



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD  
AZTEC, NEW MEXICO 87410  
(505) 334-5178

OIL CONSERVATION DIVISION  
BOX 2088  
SANTA FE, NEW MEXICO 87501

DATE 3-6-85

RE: Proposed MC \_\_\_\_\_  
Proposed DHC \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed SWD X \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed PMX \_\_\_\_\_

Gentlemen:

I have examined the application dated 2-26-85  
for the Hicks Oil & Gas, Inc. S.E. CHACHA UNIT #37 D-15-28N-13W  
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Docketed for Hearing: Production as shown  
two miles = no objection

Yours truly,

E. B. Burch

## 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.

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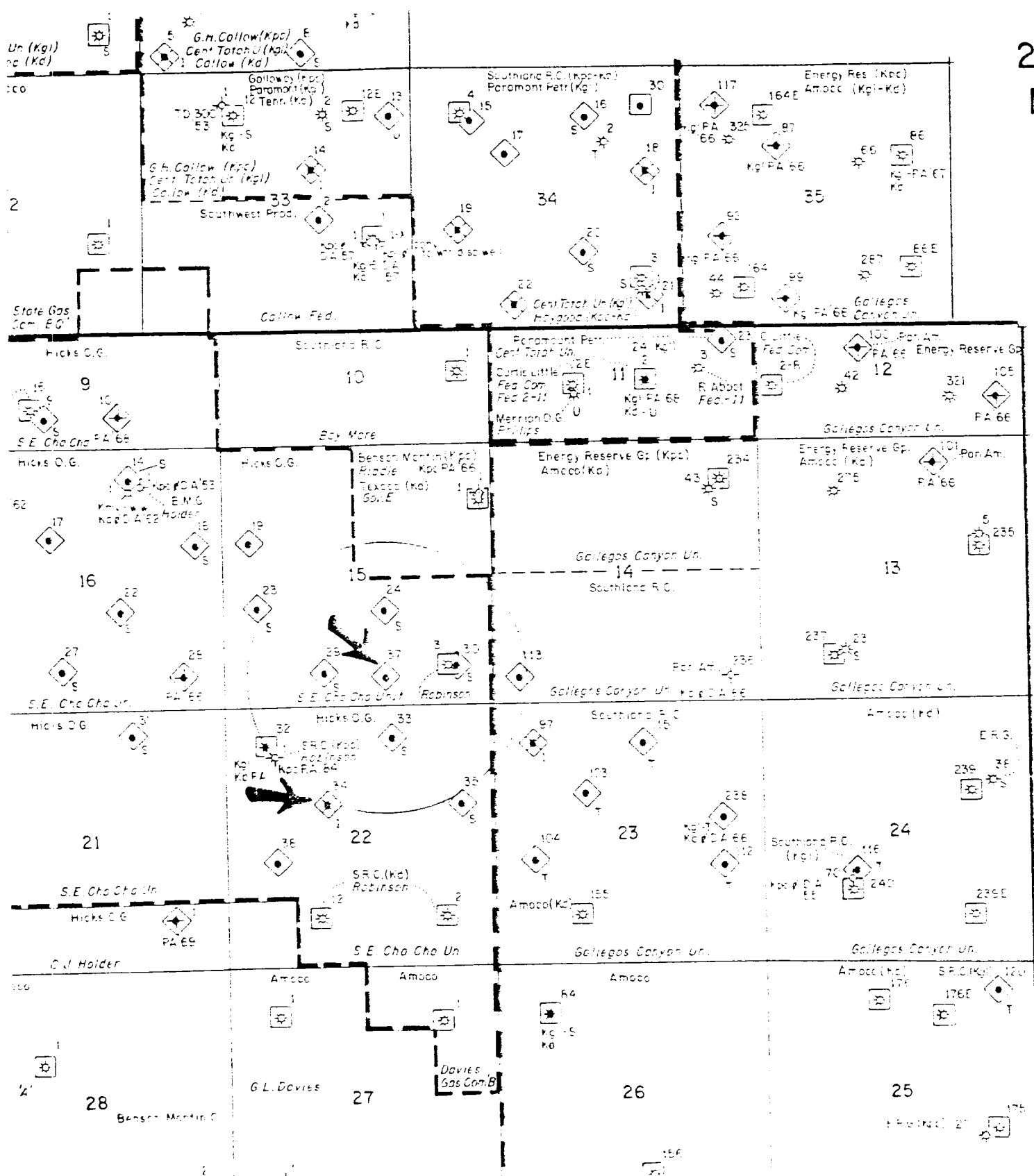
NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

RECEIVED

FEB 26 1985

OIL CON. DIV.  
DIST.

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## APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage  
Application qualifies for administrative approval? ☐ yes ☒ no
- II. Operator: Hicks Oil & Gas, Inc.  
Address: P.O. Drawer 3307, Farmington, New Mexico 87499  
Contact party: Mike Hicks Phone: 505/327-4902
- 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 \_\_\_\_\_.
- 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: Mike Hicks Title: President  
Signature: Mike Hicks Date: 1/17/85

- 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

## INJECTION WELL DATA SHEET

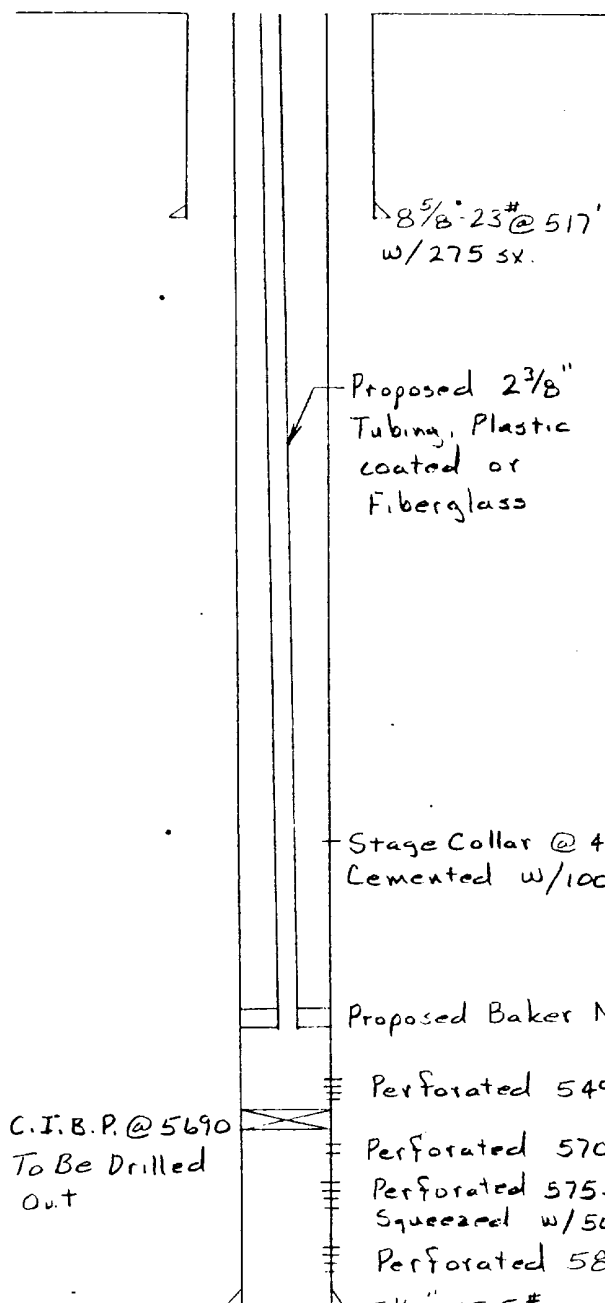
Hicks Oil &amp; Gas, Inc.

S.E. Cha Cha Unit

OPERATION	LEASE			
37	2100' FEL & 550' FSL	15	T28N	R13W
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

## Schematic

## Tabular Data



## Surface Casing

Size 8 5/8"-23# " Cemented with 275 sx.TOC Surface feet determined by CirculationHole size 12 1/4"

## Intermediate Casing

Size                      " Cemented with                      sx.TOC                      feet determined by                     Hole size                     

## Long string

Size 5 1/2"-15.5# " Cemented with 1280 sx.TOC 500' feet determined by temperature surveyHole size 7 7/8"Total depth 5940'

## Injection interval

5492' feet to 5824' feet  
(perforated or open-hole, indicate which)Stage Collar @ 4520'  
Cemented w/1000 sx.

Proposed Baker Model D Packer @ 5400'

Perforated 5492-5502

Perforated 5708-12

Perforated 5753-63  
Squeezed w/50 sx cement

Perforated 5814-24

5 1/2"-15.5# @ 5940'  
1st Stage Cemented w/280 sx.Tubing size 2 3/8" lined with Plastic or Fiberglass set in a  
(material)Baker Model "D" packer at 5400' feet.  
(brand and model)

(or describe any other casing-tubing seal).

## Other Data

1. Name of the injection formation Gallup2. Name of field or Pool (if applicable) S.E. Cha Cha3. Is this a new well drilled for injection? ☐ Yes ☒ NoIf no, for what purpose was the well originally drilled? Oil Well4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) NO5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Picture Cliff gas zone approximately 3700' above Dakota gas zoneapproximately 1500' below.

# Hicks Oil & Gas, Inc.

P. O. DRAWER 3307  
FARMINGTON, NM 87499  
505-327-4902

1/17/85

## APPLICATION FOR SALT WATER DISPOSAL S.E. CHA CHA UNIT WELL #37

### VII

1. Lease production currently averages 90 BWPD and this volume would be split between other injection wells. Also, we are planning to operate the injection well for commercial salt water disposal. At this time, it is estimated that we will be disposing of 100 bbls of water per day from wells off the lease. We do anticipate this volume to increase as the NMOCD revises it's rules concerning disposal of produced water in unlined pits. From injection records of wells in the field when the unit was actively water flooded it is estimated that 750 BWPD could be injected at 1000 psi.
2. The system will be an open system.
3. Average injection pressure 500 psi. Maximum injection pressure 1000 psi.
4. Sources of injected water.
  1. Produced water from the lease. Water analysis attatched.
  2. Produced water from San Juan Basin oil and gas wells. Typical water analysis attatched.

IX Stimulation treatment will consist of 500-1000 gallons of 15% Iron Sequestering HCL acid. If necessary the well may be frac treated with approximately 30,000 gallons of gelled water and 30,000# of 20/40 sand.

X Well logs on file with NMOCD.

XI No fresh water wells within one mile.

# Hicks Oil & Gas, Inc.

P. O. DRAWER 3307  
FARMINGTON, NM 87499  
505-327-4902

## XII Affirmative Statement

I, Mike Hicks, 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.

A handwritten signature in cursive script, reading "Mike Hicks", written over a horizontal line.

Mike Hicks  
President  
Hicks Oil & Gas, Inc.

TABULATION OF WELLS  
WITHIN 1/2 MILE RADIUS  
OF PROPOSED SALT WATER DISPOSAL WELL  
S.E. CHA CHA UNIT WELL # 37

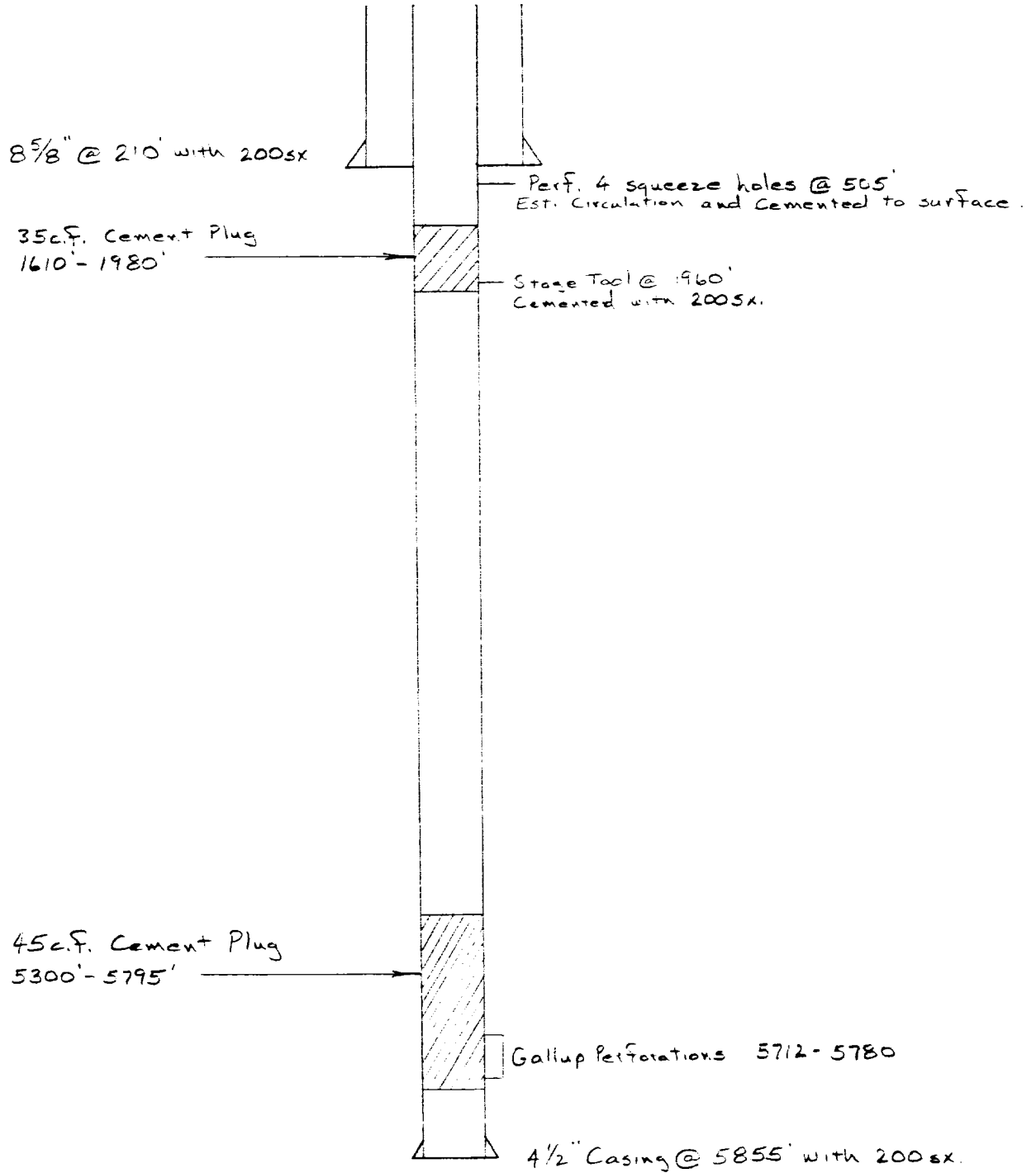
WELL	LOCATION	SURFACE CASING	CEMENT	T.O.C.	PRODUCTION CASING	CEMENT	T.O.C.	PRODUCING INTERVAL	TD
S.E. Cha Cha 24	J-15-28-13	8 5/8 @328'	225sx	surface	5 1/2 @5850'	300sx 2 stage sq.100sx	5200' 1600' 3407'	Gallup 5740-5758	5852'
S.E. Cha Cha 29	N-15-28-13	8 5/8 @317	225sx	surface	4 1/2 @5830'	400sx 2 stage sq.100sx	1610' 3518'	Gallup 5751'	5830'
S.E. Cha Cha 30	P-15-28-13	8 5/8 @324	225sx	surface	4 1/2 @5859	400sx 2 stage	1600' 4500'	Gallup 5748-5824	5860'
S.E. Cha Cha 32	D-22-28-13	8 5/8 @321	225sx	surface	4 1/2 @6499	500sx 2 stage	1500' 4920'	Dakota P&A 6273-6377 Gallup 5670-5742	6500'
S.E. Cha Cha 33	B-22-28-13	8 5/8 @202	160sx	Surface	4 1/2 @5864	400sx 2 stage	1670' 4620'	Gallup 5758-5770	5865
GCU 113	M-14-28-13	8 5/8 @210'	200sx	surface	4 1/2 @5855'	340sx		Gallup P&A 5712-5780	5865'
Robinson #3	15-28-13	8 5/8 @330'	225sx	surface	4 1/2 @6500' DV @1954'	300sx	Unknown	Dakota 6332-6418	6500'



Gallegos Canyon Unit Well #113

Unit M - Sec. 14, T28N, R13W

Well Schematic



MA

### CHA CHA GALLUP

Producing sandstone of the Cha Cha Gallup Oil Pool are the result of the transition of the regressive Carlile Seas, leaving the Gallup sandstones and the transgressive Niobrara Seas. The advancing seas caused truncation of the Gallup and deposition of new sands, silts and muds. The lower sands are cleaner and generally thought to be offshore bars deposited by currents parallel to the shore line. These basal Niobrara sandstones are oil bearing as are some of the cleaner Gallup sandstones.

The entire complex of upper Carlile-lower Niobrara sandstones has been known as "the Gallup" since the late nineteen fifties when production began along the Bisti-Horseshoe Canyon trend.

Several of the basal Niobrara sandstones are present in the Cha Cha Gallup Pool.

These sandstones have been described as follows:

Light-gray to gray-brown, fine to coarse grained quartz sandstone with minor chert, feldspar and rock fragments. Traces of glauconite and mica are present. Cement is primarily calcite with some secondary quartz. There is porosity present and oil staining is evident.

### DRINKING WATER SOURCES

Considerable effort was made to obtain chemical analyses of the water bearing rocks in Township 28 North, Range 13 West, San Juan County, N.M. These efforts failed but analyses were observed of waters taken from sources outside the township which had similar ages and depositional histories.

The analyses showed the following:

1. There is no known source of potable\* water immediately below the Cha Cha Gallup producing zones.
2. The only potable water aquifers found above the injection zones (Cha Cha Gallup) are:
  - a. the Cretaceous Kirtland (Farmington Sandstone) at depths of 630-815' in section 21. (This information obtained from Ed Welder, U.S.G.S., Albuquerque.

ROY L. PRITCHARD - *PETROLEUM GEOLOGIST*

Petroleum Club Plaza Suite 103 • P.O. Box 2372 • Farmington, New Mexico 87499 • Telephone: (505) 325-2209

DRINKING WATER SOURCES cont.

- b. the Ojo Alamo (Tertiary Period) has water with very low solids (350-850 mg/l). This is found to a depth of 350-450' in the area of interest.

\*All references herein to potable or drinking water are based on dissolved solids of 10,000 mg/l or less as found in item VIII of Application for Authorization to Inject.