STATE OF NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES OIL CONSERVATION DIVISION

APPLICATION OF MANZANO LLC FOR APPROVAL OF A PRESSURE MAINTENANCE PROJECT AND AUTHORIZATION TO INJECT, LEA COUNTY, NEW MEXICO.

CASE NO. 22357

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EXHIBIT INDEX

Exhibit A	Self-Affirmed Statement of Nick C. McClelland
A-1	Application & Proposed Notice of Hearing
A-2	C-108
A-3	Notice of Hearing Letter and Associated Green Cards
A-4	Affidavit of Publication
Exhibit B	Self-Affirmed Statement of John Worrall
Exhibit C	Self-Affirmed Statement of Mike Hanagan
C-1	Production Decline Curve

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SELF-AFFIRMED STATEMENT OF NICK C. MCCLELLAND

1. I am the Land Manager at Manzano LLC ("Manzano"). I am over 18 years of age, have personal knowledge of the matters addressed herein, and am competent to provide this Self-Affirmed Statement. I have previously testified before the New Mexico Oil Conservation Division ("Division"), and my qualifications as an expert in petroleum land matters were accepted and made a matter of record.

2. I am familiar with the Application in this case and with the land matters pertaining to this Application. Copies of the application and proposed notice are attached as **Exhibit A-1**.

3. Manzano's Application seeks an order: (1) approving a pressure maintenance project for the injection of produced gas through the Vince BGH #1 well into the Jenkins San Andres pool (Pool Code 33950) within the San Andres formation in a project area ("Project Area") comprised of SE/4 of Section 30, Township 9 South, Range 35 East, NMPM, Eddy County, New Mexico; and (2) authorizing Manzano to convert the Vince BGH #1 well from a producing well to an injector.

4. Manzano operates the following described wells within or near the Project Area currently producing from the Jenkins San Andres Pool:

a. Sodbuster 21 Fee #4H (API 30-025-43704) horizontally drilled from a surface hole location at 200 FSL, 1650 FWL in Section 21 to a bottom hole location at 335 FNL, 1630 FWL in Section 21;

MANZANO LLC Case No. 22357 Exhibit A

- Rag Mama 30-19 Fee #1H (API 30-025-44067) horizontally drilled from a surface hole location at 25 FSL, 528 FEL in Section 30 to a bottom hole location at 2303 FSL, 394 FEL in Section 19; and
- vince BGH No. 1H (API No. 30-025-37104) ("Vince") vertically drilled at 1980 FSL, 1750 FEL (Unit J) of Section 30.

5. The wells were initially drilled as producers within the San Andres formation.

6. The perforated interval of the Rag Mama 30-19 Fee #1 is 5,250' to 12,123'; the perforated interval of the Sodbuster 21 Fee #4H is 5,150' to 9,330'; and the perforated interval of the Vince BGH No. 1H is 4840' to 4850'.

7. The Vince well currently produces 2 BOPD and 31 BWPD and is deemed uneconomic. Therefore, Manzano proposes to convert the well from a producer into an injection well to provide pressure maintenance support for the Rag Mama 30 19 Fee #1 well. Converting the well from a producer to an injector will also attempt to eliminate flaring.

8. Manzano plans to inject produced gas from the Sodbuster 21 Fee #4 and Rag Mama 30-19 Fee #1 into the San Andres formation through a closed system using the Vince BGH No. 1H at depths of 4840' to 4850' within the San Andres formation.

9. Accordingly, Manzano proposes the unitized interval be defined as the Jenkins San Andres pool (Pool Code 33950) within the San Andres formation at depths of 4840' to 4850' as defined on the Manzano Vince BGH #1 well log provided on page 19 of Form C-108.

10. Exhibit A-2 includes a copy of Manzano's Application for Authorization to Inject ("Form C-108"). I am generally familiar with the land matters addressed in the Form C-108.

11. Page 20 of Form C-108 contains a land map of the Project Area that identifies surface and mineral ownership interests entitled to notice within the area of review and includes applicable lease numbers. There are no other operators within a ½ mile area of review radius.

12. Page 5 of Form C-108 is an area of review map of the Project Area that depicts the producing wells and other wells within the ½ mile radius areas of review that penetrate the proposed injection zone. Pages 9-12 of Form C-108 provide detailed well information for the wells within the areas of review.

13. Manzano conducted a diligent, good-faith effort to identify the correct addresses of persons entitled to notice and has complied with the Division's notice requirements.

14. Notice of the Division's hearing was provided to all affected parties, including the New Mexico State Land Office and Bureau of Land Management, at least 20 days prior to the hearing date. A sample of the hearing notice letter and the associated return receipts are attached as Exhibit A-3.

15. Notice of the hearing was also published more than ten business days prior to the hearing date. The affidavit of publication is attached as **Exhibit A-4**.

16. The exhibits referenced above were either prepared by me or under my supervision or were compiled from company business records.

17. In my opinion, the granting of Manzano's application would serve the interests of conservation, the prevention of waste, and the protection of correlative rights.

18. I understand this Self-Affirmed Statement will be used as written testimony in this case. I affirm that my testimony in paragraphs 1 through 17 above is true and correct and is made under penalty of perjury under the laws of the State of New Mexico. My testimony is made as of the date handwritten next to my signature below.

ellul

Nick C. McClelland

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11/19/21

STATE OF NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES OIL CONSERVATION DIVISION

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- b. Rag Mama 30-19 Fee #1H (API 30-025-44067) horizontally drilled from a surface hole location at 25 FSL, 528 FEL in Section 30 to a bottom hole location at 2303 FSL, 394 FEL in Section 19; and
- c. Vince BGH No. 1H (API No. 30-025-37104) ("Vince") vertically drilled at 1980 FSL, 1750 FEL (Unit J) of Section 30.

5. The wells were initially drilled as producers within the San Andres formation.

6. The perforated interval of the Rag Mama 30-19 Fee #1 is 5,250' to 12,123'; the perforated interval of the Sodbuster 21 Fee #4H is 5,150' to 9,330'; and the perforated interval of the Vince BGH No. 1H is 4840' to 4850'.

7. The Vince well currently produces 2 BOPD and 31 BWPD and is deemed uneconomic. Therefore, Manzano proposes to convert the well from a producer into an injection well to provide pressure maintenance support for the Rag Mama 30 19 Fee #1 well. Converting the well from a producer to an injector will also attempt to eliminate flaring.

8. Manzano plans to inject produced gas from the Sodbuster 21 Fee #4 and Rag Mama 30-19 Fee #1 into the San Andres formation through a closed system using the Vince BGH No. 1H at depths of 4840' to 4850' within the San Andres formation.

9. Accordingly, Manzano proposes the unitized interval be defined as the Jenkins San Andres pool (Pool Code 33950) within the San Andres formation at depths of 4840' to 4850' as defined on the Manzano Vince BGH #1 well log provided on page 19 of Form C-108.

10. Exhibit A-2 includes a copy of Manzano's Application for Authorization to Inject ("Form C-108"). I am generally familiar with the land matters addressed in the Form C-108.

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12. Page 5 of Form C-108 is an area of review map of the Project Area that depicts the producing wells and other wells within the ½ mile radius areas of review that penetrate the proposed injection zone. Pages 9-12 of Form C-108 provide detailed well information for the wells within the areas of review.

13. Manzano conducted a diligent, good-faith effort to identify the correct addresses of persons entitled to notice and has complied with the Division's notice requirements.

14. Notice of the Division's hearing was provided to all affected parties, including the New Mexico State Land Office and Bureau of Land Management, at least 20 days prior to the hearing date. A sample of the hearing notice letter and the associated return receipts are attached as Exhibit A-3.

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16. The exhibits referenced above were either prepared by me or under my supervision or were compiled from company business records.

17. In my opinion, the granting of Manzano's application would serve the interests of conservation, the prevention of waste, and the protection of correlative rights.

18. I understand this Self-Affirmed Statement will be used as written testimony in this case. I affirm that my testimony in paragraphs 1 through 17 above is true and correct and is made under penalty of perjury under the laws of the State of New Mexico. My testimony is made as of the date handwritten next to my signature below.

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Nick C. McClelland

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STATE OF NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES OIL CONSERVATION DIVISION

APPLICATION OF MANZANO LLC FOR APPROVAL OF A PRESSURE MAINTENANCE PROJECT AND AUTHORIZATION TO INJECT, LEA COUNTY, NEW MEXICO.

Case No. 22357

APPLICATION

In accordance with NMAC 19.15.27.8, Manzano LLC ("Applicant") (OGRID No. 231429) files this application with the Oil Conservation Division for an order: (1) approving a pressure maintenance project for the injection of produced gas through the Vince BGH #1 well into the San Andres formation in a project area ("Project Area") comprised of SE/4 of Section 30, Township 9 South, Range 35 East, NMPM, Eddy County, New Mexico; and (2) authorizing Manzano to convert the Vince BGH #1 well from a producing well to an injector. In support of its application, Applicant states:

- 1. Applicant operates the following described wells within or near the Project Area:
- the Sodbuster 21 Fee #4H (API 30-025-43704) with a surface hole location at 200 FSL,
 1650 FWL of Section 21 and a bottom hole location at 330 FNL, 1650 FWL of Section 21;
- the Rag Mama 30-19 Fee #1 (API 30-025-44067) with a surface hole location at 25 FSL,
 528 FEL of Section 30 and a bottom hole location at 2303 FSL, 394 FEL of Section 19; and
- The Vince BGH No. 1H (API No. 30-025-37104) located at 1980 FSL, 1750 FEL (Unit J) of Section 30.

The wells are currently producing from the Jenkins San Andres Pool (Pool No. 33950).

3. Applicant proposes to convert its Vince BGH No. 1H well from a producer into an injection well for pressure maintenance operations. Applicant plans to inject produced gas from the

MANZANO LLC Case No. 22357 Exhibit A-1

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Sodbuster 21 Fee #4 and Rag Mama 30-19 Fee #1 into the San Andres formation through a closed system using the Vince BGH No. 1H. Applicant does not anticipate compatibility issues.

The injection interval of the Vince BGH No. 1H is 4840 feet to 4850 feet.

 Injection will provide pressure maintenance support for the Rag Mama 30 19 Fee #1 well and will also reduce flaring.

6. The expected average injection rate of produced gas into the Vince BGH No. 1H is 150 MCFGPD. The expected maximum injection rate is 1,000 MCFGPD to provide Manzano the option to inject more gas as the GOR increases or if Manzano drills additional wells in the Jenkins San Andres Pool.

The expected average injection pressure of produced gas into the Vince BGH No.
 1H is 500 psi and the proposed maximum injection pressure is 950 psi.

8. Applicant's proposed pressure maintenance project can be conducted in a safe and responsible manner without causing waste, impairing correlative rights or endangering fresh water, public health or the environment.

9. Approval of this application will be in the best interest of conservation, the prevention of waste and the protection of correlative rights.

10. A copy of the applicable C-108 is attached as Exhibit A.

WHEREFORE, Applicant requests this application be set for hearing on December 2, 2021, and after notice and hearing, the Division enter an order: (1) approving a pressure maintenance project for the injection of produced gas through the Vince BGH #1 well into the San Andres formation in the Project Area; and (2) authorizing Manzano to convert the Vince BGH #1 well from a producer to an injector.

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Respectfully submitted,

HINKLE SHANOR LLP

<u>/s/ Dana S. Hardy</u> Dana S. Hardy Michael Rodriguez P.O. Box 2068 Santa Fe, NM 87504-2068 Phone: (505) 982-4554 Facsimile: (505) 982-8623 dhardy@hinklelawfirm.com mrodriguez@hinklelawfirm.com *Counsel for Manzano LLC*

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Application of Manzano LLC for Approval of a Pressure Maintenance Project and Authorization to Inject, Lea County, New Mexico. Applicant seeks an order: (1) approving a pressure maintenance project for the injection of produced gas through the Vince BGH #1 well into the San Andres formation in a project area ("Project Area") comprised of SE/4 of Section 30, Township 9 South, Range 35 East, NMPM, Eddy County, New Mexico; and (2) authorizing Manzano to convert the Vince BGH #1 well from a producer to an injector. Applicant operates the following described wells within or near the Project Area:

- the Sodbuster 21 Fee #4H (API 30-025-43704) with a surface hole location at 200 FSL, 1650 FWL of Section 21 and a bottom hole location at 330 FNL, 1650 FWL of Section 21;
- the Rag Mama 30-19 Fee #1 (API 30-025-44067) with a surface hole location at 25 FSL, 528 FEL of Section 30 and a bottom hole location at 2303 FSL, 394 FEL of Section 19; and
- The Vince BGH No. 1H (API No. 30-025-37104) located at 1980 FSL, 150 FEL (Unit J) of Section 30.

The wells are currently producing from the Jenkins San Andres Pool (Pool No. 33950). Applicant proposes to convert its Vince BGH No. 1H well from a producer into an injection well for pressure maintenance operations. Applicant plans to inject produced gas from the Sodbuster 21 Fee #4 and Rag Mama 30-19 Fee #1 into the San Andres formation through a closed system using the Vince BGH No. 1H. Applicant does not anticipate compatibility issues. The injection interval of the Vince BGH No. 1H is 4840 feet to 4850 feet. Injection will provide pressure maintenance support for the Rag Mama 30 19 Fee #1 well and will also reduce flaring. The expected average injection rate of produced gas into the Vince BGH No. 1H is 150 MCFGPD. The expected maximum injection rate is 1,000 MCFGPD to provide Manzano the option to inject more gas as the GOR increases or if Manzano drills additional wells in the Jenkins San Andres Pool. The expected average injection pressure of produced gas into the Vince BGH No. 1H is 500 psi and the proposed maximum injection pressure is 950 psi. Applicant's proposed pressure maintenance project can be conducted in a safe and responsible manner without causing waste, impairing correlative rights or endangering fresh water, public health or the environment. The wells are located approximately 18.1 miles north of Tatum, New Mexico.

FORM C-108 June 10, 2003			. Francis Dr Mexico 875		1220	ND NATURAL	OF NEW MEXICO Y, MINERALS AN RCES DEPARTME	EN
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	AGER	TITLE: MAN			10	ORRALL	IE: JOHN WO	
	9/27/21	DATE			110	John 1. Ja.	ATURE: C.	3

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:

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

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Case No. 22357

Exhibit A-2

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1

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, fining 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.

Answers to FORM C-108. Application of Manzano, LLC to inject gas into the VINCE BGH #1.

III. The well data for the proposed injection well is attached along with the current and proposed wellbore diagram.

V. Attached is the Area of Review map identifying six total wells within the ½ mile radius of the Injection well including the injection well, one producing oil well, and four plugged and abandoned wells.

VI. The table of well data shows casing and cement information, the perforated intervals, and the plugging and abandonment information. Wellbore diagrams are attached for the five wells within the Area of Review.

VIII. 1. Manzano, LLC proposes to inject an average of 150 MCFGPD into the well. The maximum daily rate requested is 1000 MCFGPD to give Manzano the option to inject more gas as the GOR increases or if Manzano drills additional wells in the Jenkins San Andres pool.

2. The system is closed. There are two source wells and one injection well, all in the same reservoir, the San Andres P-1 dolomite.

3. The proposed average injection pressure is 500 psi, the proposed maximum injection pressure is 950 psi.

4. Source Wells: The gas to be injected is produced in the only two active wells in the Jenkins San Andres pool. It will be injected into the same zone in the injection well. There should no compatibility issues. These two source wells currently produce 59 BOPD, 129 MCFGPD, and 1068 BWPD.

a. Manzano, LLC Rag Mama 30 19 Fee #1 (API 30-025-37104) located at 25 FSL, 528 FEL Sec. 30-T9S-R35E.

b. Manzano, LLC Sodbuster 21 Fee #4H (API 30-025-43704) located at 200 FSL, 1650 FWL Sec. 21-T9S-R35E.

5. Gas analyses from the two source wells are attached.

VIII. Geologic Information of the Injection zone: See the attached log section cross section. The gas will be injected into the San Andres P-1 dolomite in existing perforations at 4840 to 4850 feet in the Vince BGH #1. This well will be converted from an existing oil producer to a gas injector for the purpose of maintaining reservoir pressure, to allow for more oil to be produced from the reservoir. The well currently produces 2 BOPD and 31 BWPD and is uneconomic. Reservoir: The San Andres formation is present from 4000 to 5460 feet in this well. The interval from 4810 to 4900 is known as the P-1 dolomite, which is a fine crystalline dolomite with 4% to 12% porosity, and 20 to 100 ohm-m of resistivity. The interval has up to 100 feet of porosity greater than 6% (See attached isopach map). Oil and gas is stratigraphically trapped where this

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reservoir pinches out northward into anhydrite. The zone is also overlain by anhydrite, and underlain by a tight limestone.

Water Aquifer: The water aquifer in the area are the Ogalalla red beds. Attached is a map ("Figure 4") from Atkins Engineering of Roswell showing the top of the aquifer is present at 4025 feet above sea level. The Vince BGH #1 well has a drill floor elevation of 4183 feet, which means water is found in the red beds at 158 feet. Atkins Engineering indicates there is approximately 25 feet of water in this area

IX. No additional stimulation is planned. The zone has already been acidized with 41,000 gallons of 15% NEFE acid.

X. Logs of this well are attached.

XI. There are no water wells within one mile of the proposed injection well. Attached is a map from Atkins Engineering ("Figure 3") which identifies the nearest water wells, all of which are located 2.5 to 3 miles from the injection well.

XIII. An Affidavit is attached.

XIV. Attached is a Land Map showing that there are no other operators within the ½ mile Area of Review radius. A copy of the application has been sent by certified mail to the surface owner, C J. Kinsolving. A receipt is attached.

Attached is the Legal Notice filed with the Hobbs News Sun. Other Attachments to this application: Injection Well Data Sheet Injection Well Current Wellbore Diagram Injection Well Proposed Wellbore Diagram Area of Review Map Table of Well Data Wellbore Diagrams of other five wells within the Area of review Gas Analysis - Manzano, LLC Rag Mama 30 19 Fee #1H Gas Analysis - Manzano, LLC Sodbuster 21 Fee #4H Log Cross Section of the P-1 Dolomite Net Porosity Isopach Map of the P-1 Dolomite Map of Top of Water in the Ogallala Red Beds from Atkins Engineering Location Map of Fresh Water Wells from Atkins Engineering Land Map Affidavit Legal Notice in the Hobbs News Sun Proof of Notice to the Surface Owner Charles Kinsolving Proof of Notice to the Bureau of Land Management Carlsbad Office Statement on Seismicity Analysis

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Manzano is applying to inject gas produced from the Manzano Sodbuster 21 Fee #4H and Manzano Rag Mama 30 19 Fee #1H wells into the Vince BGH #1 well. All three wells are currently perforated in the same P-1 dolomite reservoir. The two source wells currently produce a total of 59 BOPD, 129 MCFGPD and 1068 BWPD. Produced water is disposed in the Entex Barnes SWD #1 well. Gas is currently flared due to a lack of a pipeline. The proposed injection well, currently produces 2 BOPD and 31 BWPD and is deemed uneconomic. The purpose of this application is to comply with the new flare rule, while preventing waste, and recovering more oil from the reservoir by increasing the reservoir pressure.

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CURRENT WELLBORE DIAGRAM PROPOSED INJECTION WELL

PROPOSED WELLBORE DIAGRAM

Depth Set

4148 12650



INJECTION WELL DATA SHEET

OPERATOR: MANZANO, LLC

Side 1

WELL NAME & NUMBER. VINCE RGH #1

	T TA LOTA & ADDRESS AND	22	0/1	KGDE
	UNIT LETTER	SECTION	TOWNSHIP	RANGE
WELLBORE SCHEMATIC		METT CI	WELL CONSTRUCTION DATA	-
(SEE ATTACHED)		Surface Casing	Casing	
	Hole Size:	17 1/2"	Casing Size: 13	13 3/8*
	Cemented with:	426 SN.	or 975	R ²
	Top of Cement:	SURFACE	Method Determined.	CIRC.
		Intermediate Casing	te Casing	
	Hole Size: 1	12 1/4*	Casing Size: 9 5/8"	50
	Cemented with:	1105 sx.	or 2500	f H
	Top of Cement:	SURFACE	Method Determined: CIRC.	CIRC.
		Production Casing	(Casing	
	Hole Size:	8 3/4"	Casing Size: 5	5 1/2"
	Cemented with:	1420 sx.	or 3200	f3
	Top of Cement:	3645	Method Determined:	CALC.
	Total Depth:	12650		
		Injection Interval	nterval	
	48	4840 fcct	fact to 4850 (PERFS)	ERFS)

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INJECTION WELL DATA SHEET

Side 2

Tubing Size:	27	2 7/8"	Lining Material:	
Type of Packer: ARROWSET 1-X	ARROWSE	X-1-X		1
Packer Setting Depth: _	epth:	4750	1	
Other Type of Tu	ıbing/Casi	Other Type of Tubing/Casing Seal (if applicable): _	e):	
		Addi	Additional Data	
 Is this a new 	well drille	1. Is this a new well drilled for injection?	Yes X No	
If no, for wh	at purpose	If no, for what purpose was the well originally drilled?	ally drilled?	
DEVONI	DEVONIAN OIL WELL	WELL		

ci

- Name of the Injection Formation: SAN ANDRES
- Name of Field or Pool (if applicable): JENKINS SAN ANDRES i.
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. I. DEVONIAN UPHOLE SET CIBP AT 12620. 20 CMT ON TOP 2. WOODFORD 12534-12592 SET CIBP AT 12500 30' CMT. 3. ATOKA PERFS 11607-11621, 11655-11664. SQUEEZED. 4. SAN ANDRES 4840-50. ÷
- Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: <u>SAN ANDRES IS PRODUCTIVE.</u> TOP IS 4000. BOUGH C si

FORMERLY PRODUCED, NOW INACTIVE IN AREA, TOP IS 9738, DEVONIAN(TOP OF

12650) PRODUCES IN SECTION 20.

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VI. AREA OF REVIEW TABLE OF WELL DATA

ور	30-025-37103	EOG RESOURCES	GILL BGJ	1	OIL WELL	rea	1650 FSL, 660 FWL	-	29	<u>95</u>	35E	8/1/2005	12,670	12,670	17 1/2"	13 3/8"	420	440	SURFACE	CIRCULATED	12 1/4"	9 5/8"	4170	1575	SURFACE	CIRCULATED	8 3/4"	5 1/2"	12660	3400	3670	CALCULATED		NONE	NONE	11603 TO 11877		SET CIRP AT 12615		30 SXS CMT 12377 TO 12615	55 SXS CMT 11934 TO 11487	25 SXS CMT 10056 TO 9853	30 SXS CMT 7786 TO 7542	25 SXS CMT 5521 TO 5268	40 SXS CMT 4282 TO 3877	25 SXS CMT 2887 TO 2634	25 SKS CMT 523 TO 270	40 SXS CMT 270 TO SURF	CUT OFF WELLHEAD	0000 (bt /b
S	30-025-20488	AMERADA PETROLEUM	ANDERSON SE	1	OIL WELL	LO L	560 FNL, 1980 FEL	U I	30	55	3SE	1/15/1963	12,690	12,690	17 1/2"	13 3/8"	400	500	SURFACE	CIRCULATED	"11	8 5/8"	4315	1400	2417	TEMP. SURVEY	77/8"	7" 0 TO 9952	5 1/2° 9952 TO 12688	800	7833	TEMP. SURVEY		NONE		TURE 01 1//4	66/6 01 /5/6	CIBP set at 12.584		Retainer set at 8175 ft	Perf at 4300 and 4985.	Sq2d 120 sxs 4300-4985	50 SXS CMT 4200 TO 4090	60 SXS CMT 2260 TO 2058	60 SXS CMT 525 TO 378	45 SXS CMT 60 TO SURF			2016/30/2	
4	30-025-44067	MANZANO, LLC	RAG MAMA 30-19 FEE	5	ACTIVE	The second second	131 82C JCI C2	. ;	DE	36	3SE	11/30/2017	4847	12,160	12 1/4"	8 5/8"	2268	950	SURFACE	CIRCULATED	*17/8*	5.5"	12160	2100	SURFACE	CIRCULATED	NONE	NONE	NONE	NONE	NONE	NONE	CTER TO TOTO	2227 TO ADDA	NONE NONE	NUME													ACTIVE WELL	
B	30-025-37104	MANZANO, LLC	VINCE BOH	- 10	ACTIVE	1080 CE1 1150 CE1	ו דומט ובון, בוסט רבו		05	35	3SE	4/25/2005	12,655	12,655	17 1/2"	13 3/8"	426	240	SURFACE	CIRCULATED	12 1/4"	9 5/8"	4145	1103	SURFACE	CIRCULATED	83/4"	5 1/2"	12650	1420	3645	CALCULATED	ARAN TO ARCO	4840 TO 4850	1353A TO 13587	ACCAL OF COLOR	LOATT OF JOATT		WEILDORE	ACCEDORE	DIAGRAM	ATTACHED							ACTIVE WELL	
2	30-025-02667	AILAN IC KEHINING CO	1.2		P&A	1980 EGI 1880 EEI		, FE	20	R	35E	3/1/1959	10025	10025	2/1/1	13 3/8	408	C/E	SURFACE	CIRCULATED	12 1/4"	9 5/8-	4333	1500	1350	TEMP. SURVEY	77/8"	5 1/2"	5050	325	4178	CALCULATED	NONE	NONE	4846 to 4866 (San Andrec)			250 sxs CMT 10025 to 9347	75 sxs cmt 5200 to 5050		30 sxs cmt plug 4620 to 4880	shot off 9 5/8" csg at 630 feet	35s sxs CMT 646 to 608	5 sxs CMT, TOC at 485	50 sxs cmt TOC at 385	SU SXS CMT TOC at 340 CUT DEE WELLIERD	WEID PLATE ON TOP	12/05/1973 Ist time	8/7/1978	
1	99970-570-05		1	DRY HOLE	P&A	1980 FSI 1980 FFI		08	3 5	22	30E	6561/1/2	4/52	76/5	7/T /T	0/c ct	430	C/C		CINCULATED	14 1/4-	8/6 5	4350	1600	1475	TEMP, SURVEY	NONE	NUNE	NONE	NONE	NONE	NONE	NONE	JUNKED & ABANDONED	NONE			SET RETAINER AT 4151	SQUEEZED 200 SXS INTO		PARTED CASING AT 4245	5 5X5 ON RETAINER	CUT OFF WELLHEAD	WELD PLATE ON TOP					3/5/1959	
WELL ID#	COCENTOR	LEASE NAME	WELL#	WELL TYPE	STATUS	FOOTAGES	SURFC UNIT	SECTION	TOWNSHIP	DANGE		TRUE MEDICAL STREET	INVE VERIIOAL DEPTH			COUNTRY PALLS		CMTTO	HOW MEASIBED	THE STREAM CONC.	CASIMG STORE SIZE	CET AT			UDIAL MERCENDED	DON STRING LIGHT STAT		CHOING SIGE	201.41	SK CMI	CMI 10	HDW MEASURED	CURRENT COMPLETION, MD	CURRENT COMPLETION, TVD	PRIOR COMPLETION DEPTHS	PRIOR COMPLETION DEPTHS	PRIOR COMPLETION DEPTHS	P&A INFORMATION											P&A DATE	

There are six wells within the Area of Review. <u>The zone of injection is</u> <u>isolated in each well.</u>

The Vince #1 (Well#3) has cement behind 5 ½" casing to 3645 feet. The proposed injection interval is 4840 to 4850 feet. The Rag Mama (Well #4) produces oil from the injection interval. The entire well has cement behind 5 ½" casing.

Wells #2, 5 and 6 were plugged and abandoned with 5 %" casing cemented over the injection interval, with additional overlying cement plugs in the annulus.

Well #1 did not reach the injection depth.

Wellbore diagrams are attached.

_	Company:	Company: Atlantic Refining			Prospect: Prokine	lenkinc
	Well Name: Anderson #1	Anderson #1			TD (MID/TUM). 4752	1367
le	Countur-				יהאו /האול הו	70/6
era	-Anima-	rea			Elevation: 4175 (DF)	4175 (DF)
ana	State:	State: New Mexico		Lati	Latitude & longitude:	
9	API Number: 30-025-02666	30-025-02666		Section	Section-Township-Range 30-795-R35E	30-135-R35E
					Surface Location: 1980 FSL, 1980 FEL	1980 FSL, 1980 FEL
				Botte	Bottom Hole Location: 1980 FSL, 1980 FEL	1980 FSL, 1980 FEL
DIRE	DIRECTIONS:					
Form	Formation MD TVD	Casing Profile	Hole Size	Casing Specifications		P&A Info.
					3-5-1959 Cut off wellhead weld plate on top Skid rig to Anderson 1-X	elihead n 1-X
			2/1/2	Set 13 3/8 at 426 feet. Coment with 426 sxs		
			12 1/4	Set 9 5/8" at 4350 feet.	Casing parted at 42	Casing parted at 4275. Sourcesed part with 200 ever one
			Surv.	Coment with 1500 535 TOC at 1475 by Temp.	5	THE FOR ANY INCLUSION AND A DESCRIPTION
		_ ⊢	"8/LL L	J&A 4752 ft TD	Junked and abando	Junked and abandoned at TD of 4753 feet.
3	ELL #1. This	s well was drill	ed in	1959 and i	unked and	WELL #1. This well was drilled in 1959 and junked and abandoned at
4Σ	752 feet priv anzano Vin	4752 feet prior to reaching the depth of proposed injection in the Manzano Vince BGH #1 well (4840-4850 feet).	the I (48	depth of pro 840-4850 fee	posed inje it).	ction in the
	No completion attem	No completion attempted after intermediate casing parted ansd the well was Junked and abandoned.	ing par	ted ansd the well was ju	nked and abandone	ď,
strom						
шор						

Well Name Work Information The Northong (account stat) The Northong (account stat) Current Location State (her Miner) Latitude & Iteration (account stat) Exerction (account stat) Exerction (account stat) AVI Number State (her Miner) Latitude & Iteration (account stat) Exerction (account stat) Exerction (account stat) AVI Number State (her Miner) Latitude & Iteration (account stat) Exerction (account stat) AVI Number State (her Miner) Latitude & Iteration (account stat) Exerction (account stat) AVI Number State (her Miner) Latitude & Iteration (account stat) Exerction (account stat) AVI Number State (her Miner) Latitude & Stat) Exerction (account stat) Avia State (her Miner) Latitude (account stat) Exerction (account stat) Avia Latitude (account stat) Latitude (account stat) Latitude (account stat) Avia Latitude (account stat) Latitude (account stat) Latitude (account stat) Avia Latitude (account stat) Latitude (account stat) Latitude (account stat) Avia Latitude (account stat) Latitu	Well Name: Anderson #1-X Country: Leo State: New Mexico Pather: 30-025-02667 Casing Profile Depth dete: 36-025-02667 dete: 36-025-02667 dete: 36-025-02667 dete: 36-025-02667 dete: 36-025-02667 dete: 36-025-02667 dete: 36-020 dete:	Well Name: Anderson #1-X Country: Lea State: New Mexico Brance: 30-025-02667 Casing Profile Casi	Well Name: Anderson #1.X Country: Lea State: New Mexico State: New Mexico Peth Depth Cosing Profile
API Number: Leo State: New Mexico API Number: 30-025-02667 MS: API Number: 30-025-02667 API API API API API API API API API API	Country: Lea State: New Mexico State: New Mexico Depth Depth assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis assis	Country: Lea State: New Mexico State: New Mexico Depti Depti assing Profile assing Profi	Country: Leo State: New Mexico State: New Mexico State: New Mexico Costine Profile Costine Pro
State: New Mexico PI Number: 30-025-02667 Pineter 30-025-02667 Pineter 30-025-02667 Pineter 20-025-02667 Pineter 20-025 Pineter 2	State: New Mexico PI Number: 30-025-02667 Depth Depth deta deta deta deta deta deta deta deta	State: New Mexico PI Number: 30-025-02667 Pepti Depti	State: New Mexico
PI Number: 30-025-02667	PI Number: 30-025-02667	PI Number: 30-025-02667	
Depth Depth 4445 4265 ALCE Casing Profile 4445 4265 ALCE ond 22769 BW/form Projector Plugged and obordioned 12785 BW/form	Depth Depth 4465 4465 Add Casing Profile 4465 4465 Add 2000 BW/form Additionally plugged and across BW/form Additionally plugged and across BW/form Additionally plugged and across Addition Contextered in 1373 aurio across Addition Contextered in 1373 additin 1373 addition Contextered in 1373 addition Context	Depth Depth Caling Profile Asks Asks Asks Asks Asks Asks Acrosond 22789 BW/jom Colloced 11,925 BD 7454 MCFG and 22789 BW/jom	
Cepth Caling Profile	Cepth Casing Profile Cepth Casing Profile Casing Pr	Depth Depth Association from the frontile Association from the output from	
Depth Casing Frontie Depth Casing Frontie Additional Casing Frontie Ad	Depth Casing Frontie Depth Casing Frontie Casing Frontie date date date date Deputred 11, 352 BD 7554 MCFG and 12705 BW/om	Depth Casing Frontie Depth Casing Frontie east assis	Casing Profile
4465 A 4265 A 4265 A 4265 A 4265 A 42725 B W form	4465 and 22269 BW/form	4466 and 22268 BW/om	
4465 4255 MCFG and 22258 BW/form	4465 4265 BW/form	4465 4465 and 12026 BW/om	
4845 4855 And CDG and 22709 BW form	4466 4466 and 22708 BW form to conjunctive place and 22708 BW form to conjunct 11, 352 BD 7454 MCFG and 22708 BW form to conjunct 11, 352 BD 7454 MCFG and 22709 BW form	4466 4466 4466 4466 4466 4466 4466 446	
4465 4265 4265 4265 426 426 426 426 426 426 426 426 426 426	4465 4265 4265 4265 4255 4255 4254 MCFG and 12725 BW/om produced 11, 352 BD 7454 MCFG and 22729 BW/om st scriptingly plugged and aborndoned 12/05/1973	4865 4865 4865 4865 4865 4865 4865 4865 4865 4865 4865 4865 4875 4875 4800 4800 4800 4800 4800 4800 4800 4800	
4845 4865 4865 4865 000000000000000000000000000000000000	4845 4865 4865 4865 Participant of the participant of the partite of the partite of the partite of the participant of the parti	4465 4265 4265 4265 4265 4265 4265 4265	
E 0	E 0	E 0	WELL #2. This well is on the same 40 acre- injection well. It produced from 1959 to 1 the proposed injection zone from perforal 4846 to 4866. It produced 11,352 BO, 745 and 22,769 BW. The injection interval is is plug in those perforations, three overlying plugs, and cement behind the 5 ½" casing
E 9		E 0	injection well. It produced from 1959 to 1 the proposed injection zone from perforal 4846 to 4866. It produced 11,352 B0, 745 and 22,769 BW. The injection interval is is plug in those perforations, three overlying plugs, and cement behind the 5 %" casing
	E O		The proposed injection zone from perforal 4846 to 4866. It produced 11,352 BO, 745 and 22,769 BW. The injection interval is is plug in those perforations, three overlying plugs, and cement behind the 5 ½" casing
	E O		and 22,769 BW. The injection interval is is plug in those perforations, three overlying plugs, and cement behind the 5 ½" casing
			plug in those perforations, three overlying plugs, and cement behind the 5 %" casing
Well produced 11.352 BO 3454 MCFG and 22769 BW form 5an Andres 4846 to 4866. Well produced 11.352 BO 3454 MCFG and 22769 BW form 5an Andres 4846 to 4866. If wers originally plugged and oborndoned 12/05/1973. If wers creatived in 1973 but operator could not the costing stub and wers replugged di7/1978 as shown.	250 sts plug 10025 to 9347 250 sts plug 10025 to 9347 Well produced 11,352 BD 7454 MCFG and 22759 WV/fom 5an Andres 4846 to 4866. 1t was anighted and aborndaned 12/05/1973. 1t was reentered in 1373 but operator could not the onto 95/8° casing stub and was replayed 47/1978 as shown.	250 sts plug 10025 to 9347 7 7/a* TD 10,025 to 9347 7 7/a* TD 10,025 bld nat run pipe to TD Well produced 11,322 BO 7454 MCF6 and 22769 BW form 5 an Adres 4846 to 4866 It was criginically plugged and aborndoned 12/05/1973 for a social stub and was recharated af 7/1/978 es choura	
7 1/8" TD 10,025 Did not run pipe to TD Well produced 11,352 B0 7/454 MCFG and 22769 BW Jom 5an Andres 4846 to 4866. It was onjmolly plugged and abondoned 12/05/1373. It was reentered in 1373 but operator could not be onto 9 5/0" cosing stub and was replugged 4/1/1378 as shown.	718 718 T0 10,025 Did not run pipe to TD Well produced 11,352 BO 7454 MCFG and 22769 BW form San Andres 4846 to 4866. 11.952 BO 7454 MCFG and 22769 W form San Andres 4846 to 4866. It was originally playged and obbindoned 12/05/1973 11.052 BM form San Andres 4846 to 4866. It was originally playged and obbindoned 12/05/1973 11.052 BM form San Andres 4846 to 4866. It was originally playged and obbindoned 12/05/1973 11.052 BM form San Andres 4846 to 4866.	7/8" TD 10,025 Did not run pipe to TD Well produced 11,325 BO 7454 MCFG and 22769 BW/fom San Andres 4846 to 4866. It was optionelly plugged and aboundaned 12/05/1973 It was reentered in 1573 but operation could not be anot 92/08" costo a stub and was restinated #7/1979 ac chown	250 sts plug 10025 to 9347
Well produced 11,532 BO 7454 MFFG and 227895 BW form 5an Andres 4846 to 4866. It was anginally plugged and abandoned 12/05/1973. It was republiged 6/7/1978 as shown. It was reentered in 1973 but operator could not be onto 95/8° cosing stub and was republiged 6/7/1978 as shown.	Well produced 11,352 BO 7454 MCFG and 22769 BWY forn San Andres 4846 to 4866. It was originally plugged and abandoned 12/05/1973. It was reentered in 1973 but operator could not tie onto 95/8° cosing stub and was replugged 8/7/1978 as shown.	Weil produced 11,352 BO 7454 MCFG and 22769 BW form San Andres 4846 to 4866. It was captionly plugged and abondoned 12/05/1973 It was capta on the was resultanced A7/1979 as shown. It was reentered in 1373 but operations could not be onto 95/0° capta or this ond a was resultanced A7/1979 as shown.	77/8" TD 10,025 Did not run pipe to TD
It was reentered in 1973 but operator could not be onto 95/8" casing stub and was rephyged &/7/1978 as shown.	It was reentered in 1973 but operator could not the onto 95/8" cosing stub and was repluged &/7/1978 as shown.	It was reentered in 1973 but operator could not the onto 95/8" cosing stub and was reenhaged 8/7/1978 as chown	oduced 11,352 B0 7454 MCFG and 22769 BW form San Andres 4846 to 4866. Datiations busined and chandrand 12/06/1932
			reentered in 1973 but operator could not be onto 95/8" cosing stub and was replugged &/7/1978 as shown.

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Prospect: Jonkins TD MAD/TVDI: 12180.MD/Jeen TVD	Elevation: 4159 61.5 4180 KB 01 VB	Listitude & longstude. 101 24234/31.438136	Section Township Range JU 35 33	Surface location: 25'FU & 528 Pt 3x 30 95.35e	Bottom Hole to carton: 22/0 Fb. 4 of Fb. 20810 Cocreate, in Creamant, two were concreted and the second	onto CRUPO/Carrol Road, Go west on CRUPO for 3 miles & and 0.2 miles to location	Mud Postania Mud Postania	0 3.000 M M & 4 100 - VIS 10 12 NR 13 Comon w/7304 15 555 (125004/14744/10.1406) +	20% "C' (14.8pps/) 33ch/6.3kps)	2275 KDP & 4200: MM D+, VA28 12, ML A/C		Centerni 5 1/2" w" 1100ea 50-20:10 C (11.0000g/2.3.2.1:1) + 1000ea 50-50.2 C (14.5.66g/1.27.6:4)	10° 10, 8° . MN 10+, VE 10 12, M, 4/6	Curve: 1255 5170 (945-1			101-aceal @ 12160MD/18057700 Lateral: 5180 - 12180 100 (18990)		
		a	Sectio		D Crossnadt two work	er uoment the follow of a	Court Sourceuro	an 711 Act of West of State 1971 - 1972 - 1972 - 1973 1971 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 1972 - 19			ואכב שי איניד בעור בער		1.100 million	software store		「日本」の「日」の「日	11/3" Ukere Union AS' AUGE INGER IN Mefan		
Well Name: Roo Mama JU 19 Fee #14		Mexico	12 4405		north on Hery 2061o Crossroads	um south office sections of the section of the south of the section of	เป็นเหลาะเป็น (การการการการการการการการการการการการการก	-467421			1			ל כהצא		and the second second	IARITAL		
Well Name: Roo Mana JU	Country: 1 no	State: New Mexico	APTINUMDER: 30.025 42057		NS From Taum, NM 201	n onto taxe road, Go sou	w Duali NO 110		r 26 26 Cang <u>P</u> 115	ant ant	316 316	- 450 AG		<u>435</u> 02	226 300 m	4 115 GC	200 10100 M		
	121	auaș	9		DIRECTIO	turn sout	in mary		12/1/10	ALC: N	Davie	a Divice		8 Nation	argenter.	Long Low	chicity of	saction	

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Well #4. The Manzano LLC Rag Mama 30 19 Fee #1H produces from the San Andres from perforations from 5250 to 12,123. The wellbore's True Vertical Depth at landing point is 4837 feet, essentially the same stratigraphic depth as the proposed injection depths in the Vince #1 (4840 to 4850 feet). The TVD is 4803 feet at the bottomhole location, to take into account the zone rises structurally to the north.

The wellbore is isolated from top to bottom by cement circulated in both the surface and production strings.



VIII. 1. Manzano proposes to inject an average of 150 Mcfgpd into the Vince BGH #1. The maximum proposed rate is 1000 MCFGPD.

2. The system is closed.

3. The average proposed injection pressure is 500 psi. The maximum proposed pressure is 950 psi. A 10 day shut in test on the Vince, revealed the current bottomhole pressure is 378 psi. The original bottomhole pressure is calculated as 1697 psi. Gas will be sourced by the Sodbuster 21 #4H and the Rag Mama 30 19 Fee #1H wells. These wells currently produce 59 BOPD, 129 MCFGPD and 1068 BWPD.

Artesia Laboratory 200 E Main St. Arresia, NM 88210 Phone 575-746-3481	021	ra 16 mt 20*F 15			AL C2+ 5431 AL C3+ 3311 AL C5+ 1.185	produce a typical San Andres gas. BTU content is 1059 to 1138, with mole%), and H2S (2.1 to 2.4 mole %). The gas is currently flared due to the 4
	July 01, 2021	Sampled By: Carmeron Rivera Sample Ot Gas Sample Ot Gas Sample Date: 06330(2021 09:15 Sample Conditions: 20 psig Ambient 70 *F Method: 0742221 09:15 Method: 0742251M Syllinder No: 1111-002209			GPM TOTAL C2+ GPM TOTAL C2+ GPM TOTAL IC5+	9 to 113 ently flai
Certificate of Analysis Number: 6030-21070001-003A		Sampled By: Sample Of. Sample Date: Sample Condit Effective Date: Method: Cylinder No:	al Data	% GPM at 14.696 psia	81 71 71 71 71 71 71 71 71 0.0255 86 1.246 91 0.2555 91 0.2555 91 0.2555 91 0.2555 91 0.2555 92 0.2555 93 19 5421 3.2756 93 19 5128 5039.7 5039.7 5039.7	nt is 105 as is curr
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ц С	Manzano Energy Manzano Energy 300 W 2nd SI Roswell, NM 88201	Station Name: Sodbuster Hea Station Number: Heater Treater Station Location: Manzana Sample Point: Heater Boll Val Instrument: 0030_GGS (Infl Last Inst. Cal.: 0920_GGS (Infl Last Inst. Cal.: 0920202010) Analyzed: 07/01/2021 11:		Components	Hydrogen Sulfide 0.000 2.40000 Nitrogen 7.990 8.1726 Nethame 5.324 55.5641 Carbon Dixoido 15.324 55.5641 Carbon Dixoido 15.324 55.5641 Propane 7.736 7.930 Propane 7.736 7.9130 Propane 7.736 7.9130 Propane 7.736 15.7146 Propentane 0.5703 0.5713 Iso-butane 0.570 0.5713 Iso-butane 0.559 0.5713 Iso-butane 0.5703 0.5713 Iso-butane 0.5703 0.5713 Iso-butane 0.5703 0.5713 Iso-butane 0.553 0.65763 Iso-butane 0.533 0.617200 Provances Plus 95.422 100.0000 Relative Density Real Gas 0.94 Calculated Molecular Veright 27 Gonducossitivity Fractor 0.93 Graduko Gross HV - Dy at 14.696 psia & 60°F 1	produce a typical San Andres gas. BTU content is 1059 to 1138, with mole%), and H2S (2.1 to 2.4 mole %). The gas is currently flared due
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ي ال	Manzario Energy Manzario Energy 300 W 2nd St Roswell, NM 88201	Station Name: Rag Marrena / Station Number: Healer Insutor Station Location: Manzen Station Location: Manzen Sample Point: Healer Bal Va Instrument: 8230_GC6 (in Instrument: 9230_GC6 (in Last Inst. Cat.: 9229_2021 t0 Analyzed: 97/01/2021 t0		Components	Hydrogen Sulficio 00 Nitrogen Sulficio 4.4 Methane 4.4 Methane 80.5 Carbon Dioude 13.1 Entrane 80.5 Propane 80.5 Replane 80.5 Replane 9.6 Replane 9.6 Replane 0.6 Replane 0.6 Replane 0.6 Replane 0.6 Replane 0.6 Relative Density Real Gas 0.6 Relative Density Real Gas 12.2 Calculated Molecular Weight 0.6 Calculated Gross PTU per fr? @ 14.6 Real Gas Kry. PTU Water Sal Gas Siry BTU 10.0 Water Sal Gas Siry BTU 10.0 Water Sal Gas Siry V- Weit 10.0 Mater Sal Gas Siry V- Weit 10.5 Real Gas Siry V- Weit 11.5	VII. 5. Gas analyses show the two source wells pritrogen (4.4 to 8.1 Mole %), CO2 (13.1 to 15.3 lack of a pipeline willing to transport the gas.

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ohm-m of resistivity. The interval can exhibit up to 100 feet of porosity> 6% (see isopach map). Oil and gas is section is the San Andres Pi Marker, a regional volcanic ash bed which is the datum for the cross section. The stratigraphically trapped where this reservoir pinches out northward into anhydrite. The zone is also overlain VIII. This is a south to north stratigraphic cross section depicting the logs of the vertical wells adjacent to the Rag Mama 30 19#1H lateral. The location of these wells is shown on the P-1 dolomite isopach and structure in the Manzano LLC Vince BGH#1. The well will be converted to injection; it currently produces 2 BOPD and map. The gas will be injected into the San Andres P-1 dolomite in existing perforations at 4840 to 4850 feet P-1 dolomite (yellow) is a fine crystalline dolomite reservoir, with typically 4 to 12% porosity, and 20 to 100 31 BWPD. The San Andres formation is present from 4000 to 5460 feet in this well. Shown on this cross by anhydrite, and underlain by tight limestone.



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VIII. GEOLOGY

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feet of east dip per mile (a relatively flat with only 40 This is a structure map on showing the reservoir is top of the P-1 dolomite half degree slope).

Manzano produces oil from historically produced oil or other red wells have been gas from this reservoir, or exhibit shows. Currently, the two horizontal wells plugged and abandoned. and the Vince #1. The Wells in red have

The location of the cross section is shown on this

August 15, 2017

By John Worral

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is present at 4025 **Roswell indicates** elevation of 4183 level in the Vince approximately 25 #1 well. This well the top of water beds at 158 feet. indicates there is found in the red feet of water in has a drill floor Beds. The map means water is Engineering of feet above sea VIII. The water aquifer in the **Ogalalla Red** area are the from Atkins Engineering feet, which this area. Atkins

3950

Atlkins -

Injection will be through existing perforations at 4840 to 50 feet. Logs show the pay is a dolomite with good porosity and X. Log Data of the Manzano Vince BGH #1 located in Section 30-T9S-R35E, 1980 Fsl, 1750 Fel. resistivity from 4810 to 4900 ft.



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XIV. This is a land map showing lease ownership of Manzano, LLC in yellow. Manzano, LLC is the only operator within the Area of Review. The surface owner of the Vince location, Charles Kinsolving, has been given notice, as has the Bureau of Land Management who owns unleased minerals in the N/2 of Section 31. See attached.





September 28, 2021

New Mexico Oil Conservation Division 1220 South St. Francis Drive Santa Fc, NM 87505 New Mexico Oil Conservation Division 1625 N. French Drive Hobbs, NM 88240

RE: Gas Injection Application Manzano, LLC Vince BGH #1

Manzano, LLC hereby submits an application to convert the Vince BGH #1 to a gas injection well. Accordingly, please find enclosed an original and one copy of our application Form C-108 with attachments. A third copy has been sent to the Division Office in Hobbs. A Legal Notice of our application has been filed with the Hobbs Sun newspaper.

Should you have any questions regarding our application, I can be reached at 575-623-1996 ext. 302 or 575-420-5853 cell. Thank you for your assistance in handling our application.

Sincerely,

John Workin John Workin On heligif of Manzano, LLC

NOTICES: The application is made to the NMOCD offices in owner, Charles Kinsolving. Notice was given to the Bureau of Land Management in Carlsbad. There are no offset Santa Fe and Hobbs. Notice was given to the surface operators to notice.

Notice was also provided in the Hobbs Sun newspaper.

575-623-1996 • PO Box 1737 • Roswell, NM 86202-1737



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September 28, 2021

Mr. Charles J. Kinsolving HC 65 Box 209 Crossroads, NM 88114

Mr. Kinsolving.

Attached for your notice is a copy of the permit filed with the New Mexico Oil Conservation Division, located at 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. In this application, Amzano, LLLC is proposing to reviped gas at 4840 to 4850 feet in the San Andres formation in the Vince RGH #1. located at 1980 FSL, 1750 FEL, in Section 30 of T93-R35E, on surface llands owned by you. Should you have any questions, please contact me or Mike Hamagen at 575-623-1996. Thank you.

Sincerely,

John Worrall On behalf of Manzano, LLC

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LEGAL NOTICE October 1, 2021 Manzano, LLC of P.O. Box 1737 Roswell, NM has filed an application with the New Mexico Oil Conservation Division to inject gas into the Manzano, LLC Vince BGH #1 well for the purpose of reservoir pressure maintenance. The well is located at Section 30-79S-R35E 1980 from east line in Lea County, New Mexico. Gas will be injected in the San Andres dolomite at 4840 to 4850 feet at maximum rate of 1000 MCFGPD and a maximum pressure of 950 psi. Interested parties may file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, within 15 days. Should you have any questions please contact John Worrall at Manzano, LLC at 575-623-1996 ext. 302.

Form C-108 Item XII.

Manzano, LLC Vince BGH #1

AFFIDAVIT

Manzano, LLC has examined the geological and engineering data associated with the proposed injection well and find no evidence of open faults or other hydrologic connections between the injection zone and good sources of drinking water.

Sincerely. John Worrall

Partner

Manzano, LLC

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HINKLE SHANOR LLP

ATTORNEYS AT LAW PO BOX 2068 SANTA FE, NEW MEXICO 87504 505-982-4554 (FAX) 505-982-8623

WRITER:

Dana S. Hardy, Partner dhardy@hinklelawfirm.com

hinklelawfirm.com

November 5, 2021

VIA CERTIFIED MAIL **RETURN RECEIPT REQUESTED**

TO ALL INTERESTED PARTIES SUBJECT TO NOTICE

Re: Case No. 22357 - Application of Manzano LLC for Approval of a Pressure Maintenance Project and Authorization to Inject, Lea County, New Mexico.

To whom it may concern:

This letter is to advise you that the enclosed application was filed with the New Mexico Oil Conservation Division. The hearing will be conducted on December 2, 2021 beginning at 8:15 a.m.

During the COVID-19 Public Health Emergency, state buildings are closed to the public and hearings will be conducted remotely. To participate in the electronic hearing, see the instructions posted on the OCD Hearings website: https://www.emnrd.nm.gov/ocd/hearing-info/. You are not required to attend this hearing, but as an owner of an interest that may be affected by this application, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from challenging the matter at a later date.

Pursuant to Division Rule 19.15.4.13.B, a party who intends to present evidence at the hearing shall file a pre-hearing statement and serve copies on other parties, or the attorneys of parties who are represented by counsel, at least four business days in advance of a scheduled hearing, but in no event later than 5:00 p.m. mountain time, on the Thursday preceding the scheduled hearing date. The statement must be filed at the Division's Santa Fe office or submitted through the OCD E-Permitting system (https://wwwapps.emnrd.state.nm.us/ocd/ocdpermitting/) and should include: the names of the parties and their attorneys, a concise statement of the case. the names of all witnesses the party will call to testify at the hearing, the approximate time the party will need to present its case, and identification of any procedural matters that are to be resolved prior to the hearing.

Please do not hesitate to contact me if you have any questions about this matter.

Sincerely,

/s/ Dana S. Hardv

Dana S. Hardy

MANZANO LLC Case No. 22357

Exhibit A-3

Enclosure

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Page 70 of 84



72 of 84 Affidavit of Publication

STATE OF NEW MEXICO COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

> Beginning with the issue dated November 14, 2021 and ending with the issue dated November 14, 2021.

Insell

Publisher

Sworn and subscribed to before me this 14th day of November 2021.

Pack

Business Manager

My commission expires when the second January 29, 2023 Seal) ลี OFFICIAL GEAL GUSSIE BLACK



/30/2021 4:43:56 his newspaper is duly qualified to publish tegal notices or advertisements within the neaning of Section 3, Chapter 167, Laws of 937 and payment of fees for said

LEGAL NOTICE November 14, 2021

November 14, 2021
This is to notify all interested parties, including Donivan D. Crockett; Hayden G. Crockett; William Harrel Delafield, Jr.; Mary Ann Delafield Frazier; Gleason Wildcats, LLC; Donald Joseph Marczeski; Dorothy Ann Middaugh; Margaret Ann Morgan Lilly, Edward R. Lilly; Patricia Ann Morgan McNally; Leo Patrick Morgan, Jr.; Mary Carol Morgan; Sharon Y. Weisler; Crayton Weisler; William Marvin Zahn, Jr.; Stephanie Zahn; Darwin D. Crockett; Dorothy Fitzgerald; Walta Neuner Ocker; Keith Z. Neuner; Robert Franklin White, Sr., Rebecca Ann Gallun, Trustee of the Rebecca Ann Gallun Exempt Trust; Everett Bruce Lomax, Trustee of the Everett Bruce Lomax Exempt Trust; Kay Lomax Jerin, Trustee of the Rebecca Ann Gallun Exempt Trust; Kay Lomax Jerin, Trustee of the Kay Lomax Jerin Exempt Trust; Kathryn Ann Barwick Fox; Maxine E. Barber; Tom Barber; Rozella M. Jones; Arville O. Glenn, Jr.; Arlis E. Schleiger; Worth Fullingim; Rena F. Kerr; Rodean Gleason; Beal Gleason; Cleo Dickinson; James Don Dickinson; Barbara S. Dickinson; Grace G. Glenn; Prosperity State Bank, Successor to American State Bank, Trustee of the Willa Ruth Simmons Trust; Kenneth Edward Bennett and Frieda Johanna Bennett, Successors Trustees of the Bannett Family Living Trust; Lawrence A. Wangler, Trustee of the Wangler Trust; Sherry McCray, Trustee, McCray Family Trust; Oliver Falls; Melissa Glenn; Gerald Glenn; Clark A. Glenn; Carolyn Taylor; Fex Glenn; Brenda Sue Ehlert Hayden; Marilyn K. Glenn; Carolyn Taylor; Fex Glenn; Brenda Sue Ehlert Hayden; Marilyn K. Glenn; Carolyn Taylor; Hex Glenn, Jr.; Patricia Horton; Lance Jackson; Titfing Lann; Scott Alan Erost; Glenda King; Laura Hand; Alice Reed; Gary McCray; Janelle McCray; William E. Glenn, Jr.; Patricia Horton; Lance Jackson; Titfiny Latner; Amanda McCasland; Amelia Jackson; Kathryn Ann Barwick Fox; Alvin Simpson; Christine Simpson; Worth Fullingin; Lawrence A. Wangler, Trustee of the Wangler Trust; Cindy Corkins; Phillip Corkins; and thei successors and assigns that the New Mexico

the following described wells within or near the Project Area: • the Sodbuster 21 Fee #4H (API 30-025-43704) with a surface hole location at 200 FSL, 1650 FWL of Section 21 and a bottom hole location at 330 FNL, 1650 FWL of Section 21

 the Flag Mama 30-19 Fee #1 (API 30-025-44067) with a surface hole location at 25 FSL, 528 FEL of Section 30 and a bottom hole location at 2303 FSL, 394 FEL of Section 19; and

The Vince BGH No. 1H (API No. 30-025-37104) located at 1980 FSL, 1750 FEL (Unit J) of Section 30.

The wells are currently producing from the Jenkins San Andres Pool (Pool No. 33950). Applicant proposes to convert its Vince BGH No. 1H well from a producer into an injection well for pressure maintenance operations. Applicant plans to inject produced gas from the Sodbuster 21 Fee #4 and Rag Mama 30-19 Fee #1 into the San Andres formation through a closed system using the Vince BGH No. 1H. Applicant does not anticipate compatibility issues. The injection interval of the Vince BGH No. 1H is 4840 feet to 4850 feet. Injection will provide pressure maintenance support for the Rag Mama 30 19 Fee #1 well and will also reduce flaring. The expected average injection rate of produced gas into the Vince BGH No. 1H is 150 MCFGPD. The expected maximum injection rate is 1,000 MCFGPD to provide Manzano the option to inject more gas as the GOR increases or if Manzano drills additional wells in the Jenkins San Andres Pool. The expected average injection pressure of produced gas into the Vince BGH No. 1H is 500 psi and the proposed maximum injection pressure is 950 psi. Applicant's proposed pressure maintenance project can be conducted in a safe and responsible manner without causing waste, impairing correlative rights or endangering fresh water, public health or the environment. The wells are located approximately 3 miles weet of Crearrage New Meyrice approximately 3 miles west of Crossroads, New Mexico. #37024

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GILBERT

PO BOX 2068

HINKLE, SHANOR LLP

SANTA FE, NM 87504

00260649

MANZANO LLC

Case No. 22357

Exhibit A-4
STATE OF NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES OIL CONSERVATION DIVISION

APPLICATION OF MANZANO LLC FOR APPROVAL OF A PRESSURE MAINTENANCE PROJECT AND AUTHORIZATION TO INJECT, LEA COUNTY, NEW MEXICO.

CASE NO. 22357

SELF-AFFIRMED STATEMENT OF JOHN WORRALL

1. I am employed by Manzano LLC ("Manzano") as a geologist and am over 18 years of age and competent to provide this Self-Affirmed Statement. I have personal knowledge of the matters addressed herein. I am familiar with the Application in this case and with the geology matters pertaining to this Application. I have previously testified before the New Mexico Oil Conservation Division ("Division"), and my credentials as an expert in petroleum geology matters were accepted and made a matter of record.

2. Manzano's Application seeks an order: (1) approving a pressure maintenance project for the injection of produced gas through the Vince BGH #1 well into the Jenkins San Andres pool (Pool Code 33950) within the San Andres formation in a project area ("Project Area") comprised of SE/4 of Section 30, Township 9 South, Range 35 East, NMPM, Eddy County, New Mexico; and (2) authorizing Manzano to convert the Vince BGH #1 well from a producing well to an injector.

 Manzano operates the following described wells within or near the Project Area currently producing from the Jenkins San Andres Pool:

1

- a. Sodbuster 21 Fee #4H (API 30-025-43704) horizontally drilled from a surface hole location at 200 FSL, 1650 FWL in Section 21 to a bottom hole location at 330 FNL, 1650 FWL in Section 21;
- b. Rag Mama 30-19 Fee #1 (API 30-025-44067) horizontally drilled from a surface hole location at 25 FSL, 528 FEL in Section 30 to a bottom hole location at 2303 FSL, 394 FEL in Section 19; and
- c. Vince BGH No. 1H (API No. 30-025-37104) ("Vince") vertically drilled at 1980 FSL, 1750 FEL (Unit J) of Section 30.

4. The perforated interval of the Rag Mama 30-19 Fee #1 is from 5,250' to 12,123'; the perforated interval of the Sodbuster 21 Fee #4H is from 5150 to 9,330; and the perforated interval of the Vince BGH No. 1H is 4840' to 4850'.

5. The Vince well currently produces 2 BOPD and 31 BWPD and is deemed uneconomic. Therefore, Manzano proposes to convert the well from a producer into an injection well to provide pressure maintenance support for the Rag Mama 30 19 Fee #1 well. Conversion of the well will also allow Manzano to attempt to eliminate flaring.

6. Manzano plans to inject produced gas from the Sodbuster 21 Fee #4 and Rag Mama
30-19 Fee #1 into the San Andres formation through a closed system using the Vince BGH No.
1H at depths of 4840' to 4850' within the San Andres formation.

7. Accordingly, Manzano proposes the unitized interval be defined as the Jenkins San Andres pool (Pool Code 33950) within the San Andres formation at depths of 4840' to 4850' as defined on the Manzano Vince BGH #1 well log provided on page 19 of Form C-108.

8. The injection interval of the Vince BGH No. 1H well ("Vince") is 4840' to 4850'.

9. The productive zone immediately overlying the proposed injection interval is the San Andres formation with its top being at an approximate depth of 4000' TVD.

10. Page 16 of Form C-108 contains a structure map of the Project Area. The map shows the structural contours near the top of the P-1 dolomite within the San Andres formation. The map demonstrates the reservoir is relatively flat with a 40 feet of east dip per mile (a half degree slope).

11. Page 17 of Form C-108 contains an isopach map of the P-1 Dolomite interval within the San Andres formation. The San Andres formation is present from 4000 to 5460' within the Vince well. The interval from 4810 to 4900' is known as the P-1 dolomite which is a fine crystalline dolomite with 4% to 12% porosity and 20 to 100 ohm-m of resistivity. The interval has up to 100' of porosity greater than 6%. Oil and gas is stratigraphically trapped where this reservoir pinches out northward into anhydrite. The zone is also overlain by anhydrite and underlain by a tight limestone.

12. Page 15 of Form C-108 contains a cross-section of the target injection interval. The cross-sections demonstrate the injection interval is consistent and continuous across the formation underlying the Project Area. The cross-section also shows all lands within the proposed unit contain porous reservoir rock, and therefore, all lands within the proposed unit appear capable of contributing additional secondary recovery reserves.

13. From geologic studies performed over this area, the Project Area is well suited for pressure maintenance operations and the entire Project Area should continue to contribute enhanced recovery reserves.

14. There are no faults or other geologic impediments that would impede the efficiency of the Project.

15. Manzano's pressure maintenance project can be conducted in a safe and responsible manner without causing waste, impairing correlative rights or endangering fresh water, public health or the environment.

16. There are no water wells within one (1) mile of the proposed injection well. Page18 of Form C-108 shows the nearest water wells are located 2.5 to 3.0 miles from the Vince well.

17. The water aquifer in the Project Area is the Ogalalla Red Beds. Page 18 of Form C-108 contains a map from Atkins Engineering of Roswell indicating the top of water is present at 4025' above sea level below the Vince well. This well has a drill floor elevation of 4183' where water is found at 158'. The map indicates there is approximately 25' of water in this area.

18. With respect to compatibility, the source of the gas to be injected will be produced gas from the **Sodbuster 21 Fee #4H** and **Rag Mama 30-19 Fee #1** wells drilled within or near the Project area. Gas analyses for the Sodbuster 21 Fee #4 and Rag Mama 30-19 Fee #1 are provided on page 14 of Form C-108 and show the two source wells produce a typical San Andres formation gas – the BTU content is 1059 to 1138 with nitrogen (4.4 to 8.1 Mole %), CO2 (13.1to15.3mole%) and H2S (2.1 to 2.4 mole %).

 I do not expect any compatibility issues to arise from the proposed injection operations.

20. I have examined the available geological and engineering data and have found no evidence of open faults or hydrological connection between the proposed injection interval and any underground sources of drinking water.

21. Based on my professional training and experience, it is my opinion that the proposed injection operations will not impair any hydrocarbon-bearing zones. It is also my opinion

that injection fluids will be confined to the injection interval as a result of the stratigraphic confining layers above and below the injection zone.

22. In my opinion, the granting of Manzano's application would serve the interests of conservation, the prevention of waste, and the protection of correlative rights.

23. The exhibits referenced above were either prepared by me or under my supervision or were compiled from company business records.

24. I understand this Self-Affirmed Statement will be used as written testimony in this case. I affirm that my testimony in paragraphs 1 through 23 above is true and correct and is made under penalty of perjury under the laws of the State of New Mexico. My testimony is made as of the date handwritten next to my signature below.

John Worrall

<u>//_ ZZ- Z0</u>21 Date

STATE OF NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES OIL CONSERVATION DIVISION

APPLICATION OF MANZANO LLC FOR APPROVAL OF A PRESSURE MAINTENANCE PROJECT AND AUTHORIZATION TO INJECT, LEA COUNTY, NEW MEXICO.

CASE NO. 22357

SELF-AFFIRMED STATEMENT OF MIKE HANAGAN

1. I am the Operations Manger for Manzano LLC ("Manzano"). I am over 18 years of age and competent to provide this Self-Affirmed Statement. I have personal knowledge of the matters addressed herein. I am familiar with the Application in this case and with the engineering matters pertaining to this Application. I have previously testified before the New Mexico Oil Conservation Division ("Division"), and my credentials as an expert were accepted and made a matter of record.

2. Manzano's Application seeks an order: (1) approving a pressure maintenance project ("Project") for the injection of produced gas through the Vince BGH #1 well into the Jenkins San Andres pool (Pool Code 33950) within the San Andres formation in a project area ("Project Area") comprised of SE/4 of Section 30, Township 9 South, Range 35 East, NMPM, Eddy County, New Mexico; and (2) authorizing Manzano to convert the Vince BGH #1 well from a producing well to an injector.

 Manzano operates the following described wells within or near the Project Area currently producing from the Jenkins San Andres Pool:

a. Sodbuster 21 Fee #4H (API 30-025-43704) horizontally drilled from a surface hole location at 200 FSL, 1650 FWL in Section 21 to a bottom hole location at 330 FNL, 1650 FWL in Section 21;

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MANZANO LLC

Case No. 22357 Exhibit C

- b. Rag Mama 30-19 Fee #1 (API 30-025-44067) horizontally drilled from a surface hole location at 25 FSL, 528 FEL in Section 30 to a bottom hole location at 2303 FSL, 394 FEL in Section 19; and
- vince BGH No. 1H (API No. 30-025-37104) vertically drilled at 1980 FSL,
 1750 FEL (Unit J) of Section 30.
- 4. The injection interval of the Vince BGH No. 1H well ("Vince") is 4840' to 4850'.

5. Manzano proposes to convert its Vince well from a producer into an injection well for pressure maintenance operations for the purpose of; (1) mitigating the flaring of off-spec methane from our Rag Mama & Sodbuster wells, and (2) increasing the ultimate recovery of oil within the interval underlying the Project area.

6. Manzano proposes to inject produced gas from the Sodbuster 21 Fee #4 and Rag Mama 30-19 Fee #1 into the San Andres formation through a closed system using the Vince well at depths of 4840' to 4850' within the San Andres formation.

7. Specifications and a wellbore schematic for the Vince well is provided at pages 6-8 of Form C-108. The Vince well will be adequately equipped for injection and the construction of the Well will protect fresh water and other hydrocarbon-bearing zones.

8. The expected average injection rate of produced gas into the Vince well is 150 MCFGPD. The expected maximum injection rate is 1,000 MCFGPD to provide Manzano the option to inject more gas as the GOR increases or if Manzano drills additional wells in the Jenkins San Andres pool.

9. The expected average injection pressure of produced gas into the Vince well is 500 psi and the proposed maximum injection pressure is 950 psi.

10. No additional stimulation is planned. The zone has already been acidized with 41,000 gallons of 15% NEFE acid.

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11. When we drilled and completed the Rag Mama 30 19 #1H, which at its nearest point is over 1200' east of the Vince, with a frac that included 5,155,137 lbs. of sand, we did not see any effect on the production in the adjacent Vince BGH #1 well. Therefore, the proposed area of the SE/4 of Section 30 is appropriate because the reservoir has low permeability; we do not believe the injected gas will affect reservoir pressure in a larger area. It will take time for the injected gas to affect the Rag Mama 30 19 #1H, but it should help to arrest decline in the well's production. Exhibit C-1, is a decline curve of the Rag Mama 30 19 #1H. Based on my professional training and experience, it is my opinion that production will further decline in the absence of pressure maintenance support.

12. Without approval of this application, Manzano, LLC will likely have to plug and abandon the Rag Mama 3019 #1H, the Vince BGH #1, and the Sodbuster 21 #1H wells, because there are no alternatives to comply with the NMOCD no flare rule in this area. This will result in a permanent waste of the oil and gas in these wells. Injection of the gas will allow for the gas that is currently flared to be safely stored in the reservoir, while potentially providing the added benefit of pressure support.

13. It is my opinion that injection operations within the Project are economically and technically feasible and that it is prudent to utilize pressure maintenance operations to maximize oil recovery.

 Injection of produced gas into the Vince BGH No. 1H well will attempt to eliminate flaring.

15. Manzano has run an MIT test prior to commencing injection and will monitor pressure during injection.

16. The exhibits referenced above were either prepared by me or under my supervision or were compiled from company business records.

17. In my opinion, the granting of Manzano's application would serve the interests of conservation, the prevention of waste, and the protection of correlative rights.

18. I understand this Self-Affirmed Statement will be used as written testimony in this case. I affirm that my testimony in paragraphs 1 through 17 above is true and correct and is made under penalty of perjury under the laws of the State of New Mexico. My testimony is made as of the date handwritten next to my signature below.

Ul Han

Mike Hanagan

11/21/21

Date

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RAG MAMA



MANZANO LLC Case No. 22357 Exhibit C-1

falling (see dashed green line projection) This is an recompleted by Yates to the San Andres at 4840 convert to gas injection. from the Manzano, LLC to 4850 perfs in March through March 2021 is 26,144 BO, and 91,787 This is the production Vince BGH State #1 in Section 30-T9S-R35E, NWSE. The well was production has been BW. Water has been Manzano wants to 2012. Production uneconomic well steady while oil





This is the Targa pipeline system formerly of Agave, that goes to the Vince well. The Vince and Rag Mama wells are located at the northernmost end of this sytem. It is abandoned coming up to Manzano. Manzano has tried repeatedly to get the gas into this system for the last four years. Targa will not take this gas even if we give it to them.