

William F. Carr wcarr@hollandhart.com

February 1, 2011

#### VIA HAND DELIVERY

Mr. Daniel Sanchez
Acting Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
1220 South Saint Francis Drive
Santa Fe. New Mexico 87505

Cuse 14606

Re:

Application of Mewbourne Oil Company. for approval of a salt water disposal well, Eddy County, New Mexico.

Dear Mr. Sanchez:

Enclosed is an original and one copy of the application of Mewbourne Oil Company in the above-referenced case (Oil Conservation Division Form C-108) as well as a copy of a legal advertisement.

Mewbourne Oil Company requests that this matter be placed on the docket for the March 3, 2011 Examiner Hearings.

Very truly yours,

William F. Carr Ocean Munds-Dry

Attorneys for Chevron U.S.A., Inc.

Enclosures

cc: Oil Conservation Division

District II

1301 W. Grand Avenue

Artesia, New Mexico 88210

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108 Revised June 10, 2003

Case 14606

### APPLICATION FOR AUTHORIZATION TO INJECT

I.	PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage Application qualifies for administrative approval? Yes X No
II.	OPERATOR: Mewbourne Oil Company
	ADDRESS: 3901 S. Broadway Tyler, TX 75701
	CONTACT PARTY: Bryan Montgomery PHONE: (903) 561-2900_
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? YesXNo 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. See attached map.
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. See attached schematic for the Fairchild 24 #1
VII.	Attach data on the proposed operation, including:
	<ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,</li> <li>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.).</li> </ol>
*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: Bryan MontgomeryTITLE: Manager of Economics and Evaluations_
	NAME: Bryan Montgomery
*	E-MAIL ADDRESS: bmontgomery@mewbourne.com

#### III. WELL DATA

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

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

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

#### XIV. PROOF OF NOTICE

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

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

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

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

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

### INJECTION WELL DATA SHEET

OPERATOR: Mewbourne Oil Company

WELL NAME & NUMBER: Fairchild 13 #1 SWD

WELL LOCATION: 660 FSL & 660 FWL

FOOTAGE LOCATION

M UNIT LETTER 13 SECTION 19S TOWNSHIP 25E RANGE

WELLBORE SCHEMATIC (See Attached)

### **WELL CONSTRUCTION DATA**

Surface Casing

Hole Size: 14 3/4 in	Casing Size:9 5/8 in set at 1173 feet
Cemented with: 1050 sx.	orft
Top of Cement: surface	Method Determined: circulated
Intermediate	<u>Casing</u>
Hole Size:	Casing Size:
Cemented with:sx.	orft
Top of Cement:	Method Determined:
Production	Casing
Hole Size: 8 3/4 in	Casing Size: 7 in
Cemented with: 820 sx.	orft
Top of Cement: surface	Method Determined: circulated
Total Depth: Drill to 8200 feet	and set casing at 7800 feet
Injection In	nterval
7800 feet	To 8200 feet

Open Hole

### **INJECTION WELL DATA SHEET**

Tubing Size: 2 7/8 in Lining Material: TK99 plastic

Type of Packer: Arrowset 1X Nickel Plated (10,000#)

Packer Setting Depth: 7700 feet

Other Type of Tubing/Casing Seal (if applicable): None

### Additional Data

1. Is this a new well drilled for injection? No

If no, for what purpose was the well originally drilled? Canyon (Upper Penn) test.

Determined non-commercial and plugged in February, 1998 without any formation tests.

- 2. Name of the Injection Formation: Canyon (Upper Penn) Open hole
- 3. Name of Field or Pool (if applicable): North Dagger Draw Upper Penn
- 4. 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. No perforations.

See attached C103 plugging record from 1992.

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:

Overlying producing zone - Yeso at 2640 feet

Underlying producing zone – Strawn at 8210 feet

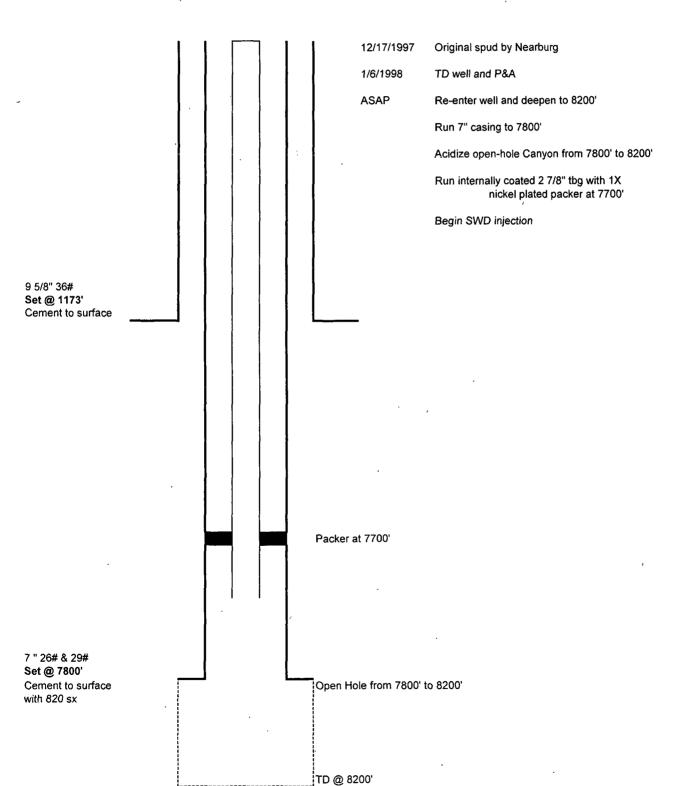
### **Proposed Wellbore Diagram**

Operator: Mewbourne Oil Company

Well Name: Fairchild "13" #1 SWD

Location: 660 FSL & 660 FWL Section 13 19S-25E Eddy Co, NM

API# 30-015-29729 Current status: P&A Updated by: B. Montgomery Date Updated: 1/21/11

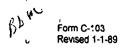


Submit's Copies to Appropriate District Office

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY

# State of New Mexico Eulergy, Minerals and Natural Resources Department



DATE

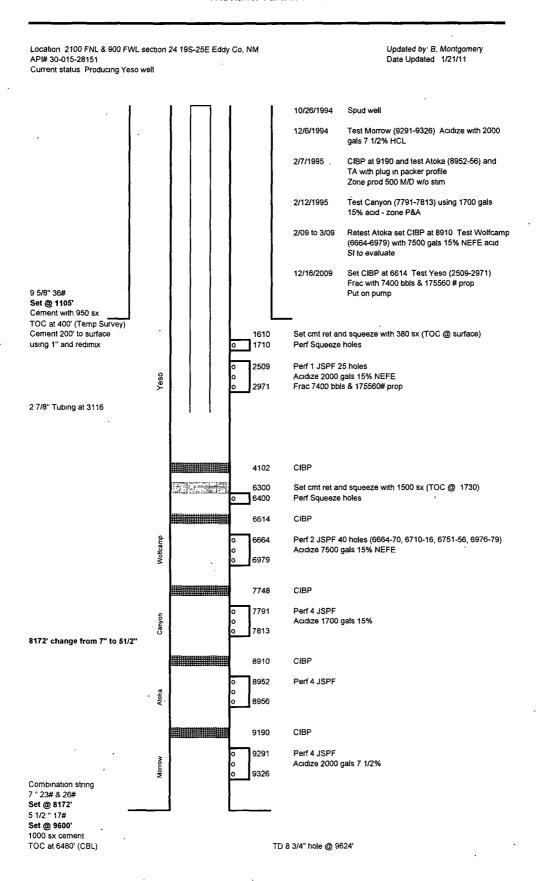
DISTRICT OIL CONSERVATIO	N DIVISION
2040 Pacheco St.	WELL API NO
<u>BISTINGT II</u>	505
P.O. Urawer DD, Artesia, NM 88210	
DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410	•State Oil & Gas Lease No.
SUNDRY NOTICES AND REPORTS ON WELL	S
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN (	OR PLUG BACK TO A Lease Name or Unit Agreement Name
Oii GAS	Fairchild "13"
2Name of Operator	aWell No.
2Address of Operator	∘Pool name or Wildcat
	Dagger Draw, Upper Penn, North
Unit Letter M 660 Feet From The South	Line and 660 Feet From The West Line
Section 13 Township 19S R.	ange 25E NMPM Eddy County
nelevation (Show whether DF, F	KB, RT, GR, etc.)
11 Check Appropriate Box to Indicate Na	ture 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 ANBANDONMENT X
PULL OR ALTER CASING	CASING TEST AND CEMENT JOB
OTHER:	OTHER:
	pertinent dates, including estimated date of starting any proposed
<ul> <li>4) Set 40 sx cement plug from 2,767'-2,648'.</li> <li>5) Set 60 sx cement plug from 1,241'-1,123'. WOC &amp; tag cmt at 1,144'</li> </ul>	well.
	·
I hereby certify that the information above is true and complete to the best of my knowledge	e and belief.
SIGNATURE - TITI	Manager of Drilling and Production DATE 2/20/98
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(This space for State Use) Simi W. Stemi	Ditait Supervisor 3/1/20

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123	Bogger Drew-	red 70 8000	87 20   10	Albertst Sovaniah	E-6096	3/11, 12.8 6 14)	Atoka (P/B)	Penn Disch	BHL 9	Hany en High-Fed 35 -   + -	- 61 	36l	<b>247</b> ./3 3	31 1.6.0 in the	1
,	-2 -2	d) property	Hearburg Expl. S-14-93	Nearburg 6   2006	Nearburo   Nearburo   12.1.200	S JATHUBER	7 12	2007	OHL "Gulf-Fed"	Marbob	N3or V-80 (753	1612 122	Yate 12.2	es Pet,etal	Yares Pcl 3/c/8EP Guif) # # Prorman_fr) # 07801 10/41-13-70)
71/A 17	of the end) 10 10 10 10 10 10 10 10 10 10 10 10 10 1	Abort Poster	Albert Foster	96820 2150 <u>90</u>	93197 530	15741 (Mark Prod.)	Nearburg Prod. J.M. Huberl Iromin Fed Hearbur TO 9400 WA4-73 74) Yeso Disc.	Wayne Han	WE VVPKID I	1 (	Gulf	Morbob	2073 II Pite	ch Ener.   Moutros	BEPAREMON JO Thomas
1527	VA 125	450 (0359)	Monsonto Chase To 170 Chase To 170 Chase To 170 Chase The 180 Chase The	(Mongonk	"Daromi-Fed "	Holstun TO 9550	YesoDisc.	Hedd 2	LOKEWOOD THE TOTAL	WL S BHL BH	Gulf Shugart 109754 BHLOIA4 E3 TS S	1 VB 707			C.R.Pearman, Moule

#### Wellbore Diagram

#### Operator: Nearburg Producing Company

Well Name. Fairchild 24 #1



### Fairchild 13 #1 SWD C-108

#### Additional Details

- VII. 1. Proposed average rate of 5000 bwpd and maximum rate of 10,000 bwpd.
  - 2. Closed system.
- 3. Proposed average injection pressure is unknown and the maximum injection pressure is 1560 psig (0.2 psi/ft).
- 4. Injection fluid will be from the Mewbourne Oil Company operated Yeso producing wells in the area. See attached water analysis for both the Yeso and Canyon produced water in this area and the water mixing reports of those waters.
  - 5. See attached analysis.
- VIII. 1. The proposed injection interval is in the Canyon (Upper Penn) formation which is a porous dolomite about 240' thick at depths 7843' 8083'.
  - 2. The underground fresh water aquifers (unnamed) are present at shallow depths down to about 750'. There are no known fresh water intervals underlying the injecting formation.
- IX. The proposed stimulation is an ope-hole acid treatment of 5000 gallons of 20% HCL.
- X. All logs were filed with the OCD in 1997 when the Fairchild 13 #1 was drilled.
- **XI.** See attached.
- XII. Mewbourne Oil Company has examined geologic and engineering data and has found that there is no evidence of faulting between the proposed disposal zone and any underground sources of drinking water.

### XIII. Proof of Notice

- 1. A certified letter, and a copy of this application, to offset operators are attached. Mewbourne Oil Company owns the surface.
- 2. N/A

### 1

### Fairchild 13 # 1 SWD C-108 Application Attachments # 7-4&5

Samples of produced water were all taken 1/20/11 on the following wells

Mewbourne Oil Co	Wyatt Draw 18/19 LD # 1H	Yeso horizontal	(Sec
18/19, T19S, R26E)			
Mewbourne Oil Co	Wyatt Draw 24/25 LE # 1H	Yeso horizontal	(Sec
24/25, T19S, R25E)			
Nearburg Producing	B & B # 4	Cisco/Canyon	(Sec 22, T19S,
R25E)			

These are the waters that would be commingled if Mewbourne Oil Company is granted permission to dispose water into Canyon zone we are requesting for the Fairchild 13 # 1 SWD well.

Samples were taken to BJ for complete composition analysis and are attached below.

Also attached are results of the compatibility study done by baker Hughes Petrolite.

The results concluded that these three waters are compatible together and could be commonly disposed of.



### Individual Water Analyses

	Summary	of Mixing Waters	
Sample Number	538168	538169	538170
Company	MEWBOURNE OIL CO	MEWBOURNE OIL CO	MEWBOURNE OIL CO
Lease	B & B C SISCO CANYON	WYATT DRAW 24/25	WYATT DRAW 18/19
Well	4	LE 1H	LD 1H
Sample Location	WELLHEAD .	WELLHEAD	WELLHEAD
Anions (mg/L)			
Chloride	1,842	89,335	5,432
Bicarbonate	976	988	780
Sulfate	2,330	4,287	2,827
Cations (mg/L)			·
Sodium	2,019	55,640	3,896
Magnesium	59.0	640	199
Calcium	444	2,743	762
Strontium	7 50	48.0	11.0
Barium	0.10	0.10	0 10
Iron	210	3.50	1.50
Potassium	26 0	560	27.0
Manganese	0.90	0.10	. 0.06
Anion/Cation Ratio	1.00	1.00	
TDS (mg/L)	7,726	•	
Density (g/cm)	1 01	1.10	1.01
Sampling Date	1/19/11	1/19/11	1/19/11
Account Manager	GENE ROGERS	GENE ROGERS	GENE ROGERS
Analyst	STACY SMITH	i .	
Analysis Date	1/21/11		18:
oH at time of sampling	7 50	· ·	
pH used in Calculations	7.50	7.00	7.50

### **Water Analysis Report**

BAKER HUGHES

Baker Petrolite

MEWBOURNE OIL CO B & B C SISCO CANYON

4

WELLHEAD

Account Manager GENE ROGERS

Summary of Enter	ed Data		Sample 538168 @ 75°F							
Sampling Date	1/19/11	Anions n	ng/l	meq/l	Cations	mg/i	meq/l			
Analysis Date	1/21/11	Chloride	1,842	52.0	Sodium	2,019	87.8			
Analyst	STACY SMITH	Bicarbonate	976	16.0	Magnesium	59.0	4.85			
·		Carbonate	0.00	0.00	Calcium	444	22.2			
TDS (mg/l or g/m³)	7,726	Sulfate	2,330	48.5	Strontium	7.50	0.17			
Density (g/cm³ or tonne/m³)	1.0060	Phosphate	N/A	N/A	Barium	0.10	0.00			
Anion/Cation Ratio	1 00	Borate	N/A	N/A	Iron	21.0	0.75			
		Silicate	N/A	N/A	Potassium	26.0	0 66			
Carbon Dioxide	120 PPM				Aluminum	N/A	N/A			
		Hydrogen Sulfide		493 PPM	Chromium	N/A	N/A			
					Copper	N/A	· N/A			
		pH at time of sampling	}	7.50	Lead	N/A	N/A			
		pH at time of analysis			Manganese	0.90	0.03			
		pH used in Calculation	ons	7.50	Nickel	N/A	N/A			

Specific ion interactions calculated for ions in bold faced type; other ions contribute to ionic strength

Cond	itions	V	Values Calculated at the Given Conditions - Amounts of Scale in lb/1000bbl											
Тетр.	Temp. Gauge Calcite Press. CaCO 3			Gypsum CaSO₄•2H₂O		Anhydrite CaSO₄		Celestite SrSO ₄		Barite BaSO₄				
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi		
80	0 00	1 09	· 96	-0.20	u	-0.27		-0.30		0 99	0.05	0 36		
100	0 00	1 19	109	-0 21	,	-0.22		-0.29		0.83	0.05	0 50		
120	0 00	1 29	.123	-0.22		-0.14		-0.27		0 71	0 05	0 66		
140	0 00	1.40	138	-0.21		-0 04		-0.25		0 60	0 04	0 85		

Precipitation of each scale is considered separately; total scale will be less than the sum of the amounts of the five scales.

The amount of scale indicates the severity of the problem; the index (equivalent to Stiff Davis SI) indicates how difficult it is to control the problem

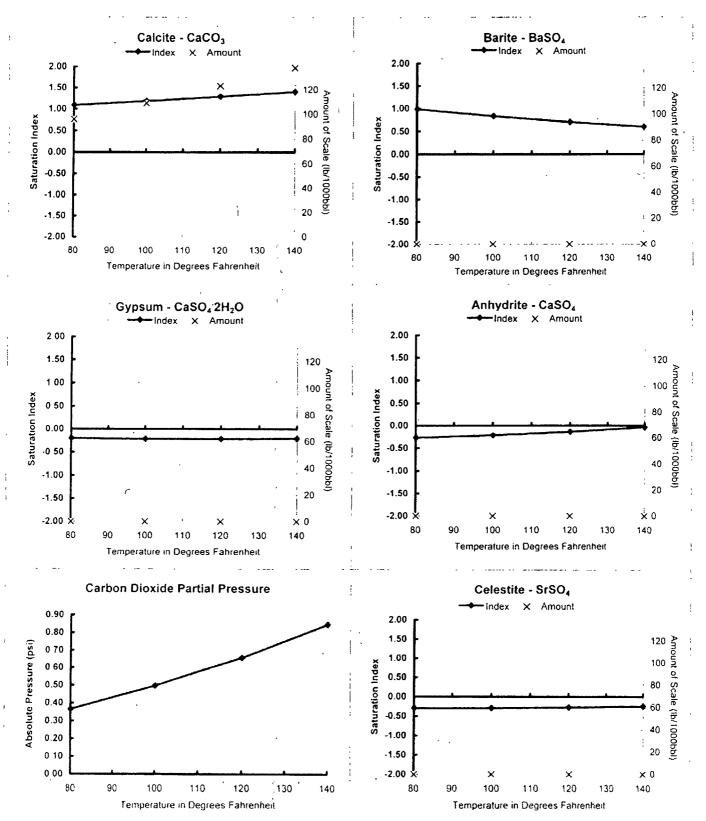
The CO<sub>2</sub> fugacity is reported. Under usual conditions it is essentially the same as the CO<sub>2</sub> partial pressure.

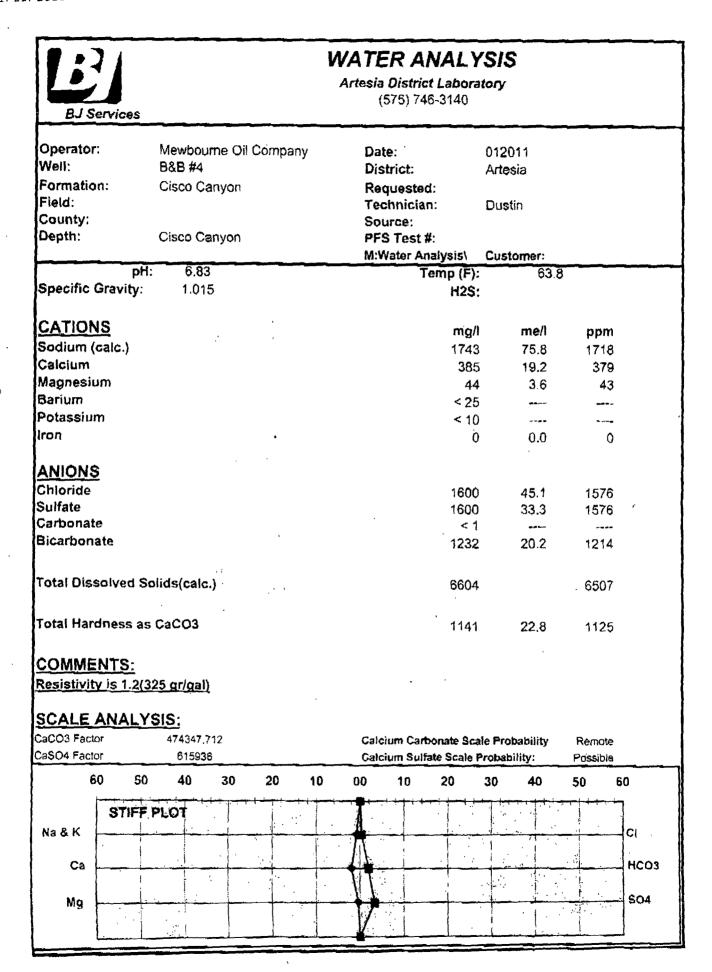
### **Scale Predictions**



For Sample 538168 @ 75°F from MEWBOURNE OIL CO , B & B C SISCO CANYON , 4 , WELLHEAD , Jan/21/11

Baker Petrolite







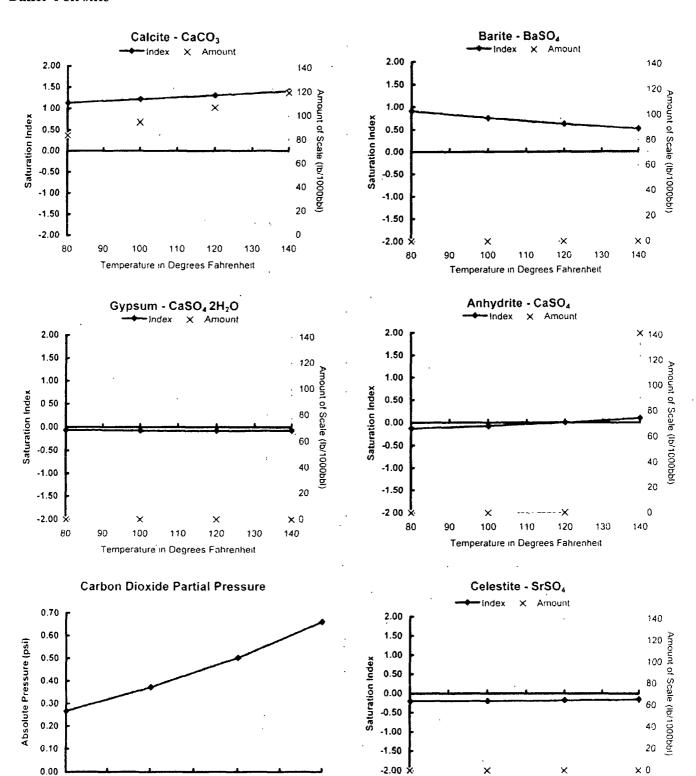
Temperature in Degrees Fahrenheit

Analysis: 47116



Barepi 1217125°F from MEWBOURNE OIL CO, WYATT DRAW 18/19, LD 1H, WELLHEAD, Jan/21/11

Baker Petrolite



Temperature in Degrees Fahrenheit

WATER ANALYSIS Artesia District Laboratory (575) 746-3140 **BJ Services** Operator: Mewbourne Oil Company 012011 Date: Well: Wyatt Draw District: Artesia 14/19 Formation: Yeso Requested: Field: Technician: Dustin County: Source: Depth: Yeso PFS Test #: M:Water Analysis\ Customer: pH: 6.8 Temp (F): 68.3 Specific Gravity: 1.015 H25: CATIONS mg/l me/l ppm Sodium (calc.) 683 29.7 673 Calcium 978 48.8 964 Magnesium 262 21.6 259 Barium < 25 **Potassium** < 10 \_\_\_\_ ----Iron 0 0.0 0 ANIONS Chloride 2000 56.4 1970 Sulfate 1600 33.3 1576 Carbonate < 1 **Bicarbonate** 634 10.4 625 Total Dissolved Solids(calc.) 6158 6067 Total Hardness as CaCO3 3524 70.4 3472 COMMENTS: Resistivity is .65(650 gr/gal) SCALE ANALYSIS: CaCO3 Factor 620722,336 Calcium Carbonate Scale Probability Possible CaSO4 Factor 1565504 Calcium Sulfate Scale Probability: Possible 60 50 40 30 20 10 00 10 20 30 40 50 60 STIFF PLOT Na & K CI Ca HCO3 **SO4** Mg



### Water Analysis Report

BAKER HUGHES

Baker Petrolite

MEWBOURNE OIL CO WYATT DRAW 24/25 LE 1H WELLHEAD

Account Manager GENE ROGERS

Summary of Enter	ed Data		Sample 538169 @ 75°F							
Sampling Date	1/19/11	Anions .	mg/l	meq/I	Cations	mg/l	meq/l			
Analysis Date	1/21/11	Chloride	89,335	2,520	Sodium	55,640	2,420			
Analyst	STACÝ SMITH	Bicarbonate	988	16.2	Magnesium	640	52.7			
		Carbonate	0.00	0.00	Calcium	2,743	137			
TDS (mg/l or g/m³)	154,244	Sulfate ```	4,287	89.3	Strontium	48.0	1.10			
Density (g/cm³ or tonne/m³)	1 1030	Phosphate	N/A	N/A	Barium	0.10	0.00			
Anion/Cation Ratio	1.00	Borate	N/A	N/A	iron	3.50	0.13			
	*	Silicate	N/A	N/A	Potassium	560	14 3			
Carbon Dioxide	· 600 PPM	ĺ	•		Aluminum	'N/A	N/A			
		Hydrogen Sulfide		340 PPM	Chromium	N/A	N/A			
					Copper	N/A	N/A			
,		pH at time of sampling	g	7.00	Lead	N/A	N/A			
		pH at time of analysis	- i		Manganese	0 10	0.00			
		pH used in Calculati	ions	7.00	Nickel	N/A	N/A			

Specific ion interactions calculated for ions in bold faced type, other ions contribute to ionic strength

Cond	itions	V	Values Calculated at the Given Conditions - Amounts of Scale in lb/1000bbl											
Тетр.	Gauge Press.	5   5415115		Gypsum CaSO <sub>4</sub> •2H <sub>2</sub> O		Anhydrite CaSO₄		Celestite SrSO ₄		Barite BaSO₄		CO <sub>2</sub>		
°F	psi	Index	Amount	Index	· Amount	Index	Amount	Index	Amount	Index	Amount	psi		
80	. 0 00	1.13	112	0.04	132	0.04	116	-0.00		0 43	0.03	0.76		
100	0 00	1 18	123	-0 03		0.04	110	-0.03		0.23	0.02	1 03		
120	0.00	1 22	134	-0 09		0.06	170	-0.05		0.06	0.01	1 37		
. 140	0.00	1 26	145	-0 13		0.11	· 283	-0 05		-0.09		1.80		

Precipitation of each scale is considered separately, total scale will be less than the sum of the amounts of the five scales

The amount of scale indicates the severity of the problem, the index (equivalent to Stiff Davis SI) indicates how difficult it is to control the problem

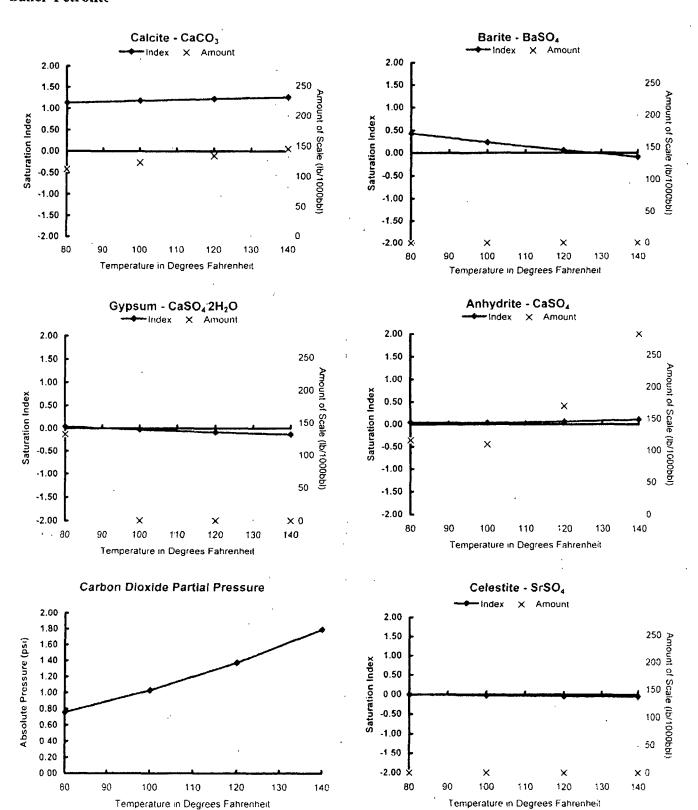
The CO<sub>2</sub> fugacity is reported. Under usual conditions it is essentially the same as the CO<sub>2</sub> partial pressure.





Barer 1216 R 25°F from MEWBOURNE OIL CO, WYATT DRAW 24/25, LE 1H, WELLHEAD, Jan/21/11

**Baker Petrolite** 



01/21/2011 16:23 5057462293

BJ Service	•		VATER ANALYSIS Artesia District Laboratory (575) 746-3140								
Operator: Well: Formation: Field: County: Depth:	Mewbourne Oil Company Wyatt Draw #2 4/25 Yeso Yeso	Date: District: Requested: Technician: Source: PFS Test #: M:Water Analysis\	012011 Artesia Dustin Customer:								
Specific Gravit	pH: 6.68 y: 1.105	Temp (F): H2S:									
CATIONS Sodium (calc.) Calcium Magnesium Barium Potassium		mg/l 128455 3609 486 < 25 < 10	5587.4 180.1 40.0	ppm 116249 3266 440							
ANIONS Chloride Sulfate Carbonate Bicarbonate		204000 1600 < 1 1196	33.3	184615 1448  1082							
Total Dissolved	:Solids(calc.)	339345		307100							
Total Hardness		11014	220.1	9967							
Resistivity is:1 SCALE ANA CaCO3 Factor CaSO4 Factor	(5,000 gr/gal)	Calcium Carbonate Sca Calcium Sulfate Scale I	•	Probable Possible							
60	50 40 30 20 10	00 10 20	30 40	50 80							
Na & K  Ca  Mg	FF PLOT			CI HCO3 SO4							



### Mixed Water Analysis Report

Mixes at 80°F and 0 psi

Mixa	Mixes of 538168 and 538169 with 538170. CaCO <sub>3</sub>		Predictions of Saturation Index and Amount of Scale in lb/1000bbl										
53816 53816			Gypsum CaSO₄•2H₂O		Anhydrite CaSO₄		Celestite SrSO <sub>4</sub>			Barite BaSO₄			
538168	538169	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi	
33%	34%	1 02	92.1	-0.17		-0.21		-0.17		0.60	0.04	0.45	

Precipitation of each scale is considered separately, total scale will be less than the sum of the amounts of the five scales.

The amount of scale indicates the severity of the problem; the index (equivalent to Stiff Davis SI) Indicates how difficult it is to control the problem. The CO<sub>2</sub> fugacity is calculated. Under usual conditions it is essentially the same as the CO<sub>2</sub> partial pressure.

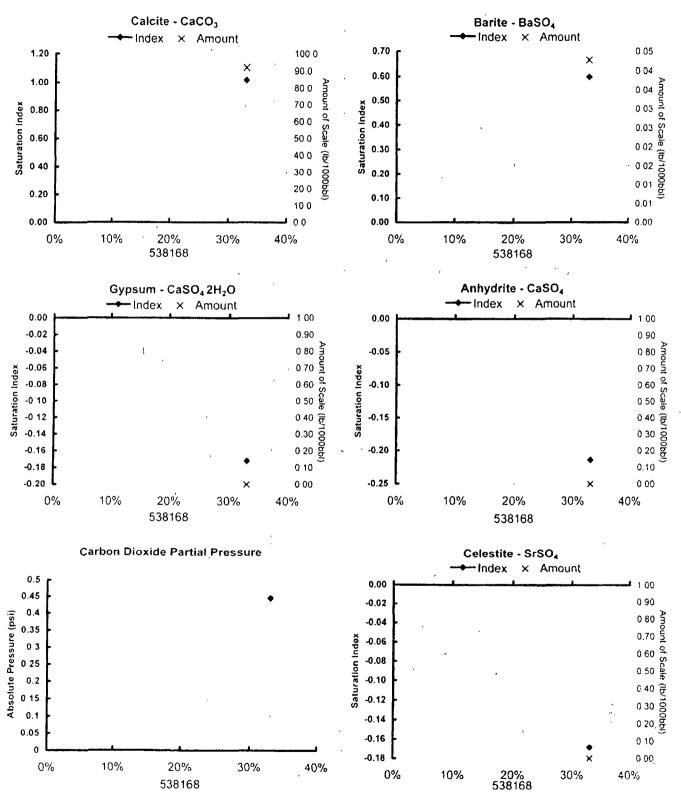
Disclaimer of Liability: Baker Petrolite Corporation and its affiliates (BPC) disclaim all warranties or representations express or implied, including any implied warranties of merchantability or fitness for a particular purpose or to the accuracy, correctness or completeness of such information herein or that reliance on such information will accomplish any particular result. All such information is furnished "as is" and by using such information the user is assuming all fiabilities for the use or reliance on such information. BPC SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES OR LOSSES FROM ANY CAUSE WHATSOEVER INCLUDING BUT NOT LIMITED TO ITS NEGLIGENCE.

		-	Complete W	later Com	positions	 	
538168	538169	538170					
33 0%	34.0%	33.0%					

Predictions

ad 538169 with 538170 at 80°F and 0 psi **Baker Petrolite** 





### Fairchild 13 # 1 SWD C-108 Application Attachments # 11

Samples were all taken 1/21/11

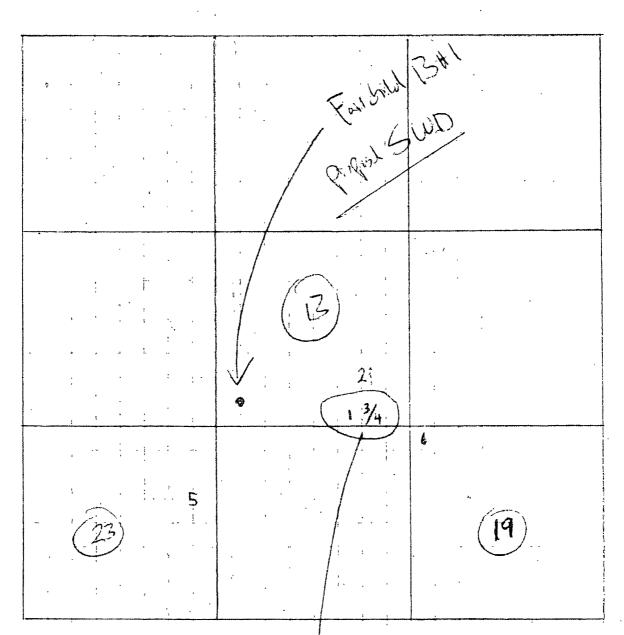
Samples were all taken in three wells in the SE4 of Section 13 approximately 3300' due East of proposed SWD site.

The New Mexico Office of State Engineer showed there to be 6 fresh water wells in this 1 mile radius. One of the six was never drilled, another is without pump or unable to produce now, and another had no trespassing signs up all around the property with dogs, and no means of getting in touch with property owners. We have provided here samples from the 3 closes fresh water wells. I spoke to Richard Ezeanyim w/OCD and he told me that the samples collected from these three wells would be more than adequate to satisfy this portion of the application.



# BRANDON & CLARK, INC.

Keeping Industry Humming SINCE 1950 Sales - Service - Repair - Installation



Samples taken from taken

Samples taken from topen

Samples taken to several some topen

Samples taken to several some topen

Samples taken topen

To

有的政府的 克拉特维拉尔 人名约尔德人西特尔特尔罗 一种的现在分词 医克拉维维性抗原药

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### New Mexico Office of the State Engineer

# **Point of Diversion by Location**

(with Owner Information)

(acre ft per annum)						(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)			(NAD83 UTM in meters)					
		Sub							9 9.	q.				
	WR File Nbr	basin Us	se Diversion	Owner	Count	y POD Number	Grant	S	ource 6416	4 Sec	Tws Rng	- X	Y D	istance
Ì	RA 09295	E>	(P :	3 COX JOE	. ED	RA 09295		S	nallow 4 3	4 13	19S 25E	552979	3613115*	764
4	RA 07864	DC.	DM (	0 J.T ROSS	ED	RA 07864		-	•	4 13	19S 25E	553081	3613417*	803
7	RA 09293	- DC	эм :	3 COX JOE	. ED	RA 09293		SI	nallow 3 4	4 13	19S 25E	553180	3613114*	952
щ	RA 09294	EX	(P;	3 COX JOE	ED	RA 09294		Si	nallow 3 4	4 13	19S 25È	553180	3613114*	952
ή,	RA 10407	, DC	DL (	O JOAN MULLARKEY	ED	RA 10407		- S	nallow 4	2 23	19S 25E	551678	3612409*	1174
6	RA 08611	DC	om :	3 JOSEPH B HUBER	ED	RA 08611		Si	nallow 1 1	1 19	19S 26E	553583	3612909*	1401

Record Count: 6

POD Search:

POD Basin: Roswell Artesian

UTMNAD83 Radius Search (in meters):

Easting (X): 552278

Northing (Y): 3613419

Radius: 1609.4

Sorted by: Distance

neters

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data

1/19/11 5:03 PM

<sup>&#</sup>x27;UTM location was derived from PLSS - see Help



# **Water Analysis**

Date: 22-Jan-11

2708 West County Road, Hobbs NM 88240 Phone (505) 392-5556 Fax (505) 392-7307

### **Analyzed For**

Company	V	lell Name	Cou	inty	State		
Mewbourne		Lisas	Lea		New Mexico		
Sample Source	Sourc	e	Sample #	,	1		
Formation			Depth				
Specific Gravity	1.000		SG @ 6	60 °F	1.002		
рН	7.18		Sul	fides	Absent		
Temperature (°F)	70		Reducing Ag	gents			
Cations							
Sodium (Calc)		in Mg/L	655	in PPM	654		
Calcium		in Mg/L	316	in PPM	315 -		
Magnesium		in Mg/L	48	in PPM	48		
Soluable Iron (FE2)		ın Mg/L	0.0	in PPM	0		
Anions				v see s 4000 ° ≏ chillion w			
Chlorides		in Mg/L	200	in PPM	200		
Sulfates		in Mg/L	2,000	in PPM	1,996		
Bicarbonates		ın Mg/L	59	in PPM	58		
Total Hardness (as CaCO	3)	in Mg/L	990	in PPM	988		
Total Dissolved Solids (Ca	alc)	in Mg/L	3,278	in PPM	3,271		
Equivalent NaCl Concentr	ation	in Mg/L	2,263	in PPM	2,258		
Scaling Tendencies				,			
*Calcium Carbonate Index Below 500,00	0 Remote / 500	.000 - 1 000,00	00 Possible / Above 1,	000,000 Probab	18,505 te		
*Calcium Sulfate (Gyp) Inc		000 - 10,000 0	0 Possible / Above 10.	000 000 Probat	<b>632,000</b>		
*This Calculation is only an app treatment.	roximation an	d is only valld	before treatment of	a well or sever	al weeks after		
Remarks rw=5@701	<del> </del>		, '	ALL E TO B AND	,		



# **Water Analysis**

Date: 22-Jan-11

2708 West County Road, Hobbs NM 88240 Phone (505) 392-5556 Fax (505) 392-7307

### **Analyzed For**

	Ross East	L	ea	N	
			ca	New Mexico	
Source		Sample #		1	
		Depth		·	
1.000		SG @	60 °F	1.002	
7.24		Su	lfides	Absent	
70		Reducing A	gents		
		,	. ;		
بفسو و الوجو الديات الديات الديات	in Mg/L	655	in PPM	654	
	in <b>M</b> g/L	316	in PPM	315	
	in Mg/L	48	in PPM	48	
' i	in Mg/L	0.0	ın PPM	0	
	** <b>**</b> * * * * * *				
	in Mg/L	200	in PPM	200	
	in Mg/L	2,000	in PPM	1,996	
	in Mg/L	59	ın PPM	58	
	ın Mg/L	990	in PPM	988	
)	in Mg/L	3,278	in PPM	3,271	
ion	in Mg/L	2,263	in PPM	2,258	
			,		
emote / 500	.000 - 1.000,00	0 Possible / Above 1	000,000 Probable	18,505	
	000 - 10 000 O	O Possible / Above 10	.000,000 Probabl	632,000 e	
dmation an	d is only valld	before treatment of	a well or severa	weeks after	
	7.24 70 ion Remote / 500 emote / 500	in Mg/L	1.000 SG @ (7.24 Su 70 Reducing Ag  in Mg/L 655 in Mg/L 316 in Mg/L 48 in Mg/L 0.0  in Mg/L 2,000 in Mg/L 2,000 in Mg/L 59  In Mg/L 990 in Mg/L 3,278 ion in Mg/L 3,278 ion in Mg/L 2,263	1.000 SG @ 60 °F 7.24 Sulfides 70 Reducing Agents  in Mg/L 655 in PPM in Mg/L 316 in PPM in Mg/L 48 in PPM in Mg/L 0.0 in PPM in Mg/L 200 in PPM in Mg/L 2,000 in PPM in Mg/L 59 in PPM in Mg/L 59 in PPM in Mg/L 3,278 in PPM in Mg/L 3,278 in PPM in Mg/L 3,278 in PPM in Mg/L 2,263 in PPM	



# **Water Analysis**

Date: 22-Jan-11

2708 West County Road, Hobbs NM 88240 Phone (505) 392-5556 Fax (505) 392-7307

### **Analyzed For**

Company	V	Vell Name	Co	ounty	State	
Mewbourne	F	Ross West	Lea		New Mexico	
Sample Source	Source		Sample #		1 į	
Formation			Depth			
Specific Gravity	1.000		SG @	60 °F	1.002	
pН	7.22		St	ulfides	Absent	
Temperature (°F)	70	•	Reducing A	gents		
Cations						
Sodium (Calc)		in Mg/L	670	in PPM	669	
Calcium		in Mg/L	300	in PPM	299	
Magnesium	1	in Mg/L	48 .	in PPM	48	
Soluable Iron (FE2)		ın Mg/L	0.0	in PPM	0	
Anions				<del></del> .		
Chlorides		in <b>Mg/L</b>	200	in PPM	200	
Sulfates		in Mg/L	2,000	in PPM	1,996	
Bicarbonates		in Mg/L	, 49 ·	in PPM	49	
Total Hardness (as CaCO	3)	in Mg/L	950	in PPM	948	
Total Dissolved Solids (Ca	ilc)	in Mg/L	3,267	in PPM	3,260	
Equivalent NaCl Concentr	ation	in Mg/L	2,260	in PPM	2,255	
Scaling Tendencies	,					
Calcium Carbonate Index Below 500,000	) Remote / 500	0,000 - 1,000.00	0 Possible / Above	1,000,000 Probab	14,640 le	
Calcium Sulfate (Gyp) Ind Below 500,000		,000 - 10,000,0	0 Possible / Above 1	0.000.000 Probat	600,000	
This Calculation is only an app eatment.	roximation an	d is only valid	before treatment o	f a well or sever	al weeks after	

CASE 14606.

Application of Mewbourne Oil Company for approval of a salt water disposal well, Eddy County, New Mexico. Applicant seeks approval to utilize its Fairchild "13" Well No. 1 (API No. 30-015-29729) located 660 feet from the South and West lines (Unit M) of Section 13, Township 19 South, Range 25 East, NMPM, to inject up to 10,000 barrels of water per day, at a maximum pressure of 1560 psi, into the into the Canyon (Upper Pennsylvanian) formation in the open-hole interval from 7800 feet to 8200 feet. This well is located approximately 12 miles south of Artesia, New Mexico.