

Energy and Minerals Department Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501

Case 93/9

Feeleway

Re:

Cactus Queen Unit

Chaves County, New Mexico

### Gentlemen:

Enclosed for filing, please find three copies of the Application of Yates Drilling Company for Approval of a Secondary Recovery Unit Agreement, and for the Compulsory Unit Operation of a Pool, Cactus Queen Unit Area, Chaves County, New Mexico. Also enclosed are three copies of Form C-108, Application for Authorization to Inject for the Purpose of Secondary Recovery.

We ask that this matter be set for hearing before an Examiner on March 2, 1988.

Thank you.

Sincerely yours,

DICKERSON, FISK & VANDIVER

Chad Dickerson

CD:pvw Enclosures

cc w/enclosure: Ms. Kathy Colbert

### BEFORE THE OIL CONSERVATION DIVISION

### OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF YATES DRILLING COMPANY FOR APPROVAL OF A SECONDARY RECOVERY UNIT AGREEMENT, AND FOR THE COMPULSORY UNIT OPERATION OF A POOL, CACTUS QUEEN UNIT AREA, CHAVES COUNTY, NEW MEXICO

case no. 93/9

### **APPLICATION**

COMES NOW Yates Drilling Company, by its attorneys, pursuant to \$70-7-1, et seq., N.M.S.A. (1978), and requests that the Division enter an order for the compulsory unit operation of a pool, and in support hereof, respectfully states:

1. Applicant is the operator of a portion of the following lands in Chaves County, New Mexico:

### Township 12 South, Range 31 East, N.M.P.M.

Section 26: SW/4 SW/4

Section 27: SE/4, E/2 SW/4, SW/4 SW/4

Section 34: N/2 NE/4, SE/4 NE/4, N/2 NW/4

Section 35: NW/4 NW/4

containing 560 acres, more or less.

- 2. The Applicant seeks to commit the above described lands to a secondary recovery unit known as the Cactus Queen Unit. The unit consists of federal, state and fee lands.
- 3. A plat of the proposed unit area is submitted herewith. The formation proposed to be unitized is defined as that

interval underlying the unit area, the vertical limits of which extend from an upper limit described as the top of the Queen formation to a lower limit as the base of the Queen formation; the geologic markers having been previously found to occur at 2,980 feet and 3,100 feet, respectively, in the Yates Drilling Company's Doyal No. 1, located 660 feet from the north line and 990 feet from the east line of Section 34, Township 12 South, Range 31 East, N.M.P.M.

- 4. The reservoir involved in the application has been reasonably defined by development.
- 5. Yates Drilling Company, as operator, proposes to conduct a secondary recovery program for the unit area, consisting of injection of water under pressure, for the recovery of oil and gas.
- 6. Three copies of Form C-108, Application for Authorization to Inject for the Purpose of Secondary Recovery are filed herewith.
- 7. Three copies of the proposed Unit Agreement covering the manner in which the unit will be supervised and managed, and costs allocated and paid, which the Applicant considers fair, reasonable and equitable, are filed herewith.
- 8. The unitized management, operation and further development of the oil or gas pool is reasonably necessary in order to effectively carry on secondary recovery operations to

substantially increase the ultimate recovery of oil and gas from the pool or the unitized portion thereof.

- 9. That secondary recovery methods of operations as applied to such pool or portion thereof are feasible, will prevent waste and will result with reasonable probability in the increased recovery of substantially more oil and gas from the pool or unitized portion thereof than would otherwise be recovered.
- 10. That the estimated additional costs, if any, of conducting such operations will not exceed the estimated value of the additional oil and gas so recovered, plus a reasonable profit.
- 11. That such unitization and adoption of such unitized methods of operation will benefit the working interest owners and royalty owners of the oil and gas rights within the pool or portion thereof directly affected.
- 12. That the operator has made a good faith effort to secure voluntary unitization within the pool or portion thereof directly affected.
- 13. That the participation formula contained in the unitization agreement allocates the produced and saved unitized hydrocarbons to the separately owned tracts in the unit area on a fair, reasonable and equitable basis.
- 14. The ratification or approval of operator's plan of operation by the owners required to so ratify by \$70-7-8,

N.M.S.A. (1978), and by the Commissioner of Public Lands of the State of New Mexico, and the United States Bureau of Land Management, will be forthcoming prior to the effective date of any order issued pursuant to this application by the Division.

WHEREFORE, Applicant prays that this matter be set for hearing and, upon hearing, the Division enter its order approving operator's proposed secondary recovery project, and approving the unit agreement for compulsory unit operation of the Cactus Queen Unit hereinabove defined, within the vertical limits hereinabove set forth, making provision for the matters prescribed by \$70-7-7 and \$70-7-8, N.M.S.A. (1978), and for such other and further relief as to the Division seems proper.

YATES DRILLING COMPANY

Chad Dickerson

Chad Dickerson

DICKERSON, FISK & VANDIVER Seventh and Mahone, Suite E Artesia, New Mexico 88210 (505) 746-9841

Attorneys for Applicant

# SOUTHEAST CHAVES QUEEN GAS AREA ASSOCIATED POOL

Chaves County, New Mexico

Order No. R-4435, December 1, 1972, Establishing Pool, as Amended by Order No. R-5911, February 1, 1979; Order No. R-7763, January 1, 1985; Order No. R-7800, February 1, 1985.

T-12-S, R-31-E T-13-S, R-30-E T-13-S, R-31-E 1, 28 through 32. T-14-S, R-29-E T-14-S, R-30-E T-15-S, R-30-E T-15-S, R-30-E Secs. 1 through 36.
Secs. 1 through 34; NW/4 Sec. 35.
Secs. 1 through 36.
S/2, NW/4 Sec. 3; Secs. 4 through 9, 16 through

Secs. 1
Secs. 5
Secs. 1
Secs. 1 1 through 36.
1 through 36.
5 through 7, 18, 19, 30, 31.
1 through 36.
1 through 36.

# ULATIONS - ASSOCIATED at'd.)

ANIAN "D" ASSOCIATED POOL nty, New Mexico

Special Rules and Regulations, in and Regulations for Associated west and Southeast New Mexico, ylvanian "D" Associated Pool, Mexico, February 1, 1977.

the Tocito Dome-Pennsylvanian New Mexico, August 3, 1964, as 8-A, September 30, 1964, Order and Order No. R-2758-C, August

l proration unit shall be 160 acres. shall be 320 acres.

SCUTHEAST CHAVES QUEEN GAS AREA ASSOCIATED POOL Chaves County, New Mexico

Addition to the General Rules and Regulations for Associated Oil and Gas Pools in Northwest and Southeast New Mexico, Order No. R-5353, Adopting Special Rules and Regulations, in for the Southeast Chaves Queen Gas Area Associated Pool, Chaves County, New Mexico, February 1, 1977.

(Order No. R-5353 supersedes Order No. R-4435, creating and adopting temporary rules for the Southeast Chaves Queen Gas Area, Chaves County, New Mexico, December 1, 1972, as amended by Order No. R-4583, August 1, 1973, Order No. R-4435-A, December 3, 1974, and Order No. R-4435-B, July 6, 1976.)

A standard gas proration unit shall be 320 acres RULE 2. (a) A standard oil proration unit shall be 40 acres.

Special Pool Rules.) (General Pool Rules also apply unless in conflict with these

all be located within 150 feet of

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YATES DRILLING COMPANY

By: Chad Dickerson

Chad Dickerson

DICKERSON, FISK & VANDIVER Seventh and Mahone, Suite E Artesia, New Mexico 88210 (505) 746-9841

Attorneys for Applicant

# STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

### **UIL CONSERVATION DIVISION** POST OFFICE BOX 2008 BTATE LAND OFFICE BUILDING SANTATE, NEW MEXICO 87501

FORM C-108 Revised 7-1-81

P-10 9319

| APPLICA | ATION FOR AUTHORIZATION TO INJECT  |
|---------|--|
| I.      | Purpose: Secondary Recovery Pressure Maintenance Disposal Storage Application qualifies for administrative approval? Tyes X no   |
| 11.     | Operator: Yates Drilling Company   |
|         | Address: 105 South 4th Street, Artesia, New Mexico 88210   |
|         | Contact party: Tobin L. Rhodes Phone: (505) 746-9889   |
| 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.   |
| 1 V .   | Is this an expansion of an existing project?   |
| ٧.      | 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:  |
|         | <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 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.   |
| 1 X .   | Describe the proposed stimulation program, if any.   |
| х.      | 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 evailable 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 L. Rhodes Title Petroleum Engineer   |
|         | Signature: John L. Rhol "Date: 1-7-88  |
| mdua    | he information required under Sections VI, VIII, X, and XI above has been previously itted, it need not be duplicated and resubmitted. Please show the date and circumstance he earlier submittal.   |

### III. WELL DATA

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

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

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

### XIV. PROOF OF NOTICE

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

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

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

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

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

## OIL CONSERVATION DIVISION FORM C-108 (Supplement)

Application of Yates Drilling Company For a Secondary Recovery Project (Proposed Cactus Queen Unit) Chaves County, New Mexico

### I. Purpose:

Application is made for authorization to inject water into the Queen formation within the boundaries of the proposed Cactus Queen Unit. The proposed unit consists of 560 acres and lies in Sections 26,27,34 and 35 of Township 12 South, Range 31 East, Chaves County, New Mexico. This project would be classified as a secondary recovery project with the objective of recovering hydrocarbons that will not be recovered by primary means.

The reservoir as defined is near primary depletion. Our studies show that a five-spot injection pattern with six injection wells and six producing wells will result in recovery of oil in economic quantities not otherwise recoverable. Such a pattern will utilize eleven existing wells and will initially require the drilling of one additional well.

### II. Operator:

Yates Drilling Company 105 South Fourth Street Artesia, New Mexico 88210

Phone Number: (505) 746-9889

### III. Injection Well Data:

A well data sheet is attached for each of the six wells proposed for injection. Each injection well data sheet includes a downhole schematic of how each individual well will be configured if this application is approved.

### IV. Existing Project:

The proposed project is not an expansion of an existing project and will be a totally new project.

### V. Ownership:

A lease ownership map is attached which identifies all wells and lease ownership within two miles of any of the six proposed injection wells. A one-half mile radius circle has been drawn around each of the injection wells on the second map to identify the unit's area of review.

### VI. Well Data:

There are seventeen wells including the proposed injection wells which fall within the area of review. Two of these wells have been plugged and abandoned, one well is temporarily abandoned, and the remaining fourteen wells are active "Queen" producers. Available data for each of the seventeen well is included in attached well data sheets. Additionally a downhole schematic has been drawn depicting each of the two plugged and abandoned wells.

### VII. Project Data:

- 1. The proposed daily injection rate is approximately 200 barrels per day for each of the six proposed injection wells. Total injection for the unit would be 1200 barrels per day. The maximum injection rate for any one well will be based on fracture pressures as determined from proposed step rate test to be conducted on each injection well.
- 2. Produced water will be stored in existing open top fiberglass tanks until transferred to a covered steel storage tank, therefore the water system will be open until the water is transferred to the steel storage tank. Any fresh water will be stored in a covered and sealed steel tank. Produced oil will immediately be separated from produced water and stored in steel, covered, production tanks until sold.
- 3. Initially the injection wells may take water on a vacuum, but as the reservoir begins to fill, a positive surface injection pressure will be required to inject water. The maximum injection pressure will also be based on proposed step rate tests.
- 4. The source of injection fluid will be produced water from producing wells within the unit and fresh water from an existing "Ogollala" well in the area. No commitment has been made but there are at lease two water wells nearby that are capable of producing water in the amounts required. The State Engineer's Office

in Roswell has indicated commercial water rights are available in this area.

5. No water compatibility problems are expected as "Ogollala" water has been injected into the Queen formation for years, throughout the Caprock Queen field, without excessive problems.

### VIII. Geologic Data:

The proposed 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 2989 feet. The existing producing formation will be the interval into which water will be injected.

The productive/injection interval, as indicated from a whole core analysis on the DeLuna Federal #3 (330' FNL & 1980' FEL, 34-12s-34e) and sidewall core data from numerous wells, is fine grained, friable, gray, quartz sandstone. The grains are sub-angular to sub-rounded and well sorted. The cementing material is variously from anhydrite and dolomite. The exact depositional environment is unknown. Porosity and permeability are intergranular in nature. The sandstone is not naturally fractured.

The Cactus Queen Field 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. A tilted oil/water contact limits the production in that direction. The oil/ water has been established at (+1440) in the southeast end of the field and (+1446) at the northeast edge.

The underground 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 aquifer is behind the surface pipe and cement of all existing wells in the unit area. The Chinlee formation is also a fresh water aguifer which immediately underlies the Ogollala formation. The base of the Chinlee is estimated to be approximately feet below the surface in the unit area. The Chinlee Aquifer is behind the production casing in all existing wells in the unit area.

### IX. Stimulation Program:

Each of the eleven existing wells has previously received a fracture treatment. The details of each of these treatments are outlined in the data sheet for each individual well. There are no plans to stimulate any of the existing wells which will be producing wells in this project. The proposed new producing well will require a fracture treatment which will be similar to currently existing wells' initial fracture treatment.

The wells which will be injection wells may require a small "cleanup" acid job prior to injection. We plan to treat each of these six well with a 1000 to 2000 gallon treatment of 15% hydrochloric acid. This treatment should insure that existing perforations in a well are open and that each well will accept water at the lowest possible pressure.

### X. Well Logs:

Well logs for each of the existing well in the proposed unit have previously been submitted to the Hobbs office of the NMOCD. Logs obtained on a new well will also be submitted to the Hobbs office when these logs become available.

### XI. Fresh Water:

The State Engineer's Office in Roswell has record of seven water wells within one mile of the proposed unit. The total depths of four of the seven wells are unknown, however all seven wells are assumed to be producing from the Ogollala formation. Analysis reports for water taken from three of the seven wells are attached.

### XII. Injection Zone Isolation:

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

### XIII. Proof of Notice:

A listing of off-set leasehold operators, surface owners, royalty owners, overriding royalty owners, and working interest owners that have received a copy of this application by certified mail is attached.

### XIV. Certification:

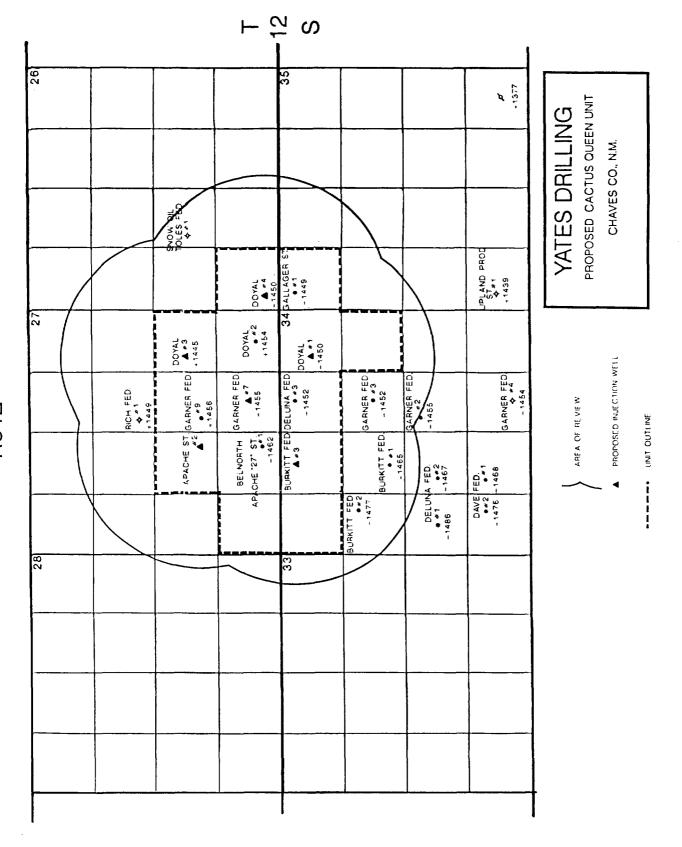
I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Tobin L. Rhodes

Petroleum Engineer

January 7, 1988

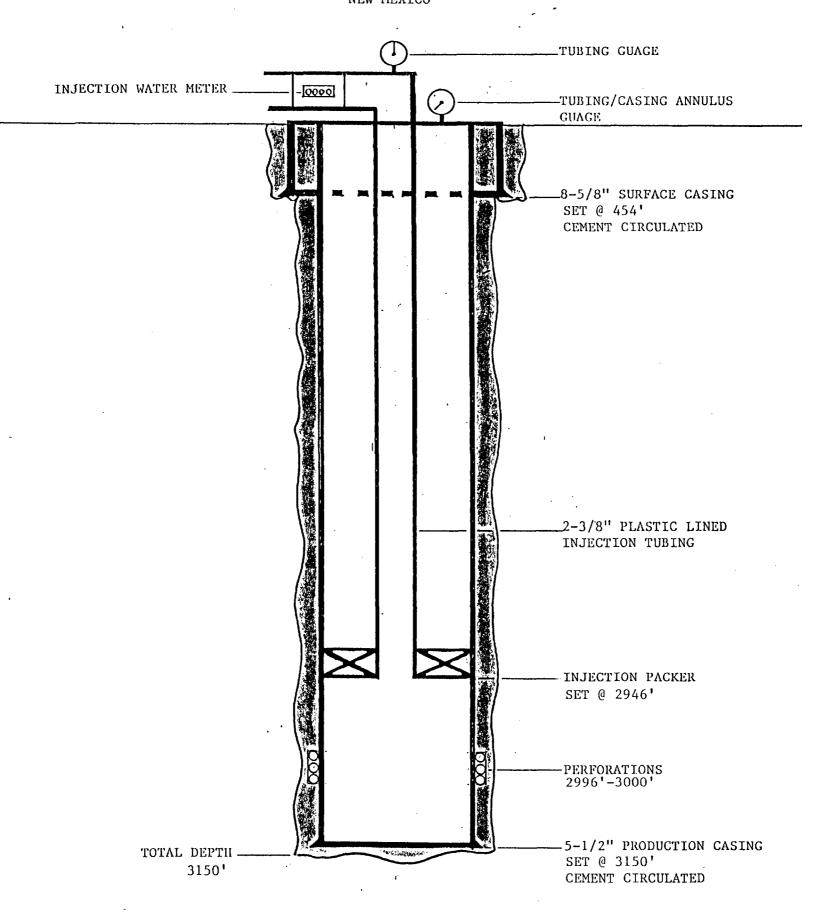
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| Sabine Prod. Sabine Prod. Reading & Barres   | U. 5 4 13 3 37 7 5 m)  Jock Hurf 2 1 99 58097 278 22 Yafes Drig, etal  | Total Annual residence   | 1 a c c c c c c c c c c c c c c c c c c  | B 10418   37878   1  |              |
| 5 : 1.97<br>29829 1 42809 H 8 P E-Swent<br>5 1   | KG5 HBP 0256521  | Welunafide af of 4.  | Gollagher, etal Gallagher, etal  | Great Chevron Kerometer Chevron Kollowski Chevron Kollowski Chevron Kollowski Chevron Kerometer Chevro   | h            |
| 32<br>Nortex   | 45155 33   | Yates Origination 2 etai, 1/2  | B-10420   B-10420  Creet TMalco 35   | Vests Honor Bristi Hilliams 15000 Holloways Thunderbird Thunderbird Thunderbird Westernta 188 - 98 Westernta 188   | r<br>h       |
| Nortex   Great   165 cm  | η μες<br>1, οι 5 κοτ<br>1, Yotes et al 1/2;<br>μ   | 15896 OISB07   | HBP (8-935) HBF (8-935) B 9369 Store B-10416 Universe Prod Gallogher, Charles Control (1997) C (1997)  | HBP ISO I More I More I HBP ISO I MORE I MOR   |              |
| 15 - Was 140.15 Millis 140.21 Map 21  | U.S  | do te moles tem start to 12 70005  | VIII46<br>376.20 anous West<br>Street Grand Grand II /   | CR Gally Stere 8 945555  |              |
| Rieget E Deother  63 93 9 187  9 187  9 187  9 187  1 189  C. Cone Dator Ma Forster & Sweet 10 188 Burn Reg et al. 189  C. Cone Dator Ma Forster & Sweet 10 188 Burn Reg et al. 189  3357 1 3  | 015507 0756421  Yates # 100 Dac. erally # 14 3 Mil.  | (Aman) (A | Company of the state of the sta | ort nein Biocaco de Prerio) y y control de Chicalli (Anadarhu de C   |              |
| : 19314 ·   1   1   1   1   1   1   1   1   1  | Lois Fed. Fedings  | General Dries   Control of the Contr | Great Western   Great Western   12 pt etal pt   pt   pt  | Transfell Flanodarka   |              |
| Magnelia Shaw Fed 1042072 1045 8-53 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5  | NBP<br>1 0256521 1 018807<br>1 S.P.Yorles  | \$ P Yates 103025 12:6 84<br>Williams 10/A5:26:45 to 360:  | Gallagher Grt Westn 13 AA 15 Ambaasi   |  | <b>K</b>     |
| gele.Deather Dalport 1/2 (MIII Chem.) U.S Goodrich, etal   | Jack Huff ISP Yates etal   | Vartes Andersol American Andersol Andersol American Andersol American Andersol American Andersol Ander |  | 'Na Fest (Anadarka) o CiR.   |              |
| Bison Pet Read & Stevens et 1535 IEEE 1549 ISSON PET Read & Stevens et 1550 Pet Read & Stevens et 1550 Pet Read & Stevens et 1550 Pet  | 57652 HBP<br>763 0256521<br>KGS  | 100  | Sunser Logaria (Ambiad)  | 31 B 8855<br>U-73-121 Life I Director Dir |              |
| Ouncan-Feat  | Forister 6. Sweath etal to 2750 Anadarko   |  |  | B. posis<br>6-18417 B. posis<br>Graphom<br>12 Graphom<br>10-3150   |              |
| Ouncan-Fed Authorities of Property Office of Proper | Reod & Stevens, etal   4 · 1 · 87   1 · 87   27199   15819   for start   6.5 meant   4 more red, 1   1 · 10 · 10 · 10 · 10 · 10 · 10 · 1   | 20969 Lands 2  | (Graniage).  | And Greedge Anadar korben om darko Strin IAT PET I   | h            |
| LE Egite Rieger Deother Yates Drig.  | Reading L Bates   Crown Reading L Bates   Control L Bates   Charles   Charle | Anadaska (hewanee)   | "Rebble Queen"State was  | Gr. Wester Spurmoyer Gr. Wester Anadorso   | <del> </del> |
| # 55.5.5. 3114 D256521  6 1 93 Forester 7 55945  | B-10411   Worlers   HBP   HBP  | 10-1-87 Vates Orig. 36<br>31113   etcl<br>  1-98<br>  54429 (6-West of   | or West Cross of Gr. West Gr. West Gr. West Gr. West Gr. West Gr. West   | 2Depcd   |              |
| Coipor*  Birgherg Fee Dalport /2   | 9: 8455<br>  | 15 = 172 =   | ordina)   0.40213  | Gr. Westa 18 Gr. Westa   |              |
| Dia 12 24 72   Burk Roy   Aminor   1899      | HBP IAMOCOL V-536<br>HBP 175<br>B-10419-\$5   B-10419-38   | Gr. Westin   | Gr. West. Gr. West.  Sizola   Gr. West. Gr. West.  Sizola   Gr. West. Gr. West.  Gr. West. Gr. West. Gr. West.  Gr. West. Gr. West.  Gr. West. Gr. West.  Gr. West. Gr. West.  Gr. West. Gr. West.  Gr. West. Gr. West.    | LABAB (Gulf) Greeth. 111 18-8453 Greeth. 10448 73 107. West. Gr. West. ISr. West.   Collier  | _            |
| Burk Rough 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   |  |  |  | ļ, t   |              |



### INJECTION WELL DATA SHEET

| OPERATOR: Encog Oil & Sas Co. LEASE: Apache "27" State                           |   |  |  |
|--|---|--|--|
| WELL NO.: 2 FOOTAGE: 1650/ESL-2310/FEL_SEC: 27-3128-R318                         |   |  |  |
|  | TUBULAR DATA  |  |  |
| SURFA  | ACE CASING  |  |  |
| TOC:   | CEMENTED WITH: SX. Surface FEET DETERMINED BY: Circulation SIZE: 12-1/4" SETTING DEPTH: 454   |  |  |
| INTER  | RMEDIATE CASING   |  |  |
| TOC:   | CEMENTED WITH: SX. FEET DETERMINED BY: SIZE: SETTING DEPTH:   |  |  |
| LONG   | STRING  |  |  |
| TOC:_<br>HOLE  | CEMENTED WITH: SX. Surface FEET DETERMINED BY: Circulation SIZE: 7-778" SETTING DEPTH: 3150' DEPTH: 3150'   |  |  |
| INJEC  | CTION INTERVAL  |  |  |
| WA 645 5 8 222 F   | 2996 FEET TO 30007 FEET - PERFORATED  |  |  |
| TUBI   | NG  |  |  |
| TUBING SIZE: 2-3/8" LINED WITH: Plastic SET IN A Baker AD-1 PACKER AT: 2946 FEET |   |  |  |
|  | OTHER DATA  |  |  |
| 1.   | NAME OF INJECTION FORMATION: Queen  |  |  |
| 2.   | NAME OF FIELD OR POOL (IF APPLICABLE): SE Chayes Queen  |  |  |
| 3.   | IS THIS A NEW WELL DRILLED FOR INJECTION? No IF NO.FOR WHAT PURPOSE WAS THE WELL ORIGINALLY DRILLED? This well was drilled as a Gueen producing well.               |  |  |
| 4.   | HAS WELL EVER BEEN PERFORATED IN ANY OTHER ZONE(S)? No<br>LIST ALL SUCH PERFORATED INTERVALS AND GIVE PLUGGING<br>DETAILS (SACKS OF CEMENT OR BRIDGE PLUG(S) USED): |  |  |
| en<br>W  | GIVE DEPTH TO AND NAME OF ANY OVERLYING AND/OR UNDERLYING OIL OR GAS ZONES (POOLS) IN THIS AREA: None known.  |  |  |

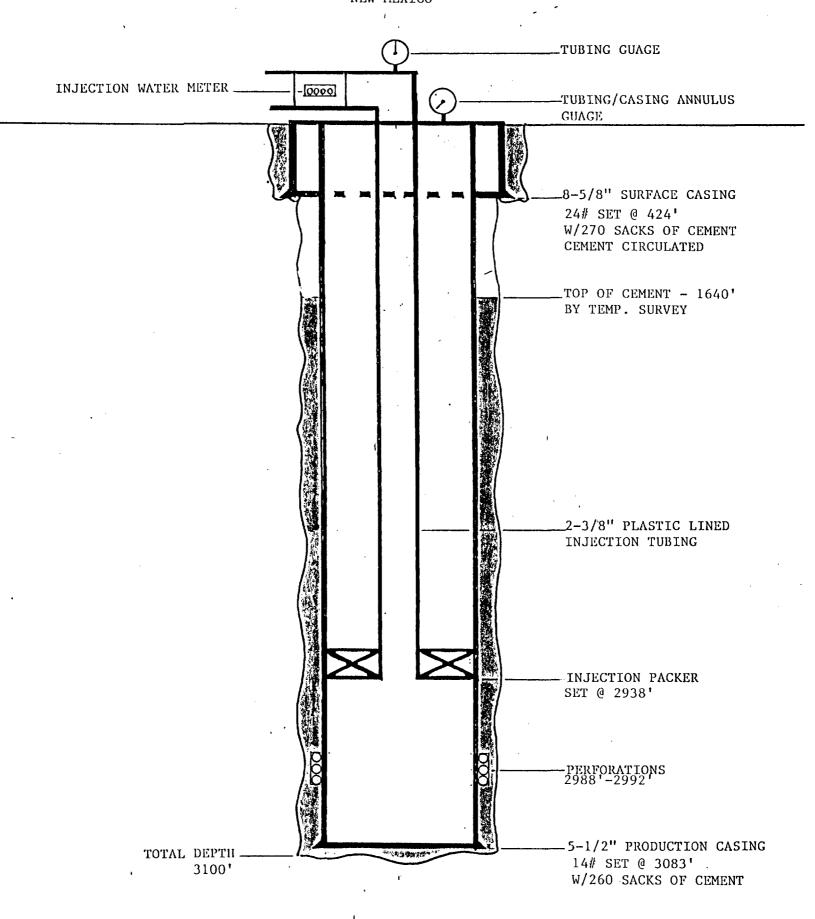
APACHE "27" STATE # 2 1650' FSL & 2310' FEL SECTION 27-T12S-R31E CHAVES COUNTY NEW MEXICO



### INJECTION WELL DATA SHEET

| OPERA   | TOR: Yates Drilling Co. LEASE: Burkitt Federal  |  |  |
|---|---|--|--|
| WELL  | NO.: 3 FOOTAGE: 330'FNL-2310'FWL SEC: 34-T12s-R31e  |  |  |
|   | TUBULAR DATA  |  |  |
| SURFA   | CE CASING   |  |  |
| SIZE:<br>TOC:_<br>HOLE  | SIZE: 12-1/4"   CEMENTED WITH: 270   SX.  |  |  |
| INTER   | MEDIATE CASING  |  |  |
| TOC:  | None CEMENTED WITH: SX. FEET DETERMINED BY: SIZE: SETTING DEFTH:  |  |  |
| LONG  | STRING  |  |  |
| TOC: _  | 5-1/2" 14# CEMENTED WITH: 260 SX. 1640' FEET DETERMINED BY: Temp. Survey SIZE: 7-7/8" SETTING DEPTH: 3083' DEFTH: 3100'   |  |  |
| INJEC   | CTION_INTERVAL  |  |  |
|   | 29881 FEET TO 29921 FEET - PERFORATED   |  |  |
| TUBIN   | ie<br>Territoria  |  |  |
| TUBING SIZE: 2-3/8" LINED WITH: Plastic SET IN A Haker AD-1 PACKER AT: 2938' FEET |   |  |  |
|   | OTHER DATA  |  |  |
| 1.  | NAME OF INJECTION FORMATION: Queen  |  |  |
| 2.  | NAME OF FIELD OR POOL (IF APPLICABLE): SE Chaves Queen_   |  |  |
| 3.  | IS THIS A NEW WELL DRILLED FOR INJECTION? No IF NO, FOR WHAT PURPOSE WAS THE WELL ORIGINALLY DRILLED? This well was drilled as a Queen producing well.              |  |  |
| 4.  | HAS WELL EVER BEEN PERFORATED IN ANY OTHER ZONE(S)? No<br>LIST ALL SUCH PERFORATED INTERVALS AND GIVE PLUGGING<br>DETAILS (SACKS OF CEMENT OR BRIDGE PLUG(S) USED): |  |  |
| 5.  | GIVE DEPTH TO AND NAME OF ANY OVERLYING AND/OR UNDERLYING OIL OR GAS ZONES (POOLS) IN THIS AREA:  None known.   |  |  |

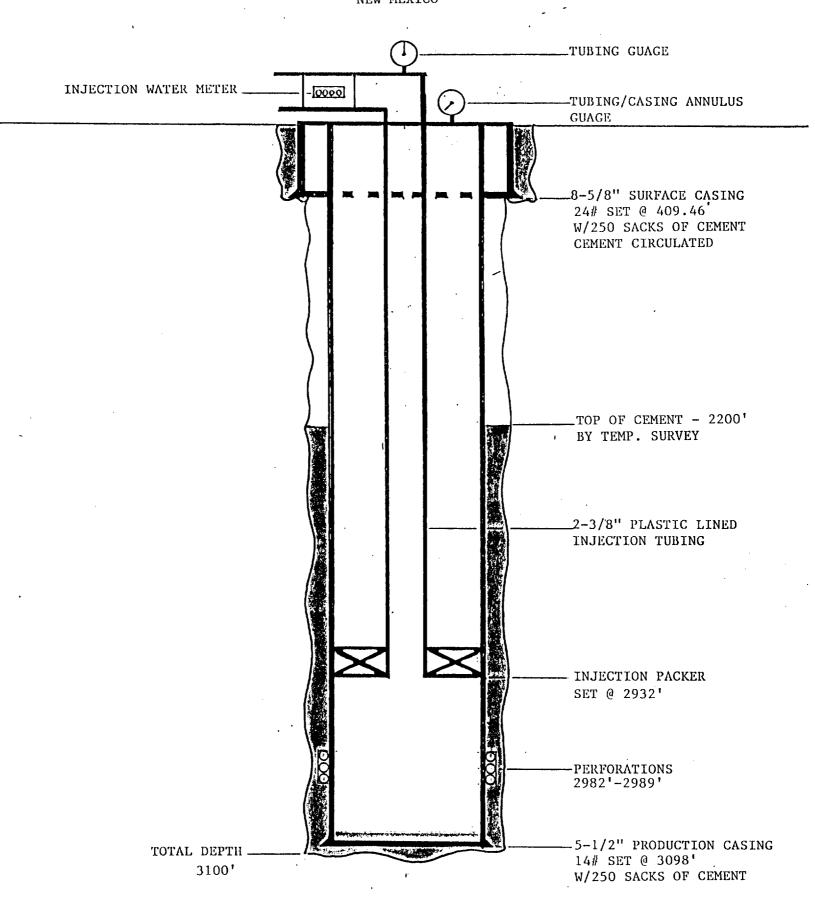
330' FNL & 2310' FWL SECTION 34-T12S-R31E CHAVES COUNTY NEW MEXICO



### INJECTION WELL DATA SHEET

| OPERATOR: Yates Drilling Co. LEASE: Doyal   |  |  |
|---|--|--|
| WELL NO.: 1 FOOTAGE: 660'FNL- 990'FEL SEC: 34-712s-R316   |  |  |
| TUBULAR DATA  |  |  |
| SURFACE_CASING  |  |  |
| SIZE: 8-5/8" 24# CEMENTED WITH: 250 SX. TOC: Surface FEET DETERMINED BY: Circulation HOLE SIZE: 12-1/4" SETTING DEPTH: 409.46   |  |  |
| INTERMEDIATE CASING   |  |  |
| SIZE: None CEMENTED WITH: SX. TOC: FEET DETERMINED BY: HOLE SIZE: SETTING DEPTH:  |  |  |
| LONG STRING   |  |  |
| SIZE:       5-1/2" 14#       CEMENTED WITH:       250       SX.         TOC:       2200'       FEET DETERMINED BY:       Temp. Survey         HOLE SIZE:       7-7/8"       SETTING DEPTH:       3100'         TOTAL DEPTH:       3100' |  |  |
| INJECTION_INTERVAL  |  |  |
| 2982' FEET TO 2989' FEET - PERFORATE  |  |  |
| TUBING  |  |  |
| TUBING SIZE: 2-3/8" LINED WITH: Plastic SET IN A Baker AD-1 PACKER AT: 2932' FEET   |  |  |
| OTHER DATA  |  |  |
| 1. NAME OF INJECTION FORMATION: Queen   |  |  |
| 2. NAME OF FIELD OR POOL (IF APPLICABLE): SE Chaves Queen   |  |  |
| 3. IS THIS A NEW WELL DRILLED FOR INJECTION? No IF NO, FOR WHAT PURPOSE WAS THE WELL ORIGINALLY DRILLED This well was drilled as a Queen producing well.  |  |  |
| 4. 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):   |  |  |
| 5. GIVE DEPTH TO AND NAME OF ANY OVERLYING AND/OR UNDERLYING OIL OR GAS ZONES (POOLS) IN THIS AREA: None known.   |  |  |

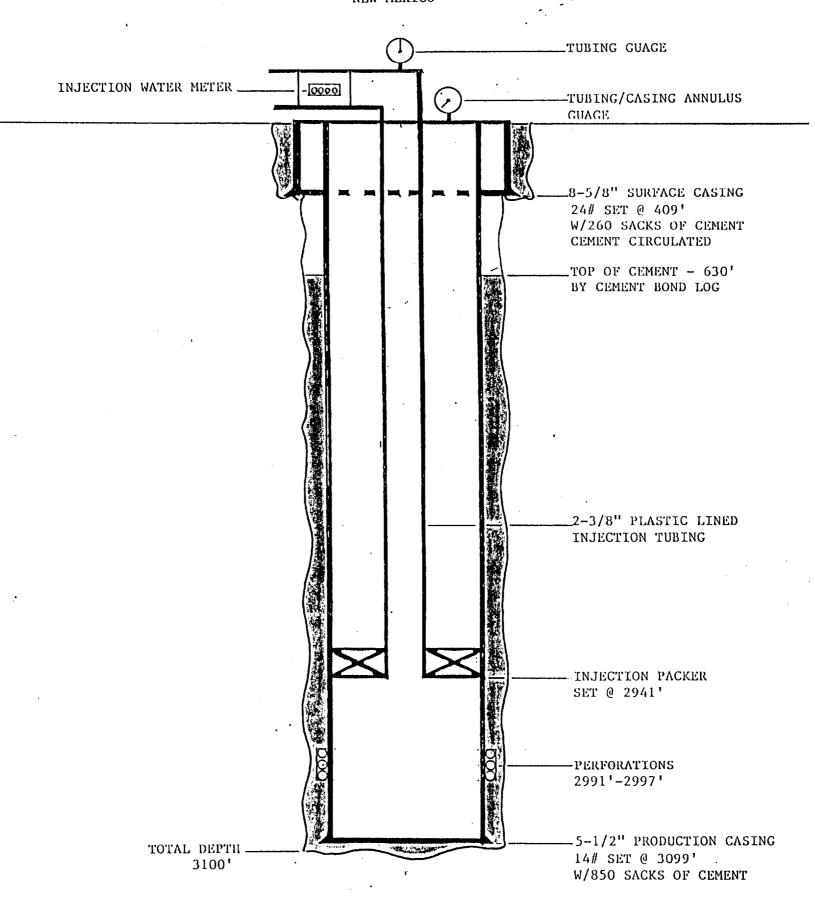
DOYAL #1
660' FNL & 990' FEL
SECTION 34-T12S-R31E
CHAVES COUNTY
NEW MEXICO



### INJECTION WELL DATA SHEET

| OPERATOR: Yates Drilling Co. LEASE: Doyal   |   |  |  |
|---|---|--|--|
| WELL NO.: 3 FOOTAGE: 1980 FSL 990 FEL SEC: 2Z-T125-R31e                           |   |  |  |
|   | TUBULAR_DATA  |  |  |
| SURFACE   | E_CASING  |  |  |
| SIZE: (TOC: S   | 8-5/8" 24排 CEMENTED WITH: 260 SX. Surface FEET DETERMINED BY: Circulation IZE: 12-1/4" SETTING DEPTH: 4097  |  |  |
| INTERME   | EDIATE CASING   |  |  |
| 106:  | None CEMENTED WITH: SX.  FEET DETERMINED BY:  SETTING DEPTH:  |  |  |
| LONG S  | TRING   |  |  |
| TOC:, HOLE S  | 5-1/2" 14# CEMENTED WITH: 850 SX. 630 FEET DETERMINED BY: Cement Band Log IZE: 7-7/8" SETTING DEPTH: 30997 DEPTH: 3100  |  |  |
| INJECT  | ION INTERVAL  |  |  |
|   | 2991' FEET TO 2997' FEET - PERFORATED   |  |  |
| TUBING  |   |  |  |
| TUBING SIZE: 2-3/8" LINED WITH: Plastic SET IN A Baker AD-1 PACKER AT: 2941' FEET |   |  |  |
|   | OTHER DATA  |  |  |
| 1. N  | AME OF INJECTION FORMATION: Queen   |  |  |
| 2. N  | AME OF FIELD OR POOL (IF APPLICABLE): SE Chaves Queen_  |  |  |
| ,   | S THIS A NEW WELL DRILLED FOR INJECTION? No<br>F NO,FOR WHAT PURPOSE WAS THE WELL ORIGINALLY DRILLED?<br>This well was drilled as a Queen producing well.<br>This well is temp. aban. due to high water produnction |  |  |
| L<br>D  | AS WELL EVER BEEN PERFORATED IN ANY OTHER ZONE(S)? No<br>IST ALL SUCH PERFORATED INTERVALS AND GIVE PLUGGING<br>ETAILS (SACKS OF CEMENT OR BRIDGE PLUG(S) USED):  |  |  |
| 5. G<br>U   | IVE DEPTH TO AND NAME OF ANY OVERLYING AND/OR NDERLYING OIL OR GAS ZONES (POOLS) IN THIS AREA:  |  |  |

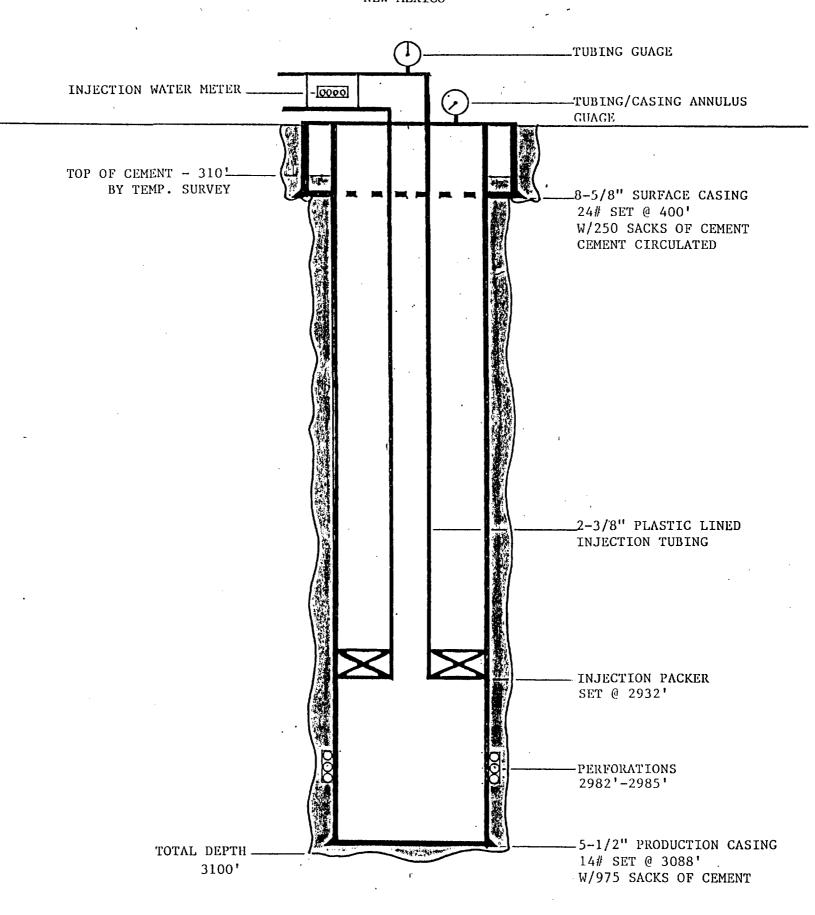
DOYAL #3
1980' FSL & 990' FEL
SECTION 27-T12S-R31E
CHAVES COUNTY
NEW MEXICO



### INJECTION WELL DATA SHEET

| OPERATOR: _Yates_Drilling_Co LEASE: _Doyal  |   |  |
|---|---|--|
| WELL.   | NO.: 4 FOOTAGE: 330/FSL- 330/FWL SEC: 26-T12s-R31e  |  |
|   | TUBULAR_DATA  |  |
| SURFA   | CE CASING   |  |
| SIZE:<br>TOC:_<br>HOLE  | SURFACE FEET DETERMINED BY: Circulation SIZE: 12-1/4" SETTING DEPTH: 400  |  |
| INTER   | MEDIATE CASING  |  |
| SIZE:<br>TOC:_<br>HOLE  | None CEMENTED WITH: SX. FEET DETERMINED BY: SIZE: SETTING DEPTH:  |  |
| LONG  | STRING  |  |
| SIZE:<br>TOC:_<br>HOLE<br>TOTAL   | 5-1/2" 14# CEMENTED WITH: 975 SX. 310' FEET DETERMINED BY: Igmp. Survey SIZE: 7-7/8" SETTING DEPTH: 3088' DEPTH: 3100'  |  |
| INJEC   | CTION INTERVAL  |  |
|   | 2982' FEET TO 2985' FEET - PERFORATED   |  |
| TUBIN   | 4G  |  |
| TUBING SIZE: 2-3/8" LINED WITH: Plastic SET IN A Baker AD-1 PACKER AT: 2932' FEET |   |  |
|   | OTHER DATA  |  |
| 1.  | NAME OF INJECTION FORMATION: Queen  |  |
| 2.  | NAME OF FIELD OR POOL (IF APPLICABLE): SE Chayes Queen  |  |
| 3.  | IS THIS A NEW WELL DRILLED FOR INJECTION? No IF NO, FOR WHAT PURPOSE WAS THE WELL ORIGINALLY DRILLED? This well was drilled as a Queen producing well.              |  |
| 4.  | HAS WELL EVER BEEN PERFORATED IN ANY OTHER ZONE(S)? No<br>LIST ALL SUCH PERFORATED INTERVALS AND GIVE PLUGGING<br>DETAILS (SACKS OF CEMENT OR BRIDGE PLUG(S) USED): |  |
| ë:  | GIVE DEPTH TO AND NAME OF ANY OVERLYING AND/OR UNDERLYING OIL OR GAS ZONES (POOLS) IN THIS AREA:  _None_known.  |  |

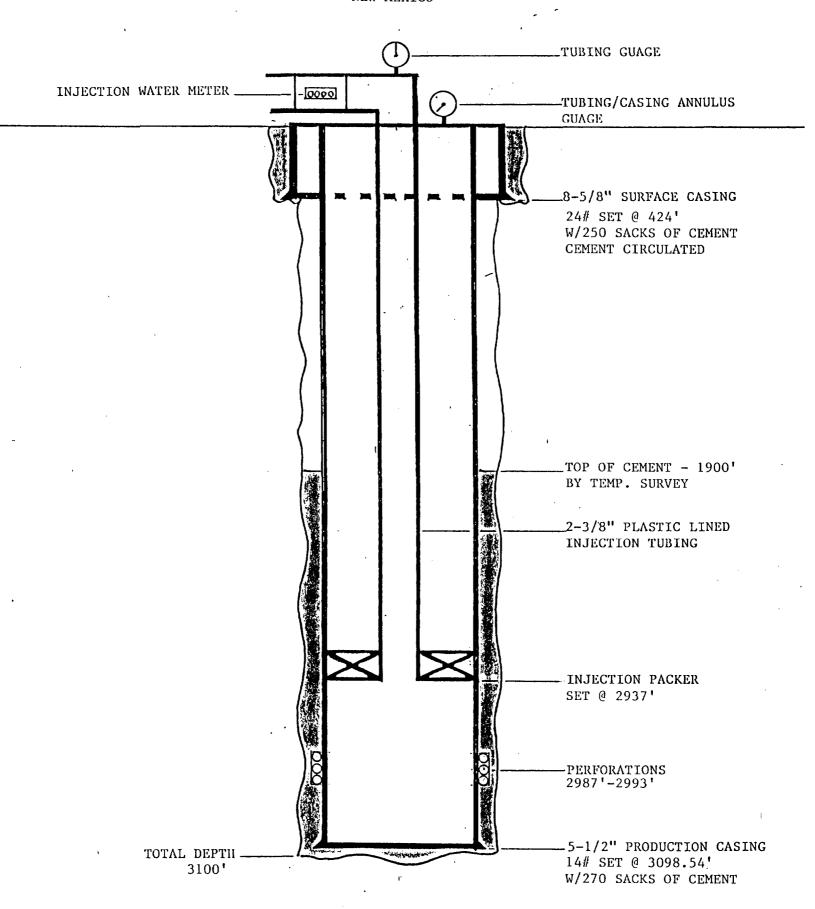
DOYAL #4
330' FSL & 330' FWL
SECTION 26-T12S-R31E
CHAVES COUNTY
NEW MEXICO



### INJECTION WELL DATA SHEET

| OPERATOR: Yates Drilling Co. LEASE: Garner Federal                                |  |  |  |
|---|--|--|--|
| WELL NO.: 7FOOTAGE: _660'FSL-1980'FEL _SEC: _27-T12s-R31e                         |  |  |  |
|   | TUBULAR DATA   |  |  |
| SURFACE   | CASING   |  |  |
| TOC:S   | CEMENTED WITH: 250 SX. Surface FEET DETERMINED BY: Circulation ZE: 12-1/4" SETTING DEPTH: 424  |  |  |
| INTERME   | EDIATE CASING  |  |  |
| TOC:  | CEMENTED WITH: SX. FEET DETERMINED BY: SETTING DEPTH:  |  |  |
| LONG ST   | IRING  |  |  |
| HOLE SI   | CEMENTED WITH:         270         SX.           1900'         FEET DETERMINED BY:         Temp. Survey           IZE:         7-7/8"         SETTING DEPTH:         3098.54'           DEPTH:         3100' |  |  |
| INJECTI   | ION INTERVAL   |  |  |
|   | 2987' FEET TO 2993' FEET - PERFORATED  |  |  |
| TUBING  |  |  |  |
| TUBING SIZE: 2-3/8" LINED WITH: Plastic SET IN A Baker AD-1 PACKER AT: 2937' FEET |  |  |  |
|   | OTHER DATA   |  |  |
| 1. NA   | AME OF INJECTION FORMATION: <u>Gueen</u>   |  |  |
| 2. NA   | AME OF FIELD OR FOOL (IF APPLICABLE): SE Chayes Queen  |  |  |
| I k   | S THIS A NEW WELL DRILLED FOR INJECTION? No<br>F NO,FOR WHAT FURPOSE WAS THE WELL ORIGINALLY DRILLED?<br>This well was drilled as a Queen producing well,  |  |  |
| L. I  | AS WELL EVER BEEN PERFORATED IN ANY OTHER ZONE(S)?_No_IST ALL SUCH PERFORATED INTERVALS AND GIVE PLUGGING ETAILS (SACKS OF CEMENT OR BRIDGE PLUG(S) USED):   |  |  |
| U)  | IVE DEFTH TO AND NAME OF ANY OVERLYING AND/OR<br>NDERLYING OIL OR GAS ZONES (POOLS) IN THIS AREA:<br>None known.   |  |  |

GARNER FEDERAL # 7
660' FSL & 1980' FEL
SECTION 27-T12S-R31E
CHAVES COUNTY
NEW MEXICO



| OPERATOR: <u>Enron Oil &amp; C</u>  | Gas_Co                           | LEASE: <u>Apache "27</u>  | " State  |
|---|----------------------------------|---|--|
| WELL NO.: 1 FOOTAGE   |                                  |   |  |
| Aire will thin your you are the line time time that the field and the line that the field and the line the line t |                                  |   | ه هما بالمار المار |
|   | TUBULA                           | AR_DATA   |  |
| SURFACE_CASING  |                                  |   |  |
| SIZE: 8-5/8" TOC: Surface HOLE SIZE: 12-1/4"  | FEET                             | CEMENTED WITH:<br>DETERMINED BY: _Ci<br>SETTING DEPTH: 42   | SX.<br>rculation   |
| INTERMEDIATE CASING   |                                  |   |  |
| SIZE: None TOC: HOLE SIZE:  | FEET                             | CEMENTED WITH: DETERMINED BY: SETTING DEPTH:  | SX.  |
| LONG STRING   |                                  |   |  |
| SIZE: 4-1/2" TOC: 210' HOLE SIZE: 7-7/8" TOTAL DEPTH: 3150'   | FEET                             | CEMENTED WITH: DETERMINED BY: SETTING DEPTH: 31   | SX.  |
| E   | RODUCINO                         | ) INTERVAL  |  |
| FORMATION: Queen<br>SPUD DATE: 5-9-85<br>PERFORATED: 2984   | C0                               | OMPLETION DATE: 6   | -27-85   |
| STIMULATION: 100 gals.<br>4000 gals. CO2, 10500   | 15% HC)<br>#_20/40               | acid, 12000 gals<br>sand,10000# 12/20   | s. gel water<br>D sand   |
| OTHER PERFORATED ZONES  | : None                           |   |  |
|   |                                  |   | Mic and the same consequence and and and and same consequence and and and  |
|   |                                  | <u> STATUS</u>  |  |
| WHAT IS CURRENT STATUS  | OF WELL                          | -? <u>Pumping oil wel</u>   | 1  |
| IF P&A, LIST PLUGGING   |                                  |   |  |
|   | ***** **** **** **** **** **** * |   |  |
| CASE THE THE THE THE STEEL COME THE STEEL SHOW THE STEEL SHOW AND THE STEEL SHOW AND THE STEEL SHOW THE           |                                  | and these decim decen while select many makes speed below copies come below from cooks among major to | men deller tallen deller gemigs ettels telepte utbest delse allen egler vilate sudse susm  |

| OPERATOR: <u>Enron Oil &amp; Gas Co.</u> LEASE: <u>Apache "27" State</u>   |  |  |
|--|--|--|
| WELL NO.:_2FOOTAGE:16501FSL-23101FELSEC:_27-1125-631e  |  |  |
|  |  |  |
| TUBULAR DATA   |  |  |
| SURFACE CASING   |  |  |
| SIZE: 8-5/8" CEMENTED WITH: SX. TOC: Surface FEET DETERMINED BY: Circulation HOLE SIZE: 12-1/4" SETTING DEPTH: 454'                    |  |  |
| INTERMEDIATE CASING  |  |  |
| SIZE: None CEMENTED WITH: SX. TOC: FEET DETERMINED BY: HOLE SIZE: SETTING DEPTH:   |  |  |
| LONG_STRING  |  |  |
| SIZE: 4-1/2" CEMENTED WITH: SX. TOC: Surface FEET DETERMINED BY: Circulation HOLE SIZE: 7-7/8" SETTING DEPTH: 3150' TOTAL DEPTH: 3150' |  |  |
| PRODUCING INTERVAL   |  |  |
| FORMATION: Queen POOL OR FIELD: SE Chayes Queen SPUD DATE: 7-29-85 COMPLETION DATE: 8-23-85 PERFORATED: 2996 FEET TO 3000 FEET         |  |  |
| STIMULATION: 850 gals. 15% HCl acid. 16000 gals. gel water 25% CO2. 10500# 20/40 sand.10000# 12/20 sand                                |  |  |
| OTHER PERFORATED ZONES: None   |  |  |
| CURRENT STATUS   |  |  |
| WHAT IS CURRENT STATUS OF WELL? Pumping oil well   |  |  |
| IF F&A, LIST FLUGGING DETAILS:   |  |  |
|  |  |  |

| OPERATOR: Yates Drill   | ing Co.  | LEASE: <u>Burkitt</u> Fe  | deral   |
|---|--|---|---|
| WELL NO.: 1 FOOTA   |  |   |   |
|   |  | AR_DATA   |   |
| SURFACE_CASING  |  |   |   |
| SIZE: 8-5/8" 24#<br>TOC: Surface<br>HOLE SIZE: 12-1/4"                    | FEET   | DETERMINED BY: Qi   | rculation   |
| INTERMEDIATE CASING   |  |   |   |
| SIZE: None<br>TOC:<br>HOLE SIZE:  | FEET   | DETERMINED BY:  |   |
| LONG_STRING   |  |   |   |
| SIZE: 5-1/2" 14#<br>TOC: 1650'<br>HOLE SIZE: Z-7/8"<br>TOTAL DEPTH: 3100' |  | _SETTING DEPTH:_30  | o sx.<br>mp. Survey<br>eo'  |
|   | PRODUCING  | 3_INTERYAL  |   |
| FORMATION: Queen :<br>SPUD DATE: 3-23-84<br>PERFORATED: 2874              | C(   | OMPLETION DATE: <u>4-</u>   | 7-84  |
| STIMULATION: 750 gals<br>25% CO2, 16500# 2074                             | . 15% HC<br>O sand. (  | l acid, 20000 gals<br>5000# 12/20 sand  |   |
| OTHER PERFORATED ZONE   | S: <u>None</u>   |   |   |
|   | CURREN   | T STATUS  |   |
| WHAT IS CURRENT STATU   |  |   | 1   |
| IF P&A, LIST PLUGGING   |  |   |   |
|   |  |   |   |
| **** **** **** **** **** **** **** **** ****                              | * '****   **** | adde were accus eagus garas garte minté paras croms reme pabas paras cêrms abun acots mant têrms erre | ng barba filitin bilain négar subgat dahin inom paga, bodhid illidan asanga agata bin |

| OPERATOR: Yates Drilling Co   | o. LEASE: Burkitt Federal  |  |
|---|--|--|
|   | 50'FNL- 990'FWL SEC: 34-T12s-R31e  |  |
| MAIN MAIN MAIN ANN MAIN MAIN MAIN MAIN M  | O tied nier van sen pan van van van van van men men nas van ver diel den van van van veld tied van van van bed tied rept van van diel diel den van   |  |
| TUE   | BULAR DATA   |  |
| SURFACE CASING  |  |  |
| SIZE: 8-5/8" 24#  TOC: Surface FE  HOLE SIZE: 12-1/4"   | CEMENTED WITH: 375 SX. EET DETERMINED BY: Circulation SETTING DEPTH: 370'  |  |
| INTERMEDIATE CASING   |  |  |
| SIZE: None TOC: FE HOLE SIZE:   | CEMENTED WITH: SX. EET DETERMINED BY: SETTING DEPTH:/  |  |
| LONG STRING   |  |  |
| SIZE: 5-1/2" 14#  TOC: 1678' FE  HOLE SIZE: 7-7/8"  TOTAL DEPTH: 2850'  | CEMENTED WITH: 250 SX. EET DETERMINED BY: Cement Bond Log SETTING DEPTH: 2845?   |  |
| PRODUC  | CING INTERVAL  |  |
| SPUD DATE: 5-5-84   | POOL OR FIELD: SE Chaves Queen COMPLETION DATE: 7-10-84 FEET TO 2760 FEET  |  |
| STIMULATION: 750 gals, 15% 5000 gals CO2, 14500# 2074   | HCl acid, 15000 gals. 30# gel,<br>40 sand, 2500# 12/20 sand  |  |
| OTHER PERFORATED ZONES: None  |  |  |
| CURE  | RENT_STATUS  |  |
| WHAT IS CURRENT STATUS OF WELL? Pumping oil well  |  |  |
| IF P&A, LIST PLUGGING DETA  | ILS:   |  |
|   |  |  |
| the cost and the rate has not the total the cost and the cost and the first that the total time that the cost and the first and | Mark tiller mint same state state state state state same same state stat |  |

| OPERATOR: Yates Drilling  | ng Co.            | LEASE:                       | <u>urkitt Feder</u>  | a L  |
|---|-------------------|------------------------------|--|--|
| WELL NO.: 3 FOOTAGE   |                   |                              |  |  |
|   | TUBUL             | AR_DATA                      |  |  |
| SURFACE_CASING  |                   |                              |  |  |
| SIZE: 8-5/8" 24# TOC: Surface HOLE SIZE: 12-1/4"                          | FEET              | CEMENTED DETERMINE SETTING D | WITH: 270<br>ED BY: Circu<br>DEPTH: 424'   | SX.<br>Lation  |
| INTERMEDIATE CASING   |                   |                              |  |  |
| SIZE: None TOC: HOLE SIZE:  | FEET              | CEMENTED DETERMINE SETTING I | WITH:<br>ED BY:<br>DEPTH:  | SX.  |
| LONG_STRING   |                   |                              |  |  |
| SIZE: 5-1/2" 14#<br>TOC: 1640'<br>HOLE SIZE: 7-7/8"<br>TOTAL DEPTH: 3100' | FEET              | DETERMINE<br>SETTING I       | WITH: 260<br>ED BY: Temp.<br>DEPTH: 3083/  | Survey   |
| <u>E</u> l  | RODUCIN           | G INTERVAL                   | m.   |  |
| FORMATION: Queen<br>SPUD DATE: 8-9-855<br>PERFORATED: 2988                | C                 | DMPLETION                    | DATE: 10-1-  | 85 <u> </u>  |
| STIMULATION: 750 gals.<br>24 tons CO2, 12000# 2                           | 15% HC<br>0/40 sa | 1 acid, 15<br>nd, 7000#      | 000 gals. g<br>12/20 sand  | el water   |
| OTHER PERFORATED ZONES  |                   |                              | An area and the construction a |  |
|   | CURREN            | T STATUS                     |  |  |
| WHAT IS CURRENT STATUS  |                   |                              | g oil well   | 1110 start the state only was sale than 1110 and     |
| IF P&A, LIST PLUGGING   |                   |                              |  |  |
|   |                   |                              | and load only Mark Mark Mark and the other state and and   |  |
|   |                   |                              | like tille since stops have trial tilps man, 2—11 föret stige erin   | born (1 the class andre state and andre make from an |

| OPERATOR: <u>Yates Drilli</u>  | og_Co  | LEASE: <u>Deluna</u>  | Federal  |
|--|--|---|--|
| WELL NO.: 3 FOOTAG   | E:_3301F                                     | NL-1980/FEL_S   | EC: <u>34-T12</u> s-R31e   |
|  |  |   |  |
|  | TUBULE                                       | AR_DATA   |  |
| SURFACE_CASING   |  |   |  |
| SIZE: 8-5/8" 24#<br>TOC: Surface<br>HOLE SIZE: 12-1/4"   | FEET   | DETERMINED BY:  | Circulation  |
| INTERMEDIATE CASING  |  |   |  |
| SIZE: None TOC: HOLE SIZE:   | FEET   | DETERMINED BY:  |  |
| LONG_STRING  |  |   |  |
| SIZE: 5-1/2" 14#<br>TOC: 1900'<br>HOLE SIZE: 7-7/8"<br>TOTAL DEPTH: 3100'  | FEET   | DETERMINED BY:<br>SETTING DEPTH:  | Cement Bond Log  |
| <u>E</u>   | RODUCINO                                     | 3_INTERVAL  |  |
| FORMATION: Queen SPUD DATE: 2-11-85 PERFORATED: 2987-17  | CC<br>FE                                     | POOL OR FIELD:<br>OMPLETION DATE:<br>EET TO 2                             | SE Chaves Queen<br>3-20-85<br>993 FEET   |
| STIMULATION: 750 gals.<br>tons CO2, 13000# 20740   | 15% hcl                                      | 15000 gals.<br>10000# 10/20 sa  | 30# gel, 23-1/2<br>and -   |
| OTHER PERFORATED ZONES   | : None_                                      |   |  |
|  | CURREN                                       | r_STATUS  |  |
| WHAT IS CURRENT STATUS   | OF WELL                                      | -?_ <u>Pumping_oil</u>  | well_  |
| IF P&A, LIST PLUGGING  | DETAILS:                                     | they can been one that will have the sout over the sign of the            |  |
|  | * 1869 1899 1879 1880 1891 1891 1870 1881 18 | the state and state state state and state state state state and state and |  |
| 100 Mile 400 Mile 1100 Mile 1100 Mile 1000 Mile 1000 Mile 1000 Mile 1000 Mile 1100 Mile 1000 Mil | P 1000 Min with 1000 may and one of our      |   | of balls, (1984-1986). 1986-1986. 1986-1986. 1986-1986. 1986-1986-1986. 1986-1986-1986-1986-1986-1986-1986-198 |

| OPERATOR: Yates Drilling Co. LEASE: Doyal  | ··· ··· ··· ···         |
|--|-------------------------|
| WELL NO.: 1 FOOTAGE: 660'FNL- 990'FEL SEC: 34-T12s-F   |                         |
|  |                         |
| TUBULAR DATA   |                         |
| SURFACE CASING   |                         |
| SIZE: 8-5/8" 24# CEMENTED WITH: 250 TOC: Surface FEET DETERMINED BY: Circulation HOLE SIZE: 12-1/4" SETTING DEPTH: 409.46'   | Mar 444 1174 1444       |
| INTERMEDIATE CASING  |                         |
| SIZE: None CEMENTED WITH: TOC: FEET DETERMINED BY: HOLE SIZE: SETTING DEPTH:   |                         |
| LONG STRING  |                         |
| SIZE: 5-1/2" CEMENTED WITH: 250 TOC: 2200' FEET DETERMINED BY: Temp. Surve HOLE SIZE: 7-7/8" SETTING DEPTH: 3098' TOTAL DEPTH: 3100'   | V                       |
| PRODUCING_INTERVAL   |                         |
| FORMATION: Queen POOL OR FIELD: SE Chayes Q<br>SPUD DATE: 7-31-84 COMPLETION DATE: 8-25-84<br>PERFORATED: 2982' FEET TO 2989'  | ueen<br>FEET            |
| STIMULATION: 750 gallons of 15 % HCl, 15000 gallons 30# , 5000 SCF N2 per barrel, 10900# 20740 sand, and 4200# 1 sand.   | gel<br>0/20             |
| OTHER PERFORATED ZONES: None   | ma tuz ang aru          |
|  | and purp spring from    |
| CURRENT STATUS   |                         |
| WHAT IS CURRENT STATUS OF WELL? <u>Pumping oil well</u> .  IF P&A, LIST PLUGGING DETAILS:  |                         |
| II DESTINATION OF THE PROPERTY |                         |
|  | 20-11 Frank Sales Staff |

| OPERATOR: Yates Drilling Co. LEASE: Doyal   |
|---|
| WELL NO.: 2 FOOTAGE: 500'FSL- 760'FEL SEC: 27-T12s-R31e   |
| TUBULAR DATA  |
| SURFACE CASING  |
| SIZE: 8-5/8" 24# CEMENTED WITH: 275 SX. TOC: Surface FEET DETERMINED BY: Circulation HOLE SIZE: 12-1/4" SETTING DEPTH: 411                |
| INTERMEDIATE CASING   |
| SIZE: Mone CEMENTED WITH: SX. TOC: FEET DETERMINED BY: HOLE SIZE: SETTING DEPTH:  |
| LONG_STRING   |
| SIZE: 5-1/2" CEMENTED WITH: 250 SX. TOC: 2200' FEET DETERMINED BY: Temp. Survey HOLE SIZE: 7-7/8" SETTING DEPTH: 3098' TOTAL DEPTH: 3100' |
| PRODUCING_INTERVAL  |
| FORMATION: QueenPOOL OR FIELD: SE Chaves QueenSPUD DATE: 9-7-84COMPLETION DATE: 9-20-84PERFORATED: 2981'FEET TO 2987'FEET                 |
| STIMULATION: 750 gallons of 15 % HCl. 15000 gallons 30# gel<br>, 25% CO2 12000# 20/40 sand, 10000# 10/20 sand.                            |
| OTHER PERFORATED ZONES: None  |
| CURRENT STATUS  |
| WHAT IS CURRENT STATUS OF WELL? <u>Pumping oil well</u> .   |
| IF P&A, LIST PLUGGING DETAILS:  |
|   |

| OPERATOR: Yates Drilling Co. LEASE: Doyal   |
|---|
| WELL NO.: 3FOOTAGE:1980/FSL- 990/FEL SEC: 27-T12s-R31e  |
|   |
| TUBULAR DATA  |
| SURFACE_CASING  |
| SIZE: 8-5/8" 24# CEMENTED WITH: 260 SX. TOC: Surface FEET DETERMINED BY: Circulation HOLE SIZE: 12-1/4" SETTING DEPTH: 409'                     |
| INTERMEDIATE CASING   |
| SIZE: None CEMENTED WITH: SX. TOC: FEET DETERMINED BY: HOLE SIZE: SETTING DEFTH:  |
| LONG STRING   |
| SIZE: 5-1/2" 14# CEMENTED WITH: 850 SX.  TOC: 630' FEET DETERMINED BY: Temp. Survey  HOLE SIZE: 7-7/8" SETTING DEPTH: 3099'  TOTAL DEPTH: 3100' |
| FRODUCING_INTERVAL  |
| FORMATION: Queen FOOL OR FIELD: SE Chaves Queer SPUD DATE: 9-20-84 COMPLETION DATE: NOME PERFORATED: 2991' FEET TO 2997' FEET                   |
| STIMULATION: 750 gallons of 15 % HCl, 15000 gallons 30# gel<br>, 25% CD2 20000# 20740 sand, 10000# 10720 sand.                                  |
| OTHER PERFORATED ZONES: None  |
| ent tratagraphic constraints  |
| CURRENT STATUS  |
| WHAT IS CURRENT STATUS OF WELL? Temp. Abandoned  IF P&A, LIST FLUGGING DETAILS:   |
|   |

| OPERATOR: Yates Drilling Co.  | LEASE: Doyal  |
|-------------------------------|---|
|                               | SL- 330 <u>'FWL _</u> SEC: _26-T12s-R31e                                      |
|                               |   |
| TUBULA                        | AR_DATA   |
| SURFACE CASING                | -   |
| TOC: Surface FEET             | CEMENTED WITH: 250 SX. DETERMINED BY: Circulation SETTING DEPTH: 400'         |
| INTERMEDIATE CASING           |   |
| TOC: FEET                     | CEMENTED WITH: SX. DETERMINED BY: SETTING DEPTH:                              |
| LONG STRING                   |   |
| TOC: 310' FEET                | CEMENTED WITH: 975 SX.  DETERMINED BY: Temp. Survey SETTING DEPTH: 30887      |
| PRODUCIN                      | 3 INTERVAL  |
| SPUD DATE: 11-18-84 C         | _POOL OR FIELD: SE Chayes Queen<br>OMPLETION DATE: 1-24-87<br>EET TO29851FEET |
| , 22 tons CO2, 12000# 20740 s | 5 % HCl, 15000 gallons 30# gel<br>and, 8500 # 12/20 sand.                     |
| OTHER PERFORATED ZONES: None  |   |
| CHEEK                         | T STATUS  |
|                               | L? Pumping oil well   |
| IF F&A, LIST PLUGGING DETAILS | :   |
|                               |   |

| OPERATOR: Yates Drillin   | g_Co   | LEASE: Gallagh   | er State   |
|---|--------|--|--|
| WELL NO.: 1 FOOTAGE   |        |  |  |
|   | TUBUL  | AR DATA  |  |
| SURFACE CASING  |        |  |  |
| SIZE: 8-5/8" 24#<br>TOC: Surface<br>HOLE SIZE: 12-1/4"                      | FEET   | DETERMINED BY:   | Circulation  |
| INTERMEDIATE CASING   |        |  |  |
| SIZE: None<br>TOC:<br>HOLE SIZE:  | FEET   | DETERMINED BY:   |  |
| LONG_STRING   |        |  |  |
| SIZE: 5-1/2" 14#<br>TOC: _Surface<br>HOLE SIZE: 7-7/8"<br>TOTAL DEPTH: 3100 |        | _SETTING DEPTH:  | 900 SX.<br>Circulation<br>3084   |
| . ER  | ODUCIN | G INTERVAL   |  |
| FORMATION: Queen<br>SPUD DATE: 10-28-84<br>PERFORATED: 29821                | C      | OMPLETION DATE:  | 11-9-84  |
| STIMULATION: 650 gallon<br>, 22 tons CO2, 12000# 2                          | 0/40_s | and. 10750#_10/  | 20 sand.   |
| OTHER FERFORATED ZONES:   | _None_ | The time time time time time time time tim   | The risk first time that the risk state and the risk time that the state and the state |
|   |        | T_STATUS   | the case for the the me will determine the me and the me   |
| WHAT IS CURRENT STATUS  |        |  | well   |
| IF P&A, LIST PLUGGING D   |        |  |  |
| **************************************                                      |        | latin velis sense 10000 Maty stand annu 1844 addit still 4188 annut 1850 serve serve | were arther reter being separature, took were ring came track that their came man art  |
|   |        |  |  |

| OPERATOR: _Yates_Drilling   | Co.                                   | _LEASE: _Ge                          | rner_Fe                         | deral   | ne man continge to a pro-         |
|---|---------------------------------------|--------------------------------------|---------------------------------|---|-----------------------------------|
| WELL NO.: 2 FOOTAGE:  |                                       |                                      |                                 |   |                                   |
|   | <u>Tn</u> ěnr <i>t</i>                | AR_DATA                              |                                 |   |                                   |
| SURFACE CASING  |                                       |                                      |                                 |   |                                   |
| SIZE: 8-5/8" 24th<br>TOC: Surface<br>HOLE SIZE: 12-1/4"                   | FEET                                  | DETERMINE                            | ED BY: C                        | arculatio   | .313                              |
| INTERMEDIATE CASING   |                                       |                                      |                                 |   |                                   |
| SIZE: None<br>TOC:<br>HOLE SIZE:  | FEET                                  | DETERMINE                            | ED BY:                          |   | nick from major dans filmin (j.m. |
| LONG STRING   |                                       |                                      |                                 |   |                                   |
| SIZE: 5-1/2" 14#<br>TOC: 1992'<br>HOLE SIZE: 7-7/8"<br>TOTAL DEPTH: 3100' | FEET                                  | _CEMENTED<br>DETERMINE<br>_SETTING I | WITH: 5<br>ED BY: 0<br>DEPTH: 3 | 550<br>Cement Bor<br>5098′                                | sx.<br>nd Log                     |
| FRO   | DUCIN                                 | G INTERVAL                           | 000<br>1-1                      |   |                                   |
| FORMATION: Queen SPUD DATE: 4-29-84 PERFORATED: 2982                      | C                                     | DMPLETION                            | DATE:c                          | <u>) - 1 - 844</u>  | make over overa source place bloc |
| STIMULATION: 750 gals. 1<br>25% CO2, 16500# 20740 s                       | and.                                  | 1700#_12/3                           | 20_sand_                        |   |                                   |
| OTHER PERFORATED ZONES:   |                                       |                                      |                                 |   |                                   |
| C   | URREN                                 | T_STATUS                             |                                 |   |                                   |
| WHAT IS CURRENT STATUS O  |                                       |                                      | g oil we                        | e 1 1   |                                   |
| IF P&A, LIST FLUGGING DE  | TAILS                                 |                                      |                                 | the barre state that where each residence desired for the | ·** (*** (*); save see es         |
|   | · · · · · · · · · · · · · · · · · · · |                                      |                                 | 44 PM AND 1111 1111 1111 1111 1111 1111                   |                                   |

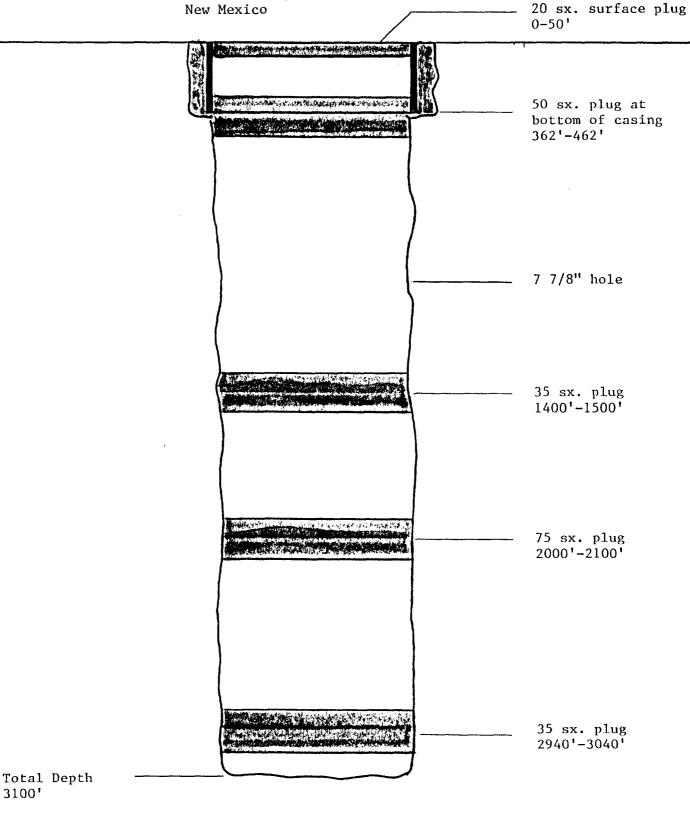
| OFERATOR: Yates Drilling Co.   | LEASE: Darner Federal   |
|--|---|
|  | FNL-19801FEL SEC: 34-T12s-R31e  |
| the barry tree, then state than their tree filler and their tree tree tree tree tree tree tree t | !   |
| TUBUL  | AR DATA   |
| SURFACE CASING   |   |
| TOC: Surface FEET  | CEMENTED WITH: 225 SX. DETERMINED BY: Circulation SETTING DEPTH: 408'   |
| INTERMEDIATE CASING  |   |
| SIZE: None TOC: FEETHOLE SIZE:   | CEMENTED WITH: SX. DETERMINED BY: SETTING DEPTH:                        |
| LONG_STRING  |   |
| SIZE: 5-1/2" 14# TOC: 1810 FEET HOLE SIZE: 7-7/8" TOTAL DEPTH: 3100                              | CEMENTED WITH: 250 SX. DETERMINED BY: Temp. Survey SETTING DEPTH: 31007 |
| FRODUCIA   | IG_INTERVAL   |
| SPUD DATE: 7-2-84  | POOL OR FIELD: SE Chayes Queen<br>COMPLETION DATE: 8-12-84<br>FEET TO   |
| STIMULATION: 750 gals, 15% HC 5000 SCF N2 per barre, 1500#                                       | l acid, 15000 gals, 30# gel,<br>} 20740 sand, 1700# 12720 sand_         |
| OTHER PERFORATED ZONES: None   |   |
| CURREN   | NT_STATUS   |
|  | L? Pumping oil well   |
|  |   |
|  |   |
|  |   |

| OPERATOR: <u>Yates Drilling Co</u>                                     | o. LEASE: Garner Federal   |
|--|--|
|  | 501FSL-19801FEL_SEC:_27-T12s-R31e  |
|  | BULAR DATA   |
| SURFACE CASING   |  |
| SIZE: 8-5/8" 24# TOC: Surface FE HOLE SIZE: 12-1/4"                    | CEMENTED WITH: 250 SX. EET DETERMINED BY: Circulation SETTING DEPTH: 424'  |
| INTERMEDIATE CASING  |  |
| SIZE: None TOC: FE HOLE SIZE:  | CEMENTED WITH: SX. ET DETERMINED BY: SETTING DEPTH:  |
| LONG STRING  |  |
| SIZE: 5-1/2" 14#  TOC: 1900' FI  HOLE SIZE: 7-7/8"  TOTAL DEPTH: 3100' | CEMENTED WITH: 270 SX. EET DETERMINED BY: Temp. Survey SETTING DEPTH: 3098.54'   |
| ERODU  | CING_INTERVAL  |
| FORMATION: Queen SPUD DATE: 10-14-84 PERFORATED: 29871                 | POOL OR FIELD: SE Chaves Queen COMPLETION DATE: 10-30-84 FEET TO 2993' FEET  |
| STIMULATION: 750 gallons o   | f 15 % HCl, 15000 gallons 30# gel<br>20/40 sand, 9000# 10/20 sand  |
| OTHER PERFORATED ZONES: No   | <u> </u>   |
| GUIS-  | (Salarin harris and ha |
| · · · · · · · · · · · · · · · · · · ·                                  | RENT STATUS  |
|  | WELL? Pumping oil well   |
|  |  |
|  |  |

| OPERATOR: Yates Drilling  | Co.                                | LEASE: Garner Federal  |  |
|---|------------------------------------|--|--|
|   |                                    | FSL-23101FELSEC:_27-T12s-R31e  |  |
|   |                                    |  |  |
|   | TUBUL                              | AR DATA  |  |
| SURFACE CASING  |                                    |  |  |
| SIZE: 8-5/6" 24#<br>TOC: Surface<br>HOLE SIZE: 12-1/4"  | FEET                               | CEMENTED WITH: 250 SX. DETERMINED BY: Circulation SETTING DEPTH: 4287  |  |
| INTERMEDIATE CASING   |                                    |  |  |
| TOC:  | FEET                               | CEMENTED WITH: SX. DETERMINED BY: SETTING DEPTH:   |  |
| LONG STRING   |                                    |  |  |
| SIZE: 5-1/2" 14#<br>TOC: 1820'<br>HOLE SIZE: 7-7/8"<br>TOTAL DEPTH: 3100'   | FEET                               | CEMENTED WITH: 320 SX.  DETERMINED BY: Temp. Survey SETTING DEPTH: 3098  |  |
| ERC   | DDUCIN                             | G INTERVAL   |  |
| FORMATION: Gueen<br>SPUD DATE: 11-11-84<br>PERFORATED: 29851  | C                                  | POOL OR FIELD: SE Chaves Queen<br>OMPLETION DATE: 11-30-84<br>EET TO 2995' FEET  |  |
|   |                                    | 5 % HCl. 15000 gallons 30# gel<br>40 sand.12500# 10/20 sand  |  |
| OTHER PERFORATED ZONES: None  |                                    |  |  |
| Ç   | CURREN                             | T_STATUS   |  |
| WHAT IS CURRENT STATUS (  | OF WEL                             | L? <u>Pumping oil well</u>   |  |
| IF P&A, LIST PLUGGING DE  | ETAILS                             | The first was said less two tree said that the tree said that will be said the said that the tree said the tree sa |  |
| The man first that who may first the man and the time that had been seen and the man and the man and time the time the time that the man and time time the time that the time time time time the time time time time time time time tim | THE ARM IS SHOULD THREE WHICH SHOW | and the test see and the see the test see the  |  |
|   | appl PMM cour april                |  |  |

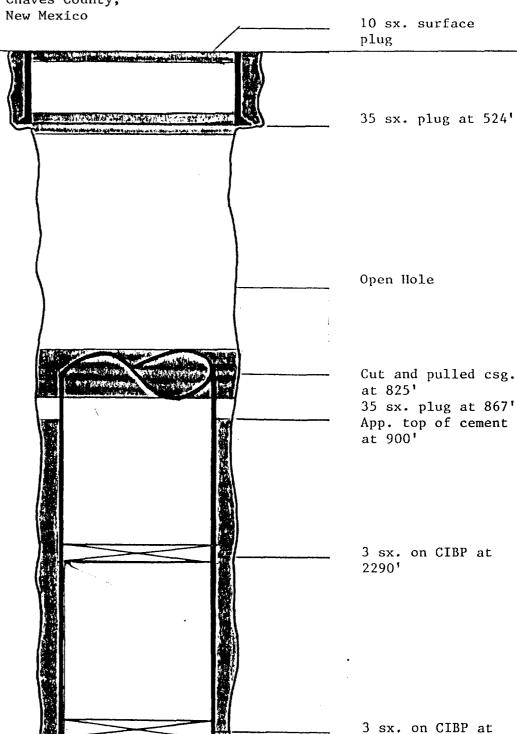
| OPERATOR: Yates Drilling   | <u>. Co</u> | LEASE: Rich Federal  |                                     |
|--|-------------|--|-------------------------------------|
| WELL NO.: 1 FOOTAGE:   |             | NL-2310'FEL SEC: 27-T1   |                                     |
|  |             |  |                                     |
|  | INROF       | AR DATA  |                                     |
| SURFACE CASING   |             |  |                                     |
| SIZE: 8-5/6" 24# TOC: Surface HOLE SIZE: 12-1/4"   | FEET        | CEMENTED WITH: 250 DETERMINED BY: Circulat SETTING DEPTH: 412                                      | sx.                                 |
| INTERMEDIATE CASING  |             |  |                                     |
| SIZE: None TOC: HOLE SIZE:   | FEET        | DETERMINED BY:   |                                     |
| LONG STRING  |             |  |                                     |
| TOC:   | FEET        | CEMENTED WITH: DETERMINED BY: SETTING DEPTH:   |                                     |
| <u>er</u>  | ODUCIN      | 3_INTERVAL   |                                     |
| FORMATION: None SPUD DATE: 11-30-84 PERFORATED:  | C(          | POOL OR FIELD: SE Chave  OMPLETION DATE: None  EET TO  | s_Queen<br>FEET                     |
|  |             |  |                                     |
| The section of the se |             |  |                                     |
| OTHER PERFORATED ZONES:  | None        |  | AND COMPANY AND SHAPE AND SHAPE AND |
|  | TUSEEN      | T STATUS   |                                     |
|  |             | r_granded_and_Abandoned  |                                     |
|  |             |  |                                     |
| _Class "C" w/2% CaCl2,   | olug 1      | : P&A 12-12-84<br>"C" neat, Plug 2100-2000<br>300-1400: 35 sx Class "C<br>" w/2% CaCl2, Flug 50-Su | " neat,                             |

RICH FEDERAL # 1 2310' FNL & 2310' FEL Section 27-T12S-R31E Chaves County, New Mexico



| OPER | ATO          | OR:                | _900   | w C   | j <u>l</u>         | Comp                         | any              |      | _LEAS                    | E: ]                                   | ioles                      | s Ee            | den      | a1                                      | *************************************** | d 10011 23114 14513 1118 188       |
|------|--------------|--------------------|--------|-------|--------------------|------------------------------|------------------|------|--------------------------|--|----------------------------|-----------------|----------|---|---|------------------------------------|
|      |              |                    |        |       |                    |                              |                  |      |                          |  |                            |                 |          |   |   | -R31e                              |
|      |              |                    |        |       |                    |                              | ŢŲ               | BUL  | as De                    | ATA                                    |                            |                 |          |   |   |                                    |
| SURF | ACI          | E C                | ASIN   | G     |                    |                              |                  |      |                          |  |                            |                 |          |   |   |                                    |
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| LONG | ) <u>_</u> S | TRI                | NG     |       |                    |                              |                  |      |                          |  |                            |                 |          |   |   |                                    |
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| _3sx | <u>()</u>    | $L_{\mu}g$         |        | CII   | 3P (               | 1,225                        | 20. s.           | CU   | t_anc                    | l pul                                  | Lled                       | 41              | Z2"      | Cas                                     | ւրց                                     | @ 825<br>:e                        |
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TOLES FEDERAL # 1 1980' FSL & 1650' FWL Section 26-T12S-R34E Chaves County,



2990'

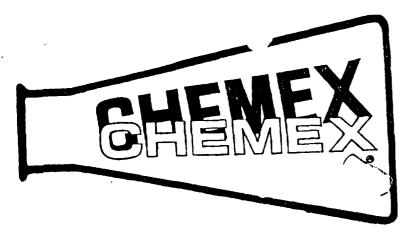
4 1/2" set at 3115'

Total Depth 3115'



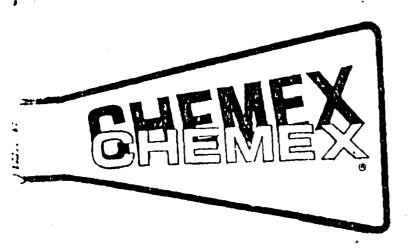
P. O. Hope 4. Artesia for M. Hight

| Yates Drillin                            | ng Co.                 |   | / u  | _ Date      | 2-5-85            |             |
|--|------------------------|---|--|-------------|-------------------|-------------|
|  | s #1                   | 44  | , <u>Chaves</u>  |             |                   |             |
| e Sample well                            |                        |   |  |             |                   | <del></del> |
|  |                        | Other 1                                       | o<br>0   |             |                   | -           |
| · · · · · · · · · · · · · · · · · · ·    |                        | Analyst Ja                                    | nes B. Cam   | panella_    |                   | •• •••      |
|  | NO MINER BENIEF HIN ST | NALYSIS PATTERN                               |  |             |                   |             |
|  | -1"                    | <u>, , , , , , , , , , , , , , , , , , , </u> |  | -           |                   | . " ÷       |
| · <del>·</del> ++                        | <b>i</b>               | 11-1-1-1                                      | į  | į.          |                   | :           |
| ···                                      | -+                     | ++++++++                                      |  |             |                   | 204         |
| 1  |                        | 1111  |  | l           | 1:11              |             |
| and Solids                               | NG.L (PPM)             | t PN  | 1  |             |                   |             |
| oloum                                    |                        |   |  | ph          | 6.0               | <del></del> |
| ; nesium                                 |                        |   |  | or Gravity  | <del>-</del>      |             |
| in ide                                   | il                     |   |  |             |                   |             |
| - artionale                              | 88                     |   |  |             | 1                 |             |
| artionate                                | nil                    |   | an and the state of the state o |             |                   |             |
| ot ii Hardriess                          | nil .                  | -   |  |             | •                 |             |
| otal Dissolved Solias<br>ydragen Sulfide | 88<br>nil              | 11<br>  |  |             |                   |             |
| DAY-1940                                 | 10+                    |   |  |             |                   |             |
| MES                                      |                        |   |  |             | II <sub>2</sub> S |             |
| SELNWANEISSELNEIL. Se                    | etion 27-T128-R31E     | tr  |  | <del></del> |                   |             |



P. O. Box 423 Artesia, N. M. 88210

| Company Yates Drilling          | 1                             |   |  | Date 3-22-85   |
|---------------------------------|-------------------------------|---|--|--|
| FieldSpears Water S             | Sample, NW/4SW/               | Continu 26 1                                      |  |  |
| Lease and Well No.              |                               | Prod. Forma                                       | ation  |  |
| Source of Sample                |                               | · · · · · · · · · · · · · · · · · · ·             |  |  |
| Sample of Prod. Water□          | Inj. Water[]                  | Other[.]  |  |  |
| Date Collected                  |                               | Analyst   | James B. Cam                                       | panella  |
| 51a* 20 15                      | WATER (NUMBER BESIDE ION 10 5 | ANALYSIS PATTE SYMBOL INDICATES m 0               |  | 15 200 17  |
| Na* 20 15                       | <del>j'in jr</del>            | <del>, , , , , , , , , , , , , , , , , , , </del> | <del>-     -   -     -     -     -          </del> | 15 20C1-   |
| c***                            |                               | <del>├┤┤┤</del> <del>┤</del> ┼                    | <del>┤</del>                                       | ++++++++++++++++++++++++++++++++++++++   |
|                                 | - - - - - - -                 | <del> </del><br><del> </del>                      | <br><del> </del>                                   | 504:   |
| Fe***                           |                               |   |  |  |
| Dissolved Solids<br>Constituent | MG/L (PPM)                    |   | EPM  |  |
| Calcium<br>Magnesium            | nil<br>nil                    |   | Sn   | ph 6.0<br>Gravity  |
| Sodium                          | nil                           | •   | Sp   | . Gravity  |
| Iron                            | nil                           | -   |  |  |
| Chloride                        | <u>nil</u>                    |   |  |  |
| Bicarbonate                     | nil                           |   |  |  |
| Carbonate                       | nil<br>120                    | ·   |  |  |
| Sulfate                         | 120                           |   |  |  |
| Total Hardness                  | nil                           |   | <u> </u>   |  |
| Total Dissolved Solids          | 120                           |   |  |  |
| Hydrogen Sulfide                |                               | -   |  | The state of the s |
| Oxygen                          | 10+                           |   |  |  |
| Remarks:                        |                               |   |  |  |
| Fresh H20                       |                               | a   | 11   |  |
|                                 |                               |   |  |  |
|                                 |                               |   |  |  |



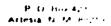
P. O. Box 423 Artesia, N. M. 68210

| opany Yates Dril                             | ling Co.             |   | Date2-       | 6-85          |
|--|----------------------|---|--------------|---------------|
|  |                      | County Chave  | s State      | NM            |
| and Well NoSam                               | ple #2               | Prod Formation  |              |               |
| are of Sample wel                            | 1 head               | 0   |              |               |
| pre f Prod Wate                              | rx Inj. Water Oth    | ner I   |              |               |
| and one tod                                  |                      | Analyst James B. (  | Campanella   |               |
|  | WATER AND            | ALYSIS PATTERN  | . "          |               |
| 1° 1-1-4-1-1-1                               |                      | <u>,                                    </u>  |              | - <del></del> |
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|  | -++-+-+-             | 1   |              | 1             |
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| Part Pharmacher of Barrier Annual Assessment |                      |   |              |               |
| er Solids<br>Stitue it                       | MG/L (PPM)           | ЕРМ   |              |               |
| e ann  | nil                  |   | ph           | 6.0           |
| in Ston                                      |                      |   | _ Sp Gravity | 6.0           |
| Sept.  | nil nil              |   | -            |               |
| out ide                                      |                      | () ————————————————————————————————————   | -            |               |
| irbunate                                     |                      |   | •            |               |
| artionate                                    |                      | ,   | -            |               |
| ntate  |                      |   | -            |               |
| al Hardisess                                 | nil                  | <u>-</u>  | _            | t             |
| dai Dissulted Solids                         | 108                  |   | -<br>-       | 1             |
| rangen Sulfide                               | nil                  | T<br>Note the second of the secon | <del>-</del> | l             |
| · .gen                                       | 10+                  | · · · · · · · · · · · · · · · · · · ·   | <del>-</del> | •             |
| marks  |                      | •   |              |               |
|  | Section 26-T12S-R31E |   |              |               |



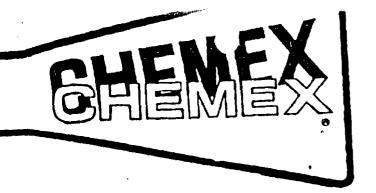
P O Bas 423 Artesia, N M 88210

| mpany Yates Drlg. Co.               | · · · · · · · · · · · · · · · · · · · | Date 8-23-84                          |
|-------------------------------------|---------------------------------------|---------------------------------------|
| · · · ·                             |                                       | . State                               |
| e and Well No. Doyal (1             | Prod. Formation                       |                                       |
| urce of Sample Frac Tank            |                                       |                                       |
| imple of Prod. Water: x Inj. Water. | Other 1                               |                                       |
| ne Collected 8-23-84                | Analyst K. Jone                       | 25                                    |
| .N. WHER HESIDI                     |                                       | + + + + + + + + + + + + + + + + + + + |
| 32.40                               |                                       |                                       |
| iolal Dissolved Solids 116245       |                                       |                                       |
| liemarks:                           |                                       |                                       |
|                                     |                                       |                                       |
|                                     |                                       |                                       |
|                                     |                                       |                                       |



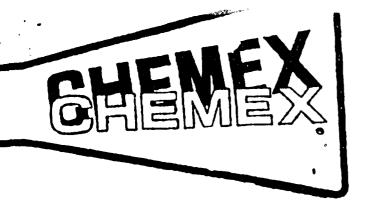


| mpany Yates Drilling Co.   |                      | · ·  |             |                                       |
|--|----------------------|--|-------------|---------------------------------------|
| NO.  |                      |  |             |                                       |
| ase and Well No. Garner #7   | Prod Porma           | to t   |             |                                       |
| urce of Sample Well head   |                      |  |             |                                       |
| mple of Prod. Water Int. Water   | *Other : "           |  |             |                                       |
| ate Collected 10-2-84  | Ana'vst              | Jame   | s Campanel  | la                                    |
|  | TER ANALYSIS PALTE   |  |             |                                       |
|  | THE THE TOTAL THE    |  |             |                                       |
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| ····   | <del></del>          |  | 1 1 1 1 1 1 | · · · · · · · · · · · · · · · · · · · |
| **** <del>                                  </del>   |                      |  |             |                                       |
|  |                      |  |             | }                                     |
|  |                      | եստե ն ե ենչեր<br>-                            | 4           |                                       |
| esolved Solids<br>eistituent MG. L. (PPM   | ,                    | IPM + ;  |             |                                       |
| darum2240  | quality and a second | 112  | . ph        | 6.0                                   |
| agnesium 23960<br>atium 37099  |                      | 1964   | i p Grasif, |                                       |
| .·n 48   |                      | antimotivaj kralitus met vindos sintegatogo ka |             |                                       |
| lloride 129,500  |                      | 3648   |             | •                                     |
| arbonate 384   |                      | 6<br>nil                                       |             | •<br>•                                |
| idate 1680   |                      | 35   |             |                                       |
| Hardness 26,200  |                      |  |             |                                       |
| Tal Dissolved Solids 157.764   |                      |  |             |                                       |
| urogen Sulfide n1  |                      |  | •           |                                       |
| gen10+   | <del></del>          |  | . "         |                                       |
| . marks:   |                      |  |             |                                       |
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|  | 9 h                  |  |             |                                       |
|  |                      |  |             |                                       |
| The second secon |                      |  |             |                                       |



P. O. Bur 423 Artesia, N. M. 58210

| npany Yates Drilling  | Co   | Date 11-20-84                           |
|---|--|---|
| ld  |  |   |
| se and Well No. Gallagher St. 4   |  |   |
| ice of Sample   |  |   |
| uple of Prod. Water[J Inj. Wal  | •  | u                                       |
| :- Cullected 11-20-84   | •  | s Campanella                            |
|   | WATER ANALYSIS PATTERN                       |   |
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| <sup>₩</sup> <sup>4**</sup> <del> - - - - - - - - - - - - - - - - - - -</del> | ╂╼╂╼╂╼╂╼╂╼╂╼╂╼╂┈╂╼╂╌┞╌┞╶┞┈┞                  | -                                       |
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| solved Solids   | •  |   |
| ostituent MG/L (P   | PM) EPM .                                    |   |
| .nem3,800   | 190  | ph 5,5 Sp Gravity                       |
| nesium 44,200<br>11um 118,266   | 362  | Sp Gravity                              |
| 394   |  |   |
| loride201_000   | 5662   | ••                                      |
| rbonate 400   | <del></del>                                  | <b>-</b> *:                             |
| late1,200   | 2:5  | <del>-</del>                            |
| lal Hardness 48,000   |  |   |
| tal Dissolved Solids 250,600  |  | <del></del>                             |
| urogen Sullide N1)  | 0 3  |   |
| ygen2.5   | •  | <del></del>                             |
| marks:  |  |   |
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|   |  |   |



P. O. Box 423 Arlesia, N. M. 88210

|  |             | County   |                        |
|--|-------------|--|------------------------|
| e and Well No. Doya  | 1 #2        | Prod. Formation  |                        |
| rce of Sample  |             |  |                        |
| nple of Prod. Water K  | Inj. Water( | Other, 1   | 6                      |
| e Collected  | (1, 6       | AnalystK. Jon  | es                     |
|  |             | ER ANALYSIS PATTERN  |                        |
| No. 20 15  | to 1        | ON STABOL INDICATES P. SCALE UNIT  | 10 15 2001-            |
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| ' <i>•</i> " <del>                                    </del> | ╁╃╌┼╌┼╌╂╌╂╌ | <del>╂╶╂═╅═╃═╂═╂═╏</del> ═╂ <del>═╏</del> ═╂═ <del>╏</del> ═╂═                 | +- +- +- +- +-   HCO5- |
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|  |             |  |                        |
| solved Solids<br>astituent                                   | MG/L (PPM)  | "<br>EPM   |                        |
|  | `           |  |                        |
| cium2720<br>gnesium_2980                                     |             | <del></del>  | ph 7.0<br>Sp. Gravity  |
| tium103477   |             |  | -                      |
| 50+  |             | -  | _                      |
| oride  |             | · = • =  | <del>-</del>           |
| arbonate 415   |             |  |                        |
| rbonate_0  |             | ••   | -                      |
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| tal Hardness5700   |             |  | _                      |
| tal Dissolved Solids_179/                                    |             |  | <del>_</del>           |
| drogen Sulfide7  |             |  |                        |
| ygen10+  |             |  | _                      |
| marks:   |             | · ·  |                        |
| KCL 0%   |             |  |                        |
| NOL VA   |             | Υ  |                        |
|  |             |  |                        |
|  |             | a  |                        |

# CACTUS QUEEN UNIT ADDRESSEE LIST SURFACE OWNERS AND OFFSET OPERATORS

Mr. Raymond Spears 307 N. 7th Street Lovington, NM 88260 Mrs. J. D. Spears Box 1017 Carlsbad, NM 88220

Enserch Exploration, Inc. 6 Desta Drive Suite 5250 Midland, Texas 79705-5510 Attention: Steve Wright

Phillips Petroleum Company 4001 Penbrook Odessa, Texas 79762 Attention: Frank Hulse Reading & Bates Petroleum Company 2412 N. Grandview Suite 201 Odessa, TX 79761 Attention: Don Kipgen

Burk Royalty
P. O. Box BRC
Wichita Falls, Texas 76307

Rich Partnership P. O. Box 3402 Casper, Wyoming 82602 Attention: Ken Snyder Great Western Drilling Company Box 1659 Midland, TX 79702 Attention: Pat L. Shannahan Dalport Oil Corporation 3471 Interfirst One Dallas, Texas 75202

E. S. Mayer, Jr.
c/o Reading & Bates Petroleum
Company
2412 N. Grandview
Suite 201
Odessa, TX 79761
Attention: Don Kipgen

C. R. Gallagher, Jr. 1005 Texas Commerce Bank 1208 - 14th Street Lubbock, Texas 79401 Gregory J. Gallagher 8550 Kathy Freeway Suite 208 Houston, Texas 77024

Robin C. Herndon, III c/o Robin C. Herndon, Jr. P. O. Box 2031 Mobile, Alabama 36601

Yates Drilling Company 105 South Fourth Street Artesia, New Mexico 88210 Attention: Toby Rhodes

## OIL CONSERVATION DIVISION FORM C-108 (Supplement)

Application of Yates Drilling Company For a Secondary Recovery Project (Proposed Cactus Queen Unit) Chaves County, New Mexico

## I. Purpose:

Application is made for authorization to inject water into the Queen formation within the boundaries of the proposed Cactus Queen Unit. The proposed unit consists of 560 acres and lies in Sections 26,27,34 and 35 of Township 12 South, Range 31 East, Chaves County, New Mexico. This project would be classified as a secondary recovery project with the objective of recovering hydrocarbons that will not be recovered by primary means.

The reservoir as defined is near primary depletion. Our studies show that a five-spot injection pattern with six injection wells and six producing wells will result in recovery of oil in economic quantities not otherwise recoverable. Such a pattern will utilize eleven existing wells and will initially require the drilling of one additional well.

## II. Operator:

Yates Drilling Company 105 South Fourth Street Artesia, New Mexico 88210

Phone Number: (505) 746-9889

### III. Injection Well Data:

A well data sheet is attached for each of the six wells proposed for injection. Each injection well data sheet includes a downhole schematic of how each individual well will be configured if this application is approved.

## IV. Existing Project:

The proposed project is not an expansion of an existing project and will be a totally new project.

## V. Ownership:

A lease ownership map is attached which identifies all wells and lease ownership within two miles of any of the six proposed injection wells. A one-half mile radius circle has been drawn around each of the injection wells on the second map to identify the unit's area of review.

### VI. Well Data:

There are seventeen wells including the proposed injection wells which fall within the area of review. Two of these wells have been plugged and abandoned, one well is temporarily abandoned, and the remaining fourteen wells are active "Queen" producers. Available data for each of the seventeen well is included in attached well data sheets. Additionally a downhole schematic has been drawn depicting each of the two plugged and abandoned wells.

## VII. Project Data:

- 1. The proposed daily injection rate is approximately 200 barrels per day for each of the six proposed injection wells. Total injection for the unit would be 1200 barrels per day. The maximum injection rate for any one well will be based on fracture pressures as determined from proposed step rate test to be conducted on each injection well.
- 2. Produced water will be stored in existing open top fiberglass tanks until transferred to a covered steel storage tank, therefore the water system will be open until the water is transferred to the steel storage tank. Any fresh water will be stored in a covered and sealed steel tank. Produced oil will immediately be separated from produced water and stored in steel, covered, production tanks until sold.
- 3. Initially the injection wells may take water on a vacuum, but as the reservoir begins to fill, a positive surface injection pressure will be required to inject water. The maximum injection pressure will also be based on proposed step rate tests.
- 4. The source of injection fluid will be produced water from producing wells within the unit and fresh water from an existing "Ogollala" well in the area. No commitment has been made but there are at lease two water wells nearby that are capable of producing water in the amounts required. The State Engineer's Office