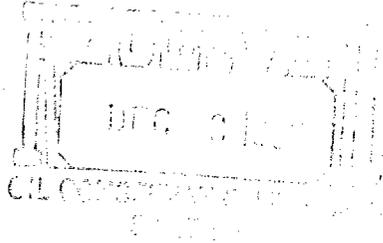




Texaco USA

FD-36 (Rev. 5-22-64)
Form No. 501
GSA GEN. REG. NO. 27

November 22, 1988



State of New Mexico
Department of Energy & Minerals
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501-2088

Attention: Mr. David Catanach

RE: Conversion to Salt Water Disposal
Salt Mountain 36 State Well No. 1
660' FNL & 660' FWL Unit Letter D
Section 36, T-26-S, R-29-E
Eddy County, New Mexico

Gentlemen:

Texaco Producing Inc. respectfully requests administrative approval of the referenced application by provision in Rule 701.B.3 and 701.D.

In support of this application, you will find attached:

- 1) Form C-108
- 2) Map identifying wells and leases within a 2-mile radius and the 1/2 mile radius area of review.
- 3) Table containing data on wells in the area of review that penetrate the disposal zone.
- 4) Injection well data sheet.
- 5) List of offset operators and surface owner.
- 6) Letters mailed to offset operator, grazing lease holder, and the Texas Railroad Commission notifying them of this application.
- 7) Affidavit of publication and copy of legal notice.

Average injection rate into the well will be 600 barrels per day with a maximum of 2000 barrels per day. Average injection pressure will be 700 PSI and the maximum pressure will be 786 PSI. If necessary, the perforations from 3931' - 4075' will be acidized with 3000 gallons of 7 1/2% NEFE acid.

The Quaternary Alluvium (Triassic Redbeds) lie above the disposal zone from the surface to a depth of approximately 400'. One fresh water well is in the proximity of the proposed disposal well and analyses of the water are attached.

Texaco Producing Inc. has examined available geologic and engineering data and found no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

Your timely consideration of this application will be greatly appreciated.

Yours very truly,



L. J. Seeman
District Petroleum Engineer

LDR:bdb
Attachments

cc: NMOCD - Artesia, New Mexico

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: TEXACO PRODUCING INC.

Address: P. O. BOX 728, HOBBS, NEW MEXICO 88240

Contact party: L. J. SEEMAN Phone: 505-393-7191

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: L. J. SEEMAN Title DISTRICT PETROLEUM ENGINEER

Signature: *L. J. Seeman* Date: NOVEMBER 22, 1988

* 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.

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.

22 23

T E X A C O
P R O D. I N C.
BD Federal

24 19

T E X A C O
P R O D. I N C.

Salt Mountain "25"
Federal

J. C. WILLIAMSON
UCBHW Federal

J. C. WILLIAMSON
EP-USA Federal

J. C. WILLIAMSON → Holly
Federal

27 26

25 30

34 35

J. C. WILLIAMSON
MWJ Federal

T E X A C O
P R O D. I N C.

Salt Mountain "36" State

36 31

T E X A S

WELLS WITHIN 1/2 MILE RADIUS OF TPI'S SALT MOUNTAIN 36 STATE WELL NO. 1
 THAT PENETRATE THE PROPOSED INJECTING INTERVAL

OPERATOR, WELL NAME AND NUMBER	FORMATION	TOTAL DEPTH	DATE DRILLED	CURRENT STATUS	HOLE SIZE	CASING SIZE	DEPTH	CEMENT (SX)	TOC	DETERMINED BY
J. C. Williamson	Brushy Draw Delaware	6250'	7/23/82	Producing	17-1/2" 11" 7-7/8"	12-3/4" 8-5/8" 4-1/2"	378'	650	Surface	Circulated
							2900'	150	2483'	Calc. 60% fill up
							6250'	900	2450'	Temp. Survey
MWJ Federal No. 1	Brushy Draw Delaware	6220'	9/26/82	Producing	17-1/2" 11" 7-7/8"	12-3/4" 8-5/8" 4-1/2"	350'	425	Surface	Circulated
							2850'	150	2500'	Temp. Survey
							6220'	1050	2956'	Calc. 60% fill up
MWJ Federal No. 2	Brushy Draw Delaware	6250'	11/11/83	Producing	17-1/2" 11" 7-7/8"	12-3/4" 8-5/8" 4-1/2"	373'	375	36'	Calc. 60% fill up
							2790'	150	2372'	Calc. 60% fill up
							6250'	1450	1743'	Calc. 60% fill up
MWJ Federal No. 5	Brushy Draw Delaware	6260'	1/12/86	Producing	17-1/2" 11" 7-7/8"	13-3/8" 8-5/8" 5-1/2"	413'	450	Surface	Calc. 60% fill up
							2800'	200	2243'	Calc. 60% fill up
							6260'	950	2378'	Calc. 60% fill up
UCBHM Federal No. 1	Brushy Draw Delaware	6250'	4/29/82	Producing	17-1/2" 11" 7-7/8"	12-3/4" 8-5/8" 4-1/2"	358'	720	Surface	Circulated
							2959'	125	2611'	Calc. 60% fill up
							6250'	900	2840'	Temp. Survey
UCBHM Federal No. 2	Brushy Draw Delaware	6285'	9/14/82	Producing	17-1/2" 11" 7-7/8"	12-3/4" 8-5/8" 4-1/2"	358'	425	Surface	Circulated
							2936'	150	2620'	Temp. Survey
							6285'	1375	1900'	Temp. Survey
UCBHM Federal No. 3	Brushy Draw Delaware	6270'	4/18/83	Producing	17-1/2" 11" 7-7/8"	12-3/4" 8-5/8" 4-1/2"	363'	425	Surface	Circulated
							2869'	150	2200'	Temp. Survey
							6270'	1400	2000'	Temp. Survey
EP - USA No. 2	Brushy Draw Delaware	4034'	10/28/81	Producing	12-1/2" 10" 8" 6-1/4"	10-3/4" 8-5/8" 7" 4-1/2"	437'	710	Surface	Required
							831'	200	Surface	Calc. 60% fill up
							2930'	400	Surface	Calc. 60% fill up
Texaco Producing Inc. Salt Mtn. 36 St. No 2	Brushy Draw Delaware	5350'	10/10/86	Producing	15" 11" 7-7/8"	11-3/4" 8-5/8" 5-1/2"	502'	500	Surface	Circulated
							2989'	1150	Surface	Circulated
							5350'	1010	Surface	Circulated
Salt Mtn. 36 St. No 3	Brushy Draw Delaware	5300'	8/10/87	Producing	14-3/4" 11" 7-7/8"	11-3/4" 8-5/8" 5-1/2"	500'	550	Surface	Circulated
							3000'	1150	Surface	Circulated
							5300'	1400	Surface	Circulated

INJECTION WELL DATA SHEET

OPERATOR		LEASE		
TEXACO PRODUCING INC.		SALT MOUNTAIN 36 STATE		
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
1	660' FNL & 660' FWL	36	26-S	29-E

Schematic

Tabular Data

Surface Casing

Size 8 5/8 " Cemented with 725 sx.
 TOC SURFACE feet determined by VISUAL INSPECTION
 Hole size 12 1/4"

Intermediate Casing

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

Long string

Size 5 1/2 " Cemented with 1000 sx.
 TOC 2960 feet determined by CBL
 Hole size 7 7/8"
 Total depth 6300'

Injection interval

3931 feet to 4075 feet
 (perforated or open-hole, indicate which)

Tubing size 2 3/8" lined with CEMENT set in a
 (material)
BAKER MODEL TSN II packer at ±3900 feet
 (brand and model)

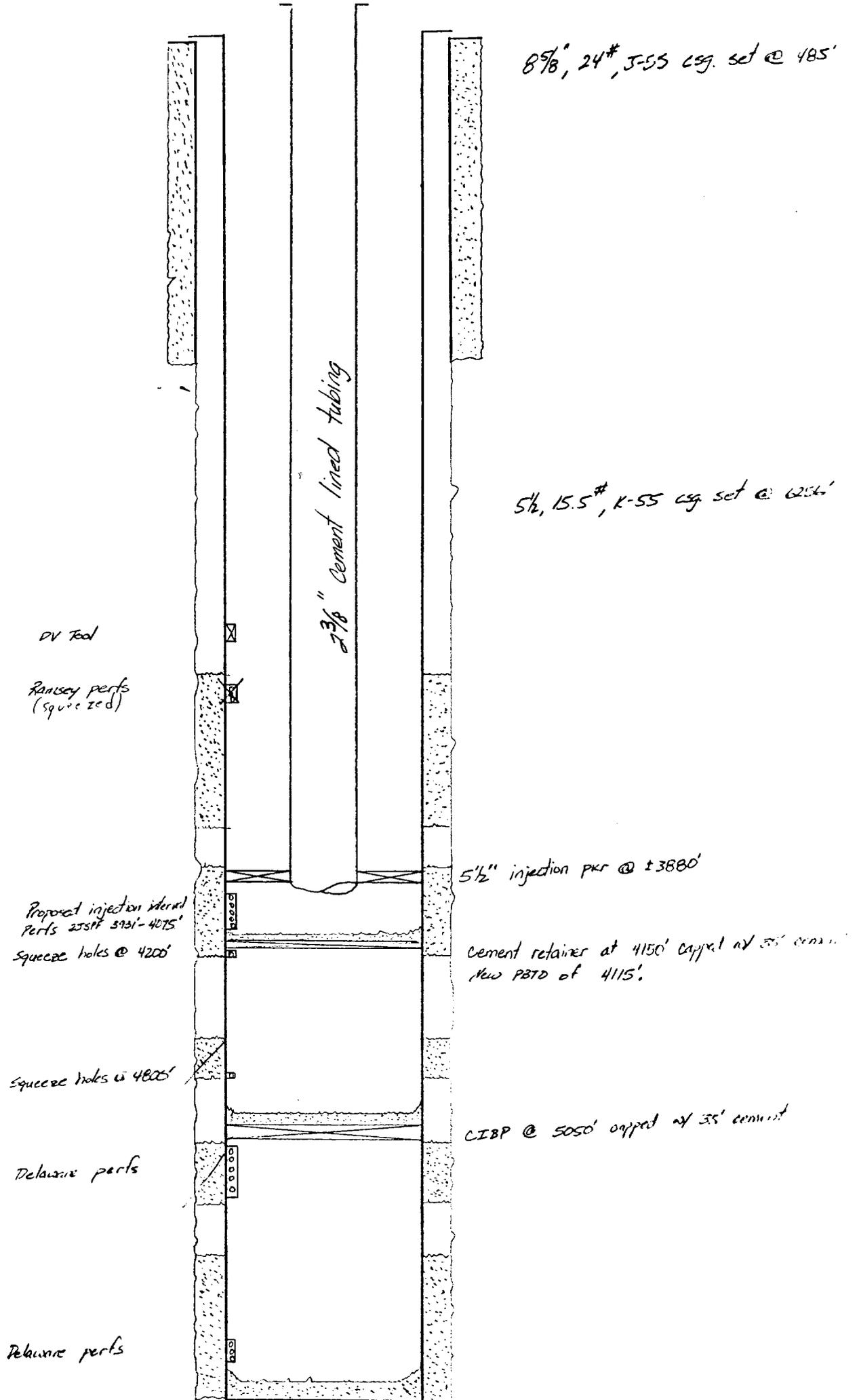
(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation DELAWARE
- Name of Field or Pool (if applicable) BRUSHY DRAW DELAWARE
- Is this a new well drilled for injection? Yes No
 If no, for what purpose was the well originally drilled? OIL PRODUCTION

- 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) 5077-5170 sqz. w/400 sxs, 3014-3088 sqz. w/400 sxs, 5080-5120, current producing interval will be isolated by CIBP @ 5050' w/35' cement on top, perf sqz. holes @ 4200' set cmt ret @ 4150 & squeeze w/250 sxs. Cap retainer w/35' cement. New PBID 4115'.
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Ramsey 3000', Wolfcamp 11,479.

PROPOSED



8 5/8", 24#, J-55 csg. set @ 485'

5 1/2", 15.5#, K-55 csg. set @ 6256'

DV Tool

Ramsay perfs (squeezed)

Proposed injection interval
Perfs 2750' - 3931' - 4075'
squeeze holes @ 4200'

Squeeze holes @ 4800'

Delaware perfs

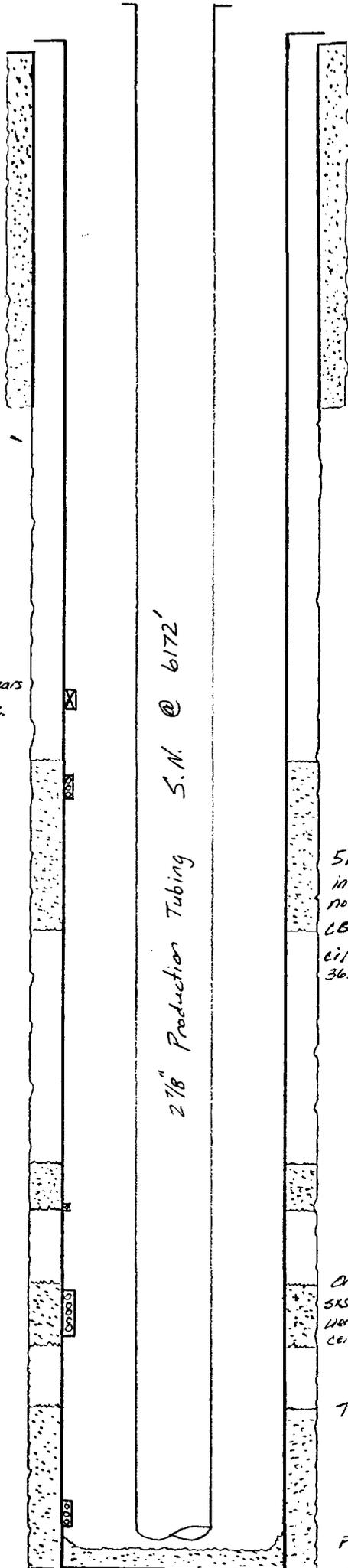
Delaware perfs

5 1/2" injection pkr @ ±3880'

Cement retainer at 4150' capped w/ 35' cement
New PBTD of 4115'

CIBP @ 5050' capped w/ 35' cement

PRESENT



8 5/8", 24#, J-55 csg set @ 485'
 w/ 525 sxs cement. Did not
 circulate. Dumped 200 sxs. and 3/4
 yard redi-mix down annulus to
 get cement to surface

DV Tool @ 2868' Cement appears
 to have gone down in 2nd stage.

Rainey perms
 13SPF 3014'-3050'; 3072'-3088'
 Squeezed w/ 400 sxs
 3-20-83

Squeeze holes at 4800'
 Squeezed w/ 200 sxs.
 Cement from 4800'-4674' by GR log
 12-3-82

Delaware perms
 13SPF 5080'-5101'; 5110'-5120'

Delaware perms
 13SPF 6152'-6170'

5 1/2", 15.5#, K-55 csg set @ 6256' with 1000 sxs
 in two stages. 1st Stage: 700 sxs. cement did
 not circulate to DV @ 2868'. TOC @ 5210' by
 CBL. 2nd Stage: 300 sxs cement did not
 circulate to surface. TOC @ 2960' and 3650' by
 Welox CBL.

Original perms 5072'-5170' were squeezed with
 sxs, broken down w/ acid and fluid then
 were squeezed with another 200 sxs. grout
 cement behind existing perms. 5072'-5170'

TOC @ 5210' by CBL

PBTD 6245'

TD 6300'



Texaco USA

November 22, 1988

J. C. Williamson
P. O. Box 16
890 One First City Center
Midland, Texas 79707

RE: Conversion to Salt Water Disposal
Salt Mountain 36 State Well No. 1
660' FNL & 660' FWL Unit Letter D
Section 36, T-26-S, R-29-E
Eddy County, New Mexico

Gentlemen:

This is to notify you, as an offset operator, that Texaco Producing Inc. is requesting the New Mexico Oil Conservation Division to approve disposal of water into the Delaware formation at a depth of 3931' - 4075' into the referenced well. A copy of our request, Form C-108, plat and legal notice are attached for your information.

Objection to this request or a request for hearing should be filed with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico, 87501-2088, within fifteen (15) days.

Yours very truly,

L. J. Seeman
District Petroleum Engineer

LDR:bdb
Attachments



Texaco USA

November 22, 1988

Mr. Robert Boling
305 South 5th Street
Artesia, New Mexico 88210

RE: Conversion to Salt Water Disposal
Salt Mountain 36 State Well No. 1
Eddy County, New Mexico

Dear Sir:

In compliance with New Mexico Oil Conservation Division Rule 701.B.2, Texaco Producing Inc. hereby notifies you that an application to convert the referenced well to a salt water disposal well has been submitted to the Oil Conservation Division. The water will be injected into the Delaware formation at a depth of 3931' - 4075'. The well is located 660' FNL and 660' FWL of Section 36, T-26-S, R-29-E.

Only the surface area absolutely required will be used in operating the well. The well is cased and cemented in such a way that all surface and subsurface fresh waters will be protected.

Objections to this request or a request for hearing should be filed with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico, 87501-2088, within fifteen (15) days following receipt of this letter.

A copy of our request and a map are attached for your information. If there are any questions, please do not hesitate to call this office.

Yours very truly,

J. A. Schaffer
District Operations Manager

LDR:bdb
Attachments



Texaco USA

November 22, 1988

Railroad Commission of Texas
Underground Injection Control
P. O. Drawer 12967, Capitol Station
Austin, Texas 78711-2967

Attention: Mr. Jerry Mullican, Director

RE: Conversion to Salt Water Disposal
Salt Mountain "36" State Well No. 1
Unit Letter D, Sec. 36, T-26-S, R-29-E
Eddy County, New Mexico

Gentlemen:

As requested by the Santa Fe office of the New Mexico Oil Conservation Division you will find attached a copy of our application to convert the referenced well to a salt water disposal. In the application you will find a map showing wells within a 1/2-mile radius of the subject well. As indicated by the map, all wells in Texas in the 1/2-mile radius are operated by Texaco.

If there are any questions, please contact this office.

Yours very truly,

L. J. Seeman
District Petroleum Engineer

LDR:bdb
Attachment

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

E. C. Cantwell, being first duly sworn,
on oath says:

That he is publisher of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the state wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

October 26, 1988
_____, 19____
_____, 19____
_____, 19____

that the cost of publication is \$ 9.98,
and that payment thereof has been made
and will be assessed as court costs.

E C Cantwell

Subscribed and sworn to before me this
17 day of November, 1988

Donella Taylor

My commission expires 6/01/92

Notary Public

October 26, 1988

LEGAL NOTICE

Notice is hereby given of the Application of Texaco Producing Inc., Attention: L. J. Seeman, District Petroleum Engineer, P.O. Box 728, Hobbs, New Mexico, 88240, telephone (505) 393-7191, to the Oil Conservation Division, New Mexico Energy & Minerals Department, for approval of the following injection well for the purpose of salt water disposal.

Well No. 1

Lease Unit Name: Salt Mountain
36 State

Location: 660' FNL & 660' FWL,
Section 36, T-26-S, R-29-E Eddy
County, New Mexico

The injection formation is Delaware at a depth of 3931 feet below

the surface of the ground. Expected maximum injection rate is 2000 barrels per day, and expected maximum injection pressure is 786 pounds per square inch. Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501-2088, within fifteen (15) days of this publication.



BOX 4518
ODESSA, TEXAS 79730

TECH SERVICE LABORATORY: Odessa, Texas Phone (915) 337-0355 & 333-0033
RESEARCH LABORATORY: Houston, Texas Phone (713) 431-2531
PLANT: Odessa, Texas Phone (915) 337-0355

REPORT FOR	Ralph Williamson	DATE SAMPLED	4/1/85
CC	Jerry Skidmore	DATE REPORTED	4/4/85
CC		FIELD, LEASE, OR WELL	Fresh Water Well
CC		COUNTY	
COMPANY	Williamson & Williamson	FORMATION	
ADDRESS		DEPTH	
SERVICE ENGINEER	Kathy Marshall	SUBMITTED BY	Kathy Marshall

Field, Lease, or Well

Chemical Component					
Chloride (Cl)	5200				
Iron (Fe)	0				
Total Hardness (Ca CO ₃)	5000				
Calcium (Ca)	800				
Magnesium (Mg)	729				
Bicarbonate (HCO ₃)	145				
Carbonate (CO ₃)	0				
Sulfate (SO ₄)	.50				
Hydrogen Sulfide (H ₂ S)	0				
Specific Gravity	1.037				
Density, 20°C TDS	9389				
pH - Beckman [K Strip]	7.10				
Sodium	1554				
Scale Index					
CaCO ₃ @ 80°F	-0.01				
CaCO ₃ @ 100°F	+1.03				
CaSO ₄	negative				

OTHER DESCRIPTION, REMARKS AND RECOMMENDATIONS

Unit Ltr. I, Sec. 26, T-26-S R-29-E

REPORTED BY: Joe Edwards TITLE: Tech Supt



P.O. BOX 2187
HOBBS, N.M. 88240

PHONE: (505) 393-7726

WATER ANALYSIS REPORT

Report for: JOHN BRADY	Date sampled: 11-23-87
cc: DAN WESTOVER-DAN JONES	Date reported: 11-24-87
cc:	Lease or well # : SALT MT 25-F
cc:	County: State:
Company: TEXACO	Formation:
Address:	Depth:
Service Engineer: JIM SPRADLEY	Submitted by: JIM SPRADLEY

CHEMICAL COMPOSITION :	mg/L	meq/L
Chloride (Cl)	196000	5529
Iron (Fe) (total)	52.0	
Total hardness	116200	
Calcium (Ca)	30195	1507
Magnesium (Mg)	9938	798
Bicarbonates (HCO3)	61	1
Carbonates (CO3)	n/a	
Sulfates (SO4)	29	1
Hydrogen sulfide (H2S)	8	
Carbon dioxide (CO2)	n/a	
Sodium (Na)	74194	3226
Total dissolved solids	310419	
Barium (Ba)	n/a	
Strontium (Sr)	n/a	

Specific Gravity 1.221
Density (#/gal.) 10.175
pH 5.600
IONIC STRENGTH 6.68
RESISTIVITY 0.046 @76.8F

Stiff-Davis (CaCO3) Stability Index :
SI = pH - pCa - pAlk - K

SI @ 86 F = +1.46
104 F = +1.69
122 F = +1.94
140 F = +2.23
158 F = +2.55

This water is 906 mg/l (-95.67%) under ITS CALCULATED
CaSO4 saturation value at 82 F.
SATURATION= 947 mg/L PRESENT= 41 mg/L

REPORTED BY RANDOLPH SCOTT

CHEMIST

REPRESENTATIVE WATER ANALYSIS FROM DELAWARE

P-562 874 936

J.C. Williamson
Ship and No P.O. Box 16
890 One First City Center
City, State and ZIP Code
Midland, Texas 79707

Postage

Postage and Fees

PS Form 3800, June 1985

U.S.G.P.O. 157-05

P-562 874 937

Robert Boling
305 S. 5th St.
City, State and ZIP Code
Artesia, New Mexico 88210

Postage

Postage and Fees

PS Form 3800, June 1985

U.S.G.P.O. 157-05