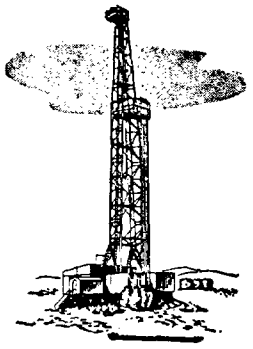


YATES DRILLING COMPANY

105 SOUTH FOURTH STREET — (505) 748-1471

FAX (505) 746-6480

TELEX 508891 (YPCART)

ARTESIA, NEW MEXICO 88210

PEYTON YATES
PRESIDENT

S. P. YATES
VICE PRESIDENT

RANDY G. PATTERSON
SECRETARY

DENNIS G. KINSEY
TREASURER

January 8, 1993

William J. LeMay, Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
P. O. Box 2088
Santa Fe, New Mexico 87504

Re: Application of Yates Drilling Company
For Administrative Approval of Injection for the
Purpose of Pressure Maintenance
Eddy County, New Mexico
S. Loco Hills

Dear Mr. LeMay:

Enclosed for filing is an original and one copy of OCD Form C-108 with all attachments in the above-referenced case. One copy of this application is being filed by copy of this letter with the Oil Conservation Division's District Office in Artesia. This application has also been mailed by certified mail, return receipt requested, to the owners of the surface of the land on which this well is located and to each leasehold operator within one-half mile of the proposed injection well. Notice of this application was published in the Artesia Daily Press on November 22, 1992 and an Affidavit of Publication confirming publication is enclosed herewith.

Your consideration of this application is appreciated.

Very truly yours,

YATES DRILLING COMPANY

Douglas W. Hurlbut

Douglas W. Hurlbut
Landman

DWH/mw

Enclosures

CC: Oil Conservation Division
District Office
Drawer DD
Artesia, New Mexico

Affidavit of Publication

No. 14135

STATE OF NEW MEXICO,

County of Eddy:

Gary D. Scott being duly sworn, says: That he is the Publisher of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive days weeks on the same day as follows:

First Publication November 22, 1992

Second Publication

Third Publication

Fourth Publication

Subscribed and sworn to before me this 24th day of November 19 92

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1996

Copy of Publication

LEGAL NOTICE

Yates Drilling Company hereby gives notice to the public that it will be filing an application with the New Mexico Oil Conservation Division seeking authority to inject water for the purpose of secondary recovery in its South Loco Hills Unit Well No. 29 located 1310 feet from the South line and 130 feet from the East line of Section 19, Township 18 South, Range 29 East, N.M.P.M., Eddy County, New Mexico. The proposed injection will be into the Grayburg formation between the depths of 2375 feet and 2383 feet. The maximum injection rate sought is 300 barrels of water per day and the maximum surface pressure to be used will be 1250 psia. Any objection to this application must be filed within fifteen (15) days of the date of this advertisement at the Oil Conservation Division, Post Office Box 2088, Santa Fe, New Mexico 87504. Questions concerning this application should be directed to Mr. Doug Hurlbut, Yates Drilling Company, 105 South Fourth Street, Artesia, New Mexico 88210. Telephone (505) 748-1471.
Published in the Artesia Daily Press, Artesia, NM. November 22, 1992.

Legal 14135

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

RELEASE 1-25-93

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no

II. Operator: Yates Drilling Company

Address: 105 S. 4TH Street, Artesia, NM 88210

Contact party: Tobin L. Rhodes Phone: (505) 748-1471

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ☒ yes ☐ no
If yes, give the Division order number authorizing the project R-7011 R-7012.

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

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate 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 available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground 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 Engineer

Signature: Tobin L. Rhodes Date: 1-7-93

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

APR 1/2 PM

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.

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

Application of Yates Drilling Company
For Authorization to Inject Water
Into
South Loco Hills Unit #29
P-19-18S-29E
Eddy County, New Mexico

I. Purpose

Application is made for administrative authorization to inject water into the Grayburg formation underlying the boundaries of the existing South Loco Hills Unit by utilizing the South Loco Hills Unit #29 well as an injection well. The existing unit is a currently active secondary recovery unit in portions of Sections 19, 20, 29, and 30 of Township 18 South, Range 29 East, Eddy County, New Mexico.

II. Operator

Yates Drilling Company
105 South Fourth Street
Artesia, New Mexico 88210
(505) 748-1471
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 South Loco Hills Unit. No expansion of the boundaries of the existing unit is proposed. The unit was approved by order R-7011 on June 30, 1982. Injection into specific unit wells was approved by order R-7012 also on June 30, 1982.

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. A map is also attached on which the area of review has been identified by drawing a one half mile radius around the proposed injection well.

VI. Well Data

There are presently seventeen wells, including the proposed injection well, within the area of review. All of these wells are within the boundaries of the existing South Loco Hills Unit. Two of these wells have been plugged and abandoned, six of the wells are active unit injection wells, eight wells are pumping oil wells producing from the unitized interval and the remaining well is the proposed injection well. There are no wells in the area of review that currently produce or inject into any formation other than the Grayburg. Data for each of the wells is included in the 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 expected daily average water injection rate for the subject well is 200 barrels per day. Ultimately the maximum injection rate will be limited by the maximum surface injection pressure, but the maximum rate is not expected to exceed 400 barrels per day.

2. Produced water from unit wells is now stored in covered steel storage tanks until injected. Make-up water is fresh water, which is stored in a seperate covered steel tank until injected. No outside produced water is used in the system. There are no changes planned.

3. Initially this well may take water on a vacuum, but as the reservoir near this well fills, a positive surface injection pressure will be required to inject water. A pressure limitation of 0.2 psi per foot of depth (475 psig) would initially be acceptable. We will eventually want to run a step rate test to determine the formation parting pressure as a basis for raising the injection pressure above 475 psig. We ultimately expect an injection pressure of 1250 psig will be required.

4. The source of injection fluid is produced water from the producing wells within the unit and fresh water from the Ogallala aquifer. The fresh water is purchased from Yates Petroleum Corporation and delivery is taken through a pipeline.

5. No water compatibility problems are expected as Ogallala water has been successfully injected into this unit and others for many years. No compatibility problems have been observed.

VIII. Geologic Data

The Loco Hills Field consists of stratigraphic traps located on the south flank of an anticline known as the Artesia-Vacuum trend. The axis of this anticline trend extends eastward from Artesia, New Mexico into Lea County, New Mexico.

Production from the unit comes from two zones in the uppermost portion of the Grayburg formation of Permian age. One producing zone is known locally as the "Loco Hills" sand. This sand corresponds to Zone 4 of the Grayburg as established by the USGS in the Maljamar Field to the east. The second producing zone is the Grayburg dolomite located immediately above the "Loco Hills" sand. The depth to the top of the Grayburg occurs at 2260 feet, while the "Loco Hills" sand occurs about 100 feet deeper in the subject well.

The "Loco Hills" sand is a very fine grained, silty sandstone containing sandy dolomite and minor amounts of shale. The sand grains are white to medium gray and light brown in color. The amount of dolomite cementation appears to be the dominant factor in controlling porosity. The Grayburg dolomite is light colored, dense, very fine grained with some anhydrite. It contains oolitic porosity, pinpoint porosity and random fractures which may or may not be cemented.

The only underground source of drinking water overlying the unit area is the Dockum, Chinlee and Santa Rosa formations, Triassic Age, that would be found at a depth of approximately 250 feet according to the State Engineer's office in Roswell, New Mexico.

IX. Stimulation Program

The proposed injection well has received a previous acid treatment. The details of this treatment are outlined in the data sheet for this well. No additional treatment is planned at this time.

X. Well Logs

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

XI. Fresh Water

The records of the State Engineer's office in Roswell do not contain a record of any fresh water wells within one mile of the proposed injection well.

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.

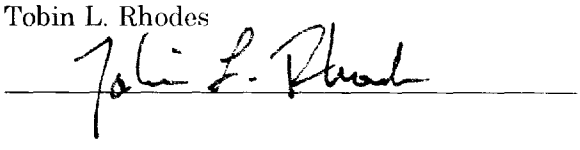
XIII. Proof of Notice

A listing of off-set leasehold operators within 1/2 mile of the proposed injection well and the owner of the surface at the well site who 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, 1993

WELL DATA SHEET

OPERATOR; Yates Drilling Company
LEASE: South Loco Hills Unit
WELL #: 29
FOOTAGE; 1310 fsl & 130 fel
SEC-TWN-RNG, COUNTY, STATE: 19-18s-29e, Eddy, NM
SPUD DATE: 27-Jul-92
COMPLETION DATE: 26-Aug-92
CURRENT STATUS: Shut-in well
PROPOSED STATUS: Injection well

SURFACE CASING

CASING SIZE: 8.625 INCHES
CASING WEIGHT: 24.000 POUNDS/FOOT
CASING GRADE: J-55
DEPTH SET: 350 FEET
CEMENTED USED: 225 SACKS
TOP OF CEMENT: 0 FEET
DETERMINED BY: circulation
HOLE SIZE: 12.250 INCHES

PRODUCTION CASING

CASING SIZE: 5.500 INCHES
CASING WEIGHT: 17.000 POUNDS/FOOT
CASING GRADE: J-55
DEPTH SET: 2,500 FEET
CEMENTED USED: 825 SACKS
TOP OF CEMENT: 0 FEET
DETERMINED BY: circulation
HOLE SIZE: 7.875 INCHES
TOTAL DEPTH: 2,500 FEET
PLUGGED BACK TD: 2,500 FEET

INJECTION OR PRODUCING INTERVAL

INTERVAL TOP: 2,375 FEET
INTERVAL BOTTOM: 2,383 FEET
COMMENTS:
PREVIOUS STIMULATION: 1000 gallons of acid
PROPOSED STIMULATION: none

INJECTION TUBING (if an injection well)

TUBING SIZE: 2" INCHES
LINING: plastic
PACKER: tension injection packer
DEPTH TO BE SET: 2,325 FEET

OTHER DATA

1. Name of injection or producing interval.
   Grayburg

2. Name of field or pool (if applicable).
   Loco Hills - Queen, Grayburg, San Andress

3. Is this a new well drilled for injection?
   No. Well was recently drilled for production. Low producing rate caused conversion to injection.

   If no, for what purpose was the well originally drilled?
   Drilled as producing oil well.

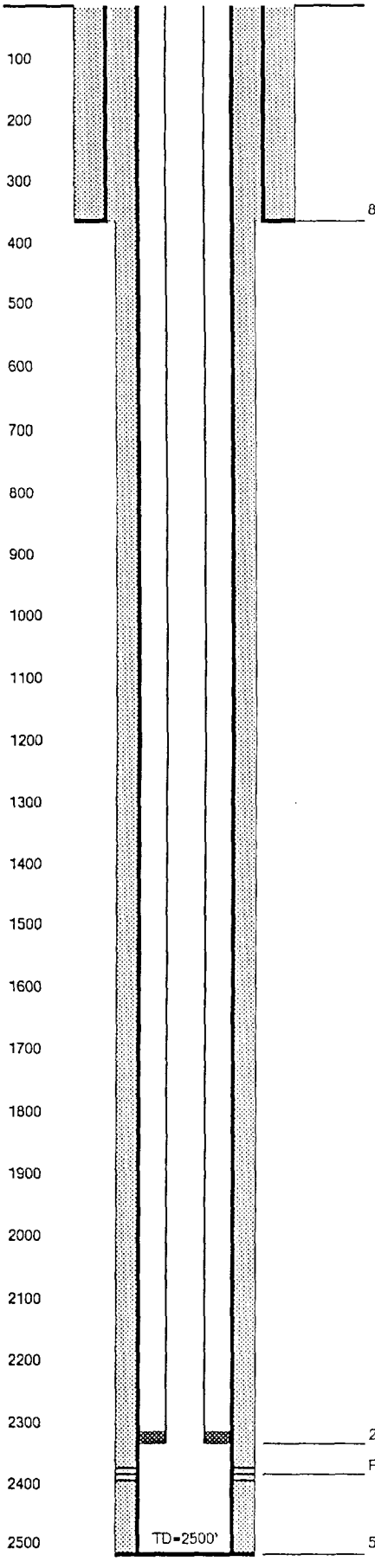
4. Has well ever been perforated in any other zones?
   No

   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.
   The following zones have produced on or around the Unit; Yates-950, Seven Rivers-1300, Queen-1900, San Andres-2750, Bone Spring-7750, Wolfcamp-8600, Cisco-9400, Strawn-10400, Atoka-10700, and the Morrow-11000. The Unitized interval and the Morrow sand are the only zones with any significant production. All other zones were either non-commercial or limited reservoirs.

6. If well is plugged and abandoned, list details of plugging and attach schematic.

SOUTH LOCO HILLS UNIT #29
Sec. 19-18S-29E
Eddy County, NM



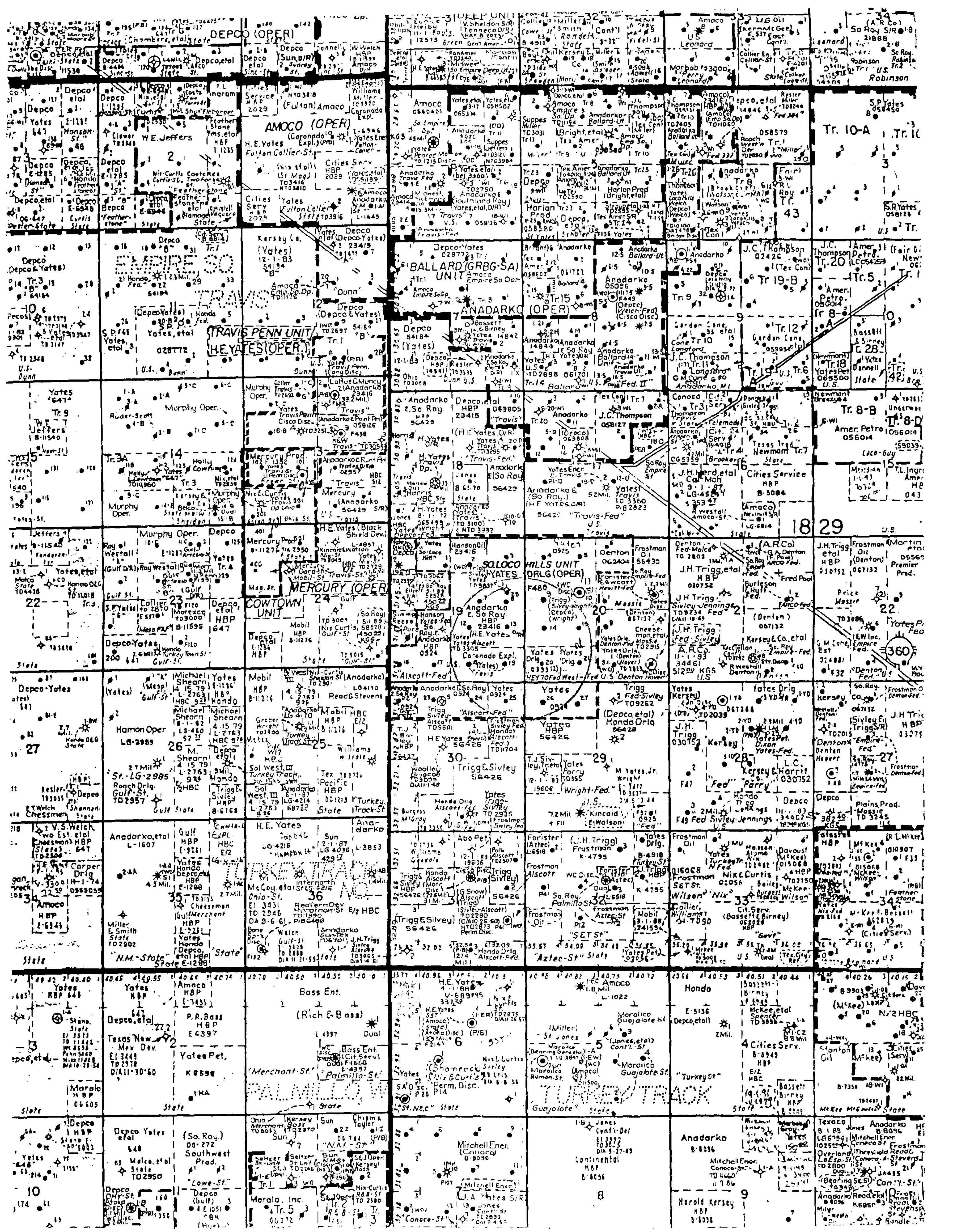
8-5/8", J-55, 24# Casing set @ 350', Cemented w/225 sacks, 75 sacks circulated

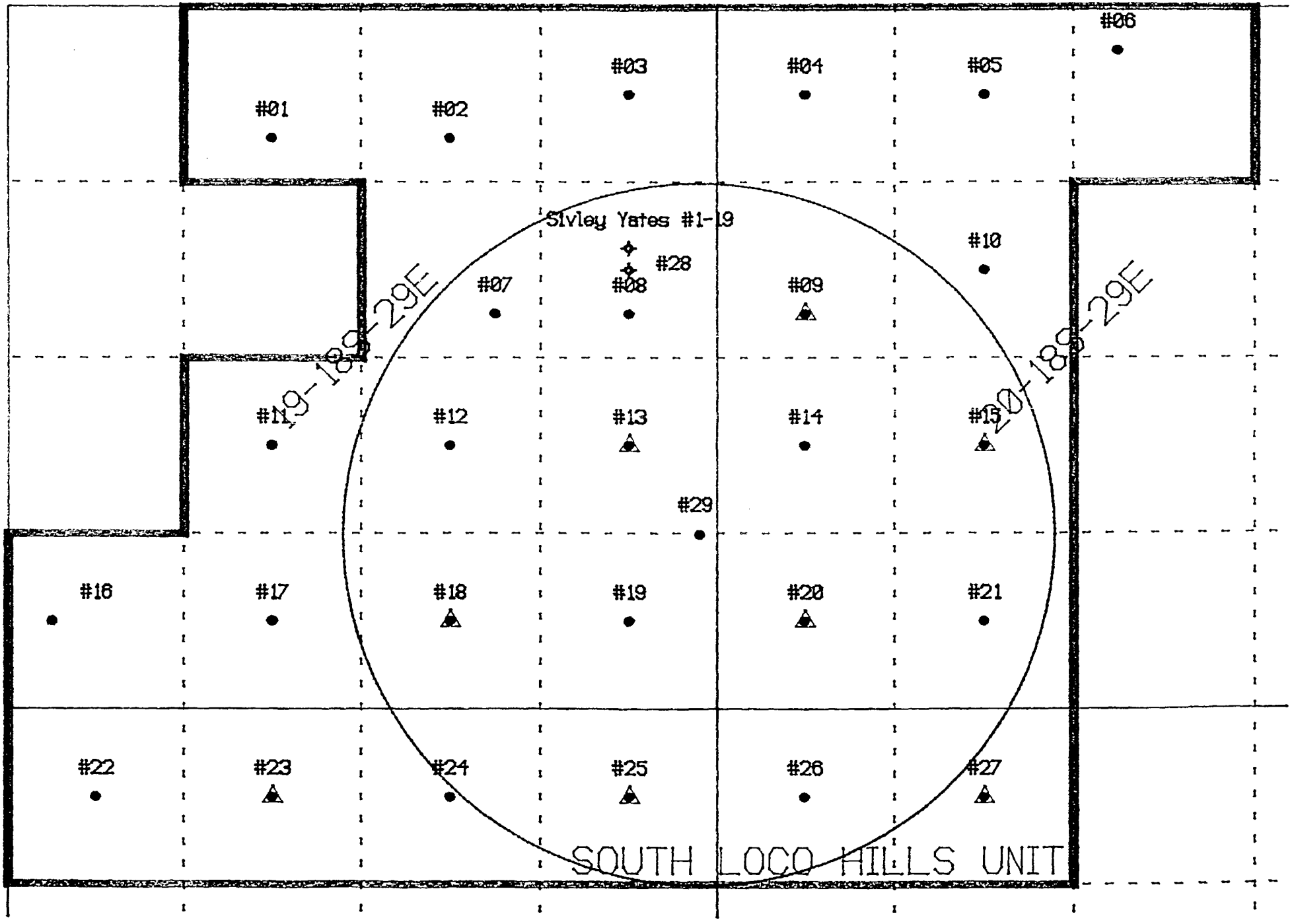
2-3/8" Plastic lined tubing w/ packer set @ approximately 2325'

Perforated 2375'-2383' w/ 4 shots per foot

5-1/2", J-55, 17# Casing set @ 2500', Cemented w/625 sacks, 128 sacks circulated

Proposed Injection Configuration


DEPCO (OPER)
AMOCO (OPER)
BALLARD (GRBG-SA) UNIT
ANADARKO (OPER)
TRAVIS PENN UNIT
H.E.YATES (OPER.)
MERCURY (OPER)
COWTOWN UNIT
SO. LOCO HILLS UNIT
YATES DRLG (OPER)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Sivley Yates #1-19
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19-18S-29E
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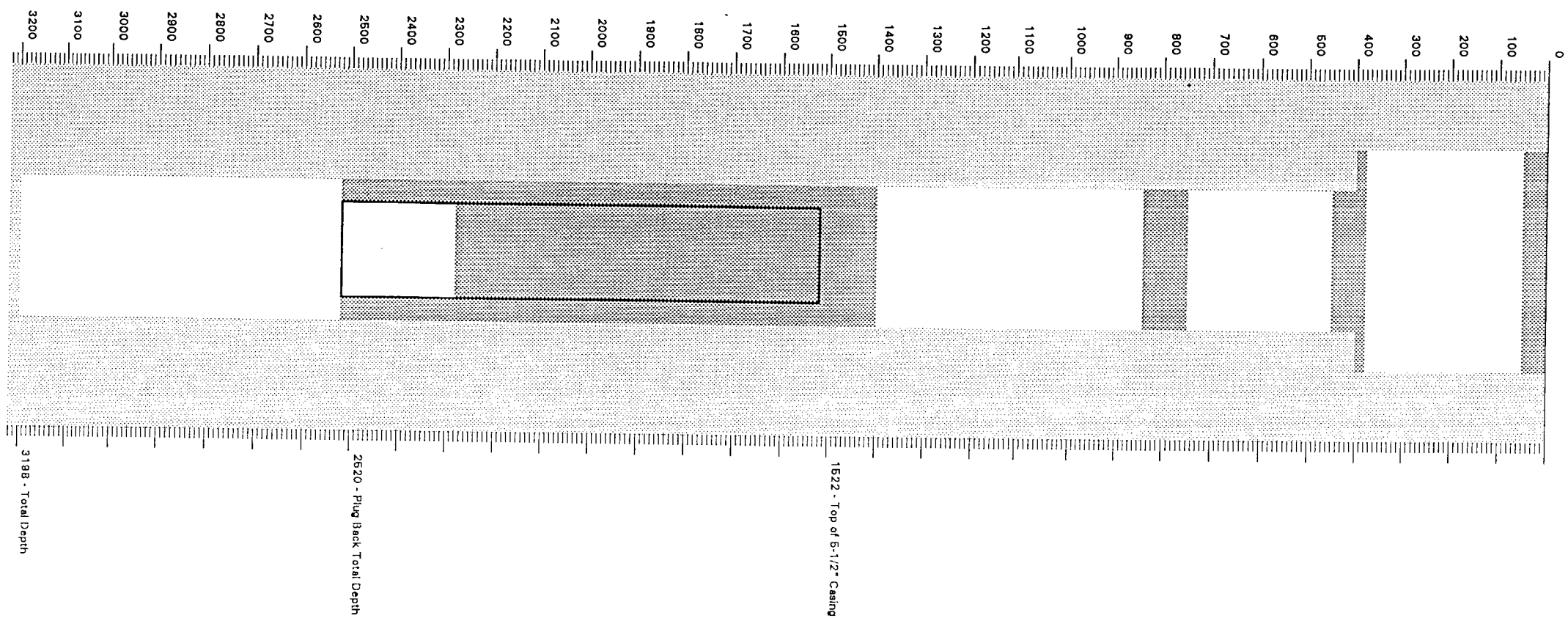
SOUTH LOCO HILLS UNIT

Area of Review
Well Data

WELL	SLHU #7	SLHU #8	SLHU #9	SLHU #12	SLHU #13	SLHU #14	SLHU #15	SLHU #18
LOCATION	G-19-18S-29E	H-19-18S-29E	E-20-18S-29E	J-19-18S-29E	I-19-18S-29E	L-20-18S-29E	K-20-18S-29E	O-19-18S-29E
OPERATOR	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company
COMPLETION DATE	19-Apr-62	12-Apr-62	19-Dec-62	03-Apr-62	18-Mar-62	18-Feb-62	07-Mar-62	10-Mar-62
COMPLETION TYPE	Pumping Oil well	Pumping Oil well	Pumping Oil well	Pumping Oil well	Pumping Oil well	Pumping Oil well	Pumping Oil well	Pumping Oil well
TOTAL DEPTH	2460	2451	2440	2424	2402	2412	2500	2424
CASING PROGRAM	8-5/8@403 w/50sx 5-1/2@2460 w/250sx	7@405 w/50sx 4-1/2@2450 w/150sx	7-1/2@493 w/100sx 4-1/2@2439 w/100sx	8-5/8@403 w/50sx 5-1/2@2420 w/325sx	7@415 w/50sx 4-1/2@2402 w/100sx	7@498 w/100sx 4-1/2@2411 w/100sx	7@485 w/125sx 4-1/2@2499 w/100sx	7@464 w/100sx 4-1/2@2424 w/100sx
PERFORATIONS	2385-2394 D 2404-2430 LH	2332-2390 D 2412-2422 LH	2361-2376 D 2397-2410 LH	2344-2348 D 2386-2396 LH	2294-2327 D 2354-2372 LH	2351-54 D 2385-2400 LH	2440-2446 D 2465-2483 LH	2344-2350 D 2374-2386 LH
COMPLETION RECORD	Frac with 40,000 gal oil, 50,000# sand Frac with 38,000 gal oil, 50,000 # sand	Frac with 54,600 gal oil, 50,000# sand Frac with 41,600 gal oil, 70,000# sand	Frac with 66,234 gal oil, 67,000# sand	Frac with 36,000 gal oil, 75,000# sand Frac with 20,000 gal oil, 25,000# sand Frac with 60,000 gal wf-30 110,400# sand	Frac with 34,000 gal oil, 82,000# sand Frac with 18,500 gal oil, 30,000# sand	Frac with 46,620 gal oil, 60,000# sand	Frac with 47,880 gal oil, 61,000# sand	Frac with 52,000 gal oil, 82,000# sand
CURRENT STATUS	Pumping	Pumping	Injection	Pumping	Injection	Pumping	Injection	Injection
REMARKS								

Area of Review
Well Data

WELL	SLHU #19	SLHU #20	SLHU #21	SLHU #24	SLHU #25	SLHU #26	SLHU #28	Sivley Yates 1-19
LOCATION	P-19-18S-29E	M-20-18S-29E	N-20-18S-29E	B-30-18S-19E	A-30-18S-29E	D-29-18S-29E	H-19-18S-29E	H-19-18S-29E
OPERATOR	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Yates Drilling Company	Trigg
COMPLETION DATE	23-Dec-61	13-May-61	07-Aug-61	12-May-62	07-Aug-61	01-Dec-61	01-May-56	02-May-61
COMPLETION TYPE	Pumping Oil well	Pumping Oil well	Pumping Oil well	Pumping Oil well	Pumping Oil well	Pumping Oil well	Pumping Oil well	Dry hole
TOTAL DEPTH	2405	2790	2700	2433	2603	2442	3198 pb 2520	9837
CASING PROGRAM	7@422 w/100sx 4-1/2@2395 w/125sx	7-1/2@410 w/75sx 4-1/2@2778 w/175sx	7@468 w/75sx 4-1/2@2692 w/175sx	7@411 w/50sx 4-1/2@2432 w/150sx	7@461 w/75sx 4-1/2@2603 w/175sx	7@432 w/100sx 4-1/2@2438 w/100sx	8-5/8 @ 397 5-1/2@2520 w/150 sx	8-5/8@991 w/550sx 4-1/2@9600 w/400sx
PERFORATIONS	2338-2344 D 2374-2386 LH	2387 2399 LH	2401-2433 D 2446-2454 LH	2325-2347 D 2381-2388 LH	2392-2400 LH	2398-2408 LH	2356-2366 LH	9506-9528 Penn
COMPLETION RECORD	Frac with 42,000 gal oil, 100,000# sand Frac with 17,200 gal oil, 9,000# sand Frac with 60,984 gal WF-30 70,000# sand	Frac with 27,000 gal oil, 87,000# sand	Frac with 39,600 gal oil, 56,000# sand Frac with 40,000 gal wtr	Frac with 37,000 gal oil, 80,000# sand Frac with 40,000 gal wtr 62300# sand	Frac with 40,000 gal oil, 74,000# sand	Frac with 36,120 gal oil, 114,000# sand	Frac with 10,000 gal viso-frac 15,000# sand	Dry hole
CURRENT STATUS	Pumping	Injection	Pumping	Pumping	Injection	Pumping	P&A	P&A
REMARKS							Schematic attached Replugged when unit formed	Schematic attached



wellform.xl 01/07/93

Replugged well as follows: Cleaned out to 1522' w/7-7/8" bit. Tagged old 5½" casing at 1522'. Ran 4-3/4" bit and cleaned out to 2282'. Set 150 sx Class "C" cement plug at 2282'. Tagged plug at 1400'. Set 75 sx Class "C" with 3% CaCl cement plug at 840'. Tagged plug at 750'. Set 75 sx Class "C" with 3% CaCl cement plug at 450'. Tagged plug at 375'. Set 15 sx plug at surface. Install dry hole marker.
Work completed 10-27-82.

RECEIVED

South Loco Hills Unit #28
1980 FNL [redacted] 660 FWL
H-19-18S-29E
Eddy, NM

JOHN H. TRIGG #1-19 - SIVLEY YATES
1880' FNL, 660' FEL
Unit H - Section 19-18S-29E