GOVERNOR

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION HOBBS DISTRICT OFFICE

96

POST OFFICE BOX 1980 HOBBS, NEW MEXICO 88241-1980 (505) 393-6161

OIL CONSERVATION DIVISION P. O. BOX 2088 SANTA FE, NEW MEXICO 87501

WFX- 691

RE: Proposed: MC______ DHC_____ NSL_____ NSP_____ SWD_____ WFX____ PMX____

Gentlemen:

I have examined the application for the: <u>Hates Drilling Co Cactus Queen Unit</u> <u>4</u>14-N <u>34-12-31</u> <u>Derator</u> <u>Lease & Well No. Unit</u> <u>S-T-R</u>

and my recommendations are as follows:

70

Yours very truly Jerry v₹.op Supervisor, District 1

/ed

ENERG	STATE OF NEW MEXICO DIL CONSERVATION DIVISION FORM C-108 Y AND MINERALS DEPA' 'ENT POST OFFICE BOX 2018 STATE LAND OFFICE BUILDING SANTA FE NEW MEXICO B/201
APPLICA	TION FOR AUTHORIZATION TO INJECT
Ι.	Purpose: 🛛 Secondary Recovery 🗋 Pressure Maintenance 🗌 Disposal 🔲 Storage Application qualifies for administrative approval? 🗌 yes 🔍 no
11.	Operator: <u>Yates Drilling Company</u>
	Address: 105 South 4th Street, Artesia, NM 88210
	Contact party: Tobin L. Rhodes Phone: 505-748-4500
111.	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? ves no If yes, give the Division order number authorizing the project <u>R-9075</u>
۷.	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 identifics 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:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
*VIII.	Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological 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 source 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 avai]able 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 source 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: Tobin La Rhodes Title Petroleum Engineer Signature: Ohi J. Clor Date: 7-15-96
	Signature: Oli 7 1000 Date: Date: 7-15-96
submi	ne information required under Sections VI, VIII, X, and XI above has been previously tted, it need not be duplicated and resubmitted. Please show the date and circumstance ne carlier submittal.

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NEW MEXICO OIL CONSERVATION DIVISION Form C-108 (Data)

Application of Yates Drilling Company For Authorization to Inject Water Into Cactus Queen Unit #14 N-34-12S-31E Chaves County, New Mexico

I. Purpose

Application is made for administrative authorization to inject water into the Queen formation underlying the existing boundaries of the Cactus Queen Unit by utilizing the Cactus Queen Unit #14 well as an injection well. The existing unit is a currently active secondary recovery unit in Sections 27 and 34 of Township 12 South, Range 31 East, Chaves County, New Mexico.

II. Operator

Yates Drilling Company 105 South 4th Street Artesia, New Mexico 88210 (505) 748-4500 Contact: Tobin L. Rhodes

III. Injection Well Data

A well data sheet is attached for the proposed injection well. There is also a downhole schematic depicting how the well will be configured if this application is approved.

IV. Existing Project

The proposed injection well lies within the boundaries of the existing Cactus Queen Unit. No expansion of the boundaries of the existing unit is proposed. The unit was approved by order R-9075-A, dated March 15, 1990 and expanded by order R-9075-A-1, dated January 26, 1993. Permission to inject into selected wells within the Cactus Queen Unit was granted March 15, 1990 by authority of order R-9075-B and injection into the expanded unit was granted under order R-9075-B-1, dated January 26, 1993.

V. Area of Review

A lease ownership map is attached which identifies all wells and lease ownership within two miles of the proposed injection well. The area of review has been identified by drawing a one half mile radius around the proposed injection well on the attached base map.

VI. Well Data

There are presently ten wells, including the proposed injection well, within the area of review. There are no wells within the area of review that have been plugged and abandoned. There are three wells within the area of review that are active injection wells, injecting water into the Queen formation. There are seven wells that are active producing oil wells, producing from the Queen formation. Available data for each of these wells is included in a well data sheet.

VII. Project Data

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- 1. The proposed daily average water injection rate is expected to be approximately 200 barrels per day for the proposed injection well. The maximum injection rate for the proposed injection well will be based on fracture pressures as determined by step-rate pressure tests to be conducted on the injection well. The maximum injection rate is expected to be less than 400 barrels per day.
- 2. Produced water and fresh water from the supply well will be stored in covered fiberglass storage tanks.
- 3. Initially, this injection well may take water on a vacuum, but as the reservoir fills a positive surface injection pressure will be required to inject water. The maximum injection pressure will also be determined by the planned step-rate pressure tests. At no time prior to the step-rate tests will the injection pressure exceed a pressure limitation of 0.2 PSIG per foot of depth to the top of the injection interval.

- 4. The source of injection fluid will be produced water from the Queen formation and fresh water from our fresh water well producing from the Ogollala Aquifer.
- 5. The Ogollala has been the source of water for many Queen waterfloods for many years without significant compatibility problems. We have had compatibility tests run with no compatibility problems observed.

VIII. Geologic Data:

The Cactus Queen Unit produces from the upper sandstone member of the Queen formation, upper Guadalupian series, Permian system. The average producing depth in the field is approximately 2990 feet.

The productive/injection interval, as indicated from a whole core analysis on the Cactus Queen Unit #6 (330' FNL & 1980' FEL, Section 34-12S-31E, Chaves County, New Mexico) and from sidewall cores from numerous wells, is fine grained, friable, gray quartz sandstone. The grains are subangular to subrounded and well sorted. The cementing materials are anhydrite and dolomite. The exact depositional environment is unknown. Porosity and permeability are intergrandular in nature. The sandstone is not naturally fractured.

The Cactus Queen Unit reservoir is a stratigraphic trap. Cementation of the sandstone results in the loss of porosity and permeability, creating a barrier on all sides with the exception of the east. An oil/water contact has been established on the eastern edge of the reservoir.

The primary source of fresh water in this area is the Ogollala formation of Tertiary age, the base of which is estimated to be 300 feet below the surface. This aguifer is protected behind the surface casing and cement of the proposed injection well. The Chinlee formation is also a fresh water aquifer which immediately underlies the Ogollala formation. The base of the Chinlee is estimated to be approximately 500 feet below the surface in the unit area.

IX. Stimulation Program

The proposed injection well has previously received a fracture treatment. The details of this treatment is outlined in the data sheet for the well.

This well may require a small clean-up acid treatment prior to injection. If needed we will treat the well with 500 to 1000 gallons of 7 1/2% hydrochloric acid. This treatment should insure that existing perforations are open and that the well will accept water at the lowest possible pressure.

X. Well Logs

Well logs for the subject well have previously been submitted to the Hobbs office of the NMOCD.

XI. Fresh Water

The office of the State Engineer in Roswell has a record of seven wells within one mile of the unit area. The exact total depth of the wells is unknown, however all wells are assumed to be producing from the Ogollala formation. A water analysis was conducted on four of the wells. A copy of each analysis is attached.

XII. Injection Zone Isolation

Available engineering and geologic data has been examined and no evidence of open faulting or any other hydrologic connection between the injection zone and any underground source of drinking water has been found.

XIII. Proof of Notice

A listing of off-set leasehold operators within one half-mile of the proposed injection well and the surface owner(s) that have received a copy of this application by certified mail is attached.

XIV. Certification

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I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Juli & Run

PETROLEUM ENGINEER

July 15, 1996

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YATES DRILLI BASE MAP-SE CHA	
DATE: 06-04-96	
SCALE : 1" = 1000'	DRAFT\92086-C JF

WELL	GARNER FEDERAL #1	GARNER FEDERAL #4	GARNER FEDERAL #5	TAO FEDERAL #1	CQU UNIT #8	CQU UNIT #10
LOCATION	D-3-13S-31E	0-34-12S-31E	C-3-13S-31E	B-3-13S-31E	F-34-12S-31E	L-34-12S-31E
	Chaves County, NM	Chaves County, NM	Chaves County, NM	Chaves County, NM	Chaves County, NM	Chaves County, NM
OPERATOR	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Circle Ridge Production, Inc.	Yates Drilling Company	Yates Drilling Company
COMPLETION DATE	1-Mar-84	7-Jul-84	14-Aug-84	6-Jun-84	7-Apr-84	1-Sep-82
TOTAL DEPTH	2925 Feet	3108 Feet	2900 Feet	3114 Feet	3,100 Feet	2,900 Feet
CASING PROGRAM	8 5/8" @ 374' W/300 Sxs.	8 5/8" @ 408' W/250 Sxs.	8 5/8" @ 371' W/230 Sxs.	8 5/8" @ 566' W/225 Sxs.	8 5/8" @ 450' W/300 Sxs.	8 5/8" 🗭 400' W/240 Sxs.
	5 1/2" @ 2,920' W/ 230 Sxs.	5 1/2" @ 3108" W/ 250 Sxs.	5 1/2" @ 2891' W/ 235 Sxs.	5 1/2" @ 3114' W/ 252 Sxs.	5 1/2" @ 3,080' W/ 360 Sxs.	4 1/2" @ 2,900 W/ 250 Sxs.
PERFORATIONS	2695'-2701'	2989'-2997'	2773'-2789'	2983'-3003'	2874'-2882'	2718'-2748'
COMPLETION RECORD	Frac'd w/ 750 gals. 15% HCL	Frac'd w/ 1000 gals. 15% HCL	Frac'd w/ 1500 gals. 15% HCL	Frac'd w/ 500 gals. 15% HCL	Frac'd w/ 750 gals. 15% NE	Frac'd w/ 2,500 gals. 15% MCA
	30,000 gals. gelled water	35,000 gals. gelled water	14,215# 20/40 Sand	20,000 gals. gelled water	20,000 gals. gelled water	10,000 gals. gelled water
	24,000# 20/40 Sand	25% CO2 and Frac 30	13,500# 10/20 Sand	20,000# Sand	25% CO2	7,000# 20/40 Sand
	12,500# 10/20 Sand	43,000# 20/40 Sand			16,500# 20/40 Sand	6,800# 12/20 Sand
		22,000# 12/20 Sand			6,000# 12/20 Sand	
CURRENT STATUS	Pumping	Pumping	Pumping	Pumping	Pumping	Injection

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WELL	CQU UNIT #11	CQU UNIT #12	CQU UNIT #13	CQU UNIT #14
LOCATION	K-34-12S-31E	J-34-12S-31E	M-34-12S-31E	N-34-12S-31E
	Chaves County, NM	Chaves County, NM	Chaves County, NM	Chaves County, NM
OPERATOR	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company
COMPLETION DATE	1-Mar-84	1-Jun-84	9-Feb-84	12-Dec-83
TOTAL DEPTH	2,925 Feet	3100 Feet	2,925 Feet	2,925 Feet
CASING PROGRAM	8 5/8" @ 374' W/275 Sxs.	8 5/8" @ 410' W/250 Sxs.	8 5/8" @ 368' W/265 Sxs.	8 5/8" @ 390' W/220 Sxs.
	5 1/2" @ 2,915' W/ 250 Sxs.	5 1/2" @ 3,098' W/ 550 Sxs.	5 1/2" @ 2,925' W/ 250 Sxs.	5 1/2" @ 2,925' W/ 950 Sxs.
PERFORATIONS	2773'-2781'	2982'-2990'	2723'-2730'	2760'-2765'
COMPLETION RECORD	Frac'd w/ 750 gals. 15% HCL	Frac'd w/ 750 gals. 15% HCL	Frac'd w/ 750 gals. 15% HCL	Frac'd w/ 15,000 gais gelied water
	20,000 gals. gelled water	20,000 gals. gelled water	15,000 gals. geiled water	5,000 gals. CO2
	16,000 20/40 Sand	16,500# 20/40 Sand	5,000 gals. CO2	16,500 # 20/40 Sand
	6,000# 12/20 Sand	1,700# 12/20 Sand	16,500# 20/40 Sand	7,000 # 10/20 Sand
			6,000# 10/20 Sand	
CURRENT STATUS	Pumping	Injection	Injection	Pumping

WELL DATA SHEET

YATES DRILLING COMPANY OPERATOR: CACTUS QUEEN UNIT #14 LEASE: 990' FSL & 1650' FWL LOCATION: Section 34-12S-31E FOOTAGE: Chaves County, New Mexico COUNTY, STATE: November 16, 1983 SPUD DATE: December 12, 1983 COMPLETION DATE: CURRENT STATUS: Active producing well - Queen Active injection well - Queen PROPOSED STATUS:

TUBULAR DATA

SURFACE CASING		PRODUCTION CAS	<u>NG</u>
CASING GRADE: DEPTH SET: CEMENT USED:	8.625" 24.000 POUNDS/FOOT J-55 390' 220 SXS. 0' CIRCULATE 12.25"	CASING SIZE:	5.5" 14.000 POUNDS/FOOT J-55 2925' 950 SXS. 0"
		PLUG BACK:	2880'

INJECTION OR PRODUCING INTERVAL

INTERVAL TOP:2760'INTERVAL BOTTOM:2765'COMMENTS:PerforatedPREVIOUS STIMULATION:15,000 gals. 30#/1000 gelled KCL water, 5000 gals. CO2,
16,500# 20/40 and 7,000# 10/20 sand.PROPOSED STIMULATION:500-1000 gallons of 7 1/2% HCL to clean perforations.

TUBING:

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TUBING SIZE: 2.375" PACKER: Nickel plated tension packer LINED WITH: Plastic DEPTH TO BE SET: 2713.45'

OTHER DATA

- 1. NAME OF INJECTION OR PRODUCING INTERVAL: Queen
- 2. NAME OF FIELD OR POOL (IF APPLICABLE): SE Chaves Queen
- IS THIS A NEW WELL DRILLED FOR INJECTION?
 No
 IF NO, FOR WHAT PURPOSE WAS THE WELL ORIGINALLY DRILLED?
 This well was originally drilled as a Queen producing well.
- HAS WELL EVER BEEN PERFORATED IN ANY OTHER ZONE(S)?
 No
 LIST ALL SUCH PERFORATED INTERVALS AND GIVE PLUGGING DETAILS (SACKS OF CEMENT OR BRIDGE PLUG (S) USED):
 None
- GIVE DEPTH TO AND NAME OF ANY OVERLYING AND/OR UNDERLYING OIL OR GAS ZONES (POOLS) IN THIS AREA: There has never been any production from any formation other that the Queen in the area surrounding this well.
- IF WELL IS PLUGGED AND ABANDONED, LIST DETAILS OF PLUGGING AND ATTACH SCHEMATIC. Not applicable.

CACTUS QUEEN UNIT #14 N34-12S-31E CHAVES COUNTY, NM



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SEC	: TWN	I I RNG	IUNIT	I OF	1	T D	1	. :	
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	1125	131E	IK	17	1	148	IDOM:	! !L499:	====: 7
	125	131E	1 P	12	1	160	DOM.	1664	
26	125	131E	ΙE	12	ł	166	IDOM. & STH	K 1L674	
		131E	16	17	17		IRR.	L211	
			10	17	1	178	COM. (OIL	& GAS)11956	6
		131E	10	17	1	198	ICOM., DOM.	. & STK!L674	9
		131E	H	17	1	160	IDOM. & STH	K 1L665	
		131E	lF	I NW		55	DOM.	L4170	
			IJOP	17	17		17	L293	-
		131E	łΚ	ISE	:	170	I WF	113460	-
		131E	1P	ISE	ł	220	IWF	11346	
		¦31E	I M	ISW	1	170	ICOM. & STH	< /L3831	
		31E	١M	ISW	1	165	ICOM. & STH	< :L383;	•
		31E	¦Н	ISW	1		IDEC.	113834	
		31E	Η.	17	17		IWF	. 114295	
		131E	ΙΗ İ	INE	1	196	ISRO	L3914	
		131E	Η	ISW	1	165	IDEC.	11383;	
		131E	l P	ISE	17		12	113808	-
		131E	¦I	INE	1	216	ISRO	12000	
		131E	IA	17	1		ISRO	113460	
13	1135	131E	ABCD	17	12		IOWD	112933	
24	1139	131E	1 H	INE	1	196	IND.	11270	
35	1138	131E	¦F	ISW	12	~	IDOM.	12849	

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Petrolite Corporation 422 West Main Street Artesia, NM 88210-2041

TRETOLITE DIVISION

(505) 746-3588 Fax (505) 746-3580

> Reply to: P.O. Box 1140 Artesia, NM 88211-7531

	-				8
	s : ARTESIA, NM		Date Date Sampled Analysis No.		
	ANALYSIS		mg/L		* meq/L
1.	рн	7.1			
2.	H2S	0 PPM			
з.	- <u>F</u>				
4.		ls	690.3		
5.	- <u>-</u>		NR		
	Dissolved Oxygen		NR		
7.	Dissolved CO2		NR		
8.			NR		
9.	• • • • • • • • • • • • • • • • • • • •	- • •			
10.	Methyl Orange Alkalir	- • •			
11.	Bicarbonate	HCO3		нсоз	4.2
	Chloride	Cl	106.0	Cl	3.0
13.		SO4	125.0	SO4	2.6
	Calcium	Ca	74.0	Ca	3.7
15.	Magnesium	Mg	12.2	Mg	1.0
16.	Sodium (calculated)	Na	117.1	Na	5.1
17.	Iron	Fe	0		
	Barium	Ba	NR		
19. 20.	Strontium	Sr	NR 225 O		
20.	Total Hardness (CaCO3)	235.0		

WATER ANALYSIS REPORT

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt	X meq/L	= mg/L
++				
4 *Ca < *HCO3 4	Ca(HCO3)2	81.0	3.7	299
/>	CaSO4	68.1		
1 *Mg> *SO4 3	CaCl2	55.5		
<	Mg(HCO3)2	73.2	0.5	37
5 *Na> *Cl 3	MgSO4	60.2	0.5	30
++ ++	MgCl2	47.6		
Saturation Values Dist. Water 20 C	NaHCO3	84.0		
CaCO3 13 mg/L	Na2SO4	71.0	2.1	149
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	3.0	175
BaSO4 2.4 mg/L				

REMARKS:

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Petrolite Oilfield Chemicals Group

Respectfully submitted, SHAWNA MATTHEWS

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SHAWNA M



Petrolite Corporation 422 West Main Street Artesia, NM 88210-2041

TRETOLITE DIVISION

(505) 746-3588 Fax (505) 746-3580

Reply to:

		WATER ANALYSIS			P.O. Bo» Artesi	k 1140 a, NM I-7531
Addres Lease Well	y : YATES DRIN s : ARTESIA, N : TIVIS : RANCH HOUS Pt. :	М	Date Date Sampled Analysis No.			
	ANALYSIS		mg/L		* meq/L	
4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	Suspended Solids Dissolved Oxygen Dissolved CO2 Oil In Water Phenolphthalein Al Methyl Orange Alka Bicarbonate Chloride Sulfate	olids kalinity (CaCO3)		HCO3 C1 SO4	3.8 3.0 3.6	
	Calcium Magnesium Sodium (calculated Iron Barium Strontium Total Hardness (Ca	Fe Ba Sr	102.0 6.1 110.9 0 NR NR 280.0	Ca Mg Na	5.1 0.5 4.8	

PROBABLE MINERAL COMPOSITION

<pre>*milli equivalents per Liter ++</pre>	Compound Equiv wt X meq/L = mg/	/L	
5 *Ca < *HCO3	Ca(HCO3)2 81.0 3.8 307 CaSO4 68.1 1.3 89 CaCl2 55.5 Mg(HCO3)2 73.2		
5 *Na> *Cl 3 ++ ++ Saturation Values Dist. Water 20 C	MgSO4 60.2 0.5 30 MgCl2 47.6 NaHCO3 84.0)	
CaCO3 13 mg/L CaSO4 * 2H2O 2090 mg/L BaSO4 2.4 mg/L	Na2SO4 71.0 1.8 130 NaCl 58.4 3.0 175	-	

REMARKS:

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TRETOLITE DIVISION

Petrolite Corporation 422 West Main Street Artesia, NM 88210-2041

> (505) 746-3588 Fax (505) 746-3580

> > Reply to:

		WATER ANALYSIS			P.O. Box 1140 Artesia, NM 88211-7531
Addres Lease Well	: GRAHAM		Date Date Sampled Analysis No.		
	ANALYSIS		mg/L	* meq	/L
3. 4. 5. 6. 7.	pH H2S Specific Gravity Total Dissolved Sol	ids alinity (CaCO3)	1102.7 NR NR NR NR		
12. 13. 14. 15. 16. 17. 18. 19.	Bicarbonate Chloride Sulfate Calcium Magnesium Sodium (calculated) Iron Barium Strontium Total Hardness (CaC	HCO3 Cl SO4 Ca Mg Na Fe Ba Sr	127.0 400.0 106.0	•••	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X	meq/L	= mg/L
+===+ +++==+				~~
5 *Ca < *HCO3 4	Ca(HCO3)2	81.0	4.0	324
/>	CaSO4	68.1	1.3	88
2 *Mg> *SO4 8	CaCl2	55.5		
</td <td>Mg(HCO3)2</td> <td>73.2</td> <td></td> <td></td>	Mg(HCO3)2	73.2		
9 *Na> *Cl 4	MgSO4	60.2	1.7	103
++	MgCl2	47.6		
Saturation Values Dist. Water 20 C	NaHCO3	84.0		
CaCO3 13 mg/L	Na2SO4	71.0	5.3	379
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	3.6	209
BaSO4 2.4 mg/L				

REMARKS: _____

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Petrolite Oilfield Chemicals Group



TRETOLITE DIVISION

Petrolite Corporation 422 West Main Street



(505) 746-3588 Fax (505) 746-3580

Reply to: P.O. Box 1140 Artesia, NM 88211-7531

WATER ANALYSIS REPORT

: 04/16/96 Date : YATES DRILLING Company Date Sampled : 04/15/96 : ARTESIA, NM Address Analysis No. : 0274 : CACTUS QUEEN Lease : WATER WELL Well Sample Pt. : * meg/L mg/L ANALYSIS _____ ____ _____ 7.1 1. pH O PPM 2. H2S 1.000 3. Specific Gravity 647.6 4. Total Dissolved Solids NR 5. Suspended Solids 6. Dissolved Oxygen NR NR 7. Dissolved CO2 8. Oil In Water NR Phenolphthalein Alkalinity (CaCO3) 9. 10. Methyl Orange Alkalinity (CaCO3) 3.2 11. Bicarbonate нсоз 195.0 HCO3 3.6 127.0 Cl C1 12. Chloride 2.6 SO4 125.0 S04 13. Sulfate 102.0 Ca 5.1 Ca 14. Calcium NR Magnesium
 Sodium (calculated)
 Iron 0.1 Mg Mg 4.3 Na 98.5 Na 0 Fe NR Ва 18. Barium NR Sr 19. Strontium 255.0 20. Total Hardness (CaCO3)

PROBABLE MINERAL COMPOSITION

		-		
*milli equivalents per Liter	Compound	Equiv wt	X meq/L	= mg/L
++ 5 *Ca < *HCO3 3 /> 0 *Mg> *SO4 3 	Ca(HCO3)2 CaSO4 CaC12 Mg(HCO3)2	81.0 68.1 55.5 73.2	3.2 1.9	259 129
4 *Na> *Cl 4 ++ ++ Saturation Values Dist. Water 20 C	MgSO4 MgC12 NaHCO3	60.2 47.6 84.0	NR	0
CaCO3 13 mg/L CaSO4 * 2H2O 2090 mg/L BaSO4 2.4 mg/L	Na2SO4 NaCl	71.0 58.4	0.7 3.6	50 209

REMARKS:

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AFFIDAVIT OF PUBLICATION

County of Chaves State of New Mexico

I, Gina Brooks, Legal Clerk,

Of the Roswell Daily Record, a daily newspaper published at Roswell, New Mexico, do solemnly swear that the clipping hereto attached was published once a week in the regular and entire issue of said paper and not in a supplement thereof for a period of: one time weeks

beginning with is	ssue dated
June 13TH	, 1996
and ending with June 13TH	the issue dated , 1996

0 Clerk

Sworn and subscribed to before me

this	13TH	day of
•	June	,1996

•••••

Notary Public

My Commission expires

July 25, 1998

Publish June 13, Rosel Yates Drilling Company hereby gives notice to the public that it will be filling an application with New Mexico Oil Conservation Division seeking authority to inject water for the purpose of secondary recovery in its Cactus Queen . Unit well #14, located 990 feet from the Southline and 1650 feet from the West line of. Section 34, flownship:12:South, Range 31:East?, N.M.P.M., Chaves County, New Mexico, Hereit and 1650 feet from the West line of. Section 34, flownship:12:South, Range 31:East?, N.M.P.M., Chaves County, New Mexico, Hereit and 1650 feet from the Queen, formation between, the depths iol 2760 feet, and 2765 feet, and antimum injection rate sought is 400 barrels periods, and the maximum initial surface pressure to be used will be 552!PSIG: Any increase in the maximum surface pressure will be based on step rate tests and subject to New Mexico Oil Conservation, Division approval. Any objection to this application must be filled within fifteen (15) days of the date of this advertisement at the Oil Conservation Division, Post Office Box 2088; Sana Fe, New Mexico 87504. Questions opnoeming this application should be directed to Mr. Doug Figurbur, Yatee Drilling Company. 105 South 4th Street, Artesia, New Mexico 88210. Telephone (505) 748-1477

LEASEHOLD OWNERSHIP

T-12-S, R-31-E Section 33: SE/4NE/4, E/2SE/4 Section 34: S/2NW/4, SW/4, SW/4NE/4, W/2SE/4 T-13-S, R-31-E Section 3: N/2NW/4 Section 4: NE/4NE/4 Chaves County, New Mexico

> Yates Drilling Company 105 South 4th Street Artesia, NM 88210

T-13-S, R-31-E Section 3: NW/4NE/4 Chaves County, NM

Circle Ridge Production, Inc. 300 E. Northside Dr. Fort Worth, Texas 76106-9234

SURFACE OWNER

W.T. Tivis, Jr. P.O. Box 1614 Eunice, NM 88231

+ _			1	
Submit S Copies Appropriate District Office		ew Mexico ural Resources Department	Form C-104	
DISTRICT	Licigy, Minerals and Mat	and Resources Department	Revised 1-1-89 See Instructions	
P.O. Box 1980, Hobbs, NM 88240	OIL CONSERVA	TION DIVISION	at Bottom of Page	
DISTRICT II P.O. Drawer DD, Ariesia, NM 88210 DISTRICT III		ox 2088 exico 87504-2088		
1000 Rio Brazos Rd., Aztec, NM 87410	REQUEST FOR ALLOWAR	BLE AND AUTHORIZATI	ON	
I. Operator	TO TRANSPORT OIL	AND NATURAL GAS	Well API No.	
Yates Drilling Compa	any	·	3000520920 i	
105 South 4th Street	t. Artesia, NM 88210			
Reason(s) for Filing (Check proper box)	-	X Other (Please explain)		
Recompletion	Change in Transporter of: Oil Dry Gas	NAME CHANGE:	Dave Federal #1	
Change in Operator	Casinghead Gas Condensate		to Cactus Queen Unit #14	
If change of operator give name and address of previous operator		****		
II. DESCRIPTION OF WELL /	AND LEASE			
Lease Name Cuctus Queen Un	well No. Pool Name, Includ	-	Kind of Lease Lease No.	
Dave-Federal	Z /4 SE Chaves	Qn Gas Area Assoc.	State, Federal or Fee NM-26883	
Unit Letter N	. 990 Feet From The	South Line and 1650	Feet From The Line	
	rea roa na			
Section 34 Township	12S Range 31E	, NMPM, Chav	res County	
III. DESIGNATION OF TRANS	SPORTER OF OIL AND NATU			
Name of Authorized Transporter of Oil	x or Condensate		proved copy of this form is to be sent)	
Navajo Refining Comp Name of Authorized Transporter of Casing		P.O. Box 159, Arte	proved copy of this form is to be sent)	
If well produces oil or liquids, give location of tanks.	Unit Sec. Twp. Rge. N 34 125 31E	Is gas actually connected? NO	When ?	
If this production is commingled with that find IV. COMPLETION DATA	rom any other lease or pool, give comming	ling order number:		
[Oil Well Gas Well	New Well Workover De	epen Plug Back Same Res'v Diff Res'v	
Designate Type of Completion - Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.	
Elevations (DF, RKB, RT, GR, etc.)	Name of Producing Formation	Top Oil/Gas Pay	Tubing Depth	
Perforations	<u></u>	I	Depth Casing Shoe	
HOLE SIZE	CASING & TUBING SIZE	CEMENTING RECORD	SACKS CEMENT	
· · · · · · · · · · · · · · · · · · ·				
		· · · · ·		
V. TEST DATA AND REQUES		· · · · · · · · · · · · · · · · · · ·		
OIL WELL (Test must be after re Date First New Oil Run To Tank	covery of total volume of load oil and must	be equal to or exceed top allowable Producing Method (Flow, pump, go		
Length of Test	Tubing Pressure	Casing Pressure	Choke Size	
Actual Prod. During Test	Oil - Bbls.	Water - Bbis.	Gas- MCF	
GAS WELL	<u>I</u>			
Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate	
Testing Method (pitot, back pr.)	Tubing Pressure (Shut-in)	Casing Pressure (Shut-in)	Choke Size	
VI. OPERATOR CERTIFICATE OF COMPLIANCE I hereby certify that the rules and regulations of the Oil Conservation		OIL CONSERVATION DIVISION		
Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief. Date Approved FEB 10 199		FEB 1 0 1993		
Karon J. Lush	Inai		BO BY JERRY SEXTON	
Karen J. Leishman Production Clerk		(SUPERVISOR		
2-8-93	505-748-1471	Title		
Date	Telephone No.			

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INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.

2) All sections of this form must be filled out for allowable on new and recompleted wells.

CON MORRS OTTER

FEB 0 9 1993

PECEIVED