CAMPBELL & BLACK, P.A.
LAWYERS

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TELEPHONE: (505) 988-4421
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December 16, 1991

Case 10433

HAND-DELIVERED

William J. LeMay, Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
State Land Office Building
Santa Fe, New Mexico 87503

Re: In the Matter of the Application of Geodyne Operating Co. for Salt Water Disposal, Eddy County, New Mexico

Dear Mr. LeMay:

Enclosed in triplicate is a completed Form C-108 which is the Amended Application of Geodyne Operating Co. for authority to dispose produced salt water into the Geodyne Operating Co.'s PFI Amoco "19" Federal Well No. 2 located 1,687 feet from the South line and 2,041 feet from the West line of Section 19, Township 22 South, Range 26 East, N.M.P.M., Eddy County, New Mexico.

An application to use this well for disposal was filed on October 16, 1991, and approved administratively. The Order required that a well within the area of review be cemented across the injection interval. Geodyne has chosen not to attempt to cement this offset operator's well and hereby submits an Amended Application to permit injection only into intervals across which there is cement in nearby wells.

The original application was also protested by Mr. Jesse F. Rayroux after entry of the Administrative Order. Mr. Rayroux is not the owner of the surface on which the well is located nor does he own mineral interests within one-half mile of the proposed injection well. Accordingly, we have provided notice of this application only to the surface owner and the owners of mineral interests within the one-half mile area of review and not to Mr. Rayroux.

Geodyne requests that this case be set for hearing before a Division Examiner on January 9, 1992.

Your attention to this matter is appreciated.

Very truly yours,

WILLIAM F. CARR
ATTORNEY FOR GEODYNE OPERATING CO.
WFC:mlh
Enclosures
cc w/enclosures: Oil Conservation Division
District II
Post Office Drawer DD
Artesia, New Mexico 88210

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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

RECEIVED
DEC 16 1991
OIL CONSERVATION DIVISION

FORM C-108
Revised 7-1-81

Case 10433

Amended Application

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: Geodyne Operating Co.

Address: 320 S. Boston Ave., Tulsa OK 74103

Contact party: Regulatory Supervisor Judy Knight Phone: (918) 583 5525

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: R. L. Stamets Title Consultant

Signature: R. L. Stamets Date: 12-12-91

* 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

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.

APPLICATION FOR SALT WATER DISPOSAL

GEODYNE OPERATING CO.
PFI AMOCO "19" FEDERAL
WELL NO. 2-K
SEC. 19-T22S-R26E
EDDY COUNTY, NM

III Data on original well completion and conversion attached.

V Map attached

VI Area of Review Wells

Geodyne Operating Co. Filaree Dome Delaware Oil Pool
PFI Amoco "19" Federal No. 4-F 1550 FNL 1980 FWL
19-22-26 Completed 9-1-88

Hole	Casing	Depth	Cement	Top
17 1/2	13 3/8	40	Ready mix	surface
12 1/4	8 5/8	627	625 sx	circ 20 sx
7 7/8	5 1/2	2180	2180	circ by 1"

TD 2383 Completed OH 2180-2381

Geodyne Operating Co. Happy Valley Morrow Gas Pool
PFI Amoco "19" Federal 1-K 1719 FSL 1999 FWL
19-22-26 Completed 12-23-87

Hole	Casing	Depth	Cement	Top
17 1/2	13 3/8	612	519 sx	circ by 1"
11	9 5/8	2699	475 sx	circ 300 sx
7 7/8	5 1/2	11385	1948 sx	Calculated sufficient

to circulate (880 sx of Class C through DV tool at 4791).
TD 11390 Completed Perforations 10,869-10,876

Primary Fuels Inc. Happy Valley Morrow Gas
PFI Amoco :19" Federal No. 3-G 1780 FNL 2573 FEL
19-22-26 P&A 3-19-88 Lost hole at 2190 feet
See attached schematic

Geodyne Operating Co. Filaree Dome Delaware Oil Pool
PFI Amoco "19" Federal 3Y-G 1831 FNL 2577 FEL
19-22-26 Completed 6-28-88

Hole	Casing	Depth	Cement	Top
17 1/2	13 3/8	694	700 sx	circ 240 sx
12 1/4	8 5/8	2200	675 sx	circ 40 sx

TD 11,350 Completed OH 2200-2362

Well plugged back 4-28-88
35 sx 10,881-10,781 35 sx 10,059-9,959 35 sx 9,882-9,782
35 sx 8,344-8,244 35 sx 8,344-8,2244 70 sx 2,500-2362

Mitchell Energy Corp. Happy Valley Morrow Gas
McKittrick 30 Federal No. 1-C 660 FNL 2285 FWL
30-22-25 Completed 11-5-83

Hole	Casing	Depth	Cement	Top
17 1/2	13 3/8	605	750 sx	circ
12 1/4	9 5/8	2845	1050 sx	circ by 1"
8 1/2	4 1/2	11665	1050 sx	Calculated top between 6,887 and 5,749 depending on mix of casing sizes.
	5 1/2 combo string			

TD 11,660 Completed Perforations 11,334-11,554

No. record found on Enfield well shown on map indicated P&A at 618 feet 9-20-74 above the disposal zone. Confirmed depth with the district office.

VII 1. Injection rates are expected to be from 50 to 110 BWPD.
2. The system will be closed.
3. Expect the well to take water on a vacuum. Pressure will not exceed 464 psi at the surface.
4. The water to be disposed of will come from Geodyne's two producing wells in the Filaree Dome Delaware Pool (No. 3Y and No. 4 listed above).
5. Not applicable.

VIII Injection will be into the Delaware Mountain Group found at depths of from 2300 to 4700 feet in the area.

The Artesia office of the OCD advises that the only USDW in the area is the Capitan Reef. The base of the reef is reported to be at approximately 1,700 feet.

IX No stimulation of the proposed injection zone is anticipated.

X Logs have previously been filed with the Division.

XI Fresh water well analyses attached.

XII I (R. L. Stamets) have examined available geologic and engineering data and find no evidence of open faults or hydrologic connection between the proposed disposal zone and any USDW.

XIII Proof of notice is attached.

ADDITIONAL INFORMATION

Attached are calculations of the projected radius of invasion of the injected fluid into the formation. These calculations were prepared by Mr. James Sellers, PE, Geodyne Operating Co., P. O. Box 1691 Midland, TX 79702 Phone (915) 682-9459.

GEODYNE

Well History Summary Sheet

Operator Geodyne Operating C Well Name & # Amoco 19, Federal No. 2 Lease # _____

District Midland Made By J. B. Sellers Date July 10, 1990

Location 1687'FSL&2041'FWL, Sec 19, T22S, R26E, Eddy Co., New Mexico

Spud Date 12-7-87 Compl. Date 12-23-87 TD 4600' PBTD 4480'

Type Well: Oil XX Gas ____ Other _____ Field Filaree Dome

I P Flowing 38 BO, 387 BW, and 89 MCFPD _____ Zone Delaware

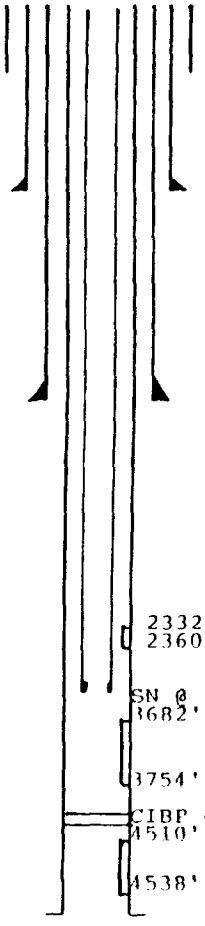
Perfs.: 2332-2360, 3682-3754' _____ Total Holes _____

Stimulation Acid w/6000 gal NEFE Hcl, Fractured w/25000 gal + 65000 bbls. sd.

Cumul. Oil _____ MCF _____ Water _____

Recent Test _____ Lift Equipment _____

Misc. GL elevation=3377.6'



Drive or Conductor
_____" @ _____'

Surface: 13 3/8" _____"
44 _____# Gr. _____
@ 623' _____ Cmt. w/
855 Sx.TOC surface
Hole Size 17 1/2" _____'
Max Mud Wt. _____ #/G

Intermediate:
8 5/8" 24# _____#
Gr _____ @ 2190'
Cmt w/ 950 Sx.
TOC @ surface , Hole
Size 12 1/4", Max Mud
Wt. _____ #/G

Liner: _____"
From _____' To
_____', _____#
_____ Gr., Cmt. w/
_____ Sx. TOC @
_____' Hole Size
_____", Max Mud
Wt. _____ #/G

Liner: _____"
From _____' To
_____', _____#
_____ Gr., Cmt. w/
_____ Sx. TOC @
_____' Hole Size
_____", Max Mud
Wt. _____ #/G

tubing is 2 7/8", 6.5#/ft, J-55, EUE

Production: 5 1/2 _____",
15.5&20 #, _____ Gr.
@ 4600 _____ Cmt. w/
650 _____ Sx. TOC @
*above2200', Hole Size
7 7/8" Mx Mud Wt.
_____ #/G

TD 4600'

*Ran csg. bond log from 4559'
to 2200. Cement top not seen.

WELL HISTORY

2-13-88 Perforated 4510-4538' with 2 JSPF Acidized w/3000 gal 7 1/2% NEFE Hcl, swabbed down 95% water, set CIBP at 4480', spoted 2 sacks class "A" cement on CIBP w/bailer. Perforated 3682-96', 3742-45', and 3749-54' w/2 JSPF, acidized with 3000 gal 7 1/2% NEFE Hcl, fractured down casing with 25000 gal 70% quality CO2 foam and 65000 lbs. 16-30 sand; set RBP at 3265 ft, Perf'd. 2332-2360', acidized with 3000 gal. 7 1/2% NEFE Hcl, swabbed down, 20% oil cut, removed RBP, ran tubing and packer and set at 3617', IPF 38 BO, 387 BW, 89 MCF/D

5-7-88 Pulled tubing and packer, reran tubing and tubing pump, ran rods and 2 1/4" plunger and began pumping. Tested 33 BO, 208 BW

Tubing _____", _____#, _____ Gr. @ _____
Tubing _____", _____#, _____ Gr. @ _____
Packer @ _____

GEODYNE

WELL DATA SHEET

Operator Geodyne Operating Co Well Name & # Amoco 19 Federal No. 2 Lease # _____

District Midland Made By James B. Sellers Date July 16, 1990

Location 1687' FSL & 2041 FWL, Sec 19, T-22-S, R-26-E, Eddy Co., New Mexico

Spud Date 12-7-87 Compl. Date 12-23-87 TD 4600' PBTD 4480'

Type Well: Oil XX Gas ____ Other _____ Field Filaree Dome

I P Flowing 34 BO, 387 BW and 89 MCFPD Zone Delaware

Perfs.: 2332-2360, 3682-3754 Total Holes _____

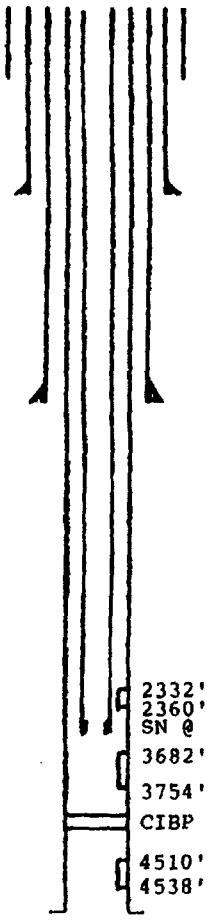
Stimulation Acid w/6000 gan NEFE Hcl. Fractured w/25000 gal+ 65000 lb. sd.

Cumul. Oil _____ MCF _____ Water _____

Recent Test _____ Lift Equipment _____

Misc. GL, elev.=3377.6'

CURRENT



Drive or Conductor
_____" @ _____'

Surface: 13 3/8" "
44 # Gr. _____
@ 623' Cmt. w/
855 Sx.TOC surface
Hole Size 17 1/2"
Max Mud Wt. _____ #/G

Intermediate:
8 5/8", 24# #
Gr _____ @ 2190'
Cmt w/ 950 Sx.
TOC @ surface, Hole
Size 12 1/4", Max Mud
Wt. _____ #/G

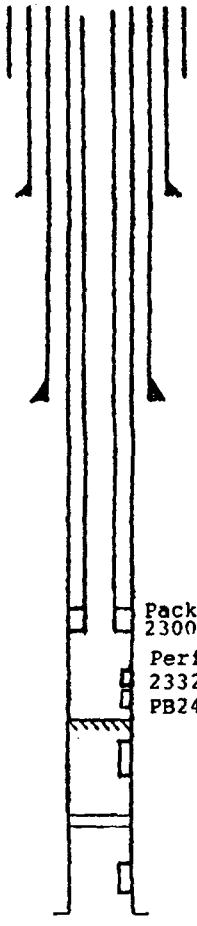
Liner: _____"
From _____' To
_____', _____#
_____Gr., Cmt. w/
_____ Sx. TOC @
_____' Hole Size
_____", Max Mud
Wt. _____ #/G

Production: 5 1/2" ",
15.5&20 #, _____ Gr.
@ 4600, Cmt. w/
650 Sx, TOC @
*above2200', Hole Size
7 7/8" Mx Mud Wt.
_____ #/G

TD 4600' '

*Ran cement bond log 4559 to 2200.
Cement top not found.

PROPOSED



TUBING

SIZE 2 3/8", 4.7#, J-55, EUE

DEPTH 3507

COATING none

PACKER none

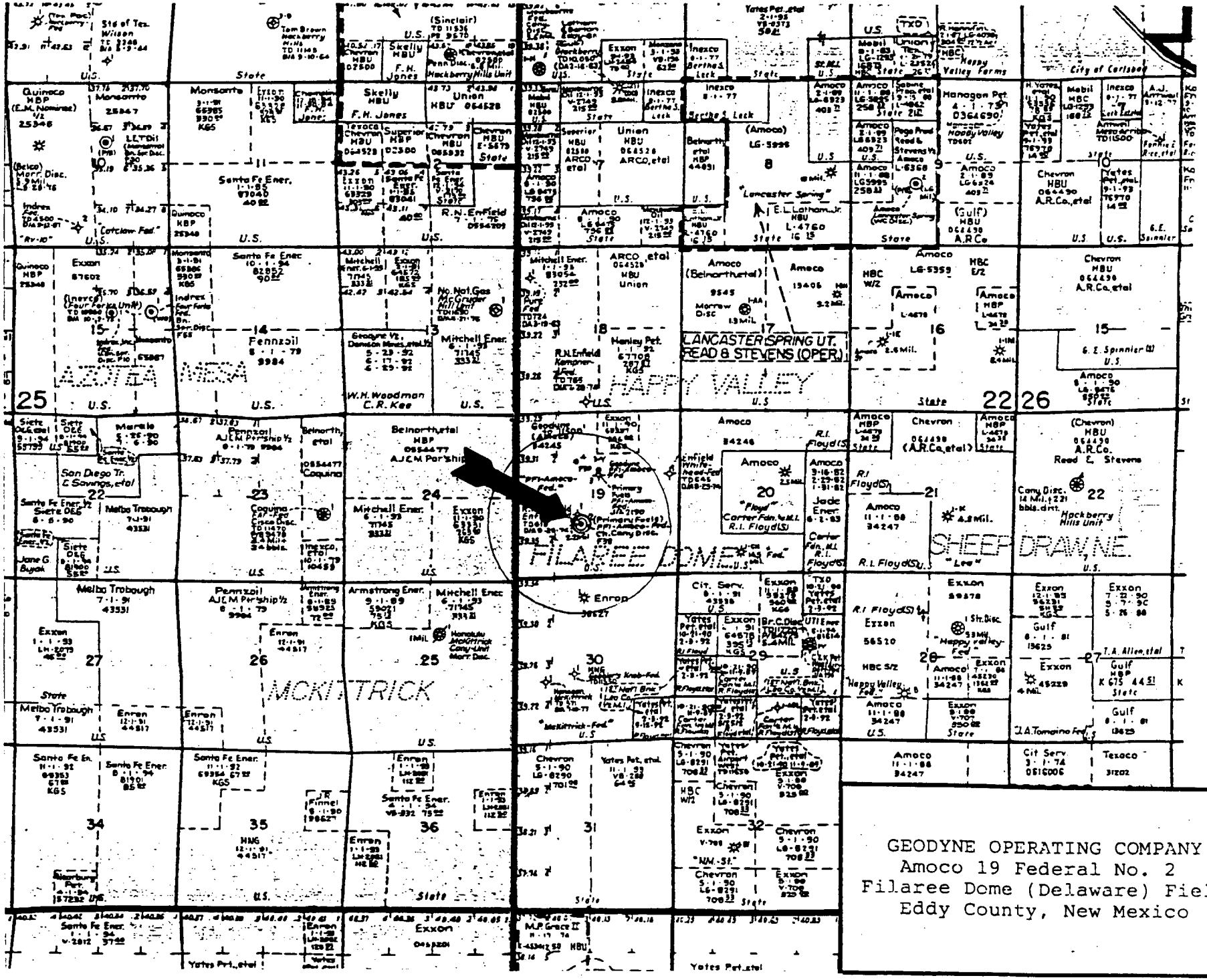
TUBING

SIZE 2 3/8", 4.7#, J-55, EUE

DEPTH 2300'±

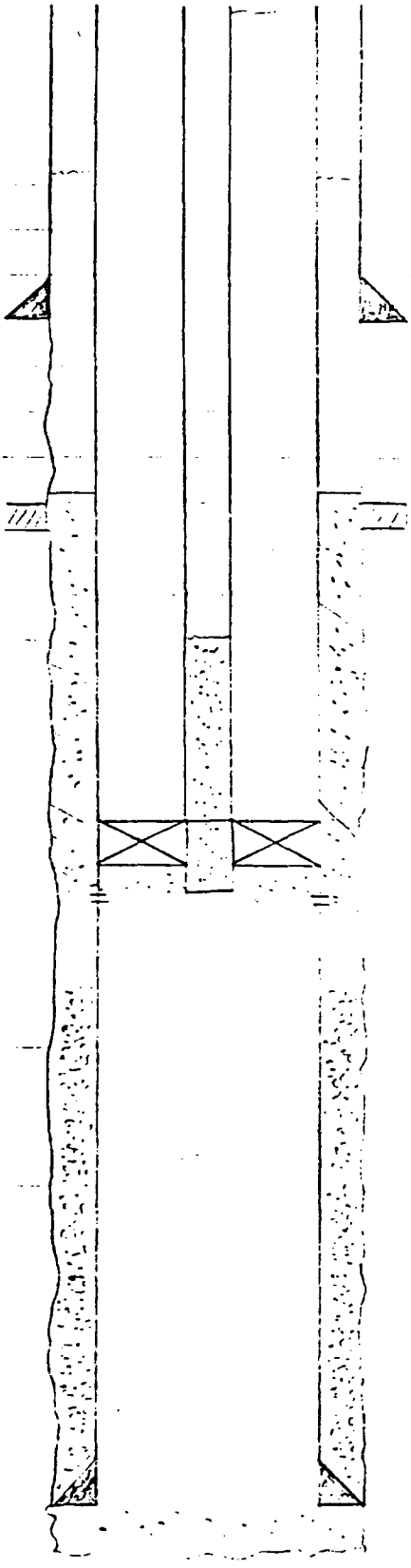
COATING TK-70 plastic internal

PACKER Watson Model "T" Packer


LANCASTER SPRING UT.
READ & STEVENS (OPER)
HAPPY VALLEY
FILAREE DOME
SHEEP DRAW NE.
MCKITTRICK
GEODYNE OPERATING COMPANY
Amoco 19 Federal No. 2
Filaree Dome (Delaware) Field
Eddy County, New Mexico

PFI - AMOCO 19 FEDERAL #3 1780 FNL 2573 FEL
EDDY COUNTY, NEW MEXICO Sec 19-T22S-R26E

Sc
02/16/18



5 5/8" x 4 1/2" FULL - 8.3 PPG FW

FLUID LEVEL - 465' - 8.3 PPG FW

13 3/8" AT 596'

8 5/8" - 100% FREE AT 629'

8 5/8" 44% FREE AT 644'
LOST RETURNS AT 650'
4' VOID DRILLING

4 1/2" DRILL PIPE FREE AT 1124'
TO TOC

EZSV CEMENT RETAINER AT 1340'
PERFORATIONS 1364'-1366' 4SPF

TOC 1430' - CBL-CCL GR

8 5/8" 24# J-55 ST&C
COLLAPSE = 1370 PSI
BURST = 2950 PSI
TENILE = 244000 LBS.

8 5/8" AT 2165'
TD - 2190'

LAB. NO.

TO: JIM SELLERS — DATE REC 10-15-91

P.O. BOX 1691, MIDLAND, TX 79702 — RR

COMPANY GEODYNE — AMOCO 19 FEDERAL

FIELD — HAPPY VALLEY

SEC — BLK — SURVEY — CO. — EDDY, NM

NO. 1 RAW WATER - TAKEN FROM KINCAID WATER WELL. 10-9-91

NO. 2 RAW WATER - TAKEN FROM RAYROUX WATER WELL. 10-9-91

NO. 3. PRODUCED WATER - TAKEN FROM AMOCO 19 FEDERAL #3 & #4

NO. 4 (WATER TANK). 10-9-91

REMARKS:

SPECIFIC GRAVITY	1.0018	1.0012	1.1107
PH WHEN TAKEN			
PH WHEN REC	7.23	7.43	7.63
BICARBONATE AS HCO3	298	312	1257
SUPERSAT AS CACO3			
UNDERSAT AS CACO3			
TOTAL HARD. AS CACO3	262	310	18250
CALCIUM AS CA	58	71	4640
MAGNESIUM AS MG	28	32	1616
SODIUM &/or POTASSIUM	83	11	58047
SULFATE AS SO4	141	57	3093
CHLORIDE AS CL	37	14	99427
IRON AS FE	0.16	0.16	70.8
BARIUM AS BA			
TURBIDITY			
COLOR			
TOTAL SOLIDS, CALC.	646	498	168080
TEMPERATURE			
CARBON DIOXIDE			
OXYGEN			
HYDROGEN SULFIDE	0.0	0.0	477
RESISTIVITY @ 77oF.	12.92	18.00	0.065
SUSPENDED OIL			
FILTRABLE SOLIDS			
VOLUME FILTERED			

RESULTS REPORTED AS MILLIGRAMS PER LITER

MARTIN WATER LABS., INC.

GEODYNE OPERATING COMPANY
AMOCO 19 FEDERAL NO. 2
PROSOBED BHD FACILITY
EDDY COUNTY, NEW MEXICO