

APPLICATION OF TESORO PETROLEUM CORPORATION  
TO EXPAND ITS WATERFLOOD PROJECT IN THE  
SOUTH HOSPAH-UPPER SAND OIL POOL IN  
MCKINLEY COUNTY, NEW MEXICO.

ORDER No. WFX-493

ADMINISTRATIVE ORDER  
OF THE OIL CONSERVATION DIVISION

Under the provisions of Order No. R-6227, Tesoro Petroleum Corporation has made application to the Division on December 8, 1981, for permission to expand its Tesoro Santa Fe Hanson Waterflood Project in the South Hospah-Upper Sand Oil Pool in McKinley County, New Mexico.

NOW, on this 8th day of December, 1981, 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 Order No. R-6227.
4. That the proposed injection well is eligible for conversion to water injection under the terms of Order No. R-6227.
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, Tesoro Petroleum Corp., be and the same is hereby authorized to inject water into the Upper Hospah Sand formation through plastic-lined tubing set in a packer at approximately 1550 feet in the following described well for purposes of secondary recovery to wit:

Tesoro Santa Fe Hanson, Waterflood, Santa Fe  
"B" Well No. 39, Unit M, Section 5, Town-  
ship 17 North, Range 8 West, NMPM, McKinley  
County, New Mexico.

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 the 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 to a maximum of 315 pounds per square inch; provided however that the Division Director may administratively authorize a pressure limitation in excess of the above upon the operator's establishing that such higher pressure will not result in fracturing of the confining strata.

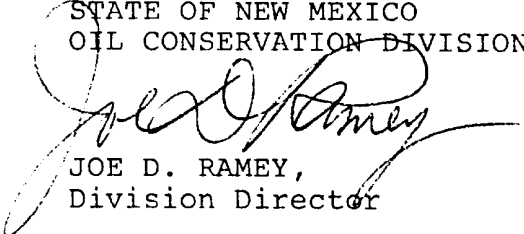
That the operator shall notify the supervisor of the Division's Aztec District Office before injection is commenced through said well.

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 well or the leakage of water from or around said well and shall take such steps as may be timely or necessary to correct such failure or leakage.

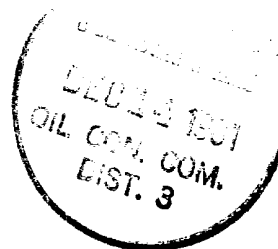
That the subject well shall be governed by all provisions of Division Order No. R-6227 not inconsistent herewith.

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
JOE D. RAMEY,  
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 87411  
(505) 334-6178

OIL CONSERVATION DIVISION  
BOX 2088  
SANTA FE, NEW MEXICO 87501

DATE Oct 16 1981

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

Gentlemen:

I have examined the application dated Oct 13, 1981  
for the Tesoro Petroleum Corp. Santa Fe 'B' #39 M-5-17N-8W  
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approve  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Yours truly,

Jeff A. Edmister

KELLAHIN and KELLAHIN

*Attorneys at Law*

Jason Kellahin  
W. Thomas Kellahin  
Karen Aubrey

500 Don Gaspar Avenue  
Post Office Box 1769  
Santa Fe, New Mexico 87501

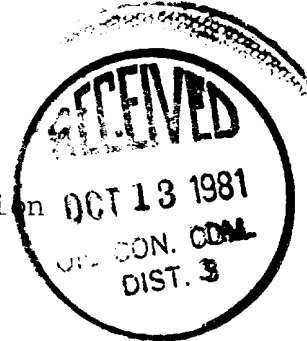
Telephone 982-4285  
Area Code 505

October 8, 1981

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

RE: Tesoro Petroleum Corporation  
Division Order R-6227

Dear Mr. Ramey:



On behalf of Tesoro Petroleum Corporation, and in accordance with Order R-6702, we hereby request administrative approval of the addition of a water injection well to the Tesoro Waterflood Project approved by Order R-6227.

The subject well is the Santa Fe "B" 39 well located 50 feet from the West line and 50 feet from the South line Section 5, T17N, R8W, Hospah Field, McKinley County, New Mexico.

In accordance with our conversation, I have only included as an attachment to this application, such additional exhibits that are not already of record in Case 6726 from which Order R-6227 was entered.

Very truly yours,

W. Thomas Kellahin

WTK:jm  
Enclosures

cc: Mr. Bill Parks  
Mr. Frank Chaves, OCD

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage  
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: TESORO PETROLEUM CORPORATION  
Address: First of Denver Plaza, Suite 2000, 633-17th St. Denver Co  
80202  
Contact party: Mr. W. E. Parks Phone: (303) 825-2000
- 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 3-6227
- 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: W. Thomas Kellen Title: Attorney for applicant  
Signature: [Signature] Date: October 7, 1978
- 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. November 14, 1978, Case 6726

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.

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

CASE NO. 6726  
Order No. R-6227

APPLICATION OF TESCRO PETROLEUM  
CORPORATION FOR A WATERFLOOD  
PROJECT, MCKINLEY COUNTY, NEW  
MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on November 14, 1979, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 9th day of January, 1980, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Tesoro Petroleum Corporation, seeks authority to institute a waterflood project on its Hanson Federal and Santa Fe Pacific Railroad Leases, South Hespah-Upper Sand Oil Pool, by the injection of water into the Upper Hespah Sand formation through three injection wells in Units E and M of Section 5 and Unit I of Section 8, Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico.

(3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(4) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

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Case No. 6726  
Order No. R-6227

(5) That the operator should 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 from injection, production, or plugged and abandoned wells.

(6) That the injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to 1000 psi, but the Division Director should have authority to increase said pressure limitation, should circumstances warrant.

(7) That there are two wells in the vicinity of the proposed waterflood project that may require remedial work prior to commencement of injection operations, those wells being the Tesoro SPPRF "B" Well No. 32 located in Unit P of Section 5 and the Burr and Cooley Coleman Well No. 2 located in Unit C of Section 3, both in Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico.

(8) That subject to the above conditions, the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tesoro Petroleum Corporation, is hereby authorized to institute a waterflood project on its Hanson Federal and Santa Fe Pacific Railroad Leases, South Hospah-Upper Sand Oil Pool, by the injection of water into the Upper Hospah Sand formation through the following-described wells in Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico:

<u>Lease</u>	<u>Well No.</u>	<u>Unit Letter</u>	<u>Section</u>
Santa Fe Pacific Railroad	35	E	5
Santa Fe Pacific Railroad	38	M	5
Hanson Federal	6	I	6

(2) That injection into each of said wells shall be through tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.



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Case No. 6726  
Order No. R-6227

(3) That the injection wells herein authorized or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 1000 psi, provided however, that the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(4) That the operator shall immediately notify the supervisor of the Division's Artec district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(5) That the subject waterflood project is hereby designated the Tesoro Santa Fe Hanson Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Division Rules and Regulations.

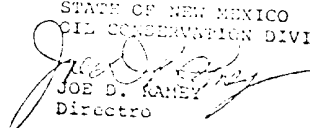
(6) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 704 and 1100 of the Division Rules and Regulations.

(7) That prior to commencement of water injection into the herein authorized wells, applicant shall consult with the supervisor of the Artec District Office of the Division, and shall take such remedial action as the District Supervisor shall require on the Tesoro Santa Fe Pacific Railroad "B" Well No. 32 located in Unit P of Section 5 and the Burr and Cooley Coleman Well No. 2 located in Unit C of Section 8, both in Township 17 North, Range 8 West, NMM, McKinley County, New Mexico.

(8) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
JOE D. KANEY  
Director

S E A L  
fd/

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

CASE NO. 6726  
Order No. R-6227-A

APPLICATION OF TESORO PETROLEUM  
CORPORATION FOR A WATERFLOOD  
PROJECT, MCKINLEY COUNTY, NEW MEXICO.

NUNC PRO TUNC ORDER

BY THE DIVISION:

It appearing to the Division that Order No. R-6227, dated January 9, 1980, does not correctly state the intended order of the Division,

IT IS THEREFORE ORDERED:

(1) That the 6th line of Finding No. (2) should be changed to read in its entirety as follows:

"and M of Section 5 and Unit I of Section 6,  
Township 17 North,"

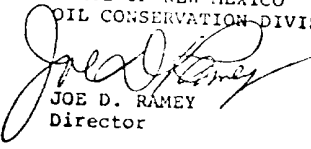
(2) That the last line of Order (1) should be changed to read in its entirety as follows:

"Hanson Federal                      24                      I                      6"

That this order shall be effective nunc pro tunc as of January 9, 1980.

DONE at Santa Fe, New Mexico, this 11th day of March, 1980.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
JOE D. RAMEY  
Director

S E A L  
fd/

TESORO

# map 3

- u. hospah well
- dakota well
- injector
- inj. lines

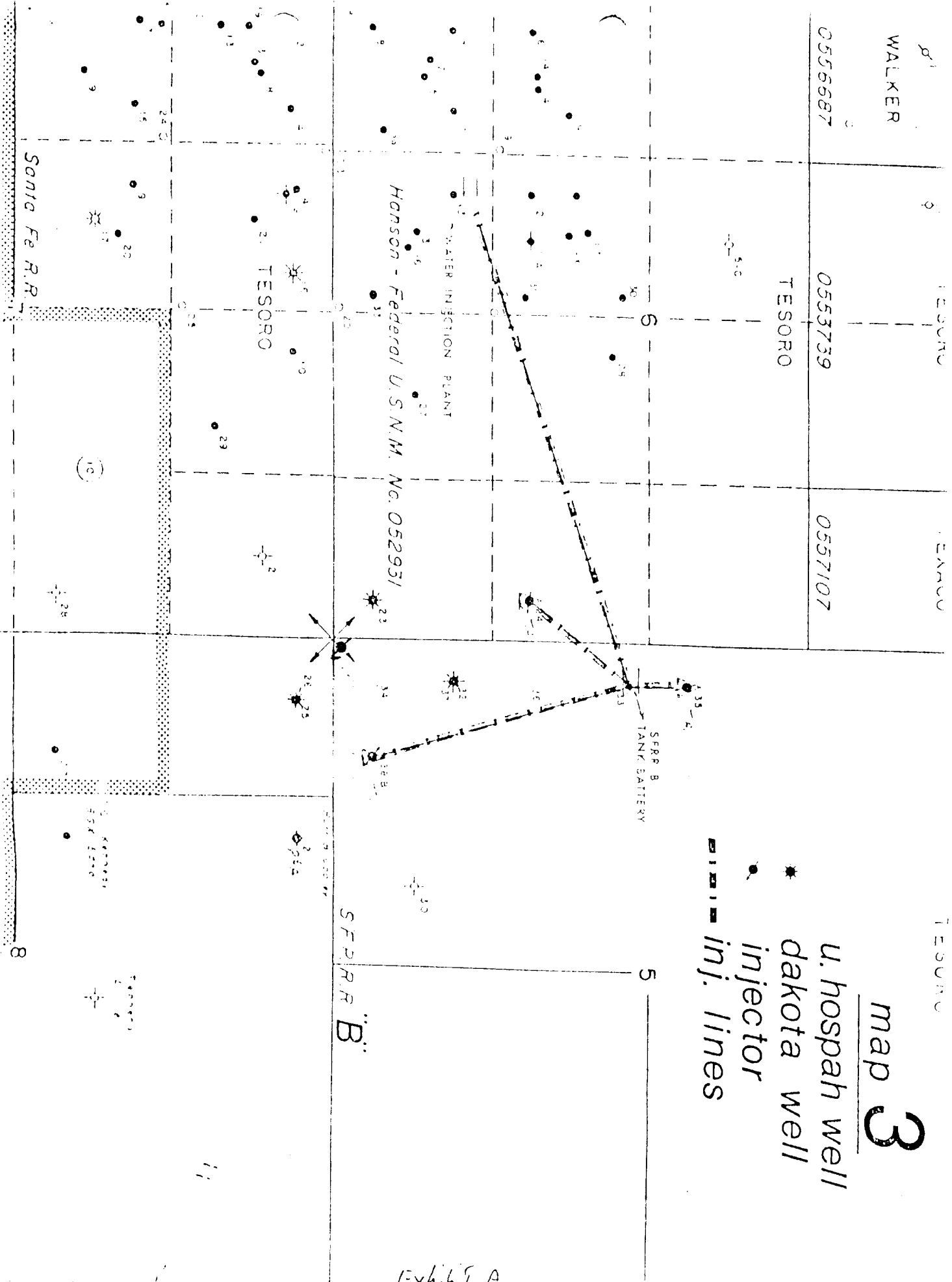
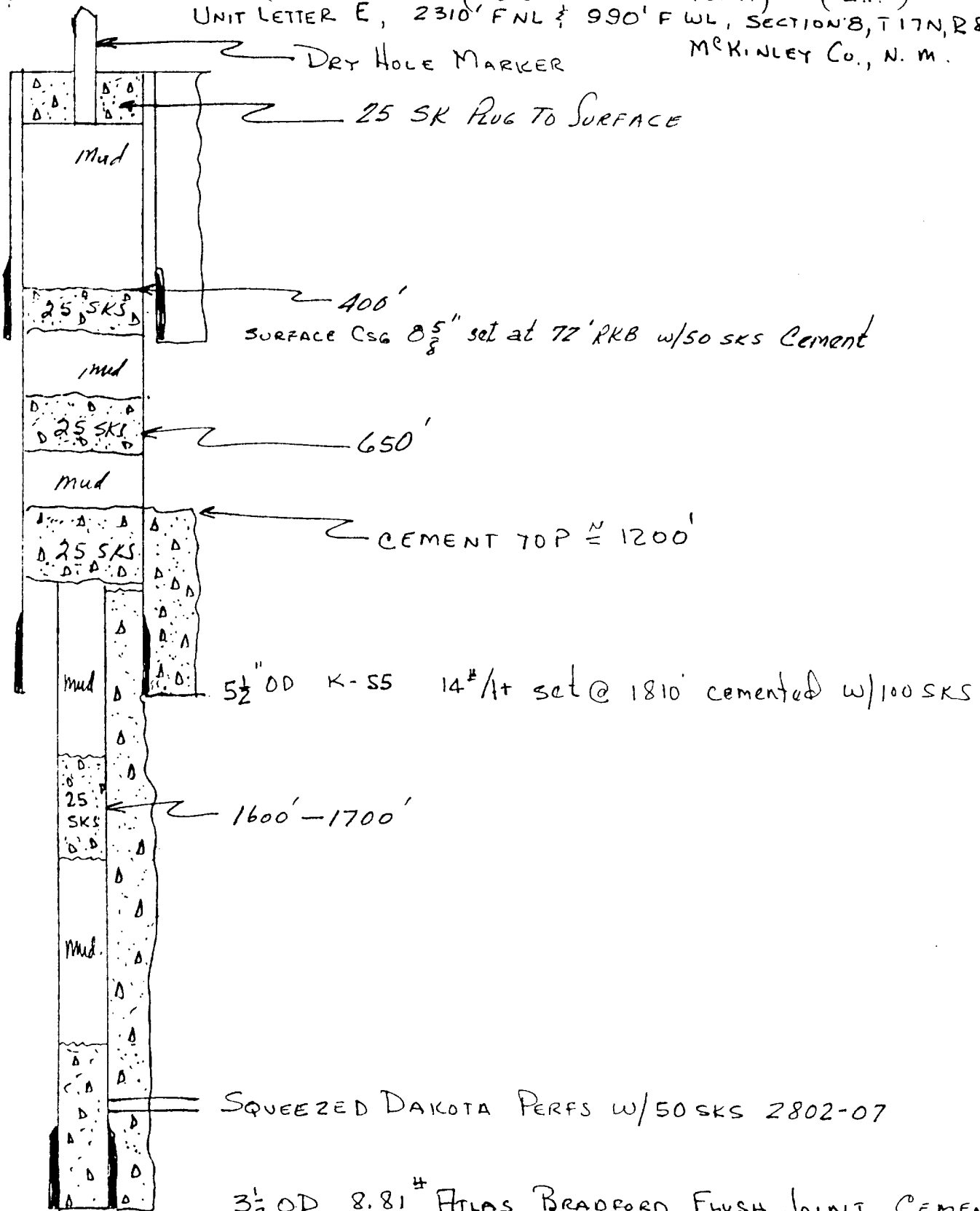


Exhibit A

DATE 9/14/81 WELL No. 22 LEASE HANSON FIELD HOSPAH  
 P&AD (29) (LONE PINE DAKOTA UNIT) (L.P.)  
 UNIT LETTER E, 2310' FNL & 990' F WL, SECTION 8, T17N, R8W  
 MCKINLEY Co., N. M.



3 1/2" OD 8.81# ATLAS BRADFORD FLUSH JOINT CEMENT  
 w/ 75 SKS.

S.F.R.R. <sup>4</sup>

SERVING THE WORLD

FIELD LOVE PINE

MEKINLEY COUNTY

SOUTH BOSTON, N.M.

UNIT LETTER H - 2160' F.N.L. & 3200' F.C.L. SER. 7-17N-8W

ELEVATION 6958' G.L. 6970' RKB (12') AFE-90958

CONTRACTOR - YOUNG DRILLING CO. SPUNDED 2 P.M. MAY 10, 1971

PLUGGED & A - 11:30 AM MAY 14, 1971

• PDA HACKER INSTALLED - SCREWED INTO 8578 COLLAR

4JTS. 123' 85<sup>5</sup>/<sub>8</sub>" 24° K-SS COZING SET @ 134' RKB W/ COLLAR 2' BELOW G.L  
CEMENTED IN 12 1/4" HOLE W/ HALLIBURTON # 1005A RKS COMMON PLUS 27"  
CALCIUM CHLORIDE, MAY 10, 1971. GOOD CEMENT RETURNS.

14 SACKS  
CEMENT  
JURINE  
TO 50'

9.1 AMND  
50' TO 680'

15<sup>th</sup>  
CENT

CEMENT PLUG 680' TO 780' 100' 26 SACKS POINT LOOK OUT  
7 7/8" HOLE CHMS' C

9.1.2.1.1.1

DRILLING MUD - 780' TO 1640'  
7 7/8" HOLE

15<sup>th</sup>  
COMMIT

CEMENT PLUG - 1640 TO 1950' 310' 80 SACKS BOTH HOSPANS & GALL  
7 1/8" HOLE CLASS C

9.1.1 MWD  
52 vis

- DRILLING MUD. 1950' to 2580'  
7 7/8" HOLE

150  
CEMENT

CEMENT Plug - 2580' to 2343' 263' 69 SATS ALL DAKOTAS  
7 7/8" HOLE CLASS "C"

T.D. 2843' RKE.

PLUGGED BY HALLIBURTON  
MAY 14, 1971



BRIDGE PLUG



PACKEE



CENTRALIZER



SCRATCHER



BASKET



PERSON

DATE 10/17/79 WE CO. 2 LEASE STRI FIELD Haystack  
 shut in Operator Tecoro Petr.

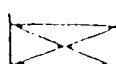






T. A. Wells

4 1/2" csg. set @ 45' Cemented to surface w/ 15.5x

**ILLEGIBLE**

Cement top @ approx 1440'

4 1/2" csg. set @ 1621' Cemented w/ 15.5x  
 TD-1625'

 BRIDGE PLUG  
   PACKER  
  CENTRALIZER  
  SCRATCHER  
  BASKET  
  PERFORATIC

1/16" 2-2

DATE 8/15/79 WELL NO. 35 LEASE DEER "B" FIELD So. Hooper

Well to be converted to injector.  
Presently T.A.

8 7/8" 24# K-55, STC @ 108' w/ 90sx Class "A" in 12 1/4" hole. Cemented to surface.

Cement Top - 900'

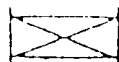
2 3/8" CD tubing

Set:  
Packer @ 1600'. Baker Model AD-1

1611'-1615' 4 JS PF (0.41")

PBTD - 1633'

5 1/2" 14# K-55, STC @ 1643' w/ 100sx Class "B" 50/50  
Por w/ 2% CaCl<sub>2</sub>. Top of cement @ 900' from CBL.



BRIDGE PLUG



PACKER



CENTRALIZER



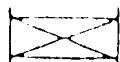
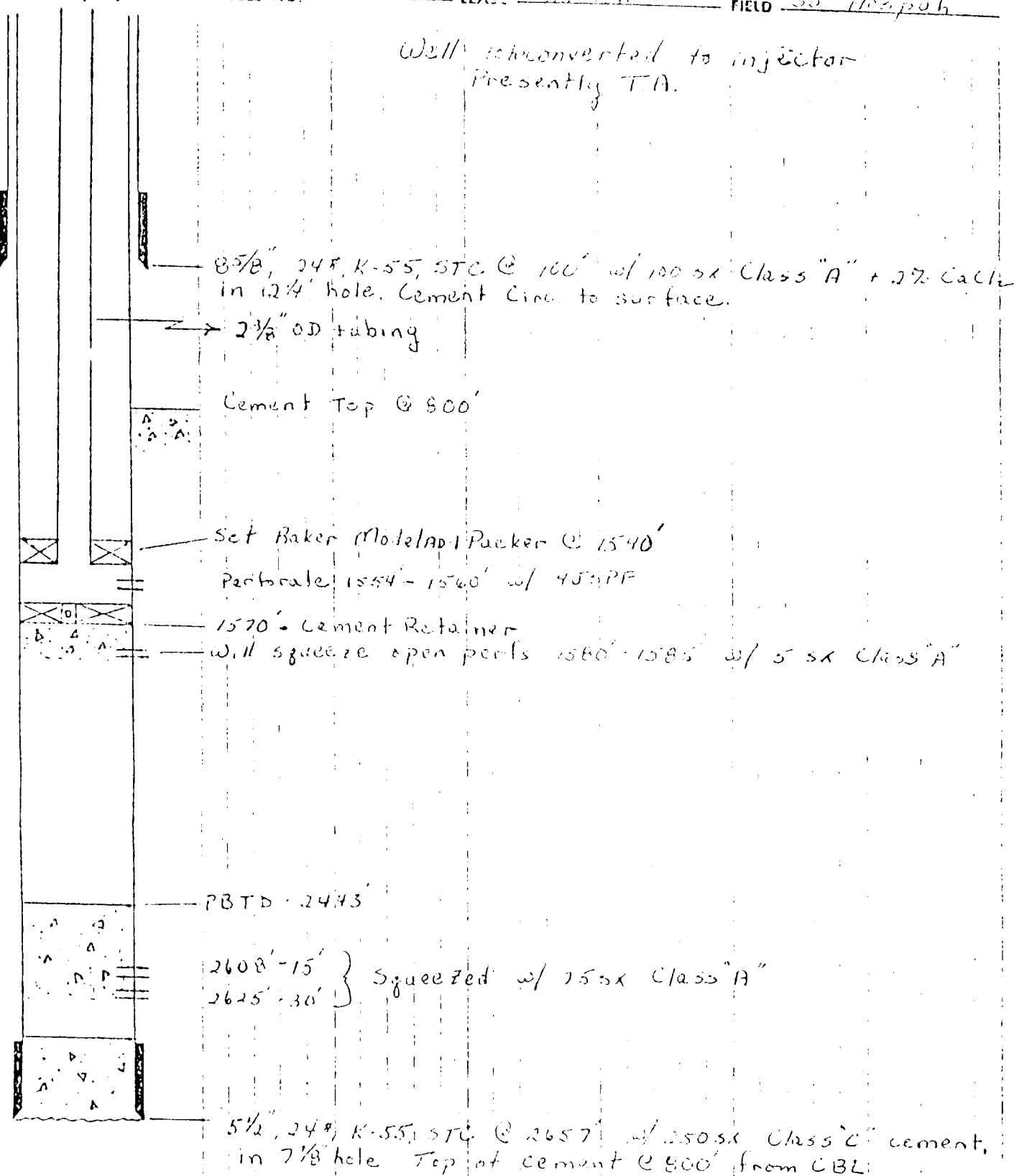
SCRATCHER



BASKET



PERFORATION

DATE 4/15/77WELL NO. 24LEASE HansenFIELD So. HespohWell converted to injector  
Presently T.A.

BRIDGE PLUG



PACKER



CENTRALIZER



SCRATCHER



BASKET



PERFORATION



DATE 8/15/79 WELL NO. 38 LEASE DEER B FIELD So Hespah

Well to be converted to injector  
Presently T.R.

8 5/8" 24 API 55, 5TC @ 158' w/ 500x Class "A" 2% CaCl<sub>2</sub>  
in 12 1/4" hole. Cement circ. to surface.

→ 2 3/8" OD tubing

Calculated cement top @ 1200'. CBL will be run.

Set a Baker Model 101 Packer @ 1590'

Perforate 1607'-1612' w/ 4J3 PF

1648'

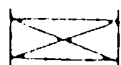
Set a Baker Model 101 BIT @ 1660' w/ 25x of Class "G"  
cement on top. (16')

**ILLEGIBLE**

2670'-2676' w/ 2J3 PF. Data watered out.

PBTD - 2730'

5 1/2" 14 5/8 15.5 #, J-55, 5TC @ 2740' w/ 300x Class "A"  
 Pozmix in 7 7/8" hole. Top of cement calculated to be  
 @ 1200'. CBL will be run



BRIDGE PLUG



PACKER



CENTRALIZER



SCRATCHER

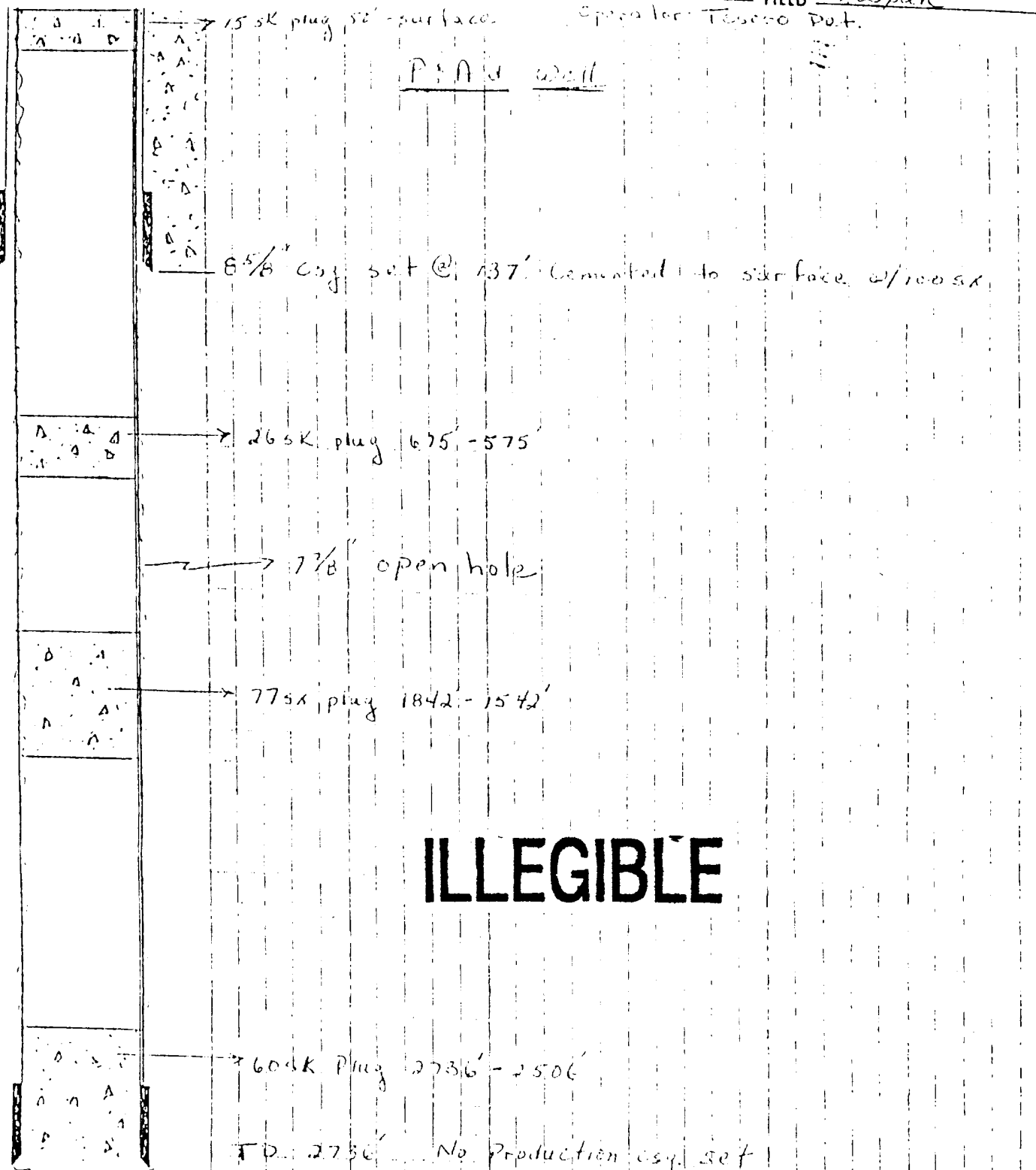


BASKET



PERFORATION

DATE 10/17/77 WELL NO. 50 LEASE ST RB B FIELD Hospah  
Operator: Tesoro Dist.



ILLEGIBLE

BRIDGE PLUG
 PACKER
 CENTRALIZER
 SCRATCHER
 BASKET
 PERFORATION

DATE 10/17/79 WELL NO. 2 LEASE Calvin FIELD KloppOperator: W. C. C. Co.

Dead Well: February, 1977

Cement Plug 50' - surface

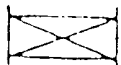
5 1/2" csg. set @ 97' cemented to surface of 100' sx

Cement top @ approx. 1195'

Cement Plug 2000' - 1700'

ILLEGIBLE

Cement plug 2800' - 2680'

5 1/2" csg. set @ 2841' cemented w/ 3/16" sx  
TD - 2842'

BRIDGE PLUG



PACKER



CENTRALIZER



SCRATCHER



BASKET



PERFORATION