

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery Pressure Maintenance Disposal Storage
Application qualifies for administrative approval? Yes No
- II. OPERATOR: Sonat Raton, L.L.C.
ADDRESS: P. O. Box 190; Raton, NM 87740-0190
CONTACT PARTY: Don Lankford PHONE: 505-445-4621
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? Yes No
If yes, give the Division order number authorizing the project: N/A
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location/depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Ann E. Ritchie 9156846381 TITLE: Regulatory Agent
SIGNATURE: *Ann E. Ritchie* DATE: 4/3/2000

* 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: 7/22/99

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 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, P. O. Box 2088, Santa Fe, New Mexico 87501 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.

Sonat Raton, L.L.C.
 Vermejo Park Ranch "B", Well #27 Water Disposal
 716.6' FNL & 801.2' FEL
 Section 36, T-30N, R-18-E
 Colfax County, New Mexico

Attachment A

III. Well Data

Section A:

1. Lease Name: Vermejo Park Ranch "B", Well #27 (Water Disposal) (30-007-20161)
 Location: 716.6' FNL & 801.2' FEL, Sec. 36, T-30-N, R-18-E, Colfax Co. NM
2. Casing & Cementing (Wellbore Diagram attached)

Proposed:

Casing Size	Setting Depth	Sacks Cement	Hole Size	Top of Cement
13 3/8"	350'	200 sx	17 1/2"	Surface
10 3/4"	2600'	500 sx	12 1/4"	Surface
7 5/8"	6440'	1100 sx	9 7/8"	Surface
5 1/2"	7200'	800 sx	6 3/4"	Surface

3. Tubing: 2 7/8" 6.5# J-55 @ +/- 6350'
4. Packer: Baker Model R-3 @ +/- 6350'

Section B:

1. Injection Formation: Dakota/Entrada Sand
 Field Name: Vermejo Park Ranch
 2. Injection Interval: Dakota/Entrada Sandstone +/- 6400' – 7350' (perforated interval)
 3. Original Purpose of Well: Drilled for the purpose of disposing of produced Formation water.
 4. No other perforated intervals
 5. Next Higher gas/oil zone: Vermejo Formation at approximately 2300'
 Next Lower gas/oil zone: None
- IV.** This is an expansion of an existing project.
- V.** Map attached – "Attachment B", two mile & 1/2 mile radius area of review.

Sonat Raton, L.L.C.
Vermejo Park Ranch "B", Well #27 Water Disposal
716.6' FNL & 801.2' FEL
Section 36, T-30N, R-18-E
Colfax County, New Mexico

VI. Area of Review

There are 3 wells within one half mile of the proposed disposal well, penetration is noted on forms attached.

VII. Operation Data:

1. Proposed average daily injection volume: 14,000 BWPD
Proposed maximum daily injection volume: 20,000 BWPD
2. This well will be a closed system.
3. Proposed average daily injection pressure: 875 psi
Proposed maximum daily injection pressure: 2000 psi due to step rate
4. Sources of injection/disposal water will be from the Vermejo and Raton Formation CBM wells that have been drilled or are scheduled to be drilled on the Vermejo Park Ranch.
5. Chlorides in the Entrada Formation are estimated to be between 1133 to 11,795 PPM as described in the "Attachment C" C-1, C-2 and C-3 Water Analysis Pantechs Laboratories taken from area wells – as available
Chemical analysis of water zones penetrated while drilling were obtained by Roy Johnson, District 4, Oil Conservation Division, Santa Fe, NM.

VII. Geological Data:

Information pertaining to the lithological details and thickness are limited to the Eustace #1, located in Section 36, T-32-N, R-19-E, Unit J, 2500' FSL & 2300' FEL. Logs on the Eustace #1 were previously submitted to the Oil Conservation Division. (Eustace #1 Form C-103 & C-105 attached)

VIII. Stimulation Program

Anticipated frac job will be 200,000# 20/40 sand w/cross linked gell @ 5# per gallon.

X. Logs and Test Data

Well has not been logged to date, the Oil Conservation Division, Att: Roy Johnson, Santa Fe, NM, is on the distribution list for all logs

XI. Fresh Water

Roy Johnson, OCD took fresh water samples, during drilling

Sonat Raton, L.L.C.
Vermejo Park Ranch "B", Well #27 Water Disposal
716.6' FNL & 801.2' FEL
Section 36, T-30N, R-18-E
Colfax County, New Mexico

XII. Statement

To the best of our current knowledge of the area there is no evidence of open
Faults or other hydrologic connection between and disposal zone and underground
Sources of drinking water.

XIII. Proof of Notice attached as "Attachment D"

Sonat Raton, L.L.C. offsets Section 1 on all sides.

XIV. Certification: Form C-108 "Application for Authorization to Inject"

WDW: "VPRB-27" Casing and Cementing Plan
Casing and Cementing Design

Surface casing cement
200 sx. Midcon 2 @
13.5 ppg., 1.76 yld
(100% excess)

17 1/2" hole

13 3/8" 48# csg. @ 350'

Intermediate casing cement
400 sx Silica Lite @ 12 ppg.
2.07 yld followed by 100 sx.
Class "G" @ 13.5 ppg.,
1.76 yld

12 1/4" hole

10 3/4" 40.5# csg. @ 2600'

Intermediate casing cement
1100 sx Midcon 2 12.0 ppg.
2.49 yld (100% excess)

9 7/8" hole

top Dakota @ ± 6440'

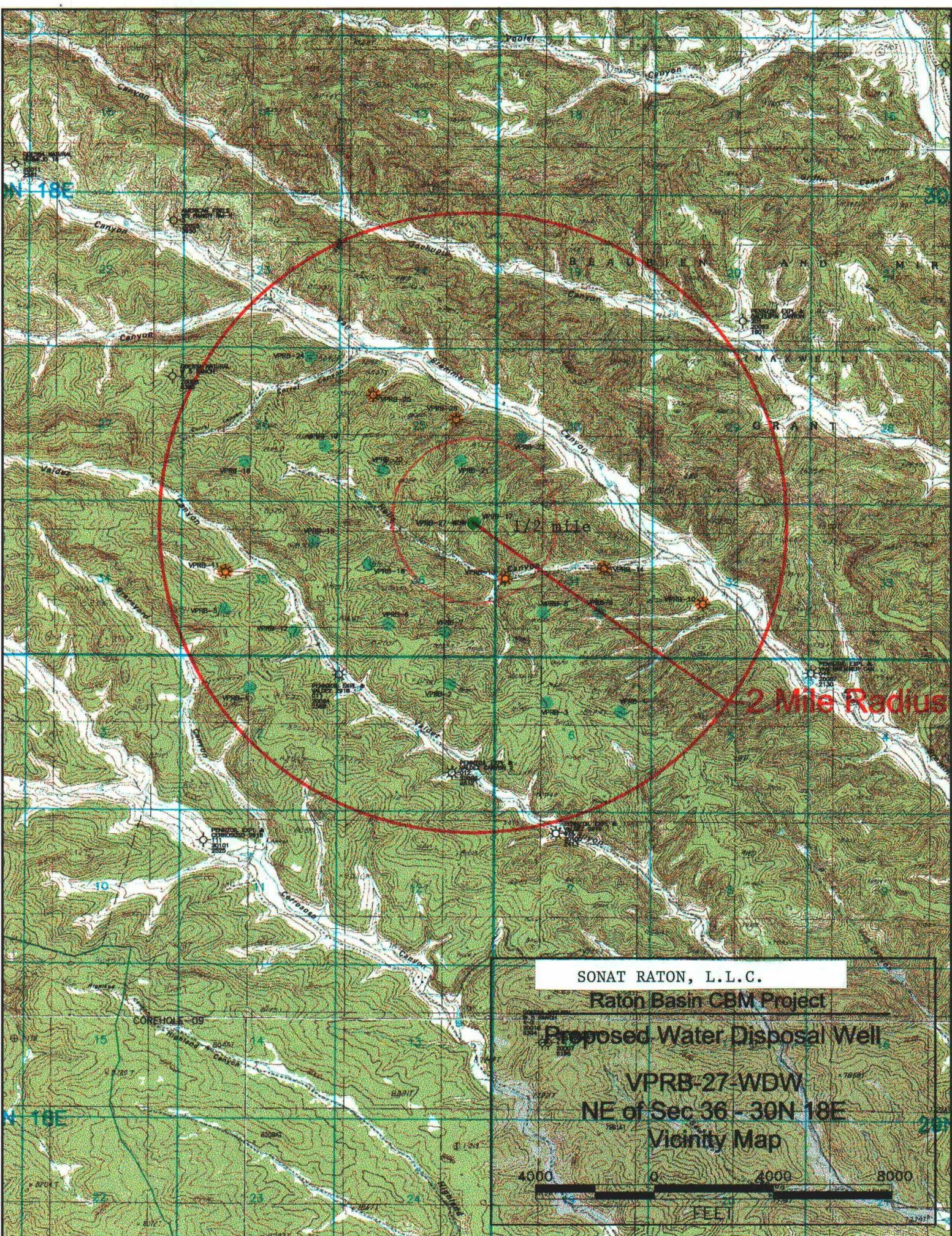
7 5/8" 26.4# csg. @ 6440'

top Entrada @ ± 7400'

Long string cement 700 sx.
Midcon 2 (12.0 ppg., 2.17 yld
followed by 100 sx. Class "G"
14.6 ppg., 1.46 yld)

6 3/4" hole

5 1/2" 15.5# csg. @ 7400'



30N 18E

30N 18E

SONAT RATON, L.L.C.
 Raton Basin CBM Project
Proposed Water Disposal Well
 VPRB-27-WDW
 NE of Sec 36 - 30N 18E
 Vicinity Map

4000 0 4000 8000
 FEET

2 Mile Radius

1/2 mile

Map labels include: Pooker Canyon, B. E. A. U. B. E. I. N. C. A. N. O. N., M. A. K. W. E. C. A. N. Y. O. N., G. R. A. N. T. C. A. N. Y. O. N., Valdez Canyon, G. E. R. R. O. S. A. C. A. N. Y. O. N., and COREHOLE-09. Well identifiers include VPRB-24, VPRB-22, VPRB-21, VPRB-19, VPRB-18, VPRB-17, VPRB-16, VPRB-15, VPRB-14, VPRB-13, VPRB-12, VPRB-11, VPRB-10, VPRB-9, VPRB-8, VPRB-7, VPRB-6, VPRB-5, VPRB-4, VPRB-3, VPRB-2, VPRB-1, VPRB-0, VPRB-27-WDW, and COREHOLE-09. Elevation contours are marked with values such as 8000, 7000, 6000, 5000, 4000, 3000, 2000, 1000, and 0.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-101
Revised March 17, 1999

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Submit to appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address Sonat Raton, L.L. C. P.O. Box 190 Raton, NM 87740		² OGRID Number 180514
		³ API Number 30-007-20158
⁴ Property Code 25180	⁵ Property Name Vermejo Park Ranch (VPR)	⁶ Well No. VPR ' B'-21

⁷ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	25	30N	18E	I	1409'	SOUTH	1254'	EAST	Colfax

⁸ Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

⁹ Proposed Pool 1

Vermejo

¹⁰ Proposed Pool 2

Raton

¹¹ Work Type Code N	¹² Well Type Code G	¹³ Cable/Rotary ROTARY/AIR	¹⁴ Lease Type Code P	¹⁵ Ground Level Elevation 8115' (GL)
¹⁶ Multiple X No	¹⁷ Proposed Depth 2900'	¹⁸ Formation Trinidad	¹⁹ Contractor Not Available	²⁰ Spud Date January 30, 2000

²¹ Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
11"	8 5/8"	23#	350'	100 sx.	SURFACE
7 7/8"	5 1/2"	15.50#	2900'	300 sx.	SURFACE

²² Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

1. Drill 11" hole to +/- 350' with air.
2. Set 8 5/8" surface casing and cement to surface with 100sks of cement.
3. Drill 7 7/8" hole to 2900' with air. Run open hole logs.
4. Set 5 1/2" production casing to TD and cement to surface. Cement volumes calculated from openhole logs.
5. Perforate and stimulate Vermejo and/or Raton Coals. Clean outwellbore and run production equipment.

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: *DR Lankford*

Printed name: Donald R. Lankford

Title: Senior Petroleum Engineer

Date: 01/20/2000

Phone: (505) 445-4620

OIL CONSERVATION DIVISION

Approved by:

[Signature]
DISTRICT SUPERVISOR

Approval Date: 1/21/00

Expiration Date: 1/21/01

Conditions of Approval:

Attached

District I
1625 N. French Dr. Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

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Revised March 17, 1999

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Santa Fe, NM 87505

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AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address Sonat Raton, L.L.C P.O. Box 190; Raton New Mexico 87740		² OGRID Number 180514
		³ API Number 30-007-20161
⁴ Property Code 24040-25180	⁵ Property Name Vermejo Park Ranch	Well No. VPR 'B' 27 WDW

⁷ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	36	30N	18E	A	717 ft.	NORTH	801	EAST	COLFAX

⁸ Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
⁹ Proposed Pool 1 Entrada					¹⁰ Proposed Pool 2 Dakota				

¹¹ Work Type Code N	¹² Well Type Code S	¹³ Cable/Rotary air / rotary	¹⁴ Lease Type Code P	¹⁵ Ground Level Elevation 8070'(GL)
¹⁶ Multiple no	¹⁷ Proposed Depth 7400'	¹⁸ Formation Entrada	¹⁹ Contractor Aztec	²⁰ Spud Date January 20, 2000

²¹ Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17 1/2"	13 3/8"	48#	350'	200 sx.	Surface
12 1/4"	10 3/4"	40.5#	2600'	500 sx.	Surface
9 7/8"	7 5/8"	26.4#	6440'	1100 sx.	Surface
6 3/4"	5 1/2"	15.5#	7400'	800 sx.	Surface

²² Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive one. Describe the blowout prevention program, if any. Use additional sheets if necessary.

1. Drill 17 1/2" surface hole to 350'. Set 13 3/8" casing and cement to surf. with 200 sx. Midcon 2, at 13.5 ppg., 1.76 yld., 100% excess.
2. Drill 12 1/4" hole to just above Pierre Shale at approx. 2600'. Set 10 3/4" csg. Cement with 400 sx. Silica Lite at 12 ppg., 2.07 yld., followed by 100 sx. Class 'G' at 13.5 ppg., 1.76 yld. Cement bond log will be run if unable to circulate cement to surface.
3. Drill 9 7/8" hole to Dakota fnt. at approx. 6440'. Set 7 7/8" csg. Cement with 1100 sx. Midcon 2 (12.0 ppg., 2.49 yld., 100% excess). Cement bond log will be run if unable to circulate cement to surface.
4. Drill 6 3/4" hole through Entrada fnt. at approx. 7400'. Open hole logs to include induction resistivity, caliper, density, and gamma ray. Set 5 1/2" csg. Cement with 700 sx. Midcon 2 (12.0 ppg., 2.17 yld.) followed by 100sx. Class 'G' (14.6 ppg., 1.46 yld.)
5. Perforate Entrada fnt. attempt to catch native formation water sample. Conductivity test. Sand frac if necessary to establish satisfactory injection rate.

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: *DR Lankford*

Printed name: Donald R. Lankford

Title: Senior Petroleum Engineer

OIL CONSERVATION DIVISION

Approved by:

Title:

DISTRICT SUPERVISOR

COLLECT AND PLUG BACK SAMPLES FOR

Expiration Date:

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-101
Revised March 17, 1999

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Submit to appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address Sonat Raton, L.L. C. P.O. Box 190 Raton, NM 87740		¹ OGRID Number 180514
		³ API Number 30 - 007-20088
³ Property Code 24548 25180	⁵ Property Name Vermejo Park Ranch	⁶ Well No. VPR B-13 (Formerly Van Bremmer B)

⁷ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	31	30N	19E		2570'	FNL	320'	FWL	Colfax

⁸ Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

⁹ Proposed Pool 1

Vermejo

¹⁰ Proposed Pool 2

Raton

¹¹ Work Type Code E	¹² Well Type Code G	¹³ Cable/Rotary Completion Rig	¹⁴ Lease Type Code P	¹⁵ Ground Level Elevation 7780' (GL)
¹⁶ Multiple No	¹⁷ Proposed Depth 2300'	¹⁸ Formation Vermejo	¹⁹ Contractor Not Available	²⁰ Spud Date January 7, 2000

²¹ Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
11"	8 5/8"	24#	325'	180 sx.	
7 7/8"	5 1/2"	17#	2262'	345 sx.	

²² Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

1. RU completion rig. Install BOP, PU and RIH with 4 1/2" bit on 2 7/8" tubing.
2. Drill out surface plug 0' to 50' and CIBP's at 2062' & 1880'. Reverse circulate clean with fresh or clean produced water to PHTD at 2231'.
3. Perforate and frac according to Raton/Houston offices.
4. Clean out to bottom and reverse circulate clean.
5. RIH with pumping equipment and place on test.

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: *DR Lankford*

Printed name: Donald R. Lankford

Title: Senior Petroleum Engineer

Date:

Phone: (505) 445-4620

OIL CONSERVATION DIVISION

Approved by:

Title: DISTRICT SUPERVISOR

Approval Date: 12/27/99

Expiration Date: 12/27/00

Conditions of Approval:

Attached

Submit 3 Copies To Appropriate District Office
 District I
 1625 N. French Dr., Hobbs, NM 87240
 District II
 811 South First, Artesia, NM 87210
 District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV
 2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
 Energy, Minerals and Natural Resources

Form C-103
 Revised March 25, 1999

OIL CONSERVATION DIVISION
 2040 South Pacheco
 Santa Fe, NM 87505

WELL API NO. 30-007-20088	
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>	
6. State Oil & Gas Lease No.	
7. Lease Name or Unit Agreement Name: VPR B	
8. Well No. 13	9. Pool name or Wildcat

SUNDRY NOTICES AND REPORTS ON WELLS
 (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:
 Oil Well Gas Well Other

2. Name of Operator
 SONAT RATON, LLC

3. Address of Operator
 P.O. BOX 190; RATON, NM 87740

4. Well Location
 Unit Letter E : 2570' feet from the NORTH line and 320' feet from the WEST line
 Section 31 Township 30N Range 19E NMPM COFAX County

10. Elevation (Show whether DR, RKB, RT, GR, etc.)
7780' (GR)

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

NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPLETION <input type="checkbox"/>
OTHER: <input type="checkbox"/>	OTHER: WELL NAME CHANGE <input checked="" type="checkbox"/>

12. The well's name has been changed to VPR "B" #13 from Van Bremmer Canyon 3019, Well number 312-E and/or Van Bremmer B.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE DR Lankford TITLE SR. PETROLEUM ENGINEER DATE 12/20/99

Type or print name: DON LANKFORD Telephone No.: (505) 445-4621
 (This space for State use)

APPROVED BY [Signature] TITLE DISTRICT SUPERVISOR DATE 12/27/99
 Conditions of approval, if any:

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
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1000 Rio Brazos Road, Aztec, NM 87410
District IV
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State of New Mexico
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Revised March 17, 1999

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¹ Operator Name and Address Sonat Raton, L.L. C. P.O. Box 190 Raton, NM 87740		² OGRID Number 180514
		³ API Number 30-007- 20154
³ Property Code 2488 25180	³ Property Name Vermejo Park Ranch (VPR)	⁶ Well No. VPR ' B'-17

⁷ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	36	30N	18E	A	703'	NORTH	737'	EAST	Colfax

⁸ Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
⁹ Proposed Pool 1 Vermejo					¹⁰ Proposed Pool 2 Raton				

¹¹ Work Type Code N	¹² Well Type Code G	¹³ Cable/Rotary ROTARY/AIR	¹⁴ Lease Type Code P	¹⁵ Ground Level Elevation 8072' (GL)
¹⁶ Multiple X No	¹⁷ Proposed Depth 2900'	¹⁸ Formation Trinidad	¹⁹ Contractor Not Available	²⁰ Spud Date January 30, 2000

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4. Set 5 1/2" production casing to TD and cement to surface. Cement volumes calculated from operhole logs.
5. Perforate and stimulate Vermejo and/or Raton Coals. Clean out wellbore and run production equipment.

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: *DR Lankford*

Printed name: Donald R. Lankford

Title: Senior Petroleum Engineer

Date: 01/20/2000

Phone: (505) 445-4620

OIL CONSERVATION DIVISION

Approved by:

Title: **DISTRICT SUPERVISOR**

Approval Date: 1/21/00

Expiration Date: 1/21/01

Conditions of Approval:

Attached

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-101
Revised March 17, 1999

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Submit to appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address Sonat Raton, L.L.C. P.O. Box 190 Raton, NM 87740		² OGRID Number 180514
		³ API Number 30-007- 20158
⁴ Property Code 25180	⁵ Property Name Vermejo Park Ranch (VPR)	⁶ Well No. VPR ' B'-21

⁷ Surface Location

UL or lot no.	Section	Township	Range	Lot No	Feet from the	North/South line	Feet from the	East/West line	County
I	25	30N	18E	1	1409'	SOUTH	1254'	EAST	Colfax

⁸ Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot No	Feet from the	North/South line	Feet from the	East/West line	County

⁹ Proposed Pool 1

Vermejo

¹⁰ Proposed Pool 2

Raton

¹¹ Work Type Code N	¹² Well Type Code G	¹³ Cable/Rotary ROTARY/AIR	¹⁴ Lease Type Code P	¹⁵ Ground Level Elevation 8115' (GL)
¹⁶ Multiple No	¹⁷ Proposed Depth 2900'	¹⁸ Formation Trinidad	¹⁹ Contractor Not Available	²⁰ Spud Date January 30, 2000

²¹ Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
11"	8 5/8"	23#	350'	100 sx.	SURFACE
7 7/8"	5 1/2"	15.50#	2900'	300 sx.	SURFACE

²² Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

1. Drill 11" hole to +/- 350' with air.
2. Set 8 5/8" surface casing and cement to surface with 100sks of cement.
3. Drill 7 7/8" hole to 2900' with air. Run open hole logs.
4. Set 5 1/2" production casing to TD and cement to surface. Cement volumes calculated from openhole logs.
5. Perforate and stimulate Vermejo and/or Raton Coals. Clean outwellbore and run production equipment.

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: *DR Lankford*

Printed name: Donald R. Lankford

Title: Senior Petroleum Engineer

Date: 01/20/2000

Phone: (505) 445-4620

OIL CONSERVATION DIVISION

Approved by:

[Signature]
DISTRICT SUPERVISOR

Approval Date: 1/21/00

Expiration Date: 1/21/01

Conditions of Approval:

Attached

PANTLEIS LABORATORIES

P. O. BOX 2439 TEL. 806 669-6821 PAMPA, TEXAS 79066-2439
 P. O. BOX 3246 TEL. 806 797-4325 LUBBOCK, TEXAS 79452-3246

WATER ANALYSIS

SAMPLING DATA

Lab #.....0689
 Customer.....VERNEJO MINERALS CORP.
 Sample ID.....# Well # B
 Produced Water
 Date sampled.....3-1-90
 Sampling point.....--
 Sample temp (deg. F).....75
 Sampled by.....Vernejo
 Analysis date.....3-7-90

REMARKS:

+ Cimarron, New Mexico Area

Color:
Gray/ cloudy; suspended Solids

DISTRIBUTION

J-Vernejo Minerals Corporation
 Rte 1 Box 68
 Cimarron, New Mexico 87714
 Mr Larry Williamson

ANALYTICAL DATA

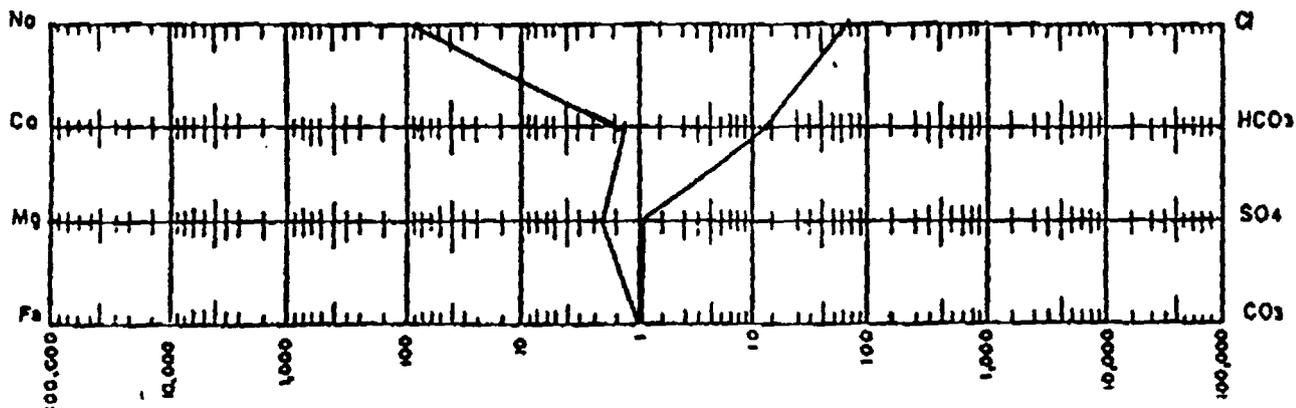
pH.....8.09
 Specific gravity @ 75 deg. F.....1.0031
 Resistivity (ohm-cm).....1.19
 Filterable solids (mg/l).....166.8
 Carbon dioxide (CO₂) mg/l.....NA
 Sulfide (as H₂S) mg/l.....NA
 Total hardness (as CaCO₃) mg/l.....NA

DISSOLVED SOLIDS

Cations	meq/l	mg/l	ppm
Sodium (Na)	85.4	1963	1957
Calcium (Ca)	1.5	30	30
Magnesium (Mg)	2.5	30	30
Iron (Fe), total	.7	20	20
Potassium (K)	NA	NA	NA
Barium (Ba)	NA	NA	NA
Anions			
Chloride (Cl)	71.2	2524	2516
Sulfate (SO ₄)	0	0	0
Carbonate (CO ₃)	0	0	0
Bicarbonate (HCO ₃)	18.9	1153	1149
Hydroxide (OH)	0	0	0
Total dissolved solids (calculated)	180.2	5720	5702

Analysis By: _____ Steve Hopkins _____

Water Patterns (meq/l)
Logarithmic



PANTCHS LABORATORIES

P. O. BOX 2439 TEL. 806 669-6821 PAMPA, TEXAS 79066-2439
 P. O. BOX 3246 TEL. 806 797-4325 LUBBOCK, TEXAS 79452-3246

WATER ANALYSIS

SAMPLING DATA

Lab #.....0687
 Customer.....VERNEJO MINERALS CORP.
 Sample ID.....# Well # 1
 Produced Water
 Date sampled.....3-1-90
 Sampling point.....
 Sample temp (deg. F).....75
 Sampled by.....Vernejo
 Analysis date.....3-7-90

REMARKS:

* Cimarron, New Mexico Area
 Color:
 Yellow; cloudy; suspended solids

DISTRIBUTION

J-Vernejo Minerals Corporation
 Rte 1 Box 68
 Cimarron, New Mexico 87714
 Mr Larry Williamson

ANALYTICAL DATA

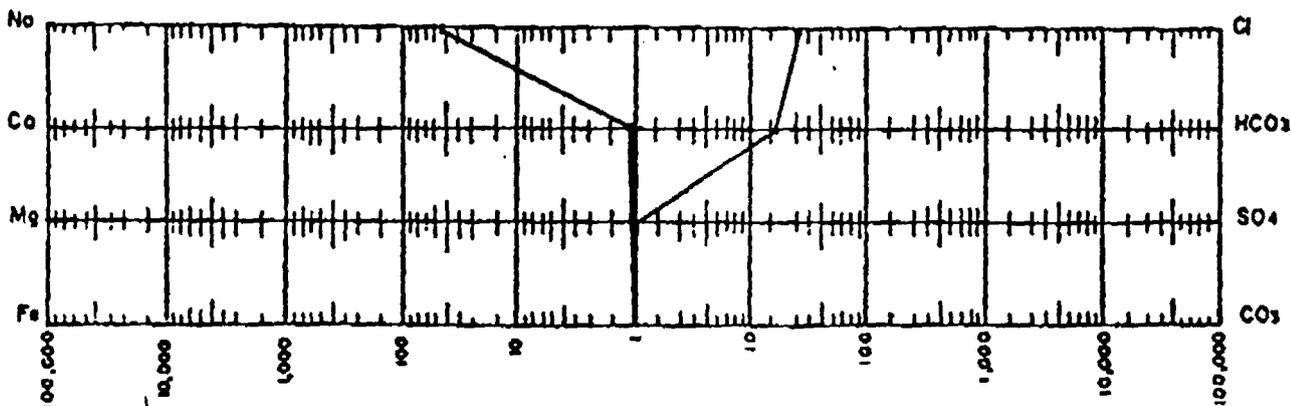
pH.....8.14
 Specific gravity @ 75 deg. F.....1.0005
 Resistivity (ohm-cm).....1.98
 Filterable solids (mg/l).....10.8
 Carbon dioxide (CO₂) mg/l.....NA
 Sulfide (as H₂S) mg/l.....NA
 Total hardness (as CaCO₃) mg/l.....NA

DISSOLVED SOLIDS

Cations	meq/l	mg/l	ppm
Sodium (Na)	53.7	1233	1234
Calcium (Ca)	.9	18	18
Magnesium (Mg)	.7	9	9
Iron (Fe), total	0	0	0
Potassium (K)	NA	NA	NA
Barium (Ba)	NA	NA	NA
Anions			
Chloride (Cl)	32	1134	1133
Sulfate (SO ₄)	0	0	0
Carbonate (CO ₃)	0	0	0
Bicarbonate (HCO ₃)	23.3	1421	1420
Hydroxide (OH)	0	0	0
Total dissolved solids (calculated)	110.6	3817	3814

Analysis By: Steve Hopkins

Water Patterns (meq/l)
 Logarithmic



FANTIL CHS LABORATORIES

P. O. BOX 2439 TEL. 806 669-6821 PAMPA, TEXAS 79066-2439
 P. O. BOX 3246 TEL. 806 797-4325 LUBBOCK, TEXAS 79452-3246

Attachment C-3 WATER ANALYSIS

SAMPLING DATA

Lab #.....0586
 Customer.....VERNEJO MINERALS CORP.
 Sample ID.....Well # P
 Produced Water
 Date sampled.....1-30-90
 Sampling point.....
 Sample temp (deg. F).....75
 Sampled by.....Vernejo
 Analysis date.....2-3-90

REMARKS:

e Cimarron, New Mexico Area

 Color:
 Orange W/Suspended Solids

DISTRIBUTION

3-Vernejo Minerals Corporation
 Rte 1 Box 68
 Cimarron, New Mexico 87714

 Mr Larry Williamson

ANALYTICAL DATA

pH.....6.37
 Specific gravity @ 75 deg. F.....1.0141
 Resistivity (ohm-cm).....31
 Filterable solids (mg/l).....566
 Carbon dioxide (CO₂) mg/l.....NA
 Sulfide (as H₂S) mg/l.....NA
 Total hardness (as CaCO₃) mg/l.....NA

DISSOLVED SOLIDS

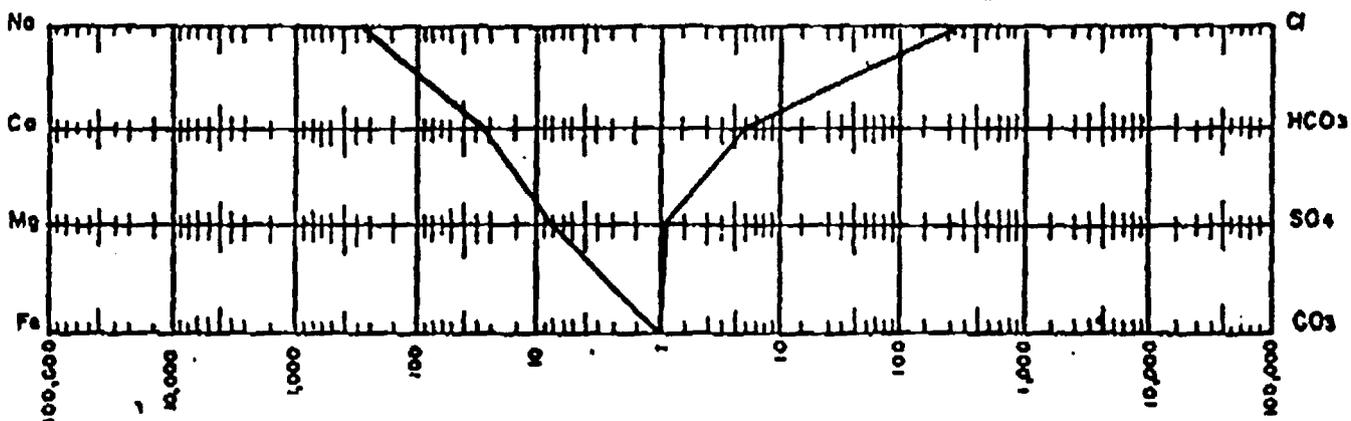
Cations	meq/l	mg/l	ppm
Sodium (Na)	302.2	6948	6951
Calcium (Ca)	32.6	653	644
Magnesium (Mg)	7.6	92	91
Iron (Fe), total	1.1	31	31
Potassium (K)	NA	NA	NA
Barium (Ba)	NA	NA	NA

Anions

Chloride (Cl)	337.4	11961	11795
Sulfate (SO ₄)	.1	5	5
Carbonate (CO ₃)	0	0	0
Bicarbonate (HCO ₃)	6	366	361
Hydroxide (OH)	0	0	0
Total dissolved solids (calculated)	687	20056	19778

Analysis By Steve Hopkins

Water Patterns (meq/l)
Logarithmic



State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Appropriate Office
Lease - 6 copies
Use Lease - 3 copies
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

WELL APIN NO.
30-007-20076

5. Indicate Type of Lease
STATE FEE

6. State Oil & Gas Lease No.
NA

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL GAS WELL DRY OTHER _____

b. Type of Completion: NEW WELL WORK OVER DEEPEN PLUG BACK DRY RESERV OTHER P & A _____

2. Name of Operator
Pennzoil Exploration & Production Company

3. Address of Operator
P.O. Box 2967, Houston, TX 77252

7. Lease Name or Unit Agreement Name
NA

8. Well No.
Eustace #1

9. Pool name or Wildcat
Wildcat

4. Well Location
Unit Later J : 2500 Feet From The South Line and 2300 Feet From The East Line
Section 36 Township 32 N Range 19 E NMPM Colfax County

10. Date Spudded 4/27/85
11. Date T.D. Reached 5/14/85
12. Date Compl. (Ready to Prod.) 11/15/89
13. Elevations (DP & RKB, RT, GR, etc.) 8069 GR
14. Elev. Casinghead 8071 GR

15. Total Depth 2497
16. Plug Back T.D. 2008
17. If Multiple Compl. How Many Zones? _____
18. Intervals Drilled By Rotary Tools 0-2497 Cable Tools _____

19. Producing Interval(s), of this completion - Top, Bottom, Name
1894-1986 Coal

20. Was Directional Survey Made
No

21. Type Electric and Other Logs Run
Unknown

22. Was Well Cored
Yes

CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8	24	327	12 1/4	225 Sacks	0
5 1/2	14	2464	7 7/8	325 sacks foam cement	0

LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

TUBING RECORD

SIZE	DEPTH SET	PACKER SET

26. Perforation record (interval, size, and number)

1894-1904	1951-1955	4 SPF
1920-1922	1963-1970	
1924-1934	1978-1986	
1939-1945		

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
1894-1986	150,000 sand

PRODUCTION

28. Date First Production 11/15/89
Production Method (Flowing, gas lift, pumping - Size and type pump) Pumping
Well Status (Prod. or Shut-in) Shut-in

Date of Test	Hours Tested	Choke Size	Prod's For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
12/17/89	24	NA		0	10	244	NA

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)
NA	20		0	10	244	NA

29. Disposition of Gas (Sold, used for fuel, vented, etc.)
Vented

Test Witnessed By
L. D. Williamson

30. List Attachments

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature L. D. Williamson Printed Name L. D. Williamson Title Operations Supt. Date 6/01/90

penetrated top of Trinidad

STAGE
Copies
Appropriate
District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1940, Hobbs, NM 88240

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

DISTRICT II
P.O. Denver 00, Alamo, NM 88210

DISTRICT III
1000 N. 1st Street, N.M., Alamo, NM 87410

WELL API NO. 30-007-20076
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>
6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name NA
--

1. Type of Well OIL <input type="checkbox"/> GAS <input type="checkbox"/> OTHER
--

8. Well No. Eustace #1

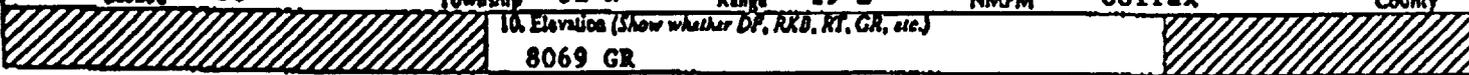
2. Name of Operator Pennzoil Exploration & Production Company
--

9. Pool name or Wildcat Wildcat

3. Address of Operator P.O. Box 2967, Houston, TX 77252
--

4. Well Location Unit Letter <u>J</u> ; <u>2500</u> Feet From The <u>South</u> Line and <u>2300</u> Feet From The <u>East</u> Line Section <u>36</u> Township <u>32 N</u> Range <u>19 E</u> NMPM <u>Colfax</u> County

10. Elevation (Show whether DP, RKB, RT, GR, etc.) 8069 GR



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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input checked="" type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>		CASING TEST AND CEMENT JOB <input type="checkbox"/>	
OTHER: _____ <input type="checkbox"/>		OTHER: _____ <input type="checkbox"/>	

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1101.

4-20-90. Set CIBP @ 1850'. Set 100' cement plug w/ 12 sks of class A @ 15.6 ppg from 1850' to 1750'. Fill hole with 8.8 ppg Bentonite mud. Set 100' cement plug w/12 sks of class A @ 15.9 ppg from 975 to 875 across known casing leak. Set CIBP @ 850'. Set 50' surface plug and marker w/6 sks class A 15.6 ppg. Location cleared and leveled.

I hereby certify that the information above is true and accurate to the best of my knowledge and belief.

SIGNATURE L. D. Williamson Title Operations Superintendent DATE 6/1/90

TYPE OR PRINT NAME L. D. Williamson TELEPHONE NO. (505) 376-28

(This space for State Use)
APPROVED BY [Signature] TITLE DISTRICT SUPERVISOR DATE 6-5-90
CONDITIONS OF APPROVAL, IF ANY:

Attachment "D"

XIII. Proof of Notice

Surface Owner:

Vermejo Park, L.L.C.
P. O. Drawer E
Raton, NM 87740

Working/Offset & Royalty Owners:

Sonat Raton, L.L.C.
Sonat Exploration
P. O. Box 1513
Houston, Texas 77251-1513
Attn: Stephen P. Guerin, P.E.

Vermejo Minerals Corp.
C/o Devon Energy Corp.
P. O. Box 4616
Houston, Texas 77210-4616
Attn: Ken Gray

Copies of the Oil Conservation Division, Form C-108 have been sent to the above stated parties by certified mail on the the 3rd day of April, 2000.



Ann E. Ritchie Regulatory Agent
Sonat Raton, L.L.C.
P. O. Box 190
Raton, New Mexico 87740

Affidavit of Publication

STATE OF NEW MEXICO)
) ss.
COUNTY OF COLFAX)

The undersigned, being first duly sworn according to law, on his/her oath deposes and says that he/she is the business manager of the newspaper named "The Raton Range" and that he/she has personal knowledge of the facts stated herein; that the said "The Raton Range" is a twice-weekly newspaper of general paid circulation printed and published in the County of Colfax and State of New Mexico and entered under the Second class postal privilege in said County, and having been uninterruptedly and continuously printed and published in said County during the period of more than six months to the date of publishing of the first issue of the publication next prior or notice concerning which this affidavit is made and a copy of which is hereto attached; that said newspaper is duly qualified for that purpose under the laws of the state of New Mexico; that the publication, a printed copy of which is hereunto attached and made a part of this affidavit, was published in said newspaper once each week for 2 successive weeks, said paid publication having been made on the following dates, to-wit:

- First publication: The 24 day of March, 2000
- Second publication: The 28 day of March, 2000
- Third publication: The ___ day of _____, 2000
- Fourth publication: The ___ day of _____, 2000
- Fifth publication: The ___ day of _____, 2000
- Sixth publication: The ___ day of _____, 2000

Margaret Massin
Business Manager

Subscribed and sworn to before me this 28th day of March, 2000.

Ruby Contreras
Notary Public



OFFICIAL SEAL
RUBY J. CONTRERAS
NOTARY PUBLIC
STATE OF NEW MEXICO

MY COMMISSION EXPIRES: 1-24-04

PUBLISHER'S BILL

55 lines, 8pt. type, 2 Times, 48.56
3.39
51.95

Notice of Application
for Fluid Injection
Well Permit

Sonat Raton, L.L.C., P.O. Box 190, Raton, New Mexico 87740 is seeking administrative approval from the New Mexico Oil Conservation Division to complete their Vermejo Park Ranch "A," Well No. 42, located in Section 1, T-31-N, R-19-E, Vermejo Park Ranch "D," Well No. 25, located in Section 5, T-30-N, R-18E, Vermejo Park Ranch "B," Well No. 27, Section 36, T-30-N, R-18-E, Colfax County, New Mexico as water disposal wells. The proposed interval is the Dakota/Entrada Sand from an estimated depth of 6400'-7350'. Sonat Raton, L.L.C. intends to inject a maximum of 20,000 bbls of produced formation water per day per well at a maximum injection pressure of 1240 psi.

Interested parties must file objections or request for hearing with the Oil Conservation Division, 2040 S. Pacheco, Santa Fe, N.M. 87505 within 15 days of this notice.

Ann E. Ritchie, Regulatory Agent

Sonat Raton, L.L.C.
C/o P.O. Box 953
Midland, Texas 79702
1-800-432-2967, (915) 682-1458 fax

e-mail: Arinc19676@aol.com

Legal No. 295100.

Published in The Raton Range March 24 and 28, 2000.