
Ŧ	pei	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	pei
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	206.06	-1.29	0.00	-1.20	0.00	-0.15	0.00	0.35	0.29	2.35
120	0	1.12	224.17	-1.38	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 (31) and emount of scale must be considered.

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

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

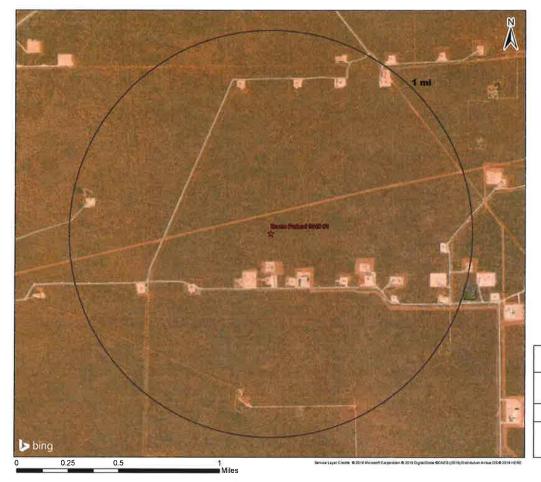
Attachment 4

Injection Formation Water Analyses

									ei Water Ar								
	-	-				-	-				nan Formati					Name of Street or other	
Wellname	API	Latitude	Longitude	Section Township	Range	Unit	Figns	Figew	County	State	Company	Field	Formation	Tds_mgt	Chloride_rngt.	flicarbonate_ingl.	Suifate_mgt
STATE B COM #001	3007509716	32.179405	-101 2212524	36 245	36€	C	600N	1880W	LEA	NM.		CUSTER	DEVONIAN	176234	107400	179	1004
FARNSWORTH FEDERAL #006	3002511950	37.077725	103 162468	4 265	37E	A	660N	990£	LEA	NM		CROSBY	DEVONAN	31931	30450	302	591
ARNOTT RAMSAY NCT-B #003	3002511863	32.092228	103.1784439	32 255	37E	A	650N :	660E	LEA	NM		CROSHY	DEVONIAN.		100382	410	
ARNOTT KAMSAY NCT-B #003	3002511863	32.092228	103.1784439	32 255	37E	A	650N	660E	LEA	NM		CROSSY	DEVOIMAN	158761			
COPPER #001	3002511818	32.029484	-103.1656723	28 255	37E	10	19805	19816	LEA	NM		CROSBY	DEVONIAN	27506	15270	1089	1079
STATE NJ A 8001	3002511398	37.164749	-103.1273346	2 255	37E	A	661N	6600	LEA	NM		JUSTIS NORTH	DEVONIAN	105350	59300	660	4950
WESTATES FEDERAL FOOA	3002511389	32.161129	-103.1241226	1 755	376	E	1980W	330W	IEA.	NM		JUSTIS NORTH	FUSSELMAN	83880	46700	340	
WESTATES FEDERAL 1904	3002511389	32.161129	-103.1741726	1 255	376	E.	1980W	330W	ILEA	NM		JUSTIS NORTH	FUSSELMAN	84900	48600	840	
WESTATES FEDERAL 1004	3002511389	32.161129	-103 1241226	1 255	376	E	1980N	330W	ILLA	NM		JUSTIS NORTH	FUSSELMAN	72200	41000	370	
WESTATES FEDERAL RODA	3002511389	32.161129	103.1241726	11255	17E	E	1980N	130W	LEA	NM	1	JUSTIS NORTH	FUSSELMAN	80900	46200	340	
WESTATES FEDERAL BOOK	3002511189	32.161129	-101.1241226	1 255	37E	E -	1980%	33000	LEA	104		JUSTIS NORTH	FUSSELMAN	77600	44000	550	
WESTATES FEDERAL BOOK	3002511389	32.161129	-103.1241226	1 255	37E		1980N	130W	LEA	NM		JUSTIS NORTH	FUSSELMAN	135000	27000	650	
WESTATES FEDERAL FOOT	3002511389	32.161129	-103.1241226	1 255	37E	E	1980N	330W	LEA	NM		JUSTIS NORTH	FUSSELMAN	114000	65000	280	
WESTATES FEDERAL POD4	3002511389	32.161129	101.1241226	1 255	37E	E	1980N	330W	LEA	NM		JUSTIS NORTH	FUSSELMAN	135000	77000	500	
WESTATES FEDERAL POOR	3002511353	32:162121	103.1241226	11255	371	E	1670N	330W	LEA	104		JUSTIS NORTH	FUSSELMAN	91058	51020	376	
WESTATES FEDERAL ROOS	300)511393	32 162121	-103 1241226	11255	376	E .	1620N	330W	LEA	100.0		JUSTIS NORTH	FUSSILMAN	86647	50450	363	
STATE Y 4009	3002511772	32.10582	-103.1113434	25 255	37E	A	990N	990E	LEA	NM		AUSTIS	FUSSELMAN	219570	129000	960	
STATE Y 8009	3002511777	32.10587	-103 1113434		37E	A.	990N	990E	LEA	NA		aistis	FUSSELMAN	163430	96000	290	
SOUTH JUSTIS UNIT HOUSE	1002511760	32 106728	-103 1184616	25 255	N/E	c	660N	2080W	IEA.	NM		INJESTIS	FUSSELMAN	63817	35870	360	
CARLSON A #002	3002511764	32.100384	103.1113434		37E	i	23105	990€	tEA.	NA		nistis	FUSSELMAN	208280	134000	510	
CARLSON B 25 BOOM			-103 1113434		171	P	9905	990E	LEA	NN		iustis	FUSSELMAN	184030	112900	68	

Attachment 5

Water Well Map and Well Data



Legend

★ Proposed SWD

NMOSE PODs

Status

- Active (0)
- Pending (0)
- O Change Location of Well (0)
- Capped (0)
- Plugged (0)
- Incomplete (0)
- Unknown (0)



Vista Disposal Solutions, LLC - Boone Federal SWD #1									
SWD	Water Wells	Owner	Available Contact Information	Use	Sampling Required	Notes			

Attachment 6

Induced Seismicity Assessment Letter



November 26, 2019

Mr. Phillip Goetze, P.G. NM EMNRD – Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505

Subject: Induced Seismicity Potential Statement for the Boone Federal SWD #1

Dear Mr. Goetze,

This letter provides information regarding the seismic potential associated with injection operations associated with Vista Disposal Solutions, LLC (Vista), proposed Boone Federal SWD #1, hereinafter referred to as the "Subject Well."

As outlined herein, based on my experience as an expert on the issue of induced seismicity, it is my opinion that the potential for the proposed injection well to cause injection-induced seismicity is expected to be minimal, at best. This conclusion is based on (1) the lack of historic seismic activity and faulting in the area, (2) the low fault slip potential (FSP) of Precambrian faults in the area, (3) the presence of confining layers, and (4) the overall vertical distance between the proposed injection zone and basement rock.

The Subject Well, is located 1,067' FSL & 1,405' FWL of Section 26, in T24-S and R31-E of Eddy County, New Mexico. Historically, the Eddy and Lea Counties area has experienced very limited recorded seismic activity (per the U.S. Geological Survey [USGS] earthquake catalog database). There has been one known seismic event located within a 25-mile radius of the proposed Subject Well. The closest recorded seismic event was a M3.1 that occurred on March 18th, 2012 and was located approximately 10.5 miles northwest of the Subject Well (See Exhibit 1). The closest Class IID wells injecting into the same formations (Devonian-Silurian) of the Subject Well are approximately 1.6 miles to the north and southeast (See Exhibit 1).

Vista does not own either 2D or 3D seismic reflection data in the area of the Subject Well. Publicly available fault data from USGS indicates that the closest known fault is approximately 14.4 miles west of the Subject Well (See Exhibit 1).

In a recent paper written by Snee and Zoback (2018) entitled "State of Stress in the Permian Basin, Texas and New Mexico: Implications for Induced Seismicity,", the authors found that large groups of mostly north-south striking Precambrian basement faults, predominantly located along the Central Basin Platform, the western Delaware Basin, and large parts of the Northwest Shelf (which includes Eddy and Lea counties, New Mexico) have low FSP at the modeled fluid-pressure

perturbation. The map in Exhibit 2 depicts the low probability risk of FSP for the Delaware Basin and Northwest Shelf areas (Snee and Zoback 2018).

Geologic analysis indicates that the proposed Devonian-Silurian injection zone is overlain by approximately 200 to 400 feet of Woodford Shale, which is the upper confining zone and will serve as a barrier for upward injection fluid migration. Additionally, the Simpson Group that lies directly below the Montoya Formation will act as a lower confining zone to prohibit fluids from migrating downward into the underlying Ellenberger Formation and Precambrian basement rock. See the stratigraphic column for the Delaware Basin included in Exhibit 3.

In the Eddy and Lea Counties area of New Mexico, the Simpson Group is comprised of a series of Middle to Upper Ordovician carbonates, several sandstones, and sandy shales that range from approximately 350 to 650 feet thick (Jones 2008). This group of rocks is capped by the limestones of the Bromide Formation, which is approximately 200 feet thick in this area (Jones 2008). The closest deep well drilled into the Precambrian basement was completed by the Skelly Oil Company in 1975. This well is located in Section 17, Range 36E, Township 25S of Lea County (API No.30-025-25046) and encountered 602 feet of Ellenburger Formation before reaching the top of the Precambrian granite at a depth of 18,920 feet. Based on the estimated thickness of the Simpson Group and Ellenburger Formation in this area, the Precambrian basement should be approximately 1,000 to 1,200 feet below the bottom of the proposed injection zones in the Subject Well.

Conclusion

As an expert on the issue of induced seismicity, it is my opinion that the potential for the proposed injection well to cause injection-induced seismicity is expected to be minimal, at best. This conclusion is based on (1) the lack of historic seismic activity and faulting in the area, (2) the low FSP of Precambrian faults in the area, (3) the presence of confining layers, and (4) the overall vertical distance between the proposed injection zone and basement rock.

Sincerely, ALL Consulting

J. Daniel Arthur, P.E., SPEC President and Chief Engineer

Enclosures References Exhibits

References

Ball, Mahlon M. 1995. "Permian Basin Province (044)." In *National Assessment of United States Oil and Gas Resources—Results, Methodology, and Supporting Data*. U.S. Geological Survey. https://certmapper.cr.usgs.gov/data/noga95/prov44/text/prov44.pdf (accessed June 18, 2018).

Green, G.N., and G.E. Jones. 1997. "The Digital Geologic Map of New Mexico in ARC/INFO Format." U.S. Geological Survey Open-File Report 97-0052. https://mrdata.usgs.gov/geology/state/state.php?state=NM (accessed June 14, 2018).

Jones, Rebecca H. 2008. "The Middle-Upper Ordovician Simpson Group of the Permian Basin: Deposition, Diagenesis, and Reservoir Development." http://www.beg.utexas.edu/resprog/permianbasin/PBGSP_members/writ_synth/Simpson.pdf (accessed June 19, 2018).

Snee, Jens-Erik Lund, and Mark D. Zoback. 2018. "State of Stress in the Permian Basin, Texas and New Mexico: Implications for Induced Seismicity." *The Leading Edge* 37, no. 2 (February 2018): 127-34.

U.S. Geological Survey (USGS). No date. Earthquakes Hazard Program: Earthquake Catalog. https://earthquake.usgs.gov/earthquakes/search/ (accessed June 14, 2018).

Exhibits

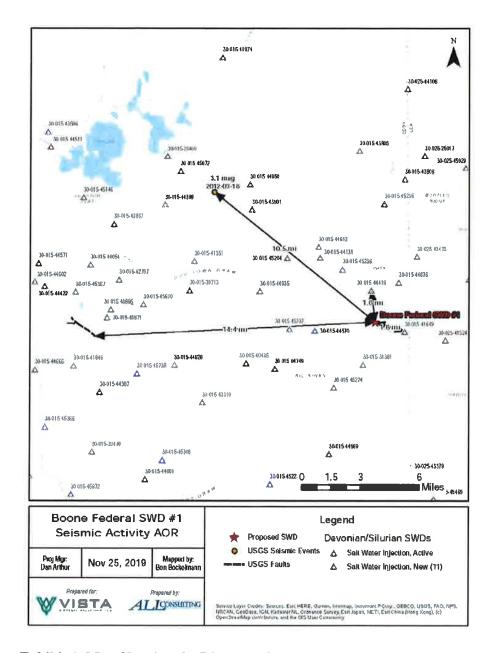


Exhibit 1. Map Showing the Distances from Known and Inferred Faults, Seismic Event, and Closest Deep Injection Well

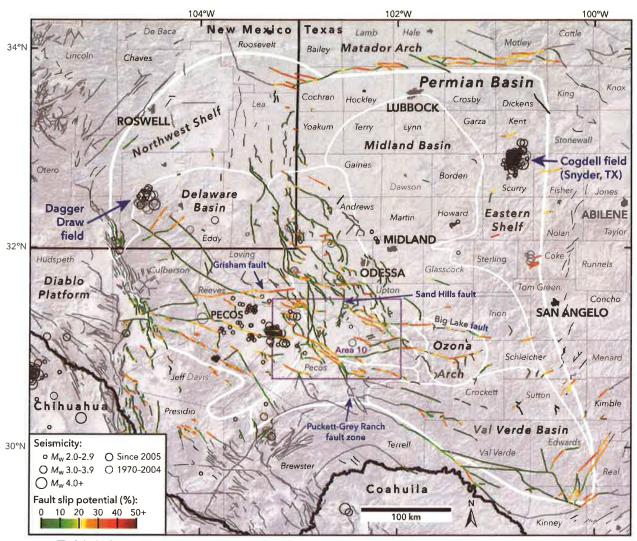


Exhibit 2. Results of the Snee and Zoback (2018) Probabilistic FSP Analysis Across the Permian Basin

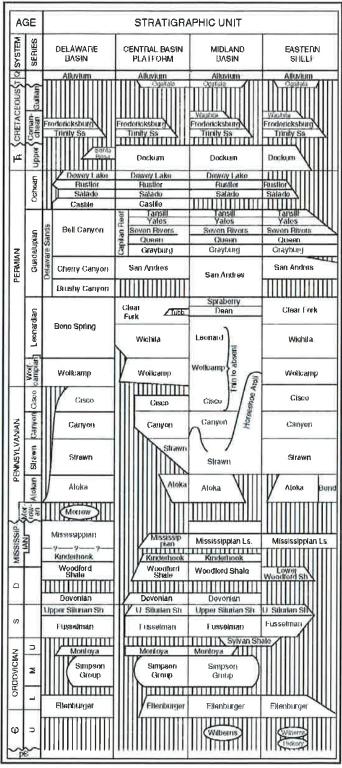


Exhibit 3. Delaware Basin Stratigraphic Chart (Ball 1995)

Attachment 7

Public Notice Affidavit and Notice of Application Confirmations

APPLICATION FOR AUTHORIZATION TO INJECT

NOTICE IS HEREBY GIVEN: That Vista Disposal Solutions, LLC, 12444 NW 10th St., Building G, Suite 202-512, Yukon, OK 73099, 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: Boone Federal SWD #1

SE ½ SW ½, Section 26, Township 24S, Range 31E

1,067' FSL & 1,405' FWL

Eddy County, NM

NAME AND DEPTH OF DISPOSAL ZONE: Devonian – Silurian (18,087' – 19,587')

EXPECTED MAXIMUM INJECTION RATE: 40,000 Bbls/day

EXPECTED MAXIMUM INJECTION PRESSURE: 3,617 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.

Carlsbad Current Argus.

Affidavit of Publication Ad # 0003902814

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:

November 15, 2019

/ Legal Clerk

Subscribed and sworn before me this November 15, 2019:

State of WI, County of Brown NOTARY PUBLIC

My commission expires

APPLICATION FOR AUTHORIZATION TO INJECT

NOTICE IS HEREBY GIVEN: That Vista Disposal Solutions, LLC, 12444 NW 10th St., Building G, Suite 202-512, Yukon, OK 73099, is requesting that the New Mexico Oil Conservation Division administratively approve the APPLICATION FOR AUTHORIZATION TO INJECT as follows:

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WELL NAME AND LOCA-TION: Boone Federal SWD #1 SE ¼ SW ¼, Section 26, Township 24S, Range 31E 1,067' FSL & 1,405' FWL Eddy County, NM

NAME AND DEPTH OF DIS-POSAL ZONE: Devonian - Silurian (18,087' -19,587') EXPECTED MAXIMUM IN-JECTION RATE: 40,000 Bbls/day EXPECTED MAXIMUM IN-JECTION PRESSURE: 3,617 psi (surface)

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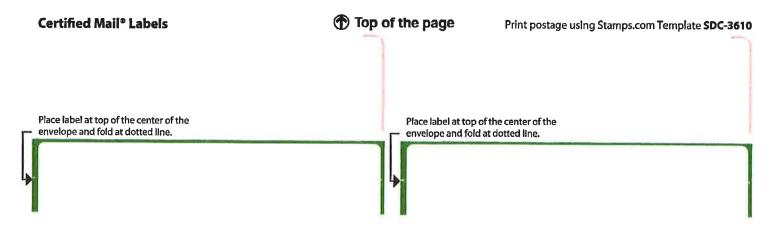
November 15, 2019

Ad # 0003902814 PO #: Boone Federal SWD #1 # of Affidavits : 1



Boone Federal SWD #1 - Notice of Application Recipients									
Entity	Address	City	State	Zip Code					
	Landowner & Mineral Owner		Just IF 8	y					
New Mexico BLM	620 E Greene St.	Carlsbad	NM	88220					
	OCD District			ille isa					
NMOCD District 2	811 S. 1st St.	Artesia	NM	88210					
	Leasehold Operators								
Chevron USA Inc. (Chevron USA INC)	6301 Deauville Blvd	Midland	TX	79706					
Commision of Public Lands - State Land Office	310 Old Santa Fe Trail	Santa Fe	NM	87501					
CTV Oil & Gas New Mexico, LLC (CTV OG NM LLC)	201 Main Street, Suite 2700	Fort Worth	TX	76102					
Devon Energy Production Company, LP (DEVON ENERGY PROD CO LP)	333 W. Sheridan Ave.	Oklahoma City	ОК	73102					
EOG Resources, Inc. (EOG RES ASSESTS LLC) (EOG RESOURCES INC) (EOG Y RES INC) (EOG A RES INC)	104 S. 4th Street	Artesia	NM	88210					
John A. Yates (YATES JOHN A)	P.O. Box 100	Artesia	NM	88211					
Keystone Petroleum NM, LLC (KEYSTONE OG NM LLC)	222 W. Las Colinas Blvd.	Irving	TX	75039					
LMBI Oil & Gas New Mexico, LLC (LMBI OG NM LLC)	201 Main Street, Ste 2700	Fort Worth	TX	76102					
PRB II 1993C Oil & Gas New Mexico, LLC (PRB II 1993C OG NM LLC)	251 Little Falls Dr.	Wilmington	DE	19808					
SRBI O&G NM, LLC (SRBI OG NM LLC)	201 Main Street, Suite 3200	Fort Worth	TX	76102					
Thru Line Oil & Gas New Mexico, LLC (THRU LINE OG NM LLC)	201 Main Street, Ste 2700	Fort Worth	тх	76102					
XTO Permian Operating, LLC (XTO PERMIAN OPERATING LLC.)	6401 Holiday Hill Rd.	Midland	тх	79707					

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



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Fort Worth TX 76102-3134

PRB II 1993C O&G NM LLC 251 Little Falls Dr. Wilmington DE 19808-1674

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