DATE IN 7/26/99	SUSPENSE 8/10/99	ENGINEER BS	LOGGED BY KV	TYPE SWD

ABOVE THIS LINE FOR DIVISION USE ONLY

755

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
[DD-Directional Drilling] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Directional Drilling

☐ NSL ☐ NSP ☐ DD ☐ SD

JUL 26

Check One Only for [B] and [C]

[B] Commingling - Storage - Measurement

☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☐ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☒ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☒ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] **INFORMATION / DATA SUBMITTED IS COMPLETE** - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

(915) 687-4381

Ann E. Ritchie		Regulatory Agent	7-22-99
Print or Type Name	Signature	Title	Date

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 SOUTH PACHECO
SANTA FE, NEW MEXICO 87505

FORM C-108
Revised 4-1-98

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance __X__ Disposal _____ Storage
Application qualifies for administrative approval? __X__ Yes _____ No

II. OPERATOR: Sonat Raton, L.L.C.

ADDRESS: P.O. Box 190, Raton, NM 87740

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 __X__ No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. 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).

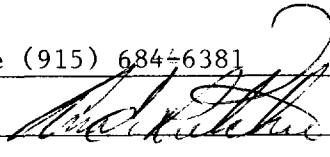
*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

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 (915) 684-6381 TITLE: Regulatory Agent

SIGNATURE:  DATE: 7-22-99

* 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

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this applicatio 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 "A", Well #7 Water Disposal
1074' FNL & 2276' FEL
Section l, T-3l-N, R-l9-E
Colfax County, New Mexico

Attachment A

III. Well Data

Section A:

l. Lease Name: Vermejo Park Ranch "A", Well #7 (Water Disposal)

Location: 1074' FNL & 2276' FEL, Sec l, T3lN, Rl9E, Colfax County, NM

2. Casing & Cementing (Wellbore Diagram attached)

Proposed:

Casing Size	Setting Depth	Sacks Cement	Hole Size	Top of Cement
13 3/8"	350'	170 sx	15 l/2"	Surface
9 5/8"	2300'	518 sx	12 l/4"	Surface
7"	6450'	375 sx	8 ¾"	1800'

3. Tubing: 2 7/8" 6.5# J-55 @ +/- 6200'

4. Packer: Baker Model R-3 @ +/- 6200'

Section B:

l. Injection Formation: Entrada Sand

Field Name: Vermejo Park Ranch

2. Injection Interval: Entrada Sandstone +/- 6200' – 6400' (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: Dakota Formation
Next Lower gas/oil zone: None

Sonat Raton, L.L.C.

VPRA-07
Casing and Cementing Plan

WDW: "VPRA-07"
Casing and Cementing Design

Surface casing cement ~~170~~ 300 sx. Class 'G'
(100% excess) at 14.5 ppg., 1.38 yield
(cement to surface)
32 sx circulated to surface

15 1/2" hole

13 3/8" 48# csg. @ 350'
7-3-99

Intermediate casing cement with ~~518~~ 400 sx.
Silica Light (75% excess) at 11.5 ppg.,
2.19 yield, followed by 68 sx. Class 'G'
at 14.5 ppg., 1.38 yield, w/120 sx Mid-con 2
(cement to surface) & 75 sx Cl G
TS: 1500'
Bradenhead squeeze: 300 sx squeezed
to surface
7-8-99

12 1/4" hole

Top Trindad @ +/-2200'

9 5/8" 36# csg. @ ~~2300'~~ 2662'
7-7-99

Long string cement with 375 sx. Silica Light
(30% excess) at 11.5 ppg., 2.19 yield
followed by 75 sx. Class 'G' (30% excess)
at 14.8 ppg., 1.32 yield
(cement to 1800')

8 3/4" hole

top Dakota @ +/-5100'

top Entrada @ +/-6200'

7" 20# csg. @ ~~6450'~~ 6400'
7-14-99

6/8/99

IV. This is not an expansion of an existing project.

V. Map attached – "Attachment B", two mile & 1/2 mile radius area of review

VI. Area of Review

There are no wells within one half mile of the proposed disposal well that penetrate the target formation. There is one shallow water well in the one half mile radius and one planned CBM well targeting the Vermejo Formation at +/- 2300'.

VI. Operation Data:

1. Proposed average daily injection volume: 10,000 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: 1240 psi

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

VIII. Geological Data

Information pertaining to the lithological details and thickness are limited to the Eustace #1, located in Section 36, north of the proposed Vermejo Park Ranch "A" Well #7. To best of our knowledge the logs on the Eustace #1 were previously submitted to the Oil Conservation Division. (Eustace #1, Form C-103 & C-105 attached)

IX. 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

XII. Statement

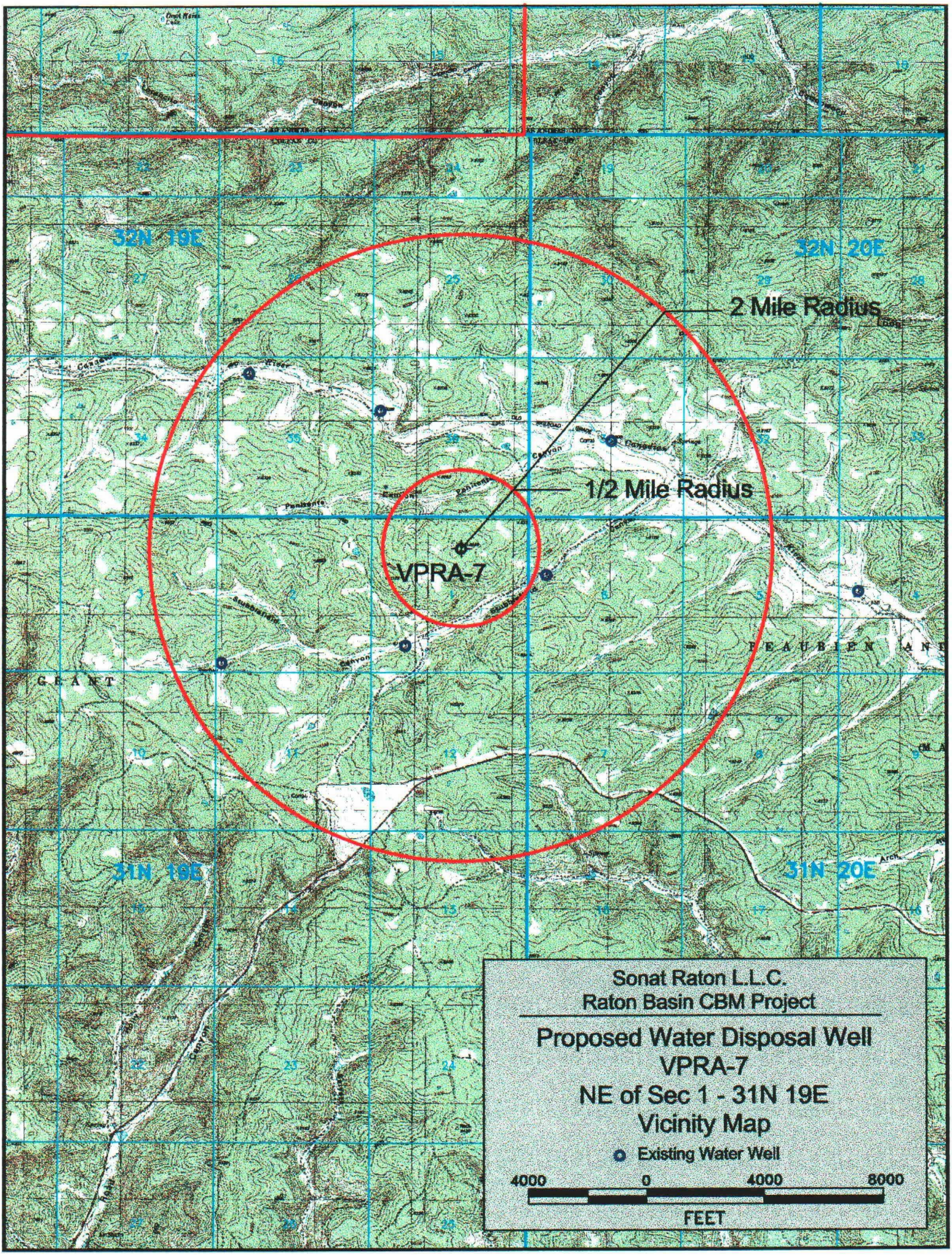
To the best of our current knowledge of the area there is no evidence of open faults or other hydrologic connection between and disposal zone and under-ground sources of drinking water.

XIII. Proof of Notice attached as "Attachment D"

Sonat Raton L.L.C. offsets Section l on all sides.

XIV. Certification: **Form C-l08 "Application for Authorization to Inject"**

Attachment B



Attachment C-1

PANTECHS 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.....VERMEJO MINERALS CORP.
Sample ID.....# Well # D
Produced Water
Date sampled.....3-1-90
Sampling point.....--
Sample temp (deg. F)..... 75
Sampled by.....Vermejo
Analysis date.....3-7-90

REMARKS:

Ciearron, New Mexico Area

Color:
Gray; cloudy; suspended Solids

DISTRIBUTION

3-Vermejo Minerals Corporation
Rte 1 Box 68
Ciearron, New Mexico 87714

Mr Larry Williamson

ANALYTICAL DATA

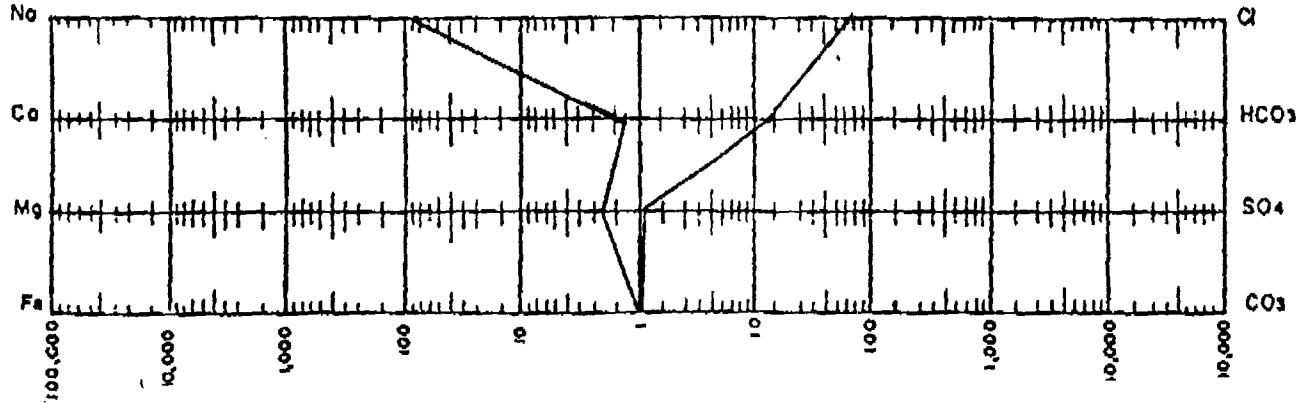
pH	8.09
Specific gravity @ 75 deg. F	1.0031
Resistivity (ohm-m)	1.19
Filterable solids (mg/l)	166.8
Carbon dioxide (CO2) mg/l	NA
Sulfide (as H2S) mg/l	NA
Total hardness (as CaCO3) mg/l	NA

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 (SO4)	0	0	0
Carbonate (CO3)	0	0	0
Bicarbonate (HCO3)	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



Attachment C-2

PANTECHS 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.....VERMEJO MINERALS CORP.
Sample ID.....# Well # 1
Produced Water
Date sampled.....3-1-90
Sampling point.....--
Sample temp (deg. F)..... 75
Sampled by.....Vermejo
Analysis date.....3-7-90

REMARKS:

Cimarron, New Mexico Area

Color:
Yellow; cloudy; suspended solids

DISTRIBUTION

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

Mr Larry Williamson

ANALYTICAL DATA

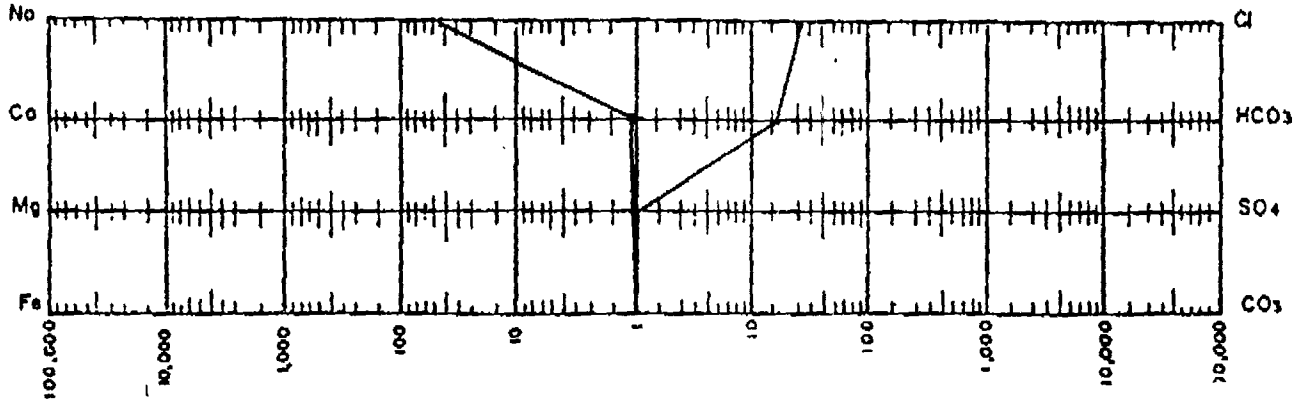
pH	8.14
Specific gravity @ 75 deg. F	1.0005
Resistivity (ohm-m)	1.98
Filterable solids (mg/l)	10.8
Carbon dioxide (CO2) mg/l	NA
Sulfide (as H2S) mg/l	NA
Total hardness (as CaCO3) mg/l	NA

DISSOLVED SOLIDS

Cations	meq/l	mg/l	ppm
Sodium (Na)	53.7	1235	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 (SO4)	0	0	0
Carbonate (CO3)	0	0	0
Bicarbonate (HCO3)	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



PANTI CHS LABORA ORIES

☐ 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.....VERMEJO MINERALS CORP.
Sample ID.....# Well @ P
Produced Water
Date sampled.....1-30-90
Sampling point.....--
Sample temp (deg. F)..... 75
Sampled by.....Vermejo
Analysis date.....2-5-90

REMARKS:

Cimarron, New Mexico Area

Color:
Orange W/Suspended Solids

DISTRIBUTION

3-Vermejo Minerals Corporation
Rte 1 Box 68
Cimarron, Newe Mexico 87714

Mr Larry Williamson

ANALYTICAL DATA

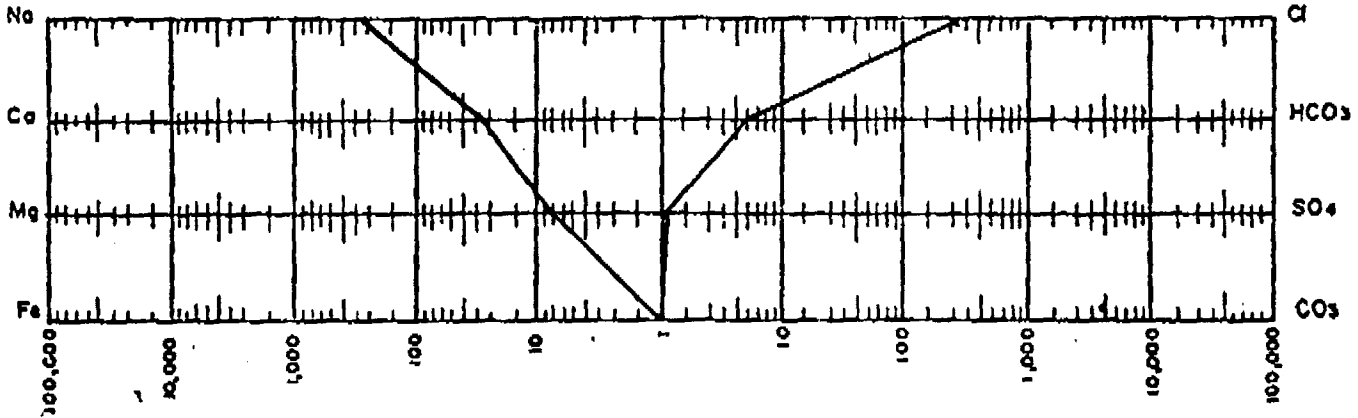
pH	6.37
Specific gravity @ 75 deg. F	1.0141
Resistivity (ohm-m)	.31
Filterable solids (mg/l)	566
Carbon dioxide (CO2) mg/l	NA
Sulfide (as H2S) mg/l	NA
Total hardness (as CaCO3) mg/l	NA

DISSOLVED SOLIDS

Cations	meq/l	mg/l	ppm
Sodium (Na)	302.2	6948	6851
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 (SO4)	.1	5	5
Carbonate (CO3)	0	0	0
Bicarbonate (HCO3)	6	366	361
Hydroxide (OH)	0	0	0
Total dissolved solids (calculated)	687	20056	19778

Analysis By Steve Hopkins

Water Patterns (meq/l)
Logarithmic



Submit to Appropriate
District Office
State Lease – 6 copies
Fee Lease – 5 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

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-105
Revised 1-1-89

WELL API 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 ☐ DIFF RESVR ☐ OTHER P & A

7. Lease Name or Unit Agreement Name
NA

2. Name of Operator
Pennzoil Exploration & Production Company

8. Well No.
Eustace #1

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

9. Pool name or Wildcat
Wildcat

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

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

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

23. **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

24. **LINER RECORD**

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. **TUBING RECORD**

SIZE	DEPTH SET	PACKER SET

26. Perforation record (interval, size, and number)
1894-1904 1951-1955
1920-1922 1963-1970 4 SPF
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

28. **PRODUCTION**

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

Date of Test	Hours Tested	Choke Size	Prod'n 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

EUSTACE

Submit 3 Copies to Appropriate District Office

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

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-103
Revised 1-1-89

WELL API NO.
30-007-20076

5. Indicate Type of Lease STATE ☐ FEE ☒

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 WELL ☐ GAS WELL ☐ OTHER

2. Name of Operator
Pennzoil Exploration & Production Company

8. Well No.
Eustace #1

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

9. Pool name or Wildcat
Wildcat

4. Well Location
Unit Letter 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. Elevation (Show whether DF, 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	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☒
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER:			☐

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 1103.

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 complete 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) 376-281

(This space for State Use)

APPROVED BY Ray E. Johnson TITLE DISTRICT SUPERVISOR DATE 6-5-90

CONDITIONS OF APPROVAL, IF ANY:

Attachment D

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 1 successive weeks, said paid publication having been made on the following dates, to-wit:

First publication: The 2 day of July, 1999

Second publication: The ___ day of _____, 199___

Third publication: The ___ day of _____, 199___

Fourth publication: The ___ day of _____, 199___

Fifth publication: The ___ day of _____, 199___

Sixth publication: The ___ day of _____, 199___

Business Manager

Subscribed and sworn to before me this 15th day of July, 1999.

Kristie L Baca
Notary Public

OFFICAL SEAL
KRISTIE L. BACA
NOTARY PUBLIC
STATE OF NEW MEXICO
MY COMMISSION EXPIRES: Sept 16, 2002

PUBLISHER'S BILL

50 lines, 8pt. type, 1 Times, 27.00
1.87 tax
28.87

NOTICE OF APPLICATION FOR FLUID INJECTION WELL PERMIT

Sonat Raton, L.L.C., P.O. Box 1513, Houston, TX 77251 is seeking administrative approval from the New Mexico Oil Conservation Division to complete their Vermejo Park Ranch "A", Well #7, as a water disposal well. The well is located in Section 1, T-31-N, R-19-E, Colfax County, New Mexico. The proposed disposal interval is the Entrada Sand from an estimated depth of 6200-6400'. Sonat Raton, L.L.C. intends to inject a maximum of 20,000 bbls of produced formation water per day 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, NM 87505 within 15 days of this notice.

Thank you,
Ann E. Ritchie,
Regulatory Agent
Sonat Raton, L.L.C.
C/o P.O. Box 953
Midland, TX 79702
1-800-432-2967, (915) 682-1458-fax
e-mail: Arltc19676@aol.com
Legal No. 262399.
Published in The Raton Range: July 2, 1999.

ILLEGIBLE

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, TX 77251-1513
Att: Stephen P. Guerin, P.E.

PennzEnergy, Exp. & Prod., L.L.C.
P.O. Box 4616
Houston, TX 77210-4616
Att: Greg Davis

Copies of the Oil Conservation Division, Form C-108 have been sent to the above stated parties by certified mail on this the 23rd day of July, 1999.

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

HOURS | FOR | SUBJECT • DESCRIPTION OF SERVICES | TIME HRS. 1/10

Canadian River Area Water Analysis
Cross Reference

Lab No.	NMOED No.	location
01	Stagecoach Pump.	N-1-31N-19E

Handpump @ StubbleField Stagecoach stop.
Depth - unknown but prob. < 20'

---

02 — CR #1 — E-36-32N-19E
Windmill @ road crossing Canadian River
Depth - unknown

---

03 — CR #2 — D-35-32N-19E
Windmill adjacent to Canadian River
Depth - unknown

---

04 — CR #4 — J-31-32N-20E
Windmill @ road & pipeline crossing - Canadian River
Depth - unknown

---

05 — PC #1 — A-2-31N-19E
Windmill between StubbleField and Penitente Canyon's
Depth - unknown

---

06 — SC #1 — E-6-[redacted]-31N-20E
Windmill - StubbleField Canyon below stage stop.
Depth - unknow.

---

07 — SCR #2 — I-31-32N-20E
Surface water - Canadian River @ Road crossing.
- water Flowing -

---

08 — SCR #3 — A-33-32N-19E
Surface water - Canadian River. Immediatly North of a windmill (broken) and three monitor wells For the coal mine. Water analysis From these monitor wells will be forwarded once thay are Found.

Champion
Technologies, Inc.
Committed To Improvement

Water Analysis Report

Customer: Sonat Raton 8/11/99
Address:
City: **State:** **Zip:**
Attention: **Date Sampled:** 8/10/99
CC1: **Date Received:** 8/11/99
CC2: **SALESMAN NAME:** Larry Stanley

LEASE: VPR **SAMPLE POINT:** Wellhead
WELL: A - 2 **REMARKS:** On Production 2 days

		WRCC
CHLORIDE (MG/L):	320	250
SULFATE (MG/L):	0	600
BICARBONATE (PPM):	1293	
CALCIUM (MG/L):	8	
MAGNESIUM (MG/L):	5	
IRON (PPM):	0	
BARIUM (MG/L):	0	
STRONTIUM (MG/L):	0	
MEASURED pH:	7.5	
TEMPERATURE:	100	
DISSOLVED C02 (PPM):	9	
MOLE PERCENT CO2 IN GAS:	0.00	
DISSOLVED H2S (PPM):	0.0	
PRESSURE (PSIA):	25	
SODIUM (PPM):	676	
TDS (MG/L):	2302	1000
RESISTIVITY:	2.7802	
IONIC STRENGTH:	0.03	

CALCITE (CaCO3) SI:	0.67	CALCITE PTB:	5.5
GYPSUM (CaSO4) SI:	N/A	YPSUM PTB:	N/A
BARITE (BaSO4) SI:	N/A	RITE PTB:	N/A
CELESTITE (SrSO4) SI:	N/A	CELESTITE PTB:	N/A

SI calculations based on Tomson-Oddo Resistivity calculated at STP

Champion
Technologies, Inc.
Committed To Improvement

Water Analysis Report

Customer: Sonat Raton 8/11/99
Address:
City: **State:** **Zip:**
Attention: **Date Sampled:** 8/10/99
CC1: **Date Received:** 8/11/99
CC2: **SALESMAN NAME:** Larry Stanley

LEASE: VPR **SAMPLE POINT:** Wellhead
WELL: A-6 **REMARKS:** On Production 2 days

		WQCC
CHLORIDE (MG/L):	600	250
SULFATE (MG/L):	0	600
BICARBONATE (PPM):	1239	
CALCIUM (MG/L):	9	
MAGNESIUM (MG/L):	7	
IRON (PPM):	0	
BARIUM (MG/L):	0	
STRONTIUM (MG/L):	0	
MEASURED pH:	7.4	
TEMPERATURE:	100	
DISSOLVED C02 (PPM):	8	
MOLE PERCENT CO2 IN GAS:	0.00	
DISSOLVED H2S (PPM):	0.0	
PRESSURE (PSIA):	25	
SODIUM (PPM):	832	
TDS (MG/L):	2687	1000
RESISTIVITY:	2.3818	
IONIC STRENGTH:	0.04	

CALCITE (CaCO3) SI:	0.66	**CALCITE PTB:**	6.1
GYPSUM (CaSO4) SI:	N/A	**GYPSUM PTB:**	N/A
BARITE (BaSO4) SI:	N/A	**BARITE PTB:**	N/A
CELESTITE (SrSO4) SI:	N/A	**CELESTITE PTB:**	N/A

SI calculations based on Tomson-Oddo **Resistivity calculated at STP**

Champion Technologies, Inc.
Committed To Improvement

Water Analysis Report

Customer: Sonat 8/31/99
Address:
City: Raton **State:** New Mexico **Zip:**
Attention: **Date Sampled:** 8/30/99
CC1: **Date Received:** 8/30/99
CC2: **SALESMAN NAME:** Larry Stanley

LEASE: VPR **SAMPLE POINT:** Water Disp. Well
WELL: A-7 **REMARKS:**

CHLORIDE (MG/L):	8302
SULFATE (MG/L):	350
BICARBONATE (PPM):	444
CALCIUM (MG/L):	256
MAGNESIUM (MG/L):	199
IRON (PPM):	22
BARIUM (MG/L):	0
STRONTIUM (MG/L):	0
MEASURED pH:	7.3
TEMPERATURE:	100
DISSOLVED C02 (PPM):	8
MOLE PERCENT CO2 IN GAS:	0.00
DISSOLVED H2S (PPM):	5.0
PRESSURE (PSIA):	25
SODIUM (PPM):	5049
TDS (MG/L):	14600
RESISTIVITY:	0.4384
IONIC STRENGTH:	0.25

CALCITE (CaCO3) SI:	0.49	CALCITE PTB:	76.9
GYPSUM (CaSO4) SI:	-1.64	GYPSUM PTB:	N/A
BARITE (BaSO4) SI:	N/A	BARITE PTB:	N/A
CELESTITE (SrSO4) SI:	N/A	CELESTITE PTB:	N/A

SI calculations based on Tomson-Oddo Resistivity calculated at STP

Champion Technologies, Inc.
Committed To Improvement

Water Analysis Report

Customer: Sonat 8/31/99
Address:
City: Raton State: New Mexico Zip:
Attention: Date Sampled: 8/31/99
CC1: Date Received: 8/31/99
CC2: SALESMAN NAME: Larry Stanley

LEASE: VPR SAMPLE POINT: Wellhead
WELL: A-15 REMARKS:

CHLORIDE (MG/L):	1650
SULFATE (MG/L):	4
BICARBONATE (PPM):	1088
CALCIUM (MG/L):	27
MAGNESIUM (MG/L):	6
IRON (PPM):	1
BARIUM (MG/L):	0
STRONTIUM (MG/L):	0
MEASURED pH:	8.4
TEMPERATURE:	100
DISSOLVED C02 (PPM):	0
MOLE PERCENT CO2 IN GAS:	0.00
DISSOLVED H2S (PPM):	0.5
PRESSURE (PSIA):	25
SODIUM (PPM):	1440
TDS (MG/L):	4215
RESISTIVITY:	1.5184
IONIC STRENGTH:	0.06

CALCITE (CaCO3) SI:	#Error	CALCITE PTB:	N/A
GYPSUM (CaSO4) SI:	-4.20	GYPSUM PTB:	N/A
BARITE (BaSO4) SI:	N/A	BARITE PTB:	N/A
CELESTITE (SrSO4) SI:	N/A	CELESTITE PTB:	N/A

SI calculations based on Tomson-Oddo Resistivity calculated at STP

FRESH WATER TEST PROCEDURES

Water Analysis Work Sheet

Well Name: VPR A-7 WDW Date Sampled: 8/30

County: _____ Date Tested: 8/30

State: Raton, N.M. Sampled By: _____

Formation: _____ Sampled By: _____

Depth: _____ Worked By: Larry Stanley

Sample Point: _____ Sample Description: _____

Physical Determinations

Specific Gravity: _____

Temperature: ____ Degrees F.

pH: ____ (Strips) 7.3 (Meter)

Chemical Determinations

Total Hardness: 1460 mg/L

Total Dissolved Solids: 14,610 mg/L
1,000 - WQCC

Cations

Dissolved Iron: 22 mg/L

Calcium: 256 mg/L

Magnesium: 199 mg/L

Sodium and Potassium: 5037 mg/L

Anions

Chloride: 8,302 mg/L 250 - WQCC

Sulfate: 350 mg/L 600 - WQCC

Bicarbonate: 444 mg/L

Remarks & Comments H_2S - 5 ppm, CO_2 - 8 ppm } Dissolved

FRESH WATER TEST PROCEDURES

Water Analysis Work Sheet

Well Name: VPR A-15 Date Sampled: 8/31/99

County: _____ Date Tested: 8/31/99

State: _____ Sampled By: _____

Formation: _____ Sampled By: Larry Stanley

Depth: _____ Worked By: Larry Stanley

Sample Point: Wellhead Sample Description: _____

Physical Determinations

Specific Gravity: _____

Temperature: ___ Degrees F.

pH: ___ (Strips) 8.4 (Meter)

Chemical Determinations

Total Hardness: 94 mg/L

Total Dissolved Solids: 4,225 mg/L
1,000 - WQCC

Cations

Dissolved Iron: 1 mg/L

Calcium: 27 mg/L

Magnesium: 6 mg/L

Sodium and Potassium: 1449 mg/L

Anions

Chloride: 1,650 mg/L 250 - WQCC

Sulfate: 4 mg/L 600 - WQCC

Bicarbonate: 1088 mg/L

Remarks & Comments Disolved - CO_2 - 0 mg/L
Disolved - H_2S - 0.5 mg/L

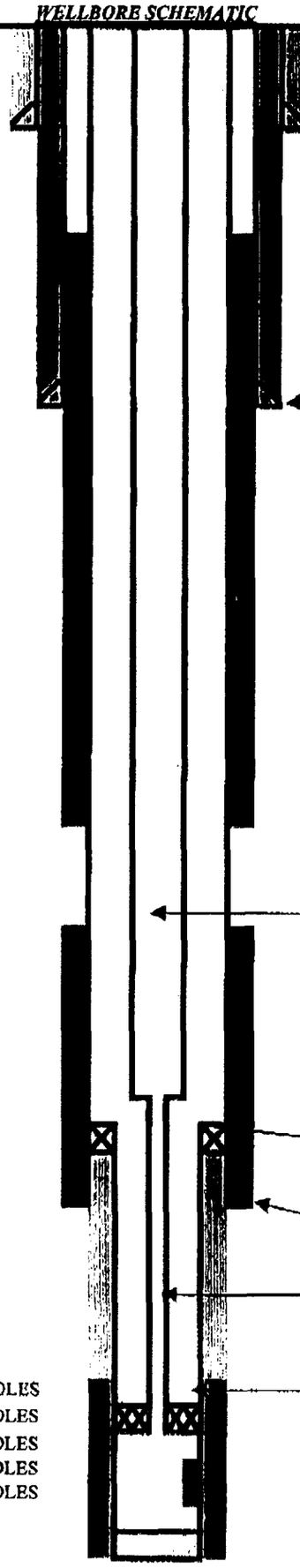
VPRA 7 WDW

API # 30-007-20116
CO: COLFAX
STATE: NEW MEXICO
LOCATION: SEC. 1 31N 19E

T.D 6620'
PBTD 5571'
G.L. 8272'
K.B. 8282

DATE: 8/31/99
PREPARED BY: DANNY LAMAN

FORMATION TOPS | ***WELLBORE SCHEMATIC*** | ***CASING & PROD. STRING*** | ***CEMENT & SQUEEZE***



VERMEJO

TRINIDAD

PIERRE

TIMPAS

CARLILE -

GREENHORN

GRANEROS SHALE

DAKOTA

PERFORMATIONS
6400 - 6429' 29' 60 HOLES
6438' - 6456' 18' 38 HOLES
6466' - 6510' 44' 90 HOLES
6522' - 6528' 6' 14 HOLES
6544' - 6564' 20' 42 HOLES

117' F/ 244 HOLES

13-3/8" 48# H-40 STC SET @ 350
CIR. 32 SKS CMT. TO SURF.
CMT: W/ 300 SKS MIDCON 2
MIX @ 13.5 PPG 1.76 CUFT/SK

9-5/8" 36# J-55 STC SET @ 2662'

3.5" 9.3# N-80 BUTT. IPC TBG.

TOL 5" LINER @ 5562'
SMITH EZRS HANGER
W/ 6' TIEBACK SLEEVE

7" 23# J-55 LTC SET @ 5745'

2.875" 6.5# N-80 IPC TBG.

5" X 2" NICKEL PLATED LOK SET
3.75" OD ON/OFF SHUCK
W/ 1.87" "F" PROFILE NIPPLE
SET @ 6310'

5" 18# P-110 CMFJ
SET @ 6619'
T.D. @ 6620' PBTD 6575'

9-5/8 CEMENT & SQUEEZE WORK
PRIMARY JOB
CMT: HES 400 SKS SILICATE LITE
MIX @ 12 PPG. 2.07 CUFT/SK
LEAD 2 - 125 SKS MIDCON 2
MIX @ 12.5 PPG. 2.17 CUFT/SK
TAIL - 75 SKS STANDARD
MIX @ 13.5 PPG. 1.76 CUFT/SK
RUN TEMP. LOG TOC @ 1250

BRADENHEAD SQUEEZE
W/ HES 300 SKS SILICATE LITE
MIX @ 12 PPG. 2.07 CUFT/SK
UNABLE TO RUN CBL
NO FLUID IN HOLE F/ AIR DRLG.

7" CEMENT & SQUEEZE WORK
PRIMARY JOB
CMT: HES 330 SKS SILICATE LITE
MIX @ 12.5 PPG. 1.85 CUFT/SK
RAN CBL 8/19/99 TOC @ 4430

1ST SQ. PERF.4370' CR @ 4270'
CMT: HES 200 SKS MIDCON 2
MIX @ 11.5 PPG. 2.82 CUFT/SK
LEAD-2 W/ 200 SKS MIDCON 2
MIX @ 12 PPG. 2.49 CUFT/SK
TAIL W/ 100 SKS. STANDARD
MIX @ 14.6 PPG. 1.46 CUFT/SK

2ND SQ. PERF 3150' CR @ 3039'
CMT: HES 400 SKS MIDCON 2
MIX @ 12 PPG. 2.17 CUFT/SK
TAIL W/ 100 SKS STANDARD
MIX @ 14.6 PPG. 1.46 CUFT/SK
RAN CBL 8/26/99
CMT F/ 1150' - 1700'
POOR CMT F/ 1700' - 2270'
CMT F/ 2270' - 3200'
POOR -VOID F/ 3200 - 4290'
CMT F/ 4290' TO TOL @ 5562'

5" CEMENT & SQUEEZE WORK
PRIMARY JOB
CMT: HES 200 SKS 50/50 POZ
MIX @ 13 PPG. 1.8 CUFT/SK
RAN CBL 8/19/99
CMT 6270' - 6619'
FAIR CMT. TO TOL

1ST SQ TOP OF LINER
CMT: 200 SKS 50/50 POZ
MIX @ 15.8 PPG. 1.15 CUFT/SK