STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

S. Hospah (Lwr. Sd.) 4-35
11-12-17N-9W

TONEY ANAYA
GOVERNOR

November 28, 1984

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

RECEIVED
NOV 30 1984
OIL CON. DIV.
DIST. 3

APPLICATION OF TENNECO OIL EXPLORATION AND PRODUCTION TO EXPAND ITS WATERFLOOD PROJECT IN THE SOUTH HOSPAH UPPER SAND OIL POOL IN McKINLEY COUNTY, NEW MEXICO

ORDER No. WFX-535

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Order No. R-3325, Tenneco Oil Exploration and Production has made application to the Division on November 8, 1984 for permission to expand its South Hospah Upper Sand Waterflood Project in the South Hospah Upper Sand Pool in McKinley County, New Mexico.

NOW, on this 29 day of November, 1984, the Division Director finds:

1. That application has been filed in due form.

2. That satisfactory information has been provided that all offset operators have been duly notified of the application.

3. That no objection has been received within the waiting period as prescribed by Rule 701B.

4. That the proposed injection well is eligible for conversion to water injection under the terms of Rule 701.

5. That the proposed expansion of the above referenced waterflood project will not cause waste nor impair correlative rights.

6. That the application should be approved.

IT IS THEREFORE ORDERED:

That the applicant, Tenneco Oil Exploration and Production, be and the same is hereby authorized to inject water into the Hospah formation through plastic-lined tubing set in a packer at a maximum of 100 feet above the uppermost

interval on each well in the following described wells for purposes of waterflooding to wit:

SOUTH UPPER HOSPAH WATERFLOOD WELL NUMBERS AND LOCATIONS	MAXIMUM SURFACE INJECTION PRESSURES
Well No. 16 1782' FNL and 2317'FWL, Section 12, T-17N, R-9W, McKinley County, NM	320 PSIG
Well No. 40 2602' FNL and 1580'FEL, Section 12, T-17N, R-9W, McKinley County, NM	315 PSIG
Well No. 55 1755' FNL and 1515' FEL, Section 12, T-17N, R-9W, McKinley County, NM	310 PSIG

IT IS FURTHER ORDERED:

That the operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

That the casing-tubing annulus (in each well) shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

That the injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 0.20 psi per foot of depth to the uppermost injection interval on each well. Note list of wells for specific pressures.

That the Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Hospah formation. That such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

That the operator shall notify the supervisor of the Division's Aztec District Office before injection is commenced through said wells.

That the operator shall immediately notify the Supervisor of the Division's Aztec District Office of the failure of the tubing, casing, or packer in said wells or the leakage of water from or around said wells and shall take such steps as may be timely or necessary to correct such failure or leakage.

That the subject wells shall be governed by all provisions of Division Order No. R-3325 and Rules 702, 703, 704, 705, and 706 not inconsistent herewith.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

R. L. STAMETS,
Division Director

S E A L

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

OIL CONSERVATION DIVISION
BOX 2088
SANTA FE, NEW MEXICO 87501

DATE 12-7-84

RE: Proposed MC _____
Proposed DHC _____
Proposed NSL _____
Proposed SWD _____
Proposed WFX X
Proposed PMX _____

Gentlemen:

I have examined the application dated 11-8-84

for the Tenneco Oil Co. Hospah #55 ~~E~~ 12-17N-9W
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows: SHU

Approve:

Note correct name is actually South Hospah Unit #~~33~~ 55. Also the unit letter is H because of an NWU

Yours truly,

Ed Kuehl

Tenneco Oil
Exploration and Production
A Tenneco Company

Eastern Rocky Mountain Division

P.O. Box 3119
Englewood, Colorado 80155
(303) 740-4800

Delivery Address:
6162 South Willow Drive
Englewood, Colorado

November 5, 1984

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, NM 87501
Attention: Joe Ramey

State of New Mexico
Oil & Gas Conservation Commission
1000 Rio Brazos Road
Aztec, NM 87410

RE: Application for Authorization to Inject
Hospah #55
Unit G, Sec. 12, T17N, R9W
McKinley County, New Mexico

Gentlemen:

Attached you will find our Application for Authorization to Inject for the purpose of secondary recovery, including supportive information for the referenced well. The offset operators have been notified by mail of this application.

Please contact this office if you require additional information.

Very truly yours,

TENNECO OIL COMPANY

Scott McKinney
Sr. Regulatory Analyst

SMc:srp
Attachment

cc: Alex McLean

STATE OF NEW MEXICO
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

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: Tenneco Oil E & P, WRMD

Address: P.O. Box 3249, Englewood, CO 80155

Contact party: Eric Matheson Phone: (303) 740-4800 , Ext. 476

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 R3325.

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: Eric W. Matheson Title Engineer

Signature: Eric W Matheson Date: Sept 10, 1984

* 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. April 19, 1983 - Application for Hospah #18

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

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;

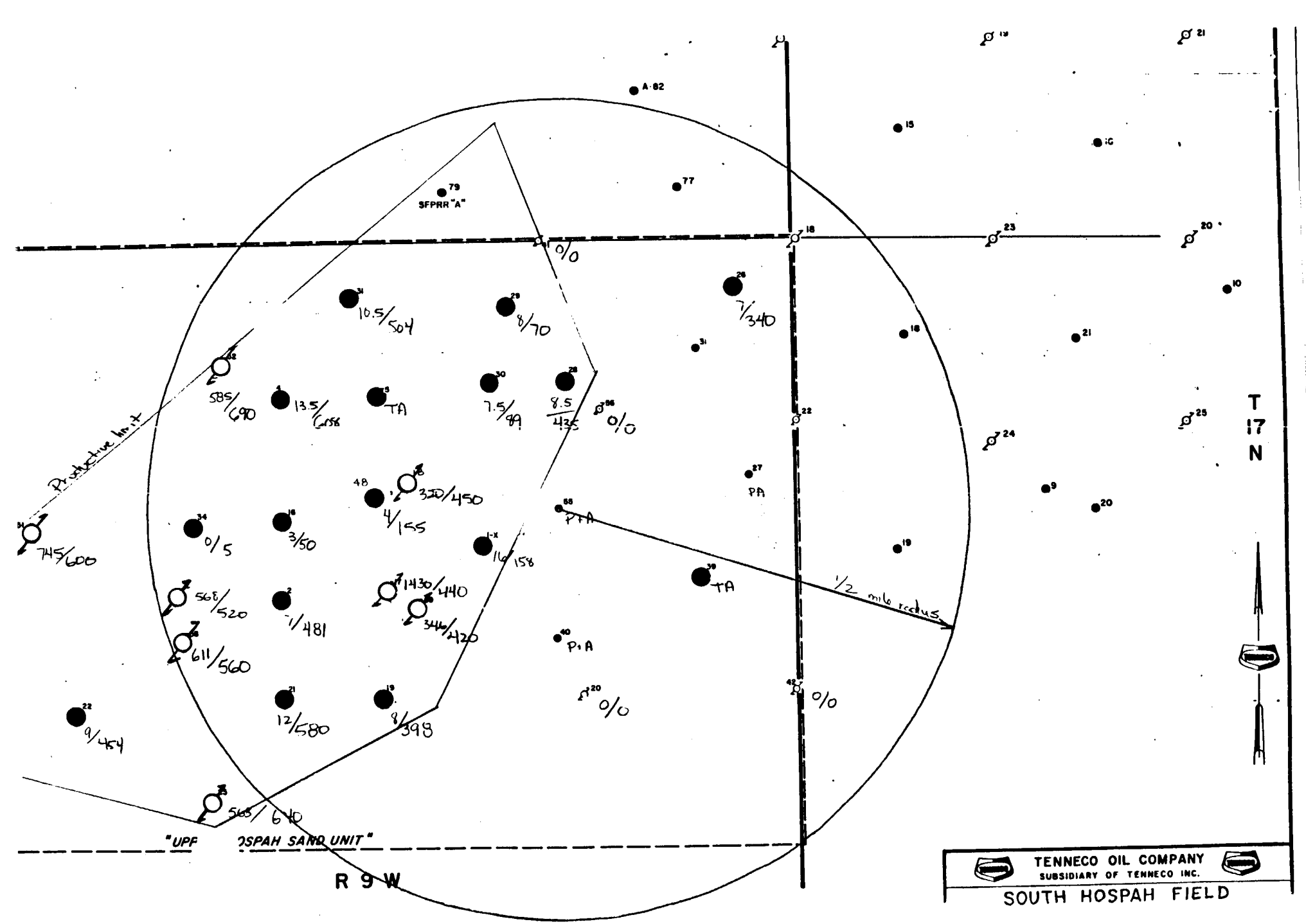
(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells:

(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.



CURRENT PRODUCING

BOPD/BWPD

INJECTION WELLS

INJ. RATE (BWPD)/INJ. PRESSURE

FORM C-108 APPLICATION FOR AUTHORIZATION TO INJECT

VII. 1. Proposed average and maximum daily rate of fluids to be injected:

Proposed average daily rate: Initially, to be limited to 25 BWIPD.
Maximum daily rate = 1200 BWIPD

2. System is to be closed.

3. Average Inj. pressure = 650 psi.

Maximum Inj. pressure = 800 psi.

4. Injection fluid will be produced water.

5. This well is not for disposal purposes.

IX. Stimulation program will initially consist of nothing, but at a later date Hospah #55 may be stimulated w/some MCA.

XII. Not applicable.

INJECTION WELL DATA SHEET

OPERATION	LEASE			
Tenneco Oil E&P	UPPER HOSPAH			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
55	1755' FNL, 1515'FEL	12	17N	9W

Tabular Data

Surface Casing

Size 9-5/8" (36#/ft.) Cemented with 90 sx.

TOC Surface feet determined by ---

Hole size 12-1/4"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 7" (20#/ft) Cemented with 100 sx.

TOC _____ feet determined by _____

Hole size 8-3/4'

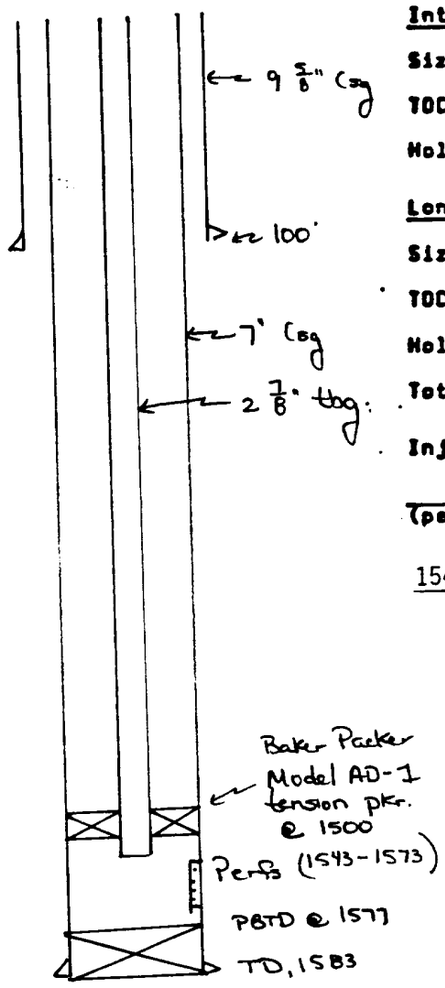
Total depth 1583'

Injection interval

1543 feet to 1573 feet

(perforated or open-hole, indicate which)

1543-1573 w/2 JSPF



Tubing size 2-7/8# (6.5#/ft) lined with _____ (material) set in a

Baker Model AD-1, 7" tension packer at 1500 feet

(brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Upper Hospah

2. Name of Field or Pool (if applicable) South Hospah - Upper Sand

3. Is this a new well drilled for injection? ☐ Yes ☒ No

   If no, for what purpose was the well originally drilled? Production of oil

4. 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) No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Lower Hospah (1600'). Dakota (2500')

Prepared by E. Matheson