



# DOME PETROLEUM CORP.

2900 DOME TOWER  
1625 BROADWAY  
DENVER, COLORADO 80202

TELEPHONE  
(303) 620-3000

February 24, 1982

Joe D. Ramey  
Secreatry Director  
New Mexico Oil Conservation  
Division  
P.O. Box 2088  
Santa Fe New Mexico 87501



Re: Application for Salt  
Water Disposal  
Leggs Field

File: WF

Gentlemen:

Attached is our application for salt water disposal in  
the Leggs field.

Very truly yours,

DOME PETROLEUM CORP.

M. Choran  
Sr. Reservoir Engineer

MC:jp

Attch.

cc: Frank Chavez  
Districe Office for  
NW New Mexico  
  
Chaco Culture National  
Historical Park  
Broomfield, New Mexico  
  
Bureau of Indian Affairs  
Windowrock Arizona

ITEM I - IV

On Form

ITEM V

Map 1

ITEM VI

Only the subject well Santa Fe Barbs #1 is in area of review. Data on this well is indicated in part III except well was spudded 10-14-78.

ITEM VII

1. Average injection rate 10,000 Bbl/D maximum rate 12,000 Bbl/D.
2. The system is open.
3. Average injection pressure is 750 psia maximum injection pressure 1000 psia.
4. Attached is water analysis of Leggs #1. The disposal zone has a water salinity of 1600 ppm the water to be disposed has a salinity of 8670 ppm. Both classify as drinking water source.
5. We determine water quality of Gallup zone by log interpretation. The logs on the Barbs No. 1 well indicates a good Gallup sand development field. Density porosity is 18-20% and the deep induction resistivity is 25-30 ohm m<sup>2</sup>/m for the interval 3316-3334'. The SP curve is reversing in this interval.

ITEM IX

Perforate and acidize

ITEM X

Logs have been sent

ITEM XI

No fresh water producing well within one mile

ITEM XII

By classification the Gallup classifies as a drinking water source. But the injection fluid also classifies as a drinking water source. The Gallup is not connected by faults to any other zones.

ITEM XIII

Attached is proof of notice published in the Farmington Daily Times February 1, 1982.

This occurs when the formation water is fresher than the mud filtrate. Rmf was .99 at 58°F (which is approximately 7700 ppm). Maximum recorded temperature during logging was 130°F. Assuming 60°F at the surface the temperature gradient in (130-60°F) - 5600' = .0125°F/ft. The BHT at 3320' should be 102°F. Rmf at 102°F is .58. Rmfeq = .85 (Rmf) = .49 (using chart Gen-9). Using chart SP - 1 from Schlumberger chart book, ignoring bed thickness effect, and using SP = +15 then Rmfeq/Rwe = .55. It follows that Rwe =  $\frac{.49}{.55}$  = .89. Using chart SP - 2 then Rw = 2.3. This equivalent to 1600 ppm salinity.

#### ITEM VIII

Data pertaining to planned injection at Leggs Field

Lithologic Detail: Sandstone, white to tan, medium sorting, angular, trace aragonic & calcite

Geologic Name: Dakota Sandstone

Thickness: 230 feet

Depth to Top: 4170 feet

Depth to Bottom: 4400 feet

Underground drinking water source underlying Dakota  
Morrison Formation - top 4490

Drinking water sources overlying Dakota  
Gallup S.S. - bottom 3650  
Menefee - 1810  
Cliff house - 1360

## APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: Dome Petroleum Corp.

Address: 2900 Dome Tower, 1625 Broadway, Denver, Colorado 80202

Contact party: Murray Choran Phone: (303) 620-3341

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 SWD 213

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: Murray Choran Title Sr. Reservoir Engineer

Signature: [Signature] Date: Jan. 26, 1982

\* 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. application for salt water disposal

SWD 213: November 7, 1978

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

### 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.

### ITEM XIII

#### NOTICE

Dome Petroleum Corp. proposes to change zones in an injection well at Santa Fe Leggs Field to lower injection pressure. The well is located 990' FSL, 500' FWL, Section 10, Township 21N, Range 10W San Juan County, New Mexico. The change of zones will be from the Entrada Formation at a depth of 5516'-5595' to the Gallup Formation at a depth of 3000'-3400'.

Maximum injection rate will be 12,000 BBL. of water/day with a maximum injection pressure of 1000 PSI.

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.

Legal No. 10855 published in the Farmington Daily Times, Farmington, New Mexico on Monday, February 1, 1982.