BW - 27

PERMITS, RENEWALS, & MODS

RECEIVED

2009 OCT 19 AM 9 19

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

Kathy McCarroll, being first duly sworn, on oath says:

That she is the Classified Supervisor 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 10 2009

That the cost of publication is **$143.24** and that payment thereof has been made and will be assessed as court costs.

Kathy McCarroll

Subscribed and sworn to before me this

13th day of October, 2009

Stephanie Dobson

My commission Expires on 1/25/2010

Notary Public

OFFICIAL SEAL
STEPHANIE DOBSON
Notary Public
State of New Mexico
My Comm. Expires 1/25/2010

October 10, 2009

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given pursuant to New Mexico Water Quality Control Commission Regulations (20.6.2.3106 NMAC) the following discharge permit application has been submitted to the Director of the New Mexico Oil Conservation Division (OCD): 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(BW-27) Mesquite SWD, Inc., PO Box 1479, Carlsbad, New Mexico 88221 has submitted an application for renewal of the discharge plan for the brine station located in Section 23, Township 22 South, Range 27 East, NMPM, Eddy County, east of Otis, NM. Fresh water is injected into the subsurface at a depth of approximately 1,064 feet thereby solution mining salt. The extracted brine has an approximate dissolved solids concentration of 350,000 mg/l. The brine is stored in above-ground tanks for use by the oil and gas industry. Groundwater most likely to be affected by a spill or leak is at a depth of approximately 50 feet with a total dissolved solids concentration of 4,000 mg/l. The plan addresses how spills and leaks will be managed in order to protect fresh water.

The OCD has determined that the application is administratively complete and is preparing a draft permit. The OCD will accept comments and statements of interest regarding this application and create a facility specific mailing list for persons who wish to receive future notices. Persons interested in obtaining further information, submitting comments or requesting to be on a facility specific mailing list for future notices may contact the Environmental Bureau of the Oil Conservation Division at the address given above. The application may be viewed at the above address between 8:00 a.m. and 4:00 p.m. Monday through Friday, or at the OCD website http://www.emnrd.state.nm.us/ocd/. Persons interested in obtaining a copy of the application may contact the OCD at the address above. Prior to ruling on any proposed discharge permit or major modification, the Director shall allow a period of at least thirty (30) days after the date of publication of this notice, during which interested persons may submit comments or request the OCD hold a public hearing. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines that there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed permit based on information available, including all comments received. If a public hearing is held, the director will approve or disapprove the proposed permit based on information in the permit application and information submitted at the hearing.

Para obtener mas información sobre esta solicitud en espan?ol, sirvase comunicarse por favor: New Mexico Energy, Minerals and Natural Resources Department (Depto. Del Energia, Minerals y Recursos Naturales de Nuevo México), Oil Conservation Division (Departo Conservacio n Del Petróleo), 1220 South St. Francis Drive, Santa Fe, New México (Contacto Dorothy Phillips, 505-476-3461).

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 7th day of October, 2009.

STATE

Bill Richardson
Governor
Joanna Prukop
Cabinet Secretary

Mark Fesmire
Director
Oil Conservation Division

October 7, 2009

Mr. Clay L. Wilson
Mesquite SWD, Inc.
PO Box 1479
Carlsbad, New Mexico 88221-1479

Re: Discharge Plan Renewal Associated with Brine Wells (BW-27)
Dunaway No. 1 (API 30-015-28083) & Dunaway No. 2 (API 30-015-28084)
Unit F, Section 23, Township 22 South, Range 27 East
Eddy County, New Mexico

Mr. V BW-27

The C Permits d Mesquite SWD's request and initial filing
fee to n the SE/4 of the NW/4 of Section 23,
Towns Otis, New Mexico in Eddy County. The
initial s in order for OCD to deem the application
"admin

Therefo WQCC) regulation's public notice
requiren d and demonstrated to the OCD. A draft
public n application. As quickly as possible, could
you plea approval prior to its required publication
and posti lic notice pursuant to the WQCC
requireme MAC to determine if there is any public interest.

The original discharge permit for the Dunaway brine wells was issued to Scurlock Permian Corporation on September 21, 1994. Operation of the facility transferred to Mesquite SWD effective November 1, 2003. It has been a permit condition for all brine wells that monthly injection and production be documented and reported to the OCD. OCD has no injection or brine production information from this facility. This should not have been a difficult requirement as these figures would normally be compiled as part of business operations. Many brine well operators have been lax in reporting injection and production information and OCD has not compelled operators when such data has not been provided. This will no longer be the case. OCD requires Mesquite SWD to provide OCD with water injection and brine production data for the entire life of the Dunaway wells before November 20, 2009 including those periods of time when Scurlock Permian Corporation was operating the facility. Mesquite SWD must also explain how it obtained this information. Failure to provide this information will result in an immediate determination of non-compliance, disapproval of the renewal application, possible

suspension of all permits for this and other operations, and termination of brine production from this facility until the required information is received. In the future, Mesquite SWD shall submit monthly injection and production data to the OCD on a quarterly basis without exception.

If there are any questions regarding this matter, please do not hesitate to contact me by phone at (505) 476-3465 or email at *jim.griswold@state.nm.us*. Please refer to permit BW-27 in all future communication. On behalf of the OCD, I wish to thank you and your staff for your continued cooperation during the review process.

Respectfully,

Jim Griswold
Senior Hydrologist

JG/jg
cc: OCD District II Office, Artesia

ACKNOWLEDGEMENT OF RECEIPT
OF CHECK/CASH

I hereby acknowledge receipt of check No. _____ dated 7/29/09

or cash received on _____ in the amount of $ 100 00

from Carlsbad Brine LLC

for BW-27

Submitted by: Lawrence Romero Date: 8/28/09

Submitted to ASD by: Lawrence Romero Date: 8/28/09

Received in ASD by: _____ Date: _____

Filing Fee ✓ New Facility _____ Renewal _____

Modification _____ Other _____

Organization Code 521.07 Applicable FY 2004

To be deposited in the Water Quality Management Fund.

Full Payment _____ or Annual Increment _____

26. Certification: Mesquite SWD, INC. by the officer whose signature appears below, accepts this and agrees to comply with all terms and conditions contained herein. Mesquite SWD, INC. further acknowledges that these conditions and requirements of this may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Mesquite SWD, INC.

Print Name: CLAY L WILSON

Signature: Clay L Wilson

Title: V.P.

Date: 7-26-05

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

July 05, 2005

Mr. Clay L. Wilson
Mesquite SWD, INC.
P.O. Box 1479
Carlsbad, New Mexico 88221-1479

Re: Discharge Permit BW-027
API # 30-015-28083-00-00
API # 30-015-28084-00-00
Carlsbad Brine Production Facility
Eddy County, New Mexico

Dear Mr. Wilson:

The groundwater discharge renewal application for the Mesquite SWD, INC. Carlsbad Brine Production Facility BW-027 operated by Mesquite SWD, INC. located in the SE/4, NW/4 of Section 23, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico **is hereby approved** under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within 30 working days of receipt of this letter.**

The original discharge plan was submitted on July 01, 1994 and approved on September 21, 1994. The discharge plan renewal application, including attachments, dated August 26, 2004 submitted pursuant to Section 5101.B.3. of the New Mexico Water Quality Control Commission (WQCC) Regulations also includes all earlier applications and all conditions later placed on those approvals. The discharge permit renewal application was submitted pursuant to Section 20.6.2.5101 of the New Mexico Water Quality Control Commission (WQCC) Regulations. The discharge permit is issued pursuant to Section 5101 and 3109.C. Please note Section 3109.G., which provides for possible future amendment of the permit. Please be advised that approval of this permit does not relieve Mesquite SWD, INC. of liability should operations result in pollution of surface or ground waters, or the environment.

Please be advised that all exposed pits, including lined pits and open top tanks (exceeding 16 feet in diameter) shall be screened, netted, or otherwise rendered non-hazardous to wildlife including migratory birds.

Please note that Section 3104 of the regulations requires that "when a permit has been approved, discharges must be consistent with the terms and conditions of the permit. Pursuant to Section 3107.C., operators are required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3109.H.4., this approval is for a period of five years. **This approval will expire September 21, 2009** and an application for renewal should be submitted in ample time before that date. Pursuant to Section 5101.F. of the regulations, if a discharger submits a discharge renewal application at least 120 days before the discharge permit expires and is in compliance with the approved permit, then the existing discharge permit will not expire until the application for renewal has been approved or disapproved.

The $100.00 filing fee has been received by OCD. The $1700.00 flat fee shall be submitted upon receipt of this approval. The required flat fee may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the permit, with the first payment due upon receipt of this approval.

Please make all checks payable to: Water Quality Management Fund
C/o: Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505.

If you have any questions, please contact Wayne Price of my staff at (505-476-3487) or E-mail wayne.price@state.nm.us. On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief
RCA/lwp

Attachment-1
xc: OCD Artesia Office

ATTACHMENT TO THE DISCHARGE Permit BW-027 APPROVAL
Mesquite SWD, INC. Carlsbad Brine Production Facility (BW-027)
API # 30-015-28083-00-00 and API # 30-015-28084-00-00
DISCHARGE PERMIT APPROVAL CONDITIONS
July 05, 2005

1. Payment of Discharge Plan Fees: The $100.00 filing fee has been received by OCD. The $1700.00 flat fee shall be submitted upon receipt of this approval. The required flat fee may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the permit, with the first payment due upon receipt of this approval.

2. Commitments: Mesquite SWD, INC. will abide by all commitments submitted in the discharge permit renewal application dated August 26, 2004 and these conditions for approval.

3. Production Method: Fresh water will be injected down the casing and brine shall be recovered up the tubing. Reverse flow will be allowed only once a month for up to 24 hours for clean out.

4. Maximum Injection Pressure: The maximum operating injection and/or test pressure at the well head will be such that the fracture pressure of the injection formation will not be exceeded and will not cause new fractures or propagate existing fractures or cause damage to the system.

5. Mechanical Integrity Testing: Conduct an annual open to formation pressure test by pressuring up the formation with fluids to one and one-half times the normal operating pressure or 300 psig whichever is greater for four hours. However, no operator may exceed surface injection or test pressures that may cause formation fracturing (see item 4 above) or system failures. Systems requiring test pressures less than 300 psig or methods that use testing media other than fluids, i.e. gas, must be approved by OCD prior to testing. Brine supply wells operating with isolation packers will have to pressure test both the cavern formation and casing/tubing annuals.

   At least once every five years and during well work-overs the cavern formation will be isolated from the casing/tubing annuals and the casing pressure tested at 300 psig for 30 minutes. All pressure tests must be witnessed by OCD.

6. Capacity/ Cavity Configuration and Subsidence Survey: The operator shall provide information on the size and extent of the solution cavern and geologic/engineering data demonstrating that continued brine extraction will not cause surface subsidence, collapse or damage to property, or become a threat to public health and the environment. This information shall be supplied in each annual report. OCD may require the operator to perform additional well surveys, test, and install subsidence monitoring in order to demonstrate the integrity of the system. If the operator cannot demonstrate the integrity of the system to the satisfaction of the Division then the operator may be required to shut-down, close the site and properly plug and abandoned the well.

7. Production/Injection Volumes: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office in an annual report due on the first day of January of each year.

8. Analysis of Injection Fluid and Brine: Provide an analysis of the injection fluid and brine with each annual report. Analysis will be for General Chemistry (method 40 CFR 136.3) using EPA methods.

9. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets must also be stored on an impermeable pad with curbing.

10. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.

11. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm.

12. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.

13. Labeling: All tanks, drums, and other containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.

14. Below Grade Ponds/Pits/Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All below grade tanks, sumps and pits must be tested annually, except systems that have secondary containment with leak detection. These systems with leak detection shall have a monthly inspection of the leak detection to determine if the primary containment is leaking. Results of tests and inspections shall be maintained at the facility covered by this discharge permit and available for NMOCD inspection. Any system found to be leaking shall be reported pursuant to Item # 19. Permit holders may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing.

15. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be approved by the OCD prior to installation and must be tested to demonstrate their mechanical integrity every five (5) years. Results of such tests shall be maintained at the facility covered by this discharge plan and available for NMOCD inspection. Permit holders may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing.

16. Class V Wells: No Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be approved for construction and/or operation unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.

17. Well Work Over Operations: OCD approval will be obtained from the Director prior to performing remedial work, pressure test or any other Work over. Approval will be requested on OCD Form C-103 "Sundry Notices and Reports on Wells" (OCD Rule 1103.A.) with appropriate copies sent to the OCD Environmental Bureau and District Office.

18. Housekeeping: All systems designed for spill collection/prevention, and leak detection will be inspected daily to ensure proper operation and to prevent overtopping or system failure.

19. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. and WQCC 1203.

20. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste determination per 40 CFR Part 261. Any waste stream that is not listed in the discharge will be approved by OCD on a case-by-case basis.

    Rule 712 Waste: Pursuant to Rule 712, disposal of certain non-domestic waste is allowed at solid waste facilities permitted by the New Mexico Environment Department as long as the waste stream is identified in the discharge, and existing process knowledge of the waste stream does not change without notification to the Oil Conservation Division.

21. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.

22. Closure: The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

23. OCD Inspections: Additional requirements may be placed on the facility based upon results from OCD inspections.

24. Storm Water : Stormwater runoff controls shall be maintained. As a result of operations, if any water contaminant that exceeds the WQCC standards listed in 20 NMAC 6.2.3101 is discharged in any storm water run-off, then immediate actions shall be taken to mitigate the effects of the run-off, notify the OCD within 24 hours, and modify the discharge to include a formal storm water run-off containment and submit for OCD approval within 15 days.

26. Certification: Mesquite SWD, INC. by the officer whose signature appears below, accepts this and agrees to comply with all terms and conditions contained herein. Mesquite SWD, INC. further acknowledges that these conditions and requirements of this may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Mesquite SWD, INC.

Print Name:_____

Signature: _____

Title:_____

Date:_____

SCURLOCK PERMIAN CORPORATION

333 Clay
P.O. Box 4648
Houston, Texas 77210-4648

(713) 646-4100

January 27, 2000

Mr. Roger Anderson
Environmental Bureau Chief
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

RE: **Discharge Plan BW-027**
Carlsbad Brine Production
Eddy County, NM

Discharge Plan BW-012
Hobbs Brine Production
Lea County, NM

Dear Mr. Anderson:

Attached are the signed New Mexico Oil Conservation Division's (OCD) conditions of approval forms and a $1,380 check for the renewal fee for Scurlock Permian Corporation's Hobbs and Carlsbad brine production facilities.

If you have any questions, please feel free to call me directly at (918) 223-0207 or via email at kebrown@paalp.com

Sincerely,

Kevin E. Brown

Kevin E. Brown
Director
Environmental & Regulatory Affairs

CC: Carlsbad Water File
Hobbs Water File
Memo File

ATTACHMENT TO THE DISCHARGE PLAN BW-027 APPROVAL
Scurlock Permian Corporation Carlsbad Brine Production Facility (BW-027)
DISCHARGE PLAN APPROVAL CONDITIONS
November 29, 1999

1. Payment of Discharge Plan Fees: The $50.00 filing fee has been received by OCD. The $690.00 flat fee shall be submitted upon receipt of this approval. The required flat fee may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the plan, with the first payment due upon receipt of this approval.

2. Commitments: Scurlock Permian Corporation will abide by all commitments submitted in the discharge plan renewal application dated September 1, 1999 and these conditions for approval.

3. Production Method: Two well system with isolation packers; Fresh water will be injected down the tubing on either well and brine shall be recovered up the tubing on the other well. One Well System; If system is operated as a one-well system, then fresh water will be injected down the casing and brine shall be recovered up the tubing. Reverse flow will be allowed only once a month for up to 24 hours for clean out.

4. Maximum Injection Pressure: The maximum operating injection and/or test pressure at the well head will be such that the fracture pressure of the injection formation will not be exceeded.

5. Mechanical Integrity Testing: Scurlock Permian Corporation will conduct an annual open hole cavern pressure test equal to one and one-half times the normal operating pressure (not to exceed formation fracture pressure) or 300 psi, whichever is greater, for four hours. At least once every five years and during well work overs the cavern formation will be isolated from the casing/tubing annuals and the casing pressure tested at 300 psig for 30 minutes. Please note, any variance in the above procedure must be pre-approved by OCD and all pressure test must be witnessed by OCD.

6. Capacity and Cavity Configuration: A test will be conducted to determine the size and configuration of the mined cavity prior to discharge plan renewal (September 21, 2004). The method and time of testing will be approved by the OCD prior to performing the test.

   Scurlock Permian Corporation will provide to the OCD the calculated size of the cavity and demonstrate the stability of the salt formation cavity from collapse and/or subsidence. Please include this information in the first annual report due on April 01, 2000.

7. Production/Injection Volumes: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office in an annual report due on the first day of April of each year.

8. Analysis of Injection Fluid and Brine: Provide an analysis of the injection fluid and brine with each annual report. Analysis will be for General Chemistry (method 40 CFR 136.3) using EPA methods.

9. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets must also be stored on an impermeable pad with curbing.

10. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.

11. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm.

12. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.

13. Labeling: All tanks, drums, and other containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.

14. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must be tested to demonstrate their mechanical integrity no later than February 28, 2000 and every year from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD in the annual report due on April 01, of each year.

15. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity no later than February 28, 2000 and every 5 years, from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD in the first annual report due on April 01, 2000.

16. Class V Wells: No Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be approved for construction and/or operation unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.

17. Well Work Over Operations: OCD approval will be obtained from the Director prior to performing remedial work, pressure test or any other Work over. Approval will be requested on OCD Form C-103 "Sundry Notices and Reports on Wells" (OCD Rule 1103.A.) with appropriate copies sent to the OCD Artesia District Office.

    Well Bore Schematics: Scurlock Permian Corporation shall provide up-dated well bore schematics. The schematics submitted in the discharge plan application did not show the isolation packers. Please provide with the first annual report due on April 01, 2000.

18. Housekeeping: All systems designed for spill collection/prevention, and leak detection will be inspected daily to ensure proper operation and to prevent overtopping or system failure.

19. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. and WQCC 1203. to the OCD Artesia District Office.

20. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste characterization per 40 CFR Part 261.

21. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.

22. Closure: The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

23. OCD Inspections: Additional requirements may be placed on the facility based upon results from OCD inspections.

24. Conditions accepted by:

Scurlock Permian Corporation

Print Name: KEVIN E. BROWN

Signature: Kevin E. Brown

Title: DIRECTOR OF ENVIRONMENTAL

Date: 1-27-00

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 12/29/99,

or cash received on _____ in the amount of $ 1380.00

from SCURLOCK PERMIAN LLC

for HOBBS + CARLSBAD BRINE STATIONS BW-012 + BW-027

Submitted by: (Facility Name) WAYNE PRICE (DP No.) Date: 2/7/2000

Submitted to ASD by: Wayne Price Date: "

Received in ASD by: _____ Date: _____

Filing Fee ___ New Facility ___ Renewals ✓

Modification ___ Other _____ (specify)

Organization Code 521.07 Applicable FY 2000

To be deposited in the Water Quality Management Fund.

Full Payment ✓ or Annual Increment ___

THIS CHECK IS VOID IF BROWN COLORED BACKGROUND IS ABSENT

FORM 2501 REV. 5-95

70-2382/719

ACCOUNTS PAYABLE CHECK

Scurlock Permian LLC
P.O. Box 4648
Houston, Texas 77210

CHECK DATE 12/29/99

CHECK NUMBER [redacted]

MATCH AMOUNT IN WORDS WITH NUMBERS

PAY TO THE ORDER OF:

NMED WATER QUALITY MANAGEMENT
OIL CONSERVATION DIVISION
2040 S PACHECI ST
SANTA FE NM 87505

U.S. Funds ******$1,380.00

VOID AFTER 180 DAYS

One Thousand Three Hundred Eighty and 00/100 U.S. Dollars

Scurlock Permian LLC

The Northern Trust Company
Payable Through
Northern Trust Bank/DuPage
Oakbrook Terrace, IL

BW-027
BW-012

By: Michael J. Latiolais
Authorized Representative

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK. HOLD AT AN ANGLE TO VIEW.

[redacted]

Check No	Check Date	Bank No	Vendor No
[redacted]	12/29/99	5208	N07226

Scurlock Permian LLC
P.O. Box 4648
Houston, Texas 77210

Direct Inquiries to:
ACCOUNTS PAYABLE DEPARTMENT
Scurlock Permian LLC
PHONE: 713-646-4543

Loc	Mo	Vou	Sub	P.O. Number	Invoice Number	Invoice Date	Remit Comment	Discount	Invoice/Pay Amt
1980	12	880	219	DNF 12	12899	12/08/99	DISCHARGE PLAN RENEWAL FEE HOBBS BRINE STATION	0.00	690.00
1980	12	880	220	DNF 12	120899	12/08/99	DISCHARGE PLAN RENEWAL FEE CARLSBAD BRINE STATION	0.00	690.00
0000	00						Total remittance: U.S. Dollars		1,380.00

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

November 29, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. P 410 425 215

James C. Ephraim II P.E.
Scurlock Permian Corporation
333 Clay
P.O. Box 4648
Houston, Texas 77210-4648

Re: Discharge Plan BW-027
Carlsbad Brine Production Facility
Eddy County, New Mexico

Dear Mr. Ephraim:

The groundwater discharge plan renewal application for the Carlsbad Brine Production Facility BW-027 operated by Scurlock Permian Corporation located in the SE/4, NW/4 of Section 23, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico **is hereby approved** under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe Office within ten working days of receipt of this letter.**

The original discharge plan application was submitted on July 01, 1994 and approved on September 21, 1994. The discharge plan renewal application, including attachments, dated September 01, 1999 submitted pursuant to Sections 5101.B.3. of the New Mexico Water Quality Control Commission (WQCC) Regulations also includes all earlier applications and all conditions later placed on those approvals. The discharge plan is renewed pursuant to Section 5101.A. and 3109.C. Please note Section 3109.G., which provides for possible future amendment of the plan. Please be advised that approval of this plan does not relieve Scurlock Permian Corporation of liability should operations result in pollution of surface or ground waters, or the environment.

Please be advised that all exposed pits, including lined pits and open top tanks (exceeding 16 feet in diameter) shall be screened, netted, or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that Section 3104. of the regulations requires that "when a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3107.C., Scurlock Permian Corporation is required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3109.H.4., this approval is for a period of five years. **This approval will expire September 21, 2004** and an application for renewal should be submitted in ample time before that date. Pursuant to Section 5101.F. of the regulations, if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved. It should be noted that all discharge plan facilities will be required to submit plans for, or the results of, an underground drainage testing program as a requirement for discharge plan renewal.

The discharge plan application for the Scurlock Permian Corporation Carlsbad Brine Production Facility is subject to the WQCC Regulation 3114. Every billable facility submitting a discharge plan will be assessed a fee equal to the filing fee of $50 plus a renewal fee of $690.00 for brine stations. The OCD has not received the $690.00 flat fee. The flat fee of $690.00 may be paid in a single payment due on the date of the discharge plan approval or in five equal installments over the expected duration of the discharge plan. Installment payments shall be remitted yearly, with the first installment due on the date of the discharge plan approval and subsequent installments due on this date of each calendar year.

Please make all checks payable to: **NMED-Water Quality Management** and addressed to the OCD Santa Fe Office.

If you have any questions, please contact Wayne Price of my staff at (505-827-7155). On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

Roger Anderson
Environmental Bureau Chief
RCA/lwp

Attachment-1
xc: OCD Artesia Office

ATTACHMENT TO THE DISCHARGE PLAN BW-027 APPROVAL
Scurlock Permian Corporation Carlsbad Brine Production Facility (BW-027)
DISCHARGE PLAN APPROVAL CONDITIONS
November 29, 1999

1. Payment of Discharge Plan Fees: The $50.00 filing fee has been received by OCD. The $690.00 flat fee shall be submitted upon receipt of this approval. The required flat fee may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the plan, with the first payment due upon receipt of this approval.

2. Commitments: Scurlock Permian Corporation will abide by all commitments submitted in the discharge plan renewal application dated September 1, 1999 and these conditions for approval.

3. Production Method: Two well system with isolation packers; Fresh water will be injected down the tubing on either well and brine shall be recovered up the tubing on the other well. One Well System; If system is operated as a one-well system, then fresh water will be injected down the casing and brine shall be recovered up the tubing. Reverse flow will be allowed only once a month for up to 24 hours for clean out.

4. Maximum Injection Pressure: The maximum operating injection and/or test pressure at the well head will be such that the fracture pressure of the injection formation will not be exceeded.

5. Mechanical Integrity Testing: Scurlock Permian Corporation will conduct an annual open hole cavern pressure test equal to one and one-half times the normal operating pressure (not to exceed formation fracture pressure) or 300 psi, whichever is greater, for four hours. At least once every five years and during well work overs the cavern formation will be isolated from the casing/tubing annuals and the casing pressure tested at 300 psig for 30 minutes. Please note, any variance in the above procedure must be pre-approved by OCD and all pressure test must be witnessed by OCD.

6. Capacity and Cavity Configuration: A test will be conducted to determine the size and configuration of the mined cavity prior to discharge plan renewal (September 21, 2004). The method and time of testing will be approved by the OCD prior to performing the test.

   Scurlock Permian Corporation will provide to the OCD the calculated size of the cavity and demonstrate the stability of the salt formation cavity from collapse and/or subsidence. Please include this information in the first annual report due on April 01, 2000.

7. Production/Injection Volumes: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office in an annual report due on the first day of April of each year.

8. Analysis of Injection Fluid and Brine: Provide an analysis of the injection fluid and brine with each annual report. Analysis will be for General Chemistry (method 40 CFR 136.3) using EPA methods.

9. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums should be stored on their sides with the bungs in place and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets must also be stored on an impermeable pad with curbing.

10. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.

11. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm.

12. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.

13. Labeling: All tanks, drums, and other containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill, or ignite.

14. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must be tested to demonstrate their mechanical integrity no later than February 28, 2000 and every year from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD in the annual report due on April 01, of each year.

15. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity no later than February 28, 2000 and every 5 years, from tested date, thereafter. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing. The test results will be submitted to OCD in the first annual report due on April 01, 2000.

16. Class V Wells: No Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be approved for construction and/or operation unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.

17. Well Work Over Operations: OCD approval will be obtained from the Director prior to performing remedial work, pressure test or any other Work over. Approval will be requested on OCD Form C-103 "Sundry Notices and Reports on Wells" (OCD Rule 1103.A.) with appropriate copies sent to the OCD Artesia District Office.

    Well Bore Schematics: Scurlock Permian Corporation shall provide up-dated well bore schematics. The schematics submitted in the discharge plan application did not show the isolation packers. Please provide with the first annual report due on April 01, 2000.

18. Housekeeping: All systems designed for spill collection/prevention, and leak detection will be inspected daily to ensure proper operation and to prevent overtopping or system failure.

19. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116. and WQCC 1203. to the OCD Artesia District Office.

20. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste characterization per 40 CFR Part 261.

21. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.

22. Closure: The OCD will be notified when operations of the facility are discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the Director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

23. OCD Inspections: Additional requirements may be placed on the facility based upon results from OCD inspections.

24. Conditions accepted by:

Scurlock Permian Corporation

Print Name:_____

Signature: _____

Title:_____

Date:_____

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

September 21, 1994

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO. Z 765 963 160

Mr. Owen Mobley
Scurlock Permian Corporation
P.O. Box 4648
Houston, TX 77210-4648

Re: Discharge Plan BW-~~024~~ 027
Carlsbad Brine Station
Eddy County, New Mexico

Dear Mr. Mobley:

The groundwater discharge plan, BW-024, for the Scurlock Permian Corporation Carlsbad Brine Station, located in the SE/4 NW/4, Section 23, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico, **is hereby approved** under the conditions contained in the enclosed attachment. The discharge plan consists of the application dated July 1, 1994.

The discharge plan was submitted pursuant to section 3-106 of the Water Quality Control Commission Regulations. It is approved pursuant to section 3-109.A. Please note Section 3-109.F., which provides for possible future amendment of the plan. Please be advised that approval of this plan does not relieve you of your liability should your operation result in actual pollution of surface or ground waters or the environment which may be actionable under other laws and/or regulations.

Please be advised that all exposed pits, including lined pits and open top tanks (exceeding 16 feet in diameter) shall be screened, netted, or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that Section 3-104 of the regulations requires that "when a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3-107.C. you are required to notify the Director of any facility expansion, production increase, or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3-109.G.4., this approval is for a period of five years. This approval will expire September 21, 1999, and an application for renewal should be submitted in ample time before that date.

The discharge plan application for the Scurlock Permian Corporation Carlsbad Brine Station is subject to the WQCC Regulation 3-114 discharge plan fee. Every billable facility submitting a discharge plan will be assessed a fee equal to the filing fee of fifty (50) dollars plus the flat rate of thirteen hundred and eighty dollars ($1380.00) for brine station discharge plans. The fifty (50) dollar filing fee and the thirteen hundred and eighty dollar ($1380.00) flat fee have not been received by the Oil Conservation Division, and shall be submitted on receipt of this approval. The required flat fee may be paid in a single payment or in five equal installments over the expected duration of the discharge plan. Installment payments shall be remitted yearly, with the first installment due on the date of the discharge plan approval.

Please make all checks payable to: **NMED-Water Quality Management** and addressed to the OCD Santa Fe Office.

On behalf of the staff of the Oil Conservation Division, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

William J. LeMay
Director

WJL/mwa
Attachments

xc: OCD Artesia Office

ATTACHMENT TO THE DISCHARGE PLAN BW-024 (01) APPROVAL
SCURLOCK PERMIAN CORPORATION
CARLSBAD BRINE STATION
DISCHARGE PLAN REQUIREMENTS
(September 21, 1994)

1. The fifty (50) dollar filing fee and the thirteen hundred and eighty dollar ($1380.00) flat fee shall be submitted on receipt of this approval. The required flat fee may be paid in a single payment or in equal installments over the expected duration of the discharge plan. Installment payments shall be remitted yearly, with the first installment due on the date of the discharge plan approval and subsequent installments due on this date of each calendar year.

2. Brine Transfer Lines: All Below-grade brine transfer lines will be tested for integrity once every five years.

3. Sump Construction: All new or rebuilt sumps and below-grade tanks will be approved by the OCD prior to installation and will incorporate secondary synthetic containment and leak detection in their designs. All leak detection systems will be inspected weekly and the OCD Santa Fe Office will be notified immediately upon discovery of fluids in any leak detection system.

4. Drum Storage: All chemical and lubrication drums shall be stored on pad and curb type containment.

5. Tank Berming: All tanks that contain materials other than fresh water will be bermed to contain one and one-third times the capacity of the tank.

6. Spill Containment: All brine storage and transfer will be managed in such a manner to keep brine off of the ground surface. Any brine spilled onto the ground surface will be cleaned up upon discovery.

7. Spill Reporting: All spills and/or leaks shall be reported to the OCD Artesia District office pursuant to WQCC Rule 1-203 and OCD Rule 116.

8. Production Method: Fresh water shall be injected down the tubing of the injection well and brine shall be recovered up the tubing of the recovery well. Reverse flow will be allowed once a month for up to 24 hours for clean out.

9. Maximum Injection Pressure: The maximum operating injection pressure at the well head will be such that the fracture pressure of the injection formation (Salado) will not be exceeded. Prior to initiating injection Scurlock Permian

Corporation shall supply and obtain approval for the maximum and average injection pressures and injection volumes.

10. Mechanical Integrity Testing: A mechanical integrity test will be conducted on the well annually. A pressure equal to one and one-half of the normal operating pressure will be maintained for four hours. The OCD will be notified at least 72 hours prior to the test so that the OCD may witness the test.

11. Cavity Configuration: A test will be conducted to determine the size and configuration of the mined cavity prior to discharge plan renewal (September 21, 1999). The method and time of testing will be approved by the OCD prior to performing the test.

12. Production/Injection Volumes: The volumes of fluids injected (fresh water) and produced (brine) will be recorded monthly and submitted to the OCD Santa Fe Office quarterly.

13. Well Workover Operations: OCD approval will be obtained from the director prior to performing remedial work or any other workover. Approval will be requested on OCD Form C-103 "Sundry Notices and Reports on Wells" (OCD Rule 1103-A) with appropriate copies sent to the OCD Artesia District office.

14. Closure: The OCD will be notified when operations of the facility is discontinued for a period in excess of six months. Prior to closure of the facility a closure plan will be submitted for approval by the director. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

15. Facility Site Plan: It will depict the locations of the injection and recovery wells, storage tanks and/or ponds, process equipment, relevant objects, facility property boundaries, and any other site information.

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, January 25, 2007 3:51 PM
To: 'rickbrown@carlsbadnational.com'
Subject: Letter-of-Credit Duplicate Originals 080504A and 080504B

Mr. Brown:

Could you please mail duplicate originals of the Letters of Credit specified above for Mesquite SWD, Inc. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

P. 01

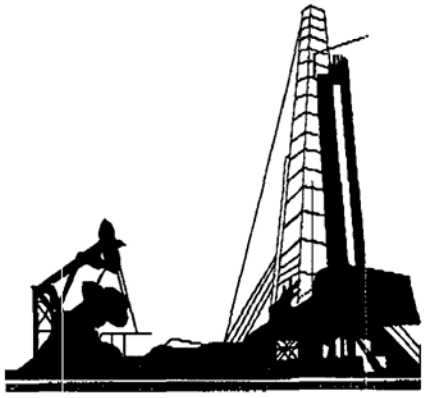
TRANSACTION REPORT

JUL-26-2005 TUE 09:47 AM

FOR:

DATE	START	RECEIVER	TX TIME	PAGES	TYPE	NOTE	M#	DP
JUL-26	09:46 AM	915058858135	43″	2	SEND	OK	381	

TOTAL : 43S PAGES: 2



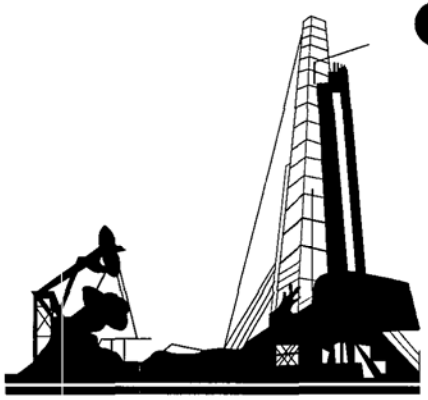
TRANSMITTAL COVER SHEET

OIL CONSERVATION DIVISION
1220 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505
(505) 476-3440
(505)476-3462 (Fax)

PLEASE DELIVER THIS FAX:

TO: CLAY WILSON

FROM: WAYNE PRICE



TRANSMITTAL COVER SHEET

OIL CONSERVATION DIVISION
1220 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505
(505) 476-3440
(505)476-3462 (Fax)

PLEASE DELIVER THIS FAX:

TO: CLAY WILSON

FROM: WAYNE PRICE

DATE: 7/26/05

PAGES: 2

SUBJECT: CLAY, PLEASE SIGN & RETURN

THANKS!

IF YOU HAVE TROUBLE RECEIVING THIS FAX, PLEASE CALL THE OFFICE NUMBER ABOVE.

26. Certification: Mesquite SWD, INC. by the officer whose signature appears below, accepts this and agrees to comply with all terms and conditions contained herein. Mesquite SWD, INC. further acknowledges that these conditions and requirements of this may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

Mesquite SWD, INC.

Print Name:_____

Signature: _____

Title:_____

Date:_____

MESQUITE SWD, INC.
P.O. BOX 1479
CARLSBAD, NM 88220
505-885-3996
FAX 505-885-8135

FAX

From: Clay L Wilson

To: Wayne Price
Company: OCD
Department:
Telephone:
Fax: 476-3462

Date: 6/1/05
Regarding: Brine wells

Notes:

Wayne - Here's the report on the frac Pressure. Look over and please advise. I'll mail a copy to you

Thanks

Clay

CARLSBAD BRINE FACILITY

Operator: Mesquite SWD, Inc.
P. O. Box 1479
Carlsbad, NM 88221

Injection/Production Rate	2.5	bpm	3.6	kBPD

Fresh Water Injection Well - Dunaway #2

SG	1	
Tubing size	2.875	in
Tubing ID	2.441	in
Tubing Length	1147	ft
H-W factor	120	
Friction Loss	121.2	ft
Injecting Well Head Pressure	325	psi
Formation Pressure	769	psi
Pressure Gradient	0.671	psi/ft
Static Well Head Pressure	100	psi
Formation Pressure	597	psi
Pressure Gradient	0.521	psi/ft

Brine Production Well - Dunaway #1

SG	1.2	
Tubing size	2.875	in
Tubing ID	2.441	in
Tubing Length	1064	ft
H-W factor	120	
Friction Loss	112.5	ft
Brine Well Head Pressure	8	psi
Formation Pressure	620	psi
Pressure Gradient	0.582	psi/ft
Static Well Head Pressure	1	psi
Formation Pressure	554	psi
Pressure Gradient	0.521	psi/ft

The above calculations indicate that all pressure gradients are below the maximum allowable gradient of 1.0 psi.

P.01

TRANSACTION REPORT

JUN-01-2005 WED 11:09 AM

FOR:

RECEIVE

DATE	START	SENDER	RX TIME	PAGES	TYPE	NOTE	M#	DP
JUN-01	11:08 AM	5058878549	1'08"	2	RECEIVE	OK		

MESQUITE SWD INC.
P.O. BOX 1479
CARLSBAD, NM 88220
505-885-3996

April 26, 2005

Wayne Price
New Mexico OCD
1220 St Francis Drive
Santa Fe, NM 87505

Attention: Wayne Price

I sent the MIT test to the OCD office in Artesia. All my information shows the two well bores to be deeper than 1000 foot. I am enclosing diagrams of both well bores and C-103 that was filed with the OCD on February 13, 1995. We should have frac pressure back this week. I will send you the report and set up a schedule to perform the work.

Thank you,

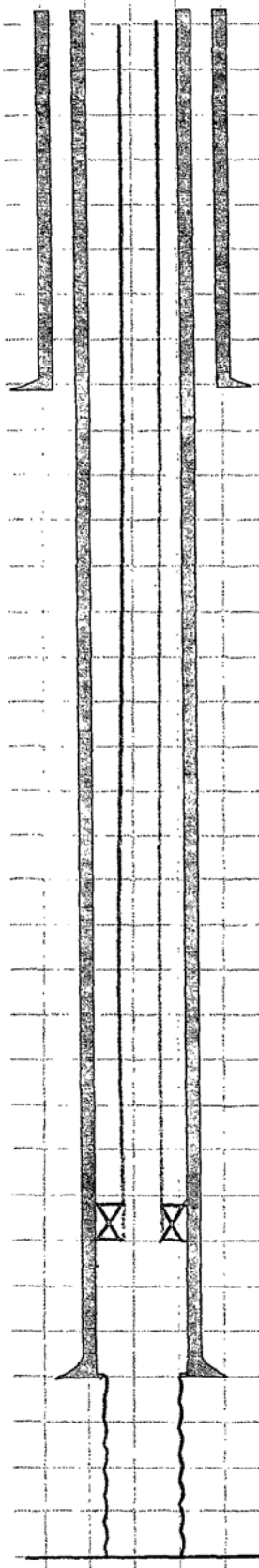
Clay Wilson

MESQUITE SWD, INC.

LEASE & WELL NO. DUNAWAY No. 1
FORMATION SALADO SALT
COUNTY & STATE EDDY CO. NM

WRH inc.
Rental Tools
6482 Southeast Main
Roswell, NM 88201
Shop: (505) 347-4810
Office: (505) 622-4772

1474' FNL 2053' FWL
SEC 23 T 22S R 27E
ELEVATION: 3091' GR



9 5/8" 36# SA 288' IN 12 1/2" HOLE W/ 160 SX PREMIUM CMT. W/ 2% $CaCl_2$. CIRC. 82 SX. OCD WITNESSED.

NOTE! 2 7/8" x 7" ANNULUS CIRC. W/ PACKER FLUID

2 7/8" 6.5# J-55 TBG-COATED SET IN HALLIBURTON R-4 TENSION PKR SA 1024'

TOP OF SALT @ 1060'

7" 23# SA 1064' IN 8 3/4" HOLE W/ 450 SX PREMIUM CMT W/ 10# /SX SALT & 2% $CaCl_2$. CIRC 150 SX TO PIT. OCD WITNESSED.

OPEN 6" HOLE TO 1300'

NOTE: NORMALLY THIS IS BRINE PRODUCTION WELL.

4/21/05

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

C15F

Form C-103
Revised 1-1-89

WELL API NO.

5. Indicate Type of Lease STATE ☐ FEE X

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: Dunaway

1. Type of Well: OIL WELL ☐ GAS WELL ☐ OTHER Brine Well

2. Name of Operator: Scurlock Permian Corp.

8. Well No. 1

3. Address of Operator

9. Pool name or Wildcat

4. Well Location
Unit Letter F : 1474 Feet From The North Line and 2053 Feet From The West

Section 23 Township 22S Range 27E NMPM Eddy Co.

10. Elevation (Show whether DF, RKB, RT, GR, etc.) 3091 GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER	☐			OTHER: Completion			

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

1. Drill 12¼" hole and run 288 ft. 36#/ft. 9-5/8" casing. Cement with 160 SX premium w/2%, $CaCl_2$. Yield 1.32 $ft.^3$ 14.8#/gal. circ. 82 SX OCD witnessed.

2. Drill 8-3/4" hole, run 1064 ft. 7" 23#/ft. casing. Cement w/450 SX premium plus w/10# salt and 2% $CaCl_2$. Circ. 150 SX to pit. OCD witnessed.

3. Open hole to 1300 ft. Run CBL.

4. Run Halliburton R-4 tension packer and 31 jts 2-7/8" 6.5# J-55 tubing. Circulate 2-7/8" x 7" annulus w/packer fluid. Set packer at 1024.31 ft.

SEE ATTACHED DIAGRAM

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Steward E. Rogers TITLE Operations Coordinator DATE 1/30/95

TYPE OR PRINT NAME Steward E. Rogers TELEPHONE NO. 713/646-4392

(This space for State Use)

APPROVED BY TITLE DATE

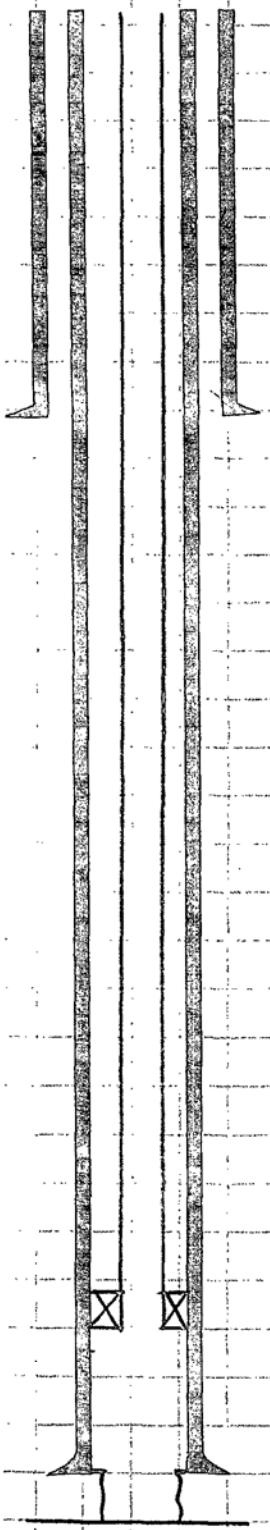
CONDITIONS OF APPROVAL, IF ANY:

MESQUITE SWD, INC.

LEASE & WELL NO. DUNAWAY No. 2
FORMATION SALADO SALT
COUNTY & STATE EDDY Co. NM

WRH inc.
Rental Tools
6482 Southeast Main
Roswell, NM 88201
Shop: (505) 347-4810
Office: (505) 622-4772

1443' FNL 1698' FWL
SEC. 23 T22S R27E
ELEVATION: 3094' GR



9 5/8" 36# SA 284' IN 12 1/2" HOLE W/ 140 SX PREMIUM CMT W/ 2% CaCl2. CIRC. 58 SX. OCD WITNESSED.

NOTE: 2 7/8" x 7" ANNULUS CIRC. W/ PACKER FLUID

2 7/8" 6.5# J-55 COATED TBG SET IN HALLIBURTON R-4 TENSION PKR SA 1223'

7" 23# SA 1231' IN 8 3/4" HOLE W/ 475 SX PREMIUM CMT W/ 15#/SX SALT & 2% CaCl2. CIRC 12 SX TO PIT. OCD WITNESSED.

OPEN 6" HOLE TO 1271'

NOTE: NORMALLY THIS IS FRESH WATER INJECTION WELL

4/21/05

Submit 3 Copies to Appropriate District Office

State of New Mexico
Energy, Minerals and Natural Resources Dept.

00-0125 Dp.

Form C-101
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO.

5. Indicate Type of Lease STATE ☐ FEE

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: Dunaway

1. Type of Well: OIL WELL ☐ GAS WELL ☐ OTHER Brine ✓

8. Well No. 2

2. Name of Operator: Scurlock Permian Corp.

9. Pool name or Wildcat

3. Address of Operator

4. Well Location
Unit Letter F : 1443 Feet From The North Line and 1698 Feet From The West

Section 23 Township 22S Range 27E NMPM Eddy

10. Elevation (Show whether DF, RKB, RT, GR, etc.)
3094 GR.

11. **Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER: Completion			

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

FEB 2 1995
OIL CON. DIV.
DIST. 2

1. Drill 12¼" hole. Set 284 ft. 36# 9-5/8" casing. Cement 140 SX premium w/2% $CaCl_2$. Yield 1.32 ft.^{3} 14.8# gal. Circulate 58 SX. OCD witnessed.

2. Drill 8-3/4" hole. Run 1231 ft. 7" 23#/ft. casing. Cement w/475 SX premium w/2% $CaCl_2$ w/15# salt. Circ. 12 SX to pit. OCD witnessed.

3. Open hole to 1271 ft. Run CBL.

4. Run Halliburton R-4 tension packer and 37 jts 2-7/8" 6.5#/ft. J-55 tubing. Circulate 2-7/8 x 7" annulus w/packer fluid. Set packer at 1222.66 ft.

RECEIVED
FEB 2 3 1995
ROYALTY ACCTG.

SEE ATTACHED DIAGRAM

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Steward E. Rogers TITLE Operations Coordinator DATE 1/30/95

TYPE OR PRINT NAME Steward E. Rogers TELEPHONE NO. 713/646-4392

(This space for State Use)

ORIGINAL SIGNED BY TIM W. GUM
DISTRICT II SUPERVISOR

APPROVED BY _____ TITLE _____ DATE FEB 13 1995

CONDITIONS OF APPROVAL, IF ANY:

MESQUITE SWD, INC.
P.O. BOX 1479
CARLSBAD, NM 88220
505-885-3996
FAX 505-885-8135
706-1869 cell

FAX

From: Clay L Wilson

To: Wayne Price
Company: OCD
Department:
Telephone:
Fax: 476-3462

Date: 6/1/05
Regarding: Brine Wells

Notes:

Wayne - Here's the report on the frac Pressure. Look over and please advise. I'll mail a copy to you

Thanks

Clay

CARLSBAD BRINE FACILITY

Operator: Mesquite SWD, Inc.
P. O. Box 1479
Carlsbad, NM 88221

Injection/Production Rate	2.5	bpm	3.6	kBPD

Fresh Water Injection Well - Dunaway #2

SG	1	
Tubing size	2.875	in
Tubing ID	2.441	in
Tubing Length	1147	ft
H-W factor	120	
Friction Loss	121.2	ft

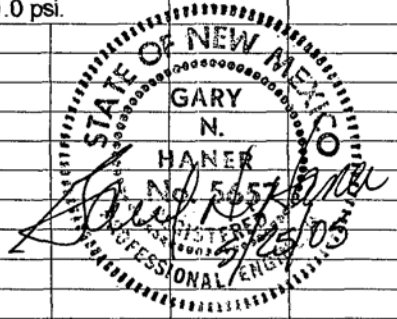
Injecting Well Head Pressure	325	psi
Formation Pressure	769	psi
Pressure Gradient	0.671	psi/ft
Static Well Head Pressure	100	psi
Formation Pressure	597	psi
Pressure Gradient	0.521	psi/ft

Brine Production Well - Dunaway #1

SG	1.2	
Tubing size	2.875	in
Tubing ID	2.441	in
Tubing Length	1064	ft
H-W factor	120	
Friction Loss	112.5	ft

Brine Well Head Pressure	8	psi
Formation Pressure	620	psi
Pressure Gradient	0.582	psi/ft
Static Well Head Pressure	1	psi
Formation Pressure	554	psi
Pressure Gradient	0.521	psi/ft

The above calculations indicate that all pressure gradients are below the maximum allowable gradient of 1.0 psi.



Price, Wayne

From: Price, Wayne
Sent: Monday, April 11, 2005 4:16 PM
To: 'clay@pccnm.com'
Cc: Bratcher, Mike
Subject: Brine wells

Contacts: Clay Wilson

Dear Clay:

I have not received anything from you since my last E-mail. Did you get the wells tested? Please provide OCD the information requested in my E-mail dated March 14, 2005.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

.ce, Wayne

From: Price, Wayne
Sent: Monday, March 14, 2005 4:09 PM
To: 'clay@pccnm.com'
Cc: Bratcher, Mike; Gum, Tim; Barton, Van
Subject: Mesquite SWD Brine Wells BW-27 &27A API# 30-015-28083 and 30-015-28084

Contacts: Clay Wilson

Dear Mr. Wilson:

Well Test Issues:

Pursuant to our telephone conversation today Mesquite SWD shall perform a hydrostatic mechanical integrity test as soon as possible on the two wells. Since your Discharge Plan has not been approved I would like to recommend that you first test the casing of each well instead of the formation test as we discussed. OCD requires the casing test once every five years or whenever you work on the wells. My experience with these wells is that they both have isolation packers with packer fluid. So please pressure test each well casing. The test will be the normal MIT casing test to be filled with a test fluid at a minimum of 300 psig for 30 minutes. I have included the OCD Brine well test guidance for your reference. Please contact the OCD Artesia District so they may witness the test. They will record the MIT and make sure they get the charts so they can put in our electronic well file.

Discharge Plan Issues:

The submittal you submitted did not show the isolation packers, please submit a correct well bore diagram. In addition, please submit to this office a calculation or other operational information that demonstrates that the maximum surface injection or test pressure that will not cause fracturing in the salt formation. Please provide OCD this maximum value.

You might want to contact the Salt Mining Institute or WIPP site for information concerning this. OCD is concerned that shallow salt formations (<1000 feet deep) may have very low Frac pressure gradients (< 1 psi/ft). If this is the case, then the normal minimum test pressure of 300 psig OCD likes to see may actually cause damage to the formation. It is the Operators responsibility to determine this. There has been generic language in the Discharge Plan conditions that require you not to exceed pressures that may cause damage.

If you cannot meet the minimum then OCD may require you to propose an alternate method of testing the formation such as using Nitrogen gas which reduces the hydrostatic head when testing.

Test Guidence
ıocument amended.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

THE SANTA FE
NEW MEXICAN
Founded 1849

RECEIVED
OCT 28 2004
OIL CONSERVATION DIVISION

NM OIL CONSERVATION DIV
1220 ST. FRANCIS DR
Attn: Wayne Price
SANTA FE NM 87505

ALTERNATE ACCOUNT: 56689
AD NUMBER: 00092092 ACCOUNT: 00002212
LEGAL NO: 75115 P.O. #: 05-199-050185

145 LINES 1 TIME(S)	99.00
AFFIDAVIT:	5.50
TAX:	6.99
TOTAL:	111.49

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF SANTA FE

I, B. Perner, being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily newspaper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication # 75115 a copy of which is hereto attached was published in said newspaper 1 day(s) between 10/21/2004 and 10/21/2004 and that the notice was published in the newspaper proper and not in any supplement; the first date of publication being on the 21st day of October, 2004 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/S/ B Perner
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 21st day of October, 2004

Notary Laura E. Harding

Commission Expires: 11/23/07

NOTICE OF PUBLICATION

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge permit application(s) has been submitted to the Director of the Oil Conservation Division, 1220 S. Saint Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(BW-027) – Mesquite SWD INC., Clay L. Wilson, (505-706-1869) President, P.O. Box 1479, Carlsbad, New Mexico 88221, has submitted an application for the renewal of a discharge plan for the Carlsbad Brine Production Facility (Previously Plains/Scurlock), located in the SE/4 NW/4 of Section 23, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico. Up to 90 barrels per hour at a operating pressure of 150 psig of 1.2 specific gravity brine water is produced for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 50-200 feet with a total dissolved solids concentration of approximately 4000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge permit application and draft discharge permit may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. The draft discharge permit may also be viewed at OCD's web site http://www.emnrd.state.nm.us/ocd/. Prior to ruling on any proposed discharge permit or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed permit based on information available. If a public hearing is held, the director will approve or disapprove the proposed permit based on information in the permit and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 15th day of October 2004.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Mark Fesmire,
Director

SEAL
Legal #75115
Pub. October 21, 2004

clay@pccpm.com

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

Dawn Higgins, being first duly sworn, on oath says:

That she is Business Manager 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 22 2004

2004

2004

2004

That the cost of publication is $ 90.56
and that payment thereof has been made and will be assessed as court costs.

Dawn Higgins

Subscribed and sworn to before me this

25 day of October, 2004

Stephanie Dobson

My commission expires 12-13-05

Notary Public

RECEIVED

OCT 27 2004

OIL CONSERVATION DIVISION

October 22, 2004

NOTICE OF PUBLICATION

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 15th day of October 2004.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Mark Fesmire
Director

Price, Wayne

From: Price, Wayne
Sent: Monday, October 18, 2004 9:36 AM
To: Inge, Richard
Subject: FW: Mesquite SWD Carlsbad Brine Production Facility- BW-027

Richard Please post the PN and BWapp_draft. Thanks

-----Original Message-----
From: Price, Wayne
Sent: Monday, October 18, 2004 9:22 AM
To: Clay Wilson (E-mail)
Cc: Gum, Tim; Bratcher, Mike
Subject: Mesquite SWD Carlsbad Brine Production Facility- BW-027

Dear Mr. Wilson:

Please find attached a copy of the Public Notice that OCD has published in the Santa Fe New Mexican, Carlsbad Current Argus and OCD's web site. Also included is your draft permit. We have to wait 30 days for comments before we issue final permit. If you have any concerns please let me know within 15 days.


PN_10_15_04.doc


BWapp_Draft_Oct_18.doc

Please Note pursuant to NMWQCC you will have to make a public notice also. I have included a copy of the regulations and a flow chart to assist you. Mesquite SWD will have to provide this office proof of your notice before we can issue final permit.


Public Notice Reg's..doc


PN Flow Chart.doc

Additional Comments:

The schematics submitted for the two well bores appears to be wrong, these wells have isolation packards. Please correct and send in the corrected schematics. Also, go ahead and make arrangements with the OCD Artesia District 748-1283 to witness a pressure test on these two wells. For this year please pressure up the casing annuals to 300 psig for 30 minutes for each well. When complete please send in charts with the following information on them. API #, Name of well, witness by signature both company and OCD.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 15th day of October 2004.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

S E A L

Mark Fesmire, Director

Mesquite SWD, Inc.
P.O. Box 1479
Carlsbad, NM 88221-1479 (505-706-1869)

August 27, 2004

Wayne Price
NM OCD
1220 S. Saint Francis Drive
Santa Fe, NM 87505

Re: Discharge Plan Renewal for Carlsbad Brine Production Facility BW-027 Eddy County, New Mexico.

Dear Sir:

Attached are the original and one copy of the Discharge Plan Application renewal for Mesquite SWD, Inc. brine production facility located near Carlsbad, New Mexico. Also enclosed, is check # 10257 for the $100.00 filing fee.

The MIT Test will be scheduled at a time approved by the OCD and a copy of the report will be furnished after the completion of testing. We will continue to work with your office to schedule a suitable time to accommodate the OCD so they may witness the tests.

If you have any questions, please call me at 505-706-1869. Your help in completing this Discharge Plan renewal is greatly appreciated.

Sincerely yours,

Clay L. Wilson
President

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised June 10, 2003

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

DISCHARGE PLAN APPLICATION FOR BRINE EXTRACTION FACILITES

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☒ Renewal

I. Facility Name: **Carlsbad Brine Facility**

II. Operator: **Mesquite SWD, Inc.**

Address: **P.O. Box 1479 Carlsbad, NM 88221**

Contact Person: **Clay Wilson** Phone: **505-706-1869**

III. Location: **SE** /4 **NW** /4 Section **23** Township **22-S** Range **27-E**
Submit large scale topographic map showing exact location.

IV. Attach the name and address of the landowner of the facility site.

V. Attach a description of the types and quantities of fluids at the facility.

VI. Attach a description of all fluid transfer and storage and fluid and solid disposal facilities.

VII. Attach a description of underground facilities (i.e. brine extraction well).

VIII. Attach a contingency plan for reporting and clean-up of spills or releases.

IX. Attach geological/hydrological evidence demonstrating that brine extraction operations will not adversely impact fresh water.

X. Attach such other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.

XI. CERTIFICATION:

I hereby certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Name: **Clay L. Wilson** Title: **President**

Signature: Clay L Wilson Date: 8/26/04

E-mail Address: **clay@pccnm.com**

A DISCHARGE PLAN

FOR

BRINE EXTRACTION FACILITIES

OF

MESQUITE SWD, INC.

Well site known as

CARLSBAD BRINE FACILITY
DUNAWAY NO. 1 AND DUNAWAY NO. 2
BRINE PRODUCTION FACILITY BW-027

Located in

SE/4 NW/4 Sec 23 T-22-S, R-27-E
Eddy county, NM

Forni Rd. East of Highway 216
Carlsbad, NM

Prepared for compliance with

New Mexico Water Quality Control Regulations

I. Facility Name: Mesquite SWD, Inc.
Carlsbad Brine Station
(BW-027)

II. Operator:: Mesquite SWD, Inc.
P.O. Box 1479
Carlsbad, NM 88221

Contact Person: Clay L. Wilson
505-706-1869

III. Location: SE / 4 NW / 4 Section 23
T-22-S R-27-E
Eddy County, New Mexico

County Road 216
Carlsbad, New Mexico

(See Map Labeled Exhibit "A & C")

IV. Landowner:

Ray Dunaway	Jim Dunaway
4307 Sycamore	P.O. Box 81
Carlsbad, NM	Taylor, AZ 85939
Jerry Dunaway	Darlene Cowart
P.O. Box 424	440 Jensen
Snowflake, AZ 85937	Grants, NM 87020

V. Type and Quantities of Fluids Stored at This Facility:

No surface storage pits are in use at this facility.

This facility stores fresh water and brine water produced from the underground salt formation at site. No other fluids are stored at this facility. Fresh water is produced from a water well located at the facility and stored in an above ground 3000 Bbl cone roof storage tank. This fresh water is pumped at a rate of about 90 BPH down the tubing of either brine well. Salt brine is recovered up the tubing of the other well and stored in seven 1,000 Bbl. internally coated, above ground , cone roof storage tanks (Added 4-1000 Bbl brine storage tanks-new storage area lined with 40 mil plastic, 7,000 Bbl total volume). These tanks are located inside a polyethylene (Permalon Ply x-210) lined dike area. Exhibit "F" in Attachment Index shows Containment Liner Design and

Specification. The dike area is sized to hold more than 133%of the brine tanks combined capacity. Volume of brine production is determined by level of area oil and gas drilling activities and varies from month to month.

VI. Fluid Transfer and Storage:

A. Fresh water is received into the 3000 Bbl above ground storage tank via polyethylene pipe from fresh water well located at the facility. Polyethylene pipe connects the fresh water down the tubing of the one brine well at a rate of 90 BPH and normal operating pressure of 150 psi. Brine water is produced up the tubing of the other brine well and delivered into the seven above ground 1,000 Bbl. internally coated, cone roof, steel, tanks through polyethylene pipe. Except the well, all piping is considered low-pressure operation with pressure near tank head pressure that is less than 40 psi. (Exhibit "B")

Fresh water and brine water is transported from the site by tanker truck for sale and use in oil and gas production operations. Tanker trucks are positioned inside a polyethylene-lined dike loading area to retain fluids in the event abnormal condition results in a spill. Brine water flows at storage tank head pressure through piping positioned above the polyethylene liner to a header valve. Tanker truck mounted pumps are connected to the header valve by a truck-mounted hose and the pump pulls the fluid from the header valve and discharges it into the tanker. When loading is complete, the operator closes the header valve and parts the connection from the header valve with the pump still running in the "load" position to empty the hose preventing spills or drips. As an additional precaution, a drip barrel is located at the header valve to catch any drips that might occur during the loading process. The truck driver is in charge of the loading process and does not leave the loading area during the transfer process. The driver fills out paper work and leaves a ticket for the volume of brine or fresh water hauled on each load. The ticket volumes are used in billing brine sales and comparing volumes of fresh water and brine production for system integrity.

A water meter is located at the fresh water well and provides the volume of fresh water used at the facility. The brine well injection pump is a positive displacement pump. This pump generally pumps at the same flow rate with minor changes in system operation. A pressure chart on pump discharge provides pressure recording and pump run time. Run time multiplied by pump flow rate

gives an indication of water volume pumped into the formation and brine water recovered. Tank volume gauges, fresh water meter readings, pump run time, and product sale tickets can be compared to give a general insight into the integrity of the facility operation. The volume of fresh water injected and the volume of produced brine are to be recorded monthly and submitted to the OCD office in Santa Fe.

Tanks are above ground for visual leak inspection and detection. Storage tanks and truck loading operations are located in poly-lined dike areas (see attachments for designs and specifications) to contain any spillage that may occur. Dike areas prevent run-off of storm water. Storm waters are either allowed to evaporate or vacuumed up and hauled to an approved disposal site.

Integrity testing of the well is conducted annually. Piping is pressure tested at intervals not to exceed five years.

Water samples from the fresh water well are analyzed to check for potential contamination.

B. Fluid and Solid Disposal:

No fluids or solids are disposed of at this site. All brine fluids are sold for use in oil and gas production. In the event brine fluid disposal would be required, the brine will be taken to OCD approved disposal well. Solids such as chloride contaminated soils will be taken to an approved disposal site.

General Closure Plan

Should it become necessary to abandon this brine production facility, the well will be filled with brine water. The well will be plugged and capped according to plans and specifications recommended by the OCD to meet requirements for protection of groundwater.

All fluid and solids will be removed from the site and transported to an approved disposal well, or tested for contaminants and hauled to an approved disposal site.

Upon removal of all surface equipment, remediation and grading of the facility will be done in a manner reflecting its original condition.

VI. Description of Underground Facility:

Underground facilities are limited to brine well casing and piping constructed as shown on attachment. Drawing schematic labeled Exhibit "D" and described as follows:

DUNAWAY NO. 1

288' 9 5/8" 36 lb. outside casing cemented bottom to surface.

1064' 7" 23 lb. inside casing cemented bottom to surface.

1021' 2 7/8" 6.5 lb. Casing packer set and open ended at bottom.

DUNAWAY NO 2

284' 9 5/8" 36 lb. outside casing cemented bottom to surface.

1231' 7" 23 lb. inside casing cemented bottom to surface.

1219' 2 7/8" 6.5 lb. Casing packer set and open ended at bottom.

General operation is to pump fresh water down the 2 7/8" tubing of well number 1 and produce brine water up the 2 7/8"tubing of well number 2. Periodically the flow is reversed, pumping the fresh water down the 2 7/8" tubing of well number 2 and producing the brine water up the 2 7/8" tubing of well number 1 to dissolve any particulate buildup in the tubing.

A casing / tubing annulus integrity test is conducted annually on the well. The annulus is pressured up to 300 psi then shut in for 30 minutes with pressure recorded on a pressure chart. The OCD is notified prior to testing to witness the procedure. Brine water transfer piping is pressure tested to $\geq$ 125% of operating pressure a minimum of once each five years to insure mechanical integrity.

The OCD office will be notified for approval prior to any Drilling, Deepening, or Plug Back Operations using Form C-101, and before remedial work such as altering or pulling casing, plugging, or abandonment by completing OCD Form C-103 "Sundry Notices and Reports on Wells".

VII. Reporting and Clean Up of Spills:

Above ground piping and tanks are visually inspected for leaks by company personnel during each site visit. Upon the discovery of any leaks, spills, or failure of the well/salt cavity or piping integrity tests, the facility will be immediately shut down. Repairs are to be made before operations may be resumed.

Minor Release (5 Bbls. to $\leq$ 25 Bbls.)

For spills greater than 5 Bbls. and less than 25 Bbls. Mesquite SWD, Inc. will file a written notice to New Mexico Oil Conservation Artesia District office at 1301 W. Grand in Artesia, New Mexico 88210 within 15 days of the spill using form C-141.

Major Releases (>25 Bbls.)

For spills greater than 25 Bbls., immediately verbal notification is required to the Artesia OCD District office at telephone number 505/7481283 within 24 hours of discovery of the spill. Written notification is required within 15 days of spill using Form C-141 to the OCD Artesia District Division Environmental Bureau Chief office at P.O. Box 2088, Santa Fe, New Mexico 8750-2088.

VIII. Site Characteristics;

1. The Carlsbad brine facility is located in an area with very little elevation definition. Drainage patterns are shallow and not of the deep arroyo type.

   The nearest surface water is located approximately 3,750 feet northeast of this facility. Brine volumes available at the Carlsbad facility are insufficient to reach the watercourse given the rainfall pattern and topography of this area.

2. Ground Water:

Ground water in this area is from the alluvium formation . This water is of poor quality, generally impotable (domestic water needs are served by Otis Water Users Cooperative). Within this area, the water is only used for livestock watering. Depth of this ground water ranges from 50 to 200 feet.

3. Hydrology:

Underground aquifers in this area are alluvium deposits. The ground water in these formations is generally impotable. Livestock and domestic supplies are generally available at depths ranging from 100 to 225 feet. Well logs indicate that rock at the base of the alluvium ranges from 250 to 300 feet.

4. Topography – Flood Potential:

Due to relatively small amount of precipitation in this area and the very shallow drainage patterns, this area is not subject to flooding or dramatic run-off events. See Exhibit "A".

5. Geology:

The Carlsbad brine well is located west of the Pecos River and exhibits soils of the Reagan Series. See attached Exhibit "G" for description of area soil types.

The brine product is from the Salado formation. The series is of upper Permian Age, and extends across the Delaware Basin, Central Basin Platform, thins and pinches out on the eastern shelf. This series is predominately evaporates with successive layers of anhydrite, halite, polyhalite, and to the west, in the Carlsbad area, varying thicknesses of the potash rich sylvanite and langbeinite. Evaporates contain stringers of dolomite, shale, siltstone, and sandstone.

These evaporates were formed during recurrent retreats of shallow seas. The lowermost formation is the Castile and is chiefly anhydrite but contains some halite beds. The Salado Overlies the Castile and ranges in thickness from 0 to 2,000 feet. The Rustler formation overlies the Salado, and varies in thickness from 90 to 360 feet, and consists chiefly of anhydrite, but includes red beds (shale) and salt.

The Quaternary sediments in this area are in the form of alluvial deposits and dune sands. The alluvium was deposited in topographically low areas where the Ogallala formation had been stripped away.

Attachment Index

Exhibit A	Topographic Map
Exhibit B	Facility Plot Plan
Exhibit C	Ownership Map
Exhibit D	Wellbore Schematic
Exhibit E	Schematic of Facility
Exhibit F	Containment Liner Design & Specification
Exhibit G	Soil Types
Exhibit J	Road Location Map

*Note: MIT Test for 2004 will be scheduled at a time approved by the OCD and a copy of reports furnished after completion of testing.

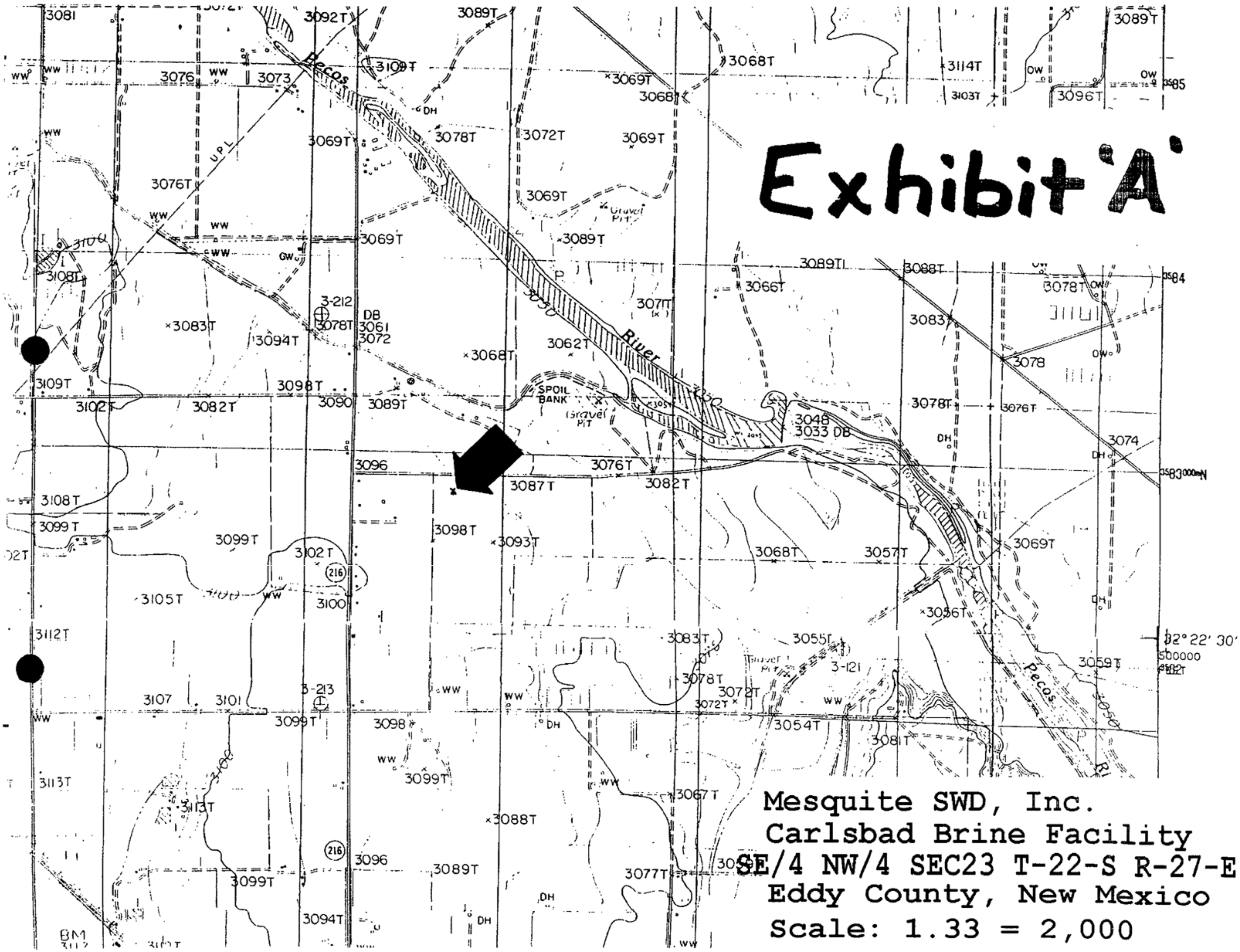
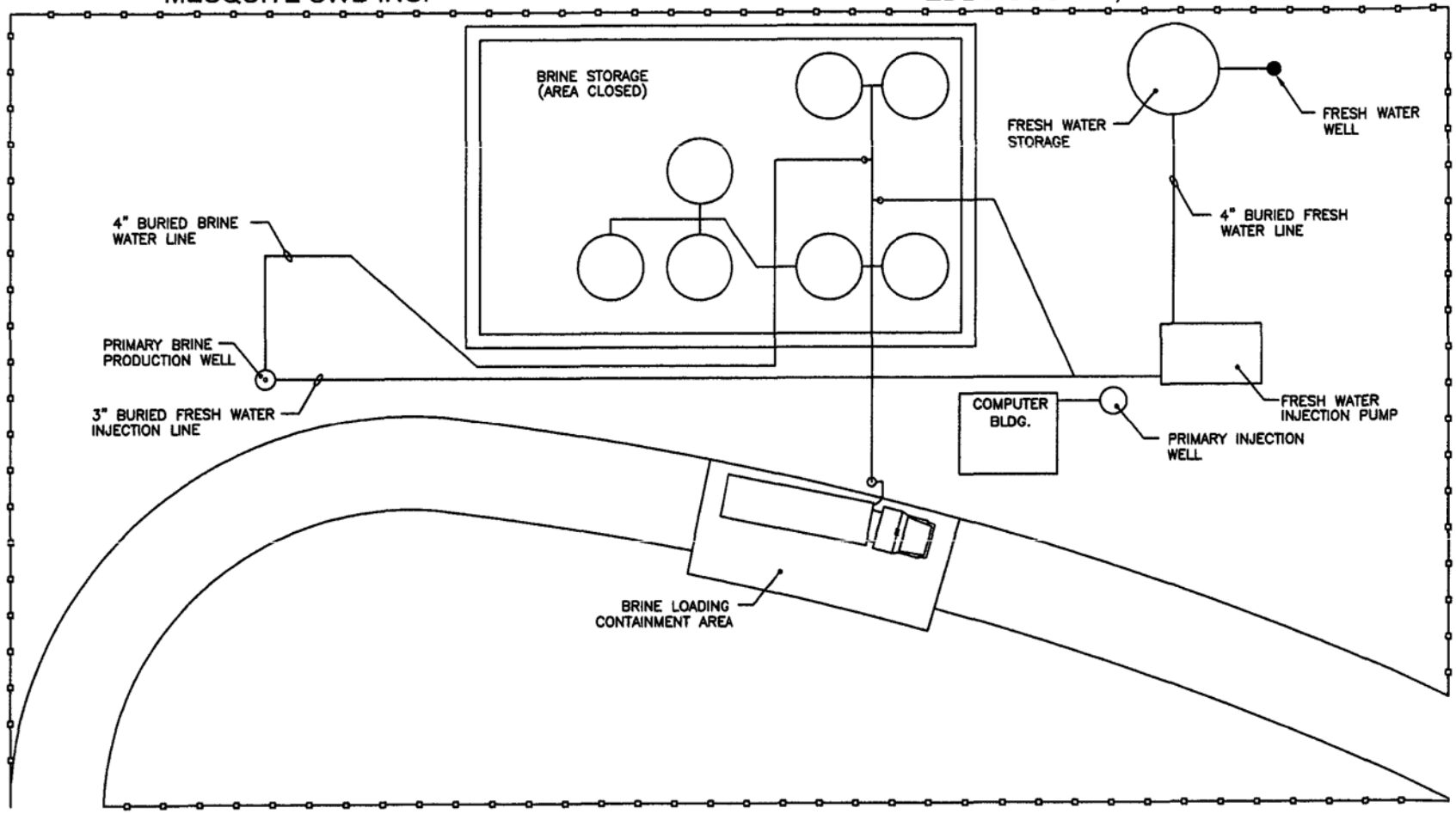


Exhibit 'A'
Mesquite SWD, Inc.
Carlsbad Brine Facility
SE/4 NW/4 SEC23 T-22-S R-27-E
Eddy County, New Mexico
Scale: 1.33 = 2,000
Pecos
River
SPOIL BANK
Gravel Pit
32°22' 30"

CARLSBAD BRINE STATION
(PLOT PLAN)
EXHIBIT `B'

MESQUITE SWD INC.

EDDY COUNTY, NEW MEXICO



COUNTY ROAD TO STATE HWY - 216

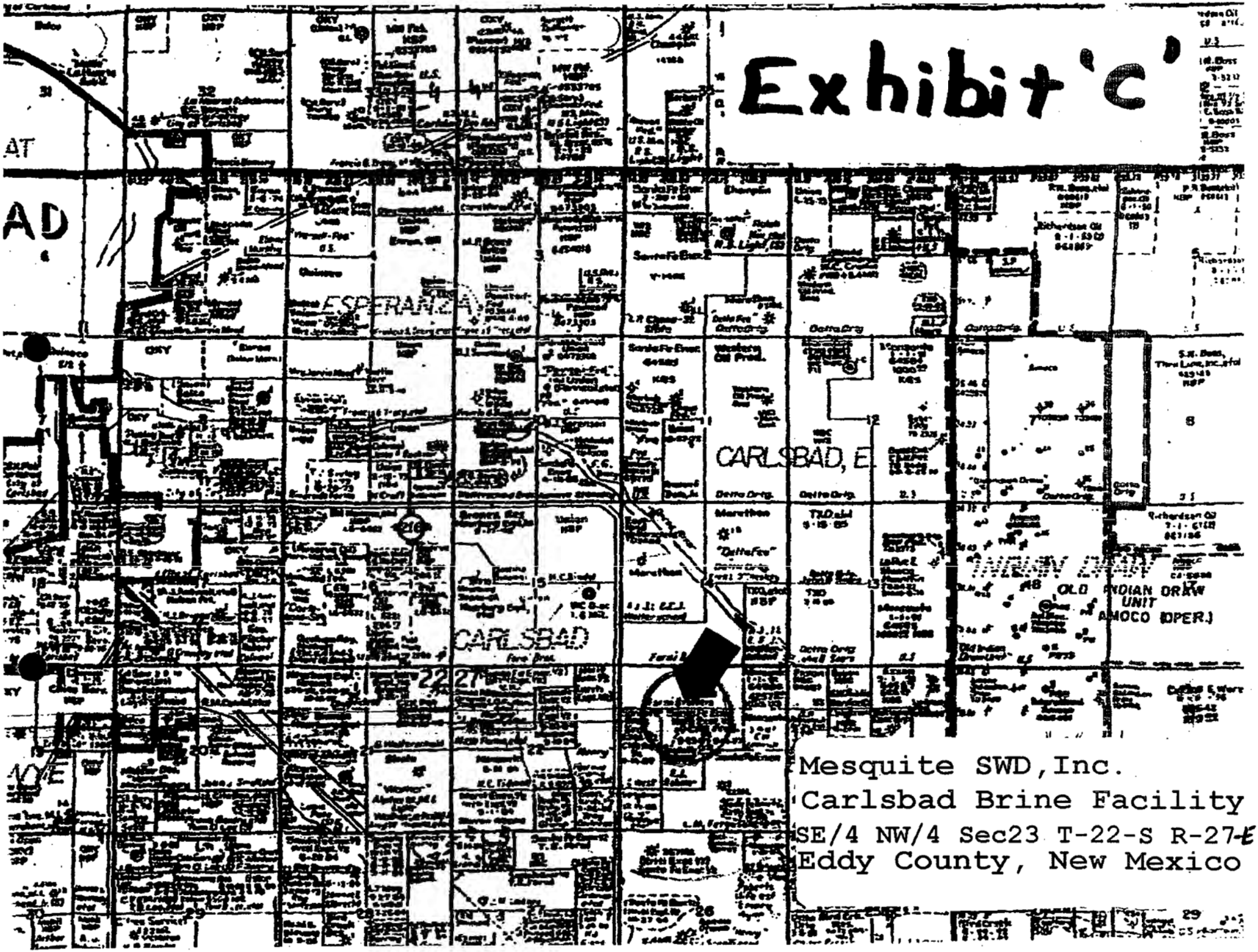


Exhibit 'C'
ESPERANZA
CARLSBAD, E
CARLSBAD
OLD INDIAN DRAW UNIT
AMOCO (OPER.)
Mesquite SWD, Inc.
Carlsbad Brine Facility
SE/4 NW/4 Sec23 T-22-S R-27-E
Eddy County, New Mexico

Mesquite SWD, Inc.
Carlsbad Brine Facility
Wellbore Schematic

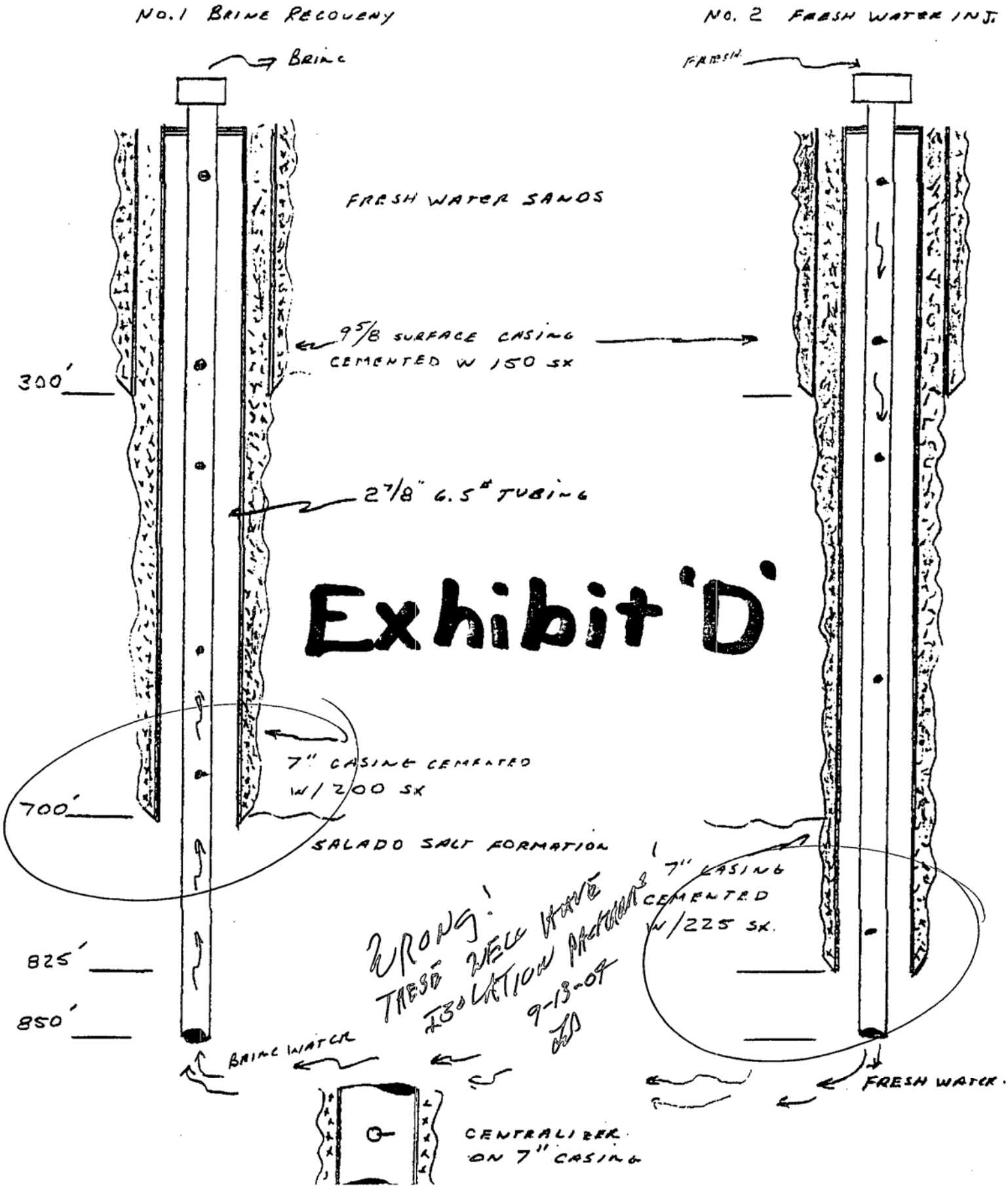
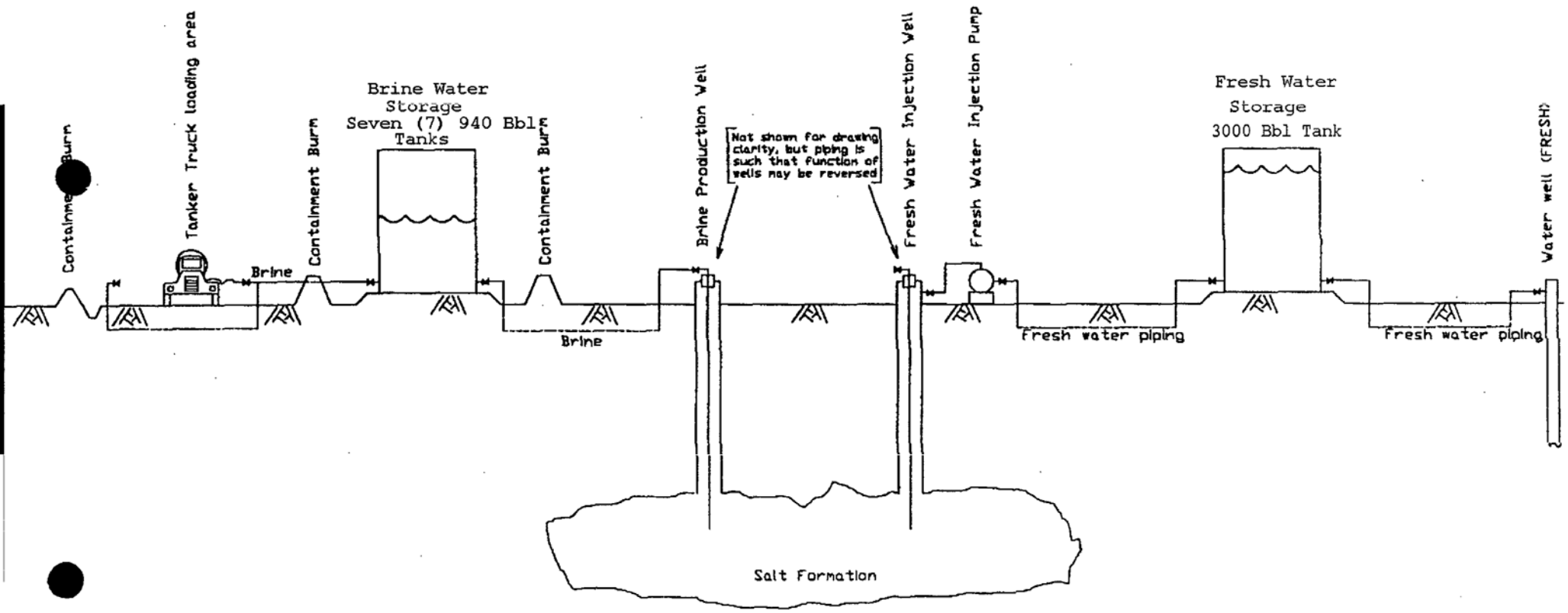


Exhibit 'E'



Process Flow Diagram
Mesquite SWD, Inc.-Carlsbad Brine Well/Station

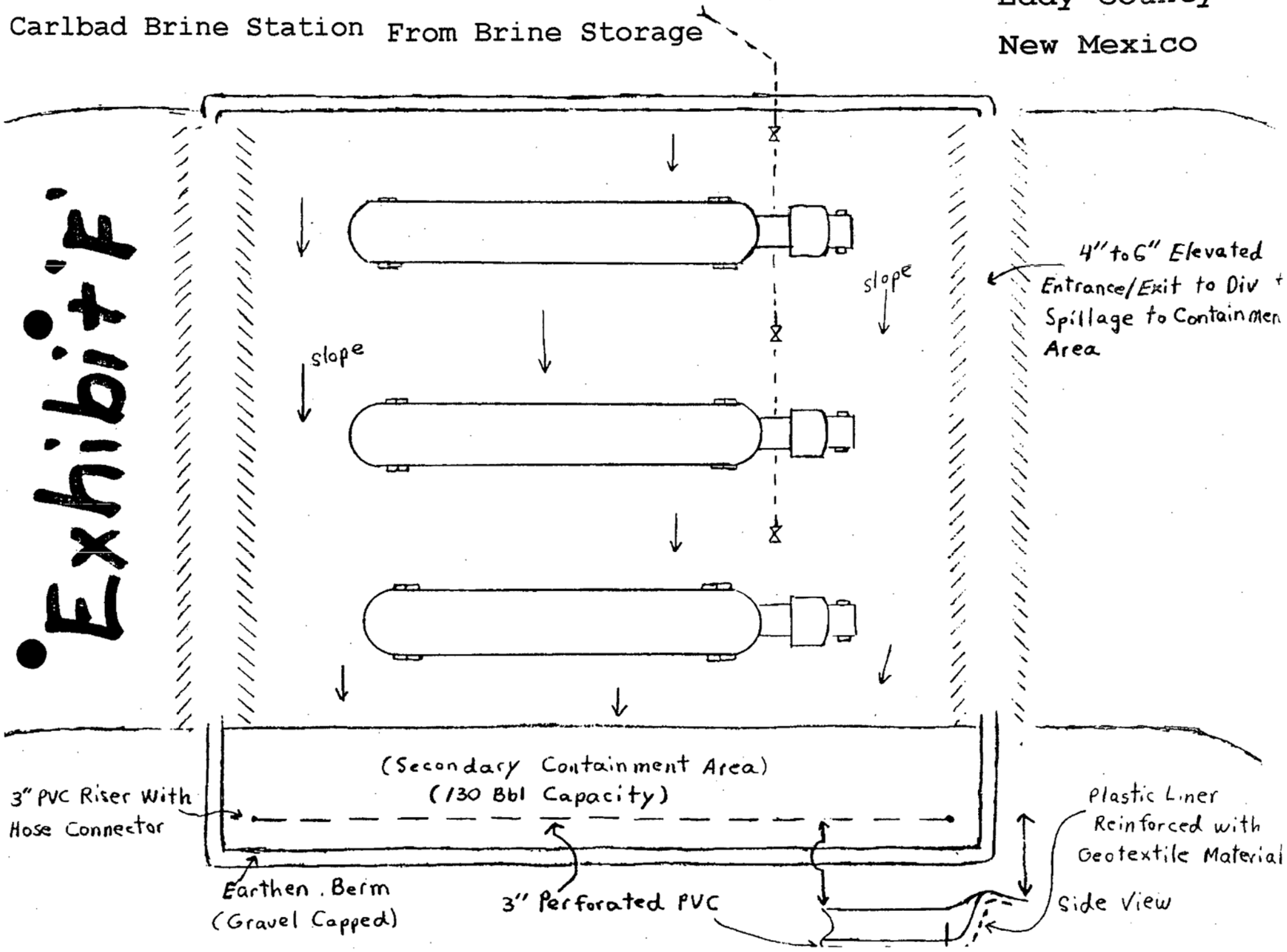
Mesquite SWD, Inc. (Plan View)

Carlbad Brine Station From Brine Storage

Eddy County

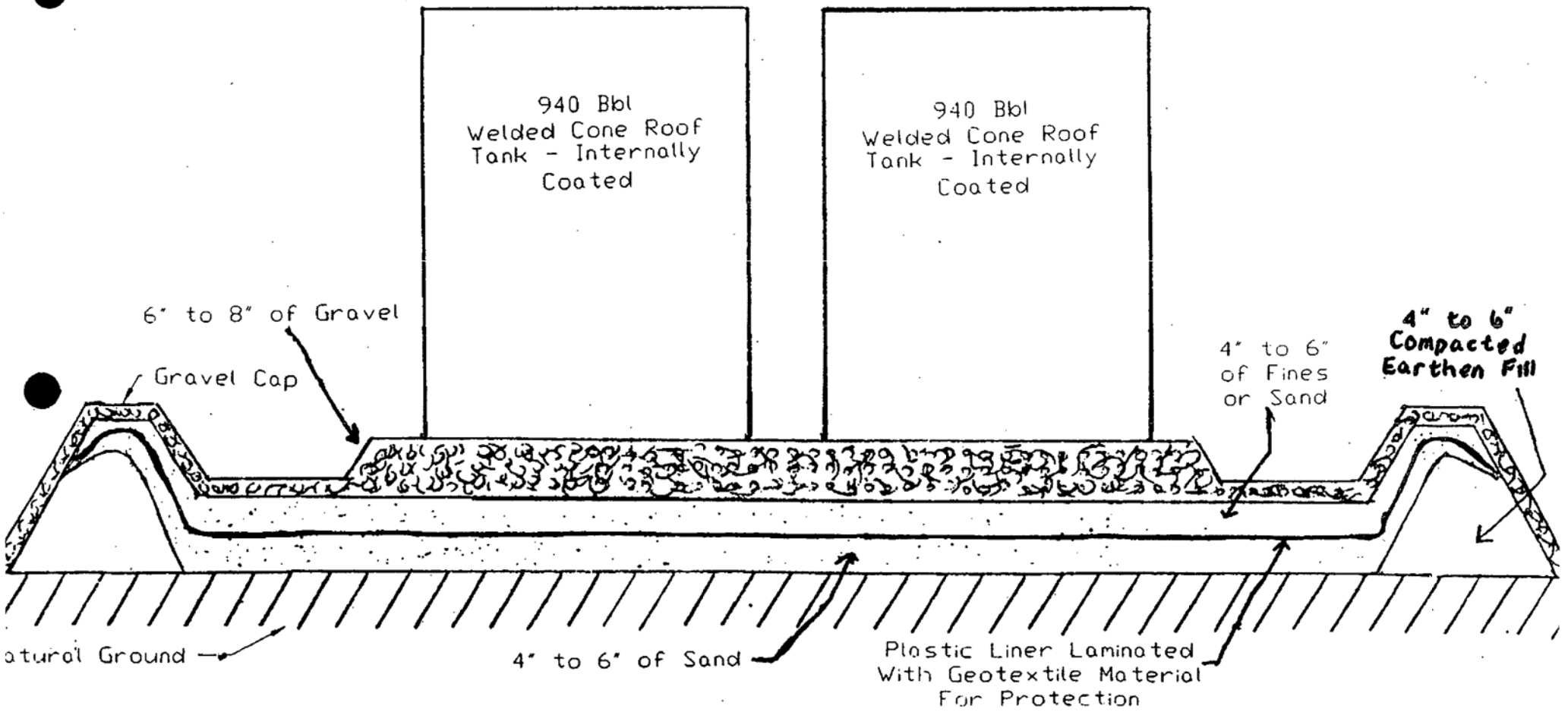
New Mexico

Exhibit 'F'



Mesquite SWD, Inc.			
	SCALE None	DRAWN BY:	
Carlsbad Brine Station			
DATE	APPROVED BY:	SHT. of	DRAWING NUMBER

Brine Storage Containment Area Specification Drawing
(Containment Area Sized For 133% Of Tank Storage Capacity)

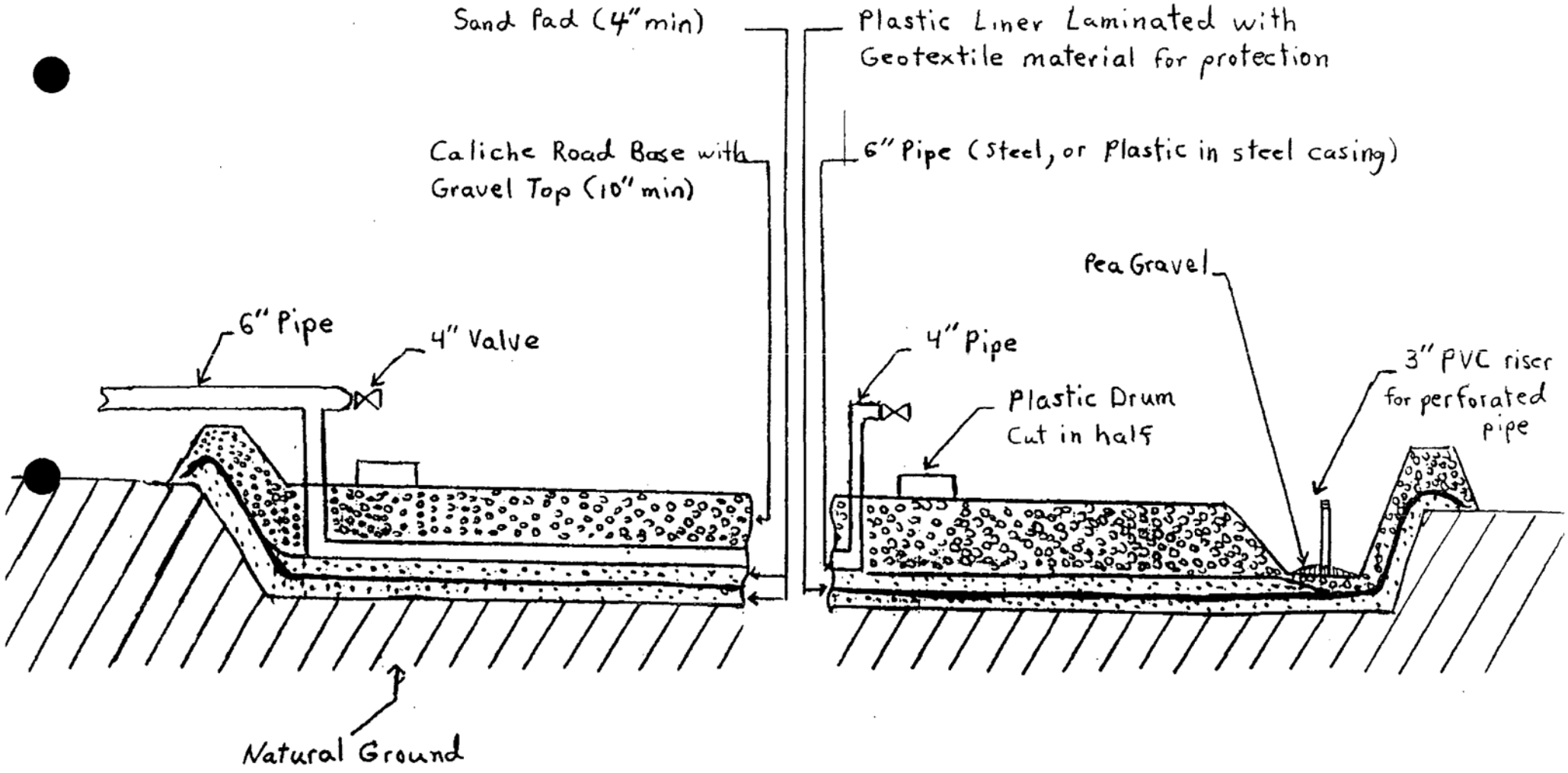


Truck Loading / Containment Area

(Cross Sectional View)

Mesquite SWD, Inc.
Carlsbad Brine Station

Eddy County
New Mexico



CONTAINMENT LINER

SPECIFICATION DATA

PERMALON®

Reef Industries, Inc.
P.O. Box 750245
Houston, TX 77275-0245
Tel: (713) 484-6892
Toll Free: 1-800-231-2417
Fax: (713) 947-2053

I wanted to provide you with some weatherability information on our Permalon Ply X-210. This high density, cross-laminated poly is designed to be UV resistant by a state of the art stabilization system. When exposed to harsh weather conditions, including intense sun, X-210 should last in excess of five years. When buried, this material should last indefinitely. X-210 is chemically inert, non-leachable, and is resistant to root penetration, rodents and microbials(it is not a food source). Additionally, it meets ASTM D-3083 (Soil Burial). Ply X-210 is not prone to stress-cracking (ESC), thus, making a very good moisture and Radon barrier.

I hope this information will serve useful to you and please do not hesitate to call if you should have any questions.

Respectfully,

David Dewsnap
Chemist
Reef Industries, Inc.

Kaal Industries, Inc.
"Since 1957"

Product Development Group
11/18/1993

Physical Properties of Geomembrane / Geotextile Composite

Material/Property	X1GPET45	X2GPET45
Basis Weight oz/yd^2 ASTM D-3776	9.83	15.1
Thickness (mils/mm) ASTM D-2103	31/0.88	39/0.99
Tensile Strength (lb_f) ASTM D - 882 - 3 in. (MD/TD)	190/159	263/222
Tensile Elongation (%) ASTM D - 882 - 3 in. (MD/TD)	63/83	46/54
Grab Tensile Strength (lb_f) ASTM D - 4632 (MD/TD)	194/168	303/250
Grab Elongation (%) ASTM D - 4632 (MD/TD)	70/110	-
Trapezoid Tear Strength (lb_f) ASTM D - 4533 (MD/TD)	91/80	132/135
Puncture Resistance (lb_f) ASTM D - 4833	85	100
Puncture Elongation (in) ASTM D - 4833	0.66	0.63
Mullen Burst (lb_f) ASTM D - 3786	237	333
Puncture Prop. & Tear (lb_f) ASTM D - 2582 (MD/TD)	-	55/57
Dart Impact Strength (lb_m) ASTM D-1709	6.5	9.9

ASTM D - 882 : Tensile strength of thin plastic sheeting (less than 40 mils)
ASTM D - 4632: Breaking Load and Elongation of Geotextiles.

N.B. These are typical values and not be interpreted as specifications. (Average Roll Values will be presented on availability of sufficient data)

P.O. Box 750250 • Houston, Texas 77275-0250
Tel: (713) 943-0070 • U.S.A. Toll Free: 1-800-231-6074 • Canada Toll Free: 1-800-847-5616
Fax: (713) 943-8085

PERMALON®

Reef Industries, Inc.
P.O. Box 750245
Houston, TX 77275-0245
Tel: (713) 484-6892
Toll Free: 1-800-231-2417
Fax: (713) 947-2053

PERMALON® PLY X-210 SPECIFICATIONS

Permalon Ply X-210 is a four layer composite laminate of three layer co-extruded polyolefin film. The material is composed of twelve distinct layers and is oriented in the machine direction, the transverse direction and at a 45 degree angle to both. The polymer is compounded with copolymer impact modifiers and copolymers to improve the impact resistance along with typical properties.

Burial Properties

Physical Property	Initial Result	Post Burial Result	%Change
3" Tensile	128 pounds	126 pounds	-1.5%
3" Elongation	714%	730%	+2.2%
100% Modulus	86 pounds	87 pounds	+1.2%

The differences in the test results fall within the expected machine error for these test methods.

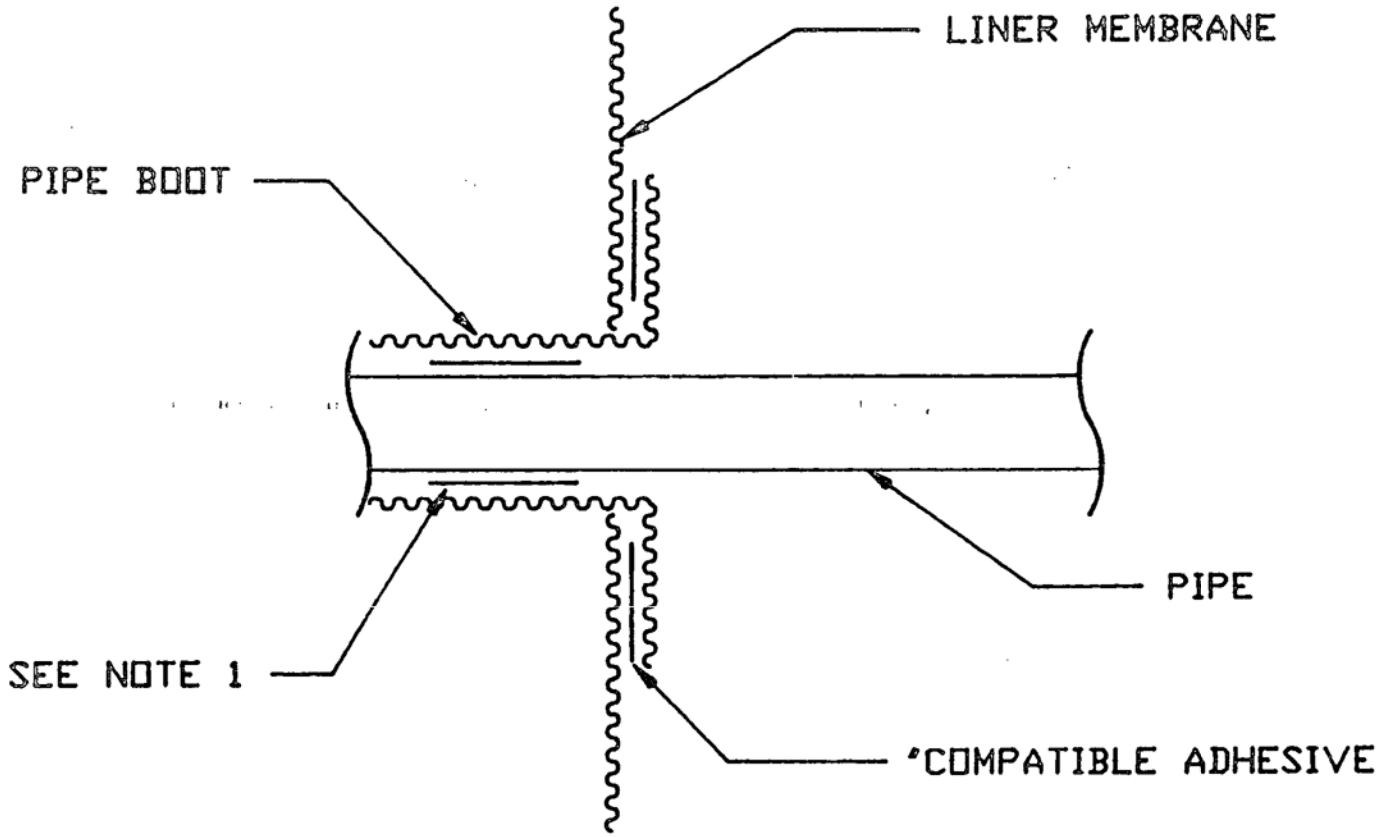
Permeability

The water vapor transmission specifications for the Ply X-210 are as follows:

Property	ASTM Method	Units	Value
WVTR	E-96	perms	0.046
WVTR	E-96	cm/s	8.9 E -10

REEF
INDUSTRIES INC

PIPE INTRUSION THROUGH PERMALON LINER MEMBRANE



SPECIAL INSTRUCTIONS:

1) AFFIX PIPE BOOT TO PIPE USING ADHESIVE OR CLAMPS.
2) PLACE PIPE AND BOOT THROUGH LINER MEMBRANE.
3) AFFIX LINER MEMBRANE TO PIPE BOOT WITH ADHESIVE.
4) NOTE: PIPE BOOTS WILL BE FURNISHED BY MANUFACTURE WHEN EXACT PIPE DIAMETER IS DETERMINED BY CONTRACTOR.

R27E

(Joins sheet 18)

T22S

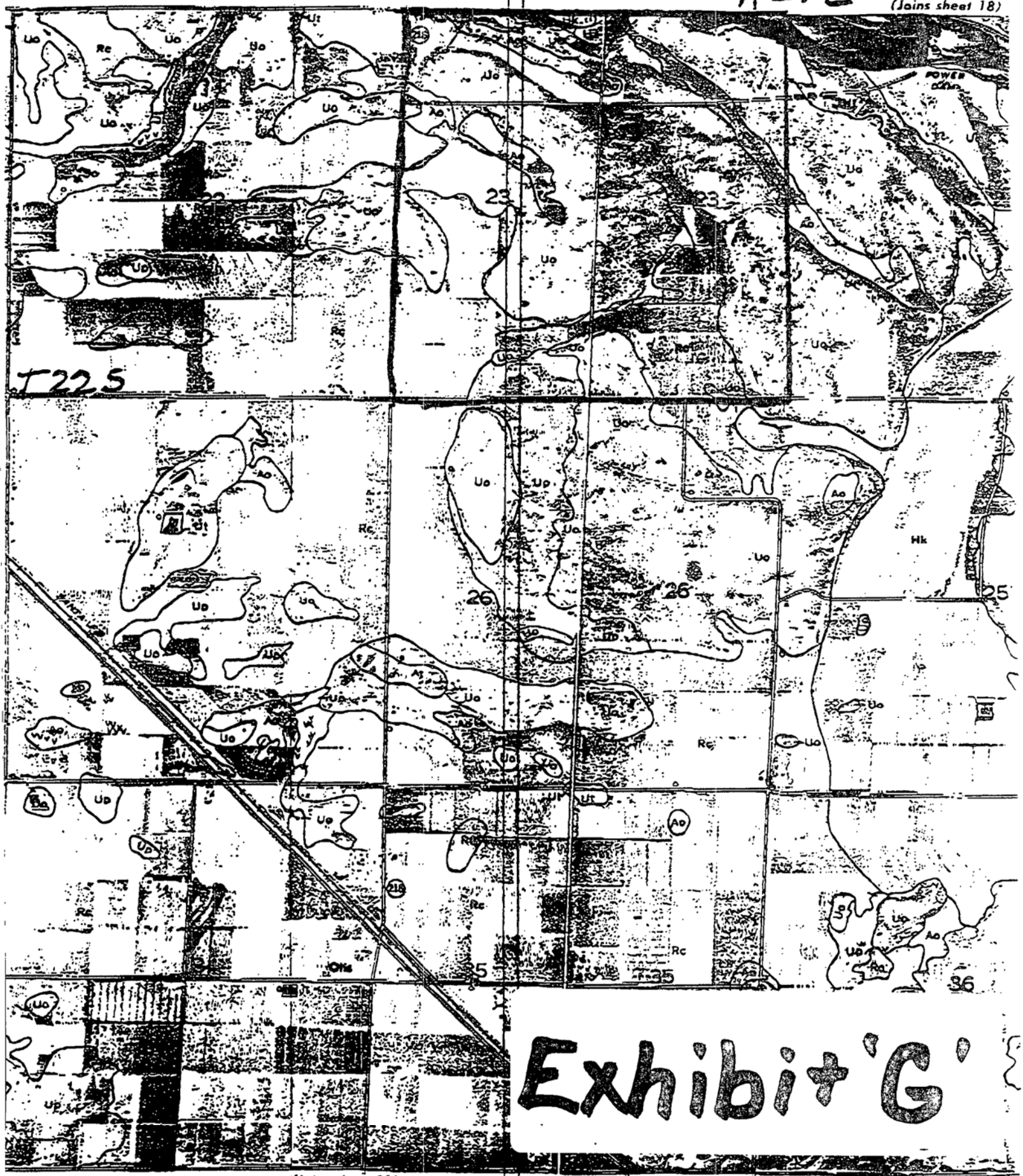


Exhibit 'G'

(Joins sheet 21)

(Joins sheet 22)

Harkey Series

The Harkey series consists of deep, well-drained, strongly calcareous, moderately dark colored soils that developed in mixed alluvium. These soils occur on low terraces on flood plains of major streams. They are naturally free of salts, except in areas adjacent to Lake McMillan and the Pecos River. In these areas the water table is at a depth of less than 5 feet part of the year.

In cultivated areas, soils of the Harkey series typically have a surface layer of brown very fine sandy loam 9 inches thick. In uncultivated areas, this layer is slightly lighter colored and contains less organic matter. The next layer, to a depth of more than 60 inches, is brown loam or very fine sandy loam.

These soils are uneroded or only slightly eroded. They are moderately fertile and have a low content of organic matter. Permeability is moderate, and the water-holding capacity is high. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature is 60° to 64° F. The frost-free season is 210 to 220 days. Elevations range from 3,000 to 3,400 feet.

Harkey soils are used for irrigated crops, native pasture, and wildlife habitat. The vegetation consists mainly of black grama, blue grama, tobosa, and vine-mesquite.

In areas affected by salts and that have a fluctuating water table, the vegetation is mainly alkali sacaton, inland saltgrass, four-wing saltbush, and saltcedar.

Typical profile of Harkey very fine sandy loam, 150 feet northeast of the SW. corner of NW¼SE¼ sec. 24, T. 22 S., R. 27 E.

Ap—0 to 9 inches, brown (10YR 5/3) very fine sandy loam, dark brown (10YR 3/3) when moist; massive; slightly hard when dry, very friable when moist, nonsticky and nonplastic when wet; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

AC—9 to 14 inches, light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) when moist; very weak, coarse, prismatic structure to massive; slightly hard when dry, very friable when moist, nonsticky when wet; few, fine, prominent seams of lime; few fine crystals of gypsum or salts, these most abundant in plowpan; strongly calcareous; mildly alkaline; clear, smooth boundary.

C1—14 to 30 inches, brown (7.5YR 5/4) very fine sandy loam, dark brown (7.5YR 4/4) when moist; very coarse, prismatic structure; soft when dry, very friable when moist, nonsticky when wet; few, fine, prominent seams of lime; few fine crystals of gypsum or salts; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

C2—30 to 37 inches, brown (7.5YR 5/4) loam, dark brown (7.5YR 4/4) when moist; massive; slightly hard when dry, friable when moist, nonsticky when wet; few, fine to medium, distinct mottles of lime; strongly calcareous; mildly alkaline; clear, smooth boundary.

C3—37 to 51 inches, brown (7.5YR 5/4) loam, dark brown (7.5YR 4/4) when moist; massive; soft when dry, very friable when moist, nonsticky when wet; strongly calcareous; gradual, smooth boundary.

C4—51 to 87 inches, brown (7.5YR 5/4) silt loam, dark brown (7.5YR 4/4) when moist; massive; slightly hard when dry, friable when moist; strongly calcareous; moderately alkaline.

The thickness of the A horizon ranges from 7 to 10 inches. The color ranges from 10YR to 7.5YR in hue, from 5 to 6 in value, and from 3 to 6 in chroma. The texture includes very fine sandy loam, loam, and sandy loam. The thickness of the AC horizon ranges from 5 to 13 inches. The color is lighter than that of the surface horizon. The texture is dominantly loam to light clay loam but includes very fine sandy loam. In places there are strata, generally less than 6 inches thick, of material ranging from sandy loam to light sandy clay loam. A few coarse fragments occur in some profiles.

Harkey soils are associated with Anthony and Arno soils and with the gray variant of Pima soils.

Harkey sandy loam, 0 to 1 percent slopes (Ha).—Except for the texture of the surface layer, this soil has a profile similar to that described as typical of the series. It occurs on low terraces along the Pecos River, mainly in the Carlsbad area. Included in mapping were areas of Anthony sandy loam, 0 to 1 percent slopes, which make up less than 5 percent of the acreage, and a small area of Harkey sandy loam, 1 to 3 percent slopes.

This soil is less productive than Harkey very fine sandy loam, 0 to 1 percent slopes. It is subject to moderate wind and water erosion, and careful management of both soil and irrigation water is needed. The water-holding capacity is moderate in the surface layer, but it is high in the subsoil and substratum. The water-intake rate is moderately rapid.

This soil is used for irrigated crops, native pasture, and wildlife habitat. (Irrigated capability unit IIe-4; dryland capability unit VIIe-2; Sandy range site)

Harkey very fine sandy loam, 0 to 1 percent slopes (Hk).—This soil has the profile described as typical of the series. It occurs on low terraces of the Pecos, Penasco, and Black Rivers. Included in mapping were areas of Anthony and Arno soils and of Pima clay loam, gray variant, 0 to 1 percent slopes. The included areas make up less than 5 percent of the acreage.

This soil is used for irrigated crops, native pasture, and wildlife habitat. It is suited to all the crops grown in the Area. (Irrigated capability unit IIs-2; dryland capability unit VIs-4; Loamy range site)

Reagan Series

The Reagan series consists of deep, well-drained, moderately dark colored, calcareous loams that developed in old alluvium derived from calcareous, sedimentary rocks of the uplands. These soils occur on plains west of the Pecos River. They are nearly level to gently sloping.

Soils of the Reagan series typically have a surface layer of brown loam about 8 inches thick. Light-brown loam and heavy loam, about 24 inches thick, underlies the surface layer. The next layers, which extend to a depth of more than 60 inches, are enriched with calcium carbonate.

These soils are uneroded or only slightly eroded. They are moderately fertile. Runoff is slow. Permeability is moderate, and the water-holding capacity is high. The organic-matter content is low. In most places roots are not restricted, but in some places caliche or gypsum occurs below a depth of 4 feet. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature is 60° to 64° F. The frost-free season is 200 to 220 days. Elevations range from 3,000 to 4,400 feet.

Reagan soils are used for irrigated crops, native pasture, and wildlife habitat. These are among the most productive irrigated soils in the Area. The vegetation consists mainly of black grama, blue grama, side-oats grama, vine-mesquite, tobosa, burrograss, broom snakeweed, and mesquite.

Typical profile of Reagan loam, NW¼NW¼ sec. 27, T. 22 S., R. 27 E.

A—0 to 8 inches, brown (10YR 5/3) loam, dark brown (10YR 4/3) when moist; massive; slightly hard when dry, friable when moist, slightly sticky when wet; abundant very fine and fine roots; many very fine and fine pores; strongly calcareous; mildly alkaline; abrupt, smooth boundary.

C1—8 to 19 inches, light-brown (7.5YR 6/3) loam, dark brown (7.5YR 4/3) when moist; weak, fine, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; abundant very fine and fine roots; many very fine and fine pores; few, fine, prominent seams of lime; strongly calcareous; mildly alkaline; gradual boundary.

C2—19 to 32 inches, light-brown (7.5YR 6/3) heavy loam, brown (7.5YR 4/4) when moist; weak, fine, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; plentiful very fine and fine roots; common very fine and fine pores; few, medium, prominent, soft concretions of lime; very strongly calcareous; mildly alkaline; gradual boundary.

C3ca—32 to 44 inches, light-brown (7.5YR 6/3) light clay loam, brown (7.5YR 5/4) when moist; massive; hard when dry, friable when moist, slightly sticky when wet; plentiful very fine and fine roots; common very fine and fine pores; many, medium, faint mottlings of lime; very strongly calcareous; moderately alkaline; clear boundary.

C4ca—44 to 54 inches, light-brown (7.5YR 6/3) light clay loam, brown (7.5YR 5/4) when moist; massive; slightly hard when dry, friable when moist, slightly sticky when wet; few very fine and fine roots; common very fine and fine pores; distinct mottlings of lime; very strongly calcareous; moderately alkaline; clear boundary.

C5ca—54 to 67 inches, light-brown (7.5YR 6/3) light clay loam, brown (7.5YR 5/4) when moist; massive; slightly hard when dry, friable when moist, slightly sticky when wet; few very fine and fine roots; common very fine and fine pores; distinct mottlings of lime; very strongly calcareous; moderately alkaline; gradual boundary.

C6—67 to 82 inches, light-brown (7.5YR 6/3) heavy loam, brown (7.5YR 4/4) when moist; weak, fine, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; common very fine and fine pores; very strongly calcareous; moderately alkaline.

The thickness of the A horizon ranges from 6 to 12 inches. The color ranges from 10YR to 7.5YR in hue, from 5 to 6 in value, and from 2 to 3 in chroma. The texture is loam, silt loam, or light clay loam. The C1 horizon is as much as 18 inches thick, but it does not occur in all profiles. The color is as much as one unit higher in value and chroma. The texture is loam or light clay loam. The C2 horizon is as much as 14 inches thick, but it does not occur in all profiles. The color and texture are similar to those of the C1 horizon. The Cca horizon extends to a depth of 40 to 60 inches or more below the surface. The color ranges from 10YR to 7.5YR in hue, from 6 to 7 in value, and from 3 to 4 in chroma. The texture ranges from loam to light clay loam. Gypsiferous earths or soft caliche occurs below a depth of 48 inches in some places.

Reagan soils are associated with Upton, Atoka, and Pima soils.

Reagan loam, 0 to 1 percent slopes (Rc).—This soil has the profile described as typical of the series. It occurs on plains west of the Pecos River in the irrigated areas near Artesia and Carlsbad. Included in mapping were small areas of Reagan loam, saline, 0 to 1 percent slopes, where water from canals seeps into the gypsiferous substratum. Also included were small areas of Upton gravelly loam, 0 to 3 percent slopes, which occur on ridges. The included areas make up less than 5 percent of the acreage.

This soil is susceptible to wind erosion, especially when the seedbed is being prepared and the soil is bare. Seedling damage caused by high winds is common.

This soil is used mainly for irrigated crops and wildlife habitat. It is among the most productive of the irrigated soils, and in most places it has been bench leveled to grades of 0.2 to 0.3 percent. Cotton (fig. 15) and most other crops grown in the Area are suitable. Pecan trees need more than 48 inches of unrestricted rooting zone, and, although the effective rooting zone extends beyond this depth in most places, care should be taken to select areas of deep soils for pecans. A small acreage of this soil is used for native pasture. (Irrigated capability unit IIs-2; dryland capability unit VIs-4; Loamy range site)

Upton Series

The Upton series consists of moderately dark colored, calcareous, gravelly soils that developed in old alluvium derived from calcareous sedimentary rocks. These soils are very shallow to shallow over caliche and cemented gravel. They occur on upland plains between the Pecos River and the mountains and hills of the western part of the survey Area. They are nearly level to sloping.

Soils of the Upton series typically have a surface layer of grayish-brown gravelly loam about 3 inches thick. The next layer, about 6 inches thick, is brown gravelly loam. Fractured, platy, indurated caliche is at a depth of about 9 inches.

These soils are uneroded or only slightly eroded. Runoff is slow to medium. Permeability is moderate. The water-holding capacity is low to very low, and the soils are droughty. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature is 60° to 64° F. The frost-free season is 200 to 217 days. Elevations range from 3,000 to 4,400 feet.

Upton soils are used principally for native pasture and wildlife habitat. A small acreage is used for irrigated crops. The vegetation consists mainly of black grama, side-oats grama, blue grama, hairy grama, creosotebush, tarbush, burrograss, broom snakeweed, and mesquite. Good management is needed to maintain a cover of desirable forage and to control erosion. Revegetation is difficult because temperatures are high and rainfall is undependable. Surface water is lacking.

Typical profile of Upton gravelly loam, 2,160 feet east and 1,650 feet south of the NW. corner of sec. 15, T. 24 S., R. 26 E.

A1—0 to 3 inches, grayish-brown (10YR 5/2) gravelly loam, dark grayish brown (10YR 4/2) when moist; weak, medium, granular structure; slightly hard when dry, friable when moist, slightly sticky and slightly plastic when wet; common very fine and fine pores; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

C1—3 to 9 inches, brown (10YR 5/3) gravelly loam, dark brown to brown (10YR 4/3) when moist; massive; slightly hard when dry, friable when moist, slightly sticky and slightly plastic when wet; common very fine and fine pores; strongly calcareous; mildly alkaline; abrupt boundary.

C2cam—9 inches, fractured, platy, indurated caliche and cemented gravel; upper part of the horizon is laminar.

The A1 horizon ranges from 1 to 4 inches in thickness. The color ranges from 10YR to 7.5YR in hue, from 5 to 7 in value, and from 2 to 4 in chroma. The C1 horizon ranges from 1 to 9 inches in thickness. The color ranges from 10YR to 7.5YR in hue, from 5 to 6 in value, and from 3 to 4 in chroma. The depth to caliche ranges from 2 to 20 inches.

Upton soils are associated with Atoka, Reagan, and Simona soils.

Upton gravelly loam, 0 to 9 percent slopes (UG, Uo).—This soil has the profile (fig. 17) described as typical of the series. It occurs as whalebacks, or elongated areas with rounded crests. The areas are west of the Pecos River on broad plains and in valleys, and east and west of the River, from Carlsbad southward to the Texas State line. Included in mapping were small areas of Upton soils 0 to 1 percent slopes; Upton soils, 1 to 3 percent slopes; Atoka loam, 0 to 1 percent slopes; Atoka loam, 1 to 3 percent slopes; and Reagan loam, 0 to 1 percent slopes. The included areas make up less than 15 percent of the acreage.

Some of the acreage was mapped at high intensity, and some at low intensity. Most of the acreage is in the low-intensity survey. The principal difference between the soils mapped at the two intensities is the size of the individual areas and the kinds of included soils. In the low-intensity survey, the areas are generally large; some are as much as several hundred acres in size. In the high-intensity survey, most areas are 5 to 50 acres in size. The included areas of Atoka loam and Reagan loam are more extensive in the low-intensity survey.

This soil is used for native pasture. Roots are restricted by shallowness over hard caliche. Fertility is low. (Dryland capability unit VIIs–1; Shallow range site)

Atoka loam, 0 to 1 percent slopes (Ac).—This soil has the profile described as typical of the Atoka series. It occurs in broad swales on the plains west of the Pecos River near Artesia and Carlsbad. Included in mapping were areas of Reagan and Upton soils, which make up less than 5 percent of the acreage. Also included were areas of Atoka fine sandy loam.

This soil is used for irrigated crops and native pasture. It is fertile, but the underlying caliche and the moderate water-holding capacity limit the growth of deep-rooted crops. It can be used for shallow-rooted crops. (Irrigated capability unit IIIs-14; dryland capability unit VIs-3; Loamy range site)

Atoka Series

The Atoka series consists of well-drained, moderately dark colored, level to gently sloping soils that developed in moderately deep old alluvium derived from calcareous sedimentary rocks. These soils (fig. 10) occur on uplands along the Pecos River in the general area of Artesia and Carlsbad. They are loamy and calcareous.

Soils of the Atoka series typically have a surface layer of grayish-brown to brown loam about 8 inches thick. The next layer, about 15 inches thick, consists of brown to dark-brown loam. A layer, about 10 inches thick, that is enriched with calcium carbonate rests on fractured, indurated caliche at a depth below 33 inches.

These soils are uneroded or only slightly eroded. The natural fertility is moderate, and the organic-matter content is low. Permeability is moderate, and the water-holding capacity is moderate. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature ranges from 60° to 64° F. The frost-free season is 210 to 220 days. Elevations range from 3,050 to 4,300 feet.

Atoka soils are used for irrigated crops and native pasture. The vegetation consists of black grama, blue grama, tobosa, side-oats grama, bush muhly, and vine-mesquite.

Typical profile of Atoka loam, 0 to 1 percent slopes, NE¼NW¼SW¼NE¼ sec. 4, T. 23 S., R. 27 E.

A11—0 to 2 inches, grayish-brown (10YR 5/2) very fine sandy loam, dark brown (10YR 3/3) when moist; moderate, thin and very thin, platy structure; soft when dry, friable when moist, nonsticky when wet; common very fine and fine pores; abundant fine and medium roots; strongly calcareous; mildly alkaline; abrupt, smooth boundary.

A12—2 to 8 inches, brown (10YR 5/3) loam, dark brown (10YR 4/3) when moist; weak, coarse, subangular blocky structure; hard when dry, friable when moist; slightly sticky when wet; abundant worm casts; common very fine and fine pores; abundant fine and medium roots; strongly calcareous; mildly alkaline; gradual, smooth boundary.

AC—8 to 15 inches, brown (10YR 5/3) loam, dark brown (10YR 4/3) when moist; weak, coarse, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; abundant worm casts; common very fine and fine pores; plentiful very fine and fine roots; few seams of lime; strongly calcareous; mildly alkaline; gradual, smooth boundary.

C1—15 to 23 inches, dark-brown (10YR 4/3) loam, dark brown (7.5YR 4/4) when moist; very weak, coarse, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; abundant worm casts; common very fine and fine pores; plentiful very fine and fine roots; few seams of lime; strongly calcareous; mildly alkaline; clear, smooth boundary.

C2ca—23 to 33 inches, light yellowish-brown (10YR 6/4) loam, yellowish brown (10YR 5/4) when moist; very weak, coarse, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; common, fine to medium, white (10YR 8/2) lime concretions, very pale brown (10YR 8/3) when moist; common very fine and fine pores; few very fine roots; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

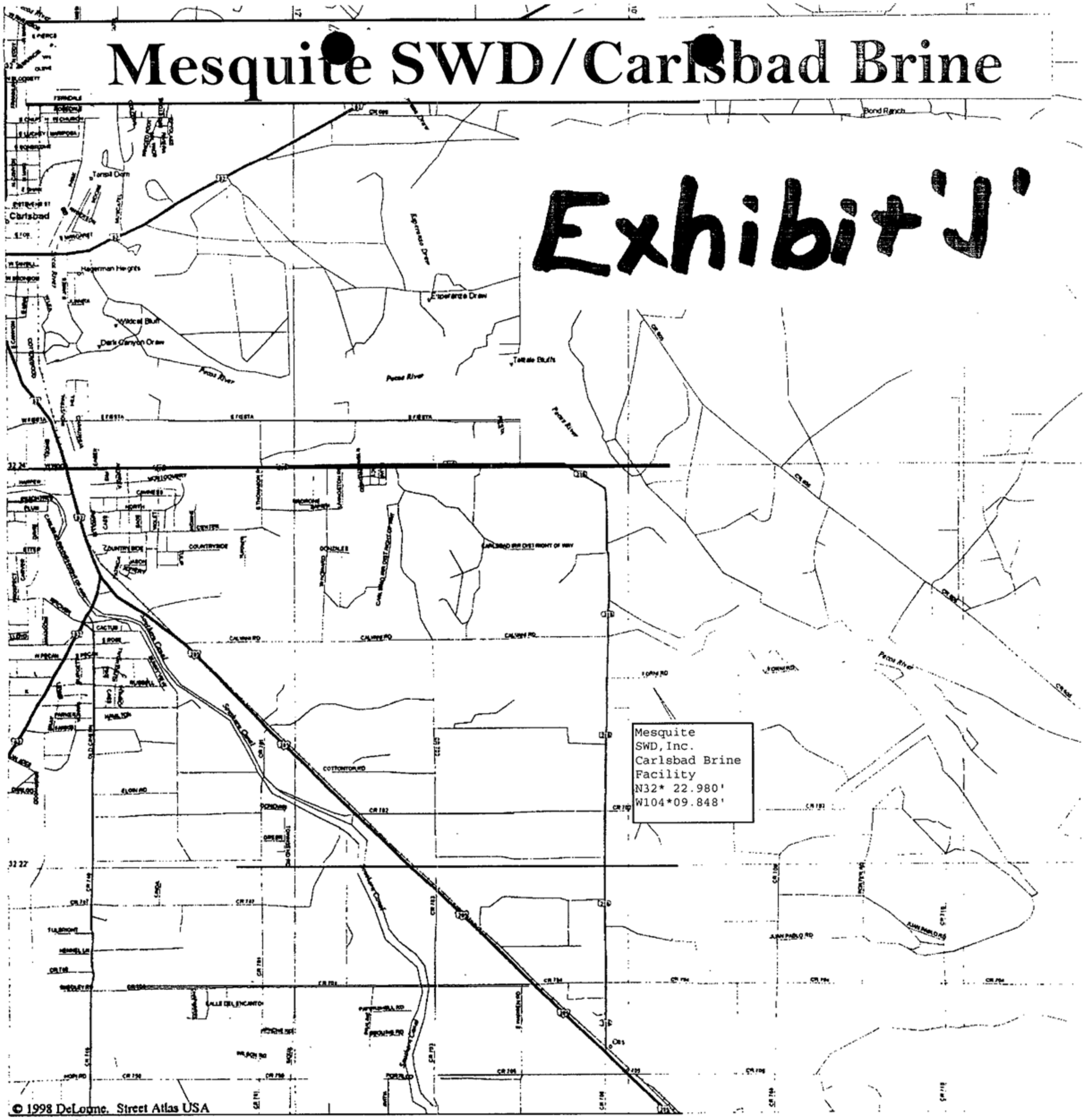
C3cam—33 inches, fractured, indurated, gravelly caliche.

The A horizon ranges from 4 to 8 inches in thickness. Its texture is very fine sandy loam, loam, or fine sandy loam. The color of the A horizon ranges from 10YR to 7.5YR in hue, from 5 to 6 in value, and from 2 to 3 in chroma. The C2ca horizon ranges from 9 to 22 inches in thickness. Its texture is generally loam to light clay loam, but in places it is silty clay loam. The depth to indurated caliche or strongly cemented gravel ranges from 20 to 36 inches.

Atoka soils are associated with soils of the Upton and Reagan series.

Mesquite SWD/Carlsbad Brine

Exhibit 'J'



Mag 14.00
Tue Aug 31 14:35 1999
Scale 1:50,000 (at center)
5000 Feet
1000 Meters

Local Road	▽ Geographic Feature
Walkway/Stairway	◇ Locale
US Highway	◇ City
Major Connector	Land
State Route	Water
Utility/Pipe	River/Canal
Railroad	Intermittent River
□ Point of Interest	

Price, Wayne

From: Price, Wayne
Sent: Friday, August 20, 2004 11:41 AM
To: 'Clay Wilson'
Subject: RE: Discharge Plan BW - 027

Dear Clay: OCD has received and approved the bonds for the Carlsbad Brine facility. Please find enclosed a renewal application form for this facility. The permit is due to expire on September 21, 2004. If there are no major changes to the existing permit please indicate so and sign and return to this office. Please include a $100 filing fee check made out to the Water Quality Management fund. As soon as I receive it I will issue public notice. I have also included a flow chart and reg's on the public notice. Most operators post a sign and issue notice in the local paper. There are other options as the flow chart will point out. As soon as you post notice please provide me with proof of notice. Please provide this office a date between now and December 31 when you will run an MIT on the wells.

[Price, Wayne]

-----Original Message-----
From: Clay Wilson [mailto:clay@pccnm.com]
Sent: Wednesday, August 04, 2004 2:33 PM
To: WPRICE@state.nm.us
Subject: Discharge Plan BW - 027

Wayne Price
N.M. Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505

August 4, 2004

Re: Discharge Plan BW - 027
Carlsbad Brine Facility
Eddy County, New Mexico

Wayne,

As per out conversation on 8/04/04 concerning the transfer of ownership from Plains Marketing to Mesquite SWD, Inc. Mesquite commits to comply with the terms and conditions of the previously approved discharge plan.

Underwriters Indemnity is in the process of issuing the bonds in the

amount or $5000.00 per bond per well.

Mesquite SWD, Inc.
P.O. Box 1479
Carlsbad, NM 88221-1479

Clay L. Wilson 505-706-1869

OCD ENVIRONMENTAL BUREAU

SITE INSPECTION SHEET

DATE: 12/15/00 Time: 9AM

Type of Facility: Refinery ☐ Gas Plant ☐ Compressor St. ☐ Brine St. ☑ Oilfield Service Co. ☐
Surface Waste Mgt. Facility ☐ E&P Site ☐ Crude Oil Pump Station ☐
Other ☐_____

Discharge Plan: No ☐ Yes ☑ DP# ~~BW-027~~ ~~BW-024~~ BW-027

FACILITY NAME: CARLS BAD BRINE ST

PHYSICAL LOCATION: _____

Legal: QTR___QTR___ Sec___ TS___ R___ County EDDY

OWNER/OPERATOR (NAME) PLAINS MARKETING

Contact Person:_____ Tele:#_____

MAILING

ADDRESS:_____ State_____ ZIP_____

Owner/Operator Rep's: DENNIS SHEARED

OCD INSPECTORS: W PRICE, G WILLIAMS

1. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums will be stored on their sides with the bungs in and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets will also be stored on an impermeable pad and curb type containment.

2. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.

3. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new tanks or existing tanks that undergo a major modification, as determined by the Division, must be placed within an impermeable bermed enclosure.

4. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.

5. Labeling: All tanks, drums and containers will be clearly labeled to identify their contents and other emergency notification information.

6. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below-grade tanks must demonstrate integrity on an annual basis. Integrity tests include pressure testing to 3 pounds per square inch above normal operating pressure and/or visual inspection of cleaned out tanks and/or sumps, or other OCD approved methods. The OCD will be notified at least 72 hours prior to all testing.

7. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity at present and then every 5 years thereafter, or prior to discharge plan renewal. The permittee may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing.

8. Onsite/Offsite Waste Disposal and Storage Practices: Are all wastes properly characterized and disposed of correctly? Does the facility have an EPA hazardous waste number? _____ Yes _____ No

ARE ALL WASTE CHARACTERIZED AND DISPOSED OF PROPERLY? YES ☐ NO ☐ IF NO DETAIL BELOW.

9. Class V Wells: Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. All Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be closed unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Closure of Class V wells must be in accordance with a plan approved by the Division's Santa Fe Office. The OCD allows industry to submit closure plans which are protective of human health, the environment and groundwater as defined by the WQCC, and are cost effective. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.

ANY CLASS V WELLS NO ☐ YES ☐ IF YES DESCRIBE BELOW ! Undetermined ☐

10. Housekeeping: All systems designed for spill collection/prevention will be inspected weekly and after each storm event to ensure proper operation and to prevent overtopping or system failure. A record of inspections will be retained on site for a period of five years.

11. Spill Reporting: All spills/releases will be reported pursuant to OCD Rule 116 and WQCC 1203 to the proper OCD District Office.

12. Does the facility have any other potential environmental concerns/issues?

13. Does the facility have any other environmental permits - i.e. SPCC, Stormwater Plan, etc.?

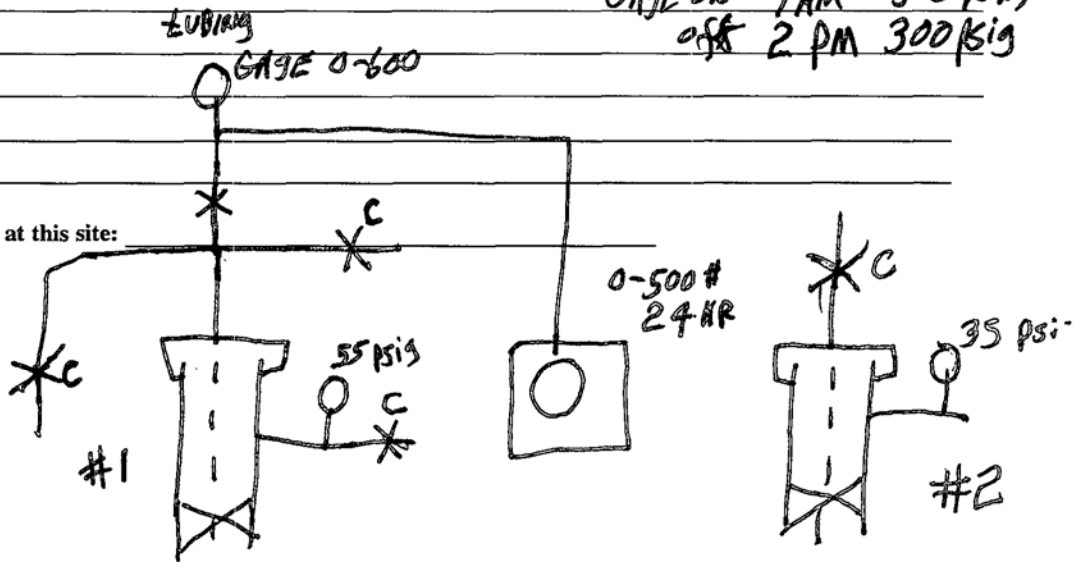
14. ANY WATER WELLS ON SITE ? NO ☐ YES ☐ IF YES, HOW IS IT BEING USED ?

Miscellaneous Comments:

GAGE ON 9AM 305 psig
off 2 PM 300 psig

Number of Photos taken at this site: _____
attachments-

OCD Inspection Sheet
Page ___ of ____



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications have been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

(BW-02) - P&S Brine Sales, Paul Prather, P.O. Box 7169, Eunice, New Mexico 88231, has submitted an application for the renewal of a discharge plan for the P&S Brine Sales Station, located in the SW/4 SE/4 of Section 34, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico. An average of 250 barrels per day of brine water with a TDS of approximately 300,000 mg/l is produced for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 45 feet with a total dissolved solids concentration of approximately 1400 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(BW-012) - Scurlock Permian Corporation, James C. Ephraim II, Senior Project Engineer, P.O. Box 4648, Houston, Texas, 77210-4648, has submitted an application for the renewal of a discharge plan for the SPC Saline NO. 1 Brine Station, located in the SW/4 SW/4 of Section 36, Township 18 South, Range 37 East, NMPM, Lea County, New Mexico. Up to 400 barrels per day of brine water with a TDS of approximately 300,000 mg/l is produced for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 40 feet with a total dissolved solids concentration of approximately 400 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(BW-027) - Scurlock Permian Corporation, James C. Ephraim II, Senior Project Engineer, P.O. Box 4648, Houston, Texas, 77210-4648, has submitted an application for the renewal of a discharge plan for the Carlsbad Brine Station, located in the SE/4 NW/4 of Section 23, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico. An average of 1000 barrels per day of brine water with a TDS of approximately 300,000 mg/l is produced for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth from approximately 50 to 200 feet with a total dissolve d solids concentration of approximately 4000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 22th day of September, 1999.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Will Olson

SEAL

for LORI WROTENBERY, Director

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 8/24/99,

or cash received on _____ in the amount of $ 50.00

from SCURLOCK PERMIAN LLC

for CARLSBAD BRINE FACILITY BW-027&27A
(Facility Name) (OCD No.)

Submitted by: WAYNE PRICE Date: 9/13/99

Submitted to ASD by: Wayne Price Date: 9/13/99

Received in ASD by: _____ Date: _____

Filing Fee ✓ New Facility ___ Renewal ___

Modification ___ Other _____
(specify)

Organization Code 521.07 Applicable FY 2000

To be deposited in the Water Quality Management Fund.

Full Payment ___ or Annual Increment ___

THIS CHECK IS VOID IF BROWN COLORED BACKGROUND IS ABSENT

FORM 2501 REV. 5-95

70-2382/719

Scurlock Permian LLC
P.O. Box 4648
Houston, Texas 77210

ACCOUNTS PAYABLE CHECK

CHECK DATE 08/24/99

CHECK NUMBER [redacted]

MATCH AMOUNT IN WORDS WITH NUMBERS

U.S. Funds ********$50.00

VOID AFTER 180 DAYS

PAY TO THE ORDER OF:

NMED WATER QUALITY MANAGEMENT
OIL CONSERVATION DIVISION
2040 S PACHECI ST
SANTA FE NM 87505

Fifty and 00/100 U.S. Dollars

Scurlock Permian LLC

By: Michael J. Latiolais
Authorized Representative

The Northern Trust Company
Payable Through
Northern Trust Bank/DuPage
Oakbrook Terrace, IL

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK* HOLD AT AN ANGLE TO VIEW

[redacted]

Affidavit of Publication

NO. 16730

STATE OF NEW MEXICO

County of Eddy:

Gary Scott being duly

sworn,says: That he is the **Publisher** of The

Artesia Daily Press, a daily newspaper of general

circulation, published in English at Artesia, said county

and county and state, and that the here to attached

Legal Notice

was published in a regular and entire issue of the said

Artesia Daily Press,a daily newspaper duly qualified

for that purpose within the meaning of Chapter 167 of

the 1937 Session Laws of the state of New Mexico for

1 consecutive weeks/days on the same

day as follows:

First Publication September 30 1999

Second Publication

Third Publication

Fourth Publication

Gary D. Scott

Subscribed and sworn to before me this

30th day of September 1999

Barbara Ann Boans

Notary Public, Eddy County, New Mexico

My Commission expires Septembe 23, 2003

Copy of Publication:

LEGAL NOTICE

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND
NATURAL RESOURCES
DEPARTMENT
OIL CONSERVATION
DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications have been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

(BW-027)- Scurlock Permian Corporation, James C. Ephraim II, Senior Project Engineer, P.O. Box 4648, Houston, Texas, 77210-4648, has submitted an application for the renewal of a discharge plan for the Carlsbad Brine Station, located in the SE/4 NW/4 of Section 23, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico. An average of 1000 barrels per day of brine water with a TDS of approximately 300,000 mg/l is produced for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth from approximately 50 to 200 feet with a total dissolved solids concentration of approximately 4000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 22th day of September, 1999.

STATE OF NEW MEXICO
OIL CONSERVATION
DIVISION
s-Will Olson
for LORI WROTENBERY,
Director

SEAL

Published in the Artesia Daily Press, Artesia, N.M. September 30, 1999.

Legal 16730

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NO. 16730

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Fourth Publication

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Notary Public, Eddy County, New Mexico

My Commission expires Septembe 23, 2003

Copy of Public

LEGAL NOTICE

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ENERGY, MINERALS AND
NATURAL RESOURCES
DEPARTMENT
OIL CONSERVATION
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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 22th day of September, 1999.

STATE OF NEW MEXICO
OIL CONSERVATION
DIVISION
s-Will Olson
for LORI WROTENBERY,
Director

S E A L

Published in the Artesia Daily Press, Artesia, N.M. September 30, 1999.

Legal 16730

Artesia Daily Press

P.O. Box 190, Artesia, NM 88211-0190
Phone: (505) 746-3524
Fax: (505) 746-8795

INVOICE

Invoice Date:	09/29/99
Invoice Number:	1050104
Customer Number:	10005610

Oil Conservation Division
2040 South Pacheco St.
Santa Fe NM 87505

DATE	TYPE	DOC NO	REF NUMBER	DESCRIPTION	# OF INS	DEPTH	RATE	AMOUNT
09/29/99	INV	1050104	A/R:1050104 Ord:10591746	**LEGAL NOTICE NOTICE OF PUBLICA** Artesia Daily Press Legal Section, LEGAL NOTICE				
				9/30/99	1	13.25	46.64	46.64
				State Sales Tax	1	13.25	2.89	2.89
				This is your First Notice! Thank You!				
							TOTAL	49.53

I hereby certify that this is a true and correct statement to the best of my knowledge.

Barbara Boans
Bookkeeper

Please detach and return this portion with payment. To ensure proper credit to your account, please write your customer number on your check. If you have any questions about your account, please contact Accounts Receivable at (505) 746-3524.

Invoice Date	Invoice Number
09/29/99	1050104
Customer Number	
10005610	

Retail Advertising Legal 16730

PLEASE PAY: 49.53

ARTESIA DAILY PRESS
Attn: Accounts Receivable
P.O. Box 190
Artesia, NM 88211-0190

Oil Conservation Division
2040 South Pacheco St.
Santa Fe NM 87505

SCURLOCK PERMIAN CORPORATION

333 Clay
P.O. Box 4648
Houston, Texas 77210-4648

(713) 646-4100

September 1, 1999

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM. 87505

Attention: Mr. Wayne Price

Re: Discharge Plan Renewal for Carlsbad Brine Production Facility BW-024
Eddy County, New Mexico

BW-027 + 27A

Dear Sir:

Attached are the original and one copy of Discharge Plan Application renewal for Scurlock Permian LLC's brine production facility located near Carlsbad, New Mexico. Also inclosed is check # 025892 for $50.00 for the filling fee.

The Cavity Configuration Test will be scheduled at a time approved by the OCD and a copy of the report furnished after the completion of testing. We continue to work with your office to schedule a suitable time to accommodate the OCD to witness the tests.

Plains All American Pipeline L.P.'s acquisition of Scurlock Permian LLC along with the scheduling of the Cavity Configuration Test has resulted in some delays in submitting the Discharge Plan renewal.

If you have any questions, you may call me at 713/672-8092. Your help in completing this Discharge Plan renewal is appreciated.

Sincerely,

James C. Ephraim II. P.E.

James C. Ephraim II. PE
Senior Project Engineer

C: State of New Mexico
Oil Conservation Division, District II
811 S. 1st. Street
Artesia, New Mexico 88210

C: Mark Shires
Richard Lentz

Check No	Check Date	Bank No	Vendor No
025892	08/24/99	5208	N07226

Scurlock Permian LLC
P.O. Box 4648
Houston, Texas 77210

Direct inquiries to:
ACCOUNTS PAYABLE DEPARTMENT
Scurlock Permian LLC
PHONE: 713-646-4543

Loc	Ma	Vou	Sub	P.O. Number	Invoice Number	Invoice Date	Remit Comment	Discount	Invoice/Pay Amt
1980	08	880	234	MCC-08	082399	08/23/99	DISCHARGE PLAN FILING FEE EDDY CO NM, CARLSBAD BRINE ST	0.00	50.00
0000	00						Total remittance: U.S. Dollars		50.00

BW-027 & 27A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Revised March 17, 1999

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES,GAS PLANTS. REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIONS

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☒ Renewal ☐ Modification

1. Type: **Brine Extraction Facility**

2. Operator: **Scurlock Permian LLC**

   Address: **P.O. Box 4648 Houston, Texas 77210-4648**

   Contact Person: **James C. Ephraim II.** Phone: **713/672-8092**

3. Location: **SE** /4 **NW** /4 Section **23** Township **22-S** Range **27-E**
   Submit large scale topographic map showing exact location.

4. Attach the name, telephone number and address of the landowner of the facility site.

5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.

6. Attach a description of all materials stored or used at the facility.

7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.

8. Attach a description of current liquid and solid waste collection/treatment/disposal procedures.

9. Attach a description of proposed modifications to existing collection/treatment/disposal systems.

10. Attach a routine inspection and maintenance plan to ensure permit compliance.

11. Attach a contingency plan for reporting and clean-up of spills or releases.

12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.

13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.

CERTIFICATION: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: **JAMES C. EPHRAIM II.** Title: **Senior Project Engineer**

Signature: James C. Ephraim II. Date: **August 31, 1999**

A DISCHARGE PLAN

FOR

BRINE EXTRACTION FACILITIES

OF

SCURLOCK PERMIAN LLC

Well site known as

CARLSBAD BRINE FACILITY
DUNAWAY NO. 1 AND DUNAWAY NO. 2
BRINE PRODUCTION FACILITY BW-024

Located in

SE/4 NW/4 Sec 23 T-22-S, R-27-E
Eddy County, NM

Forni Rd. East of Highway 216
Carlsbad, NM

Prepared for compliance with

New Mexico Water Quality Control Regulations

I. Facility Name: Scurlock Permian LLC
Carlsbad Brine Station
(BW-024)

II. Operator: Scurlock Permian LLC
333 Clay Street
P. O. Box 4648
Houston, TX 77210-4648

Contact Person: Mark Shires
713/646-4100

III. Location: SE/4 NW/4 Section 23
T-22-S R-27-E
Eddy County, New Mexico

County Road 216
Carlsbad, New Mexico

(See Map Labeled Exhibit "A")

IV. Landowner:

Ray Dunaway
4307 Sycamore
Carlsbad, NM

Jim Dunaway
P.O. Box 81
Taylor, Arz85939

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P.O. Box 424
Snowflake, Arz85937

Darlene Cowart
440 Jensen
Grants, NM 87020

V. Type and Quantities of Fluids Stored at This Facility:

No surface storage pits are in use at this facility.

This facility stores fresh water and brine water produced from the underground salt formation at site. No other fluids are stored at this facility. Fresh water is produced from a water well located at the facility and stored in an above ground 500 Bbl cone roof fiberglass storage tank. This fresh water is pumped at a rate of about 90 BPH down the tubing of either brine well. Salt brine is recovered up the tubing of the other well and stored in three 1,000 Bbl. internally coated, above ground, cone roof storage tanks (3,000 Bbl total volume). These tanks are located inside a polyethylene (Permalon Ply x-210) lined dike area. Exhibit "F" in Attachment Index shows Containment Liner Design and Specification. The dike area is sized to hold more than 133% of the brine tanks combined capacity. Volume of brine

production is determined by level of area oil and gas drilling activities and varies from month to month. Average monthly production for 1999 is 4,966 Bbls. per month.

VI. Fluid Transfer and Storage:

A. Fresh water is received into the 500 Bbl. above ground fiberglass storage tank via polyethylene pipe from fresh water well located at the facility. Polyethylene pipe connects the fresh water storage tank to the suction of a pump which pumps the fresh water down the tubing of one brine well at a rate of 90 BPH and normal operating pressure of 150 psi. Brine water is produced up the tubing of the other brine well and delivered into the three above ground 1,000 Bbl. internally coated, cone roof, steel, tanks through polyethylene pipe. Except for the short section of steel pipe between the pump and the well, all piping is considered low-pressure operation with pressure near tank head pressure that is less than 40 psi.

Fresh water and brine water is transported from the site by tanker truck for sale and use in oil and gas production operations. Tanker trucks are positioned inside a polyethylene-lined dike loading area to retain fluids in the event abnormal condition results in a spill. Brine water flows at storage tank head pressure through piping positioned above the polyethylene liner to a header valve. Tanker truck mounted pumps are connected to the header valve by a truck-mounted hose and the pump pulls the fluid from the header valve and discharges it into the tanker. When the loading is complete, the operator closes the header valve and parts the connection from the header valve with the pump still running in the "load" position to empty the hose preventing spills or drips. As an additional precaution, a drip barrel is located at the header valve to catch any drips that might occur during the loading process. The truck driver is in charge of the loading process and does not leave the loading area during the transfer process. The driver fills out paper work and leaves a ticket for the volume of brine or fresh water hauled on each load. The ticket volumes are used in billing brine sales and comparing volumes of fresh water and brine production for system integrity.

A water meter is located at the fresh water well and provides the volume of fresh water used at the facility. The brine well injection pump is a positive displacement pump. This pump generally pumps at the same flow rate with minor changes in system operation. A pressure chart on pump discharge provides pressure recording and pump run time. Run time multiplied by pump flow rate

gives an indication of water volume pumped into the formation and brine water recovered. Tank volume gauges, fresh water meter readings, pump run time, and product sale tickets can be compared to give a general insight into the integrity of the facility operation. The volume of fresh water injected and the volume of produced brine are to be recorded monthly and submitted to the OCD office in Santa Fe by the Hobbs operations district office quarterly.

Tanks are above ground for visual leak inspection and detection. Storage tanks and truck loading operations are located in dike Polly lined areas (see attachments for designs and specifications) to contain any spillage that may occur. Dike areas prevent run-off of storm water. Storm waters are either allowed to evaporate or vacuumed up and hauled to an approved disposal site.

Integrity testing of the well is conducted annually. Piping is pressure tested at intervals not to exceed five years.

Water samples from the fresh water well are analyzed to check for potential contamination.

B. Fluid and Solid Disposal:

No fluids or solids are disposed of at this site. All brine fluids are sold for use in oil and gas production. In the event brine fluid disposal would be required, the brine will be taken to OCD approved disposal well. Solids such as chloride contaminated soils will be taken to an approved disposal site.

General Closure Plan

Should it become necessary to abandon this brine production facility, the well will be filled with brine water. The well will be plugged and capped according to plans and specifications recommended by the OCD to meet requirements for protection of groundwater.

All fluid and solids will be removed from the site and transported to an approved disposal well, or tested for contaminants and hauled to an approved disposal site.

Upon removal of all surface equipment, remediation and grading of the facility will be done in a manner reflecting its original condition.

VII. Description of Underground Facility:

Underground facilities are limited to brine well casing and piping constructed as shown on attachment. Drawing schematic labeled Exhibit "D" and described as follows:

DUNAWAY NO. 1

288' 9 5/8" 36 lb. outside casing cemented bottom to surface.

1064' 7" 23 lb. inside casing cemented bottom to surface.

1021' 2 7/8" 6.5 lb. Casing packer set and open ended at bottom.

DUNAWAY NO. 2

284' 9 5/8" 36 lb. outside casing cemented bottom to surface.

1231' 7" 23 lb. inside casing cemented bottom to surface.

1219' 2 7/8" 6.5 lb. Casing packer set and open ended at bottom.

General operation is to pump fresh water down the 2 7/8" tubing of well number 1 and produce brine water up the 2 7/8" tubing of well number 2. Periodically the flow is reversed, pumping the fresh water down the 2 7/8" tubing of well number 2 and producing the brine water up the 2 7/8' tubing of well number 1 to dissolve any particulate buildup in the tubing.

A casing / tubing annulus integrity test is conducted annually on the well. The annulus is pressured up to 300 psi. then shut in for 30 minutes with pressure recorded on a pressure chart. The OCD is notified prior to testing to witness the procedure. Brine water transfer piping is pressure tested to $\geq$ 125% of operating pressure a minimum of once each five years to insure mechanical integrity.

See details of piping tests in Attachment Index of this plan labeled Exhibit "H".

Cavity configuration test is conducted as required by OCD office to determine the size and configuration of the mined cavity. The OCD will be consulted for approved testing procedure and notified of the time test is scheduled for witnessing purposes. A cavity configuration test in attachment section is labeled Exhibit "I".

The OCD office will be notified for approval prior to any Drilling, Deepening, or Plug Back Operations using Form C-101, and before remedial work such as altering or pulling casing, plugging, or abandonment by completing OCD Form C-103 "Sundry Notices and Reports on Wells".

VIII. Reporting and Clean Up of Spills:

Above ground piping and tanks are visually inspected for leaks by company personnel during each site visit. Upon the discovery of any leaks, spills, or failure of the well/salt cavity or piping integrity tests, the facility will be immediately shut down and the operator will notify the district supervisor. The district supervisor will notify SPLLC Operations by telephone at 1-800-392-3676. Repairs are to be made before operations may be resumed.

Minor Release (5 Bbls. to $\leq$ 25 Bbls.)

For spills greater than 5 Bbls. and less than 25 Bbls. the Hobbs District Supervisor will file a written notice to New Mexico Oil Conservation Artesia District office at 811 S. 1st. Street, Artesia, New Mexico 88210 within 15 days of the spill using form C-141.

Major Releases (>25 Bbls.)

For spills greater than 25 Bbls., immediately verbal notification is required to the Artesia OCD District office at telephone number 505/748-1283 within 24 hours of discovery of the spill. Written notification is required within 15 days of spill using Form C-141 to the OCD Artesia District office at 811 S. 1st. Street, Artesia, New Mexico 88210 with a copy sent to the OCD Division Environmental Bureau Chief office at P. O. Box 2088, Santa Fe, New Mexico 8750-2088.

IX. Site Characteristics:

1. The Carlsbad brine facility is located in an area with very little elevation definition. Drainage patterns are shallow and not of the deep arroyo type.

   The nearest surface water is located approximately 3,750 feet northeast of this facility. Brine volumes available at the Carlsbad facility are insufficient to reach the watercourse given the rainfall pattern and topography of this area.

2. Ground Water:

Ground water in this area is from the alluvium formation. This water is of poor quality, generally impotable (domestic water needs are served by Otis Water Users Cooperative). Within this area, the water is only used for livestock watering. Depth of this ground water ranges from 50 to 200 feet.

3. Hydrology:

Underground aquifers in this area are alluvium deposits. The ground water in these formations is generally impotable. Livestock and domestic supplies are generally available at depths ranging from 100 to 225 feet. Well logs indicate that rock at the base of the alluvium ranges from 250 to 300 feet.

4. Topography - Flood Potential:

Due to relatively small amount of precipitation in this area and the very shallow drainage patters, this area is not subject to flooding or dramatic run-off events. See Exhibit "A".

5. Geology:

The Carlsbad brine well is located west of the Pecos River and exhibits soils of the Reagan Series. See attached Exhibit "G" for description of area soil types.

The brine product is from the Salado formation. The series is of upper Permian Age, and extends across the Delaware Basin, Central Basin Platform, thins and pinches out on the eastern shelf. This series is predominately evaporates with successive layers of anhydrite, halite, polyhalite, and to the west, in the Carlsbad area, varying thicknesses of the potash rich sylvanite and langbeinite. Evaporates contain stringers of dolomite, shale, siltstone, and sandstone.

These evaporates were formed during recurrent retreats of shallow seas. The lowermost formation is the Castile and is chiefly anhydrite but contains some halite beds. The Salado Overlies the Castile and ranges in thickness from 0 to 2,000 feet. The Rustler formation overlies the Salado, and varies in thickness from 90 to 360 feet, and consists chiefly of anhydrite, but includes red beds (shale) and salt.

The Quaternary sediments in this area are in the form of alluvial deposits and dune sands. The alluvium was deposited in topographically low areas where the Ogallala formation had been stripped away.

Attachment Index

Exhibit A	Topographic Map
Exhibit B	Facility Plot Plan
Exhibit C	Ownership Map
Exhibit D	Wellbore Schematic
Exhibit E	Schematic of Facility
Exhibit F	Containment Liner Design & Specification
Exhibit G	Soil Types
Exhibit H	Piping Integrity Test 1995
*Exhibit I	Cavity Configuration Test 1999
Exhibit J	Road Location Map

*Note: Cavity Configuration Test 1999 will be scheduled at a time approved by the OCD and a copy of report furnished after completion of testing.

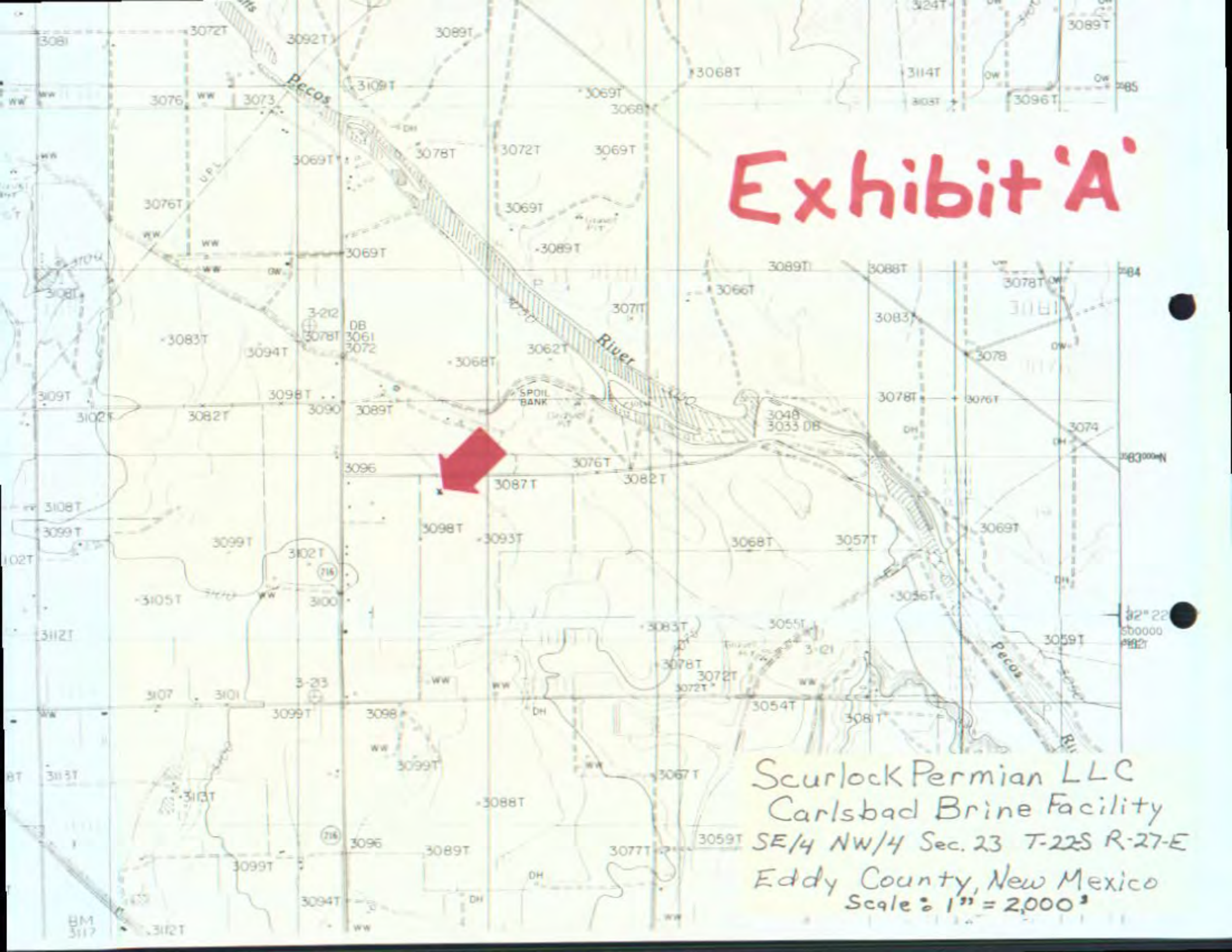


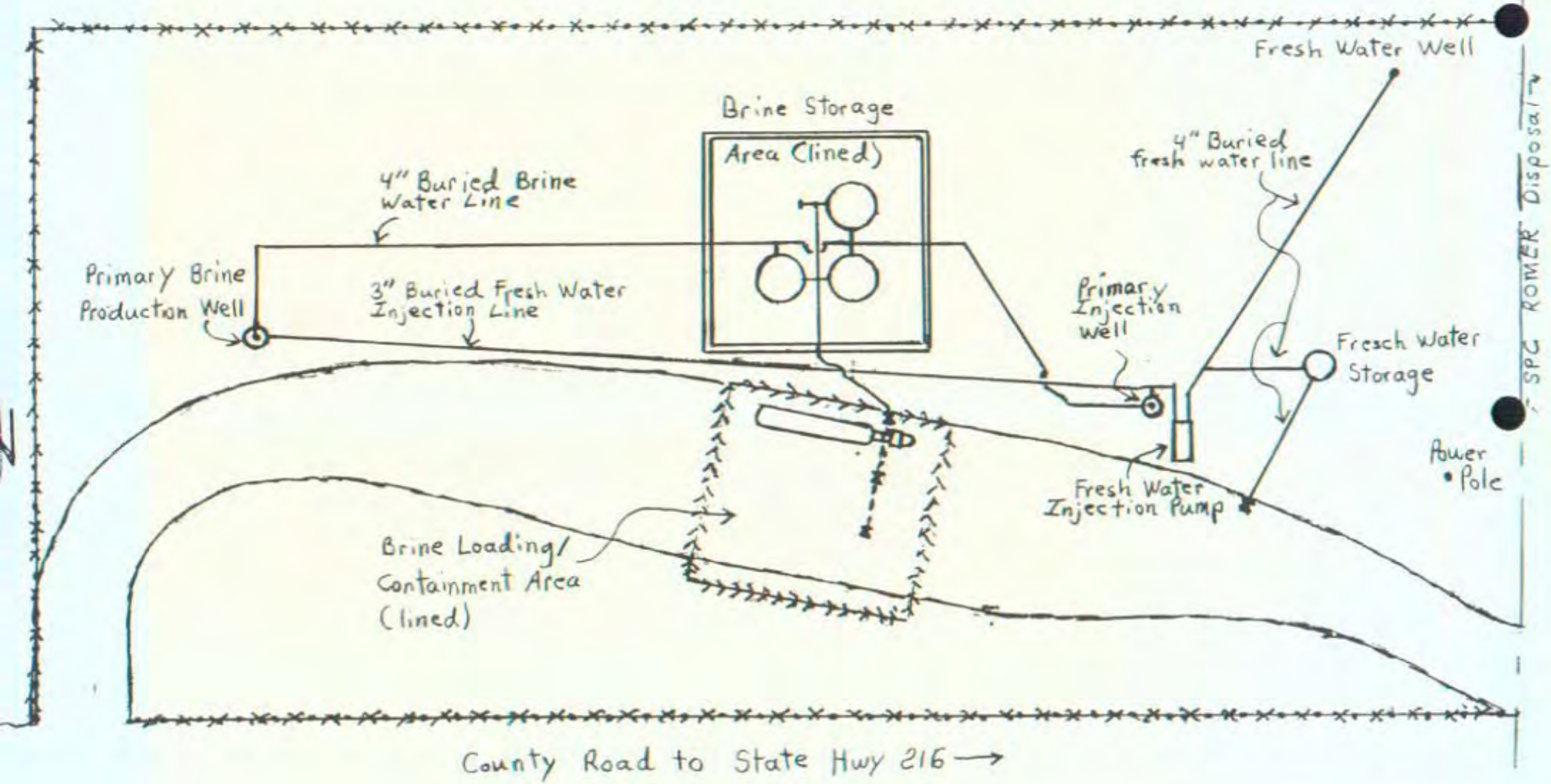
Exhibit 'A'
Scurlock Permian LLC
Carlsbad Brine Facility
SE/4 NW/4 Sec. 23 T-22S R-27-E
Eddy County, New Mexico
Scale: 1" = 2,000'
Pecos River
SPOIL BANK
DB
3-212
3-213
3-21

Carlsbad Brine Station
(Plot Plan)

Scurlock Permian
IJF 10/94

Exhibit 'B'

Eddy County
New Mexico



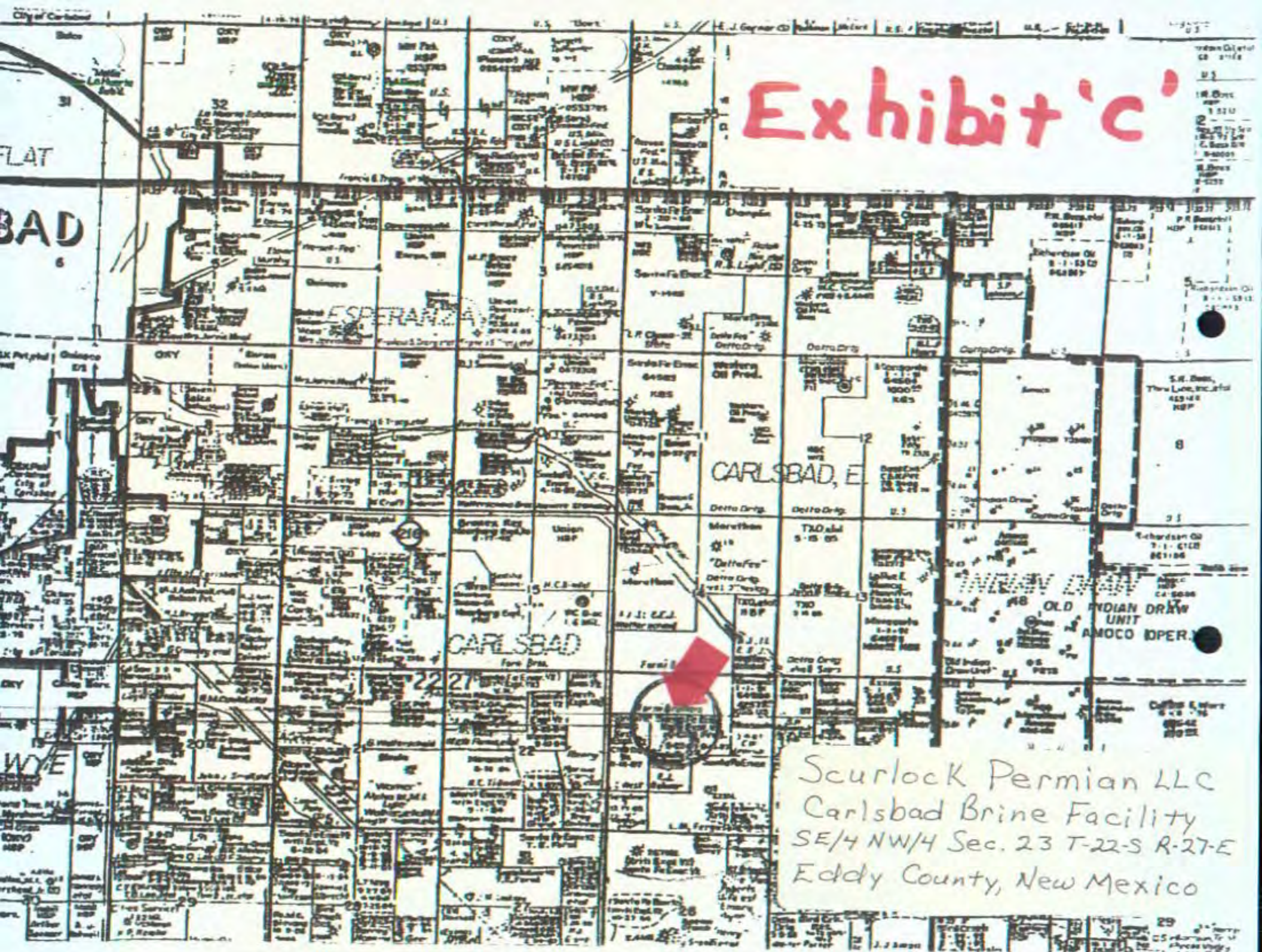


Exhibit 'c'
CARLSBAD, E
CARLSBAD
INDIAN DRAW
OLD INDIAN DRAW UNIT
AMOCO (OPER.)
Scurlock Permian LLC
Carlsbad Brine Facility
SE/4 NW/4 Sec. 23 T-22-S R-27-E
Eddy County, New Mexico

Sourlock Permian LLC
Carlsbad Brine Facility
Wellbore Schematic

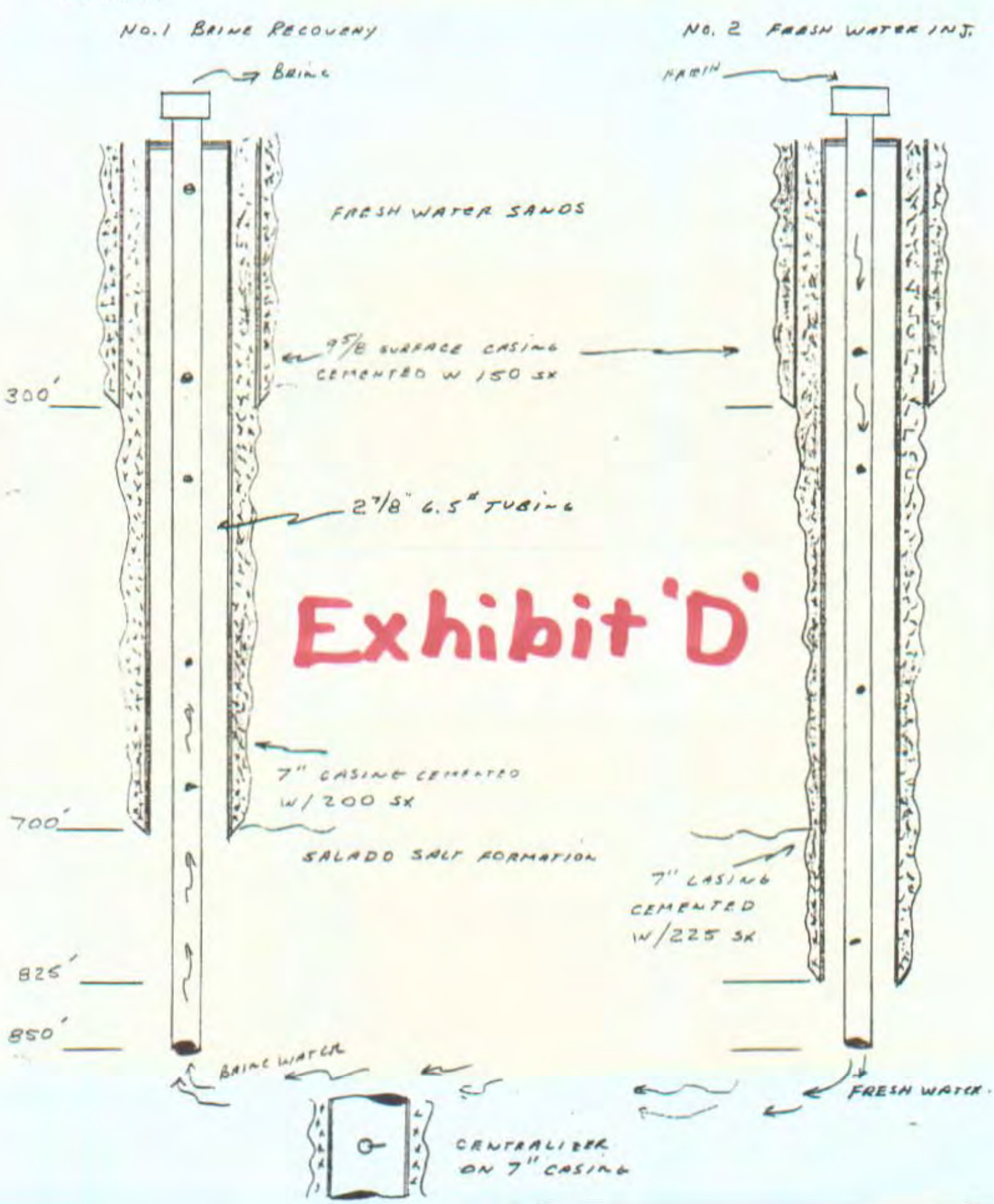
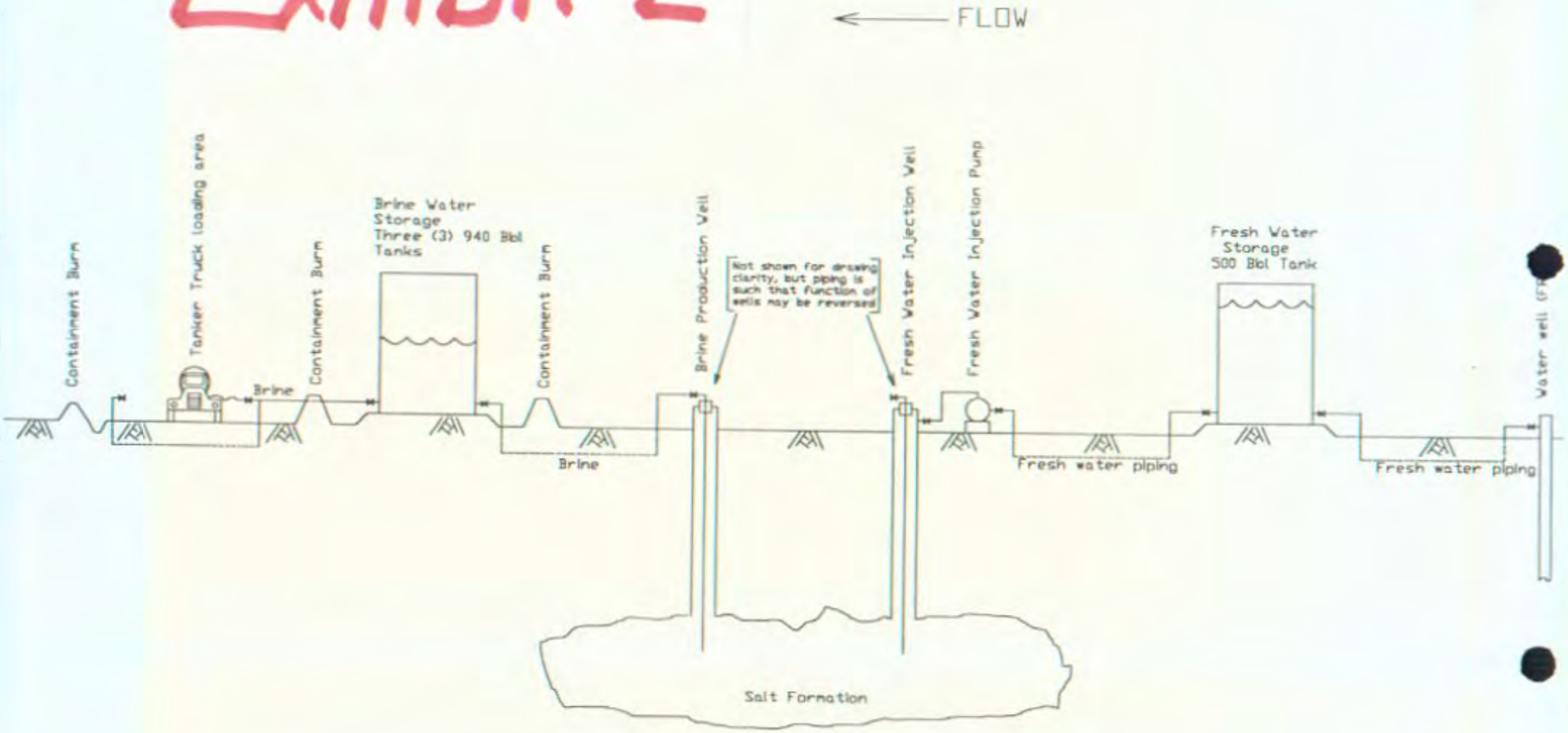


Exhibit 'E'



PROCESS FLOW DIAGRAM

SCURLOCK PERMIAN - CARLSBAD BRINE WELL/STATION

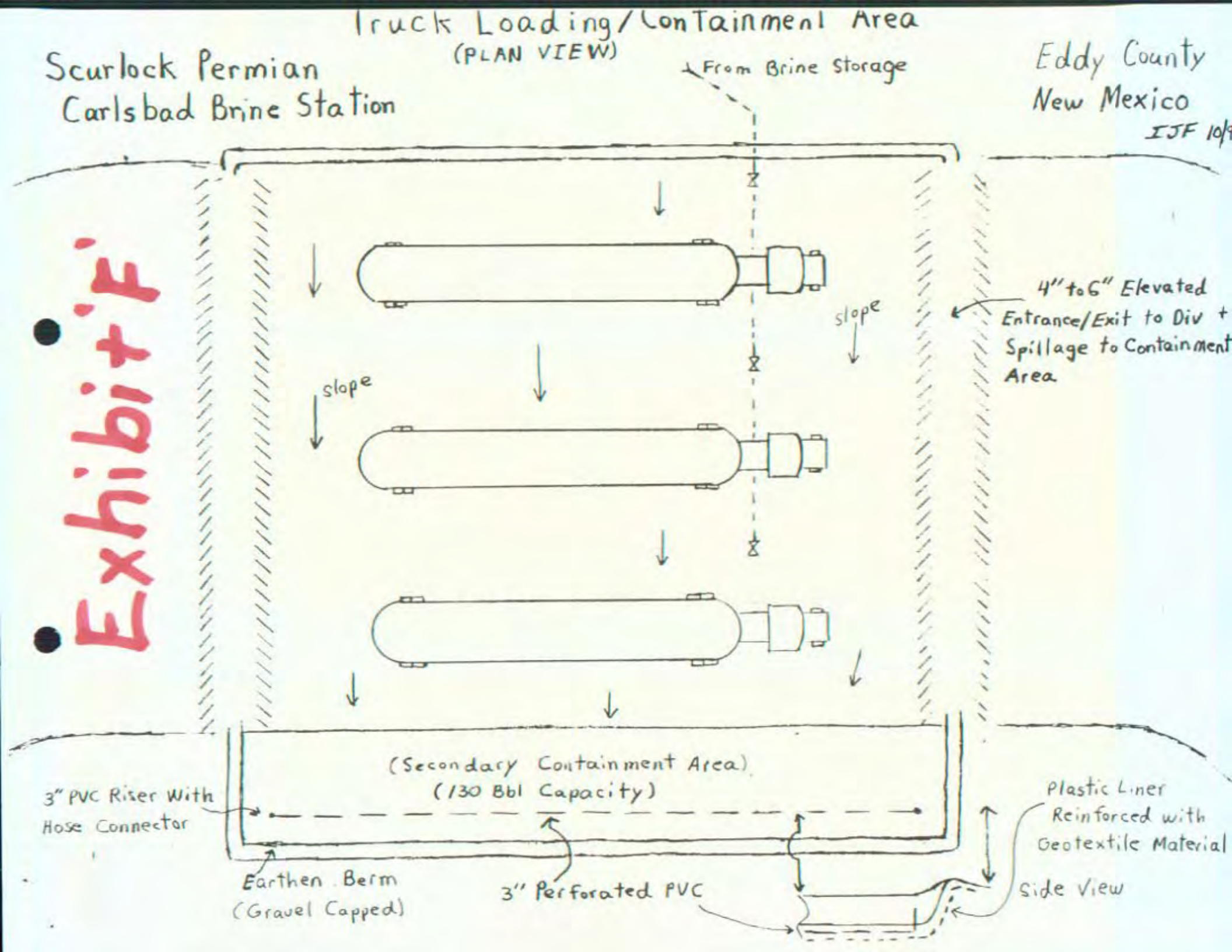
Truck Loading/Containment Area
(PLAN VIEW)

Scurlock Permian
Carlsbad Brine Station

Eddy County
New Mexico

IJF 10/

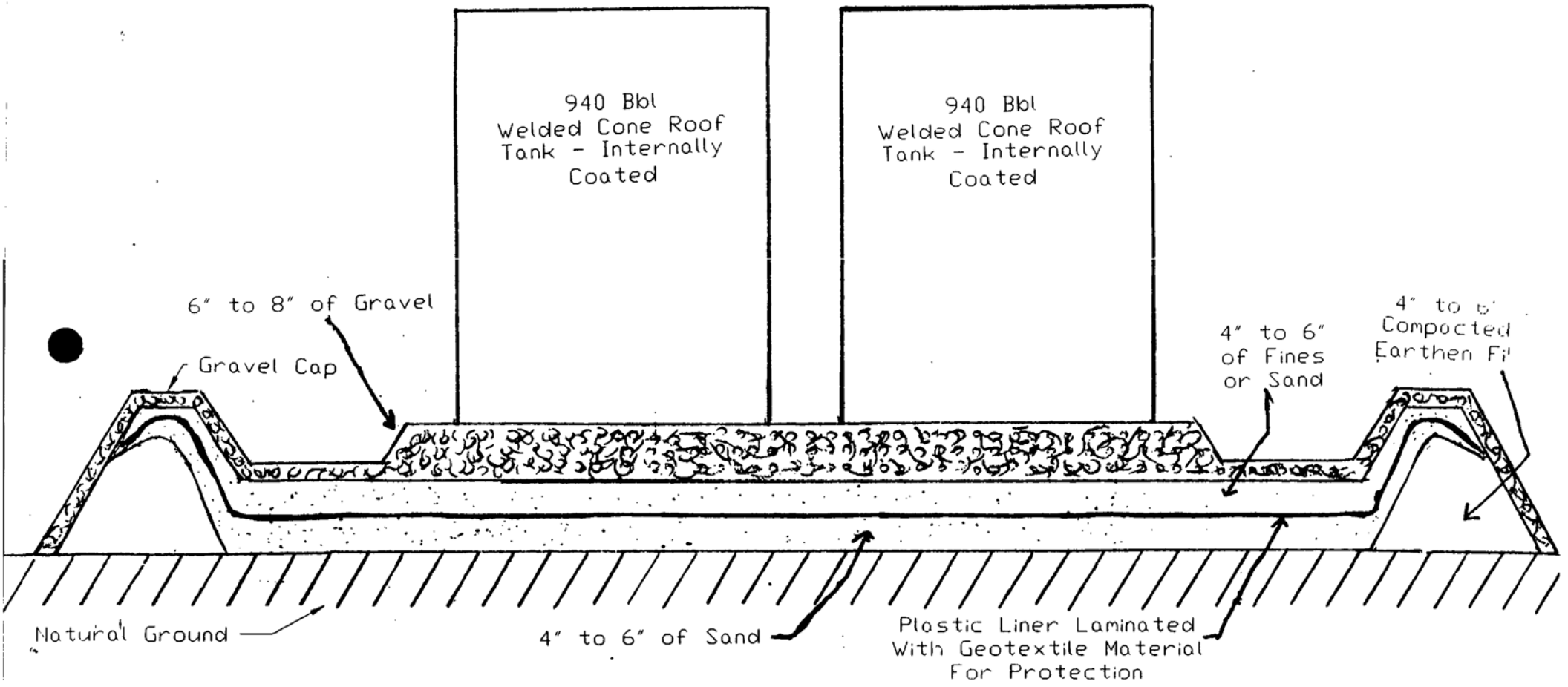
Exhibit 'F'



SCURLOCK PERMIAN CORPORATION

Scurlock Permian Corp.		
	SCALE: None	DRAWN BY:
Brine Station		
DATE	APPROVED BY:	SHT. of	DRAWING NUMBER

Brine Storage Containment Area Specification Drawing
(Containment Area Sized For 133% Of Tank Storage Capacity)



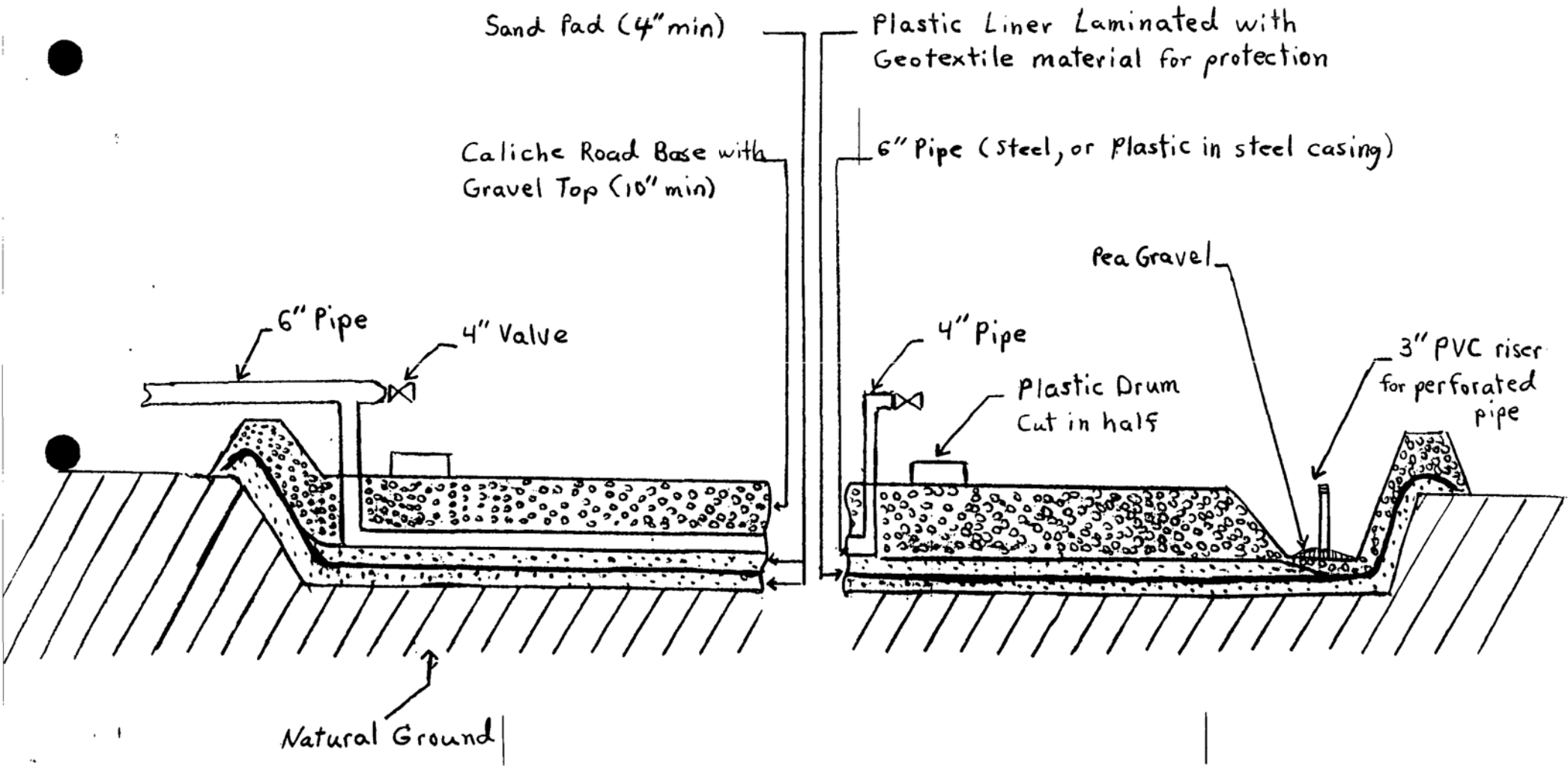
Truck Loading / Containment Area

(Cross Sectional View)

Scurlock Permian
Carlsbad Brine Station

Eddy County
New Mexico

IJF 10/94



CONTAINMENT LINER

SPECIFICATION DATA

PERMALON®

Reef Industries, Inc.
P.O. Box 750245
Houston, TX 77275-0245
Tel: (713) 484-6892
Toll Free: 1-800-231-2417
Fax: (713) 947-2053

I wanted to provide you with some weatherability information on our Permalon Ply X-210. This high density, cross-laminated poly is designed to be UV resistant by a state of the art stabilization system. When exposed to harsh weather conditions, including intense sun, X-210 should last in excess of five years. When buried, this material should last indefinitely. X-210 is chemically inert, non-leachable, and is resistant to root penetration, rodents and microbials(it is not a food source). Additionally, it meets ASTM D-3083 (Soil Burial). Ply X-210 is not prone to stress-cracking (ESC), thus, making a very good moisture and Radon barrier.

I hope this information will serve useful to you and please do not hesitate to call if you should have any questions.

Respectfully,

David Dewsnap
Chemist
Reef Industries, Inc.

Reef Industries, Inc.
"Since 1957"

Product Development Group
11/18/1993

Physical Properties of Geomembrane / Geotextile Composite

Material/Property	X1GPET45	X2GPET45
Basis Weight oz/yd^2 ASTM D-3776	9.83	15.1
Thickness (mils/mm) ASTM D-2103	31/0.88	39/0.99
Tensile Strength (lb_f) ASTM D - 882 - 3 in. (MD/TD)	190/159	263/222
Tensile Elongation (%) ASTM D - 882 - 3 in. (MD/TD)	63/83	46/54
Grab Tensile Strength (lb_f) ASTM D - 4632 (MD/TD)	194/168	303/250
Grab Elongation (%) ASTM D - 4632 (MD/TD)	70/110	-
Trapezoid Tear Strength (lb_f) ASTM D - 4533 (MD/TD)	91/80	132/135
Puncture Resistance (lb_f) ASTM D - 4833	85	100
Puncture Elongation (in) ASTM D - 4833	0.66	0.63
Mullen Burst (lb_f) ASTM D - 3786	237	333
Puncture Prop. & Tear (lb_f) ASTM D - 2582 (MD/TD)	-	55/57
Dart Impact Strength (lb_m) ASTM D-1709	6.5	9.9

ASTM D - 882 : Tensile strength of thin plastic sheeting (less than 40 mils)
ASTM D - 4632: Breaking Load and Elongation of Geotextiles.

N.B. These are typical values and not be interpreted as specifications. (Average Roll Values will be presented on availability of sufficient data)

P.O. Box 750250 • Houston, Texas 77275-0250
Tel: (713) 943-0070 • U.S.A. Toll Free: 1-800-231-6074 • Canada Toll Free: 1-800-847-5616
Fax: (713) 943-8085

PERMALON®

Reef Industries, Inc.
P.O. Box 750245
Houston, TX 77275-0245
Tel: (713) 484-6892
Toll Free: 1-800-231-2417
Fax: (713) 947-2053

PERMALON® PLY X-210 SPECIFICATIONS

Permalon Ply X-210 is a four layer composite laminate of three layer co-extruded polyolefin film. The material is composed of twelve distinct layers and is oriented in the machine direction, the transverse direction and at a 45 degree angle to both. The polymer is compounded with copolymer impact modifiers and copolymers to improve the impact resistance along with typical properties.

Burial Properties

Physical Property	Initial Result	Post Burial Result	%Change
3" Tensile	128 pounds	126 pounds	-1.5%
3" Elongation	714%	730%	+2.2%
100% Modulus	86 pounds	87 pounds	+1.2%

The differences in the test results fall within the expected machine error for these test methods.

Permeability

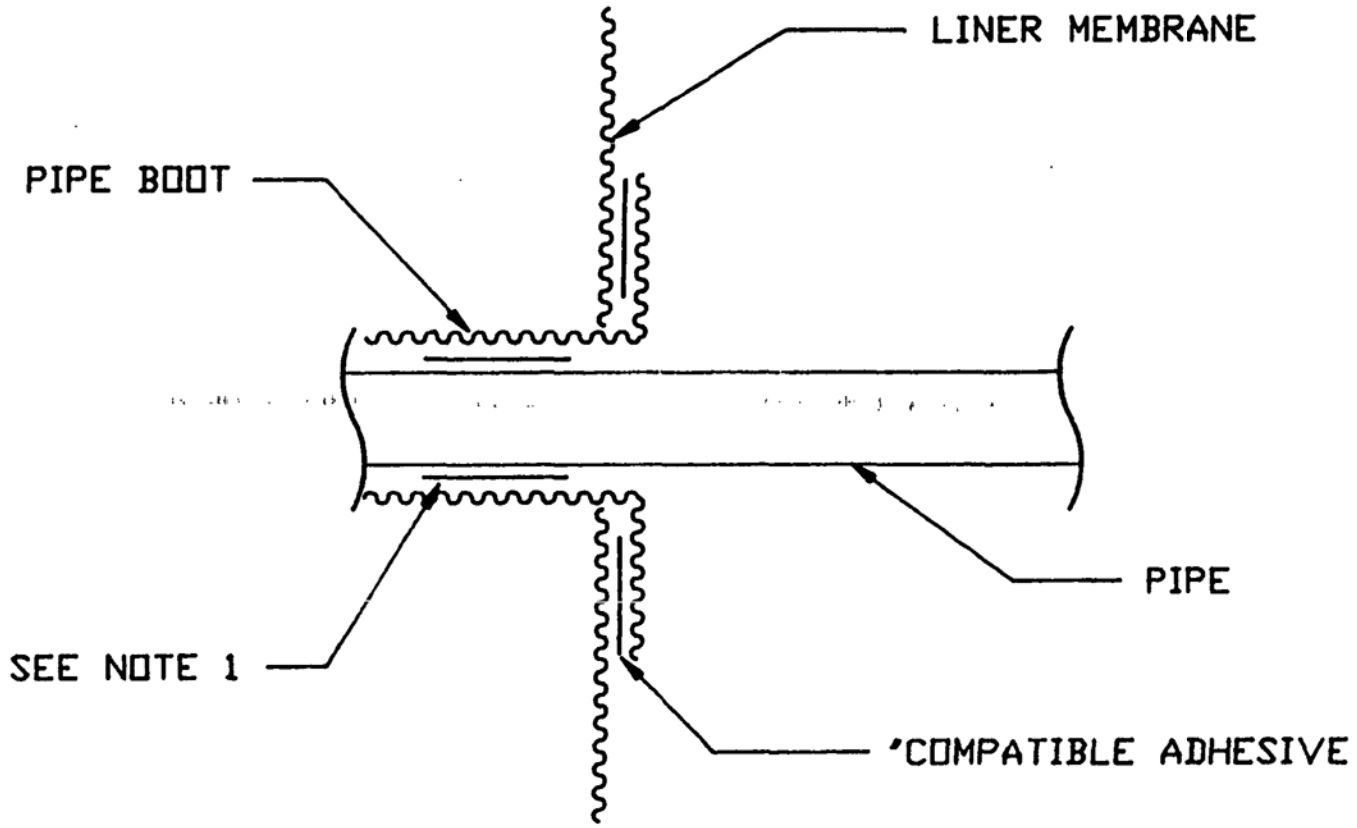
The water vapor transmission specifications for the Ply X-210 are as follows:

Property	ASTM Method	Units	Value
WVTR	E-96	perms	0.046
WVTR	E-96	cm/s	8.9 E -10

4 of 8

REEF
INDUSTRIES INC

PIPE INTRUSION THROUGH PERMALON LINER MEMBRANE



SPECIAL INSTRUCTIONS:

1) AFFIX PIPE BOOT TO PIPE USING ADHESIVE OR CLAMPS.
2) PLACE PIPE AND BOOT THROUGH LINER MEMBRANE.
3) AFFIX LINER MEMBRANE TO PIPE BOOT WITH ADHESIVE.
4) NOTE: PIPE BOOTS WILL BE FURNISHED BY MANUFACTURE WHEN EXACT PIPE DIAMETER IS DETERMINED BY CONTRACTOR.

Page 1 of 5

R27E

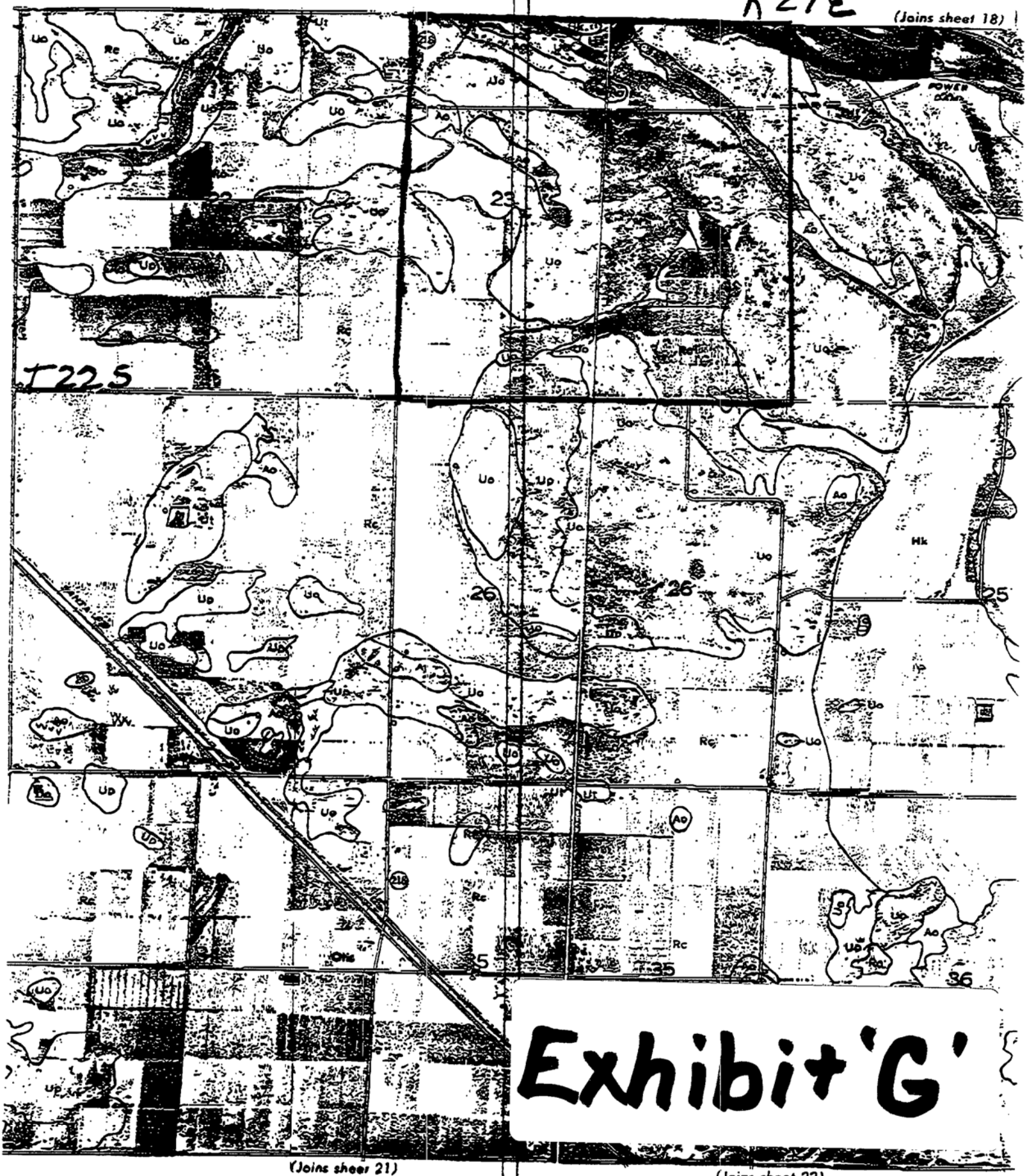


Exhibit 'G'

Harkey Series

The Harkey series consists of deep, well-drained, strongly calcareous, moderately dark colored soils that developed in mixed alluvium. These soils occur on low terraces on flood plains of major streams. They are naturally free of salts, except in areas adjacent to Lake McMillan and the Pecos River. In these areas the water table is at a depth of less than 5 feet part of the year.

In cultivated areas, soils of the Harkey series typically have a surface layer of brown very fine sandy loam 9 inches thick. In uncultivated areas, this layer is slightly lighter colored and contains less organic matter. The next layer, to a depth of more than 50 inches, is brown loam or very fine sandy loam.

These soils are uneroded or only slightly eroded. They are moderately fertile and have a low content of organic matter. Permeability is moderate, and the water-holding capacity is high. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature is 60° to 64° F. The frost-free season is 210 to 220 days. Elevations range from 3,000 to 3,400 feet.

Harkey soils are used for irrigated crops, native pasture, and wildlife habitat. The vegetation consists mainly of black grama, blue grama, tobosa, and vine-mesquite.

In areas affected by salts and that have a fluctuating water table, the vegetation is mainly alkali sacaton, inland saltgrass, four-wing saltbush, and saltcedar.

Typical profile of Harkey very fine sandy loam, 150 feet northeast of the SW. corner of NW¼SE¼, sec. 24, T. 22 S., R. 27 E.

Ap—0 to 9 inches, brown (10YR 5/3) very fine sandy loam, dark brown (10YR 3/3) when moist; massive; slightly hard when dry, very friable when moist, nonsticky and nonplastic when wet; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

AC—9 to 14 inches, light-brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) when moist; very weak, coarse, prismatic structure to massive; slightly hard when dry, very friable when moist, nonsticky when wet; few, fine, prominent seams of lime; few fine crystals of gypsum or salts, these most abundant in plowpan; strongly calcareous; mildly alkaline; clear, smooth boundary.

C1—14 to 30 inches, brown (7.5YR 5/4) very fine sandy loam, dark brown (7.5YR 4/4) when moist; very coarse, prismatic structure; soft when dry, very friable when moist, nonsticky when wet; few, fine, prominent seams of lime; few fine crystals of gypsum or salts; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

C2—30 to 37 inches, brown (7.5YR 5/4) loam, dark brown (7.5YR 4/4) when moist; massive; slightly hard when dry, friable when moist, nonsticky when wet; few, fine to medium, distinct mottles of lime; strongly calcareous; mildly alkaline; clear, smooth boundary.

C3—37 to 51 inches, brown (7.5YR 5/4) loam, dark brown (7.5YR 4/4) when moist; massive; soft when dry, very friable when moist, nonsticky when wet; strongly calcareous; gradual, smooth boundary.

C4—51 to 87 inches, brown (7.5YR 5/4) silt loam, dark brown (7.5YR 4/4) when moist; massive; slightly hard when dry, friable when moist; strongly calcareous; moderately alkaline.

The thickness of the Ap horizon ranges from 7 to 10 inches. The color ranges from 10YR to 7.5YR in hue, from 5 to 6 in value, and from 3 to 6 in chroma. The texture includes very fine sandy loam, loam, and sandy loam. The thickness of the AC horizon ranges from 5 to 13 inches. The color is lighter than that of the surface horizon. The texture is dominantly loam to light clay loam but includes very fine sandy loam. In places there are strata, generally less than 6 inches thick, of material ranging from sandy loam to light sandy clay loam. A few coarse fragments occur in some profiles.

Harkey soils are associated with Anthony and Arno soils and with the gray variant of Pima soils.

Harkey sandy loam, 0 to 1 percent slopes (Ho).—Except for the texture of the surface layer, this soil has a profile similar to that described as typical of the series. It occurs on low terraces along the Pecos River, mainly in the Carlsbad area. Included in mapping were areas of Anthony sandy loam, 0 to 1 percent slopes, which make up less than 5 percent of the acreage, and a small area of Harkey sandy loam, 1 to 3 percent slopes.

This soil is less productive than Harkey very fine sandy loam, 0 to 1 percent slopes. It is subject to moderate wind and water erosion, and careful management of both soil and irrigation water is needed. The water-holding capacity is moderate in the surface layer, but it is high in the subsoil and substratum. The water-intake rate is moderately rapid.

This soil is used for irrigated crops, native pasture, and wildlife habitat. (Irrigated capability unit IIe-4; dryland capability unit VIIe-2; Sandy range site)

Harkey very fine sandy loam, 0 to 1 percent slopes (Hk).—This soil has the profile described as typical of the series. It occurs on low terraces of the Pecos, Penasco, and Black Rivers. Included in mapping were areas of Anthony and Arno soils and of Pima clay loam, gray variant, 0 to 1 percent slopes. The included areas make up less than 5 percent of the acreage.

This soil is used for irrigated crops, native pasture, and wildlife habitat. It is suited to all the crops grown in the Area. (Irrigated capability unit IIs-2; dryland capability unit VIs-4; Loamy range site)

Reagan Series

The Reagan series consists of deep, well-drained, moderately dark colored, calcareous loams that developed in old alluvium derived from calcareous, sedimentary rocks of the uplands. These soils occur on plains west of the Pecos River. They are nearly level to gently sloping.

Soils of the Reagan series typically have a surface layer of brown loam about 8 inches thick. Light-brown loam and heavy loam, about 24 inches thick, underlies the surface layer. The next layers, which extend to a depth of more than 60 inches, are enriched with calcium carbonate.

These soils are uneroded or only slightly eroded. They are moderately fertile. Runoff is slow. Permeability is moderate, and the water-holding capacity is high. The organic-matter content is low. In most places roots are not restricted, but in some places caliche or gypsum occurs below a depth of 4 feet. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature is 60° to 64° F. The frost-free season is 200 to 220 days. Elevations range from 3,000 to 4,400 feet.

Reagan soils are used for irrigated crops, native pasture, and wildlife habitat. These are among the most productive irrigated soils in the Area. The vegetation consists mainly of black grama, blue grama, side-oats grama, vine-mesquite, tobosa, burrograss, broom snakeweed, and mesquite.

Typical profile of Reagan loam, NW¼NW¼ sec. 27, T. 22 S., R. 27 E.

A1—0 to 8 inches, brown (10YR 5/3) loam, dark brown (10YR 4/3) when moist; massive; slightly hard when dry, friable when moist, slightly sticky when wet; abundant very fine and fine roots; many very fine and fine pores; strongly calcareous; mildly alkaline; abrupt, smooth boundary.

C1—8 to 19 inches, light-brown (7.5YR 6/3) loam, dark brown (7.5YR 4/3) when moist; weak, fine, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; abundant very fine and fine roots; many very fine and fine pores; few, fine, prominent seams of lime; very strongly calcareous; mildly alkaline; gradual boundary.

C2—19 to 32 inches, light-brown (7.5YR 6/3) heavy loam, brown (7.5YR 4/4) when moist; weak, fine, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; plentiful very fine and fine roots; common very fine and fine pores; few, medium, prominent, soft concretions of lime; very strongly calcareous; mildly alkaline; gradual boundary.

C3ca—32 to 44 inches, light-brown (7.5YR 6/3) light clay loam, brown (7.5YR 5/4) when moist; massive; hard when dry, friable when moist, slightly sticky when wet; plentiful very fine and fine roots; common very fine and fine pores; many, medium, faint mottlings of lime; very strongly calcareous; moderately alkaline; clear boundary.

C4ca—44 to 54 inches, light-brown (7.5YR 6/3) light clay loam, brown (7.5YR 5/4) when moist; massive; slightly hard when dry, friable when moist, slightly sticky when wet; few very fine and fine roots; common very fine and fine pores; distinct mottlings of lime; very strongly calcareous; moderately alkaline; clear boundary.

C5ca—54 to 67 inches, light-brown (7.5YR 6/3) light clay loam, brown (7.5YR 5/4) when moist; massive; slightly hard when dry, friable when moist, slightly sticky when wet; few very fine and fine roots; common very fine and fine pores; distinct mottlings of lime; very strongly calcareous; moderately alkaline; gradual boundary.

C6 67 to 82 inches, light-brown (7.5YR 6/3) heavy loam, brown (7.5YR 4/4) when moist; weak, fine, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; common very fine and fine pores; very strongly calcareous; moderately alkaline.

The thickness of the A horizon ranges from 6 to 12 inches. The color ranges from 10YR to 7.5YR in hue, from 5 to 6 in value, and from 2 to 3 in chroma. The texture is loam, silt loam, or light clay loam. The C1 horizon is as much as 18 inches thick, but it does not occur in all profiles. The color is as much as one unit higher in value and chroma. The texture is loam or light clay loam. The C2 horizon is as much as 14 inches thick, but it does not occur in all profiles. The color and texture are similar to those of the C1 horizon. The Cca horizon extends to a depth of 40 to 60 inches or more below the surface. The color ranges from 10YR to 7.5YR in hue, from 6 to 7 in value, and from 3 to 4 in chroma. The texture ranges from loam to light clay loam. Gypsiferous earths or soft caliche occurs below a depth of 48 inches in some places.

Reagan soils are associated with Upton, Atoka, and Pima soils.

Reagan loam, 0 to 1 percent slopes (Rc).—This soil has the profile described as typical of the series. It occurs on plains west of the Pecos River in the irrigated areas near Artesia and Carlsbad. Included in mapping were small areas of Reagan loam, saline, 0 to 1 percent slopes, where water from canals seeps into the gypsiferous substratum. Also included were small areas of Upton gravelly loam, 0 to 3 percent slopes, which occur on ridges. The included areas make up less than 5 percent of the acreage.

This soil is susceptible to wind erosion, especially when the seedbed is being prepared and the soil is bare. Seedling damage caused by high winds is common.

This soil is used mainly for irrigated crops and wildlife habitat. It is among the most productive of the irrigated soils, and in most places it has been bench leveled to grades of 0.2 to 0.3 percent. Cotton (fig. 15) and most other crops grown in the Area are suitable. Pecan trees need more than 48 inches of unrestricted rooting zone, and, although the effective rooting zone extends beyond this depth in most places, care should be taken to select areas of deep soils for pecans. A small acreage of this soil is used for native pasture. (Irrigated capability unit IIs-2; dryland capability unit VIs-4; Loamy range site)

Upton Series

The Upton series consists of moderately dark colored, calcareous, gravelly soils that developed in old alluvium derived from calcareous sedimentary rocks. These soils are very shallow to shallow over caliche and cemented gravel. They occur on upland plains between the Pecos River and the mountains and hills of the western part of the survey Area. They are nearly level to sloping.

Soils of the Upton series typically have a surface layer of grayish-brown gravelly loam about 3 inches thick. The next layer, about 6 inches thick, is brown gravelly loam. Fractured, platy, indurated caliche is at a depth of about 9 inches.

These soils are uneroded or only slightly eroded. Runoff is slow to medium. Permeability is moderate. The water-holding capacity is low to very low, and the soils are droughty. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature is 60° to 64° F. The frost-free season is 200 to 217 days. Elevations range from 3,000 to 4,400 feet.

Upton soils are used principally for native pasture and wildlife habitat. A small acreage is used for irrigated crops. The vegetation consists mainly of black grama, side-oats grama, blue grama, hairy grama, creosotebush, tarbush, burrograss, broom snakeweed, and mesquite. Good management is needed to maintain a cover of desirable forage and to control erosion. Revegetation is difficult because temperatures are high and rainfall is undependable. Surface water is lacking.

Typical profile of Upton gravelly loam, 2,160 feet east and 1,650 feet south of the NW. corner of sec. 15, T. 24 S., R. 26 E.

A1—0 to 3 inches, grayish-brown (10YR 5/2) gravelly loam, dark grayish brown (10YR 4/2) when moist; weak, medium, granular structure; slightly hard when dry, friable when moist, slightly sticky and slightly plastic when wet; common very fine and fine pores; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

C1—3 to 9 inches, brown (10YR 5/3) gravelly loam, dark brown to brown (10YR 4/3) when moist; massive; slightly hard when dry, friable when moist, slightly sticky and slightly plastic when wet; common very fine and fine pores; strongly calcareous; mildly alkaline; abrupt boundary.

C2cam—9 inches, fractured, platy, indurated caliche and cemented gravel; upper part of the horizon is laminar.

The A1 horizon ranges from 1 to 4 inches in thickness. The color ranges from 10YR to 7.5YR in hue, from 5 to 7 in value, and from 2 to 4 in chroma. The C1 horizon ranges from 1 to 9 inches in thickness. The color ranges from 10YR to 7.5YR in hue, from 5 to 6 in value, and from 3 to 4 in chroma. The depth to caliche ranges from 2 to 20 inches.

Upton soils are associated with Atoka, Reagan, and Simona soils.

Upton gravelly loam, 0 to 9 percent slopes (UG, Uo).—This soil has the profile (fig. 17) described as typical of the series. It occurs as whalebacks, or elongated areas with rounded crests. The areas are west of the Pecos River on broad plains and in valleys, and east and west of the River, from Carlsbad southward to the Texas State line. Included in mapping were small areas of Upton soils 0 to 1 percent slopes; Upton soils, 1 to 3 percent slopes; Atoka loam, 0 to 1 percent slopes; Atoka loam, 1 to 3 percent slopes; and Reagan loam, 0 to 1 percent slopes. The included areas make up less than 15 percent of the acreage.

Some of the acreage was mapped at high intensity, and some at low intensity. Most of the acreage is in the low-intensity survey. The principal difference between the soils mapped at the two intensities is the size of the individual areas and the kinds of included soils. In the low-intensity survey, the areas are generally large; some are as much as several hundred acres in size. In the high-intensity survey, most areas are 5 to 50 acres in size. The included areas of Atoka loam and Reagan loam are more extensive in the low-intensity survey.

This soil is used for native pasture. Roots are restricted by shallowness over hard caliche. Fertility is low. (Dryland capability unit VIIs–1; Shallow range site)

[redacted] Page 5 of 5.

Atoka loam, 0 to 1 percent slopes (Ac).—This soil has the profile described as typical of the Atoka series. It occurs in broad swales on the plains west of the Pecos River near Artesia and Carlsbad. Included in mapping were areas of Reagan and Upton soils, which make up less than 5 percent of the acreage. Also included were areas of Atoka fine sandy loam.

This soil is used for irrigated crops and native pasture. It is fertile, but the underlying caliche and the moderate water-holding capacity limit the growth of deep-rooted crops. It can be used for shallow-rooted crops. (Irrigated capability unit IIIs-14; dryland capability unit VIs-3; Loamy range site)

Atoka Series

The Atoka series consists of well-drained, moderately dark colored, level to gently sloping soils that developed in moderately deep old alluvium derived from calcareous sedimentary rocks. These soils (fig. 10) occur on uplands along the Pecos River in the general area of Artesia and Carlsbad. They are loamy and calcareous.

Soils of the Atoka series typically have a surface layer of grayish-brown to brown loam about 8 inches thick. The next layer, about 15 inches thick, consists of brown to dark-brown loam. A layer, about 10 inches thick, that is enriched with calcium carbonate rests on fractured, indurated caliche at a depth below 33 inches.

These soils are uneroded or only slightly eroded. The natural fertility is moderate, and the organic-matter content is low. Permeability is moderate, and the water-holding capacity is moderate. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature ranges from 60° to 64° F. The frost-free season is 210 to 220 days. Elevations range from 3,050 to 4,300 feet.

Atoka soils are used for irrigated crops and native pasture. The vegetation consists of black grama, blue grama, tobosa, side-oats grama, bush muhly, and vine-mesquite.

Typical profile of Atoka loam, 0 to 1 percent slopes, NE¼NW¼SW¼NE¼ sec. 4, T. 23 S., R. 27 E.

A11—0 to 2 inches, grayish-brown (10YR 5/2) very fine sandy loam, dark brown (10YR 3/3) when moist; moderate, thin and very thin, platy structure; soft when dry, friable when moist, nonsticky when wet; common very fine and fine pores; abundant fine and medium roots; strongly calcareous; mildly alkaline; abrupt, smooth boundary.

A12—2 to 8 inches, brown (10YR 5/3) loam, dark brown (10YR 4/3) when moist; weak, coarse, subangular blocky structure; hard when dry, friable when moist; slightly sticky when wet; abundant worm casts; common very fine and fine pores; abundant fine and medium roots; strongly calcareous; mildly alkaline; gradual, smooth boundary.

AC—8 to 15 inches, brown (10YR 5/3) loam, dark brown (10YR 4/3) when moist; weak, coarse, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; abundant worm casts; common very fine and fine pores; plentiful very fine and fine roots; few seams of lime; strongly calcareous; mildly alkaline; gradual, smooth boundary.

C1—15 to 23 inches, dark-brown (10YR 4/3) loam, dark brown (7.5YR 4/4) when moist; very weak, coarse, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; abundant worm casts; common very fine and fine pores; plentiful very fine and fine roots; few seams of lime; strongly calcareous; mildly alkaline; clear, smooth boundary.

C2ca—23 to 33 inches, light yellowish-brown (10YR 6/4) loam, yellowish brown (10YR 5/4) when moist; very weak, coarse, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; common, fine to medium, white (10YR 8/2) lime concretions, very pale brown (10YR 8/3) when moist; common very fine and fine pores; few very fine roots; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

C3cam—33 inches, fractured, indurated, gravelly caliche.

The A horizon ranges from 4 to 8 inches in thickness. Its texture is very fine sandy loam, loam, or fine sandy loam. The color of the A horizon ranges from 10YR to 7.5YR in hue, from 5 to 6 in value, and from 2 to 3 in chroma. The C2ca horizon ranges from 9 to 22 inches in thickness. Its texture is generally loam to light clay loam, but in places it is silty clay loam. The depth to indurated caliche or strongly cemented gravel ranges from 20 to 36 inches.

Atoka soils are associated with soils of the Upton and Reagan series.

Pressure Test
Brine Water Discharge line
Carlsbad Brine Station
well heads to Tanks.

4/27/95 JJG.

Time	Ambient Temp	Pressure	Ambient condition
11:30 A.M.	~~70~~.	75.5 PSIG	Clear Sunny
12:00 A.M.		72.0 PSIG	Clear Sunny
1:00 P.M	59°F	69.0 PSIG	Overcast
1:30 P.M	63°F	68.0 PSIG	Overcast
2:00 P.M.	63°F	67.0 PSIG	Overcast
2:30 P.M.	63°F	66.5 PSIG	Overcast
3:00 P.M.	63°F	66.0 PSIG	Overcast
3:30 P.M.	65°F	65.5 PSIG	Overcast
4:00 P.M.		65.0 PSIG	Overcast.

Exhibit 'H'

SPLLC CARLSBAD BRINE FACILITY

Exhibit 'J'

Mag 14.00
Tue Aug 31 14:35 1999
Scale 1:50,000 (at center)
5000 Feet
1000 Meters

- Local Road
- Walkway/Stairway
- US Highway
- Major Connector
- State Route
- Utility/Pipe
- Railroad
- Point of Interest
- Geographic Feature
- Locale
- City
- Land
- Water
- River/Canal
- Intermittent River

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 930	Date 4/3/97

Originating Party	Other Parties
Richard Powell - NMED Surface Water 827-2798	Bill Olson - Envir. Bureau

Subject

Scarlock Permian Carlsbad Facility

Discussion

Report to him from Rowland Trucking that oil on adjacent Scarlock Permian facility runs onto, or washes onto Rowland's facility during runoff events.

NMED working on NPDES Stormwater Permit from Rowland

Facilities located 1-2 miles east of Carlsbad on Hobbs/Carlsbad Hwy.

Conclusions or Agreements

Distribution

Signed Bill Olson

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

December 7, 1994

CERTIFIED MAIL
RETURN RECEIPT NO. Z-765-962-841

Bobbye Dene Rogers
P.O. Box 3187
Carlsbad, NM 88221-3187

RE: Liquid Hauling on Calvani Road, Eddy County, NM

Dear Bobbye Dene Rogers:

Your concerns regarding the hauling of liquids near your home has been investigated with the following conclusions. In the vicinity of your home Scurlock Permian operates one deep disposal well for produced water and two shallow wells for the recovery of brine water used for drilling purposes and is therefore very active in your area. All three wells have been properly permitted through the New Mexico Oil Conservation Division (OCD). As part of the permitting process, they are required to report their activities and perform certain tests in order to protect water resources. Scurlock Permian has stated that they use the most comprehensive safety measures possible to insure no contamination will occur. Also, the (OCD) conducts routine inspections to verify the integrity of the wells and the facilities.

Thank you for your letter regarding this matter. Should you have any other questions or concerns please feel free to call me at (505) 827-7155.

Sincerely,

Roger Anderson
Environmental Bureau Chief

PS Form **3800**, March 1993

Sent to	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

Receipt for Certified Mail
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse).

Z 765 962 841

Energy and Minerals Department
Oil and Gas Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504

GENTLEMEN:

I have been watching many loads of some kind of water or other liquid be hauled by my home on Calvani Road in Eddy County New Mexico. Spurlock-Permian trucks haul the majority of this material. However, other trucks haul as well.

I am concerned that this type of material will affect our water for household, crops and cattle.

I am not exactly sure where this matter in going into what dry hole, but I think the Pecos River runs below this area.

Please check this out, I do not ordinarily put my nose in this type of thing, however we have irrigated crop land and water is a very important thing to us.

Sincerely,

Bobbye Dene Rogers

Bobbye Dene Rogers
P. O. Box 3187
Carlsbad, N.M. 88221-3187
December 1, 1994

cc--Environmental Eval. Group Carlsbad, N.M.
Geological Survey, Carlsbad, N.M.

no phone listing in information unable to contact 12/7/94

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

April 28, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-259-060

Mr. James C. Ephraim II
Scurlock Permian Corporation
P.O. Box 4648
Houston, Texas 77210-4648

RE: Quarterly Reports
Saline #1 Brine Station (BW-012) and Carlsbad Brine Station (BW-027)

Dear Mr. Ephraim:

As a condition of discharge plan approval, all brine facilities are required to submit quarterly reports listing, by month, the volumes of fluids injected and produced, The New Mexico Oil Conservation Division had not received any quarterly reports for the above mention brine facilities. Please update all delinquent quarterly reports by June 29, 1998.

If Scurlock Permian has any questions, please contact me at (505) 827-7155.

Sincerely,

Mark Ashley
Geologist

xc: OCD Hobbs Office
OCD Artesia Office

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

September 21, 1994

Mr. Owen Mobley
Scurlock Permian Corporation
P.O. Box 4648
Houston, TX 77210-4648

Re: Discharge Plan BW-027
Carlsbad Brine Station
Eddy County, New Mexico

Dear Mr. Mobley:

As a result of the public notice pursuant to section 3-108 of the New Mexico Water Quality Control Commission Regulations, the U.S. Fish and Wildlife Service has reviewed your discharge plan application. Enclosed is a copy of their comments and recommendations for your review and consideration. Please review and respond appropriately to their recommendations and the potential for direct and indirect impacts to the federally listed species.

Thank you for your attention to this matter. If you have any questions, please call Roger Anderson at (505) 827-5812.

Sincerely,

Mark Ashley
Environmental Geologist

MWA/mwa
Attachments

xc: OCD Artesia Office

SCURLOCK PERMIAN CORPORATION

333 Clay
P.O. Box 4648
Houston, Texas 77210-4648

(713) 646-4100

OIL CONSERVATION DIVISION
RECEIVED
'94 OCT 28 AM 8 52

October 21, 1994

State of New Mexico
Oil Conservation Division
310 Old Santa Fe Trail
P. O. Box 2088
State Land Office Building
Santa Fe, N.M. 87501

Attn: William J. LeMay

Reference: Discharge Plan BW-~~020~~ 027
Carlsbad Brine Station

Dear Mr. LeMay:

Attached for your reference are pre construction drawings, which are specifically related to the secondary liner and containment systems for the brine storage and loading areas of subject facility. Drawings and Specifications attached are:

- General Station Layout
- Brine Storage Containment Area
- Truck Loading and Containment Area (Cross Section)
- Truck Loading and Containment Area (Plan View)
- Containment Liner Specifications (4 pages)

Please review and advise should you have any questions.

Sincerely,

Jim Fleetwood

Jim Fleetwood
Project Engineer

:jlw
Attachments

c: State of New Mexico
Oil Conservation Division
District II
P. O. Drawer DD
Artesia, N.M 88211-0719
Attn: Mark Ashley

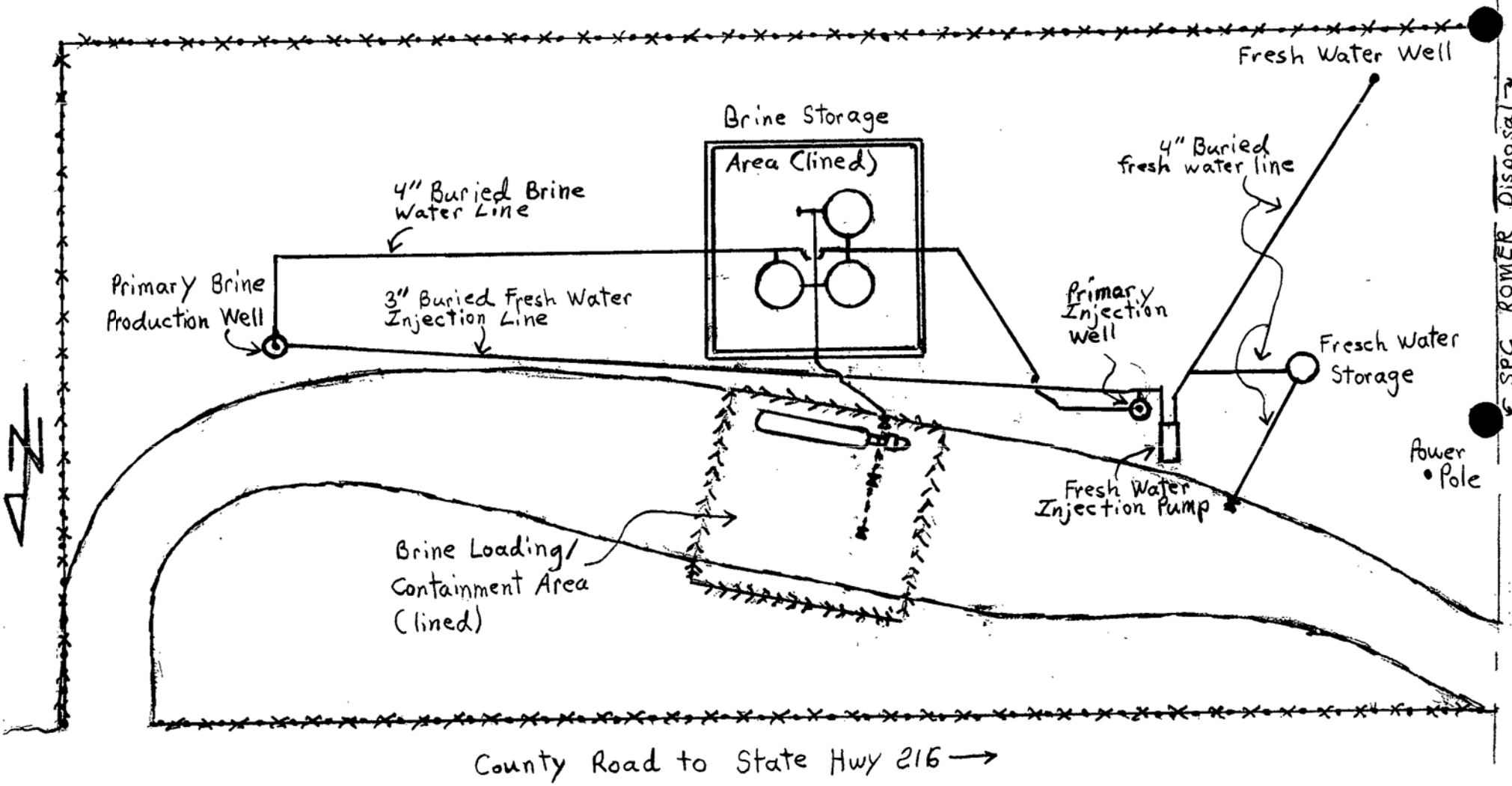
SE Rogers
FM Mitchell/AFE 487032
JT Willingham

Carlsbad Brine Station
(Plot Plan)

Scurlock Permian

IJF 10/94

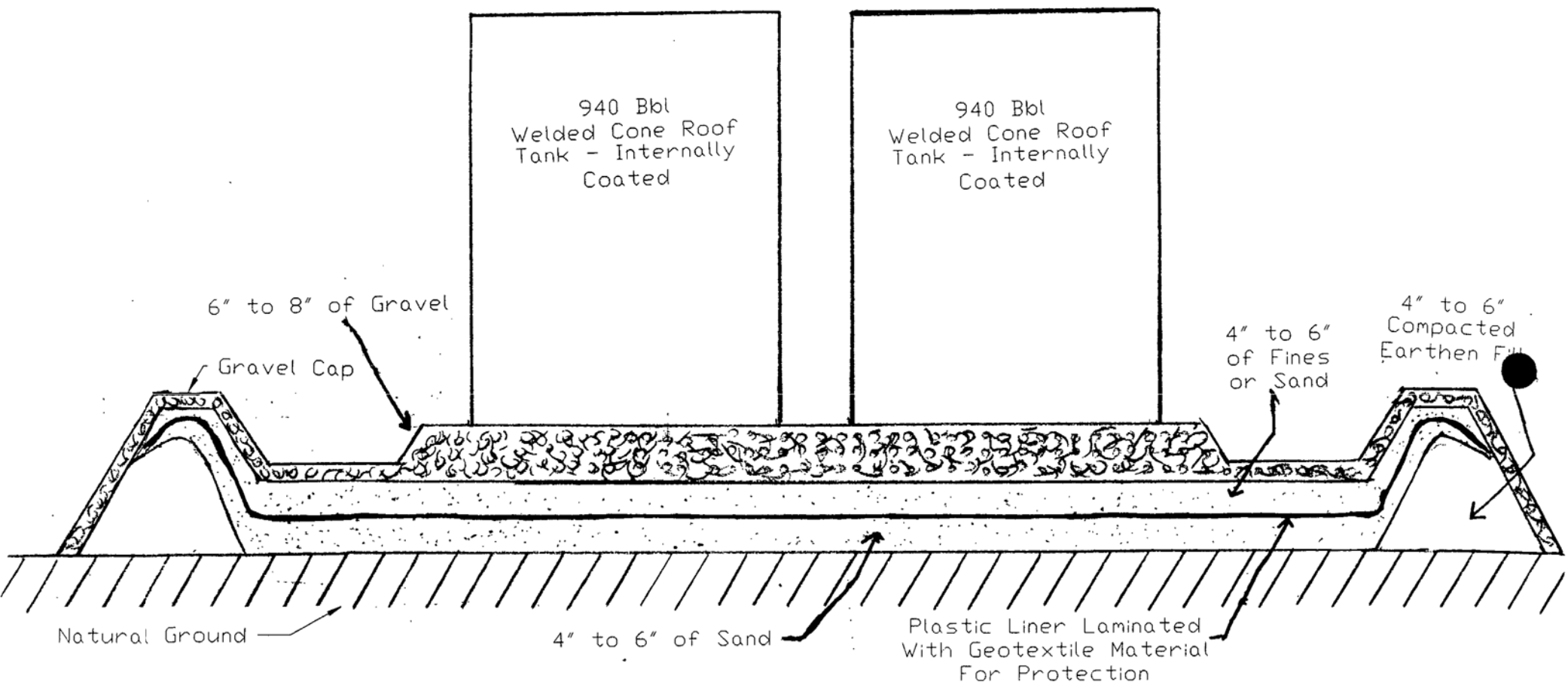
Eddy County
New Mexico



SCURLOCK PERMIAN CORPORATION

Scurlock Permian Corp.			
	SCALE: None	DRAWN BY:	
Brine Station			
DATE	APPROVED BY:	SHT. : of :	DRAWING NUMBER

Brine Storage Containment Area Specification Drawing
(Containment Area Sized For 133% Of Tank Storage Capacity)



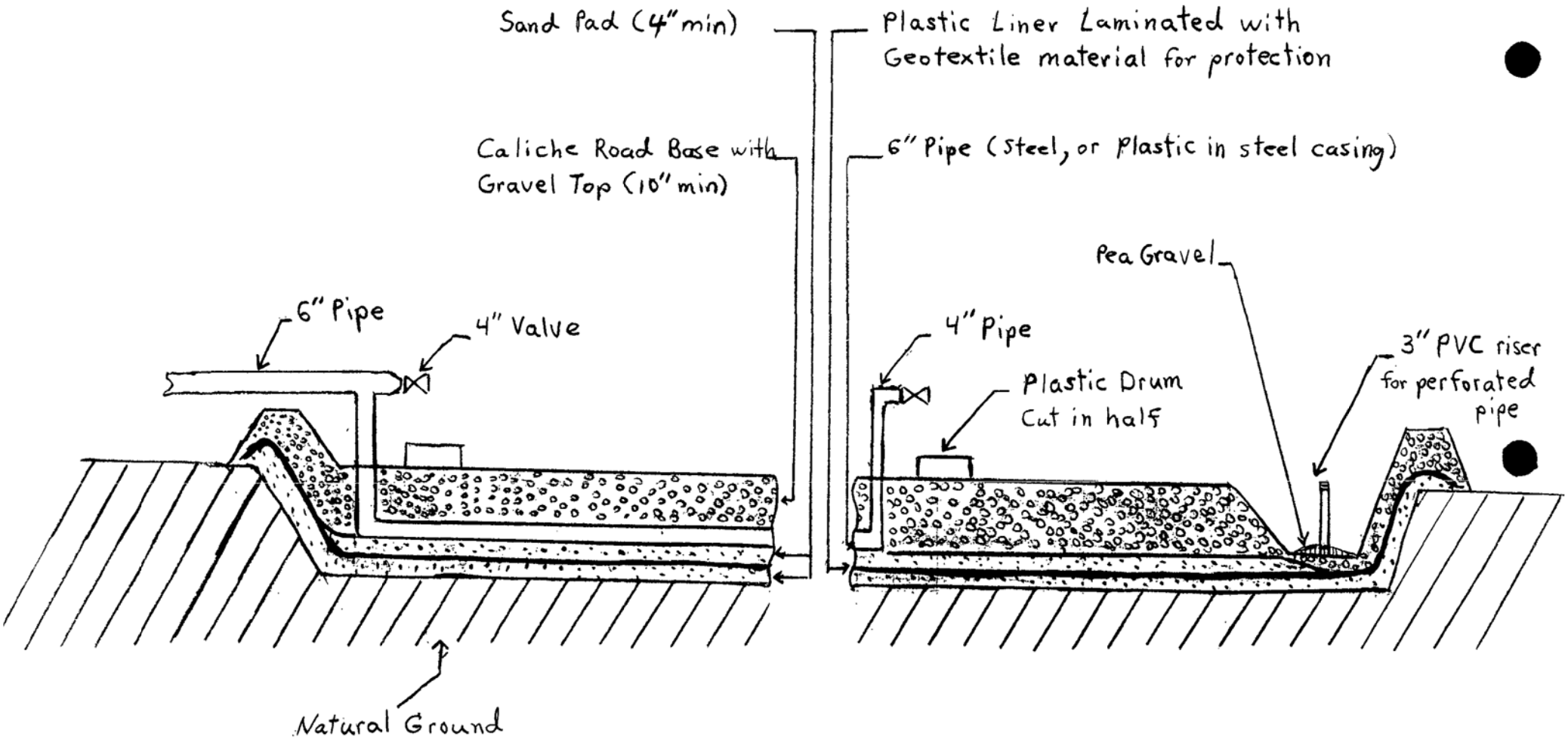
Truck Loading / Containment Area

(Cross Sectional View)

Scurlock Permian
Carlsbad Brine Station

Eddy County
New Mexico

IJF 10/94

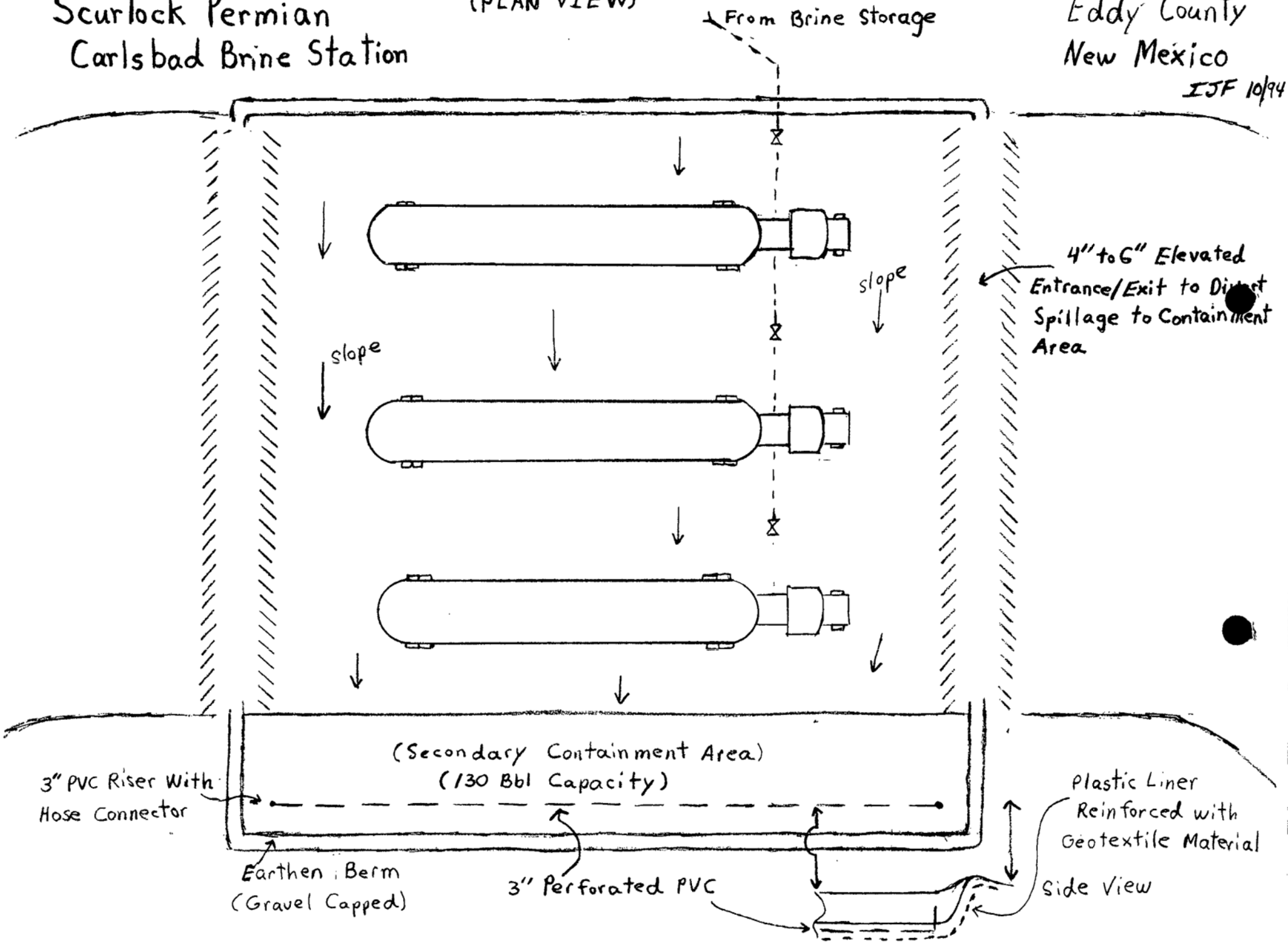


Truck Loading/Containment Area
(PLAN VIEW)

Scurlock Permian
Carlsbad Brine Station

Eddy County
New Mexico

IJF 10/94



CONTAINMENT LINER

SPECIFICATION DATA

PERMALON®

Reef Industries, Inc.
P.O. Box 750245
Houston, TX 77275-0245
Tel: (713) 484-6892
Toll Free: 1-800-231-2417
Fax: (713) 947-2053

I wanted to provide you with some weatherability information on our Permalon Ply X-210. This high density, cross-laminated poly is designed to be UV resistant by a state of the art stabilization system. When exposed to harsh weather conditions, including intense sun, X-210 should last in excess of five years. When buried, this material should last indefinitely. X-210 is chemically inert, non-leachable, and is resistant to root penetration, rodents and microbials(it is not a food source). Additionally, it meets ASTM D-3083 (Soil Burial). Ply X-210 is not prone to stress-cracking (ESC), thus, making a very good moisture and Radon barrier.

I hope this information will serve useful to you and please do not hesitate to call if you should have any questions.

Respectfully,

David Dewsnap
Chemist
Reef Industries, Inc.

Reef Industries, Inc.
"Since 1957"

Product Development Group
11/18/1993

Physical Properties of Geomembrane / Geotextile Composite

Material/Property	X1GPET45	X2GPET45
Basis Weight oz/yd^2 ASTM D-3776	9.83	15.1
Thickness (mils/mm) ASTM D-2103	31/0.88	39/0.99
Tensile Strength (lb_f) ASTM D - 882 - 3 in. (MD/TD)	190/159	263/222
Tensile Elongation (%) ASTM D - 882 - 3 in. (MD/TD)	63/83	46/54
Grab Tensile Strength (lb_f) ASTM D - 4632 (MD/TD)	194/168	303/250
Grab Elongation (%) ASTM D - 4632 (MD/TD)	70/110	-
Trapezoid Tear Strength (lb_f) ASTM D - 4533 (MD/TD)	91/80	132/135
Puncture Resistance (lb_f) ASTM D - 4833	85	100
Puncture Elongation (in) ASTM D - 4833	0.66	0.63
Mullen Burst (lb_f) ASTM D - 3786	237	333
Puncture Prop. & Tear (lb_f) ASTM D - 2582 (MD/TD)	-	55/57
Dart Impact Strength (lb_m) ASTM D-1709	6.5	9.9

ASTM D - 882 : Tensile strength of thin plastic sheeting (less than 40 mils)
ASTM D - 4632: Breaking Load and Elongation of Geotextiles.

N.B. These are typical values and not be interpreted as specifications. (Average Roll Values will be presented on availability of sufficient data)

P.O. Box 750250 • Houston, Texas 77275-0250
Tel: (713) 943-0070 • U.S.A. Toll Free: 1-800-231-6074 • Canada Toll Free: 1-800-847-5616
Fax: (713) 943-8085

PERMALON®

Reef Industries, Inc.
P.O. Box 750245
Houston, TX 77275-0245
Tel: (713) 484-6892
Toll Free: 1-800-231-2417
Fax: (713) 947-2053

PERMALON® PLY X-210 SPECIFICATIONS

Permalon Ply X-210 is a four layer composite laminate of three layer co-extruded polyolefin film. The material is composed of twelve distinct layers and is oriented in the machine direction, the transverse direction and at a 45 degree angle to both. The polymer is compounded with copolymer impact modifiers and copolymers to improve the impact resistance along with typical properties.

Burial Properties

Physical Property	Initial Result	Post Burial Result	%Change
3" Tensile	128 pounds	126 pounds	-1.5%
3" Elongation	714%	730%	+2.2%
100% Modulus	86 pounds	87 pounds	+1.2%

The differences in the test results fall within the expected machine error for these test methods.

Permeability

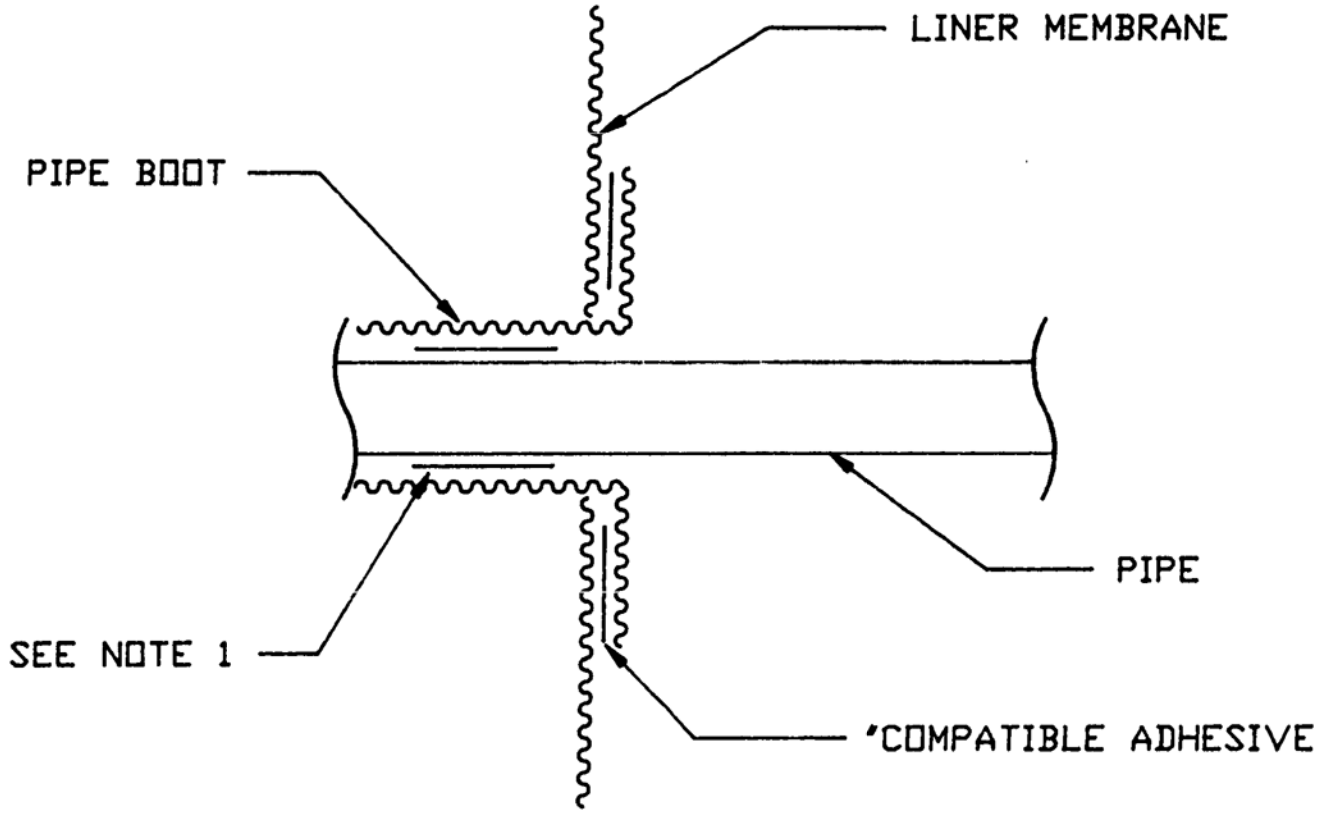
The water vapor transmission specifications for the Ply X-210 are as follows:

Property	ASTM Method	Units	Value
WVTR	E-96	perms	0.046
WVTR	E-96	cm/s	8.9 E -10

488

REEF
INDUSTRIES INC

PIPE INTRUSION THROUGH PERMALON LINER MEMBRANE



SPECIAL INSTRUCTIONS:

1) AFFIX PIPE BOOT TO PIPE USING ADHESIVE OR CLAMPS.
2) PLACE PIPE AND BOOT THROUGH LINER MEMBRANE.
3) AFFIX LINER MEMBRANE TO PIPE BOOT WITH ADHESIVE.
4) NOTE: PIPE BOOTS WILL BE FURNISHED BY MANUFACTURE WHEN EXACT PIPE DIAMETER IS DETERMINED BY CONTRACTOR.

SCURLOCK PERMIAN CORPORATION

333 Clay
P.O. Box 4648
Houston, Texas 77210-4648

(713) 646-4100

October 20, 1994

NMED-Water Quality Management
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Attention: William J. LeMay
Director

Re: Discharge Plan BW-024
Carlsbad Brine Station
Eddy County, New Mexico

Dear Mr. LeMay:

As per your letter dated September, 21, 1994 enclosed please find Scurlock Permian Corporation's check number 1155404 in the amount of $1,430.00 covering the flat rate and filing fee for Discharge Plan BW-024.

Thank you for your continued cooperation in this matter.

Very truly yours,

SCURLOCK PERMIAN CORPORATION

Stefanie M. Henson

Stefanie M. Henson
Land Records Department

0893240 573 1155404

REFERENCE NO.	DESCRIPTION	INVOICE AMOUNT	DISCOUNT DEDUCTION	NET AMOUNT
SCURLOCK PERMIAN CORPORATION				
101794	S482255	1,430.00	0.00	1,430.00
REMITTANCE STATEMENT	TOTALS THIS PAGE	1,430.00	0.00	1,430.00
LAST PAGE	TOTALS ALL PAGES	1,430.00	0.00	1,430.00

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 10-18-94,

or cash received on _____ in the amount of $ 1430 00

from Scurlock Permian Corporation

for (BW-027-024) CL Carlsbad Brine Station
(Facility Name) (DP No.)

Submitted by: _____ Date: _____

Submitted to ASD by: CHRIS EUSTICE Date: 11-2-94

Received in ASD by: [signature] Date: 11-2-94

Filing Fee ✓ New Facility ✓ Renewal ___

Modification ___ Other _____
(specify)

Organization Code 521.07 Applicable FY 95

To be deposited in the Water Quality Management Fund.

Full Payment ✓ or Annual Increment ___

SCURLOCK PERMIAN CORPORATION
A Subsidiary of Ashland Oil, Inc.
P.O. BOX 4648
HOUSTON, TX 77210

88-88/1113

DATE 10/18/94

CHECK NO. [redacted]

PAY EXACTLY * 1,430*DOLLARS AND 00 CENTS

AMOUNT
*******1,430.00

VOID AFTER 180 DAYS

TO THE ORDER OF
NMED-WATER QUALITY MANAGEMENT
% OIL CONSERVATION DIVISION
P O BOX 2088
SANTA FE NM 87504

SCURLOCK PERMIAN CORPORATION

BY [signature]

AUTHORIZED AGENT(S)

TEXAS COMMERCE BANK - SAN ANGELO, N.A., SAN ANGELO, TEXAS

[redacted]

SCURLOCK PERMIAN CORPORATION
333 Clay
P.O. Box 4648
Houston, Texas 77210-4648
(713) 646-4100

September 29, 1994

United States Department of the Interior
Fish & Wildlife Service
Suite D, 3530 Pan American Hwy, N.E.
Albuquerque, N. M. 87107

Attention: Jennifer Fowler-Propst

Dear Ms. Fowler-Propst:

This letter is in reference to your 9/8/94 letter to William LeMay, New Mexico Water Quality Control Commission, concerning our Discharge Plan BW-024. Our Steward Rogers has had conversations with you, and I had a follow up conversation with Mark Wilson. Please note the following:

- Scurlock Permian has received a 9/21/94 approved Discharge Plan from the Oil Conversation Division.

- In a discussion with Mark Wilson, I pointed out that our design includes piping, 2 closed storage tanks for the produced brine, a closed storage tank for the fresh water, an impoundment system for all storage tanks, and a secondary liner system underneath the tank storage and truck loading areas. Under normal operations there is no water exposed to wildlife. In the unlikely event of a spill, Scurlock Permian will remove any contained water upon the initial discovery.

Please call me at 713/646-4135 should you have any additional questions.

Very truly yours,

SCURLOCK PERMIAN CORPORATION

Frederick M. Mitchell, P. E.
Director of Engineering

:jag

c: State of New Mexico
Oil Conservation Division
State Land Office Building
P. O. Box 2088
Santa Fe, N.M. 87504
Attention: Mark Ashley
Distribution:
S. E. Rogers
J. Royster-BW-024
J. Willingham

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
Suite D, 3530 Pan American Highway, NE
Albuquerque, New Mexico 87107

October 11, 1994

Mr. Frederick M. Mitchell, P.E.
Director of Engineering
Scurlock Permian Corporation
P.O. Box 4648
Houston, Texas 77210-4648

Dear Mr. Mitchell:

Thank you for your September 29, 1994, letter providing further details relative to your discharge plan application (BW-024) with the New Mexico Water Quality Control Commission, Oil Conservation Division. Mark Wilson, our Environmental Contaminant Specialist, has reviewed the information you provided and we believe that your operation should not have any significant adverse effects upon fish or wildlife resources in New Mexico.

Thanks again for your genuine interest in protecting natural resources.

Sincerely,

Jennifer Fowler-Propst
State Supervisor

cc:
New Mexico Water Quality Control Commission, Oil Conservation Division, Santa Fe, New Mexico

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan and discharge plan renewal application have been submitted to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(BW-024) - Scurlock Permian Corporation, Owen Mobley, Vice President, P.O. Box 4648, Houston, Texas, 77210-4648, has submitted a discharge plan application for their proposed Carlsbad Brine Station, located in the SE/4 NW/4 of Section 23, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico. An average of 1000 barrels per day of 1.2 specific gravity brine water will be produced for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth from approximately 50 to 200 feet with a total dissolved solids concentration of approximately 4000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(BW-009) - Sims-McCasland Water Sales, Bob Patterson, Manager, P.O. Box 99, Eunice New Mexico, 88231, has submitted an application for the renewal of a discharge plan for the Sims-McCasland Brine Station, located in the NE/4 NE/4 of Section 32, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico. Approximately 200 barrels per day of 1.2 specific gravity brine water is produced for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of 140 to 160 feet with a total dissolved solids concentration of 2500 to 3000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held.

A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 25th day of July, 1994.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

S E A L

WILLIAM J. LEMAY, Director

SCURLOCK PERMIAN CORPORATION

333 Clay
P.O. Box 4648
Houston, Texas 77210-4648

(713) 646-4100

July 1, 1994

JUL _ 6 1994

Mr. William J. Lemay
Director of Oil Conservation Division
Oil Conservation Division
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

Re: Request for Brine Well Permit for Scurlock Permian Corporation in Eddy County, SE/4 NW/4 of Sec 23, T-22S, R-27E

Dear Mr. Lemay:

Permission is requested to install a brine production facility (rock salt solution mine) in Eddy County, referred to as the Carlsbad Brine Recovery Facility.

This facility will be used for the production of saturated 10 lb. per gallon brine for use by the oil industry. Utilizing a two well system known as Dunaway #1 and Dunaway #2, brine will be leached from the Salado salt section, between 700' and 850' in depth.

Attached is the application cover page, description of items I through IX, and a detailed discharge plan concerning the facility.

Your early and favorable consideration will be appreciated.

Very truly,

Steward E. Rogers

Steward E. Rogers
Operations Coordinator

attachments

cc: Oil Conservation Division
District II
P.O. Drawer DD
Artesia, NM 88211-0719

State of New Mexico
Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87501

JUL 6 1994

DISCHARGE PLAN APPLICATION FOR BRINE EXTRACTION FACILITIES

(Refer to OCD Guidelines for assistance in completing the application.)

☒ NEW ☐ RENEWAL

I. **FACILITY NAME:** Carlsbad Brine Recovery Facility

II. **OPERATOR:** Scurlock Permian Corporation

ADDRESS: 333 Clay Street, P.O. Box 4648 Houston, Texas 77210-4648

CONTACT PERSON: Steward E. Rogers **PHONE:** 210/620-1087

III. **LOCATION:** SE/4 NW/4 **Section** 23 **Township** 22S **Range** 27E
Submit large scale topographic map showing exact location.

IV. Attach the name and address of the landowner of the facility site.

V. Attach a description of the types and quantities of fluids at the facility.

VI. Attach a description of all fluid transfer and storage and fluid and solid disposal facilities.

VII. Attach a description of underground facilities (i.e. brine extraction well).

VIII. Attach a contingency plan for reporting and clean-up of spills or releases.

IX. Attach geological/hydrological evidence demonstrating that brine extraction operations will no adversely impact fresh water.

X. Attach such other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.

XI. **CERTIFICATION**

I hereby certify under penalty of law that I have personnaly examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Name: Steward E. Rogers **Title:** Operations Coordinator

Signature: Steward E. Rogers **Date:** 7/1/94

DISTRIBUTION: Original and one copy to Santa Fe with one copy to appropriate Division District Office.

SCURLOCK PERMIAN CORPORATION

333 Clay
P.O. Box 4648
Houston, Texas 77210-4648

(713) 646-4100

July 18, 1994

Mr. William J. Lemay
Director of Oil Conservation Division
Oil Conservation Division
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

Re: Carlsbad Brine Recovery Facility

Dear Mr. Lemay:

Please find enclosed a Surface Schematic - Exhibit "L", for the above referenced facility. This schematic was not included in our previous letter dated July 1, 1994. If you have any questions, please do not hesitate to call me at (210) 620-1087. Thank you for your time and cooperation in this matter.

Very truly,

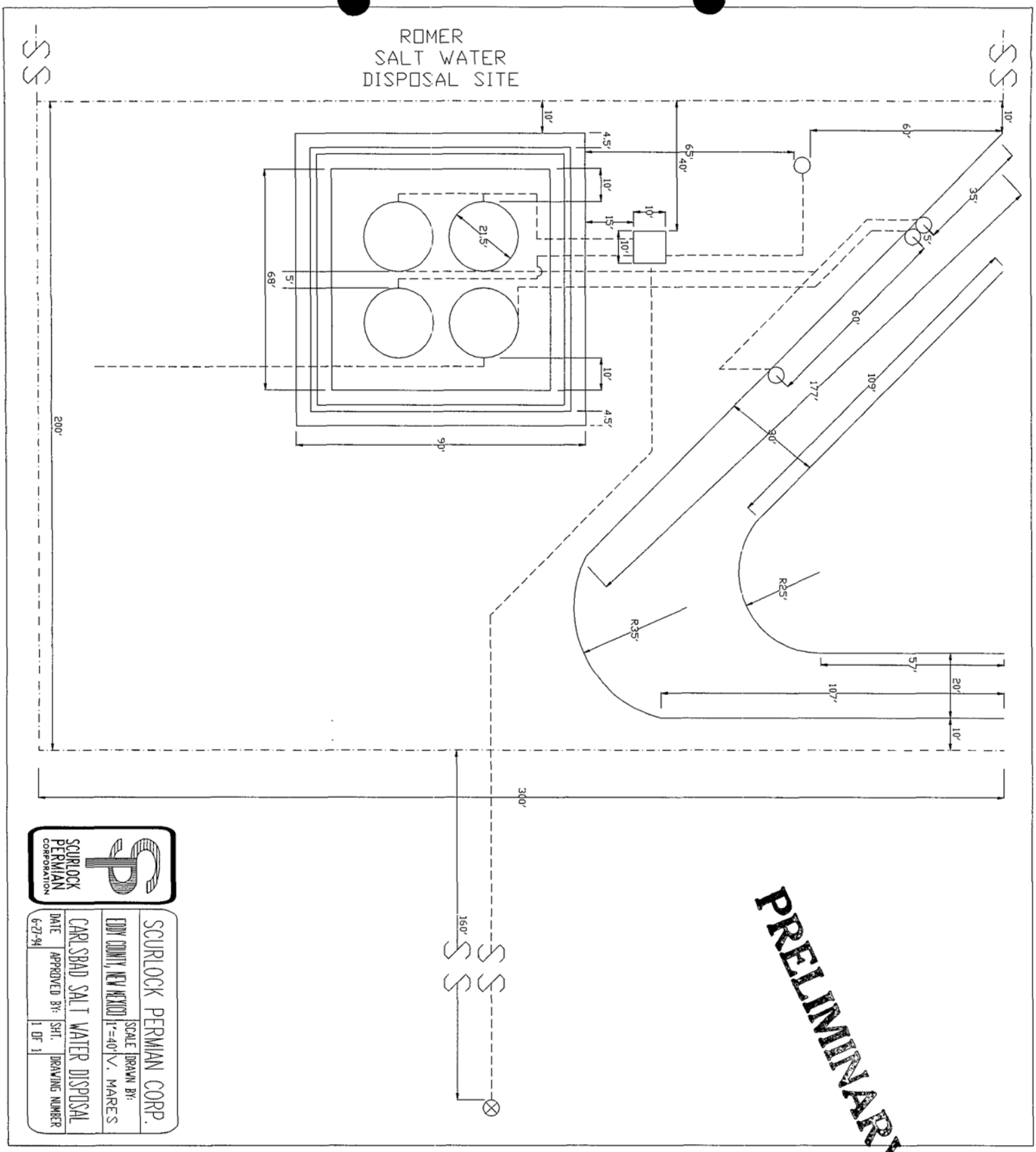
Steward E. Rogers

Steward E. Rogers
Operations Coordinator

encl.

cc: Oil Conservation Division
District II
P.O. Drawer DD
Artesia, NM 88211-0719

EXHIBIT "L"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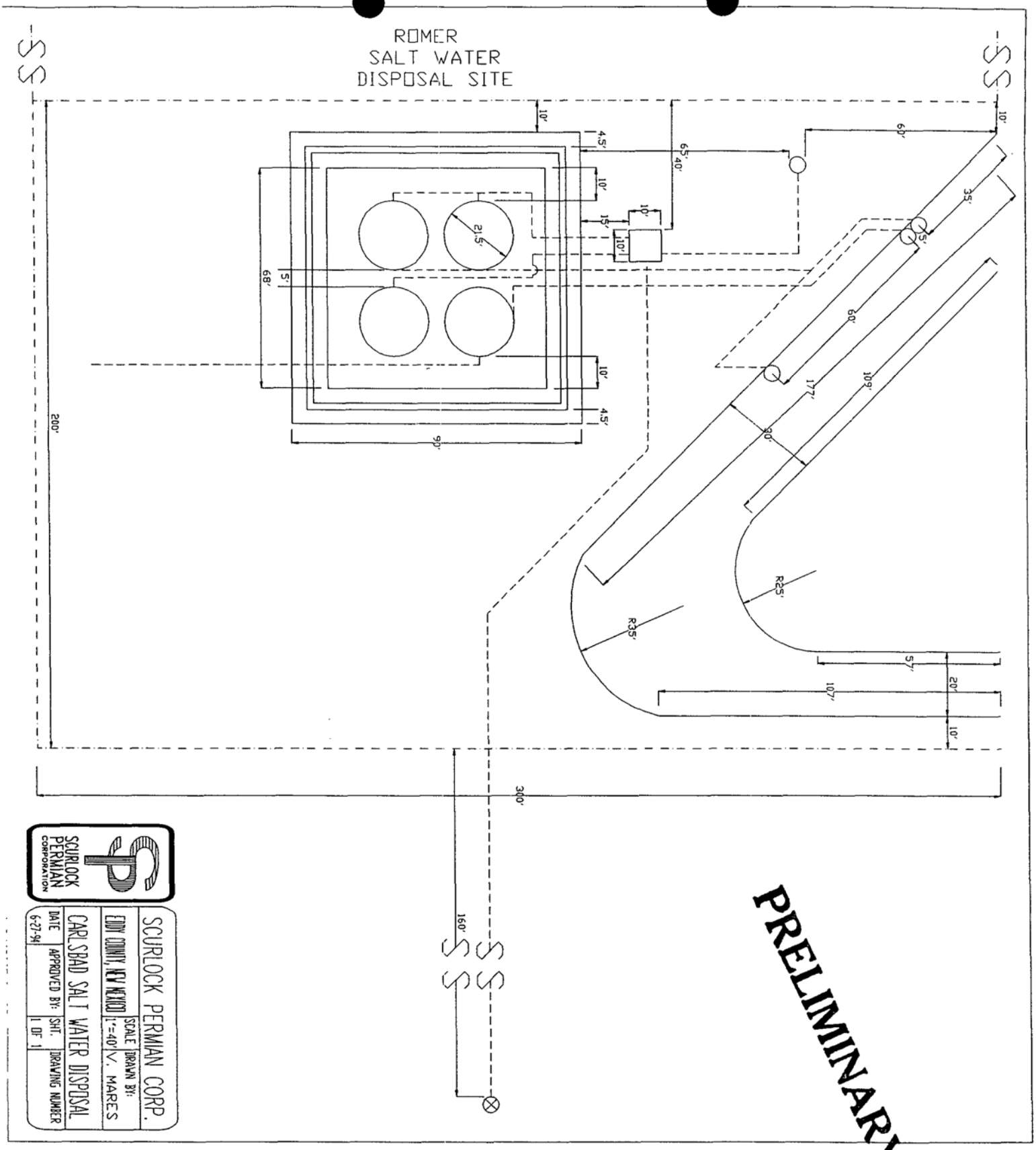
SCURLOCK PERMIAN CORPORATION
SCURLOCK PERMIAN CORP.
EDDY COUNTY, NEW MEXICO
SCALE 1"=40'
DRAWN BY: V. MARES
CARLSBAD SALT WATER DISPOSAL
DATE 6-27-94
APPROVED BY:
SHT. 1 OF 1
DRAWING NUMBER
PRELIMINARY

EXHIBIT "L"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PRELIMINARY
SCURLOCK PERMIAN CORPORATION
SCURLOCK PERMIAN CORP.
EDDY COUNTY, NEW MEXICO
SCALE 1"=40'
DRAWN BY: V. MARES
CARLSBAD SALT WATER DISPOSAL
DATE 6-27-94
APPROVED BY:
SHT. 1 OF 1
DRAWING NUMBER

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
Suite D, 3530 Pan American Highway, NE
Albuquerque, New Mexico 87107

September 8, 1994

Cons. #2-2-94-I-570

William J. Lemay, Director
New Mexico Water Quality Control Commission
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. Lemay:

This responds to your agency's public notice dated July 25, 1994, regarding the State of New Mexico's proposal to renew the discharge plan for the applicant listed below.

> **(BW-009) - Sims-McCasland Water Sales, Bob Patterson, Manager, for the proposed Sims-McCasland Brine Station**, located in the NE/4 NE/4 of Section 32, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico. Approximately 200 barrels per day of 1.2 specific gravity brine water is produced for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of 140 to 160 feet with a total dissolved solids concentration of 2,500 to 3,000 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

We recommend that all brine water produced by the applicant be contained within a pipe, closed storage tank, or transport vehicle. No produced water should be discharged into a surface impoundment or open-topped tank where it could become available to wildlife, except in the event of an accidental breach of a pipe or storage tank. So long as the above recommendation is implemented, the U.S. Fish and Wildlife Service (Service) has no objection to the Oil Conservation Division granting approval for the discharge plan application outlined above.

A second proposal to issue the following discharge permit was also included in the public notice:

> **(BW-024) - Scurlock Permian Corporation, Owen Mobley, Vice President for the proposed Carlsbad Brine Station**, located in the SE/4 NW/4 of Section 23, Township 22 South, Range 27 East, NMPM Eddy County, New Mexico. An average of 1,000 barrels per day of 1.2 specific gravity brine water will be produced for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth from approximately 50 to 200 feet with a total dissolved solids concentration of approximately 4,000 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed.

No information is provided in the public notice regarding the disposition of the land proposed for use in constructing the new brine station. The proposed construction site should be evaluated for impacts to species listed or proposed to be listed as endangered or threatened. Endangered species with potential of occurring in the Carlsbad area include the interior least tern, northern aplomado falcon, Pecos gambusia, and Lloyd's hedgehog cactus. In addition, the threatened Pecos bluntnose shiner, gypsum wild buckwheat, and Lee's pincushion cactus may occur in the vicinity of the proposed brine station. Under Section 7(a)(2) of the Endangered Species Act (Act), Federal agencies are required to consult with the Service on any action that "may affect" a listed species. The proposed project should be reviewed for the potential for impacts to these species, including indirect impacts such as those occurring downstream, downslope, or downwind.

Construction should also be designed in an attempt to avoid or minimize impact to the following category 1 candidate species: Arkansas River shiner, Pecos pupfish, and Pecos springsnail. The following category 2 candidate species may also be found in the project area (see enclosure): occult little brown bat, swift fox, Baird's sparrow, ferruginous hawk, loggerhead shrike, western snowy plover, white-faced ibis, blue sucker, Rio Grande shiner, Dunes sagebrush lizard, Texas horned lizard, Ovate vertigo (snail), Texas hornshell (mussel), shining coralroot, Tharp's bluestar, and Wright's water-willow. Category 1 candidates are those species for which the Service has substantial information to support their listing as endangered or threatened. Development and publication of proposed rules for these species is anticipated. Category 2 candidates are those species for which the Service has information indicating that proposing to list is possibly appropriate, but for which substantial data on biological vulnerability or threats are not currently available to support the immediate preparation of proposed rules. Candidate species have no legal protection under the Act and are included in this document for planning purposes only.

We recommend that all brine water produced by the applicant be contained within a pipe, closed storage tank, or transport vehicle. No produced water should be discharged into a surface impoundment or open-topped tank where it could become available to wildlife, except in the event of an accidental breach of a pipe or storage tank. So long as none of the above federally listed species are impacted, and all brine water is kept unavailable to wildlife, the Service has no objection to the Oil Conservation Division granting approval for the discharge plan application outlined above.

Thank you for the opportunity to review and comment on these discharge plan applications. If you have any questions, please contact Mark Wilson at (505) 883-7877.

Sincerely,

Sonja Jahnsdorf

for Jennifer Fowler-Propst
State Supervisor

Enclosure

cc: (wo/enc)
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico

Species List
Proposed Construction of a Brine Station
September 8, 1994

Endangered

Interior least tern (Sterna antillarum athalassos) - This species nests on sandy beaches on shorelines of streams, rivers and lakes and is found on Bitter Lake National Wildlife Refuge.

Authority: John P. Hubbard, New Mexico Department of Game and Fish, P.O. Box 25112, Santa Fe, New Mexico 87504, (505) 827-9925.

Northern aplomado falcon (Falco femoralis septentrionalis) - This species is very rare in New Mexico. The historic range of this bird includes Catron, Chaves, Dona Ana, Eddy, Grant, Hidalgo, Lea, Lincoln, Luna, Otero, Sierra, and Socorro Counties. This species is found in open woodland, savanna, or grassland habitats.

Authority: Sandy Williams, New Mexico Department of Game and Fish, P.O. Box 25112, Santa Fe, New Mexico 87504, (505) 827-9914.

Pecos Gambusia (Gambusia nobilis) - This species is found in the Bitter Lake National Wildlife Refuge in Chaves County.

Authority: Jim Johnson, U. S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, New Mexico 87103-1306, (505) 766-3972.

Lloyd's hedgehog cactus (Echinocereus lloydii) - This endangered species occurs in Carlsbad National Park and west of Artesia in Eddy County. It is associated with dry rocky hills, slopes, and limestone and granite outcrops at approximately 5,000 feet elevation.

Authority: Robert Sivinski, New Mexico Energy, Minerals and Natural Resources Department, Forestry and Resources Conservation Division, P.O. Box 1948, Santa Fe, New Mexico 87504-1948, (505) 827-7865.

Threatened

Pecos bluntnose shiner (Notropis simus) - Present distribution is in the Pecos River from Santa Rosa to Artesia. Essential habitat for this species includes permanent water, main river channel habitat with sandy substrate, and a low velocity flow. Backwaters, pools, and riffles are used by subadults. Natural springs have also been found to contain some individuals.

Authority: Gerald Burton, U.S. Fish and Wildlife Service, Ecological Services, 3530 Pan American Highway, NE., Suite D, Albuquerque, New Mexico 87107, (505) 883-7877, and Dr. David Propst, Department of Game and Fish, Santa Fe, New Mexico 87503, (505) 827-9906.

Gypsum wild buckwheat (Eriogonum gypsophilum) - This species is presently restricted to gypsum soils between Carlsbad Caverns National Park and the Pecos River and in the Seven River Hills in Eddy County.

Authorities: Richard Spellenburg, New Mexico State University, Las Cruces, New Mexico 88003-0001, (505) 646-3732, and Jess Juen, U.S. Bureau of Land Management, P.O. Box 1778, Carlsbad, New Mexico 88220, (505) 887-6544.

Lee pincushion cactus (Coryphantha sneedii var. leei) - This species occurs on the eastern edge of the Guadalupe Mountains on limestone slopes, ledges, and ridgetops at 4,100 to 5,900 feet.

Authority: Robert Sivinski, New Mexico Energy, Minerals and Natural Resources Department, Forestry and Resources Conservation Division, P.O. Box 1948, Santa Fe, New Mexico 87504-1948, (505) 827-7865

Category 1 Candidates

Arkansas River shiner (Notropis girardi) - this silvery minnow inhabits shallow, often broad, turbid and unshaded channels of major streams. Prefers uniformly sandy substrates. Native range is in the Canadian River drainages of northeastern New Mexico and has been introduced in the Pecos River.

Authority: Dr. David Propst, New Mexico Department of Game and Fish, Villagra Building, Santa Fe, New Mexico 87503, (505) 827-9901.

Pecos pupfish (Cyprinodon pecosensis) - This species is found in the Pecos River and closely associated waters of the floodplain from Bitter Lake National Wildlife Refuge south into Texas. This species occurs in many habitats, but is most abundant in highly saline waters.

Authority: Dr. David Propst, New Mexico Department of Game and Fish, Villagra Building, Santa Fe, New Mexico 87503, (505) 827-9901.

Pecos springsnail (Fonticella pecosensis) - A minute snail with a narrowly elongate shell. It is found in mud and pebble substrate in natural springs.

Authority: Dr. Patricia Mehlhop, New Mexico Natural Heritage Program, University of New Mexico, 2500 Yale Blvd., SE, Albuquerque, New Mexico 87131-1091, (505) 277-1991.

Category 2 Candidates

Occult little brown bat (Myotis lucifugus occultus) - This species is a montane dweller and roosts in natural caves, mine tunnels, hollow trees, or buildings.

Authority: Scott Altenbach, University of New Mexico, Department of Biology, Albuquerque, New Mexico 87131, (505) 277-3411.

Swift fox (Vulpes velox) - prefers open desert and plains. Usually found in short-grass prairie with loose sandy soil.

Authority: John Hubbard, New Mexico Department of Game and Fish, P.O. Box 25112, Santa Fe, New Mexico 87504, (505) 827-9925.

Baird's sparrow (Ammodramus bairdii) - Baird's sparrow occupies areas of open prairie grassland with patches of shrubbery such as wolfberry, wild rose, and willow. The species also occupies moist meadows and tall grass prairies associated with dense grass or other dense herbaceous vegetation.

Authority: None.

Ferruginous hawk (Buteo regalis) - Found almost statewide during migration. This bird seems to key in on wide open grasslands and prairies, especially for nesting.

Authority: Sandy Williams, New Mexico Department of Game and Fish, P.O. Box 25112, Santa Fe, New Mexico 87504, (505) 827-9914.

Loggerhead shrike (Lanius ludovicianus) - This species inhabits grass/shrubland, open woodland, and chaparral. The bird is rare to fairly common at lower and locally at middle elevations; casual at higher elevations. Resident statewide.

Authority: Steve Lewis, U.S. Fish and Wildlife Service, Bishop Henry Whipple Federal Building, One Federal Drive, Fort Snelling, Minnesota, 55111-4056, (612) 725-313.

Western snowy plover (Charadrius alexandrinus nivosus) - Inhabits flat sandy areas, alkali flats, and areas near water which are devoid of vegetation or have very little vegetation.

Authority: Sandy Williams, New Mexico Department of Game and Fish, P.O. Box 25112, Santa Fe, New Mexico 87504, (505) 827-9914.

White-faced ibis (Plegadis chihi) - This species inhabits salt and freshwater marshes, shallow margins of muddy pools, ponds, and rivers.

Authority: Sandy Williams, New Mexico Department of Game and Fish, P.O. Box 25112, Santa Fe, New Mexico 87504, (505) 827-9914.

Blue sucker (Cycleptus elongatus) - Inhibits deep river channels, pools with moderate currents, reservoirs and deep lakes. Preferred habitat are run-riffles in large rivers.

Authority: Mr. Gerald Burton, U.S. Fish and Wildlife Service, New Mexico Ecological Services Office, 3530 Pan American Highway, NE., Suite D, Albuquerque, New Mexico 87107, (505) 883-7877.

Rio Grande shiner (Notropis jemezanus) - This species is a small (up to 3 inches) silvery fish with a dark, lateral stripe. The body is elongated and moderately compressed. The dorsal fin is triangular, pectoral bluntly pointed, pelvic short and truncate, and anal falcate. There are no spines on the dorsal fin. It inhabits open rivers and streams with gravel, sand, or cobble bottoms sometimes overlain with silt.

Authority: Dr. David Propst, New Mexico Department of Game and Fish, P.O. Box 25112, Santa Fe, New Mexico 87504, (505) 827-9906.

Dunes sagebrush lizard (Sceloporus arenicolous) - This species found in areas of bare sand in active sand dune areas of southeastern New Mexico and adjacent regions of Texas. Associated vegetation may include dwarf shinnery oak, sand sagebrush, and prairie yuccas. Research has indicated a strong correlation between shinnery oak removal and population declines in this species.

Authority: Charlie Painter, New Mexico Department of Game and Fish, P.O. Box 25112, Santa Fe, New Mexico 87504, (505) 827-9901.

Texas horned lizard (Phrynosoma cornutum) - Dark stripes radiate from the eye region on each side of its face. Two rows of pointed fringe scales on each side of the body. The lizard inhabits arid and semiarid open country with sparse plant growth--bunch grass, cactus, juniper, acacia, and mesquite. The substrate may be of sand, loam, hardpan, or rock. Some loose soil is usually present in which these lizards bury themselves. They also seek shelter under shrubs, in burrows of other animals, or among rocks.

Authority: Charlie Painter, New Mexico Department of Game and Fish, P.O. Box 25112, Santa Fe, New Mexico 87504, (505) 827-9901.

Ovate vertigo snail (Vertigo ovata) - this species is found in a low elevation marsh environment within a few meters of springbrooks, under cover of plants and litter, and on moist soil.

Authority: Mr. Gerald Burton, U.S. Fish and Wildlife Service, New Mexico Ecological Services Office, 3530 Pan American Hwy. NE., Suite D, Albuquerque, New Mexico 87107, (505) 883-7877.

Texas hornshell (Popenaias popei) - This species is found only in Eddy County, New Mexico. Very litte is known about this invertebrate.

Authority: None.

Shining coral root (Hexalectris nitida) - Terrestrial saprophyte with smooth, stout, slender, red-purple "stems" arising from a fleshy rhizome. It is found in moist, shaded canyons at mid to higher elevations, in pinyon-juniper, oak, and riparian woodlands.

Authority: Robert Sivinski, New Mexico Energy, Minerals and Natural Resources Department, Forestry and Resources Conservation Division, P.O. Box 1948, Santa Fe, New Mexico 87504-1948, (505) 827-7865.

Tharp's bluestar (Amsonia tharpii) - A low, herbaceous perennial having a woody rootstock. Stems are about 8 Inches tall and covered with small, shaggy hairs. Leaves are 2 inches long and 1/2 inch wide. Leaves are crowded in the axils and dimorphic: Upper leaves are linear to linear-lanceolate: and lover leaves are elliptic-lanceolate. The inflorescence is terminal, few-flowered, and appear int April-May. The flowers occur on short pedicels with long hairs. The trumpet shaped flowers are pale blue-green white in color and have five elliptical-spreading petals. Occurs on limestone hills in the Transpecos area of Texas (Pecos County) and New Mexico (Eddy County).

Authority: Robert Sivinski, New Mexico Energy, Minerals and Natural Resources Department, Forestry and Resources Conservation Division, P.O. Box 1948, Santa Fe, New Mexico 87504-1948, (505) 827-7865.

Wright's water willow (Justicia wrightii) - A low branched perennial, with grey colored stems up to 8 inches tall. Leaves are rigid, obovate, and less than 1 inch in length. Flowers are solitary and sessile in the upper axils, somewhat bell-shaped with 2 lobes, about 8 mm in length and purplish-pink in color. Apparently, the flowers are short lived. Very little is known about habitat requirements other than it was collected on calcareous hills near Carlsbad, in Eddy County, New Mexico. This species is also known from the Edward Plateau of Texas. Warnock's water willow (J. warnockii) is sympatric with wright's water willow in New Mexico and west Texas.

Authority: Dr. Robert Sivinski, New Mexico Energy, Minerals and Natural Resources Department, Forestry and Resources Conservation Division, P.O. Box 1948, Santa Fe, New Mexico 87504-1948, (505) 827-7865.

A DISCHARGE PLAN

FOR

BRINE EXTRACTION FACILITIES

OF

SCURLOCK PERMIAN CORPORATION

at the Well site known as

CARLSBAD BRINE RECOVERY

located in

SW/4 NW/4 Sec 23 T-22S, R-27E

Eddy County, N.M

Prepared for compliance with

New Mexico Water Quality Control Regulations

EXHIBIT INDEX

I. SCURLOCK PERMIAN CORPORATION CARLSBAD BRINE RECOVERY, A NEW APPLICATION

II. SCURLOCK PERMIAN CORPORATION

III. LOCATION OF FACILITY:

SE/4 NW/4 Sec 23, 22S, 27E, Eddy County, New Mexico
See Exhibits "A" & "B"

IV. LANDOWNERS:

Ray Dunaway
4307 Sycamore
Carlsbad, New Mexico

Jim Dunaway
P.O. Box 81
Taylor, Arizona 85939

Jerry Dunaway
P.O. Box 424
Snowflake, Arizona 85937

Darlene Cowart
440 Jensen
Grants, New Mexico 87020

V. TYPES AND QUANTITIES OF FLUID STORED OR USED AT THE FACILITY:

Source Water:

Fresh water will be supplied and metered from a well owned and operated by Scurlock Permian Corporation.

Brine Water:

Fresh water is circulated through the underground rock salt formation, salt is leached, and the water returns to the surface as brine.

Produced brine and source water will be stored in tanks located approximately 350 feet from the Brine Recovery Well. Individual tanks, all of which will be above ground will not exceed 1,000 barrel capacity. Tanks will be constructed of API approved fiberglass or welded steel. Brine storage tanks will be inter-connected and enclosed in an earthen ditch (firewall berm) designed to contain a volume one-third more than total brine tank volume. A secondary liner of impermeable polyethylene material will be installed under the entire brine storage area to aid in rapid detection of tank seepage and preventing ground saturation in the event of a leak. This material will be covered with sand or gravel to prevent exposure or abrasion. Total brine storage will not exceed 3,000 barrels.

The average volume of brine produced daily is dependent upon drilling and work-over activity. Projected volumes are expected to average 1,000 barrels per day.

VI. TRANSFER, STORAGE, AND DISPOSAL OF FLUIDS AND SOLIDS:

A. All piping and storage containers will be constructed of API approved material. Steel pressured lines will be constructed of Schedule 40, API 5L, Grade X-42 API approved pipe. Non pressured lines will be constructed of API approved steel or fiberglass material. Average operating pressure will not exceed 150 psi. Well bores are shown schematically on attached Exhibit "C".

	DUNAWAY NO. 1	DUNAWAY NO. 2
$9^{5/8}$" 40#/ft casing	300 ft	300 ft
7" 23#/ft casing	700 ft	825 ft
$2^{7/8}$" 6.5#/ft tubing	850 ft	850 ft

This is a two well program designed to leach salt from the Salado salt formation. Under normal operation, fresh water will be pumped down Well No. 2, transverse the 354 ft. between Well No. 2 and Well No. 1 via hydraulically initiated fracture. The fresh water will leach salt and be recovered via $2^{7/8}$" tubing in Well No. 1 as saturated brine.

The $9^{5/8}$" and the 7" casing will both be cemented to surface, providing two cemented strings of casing for the protection of water sands. The design of the system is such that flow of water can be reversed between wells via the $2^{7/8}$" tubing with no detrimental effects on environmental or operating integrity.

In the event that a horizontal fracture between wells is not successful, subject to commission approval, the 7" casing will allow the drilling of a $6^{1/8}$" hole into the deeper salt section between 1,100 and 2,000 ft, and conversion into a standard brine recovery well.

1. Tankage and Storage Areas:

   Stored volumes of extracted brine will not exceed 3,000 barrels. The above ground tanks will be either API approved welded steel or fiberglass. Brine tanks will be interconnected, requiring a firewall or berm equal in capacity to one-third more than total volume. A secondary polyethylene liner will be installed under the brine storage area.

2. Surface Impoundments:

   There will be no surface impoundments. All fluid will be stored in above ground tanks.

3. Leach Fields:

   This operation will leach salt from the Salado salt formation from 700 feet to 850 feet.

4. Solids Disposal:

There will be no solids disposal from this operation. All solids will be salt dissolved to form brine. The saturated fluid will be trucked from facility site to various drilling or work-over operations.

B. For each of the transfer/storage/disposal methods listed above:

1. Ground water will be fully protected by the design of the two wells. Both wells will have two strings of casing penetrating and cemented through the fresh water sands. All brine storage facilities will be above ground, allowing actual observation in the event of a leak.

Fresh water for the project will be obtained from the applicant's water well. This water will be analyzed on a yearly basis or more often as per OCD request. There are no potable water wells in the vicinity to monitor. Primary source of domestic supply water is from the Otis Water Users Cooperative due to the poor quality of ground water in this area.

2. Sampling of the saturated brine will be on a regular basis to insure commercial brine is being recovered. Samples can be recovered from the brine storage tanks, loading headers, or from the low pressure lines connecting the brine tanks.

Flow calculations will be through meters and storage volumes. Fresh water injected into the well will be metered, volumes of recovered brine water will be compared. A ratio of one to one will exist on a properly operating system.

3. Failure of the Discharge System:

Monitoring of the system will consist of a metering of fresh water into the system versus a measurement of recovered brine. A ratio variance would indicate the probable loss of fluid from either a leak or an excursion out of zone. The very low operating pressure utilized in a two well system would make an out of zone excursion very unlikely. All brine piping will be valved in such a manner that each individual section can be pressure tested at required intervals.

C. Off Site Disposal:

There should be no off-site disposal under normal operating conditions.

D. Proposed Modification:

1. n/a

2. n/a

E. Underground piping will consist of the well bores described in Section VI A and the brine transfer lines which will consist of either $2^{7/8}$" OD, .154" wall thickness, API 5L, Grade X-42 or 3½" OD, .216" wall thickness, API 5L, Grade X-42 steel pipe. All steel piping used for brine transfer will be valved in such a manner that isolation of individual segments will be possible. Prior to utilization of the system, pressured lines will be hydrostatically tested to 275 psi.

F. Inspection, Maintenance and Reporting:

1. There will be no surface impoundments. Brine storage will consist of API approved welded steel or fiberglass tanks with an earthen firewall (dam) encircling them to serve as a retainer wall should a leak or spill occur. Any leak in the tankage or piping will be detected by the system operator during his inspection. The brine storage area will be protected from underground saturation by the use of a secondary liner of polyethylene.

   In the event of a problem, the system will be shut down until repairs have been accomplished.

   The Director will be notified within 48 hours of the detection or suspected detection of a leachate excursion. Subsequent reports will be provided as requested by the Director. Required monitoring reports will be filed quarterly or more frequently as requested.

2. Ground Water Monitoring:

   Two water wells are known to exist in the immediate vicinity of our proposed project. The closest well is in the SW/4 of the NW/4 of Section 23, approximately 1,600 feet to the west of our project. Topography indicates this well to be updip of our project, making monitoring of this water uninformative. The owner of this well, Mr. Bill Phillips, has informed us that his well has been non-operational due to pump problems for the past several years. No water wells are known to exist to downdip to the east prior to encountering the river.

3. General Procedure for Containment of Precipitation and Runoff:

   Brine surface facilities are provided with an earthen firewall encircling them to serve as a retainer wall. As no surface impoundments are to be used or proposed, precipitation and runoff through the area will have no detrimental effect on the surroundings.

   Sump barrels will be provided to collect the limited amount of dribble during truck loading procedures. During loading procedures at this facility, potential leakage/spillage will be minimal by use of gasketed transfer connections between tank headers and the truck suction hose. At the end of each

loading cycle, a truck mounted pump applies a suction to the header valve, causing brine to be pulled into the truck tank, leaving no fluid in the hose.

A secondary liner of impermeable polyethylene material will be installed under all brine loading areas to prevent soil saturation in the event of a loading problem.

4. Describe methods used to detect leaks and ensure integrity of above and below ground tanks and piping. Discuss frequency of inspection and procedures to be undertaken if significant leaks are detected.

In-flow volumes into the brine storage tanks will be confirmed by use of either of the following procedures:

a. Beginning and ending gauges of the volumes of brine in each tank before and after operation of the injection or circulation pump, and adjusted for any volumes taken from the tanks for loading out trucks.

b. Taking the elapsed time of operation of the injection pump and multiplying by the pump rate in volume per hour, again making adjustments for any volumes taken from the tanks for loading into trucks.

c. Outflow from the brine storage tanks is determined by taking the sum of the volumes loaded onto trucks during the accounting period.

Well and formation integrity will be monitored by a comparison of injected volumes of fresh water to the volume of brine recovered (to determine underground loss if any). This is accomplished by the integration of the data on the pressure recording chart for injection pump operation. The known pumping rate multiplied by the hours of operation, yields total injected volumes. An arithmetic comparison of these volumes on a bi-weekly basis determines whether or not there are any underground losses.

In the event of a significant leak, the OCD will be notified within 24 hours and injection pressures limited to avoid moving contaminants into protected ground water.

5. General Closure Plan:

Should it become necessary to abandon this brine production facility, the well will be plugged and capped according to plans and specifications recommended by the OCD that fully meet all requirements for protection of ground water.

All fluids will be removed from the site and transported to an approved disposal well, or tested for contaminants and hauled to an approved disposal site.

Upon removal of all surface equipment, levelling and grading of the facility will be done in a manner reflecting its original condition.

VII. BRINE EXTRACTION WELLS:

A. Drilling, Deepening, or Plug Back:

1. Form C-101 has been filed for both wells in this system, the Dunaway No. 1 and No. 2. Filing date was May 27, 1994. Exhibits "D(1) & "D(2)"

2. Notice of Intent to Discharge:

In accordance with WQCL Regulation 1-201, a notice of intent to discharge was submitted to the New Mexico Environmental Department, Ground Water Division on June 15, 1994. (Exhibit "E")

3. Map Featuring 1/4 Mile Review:

Ownership Map - Exhibit "F"
Topographic Map - Exhibit "G"

4. Ground water in this area is from the alluvium formation. This water is of poor quality, generally nonpotable (domestic water needs are served by the Otis Water Users Cooperative). Within the area of review, the water is only used for livestock watering. Depth of this ground water ranges from 50 to 200 feet. Ground water in this area moves to the east and is found from 50 to 200 feet. (Exhibit "H" - Water Quality Data)

Well records and logs for two water wells drilled in Section 23 (same section as project) are enclosed as Exhibits listed below. Neither well is operational.

Phillips Well SW/4 SW/4 NW/4 Exhibit "I"
Doughty Well SW/4 NW/4 SW/4 Exhibit "I(1)"

Applicant's own water well has not been drilled pending transfer of water rights and permitting.

5. List of abandoned wells/shafts in the area of review which penetrate the injection zone:

Rohmer No. 1	Unit F	Sec 23	Disposal Well
$13^{3/8}$"	277 ft	Cement Circulated	
$9^{5/8}$"	2,154 ft	Cement Circulated	
$5\frac{1}{2}$"	4,250 ft	Cement to 728 ft	

Well is owned and operated by Scurlock Permian Corporation

Ferguson No. 1	**Unit J**	**Sec 23**	**Gas Well**
$13^{3/8}$"	225 ft	Cemented Circulated	
$10^{3/4}$"	2,100 ft	1,510 Sacks	
$7^{5/8}$"	9,224 ft	860 Sacks	

Well is operated by Santa Fe Energy

Henry No. 1	**Unit I**	**Sec 22**	**Gas Well**
$13^{3/8}$"	230 ft	Cement to Surface	
$10^{3/4}$"	2,120 ft	3,375 Sacks	
$7^{7/8}$"	9,045 ft	1,160 Sacks	

Well is operated by Santa Fe Energy

Forni No. 1	**Unit I**	**Sec 15**	**Gas Well**
$11^{3/4}$"	310 ft	Cement to Surface	
$8^{5/8}$"	2,568 ft	300 Sacks	
5½"	10,764 ft	410 Sacks	

Well is operated by Union Oil Co. of California

Johnson No. 1	**Unit E**	**Sec 24**	**Gas Well**
$13^{3/8}$"	240 ft	Cement to Surface	
$9^{5/8}$"	2,180 ft	1,640 Sacks	
5½"	12,243 ft	1,600 Sacks	

Well is operated by Santa Fe Energy
Exhibit "J"

Should any information come available prior to start-up or after operations has begun of any conduit that will enable contaminants to enter fresh protected ground water, pressure will be limited until the conduit can be plugged.

6. Maps and cross sections detailing the geology and geologic structure of the local area. Exhibit "K"

7. A proposed formation testing program to obtain an analysis or description of fluids in the receiving formation.

The principle receiving formation is comprised of the Salado formation which contains no pore spaces capable of transmitting any great quantity of water. Water transmission will be accomplished by hydraulic fracture between the Salado formation separating the well bores. After fracture and initial saturation is accomplished, the fluid may be checked from valves located on the return line, from the storage tanks, and from the truck loading lines.

The saturated brine will be weighed twice weekly to insure that the fluid is within the oil field standard for brine with a per gallon weight margins from 10.0 to 10.2 pounds per gallon.

8. Schematic drawing of the surface and sub-surface construction details. Exhibit "C", Exhibit "L"

9. Proposed Drilling, Evaluation, and Testing Procedures:

Two wells will be required for this facility. No. 1 well will be the brine recovery well, and No. 2 well will be the fresh water injection well. The wells will be situated 354' apart. See Exhibit "D"

A 12½" hole will be drilled to 300' on both wells, well below any water sands that must be protected. $9^{5/8"}$ surface casing will be run, and each well cemented with 150 sacks of cement. Cement will be circulated to surface. An 8½" hole will be drilled to TD of 850 feet on both wells. Well No. 1 will have approximately 700' of casing run, and cemented with 200 sacks of cement. Well No. 2 will have approximately 825' of 7" casing cemented with 225 sacks of cement. $2^{7/8"}$ tubing will be suspended in both wells to TD. Dissolved salt will be recovered from the Salado formation. Schematic - Exhibit "C", C-101 - Exhibit "D1", "D2"

All permanent casing strings will be cemented to surface. A cement bond log will be run through the 7" on both wells to prove cement integrity. Both logs will be submitted to the OCD. A mudlogger or electric log will be utilized on Well No. 1 to be sure the 7" casing is set into a thick anhydrite barrier to provide a roof to preserve the integrity of the cavern and provide a horizontal barrier to increase the probability of a satisfactory hydraulic fracture between wells.

Due to the shallow depth of both wells, no deviation checks will be necessary.

10. Proposed Stimulation, Injection, and Operation Procedures:

This is not an injection well where produced water is pumped into a porous zone.

No stimulation is planned. Rock salt is impervious, and as the salt is dissolved by the injection of fresh water, the brine is returned to the surface and stored in steel or fiberglass above ground tanks. No stimulation is necessary as the fresh water introduced down the tubing of Well No. 2 will dissolve the rock salt as it travels across to Well No. 1. The brine will be recovered via the $2^{7/8"}$ tubing in Well No. 1.

Prior to attempts to initiate a hydraulic fracture between Well No. 1 and No. 2, a target area will be developed around Well No. 1 by injecting fresh water down the annulus, dissolving the rock salt, and recovering brine via the $2^{7/8}$" tubing. This circulating method will dissolve the rock salt between the casing seat at approximately 700' and the bottom of tubing at approximately 850'.

To fracture, fresh water will be pumped down the No. 2 well at a rate not exceeding 12 barrels per minute or 1,000 psi. After the fracture reaches the No. 1 well, fresh water will be pumped until fracture crack is washed out all the way to No. 1. The pressure will drop substantially as friction pressure and resistance decreases with the increased wash area. Normal operating pressure will be approximately the hydrostatic differential between the injected fresh water and the recovered brine, less than 100 psi.

It is felt that isolation packers will not be necessary due to the extreme care being taken to protect the fresh water by installing two strings of casing through the fresh water zone, and cementing both to surface.

The standard operational procedure of pumping fresh water down the $2^{7/8}$" tubing in Well No. 2 and recovering brine from the $2^{7/8}$" tubing in Well No. 1 further protects fresh water by limiting the exposure of the 7" casing to any saturated fluid.

11. Plugging Requirements:

Should it become necessary to plug and abandon either or both of these wells, the cavern between the two wells will be filled with brine water. The well, or wells will then be plugged and capped according to plans and specifications recommended by the OCD that fully meet all requirements for protection of ground water. A plugging bond in accordance with OCD Rule 101 will be submitted prior to the commencement of any drilling operations.

B. Workover Operations:

Prior to any remedial work, alteration, or plugging or abandonment, approval will be obtained from the OCD by submitting OCD Form C-103.

C. Additional Information:

1. All evaluation, completion and well workover information will be submitted to the OCD as they become available or become necessary in the case of operation changes.

2. This plan is for a two well system in which fresh water is pumped down the tubing of one well, and brine water recovered from the tubing in the other well. Mechanical integrity of the casing can be guaranteed by pulling the $2^{7/8}$" tubing, setting a retrievable bridge plug or tension packer in the 7" casing at ±700 and holding pressure 750 psi on the 7" for one hour. A chart recorder will be utilized and copies submitted to the OCD.

3. Mechanical Integrity Test:

The OCD will be notified 48 hours prior to any integrity test. The casing will be tested every five years by isolating the formation and 7" casing. This can be accomplished either by the use of a 7" retrievable bridge plug, or the use of a $2^{7/8}$" x 7" tension packer.

The formation integrity will be tested annually by closing the $2^{7/8}$" wellhead valve on Well No. 1, pressuring up to 500 psi on the tubing of Well No. 2 and closing the well. A pressure recorder is then installed into the valve on Well No. 1, the valve opened, and the open hole tested for 4 hours.

All pressure charts will be submitted to the OCD on a timely basis.

4. Upon completion of the project and brine being recovered, an analysis of the recovered brine water will be provided to the OCD. This sample will include the following information as required by the OCD.

TDS, Sodium, Calcium, Potassium, Magnesium, Bromide, Carbonate/Bicarbonate, Chloride, and Sulfates.

Sampling locations will be included in the high pressure return lines, brine storage area, and on the truck loading line.

The injection fluid will be relatively fresh water from the applicant's own water supply well, located approximately 450 feet west of Well No. 1.

5. Underground Loss Detection:

Well and formation integrity will be monitored by a comparison of injected volumes of fresh water to the volume of saline extracted (to determine underground losses, if any), accomplished by integration of the data on the pressure recording chart for injection pump operation.

The known pumping rate multiplied by the hours of operation, yields total injected volumes. An arithmetic comparison of these volumes on a bi-weekly basis determines whether or not there is any underground loss.

In the event of a significant leak, the OCD will be notified within 24 hours and injection pressures limited to avoid moving contaminants into protected ground water.

After approval, a quarterly report listing by month the volumes of fluid injected and produced will be submitted to the OCD.

VIII. SPILL/LEAK PREVENTION AND REPORTING PROCEDURES (Contingency Plans):

A. Prevention:

During truck loading operations at this facility, potential leakage/spillage is minimized by use of on-truck loading pumps and gasketed transfer connections between tank headers and the truck suction hose. At the end of each loading cycle, the truck mounted pump applies a suction to the header valves, causing brine to be pulled into the truck tank, leaving very little moisture to collect in the sump barrels placed beneath the loading header valves.

Any leak in the tankage or piping will be detected by our system operator who will shut down the system until repairs have been made.

Loss of mechanical integrity of system will result in the system being shut down until repairs or corrective action has been completed.

Operating the system at minimum pressures will reduce the severity of any possible damage that could result from system failure. Ground water will be routinely analyzed to determine water gravity and insure that the water is protected from contamination by the brine production process.

B. Containment and Cleanup:

Brine storage tanks will be encircled with an earthen firewall to serve as a retainer should a spill or leak occur. The firewall will be of a capacity equal to 1/3 more volume than total brine tankage.

Should a spill occur, surface material that is contaminated will be disposed of by remediation or tested for contaminates and hauled to an approved disposal site.

Sumps will be installed under the loading headers to collect any fluid that might collect during truck loading operations.

C. Notification:

In the event of a major spill, the District OCD in Artesia will be notified immediately by the systems operator stationed in Carlsbad. Minor spills will be reported to the OCD in writing within 10 days.

IX. SITE CHARACTERISTICS:

A. The proposed site for the Carlsbad Brine Recovery Facility is located in an area with very little elevation definition. Drainage patterns are shallow and not of the deep arroyo type. Drainage is toward the east and northeast with a slope of less than 5 feet per 1,000. The rate of decline increases as with proximity to the river.

The nearest surface water is the Pecos River, located approximately 3,750 feet to the northeast. Brine volumes available at the site are insufficient to reach the river given the rainfall pattern, topography and the fact that no surface impoundments are planned.

Two water wells are located within this section, with a third being proposed by the applicant as a source well. All present wells are on a higher elevation than the proposed storage area of the project.

Due to poor quality of ground water in this area, water wells in the area have been used for watering livestock only.

B. Ground Water:

Depth of ground water most likely affected by the project, ranges from 50 feet to 200 feet. This depth was determined by the well logs from the same section as the project. Exhibit "I", Exhibit "I(1)", & Exhibit "O"

After the applicant's source well is drilled, a water sample will be sent to the District OCD. Exhibit "M"

C. Soil and Aquifer Information:

1. The predominate soil types found in Sec 23, 22S, 27E are fully discussed in information supplied by the USDA. Please see Exhibit "R".

2. The principal supply of ground water in this area is the alluvium formation. Exhibit "N" and Exhibit "O"

3. Composition of the alluvium formation is predominately Quaternary Alluvium.

4. Well logs and casing reports in the OCD well file and the state engineer records indicate that the rock at the base of the alluvium ranges from 250' to 300'.

   Available geologic and engineering data has been examined and there is no evidence of open faults or any other hydrologic connection between the injection zone and any under ground source of fresh water.

D. The flooding potential at the discharge site with respect to major precipitation is very unlikely due to the relatively flat terrain with limited elevation definition. Drainage patterns are shallow and wide and not of the deep arroyos type. Exhibit "A"

As no surface impoundments are planned, minor flooding would have no detrimental effect on the terrain from an environmental standpoint.

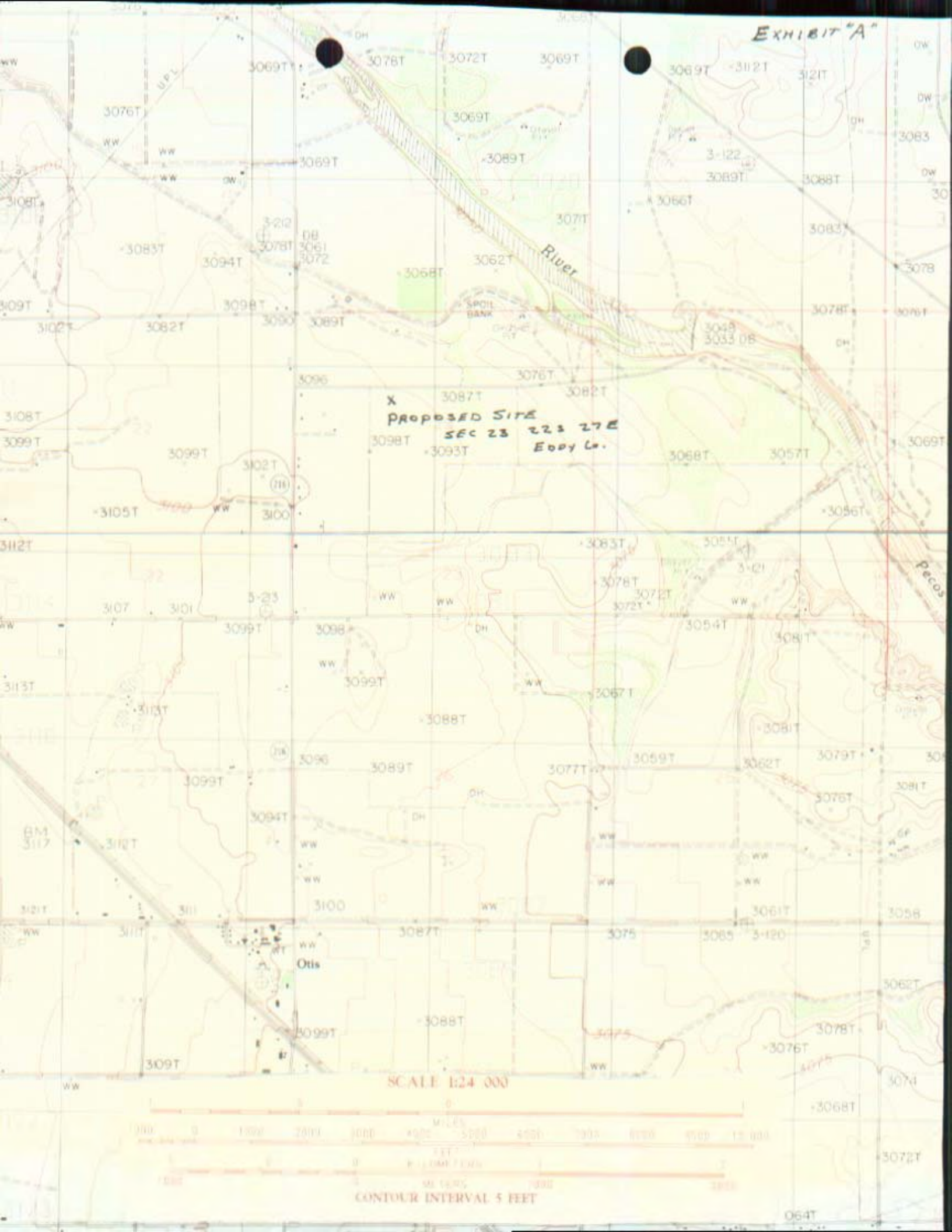


EXHIBIT "A"
PROPOSED SITE
SEC 23 T23S R27E
Eddy Co.
Otis
Pecos
River
SCALE 1:24 000
CONTOUR INTERVAL 5 FEET

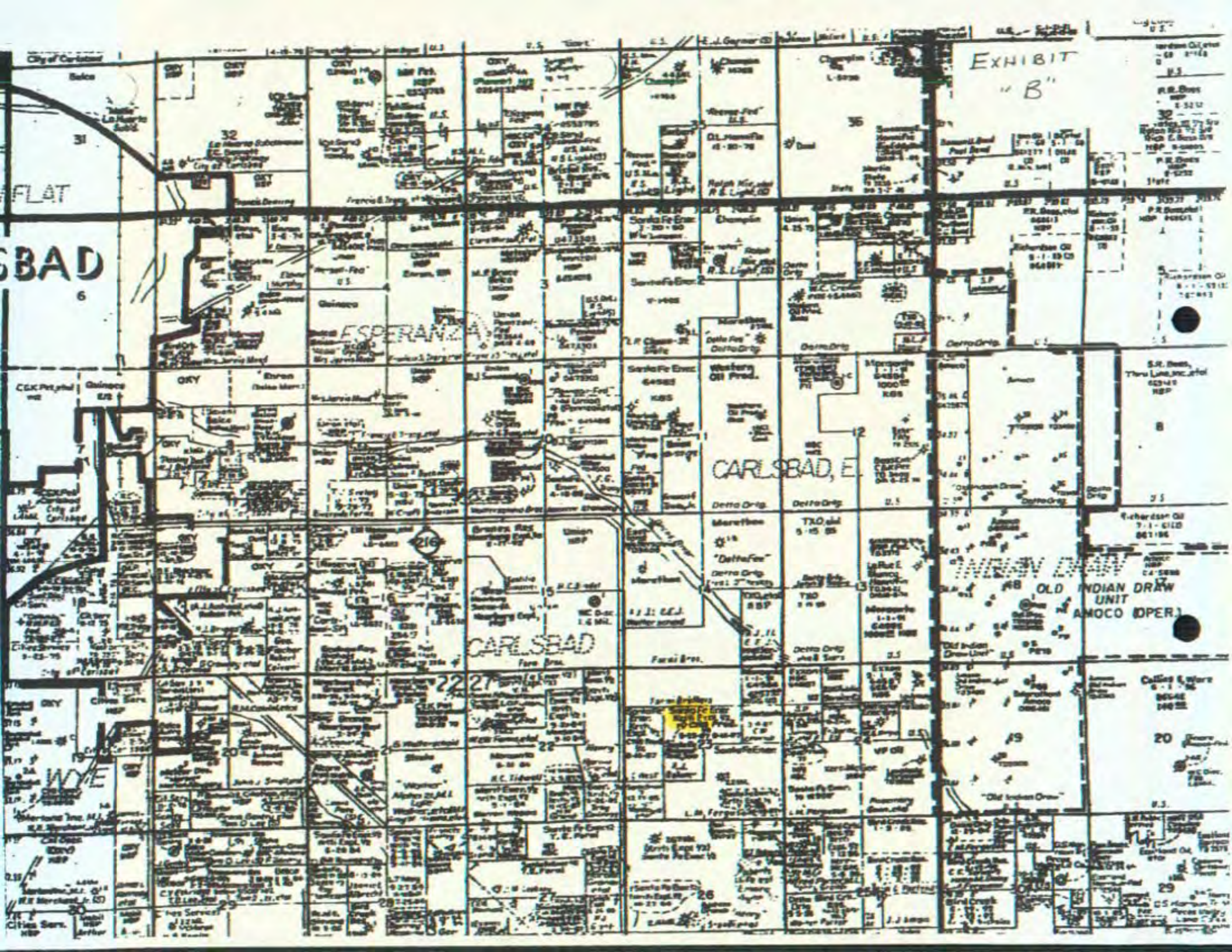
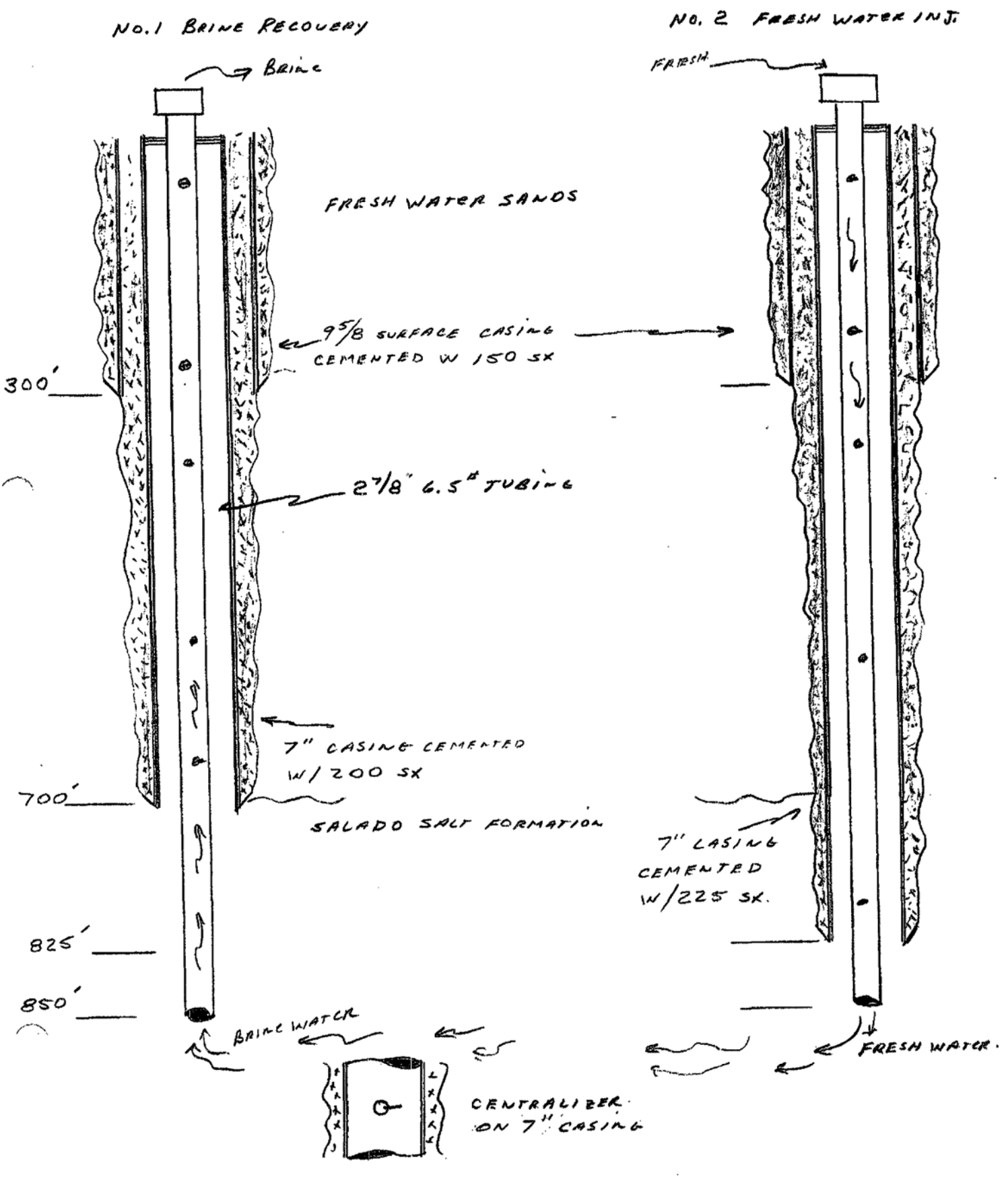


EXHIBIT "B"
CARLSBAD
ESPERANZA
CARLSBAD, E
INDIAN DRAW
OLD INDIAN DRAW UNIT
AMOCO (OPER.)
WYE
FLAT

EXHIBIT "C"

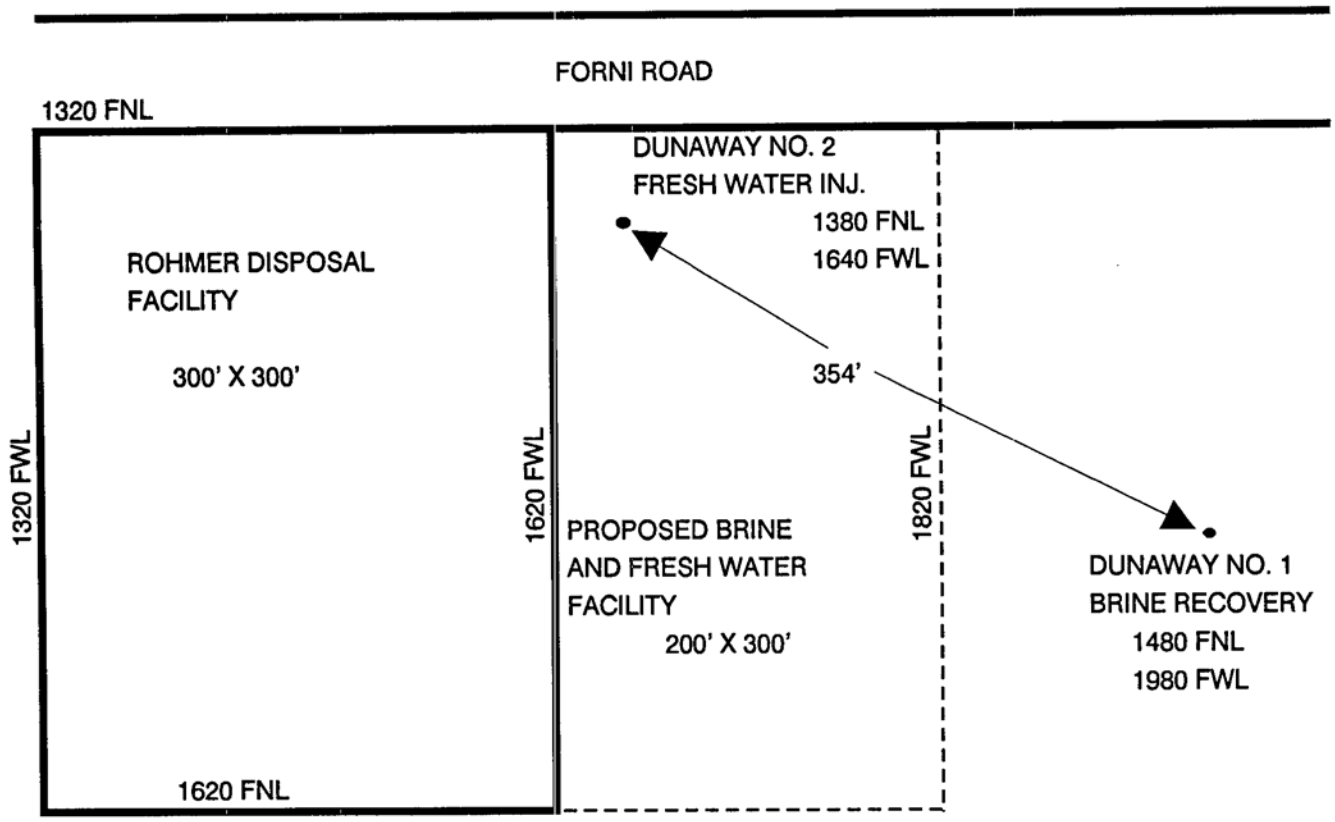
ASHLAND PIPE LINE COMPANY ENGINEERING DEPARTMENT			SHEET
			AFE
SUBJECT SCHEMATIC OF BRINE RECOVERY PROJECT			DISTRICT
WELL PROFILE, DUNAWAY NO. 1 AND NO. 2			DRAWING
BY S. ROGERS	CHECKED BY	APPROVED BY	DATE 6/17/94

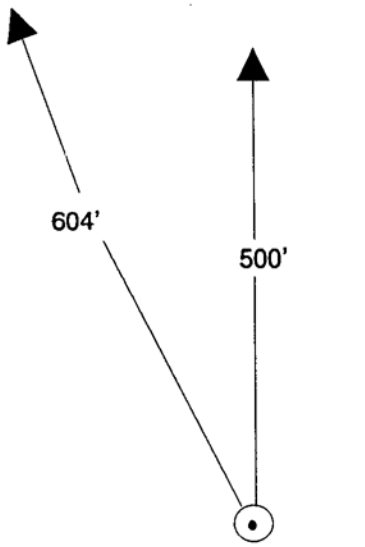
0427-6 (02/91)



BRINE RECOVERY AND FRESH WATER FACILITY
SEC 23, T22S, R27E

EXHIBIT "D"





713 739 4313

EXHIBIT "D1"

MAY 27 '94 02:34AM SPC ENGINEERING HOU. NO.505 P.6/6 P001

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-101
Revised February 10, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

[1] Operator Name and Address	[2] OGRID Number
Scurlock Permian Corporation P.O. Box 4648 Houston, Texas 77210-4648	[3] API Number 30 - 0

[4] Property Code	[5] Property Name	[6] Well No.
	Dunaway	No 1

[7] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	23	22S	27E		1480	FNL	1980	FWL	Eddy

[8] Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[9] Proposed Pool 1	[10] Proposed Pool 2

[11] Work Type Code	[12] Well Type Code	[13] Cable/Rotary	[14] Lease Type Code	[15] Ground Level Elevation
N	(Brine Well)	R	P	3094
[16] Multiple	**[17] Proposed Depth**	**[18] Formation**	**[19] Contractor**	**[20] Spud Date**
No	850 ft	Salado Salt	Unknown	June 1994

[21] Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12½"	9 5/8"	40#	300'	150	Surface
8½"	7"	23#	+- 700'	200	Surface
6 1/8"	2 7/8"	6.5#	850'	0	

[22] Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

This is Well No. 1 of a two well program to leach salt from the Salado salt formation. This well will serve as the recovery well during normal operation. Fresh water will be pumped down Well No. 2, transverse the 354' between Well No. 2 and Well No. 1 via a horizontal hydraulic fracture initiated between the well bores in the salt section. The fresh water will leach salt and be recovered via the 2 7/8" tubing in Well No. 1 as saturated brine.

Due to the shallow depth and low formation pressure in this area, only a diverter type system will be used.

[23] I hereby certify that the information given above is true and complete to the best of my knowledge and belief.	OIL CONSERVATION DIVISION
Signature:	Approved by:
Printed name:	Title:
Title:	Approval Date: / Expiration Date:
Date: / Phone:	Conditions of Approval: Attached ☐

EXHIBIT "D2"
NO.50P.5/601

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-101
Revised February 10, 1994
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Submit to Appropriate District Office
State Lease - 6 Copies
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☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1 Operator Name and Address	2 OGRID Number
Scurlock Permian Corporation P.O. Box 4648 Houston, Texas 77210-4648	3 API Number 30 - 0

4 Property Code	5 Property Name	6 Well No.
	Dunaway	No 2

7 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	23	22S	27E		1380	FNL	1640	FWL	Eddy

8 Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

9 Proposed Pool 1	10 Proposed Pool 2

11 Work Type Code	12 Well Type Code	13 Cable/Rotary	14 Lease Type Code	15 Ground Level Elevation
N	I	R	P	3094
16 Multiple	**17 Proposed Depth**	**18 Formation**	**19 Contractor**	**20 Spud Date**
No	850	Salado	Unknown	June 1994

21 Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12¼"	9 5/8"	40#	300'	150	Surface
8¼"	7"	23#	825'	225	Surface
6 1/8"	2 7/8"	6.5#	850'	0	0

22 Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

This is Well No. 2 of a two well program to leach salt from the Salado salt formation. This well will normally serve as the fresh water injection well. Fresh water will be pumped down the 2 7/8" tubing, transverse the 354' fractured salt section, and be recovered as saturated brine from the 2 7/8" tubing in Well No. 1.

Due to the shallow depth and low formation pressure in this area, only a diverter type system will be used.

23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature:
Printed name: Edward L. Ryan
Title:
Date:
Phone:

OIL CONSERVATION DIVISION

Approved by:
Title:
Approval Date:
Expiration Date:
Conditions of Approval:
Attached ☐

Exhibit "E"

SCURLOCK PERMIAN CORPORATION

333 Clay
P.O. Box 4648
Houston, Texas 77210-4648

(713) 646-4100

June 15, 1994

Mr. Dale Doremus
New Mexico Environmental Division
Groundwater Section
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, New Mexico 87502

Dear Sir:

In accordance with the Water Quality Control Commission Regulation I-201, we hereby submit our "Notice of Intent to Discharge" as it pertains to our proposed Brine Recovery project located in Sec 23, 22S, 27E, Eddy County, New Mexico.

I. NAME & ADDRESS:

Scurlock Permian Corporation
333 Clay
P.O. Box 4648
Houston, Texas 77210-4648

II. LOCATION OF DISCHARGE:

SE/4 NW/4 Sec 23, 22S, 27E, Eddy County, New Mexico

III. ESTIMATE OF CONCENTRATION OF WATER CONTAMINATES IN THE DISCHARGE PLAN:

Recovered brine will average 14,500 mg/l TDS

IV. QUANTITY OF THE DISCHARGE:

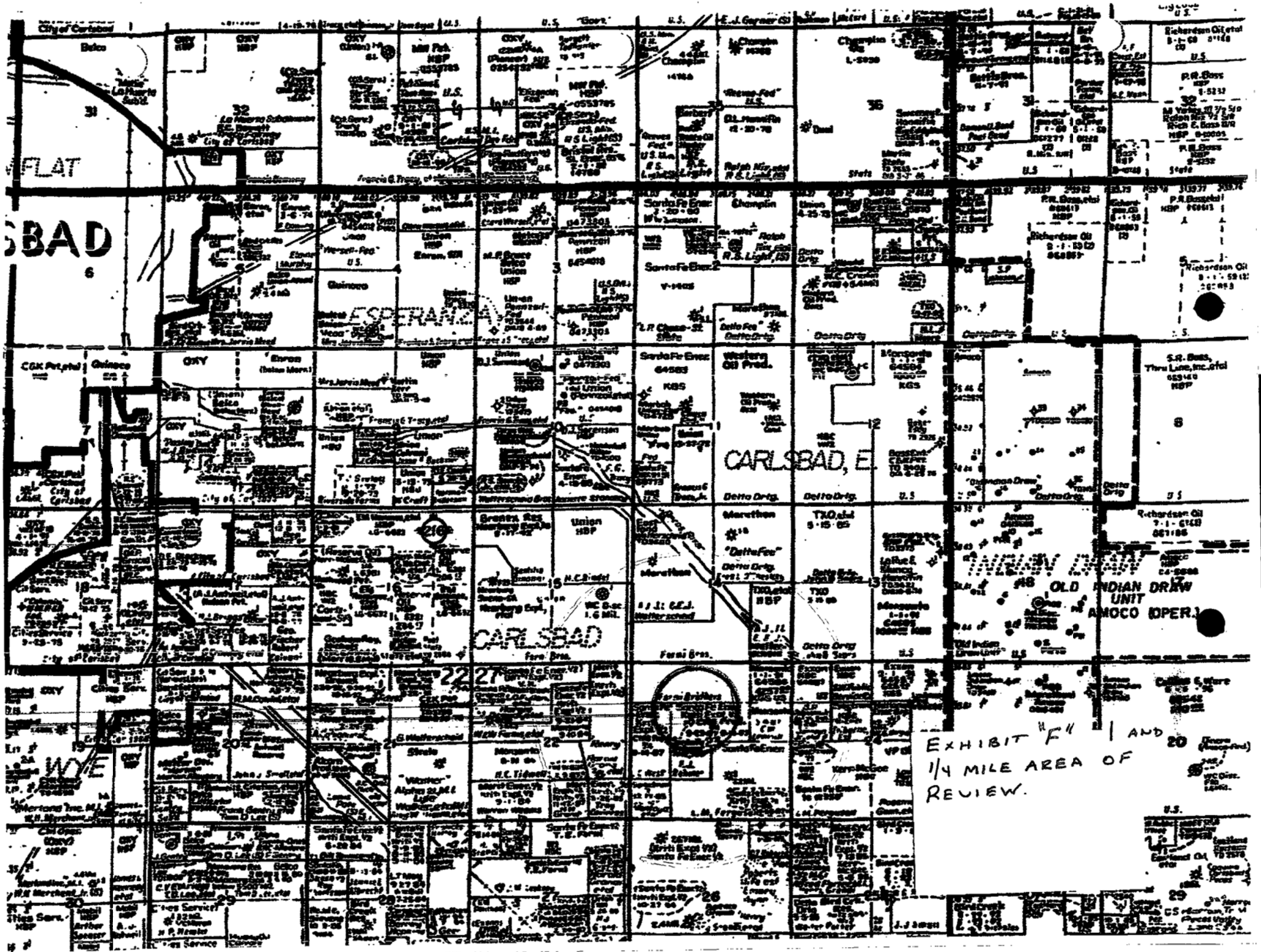
Expected recovery is anticipated to be approximately 1,000 bbls of saturated brine per day, equated to 58,800 lbs of salt per day assuming 8.7#/gallon water saturated to 10.1#/gallon.

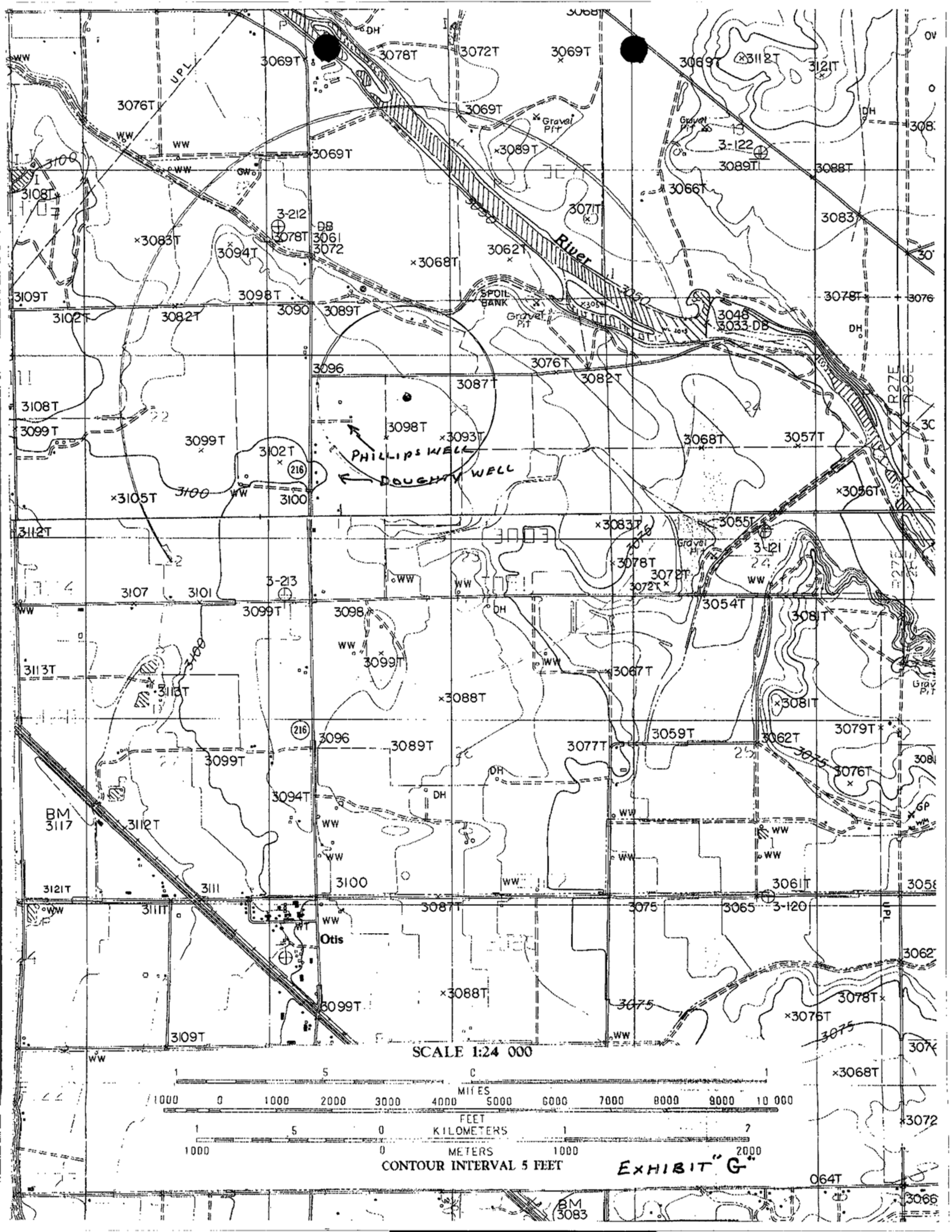
Should any further information be required, please let me know.

Sincerely,

Steward E. Rogers

Steward E. Rogers
Operations Coordinator


CARLSBAD, E.
CARLSBAD
ESPERANZA
INDIAN DRAW
OLD INDIAN DRAW UNIT
AMOCO (OPER.)
WYE
EXHIBIT "F"
1/4 MILE AREA OF REVIEW.



PHILLIPS WELL
DOUGHTY WELL
River
Otis
SPOIL BANK
Gravel Pit
R27E
UPL
3-212
3-213
3-122
3-121
3-120
BM 3117
BM 3083
216
SCALE 1:24 000
MILES
FEET
KILOMETERS
METERS
CONTOUR INTERVAL 5 FEET
EXHIBIT "G"

PHILLIPS Well Log.

EXHIBIT I

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	1	1	Brown Top Soil
1	45	44	gray & white caliche rock
45	50	5	red clay
50	146	96	brown sand & streaks of clay
146	157	11	red bed

Section 7. REMARKS AND ADDITIONAL INFORMATION

Had to run 98 feet of 8 inch casing - to shut off cavings could not drill hole without it.

'77 SEP 27 AM 8 17
STATE ENGINEER OFFICE
ROSWELL, N.M.

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

E. Clyde J. Tidwell
Driller

INSTRUCTIONS: This for ould be executed in triplicate, preferably typewritten, and submitted t appropriate district office of the State Engineer. Al ons, except Section 5, shall be answered as completely and accurate. possible when any well is drilled, repaired or deepened When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

Revised June 1972

EXHIBIT I

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well Billy C. Phillips Owner's Well No. _____

Street or Post Office Address 802 W. Mermod

City and State Carlsbad, New Mexico 88220

Well was drilled under Permit No. C-1776 and is located in the:

a. _____ ¼ _____ ¼ SW ¼ NW ¼ of Section 23 Township 22S Range 27E N.M.P.M.

b. Tract No. _____ of Map No. _____ of the Rt. 1 Box 156D on the farm to market Southeast of Carlsbad

c. Lot No. _____ of Block No. _____ of the _____ Subdivision, recorded in Eddy County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor Tidwell Drilling License No. WD- 406

Address Rt. 1. Box 17 Artesia,, New Mexico 88210

Drilling Began Sept 7 77 Completed Sept 16 77 Type tools cable Size of hole 8 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 157 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 40 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
50	146	96	sand with streaks of clay	very good

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
8" id	24	8	0	98		none	none	
this pipe was run to shut off cave-could not drill without pipe								
7"	20	8	0	157		none	121	146

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement

Section 5. PLUGGING RECORD

Plugging Contractor _____

Address _____

Plugging Method _____

Date Well Plugged _____

Plugging approved by: _____ State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received

Quad _____ FWL _____ FSL _____

✓ File No. C-1776 Use D-S Location No. 22.27.23.13

STATE ENGINEER OFFICE

WELL RECORD

EXHIBIT I

Section 1. GENERAL INFORMATION

(A) Owner of well Carl H. Doughty Owner's Well No. _____

Street or Post Office Address Route 1 Box 159

City and State Carlsbad, New Mexico 88220

Well was drilled under Permit No. C-1713 and is located in the:

a. _____ ¼ SW ¼ NW ¼ SW ¼ of Section 23 Township 25S Range 27E N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ Eddy _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor W. H. Taylor, Sr. License No. WD-604

Address 205 N. 3rd. St., Carlsbad, New Mexico 88220

Drilling Began Sept. 1976 Completed Sept 27, 1976 Type tools Cable Size of hole 7 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 101 ft.

Completed well is XX shallow ☐ artesian. Depth to water upon completion of well 46 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
65	96	31	Light brown clay, sand, & gravel	good

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
6 5/8			1	20	21	none		

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement

Section 5. PLUGGING RECORD

Plugging Contractor _____

Address _____

Plugging Method _____

Date Well Plugged _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received

Quad _____ FWL _____ FSL _____

File No. C-1713 Use Dom Location No. 22.27.23.211341

DOUGHTY WELL LOG SW/4 NW/4 SW/4 SEC 28 EXHIBIT I 1

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	1	1	dirt
1	20	19	white lime
20	28	8	white caliche
28	49	21	brown clay
49	65	16	sand, gravel, & layers of white lime stone 3"to4"thick
65	74	9	light brown clay mixed with sand
74	96	22	water sand & gravel (brown)
96	101	5	light brown clay

Section 7. REMARKS AND ADDITIONAL INFORMATION

ER OFFICE ... 8 28

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

W. H. Taylor
Driller

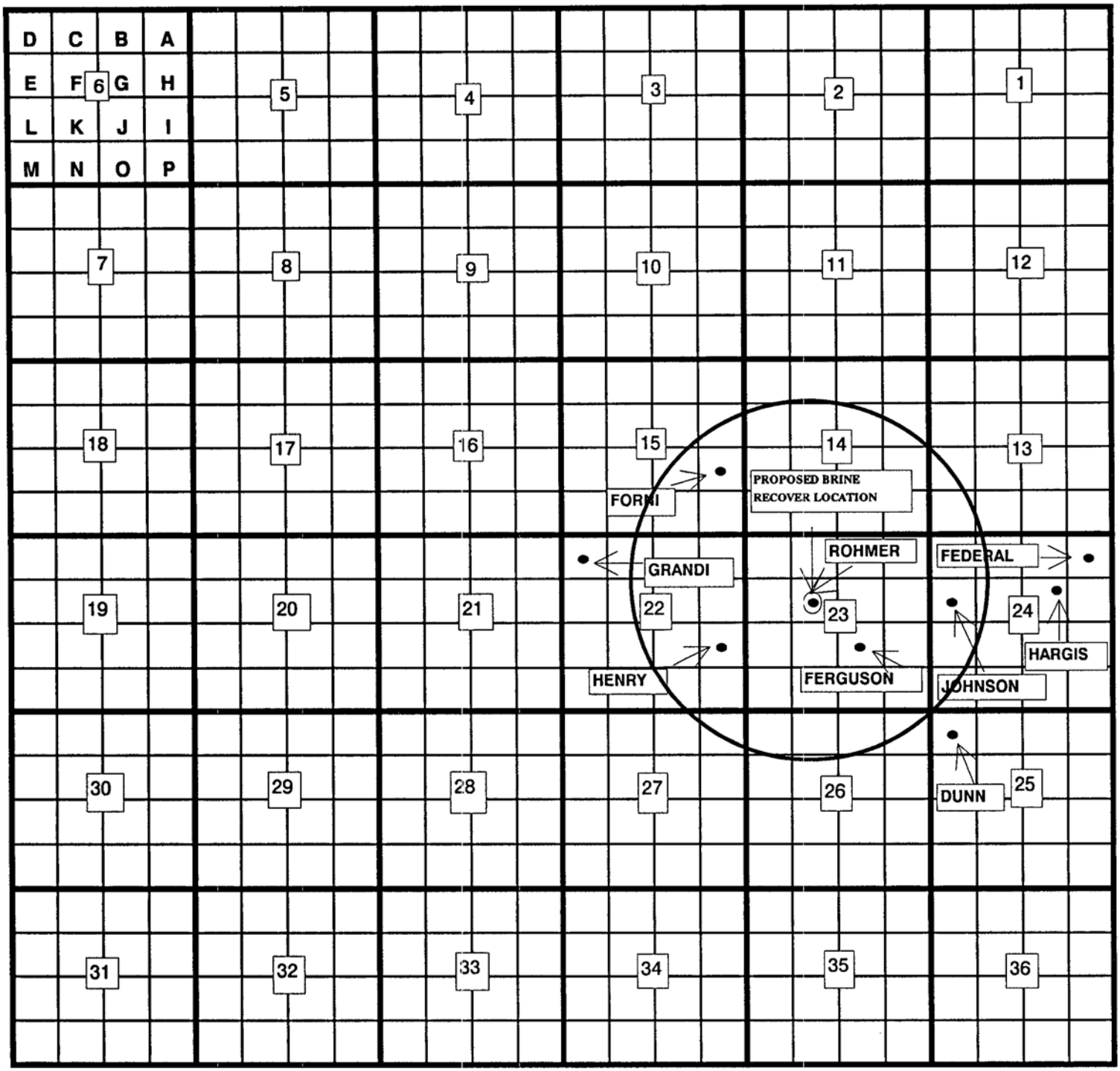
INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

COUNTY: EDDY
TOWNSHIP: 22

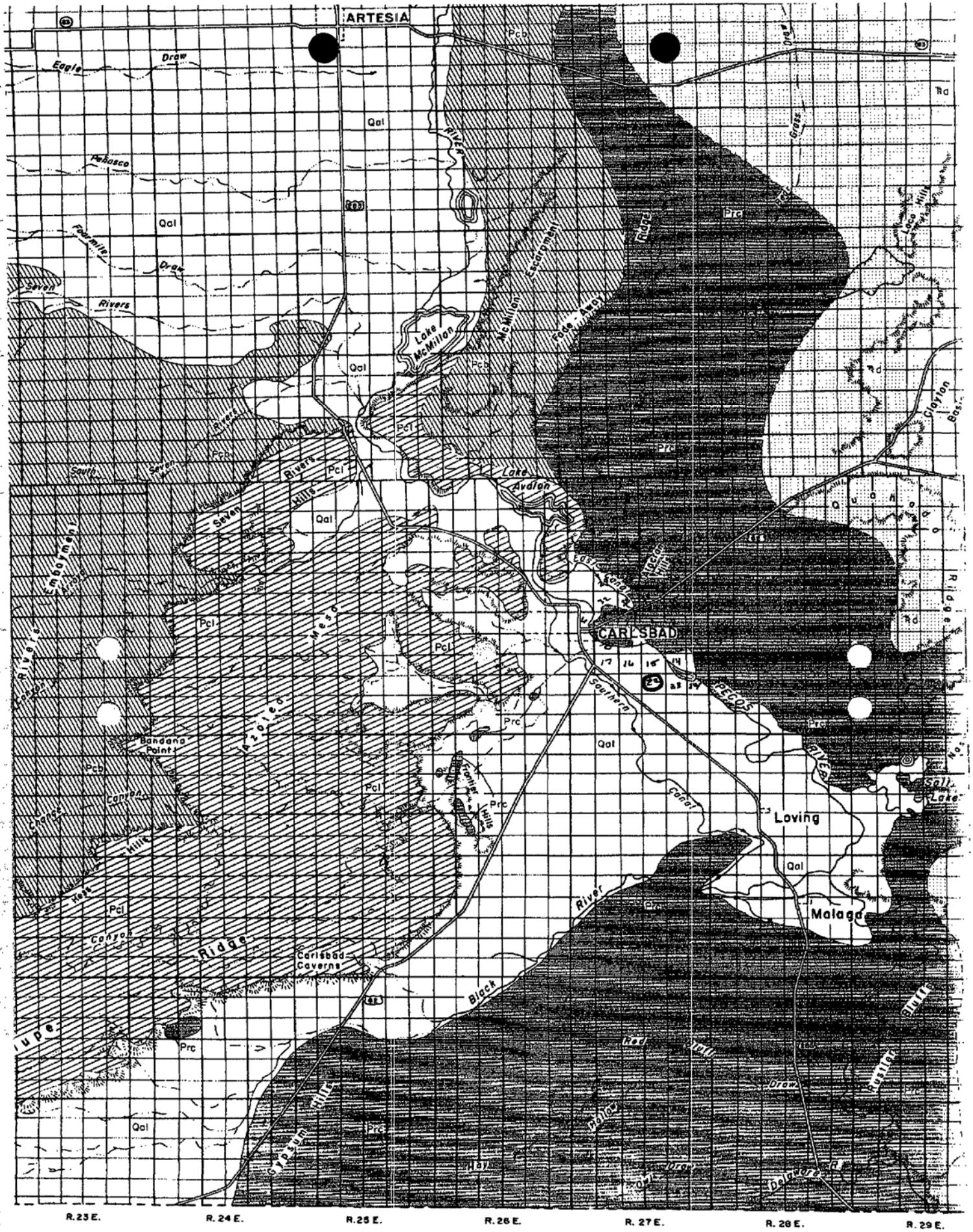
POOL: S[redacted]ADO SALT FORMATION
RANGE: 27E

NMPM

EXHIBIT "J"



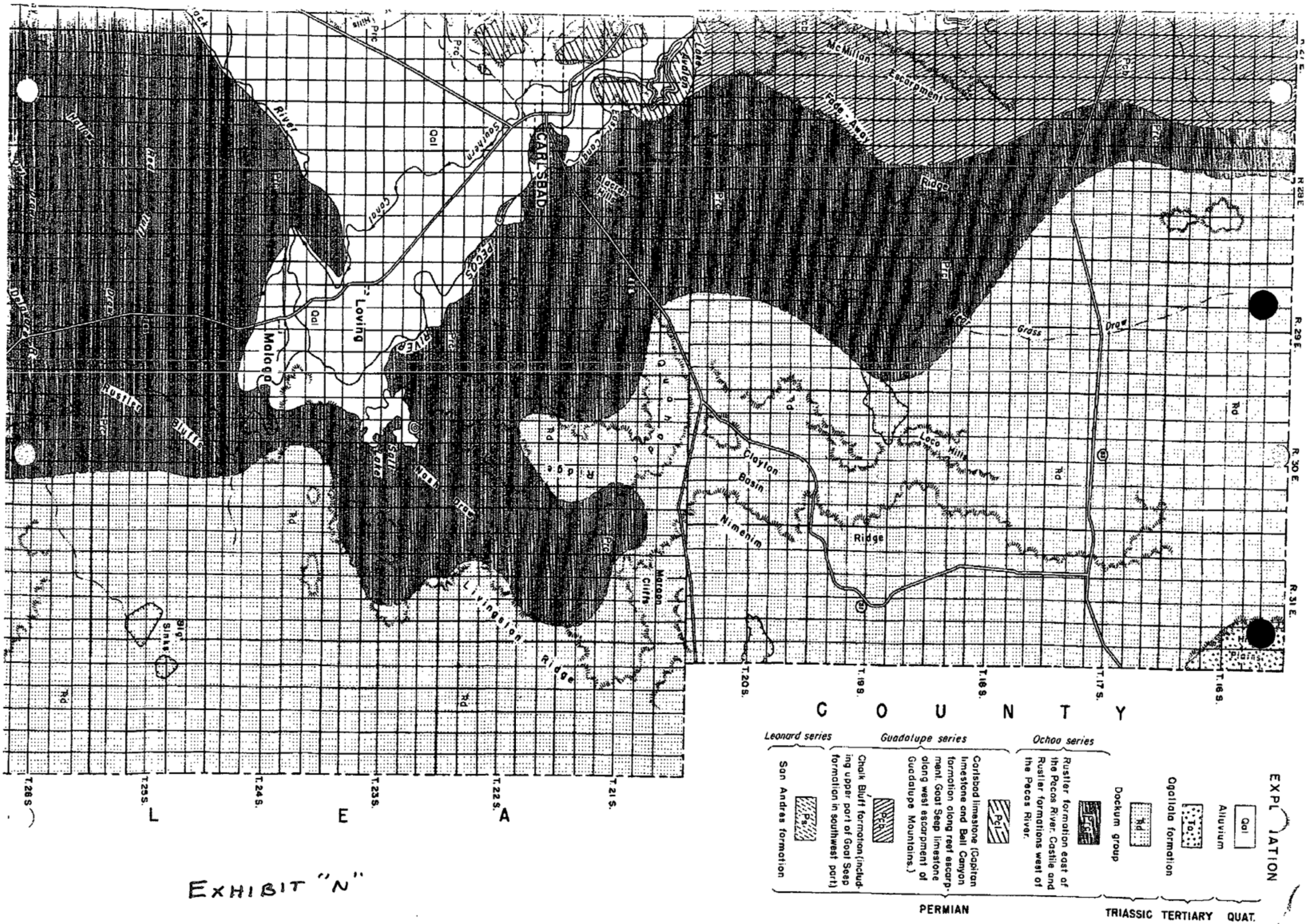
WELL NAME	LOCATION
ROHMER	UNIT F SEC 23
JOHNSON	UNIT E SEC 24
HARGIS	UNIT G SEC 24
DUNN	UNIT D SEC 25
GRANDI	UNIT E SEC 22
HENRY	UNIT I SEC 22
FEDERAL	UNIT A SEC 24
FORNI	UNIT I SEC 15
FERGUSON	UNIT J SEC 23



E X A

EXHIBIT "K"

GEOLOGY OF EDDY COUNTY, NEW MEXICO



CARLSBAD
Loving
Malaga
PECOS RIVER
McMillan Escarpment
Fade-Away Ridge
Grass Draw
Loco Hills
Clayton Basin
Nimenim Ridge
Livingston Ridge
Maroon Cliffs
Big Sinks
Rustler Bluffs
Salt Lake
Nash Draw
Qal
Prc
Rd
Pcb
R. 28 E.
R. 29 E.
R. 30 E.
R. 31 E.
T. 16 S.
T. 17 S.
T. 18 S.
T. 19 S.
T. 20 S.
T. 21 S.
T. 22 S.
T. 23 S.
T. 24 S.
T. 25 S.
T. 26 S.
C O U N T Y
L E A
EXPLANATION
Qal Alluvium
To Ogallala formation
Rd Dockum group
Prc Rustler formation east of the Pecos River. Castile and Rustler formations west of the Pecos River.
Pcl Carlsbad limestone (Capitan limestone and Bell Canyon formation along reef escarpment. Goat Seep limestone along west escarpment of Guadalupe Mountains.)
Pcb Chalk Bluff formation (including upper part of Goat Seep formation in southwest part)
Ps San Andres formation
Leonard series
Guadalupe series
Ochoa series
PERMIAN
TRIASSIC
TERTIARY
QUAT.

EXHIBIT "N"

EXHIBIT "O"

AVAILABILITY OF GROUND WATER BY AREAS

AREA 1. GUADALUPE MOUNTAINS:

a. Azotea Mesa: Stock and domestic supplies generally available at depths of less than 500 feet in Carlsbad limestone; perched water available locally in arroyo gravels. Irrigation supplies obtainable from Carlsbad limestone and overlying alluvium in La Huerta and Happy Valley, but shallow water in these areas is generally impotable.

b. Guadalupe Ridge and Mountains proper: Potable but generally hard water in small quantities available at depths of several hundred feet in uplands; shallow water available locally in arroyo gravels. Small springs from perched water southeast of White City on Guadalupe Ridge.

c. Seven Rivers embayment: Depths to water cannot be predicted accurately. Shallow wells can be obtained locally along arroyos, but most produce from Queen Sandstone member of Goat Seep limestone at depths as great as 900 feet. Water generally potable. Quantity generally sufficient for stock and domestic supplies.

AREA 2. ALLUVIUM SOUTH OF CARLSBAD:

a. Irrigation supplies generally obtainable. Generally impotable.

b. Stock and domestic supplies generally available at depths ranging from 100 to 225 feet.

AREA 3. BETWEEN GUADALUPE MOUNTAINS AND PECOS RIVER AND SOUTH OF LATITUDE 32°15':

a. Stock and domestic supplies and, locally, irrigation supplies, obtainable from alluvium at depths generally less than 200 feet.

b. Stock and domestic supplies generally available in gypsum of Castile formation. Impotable over most of eastern part of area but usable for stock.

AREA 4. ROSWELL BASIN:

a. Stock and domestic water available from alluvium or limestones of Chalk Bluff and San Andres formation at depths less than 50 feet on the east to 400 feet in west. Irrigation water available in eastern part.

b. Stock and domestic water available from limestone of San Andres formation at depths from 400 feet on the east to more than 800 feet on the west.

AREA 5. EAST OF PECOS RIVER:

a. Stock and domestic supplies available at depths less than 200 feet in Chalk Bluff formation or Whitehorse group; locally impotable.

b. Stock water generally obtainable at depths less than 250 feet in Rustler formation; generally impotable and locally unfit for livestock.

c. Stock and domestic supplies available at depths less than 800 feet in Triassic redbeds; quality generally fair but locally impotable.

d. Potable water obtainable from sand and gravel or from underlying redbeds at a depth of about 900 feet.

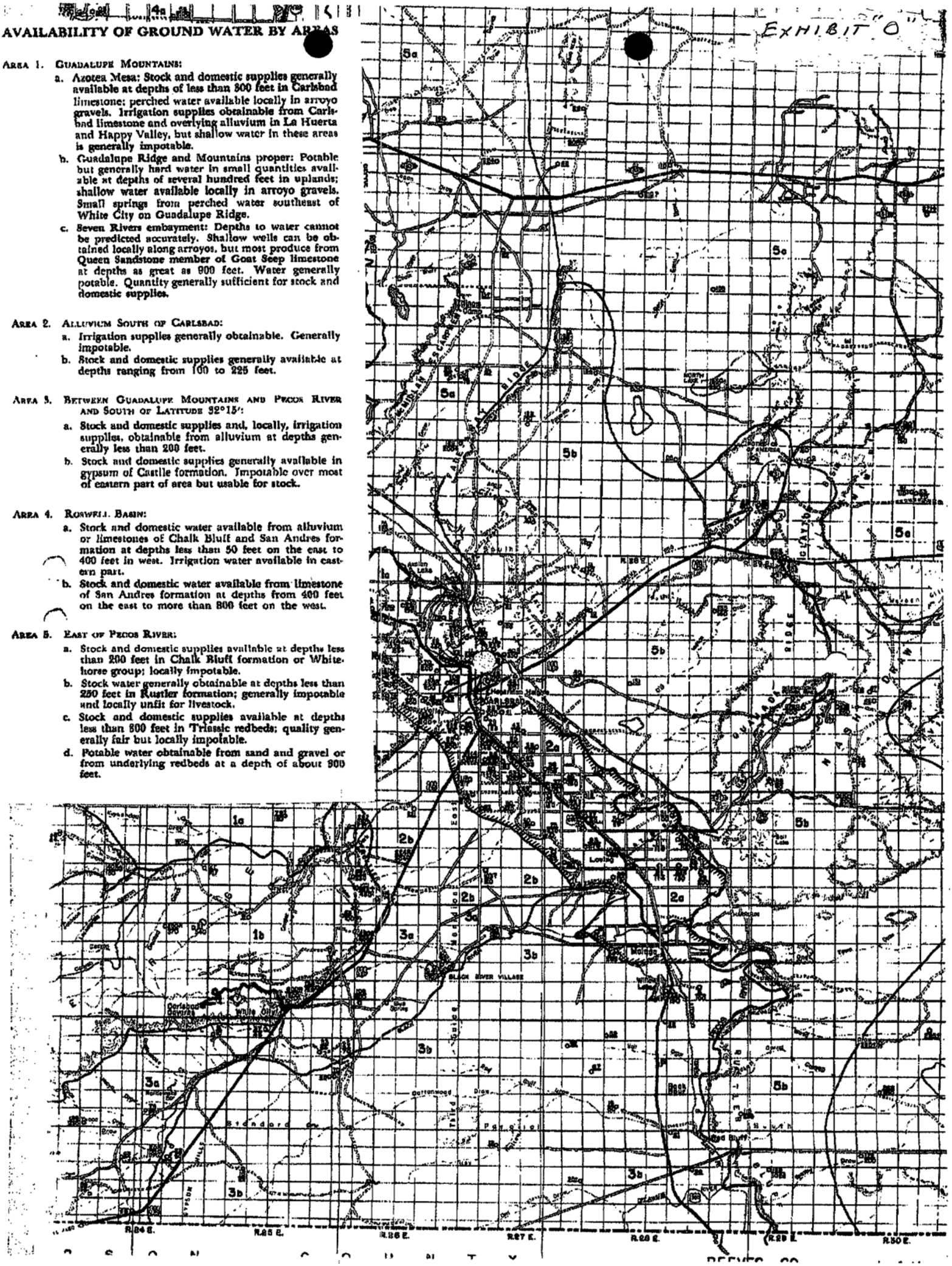


TABLE 9A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY BOTH FORMATION SOURCE AND GEOGRAPHIC LOCATION.

EDDY COUNTY

SQ NO	LOCATION SEC.	T.	R.	DATE OF COLLECTION	DEPTH FROM	TO	FORMATION	SAMPLING METHOD	SILICA (SiO2) (MG/L)	IRON (FE) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM + POTASSIUM AS NA (MG/L)	BICARBONATE + CARBONATE (MG/L)	SULFATE (SO4) (MG/L)	HYDROGEN SULFIDE (H2S) (MG/L)	CHLORIDE (CL) (MG/L)	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DENSITY OF WATER AT 20C (GM/ML)	DISSOLVED SOLIDS (SUM) (MG/L)	(CA+MG)/(NA+K)	SPECIFIC CONDUCTANCE (MMHOS AT 25C)
1																							
2		22	27	10-17-70	3,417-	3,434	453DLSD	TB			9,400.	2,300.	48,000.		572.		1,900.			76,000.		1.106	160,000.	.319	171,000.
3		22	27	10-17-70	3,411-	3,434	453DLSD	ST			9,100.	2,400.	48,000.		574.		1,900.			75,000.		1.106	160,000.	.314	171,000.
4	12	23	27	03-25-60		2,387	453DLSD				3,100.	1,400.	45,000.		101.		180.			80,000.		1.043	130,000.	.139	
5	15	24	27	03-08-59	2,480-		453DLSD			MD	5,200.	2,600.	100,000.		192.		2,000.		0.0	140,000.		1.200	300,000.	.109	
6	15	24	27	03-19-59			453DLSD			TR			130,000.						0.0	190,000.		1.124			
7	9	25	30	06-21-60	3,838-	3,842	453DLSD	SB		MD	9,000.	1,500.	45,000.		40.		800.		0.0	90,000.		1.090	160,000.	.228	
8																									
9	9	25	30	04-03-63	3,724-		453DLSD	SB		0.0	8,600.	2,100.	51,000.		122.		130.		0.0	93,000.		1.105	160,000.	.270	
10	17	25	30	06-17-64	3,668-	3,685	453DLSD	WH			8,200.	1,060.	47,000.		24.		350.			90,000.		1.105	150,000.	.296	
11	15	26	29	05-08-62	800-		453DLSD	BR			40.	8.9	529.		771.		550.			75.		1.001	2,000.	.084	
12	20	26	30	03-13-59	3,450-		453DLSD	DT		TR	7,500.	2,600.	47,000.		139.		1,300.		0.0	110,000.		1.110	180,000.	.238	
13	20	26	30	03-13-59	1,450-		453DLSD			TR	9,400.	2,500.	49,000.		137.		1,100.		0.0	98,000.		1.100	160,000.	.335	
14	26	26	31	03-10-59	4,113-	4,128	453DLSD				24,000.	3,100.	52,000.		145.		430.			130,000.		1.149	210,000.	.639	
15	27	18	31	04-22-59	4,972-		453DLWR				1,800.	820.	110,000.		159.		340.			170,000.		1.187	280,000.	.934	
16	28	18	31	11-06-60	5,074-	5,079	453DLWR			50.	19,000.	3,600.	74,000.		76.		800.		TR	160,000.		1.173	250,000.	.379	
17	7	20	29	02-00-67	-		453DLWR						58,000.							89,000.		1.089	159,000.		162,000.
18	30	20	31	04-22-59	4,395-	4,460	453DLWR	DT		11.	2,200.	710.	74,000.		236.		2,750.		TR	72,000.		1.079	120,000.	.099	
19	30	20	31	04-30-59	6,813-	6,965	453DLWR	DT			120.	41.	6,300.							9,700.		1.015		.031	
20																									
21	30	20	31	09-21-59	6,786-	6,836	453DLWR			TR			110,000.						0.0	170,000.		1.103			
22	24	21	26	02-15-67		2,670	453DLWR						72,000.							110,000.		1.123	198,000.		188,000.
23	18	22	29	11-05-70	3,624-	3,636	453DLWR	ST			8,400.	730.	6,700.		1,530.		3,900.		1,500.	10,000.		1.015	25,000.	.995	34,190.
24	18	22	25	11-05-70	3,624-	3,636	453DLWR	ST					5,905.							9,100.		1.016			35,460.
25		22	27		3,417-	3,434	453DLWR						63,000.		574.					97,000.		1.106			170,000.
26	22	23	26	02-15-67	1,870-	1,881	453DLWR	ST					69,000.							110,000.		1.119	179,000.		187,000.
27	13	24	26	01-00-58		1,900	453DLWR	TB		0.0	1,400.	770.	88,000.		850.		3,100.		HV	140,000.		1.135	230,000.	.034	
28	13	24	26	02-00-67		1,969	453DLWR						73,000.							110,000.		1.072	181,000.		197,000.
29	9	24	27	00-00-00	2,166-	2,171	453DLWR	SB			2,200.	1,800.	12,000.		95.		190.			59,000.		1.021	95,000.	.182	
30	13	24	28	04-23-59		2,180	453DLWR				4,300.	1,600.	48,000.		182.		900.			91,000.		1.105	150,000.	.228	
31	24	24	31	01-24-59	4,571-	4,623	453DLWR	DT		TR	250.	0.9	13,000.		850.		10,000.		TR	13,000.		1.019	38,000.	.039	
32	9	25	30	05-19-50	3,850-		453DLWR	WH		HV	13,000.	2,600.	53,000.		232.		1,200.		0.0	110,000.		1.110	180,500.	.366	
33	20	25	30	02-00-63	3,789-	3,761	453DLWR	DT			7,600.	1,800.	63,000.		82.		1,400.		0.0	120,000.		1.130	190,000.	.194	
34	20	25	30	02-00-63	3,632-	3,699	453DLWR	FL		0.0	8,000.	2,900.	49,000.		68.		510.		0.0	97,000.		1.109	160,000.	.301	
35	20	25	30	02-15-63	3,685-	3,711	453DLWR	DT			8,800.	1,800.	55,000.		51.		1,050.		0.0	100,000.		1.115	170,000.	.247	
36	20	25	30	02-15-63			453DLWR	DT		0.0	1,900.	800.	120,000.		86.		2,800.		0.0	190,000.		1.175	310,000.	.043	
37	20	25	30	02-21-63	3,692-	3,699	453DLWR			0.0	8,900.	2,900.	49,000.		68.		510.		0.0	97,000.		1.109	160,000.	.301	
38	13	24	29	02-00-67		3,186	453DLWR						55,000.							85,000.		1.099	146,000.		157,000.
39	20	25	30	03-18-59	3,450-		453DLWR	DT		TR	8,100.	2,400.	41,000.		139.		620.		0.0	90,000.		1.100	160,000.	.299	
40	8	18	26	01-28-64			453GBSA	FL					13.							20.		1.000			2,380.
41	14	18	26	03-20-64			453GBSA	FL					13.							20.		1.000			1,530.
42	34	18	26	08-09-65			453GBSA	FL					23.							36.		1.000			1,700.
43	20	18	26	08-09-65			453GBSA	FL					15.							23.		1.000			1,160.
44	31	16	26	03-25-64			453GBSA	FL					6.0							10.		1.000			1,190.
45	31	16	26	08-09-65			453GBSA	FL					15.							23.		1.000			1,255.
46	35	16	26	08-09-65			453GBSA	FL					45.							71.		1.000			2,590.
47	27	16	31	01-06-62	9,000-		453GBSA			0.0	1,700.	620.	34,000.		40.		170.		0.0	57,000.		1.070	99,000.	.090	
48	14	17	29	05-07-60		1,140	453GBSA	BR					19.							30.		1.000			2,370.
49	6	17	28	03-25-64			453GBSA	FL					6.0							10.		1.000			1,120.
50	8	17	26	03-22-65			453GBSA	FL					10.							15.		1.000			1,140.
51	6	17	24	03-25-64			453GBSA	FL					10.							16.		1.000			1,170.
52	8	17	26	03-25-64			453GBSA	FL					11.							20.		1.000			1,150.
53	8	17	26	08-10-65			453GBSA	FL					13.							20.		1.000			1,110.

TABLE 9A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, FORMATION SOURCE AND GEOGRAPHIC LOCATION.

EDDY COUNTY

EXHIBIT P

PG 1 OF 3

TABLE 9A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY ROCK FORMATION SOURCE AND GEOGRAPHIC LOCATION.

EDDY COUNTY

Map No.	LOCATION SEC.	T.	R.	DATE OF COLLECTION	DEPTH FROM	TO	FORMATION	SAMPLING METHOD	SILICA (SiO2) (MG/L)	IRON (FE) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM + POTASSIUM AS NA (MG/L)	BICARBONATE + CARBONATE (MG/L)	SULFATE (SO4) (MG/L)	NONCARBONATE HARDNESS (MG/L)	CHLORIDE (CL) (MG/L)	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DENSITY OF WATER AT 20C (GRAMS/ML)	DISSOLVED SOLIDS (SUM) (MG/L)	HARDNESS (CA+MG) AS CACO3 (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS AT 25C)	SPECIFIC CONDUCTANCE (MICROMHOS AT 25C)
1	21	17	29	12-30-58	9,143	9,159	400PRLV	DT	-	-	1,100.	289.	12,900.	1,610.	4,000.	1,100.	17,000.			1.026	38,000.	.148	-	
2					-	-			-	-	-	-	-	-	-	-	-			-	-	-	-	
3	21	17	29	03-06-59	8,689	8,746	400PRLV	DT	-	-	-	-	-	-	-	-	-			-	-	-	-	
4	23	18	26	03-06-61	9,094	9,108	400PRLV	PR	-	MD	3,990.	1,280.	45,000.	132.	2,600.	0.0	74,000.			1.095	130,000.	.144	-	
5	22	18	31	10-29-59	11,248	11,262	400PRLV		-	-	2,300.	486.	17,000.	660	970.	-	30,000.			1.039	51,000.	.215	-	
6	32	19	29	12-16-59	9,849	9,874	400PRLV	DT	-	TR	850.	193.	946.	-	2,850.	-	1,400.			1.006	59,000.	.123	-	
7	12	19	31	03-17-62	12,957	12,995	400PRLV	DT	-	-	1,900.	599.	18,000.	506.	960.	-	31,000.			1.007	-	.385	-	
8					-	-			-	-	-	-	-	-	-	-	-			1.038	53,000.	.183	-	
9	8	21	23	12-19-65	-		400PRLV		-	MD	7,300.	820.	14,000.	186.	310.	0.0	36,000.			-	-	-	-	
10	17	23	23	06-08-64	9,492	9,692	400PRLV	DT	-	-	-	-	910.	-	-	-	1,400.			1.035	59,000.	.729	-	
11	17	23	23	06-08-64	9,492	9,692	400PRLV	PT	-	-	-	-	1,400.	-	2,000.	-	2,200.			1.000	-	-	-	
12	17	23	22	06-07-64	9,793	9,788	400PRLV	DT	-	-	-	-	520.	-	2,000.	-	800.			1.000	-	-	-	
13	17	23	23	06-08-64	9,782	9,788	400PRLV	MY	-	-	-	-	390.	-	260.	-	600.			1.000	-	-	-	
14	27	24	27	11-05-58	10,659	12,654	400PRLV		-	-	2,400	480.	15,000.	1,510.	2,300.	-	27,000.			1.038	98,000.	.243	-	
15	16	17	29	10-03-59	10,000		402MRRW		-	-	430.	71.	45.	265.	710.	-	800.			1.003	1,800.	19.	-	
16	36	17	30	11-06-63	11,130		402MRRW	DT	-	TR	24.	0.0	1,900.	1,910.	2,100.	0.0	640.			1.007	6,200.	.014	-	
17	23	19	31	09-19-63		12,100	402MRRW		-	-	1,700.	2,600.	23,000.	6.	4,400.	-	120,000.			1.140	200,000.	.094	-	
18	24	26	29	04-05-64	12,000		402MRRW		-	MD	72	24.	4,100.	1,670.	1,400.	0.0	4,500.			1.015	12,000.	.092	-	
19	24	26	29	04-06-64	12,206		402MRRW	TR	-	MD	9,300.	1,100.	6,000.	186.	1,300.	0.0	19,000.			1.030	31,000.	1.134	-	
20	1	21	23	11-19-63	8,533		402MRRW	DT	-	MD	9,900.	810.	33,000.	470.	610.	0.0	61,000.			1.071	108,000.	.218	-	
21					-	-			-	-	-	-	-	-	-	-	-			-	-	-	-	
22	23	21	22	04-06-59	9,339	9,375	402MRRW	DT	-	TR	3,300.	440.	33,000.	-	35.	-	51,000.			1.059	-	.190	-	
23	31	22	25	04-05-63	9,986	10,006	402MRRW	DT	-	0.0	2,700.	440.	27,000.	590.	500.	0.0	42,000.			1.052	73,000.	.155	-	
24	11	23	24	05-11-60	10,454	10,479	402MRRW	DT	-	-	750.	-	260.	-	9,000.	0.0	400.			1.008	-	2,322	-	
25	26	24	26	12-06-59	11,040	11,074	402MRRW		-	-	18,000	1,300.	37,000.	117.	290.	-	81,000.			1.095	130,000.	.481	-	
26	26	24	26	12-16-59		11,100	402MRRW		-	-	7,500	2,400.	39,000.	289	720.	-	65,000.			1.078	119,000.	.943	-	
27	16	17	29	10-01-59	10,707	10,966	402MRRW	DT	-	0.0	2,500.	760.	49,000.	1,200.	9,000.	-	76,000.			1.088	140,000.	.087	-	
28	15	21	27	04-08-64	10,700		402 TRN	S	-	240	1,100.	190.	15,000.	160.	200.	0.0	26,000.			1.034	94,000.	.101	-	
29	29	23	24	04-04-65	10,611	10,911	402MRRW	DT	-	-	2,200.	1,500.	38,000.	181.	310.	-	78,000.			1.090	123,000.	.389	-	
30	29	23	24	04-04-65	10,611	10,911	402MRRW	DT	-	59	2,500.	2,400.	41,000.	299.	1,200.	-	85,000.			1.092	140,000.	.395	-	
31	29	25	28	06-22-65	12,775	12,810	402MRRW	DT	-	-	1,850.	970.	41,000.	-	560.	-	63,000.			1.071	-	.265	-	
32	28	25	28	06-22-65	12,775	12,810	402MRRW	TR	-	-	-	-	43,000.	-	750.	-	66,000.			1.074	-	-	-	
33	16	12	29	09-20-59	10,693	10,702	403ATRK	DT	-	5.0	2,000	520.	31,000.	955.	5,600.	-	57,000.			1.053	100,000.	.090	-	
34	16	17	29	09-22-59	10,678	10,749	403ATRK	DT	-	MD	900.	320.	14,000.	991.	1,100.	0.0	23,000.			1.029	91,000.	.214	-	
35	16	17	29	09-24-59	10,678	10,744	403ATRK	DT	-	MD	1,100.	130.	48,000.	484.	650.	0.0	72,000.			1.020	120,000.	.033	-	
36	16	17	29	09-29-59	10,678	10,749	403ATRK	DT	-	MD	1,300.	880.	26,000.	104.	1,900.	0.0	93,000.			1.040	74,000.	.106	-	
37	16	17	30	11-01-63	10,270	10,334	403ATRK	DT	-	-	-	-	320.	-	3,500.	-	500.			1.006	-	-	-	
38	32	18	26	04-05-61	9,004	9,136	403ATRK		-	-	-	-	32,000.	-	-	-	49,000.			1.021	-	-	-	
39	36	21	28	02-04-59	11,522	11,651	403ATRK	DT	-	-	2,800.	470.	16,000.	762.	1,100.	-	29,000.			1.036	59,000.	.266	-	
40					-	-			-	-	-	-	-	-	-	-	-			-	-	-	-	
41	36	21	28	12-21-58	11,500	11,650	403ATRK	DT	-	-	830.	630.	18,000.	1,220.	890.	-	18,000.			1.024	38,900.	.213	-	
42					-	-			-	-	-	-	-	-	-	-	-			-	-	-	-	
43	12	24	26	10-30-60	-		403ATRK		-	TR	6,400.	610.	29,000.	-	290.	0.0	37,000.			1.040	-	.352	-	
44	19	17	31	09-30-54		11,265	404STRN		-	-	1,200.	2,600.	83,000.	304.	5,700.	-	130,000.			1.162	220,000.	.075	-	
45	12	19	31	04-23-62	11,136	11,160	404STRN		-	-	6,400.	1,300.	84,000.	479.	1,600.	-	35,000.			1.043	80,000.	.672	-	
46	23	19	31	07-00-63	11,300		404STRN	DT	-	0.0	850.	100.	280.	197.	1,100.	0.0	81.			1.008	1,900.	1.318	-	
47	22	19	31	07-00-63	11,300		404STRN	DT	-	TR	93.	29.	1,300.	369.	2,600.	0.0	320.			1.008	4,500.	.183	-	
48					-	-			-	-	-	-	-	-	-	-	-			-	-	-	-	
49	23	19	31	08-27-63	11,174	11,507	404STRN	ST	-	-	3,900.	300.	79,000.	597.	3,700.	-	130,000.			1.142	210,000.	.081	-	
50	3	20	31	04-23-62	11,484	11,504	404STRN		-	-	5,000.	1,300.	38,000.	1,420.	1,900.	-	83,000.			1.101	140,000.	.458	-	
51	3	20	31	05-07-62	11,527	11,532	404STRN		-	-	4,600.	700.	34,000.	169.	540.	-	77,000.			1.088	120,000.	.417	-	
52	3	20	31	05-19-62	-		404STRN		-	-	7,100.	100.	43,000.	452.	730.	-	87,000.			1.103	140,000.	.333	-	
53	15	21	27	00-00-00	-		404STRN		-	151	1,000	490.	49,000.	32.	2,300.	0.0	87,000.			1.102	150,000.	.170	-	

TABLE 9A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY ROCK FORMATION SOURCE AND GEOGRAPHIC LOCATION.

EDDY COUNTY

EXHIBIT P
PAGE 2 OF 3

TABLE 4A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY BOTH FORMATION SOURCE AND GEOGRAPHIC LOCATION.

TABLE 4A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY BOTH FORMATION SOURCE AND GEOGRAPHIC LOCATION.

EDDY COUNTY

LOCATION SEC.	T.	R.	DATE OF COLLECTION	DEPTH FROM TO	FORMATION	SAMPLING METHOD	SILICA (SIO2) (MG/L)	IRON (FE) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM + POTASSIUM AS NA (MG/L)	BICARBONATE + CARBONATE (MG/L)	SULFATE (SO4) (MG/L)	HYDROGEN SULFIDE (H2S) (MG/L)	CHLORIDE (CL) (MG/L)	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DENSITY OF WATER AT 20C (GM/ML)	DISSOLVED SOLIDS (SUM) (MG/L)	(CA+MG)/(NA+K)	SPECIFIC CONDUCTANCE (UMHOS AT 25C)	SP (cut off)
10	18	27	07-07-59	6,005-	452ABO	FG	-	-	4,800.	3,700.	27,000.	1,700.	1,600.	-	51,000.			1.063	85,000.	.459	-	[illegible]
10	18	27	09-21-59	5,815- 5,837	452ABO	DT	-	-	4,000.	1,700.	12,000.	1,600.	1,300.	-	28,000.			1.038	48,000.	.676	-	5
10	18	27	03-01-60	5,935- 5,992	452ABO	DT	-	-	1,400.	565.	6,700.	1,150.	1,900.	-	12,000.			1.022	29,000.	.405	-	3
10	18	27	03-01-60	6,006- 6,035	452ABO	DT	-	-	1,300.	555.	6,500.	1,130.	1,930.	-	12,000.			1.020	23,000.	.399	-	2
10	18	27	03-02-60	5,935- 5,992	452ABO	FG	-	TR	1,400.	370.	7,000.	1,340.	3,350.	440.	11,000.			1.020	25,000.	.325	-	2
10	18	27	10-14-59	5,749- 5,769	452ABO	DT	-	-	1,660.	295.	10,000.	1,595.	183.	-	18,000.			1.024	33,000.	.297	-	42
11	18	27	10-22-51	5,980- 6,050	452ABO		-	-	1,700.	540.	13,000.	1,649.	1,300.	-	23,000.			1.032	44,000.	.225	-	51
11	18	27	02-22-58	6,100-	452ABO	ST	-	-	1,600.	410.	9,700.	2,200.	1,250.	ND	18,000.			1.027	33,000.	.349	-	42
11	18	27	01-16-59	6,109- 6,129	452ABO	ST	-	-	1,306.	340.	11,000.	1,250.	2,796.	-	18,000.			1.027	35,000.	.187	-	44
11	18	27	01-16-59	6,136- 6,150	452ABO		-	-	1,300.	250.	9,500.	1,130.	2,400.	-	15,000.			1.022	30,000.	.209	-	37
11	18	27	01-17-59	6,138- 6,158	452ABO		-	-	1,090.	395.	4,700.	2,510.	2,900.	NV	15,000.			1.021	30,000.	.189	-	37
11	18	27	08-31-59	6,100- 6,166	452ABO		-	-	915.	120.	13,000.	1,140.	1,700.	-	21,000.			1.030	38,000.	.106	-	98
11	18	27	08-31-59	6,100- 6,166	452ABO	PB	-	-	910.	180.	13,200.	1,020.	1,500.	-	21,000.			1.028	39,000.	.103	-	98
11	18	27	01-06-60	6,109- 6,126	452ABO		-	-	5,200.	545.	12,900.	1,195.	2,500.	-	20,000.			1.027	37,000.	.217	-	95
12	18	27	07-21-59	6,127-	452ABO		-	-	21,000.	3,700.	79,890.	176.	400	-	95,000.			1.119	150,000.	2.129	-	139
16	18	27	04-16-60	5,526- 5,603	452ABO	DT	-	-	1,100.	390.	9,700.	-	7,500.	510.	7,200.			1.007	-	.422	-	
16	18	27	10-20-60	-	452ABO	WH	-	-	4,200.	2,200.	78,600.	364.	4,305.	-	120,000.			1.134	200,000.	.127	-	176
16	18	27	06-30-61	5,555- 5,579	452ABO	ST	-	3.5	3,500.	1,500.	12,000.	151.	2,895.	0.0	120,000.			1.136	190,600.	.100	-	176
16	18	27	06-30-61	5,350- 5,502	452ABO	ST	-	2.0	3,700.	2,900.	82,000.	151.	2,605.	1.0	190,000.			1.151	230,000.	.098	-	192
17	18	27	05-07-59	[illegible]- 5,427	452ABO	DT	-	619.	1,100.	166.	20,330.	197.	6,803.	0.0	28,000.			1.035	57,000.	.077	-	66
17	18	27	06-30-61	5,3[illegible]3- 5,454	452ABO	PG	-	1.0	5,400.	2,900.	69,000.	343.	2,760.	0.0	120,000.			1.138	290,000.	.170	-	177
19	18	27	10-06-60	5,860- 5,932	452ABO	DT	-	79.	610.	110.	3,600.	664.	3,500.	180.	9,200.			1.010	13,000.	.279	-	15
9	18	28	12-27-59	- 6,123	452ABO	DT	-	-	1,900.	150.	9,700.	1,990.	2,200.	-	16,000.			1.025	32,000.	.250	-	39
9	18	28	12-30-59	- 6,303	452ABO	DT	-	-	1,600.	180.	9,500.	1,885.	2,105.	-	15,000.			1.023	31,000.	.235	-	38
9	18	23	03-25-60	6,313- 6,334	452ABO	DT	-	-	2,500.	2,300.	5,900.	2,010.	2,100.	-	17,000.			1.029	32,000.	1.259	-	39
3	19	25	03-09-59	5,770-	452ABO	DT	-	-	750.	310.	1,500.	1,192.	545.	ND	3,400.			1.010	7,890.	.962	-	9
1	19	25	03-13-59	5,770-	452ABO	DT	-	-	860.	217.	8,400.	390.	795.	-	14,000.			1.026	25,000.	.165	-	33
8	19	25	10-29-60	9,569- 9,588	452ABO	SB	-	TR	10,300.	2,400.	2,700.	354.	1,750.	ND	31,000.			1.035	49,000.	8.783	-	60
21	20	24	06-08-60	9,647- 5,003	452ABO	DT	-	0.0	3,300.	1,500.	26,000.	965.	2,890.	460.	46,000.			1.060	80,000.	.221	-	91
32	22	21	10-23-60	3,520- 3,585	452ABO	DT	-	5.0	250.	55.	4,000.	-	7,305	0.0	1,050.			1.005	-	.098	-	
6	23	22	03-22-61	3,100- 3,850	452ABO	DT	-	6.0	550.	150.	110.	-	2,000.	0.0	8.0			1.001	-	5.902	-	
34	24	22	10-21-60	3,480- 3,566	452ABO	DT	-	66.	510.	140.	170.	781.	1,505.	2.0	12.			1.003	3,100.	4.767	-	
25	24	22	07-20-61	3,587- 3,620	452ABO	DT	-	0.0	585.	150.	48.	266.	1,200.	-	530.			1.001	880.	29.	-	
35	17	27	12-19-60	-	452ABRF	ST	-	-	1,300.	380.	8,400.	797.	3,400.	-	13,000.			1.020	27,500.	.265	-	3[illegible]
35	17	27	12-19-60	-	452ABRF	ST	-	-	2,300.	920.	81,000.	365.	9,809.	-	130,000.			1.130	219,000.	.052	-	187
35	17	27	12-19-60	-	452ABRF	ST	-	-	1,200.	320.	11,000.	1,636.	2,730.	-	16,000.			1.024	32,000.	.299	-	90
19	17	32	05-31-62	6,950- 7,100	452ABRF	DT	-	-	1,500.	600.	35,000.	913.	3,190.	NV	26,500.			1.026	51,000.	.157	-	59
20	17	31	09-13-65	7,122- 7,123	452ABRF		-	-	1,600.	380.	14,000.	2,170.	9,505.	-	27,000.			1.025	43,000.	.189	-	51
33	18	26	01-13-59	5,095- 5,240	452ABRF	DT	-	0.0	430.	139.	9,300.	1,120.	2,200.	430.	4,900.			1.010	14,000.	.170	-	16
10	18	27	11-13-58	5,700- 5,800	452ABRF	WH	-	-	3,400.	1,300.	22,000.	319.	2,300.	TR	42,000.			1.047	72,000.	.296	-	65
10	18	27	07-08-59	- 6,005	452ABRF		-	-	7,500.	1,790.	23,000.	809.	1,850.	-	57,000.			1.077	94,000.	.681	-	194
11	18	27	01-17-59	6,104- 6,120	452ABRF	TB	-	-	1,000.	560.	12,000.	2,230.	2,296.	NV	18,000.			1.024	35,000.	.163	-	93
16	18	27	03-03-61	5,338- 5,456	452ABRF	ST	-	800	11,250.	[illegible]	90,000.	0.	1,395.	0.0	95,000.			1.105	150,000.	.570	-	149
16	18	27	04-03-61	-	452ABRF	TB	-	28.	6,100.	[illegible]	63,000.	122.	1,960.	0.0	110,000.			1.126	200,000.	.382	-	164
9	18	28	12-28-59	- 6,393	452ABRF		-	-	1,535.	[illegible]	9,500.	1,076.	2,100.	-	15,000.			1.018	31,000.	.235	-	38
6	18	28	11-26-63	6,174- 6,192	452ABRF	WH	-	-	2,[illegible]	[illegible]	19,000.	2,190.	2,905.	NV	31,000.			1.039	58,000.	.195	-	68
32	19	29	11-16-59	5,070- 5,160	452BSPG	DT	-	-	1,500.	[illegible]	10,000.	290.	5,503.	NV	16,000.			1.020	34,000.	.227	-	41
28	20	30	02-10-65	6,780- 6,909	452BSPG	DT	-	-	1,233.	[illegible]	2,000.	508.	2,000.	ND	4,100.			1.009	10,000.	.918	-	12
7	22	26	02-21-63	6,001- 6,081	452BSPG	DT	-	-	-	-	48,000.	-	1,900.	-	74,000.			1.082	-	-	-	
24	23	29	06-24-60	6,937- 6,991	452BSPG	DT	-	52	27,200	[illegible]	71,000.	130	100.	-	120,000			1.187	270,000.	.599	-	195
33	18	26	12-15-59	3,420- 3,761	452YFSP	DT	-	[illegible]	[illegible]	[illegible]	23,000.	1,240.	1,500.	28.	38,000.			1.046	66,000.	.124	-	79

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EXHIBIT "R"

R27E

EXHIBIT "R"

Harkey Series

The Harkey series consists of deep, well-drained, strongly calcareous, moderately dark colored soils that developed in mixed alluvium. These soils occur on low terraces on flood plains of major streams. They are naturally free of salts, except in areas adjacent to Lake McMillan and the Pecos River. In these areas the water table is at a depth of less than 5 feet part of the year.

In cultivated areas, soils of the Harkey series typically have a surface layer of brown very fine sandy loam 9 inches thick. In uncultivated areas, this layer is slightly lighter colored and contains less organic matter. The next layer, to a depth of more than 60 inches, is brown loam or very fine sandy loam.

These soils are uneroded or only slightly eroded. They are moderately fertile and have a low content of organic matter. Permeability is moderate, and the water-holding capacity is high. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature is 60° to 64° F. The frost-free season is 210 to 220 days. Elevations range from 3,000 to 3,400 feet.

Harkey soils are used for irrigated crops, native pasture, and wildlife habitat. The vegetation consists mainly of black grama, blue grama, tobosa, and vine-mesquite.

In areas affected by salts and that have a fluctuating water table, the vegetation is mainly alkali sacaton, inland saltgrass, four-wing saltbush, and saltcedar.

Typical profile of Harkey very fine sandy loam, 150 feet northeast of the SW. corner of NW¼SE¼, sec. 24, T. 22 S., R. 27 E.

Ap—0 to 9 inches, brown (10YR 5/3) very fine sandy loam, dark brown (10YR 3/3) when moist; massive; slightly hard when dry, very friable when moist, nonsticky and nonplastic when wet; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

AC—9 to 14 inches, light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) when moist; very weak, coarse, prismatic structure to massive; slightly hard when dry, very friable when moist, nonsticky when wet; few, fine, prominent seams of lime; few fine crystals of gypsum or salts, these most abundant in plowpan; strongly calcareous; mildly alkaline; clear, smooth boundary.

C1—14 to 30 inches, brown (7.5YR 5/4) very fine sandy loam, dark brown (7.5YR 4/4) when moist; very coarse, prismatic structure; soft when dry, very friable when moist, nonsticky when wet; few, fine, prominent seams of lime; few fine crystals of gypsum or salts; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

C2—30 to 37 inches, brown (7.5YR 5/4) loam, dark brown (7.5YR 4/4) when moist; massive; slightly hard when dry, friable when moist, nonsticky when wet; few, fine to medium, distinct mottles of lime; strongly calcareous; mildly alkaline; clear, smooth boundary.

C3—37 to 51 inches, brown (7.5YR 5/4) loam, dark brown (7.5YR 4/4) when moist; massive; soft when dry, very friable when moist, nonsticky when wet; strongly calcareous; gradual, smooth boundary.

C4—51 to 87 inches, brown (7.5YR 5/4) silt loam, dark brown (7.5YR 4/4) when moist; massive; slightly hard when dry, friable when moist; strongly calcareous; moderately alkaline.

The thickness of the Ap horizon ranges from 7 to 10 inches. The color ranges from 10YR to 7.5YR in hue, from 5 to 6 in value, and from 3 to 6 in chroma. The texture includes very fine sandy loam, loam, and sandy loam. The thickness of the AC horizon ranges from 5 to 13 inches. The color is lighter than that of the surface horizon. The texture is dominantly loam to light clay loam but includes very fine sandy loam. In places there are strata, generally less than 6 inches thick, of material ranging from sandy loam to light sandy clay loam. A few coarse fragments occur in some profiles.

Harkey soils are associated with Anthony and Arno soils and with the gray variant of Pima soils.

Harkey sandy loam, 0 to 1 percent slopes (Ho).—Except for the texture of the surface layer, this soil has a profile similar to that described as typical of the series. It occurs on low terraces along the Pecos River, mainly in the Carlsbad area. Included in mapping were areas of Anthony sandy loam, 0 to 1 percent slopes, which make up less than 5 percent of the acreage, and a small area of Harkey sandy loam, 1 to 3 percent slopes.

This soil is less productive than Harkey very fine sandy loam, 0 to 1 percent slopes. It is subject to moderate wind and water erosion, and careful management of both soil and irrigation water is needed. The water-holding capacity is moderate in the surface layer, but it is high in the subsoil and substratum. The water-intake rate is moderately rapid.

This soil is used for irrigated crops, native pasture, and wildlife habitat. (Irrigated capability unit IIe-4; dryland capability unit VIIe-2; Sandy range site)

Harkey very fine sandy loam, 0 to 1 percent slopes (Hk).—This soil has the profile described as typical of the series. It occurs on low terraces of the Pecos, Penasco, and Black Rivers. Included in mapping were areas of Anthony and Arno soils and of Pima clay loam, gray variant, 0 to 1 percent slopes. The included areas make up less than 5 percent of the acreage.

This soil is used for irrigated crops, native pasture, and wildlife habitat. It is suited to all the crops grown in the Area. (Irrigated capability unit IIs-2; dryland capability unit VIs-4; Loamy range site)

EXHIBIT "R"

Upton Series

The Upton series consists of moderately dark colored, calcareous, gravelly soils that developed in old alluvium derived from calcareous sedimentary rocks. These soils are very shallow to shallow over caliche and cemented gravel. They occur on upland plains between the Pecos River and the mountains and hills of the western part of the survey Area. They are nearly level to sloping.

Soils of the Upton series typically have a surface layer of grayish-brown gravelly loam about 3 inches thick. The next layer, about 6 inches thick, is brown gravelly loam. Fractured, platy, indurated caliche is at a depth of about 9 inches.

These soils are uneroded or only slightly eroded. Runoff is slow to medium. Permeability is moderate. The water-holding capacity is low to very low, and the soils are droughty. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature is 60° to 64° F. The frost-free season is 200 to 217 days. Elevations range from 3,000 to 4,400 feet.

Upton soils are used principally for native pasture and wildlife habitat. A small acreage is used for irrigated crops. The vegetation consists mainly of black grama, side-oats grama, blue grama, hairy grama, creosotebush, tarbush, burrograss, broom snakeweed, and mesquite. Good management is needed to maintain a cover of desirable forage and to control erosion. Revegetation is difficult because temperatures are high and rainfall is undependable. Surface water is lacking.

Typical profile of Upton gravelly loam, 2,160 feet east and 1,650 feet south of the NW. corner of sec. 15, T. 24 S., R. 26 E.

A1—0 to 3 inches, grayish-brown (10YR 5/2) gravelly loam, dark grayish brown (10YR 4/2) when moist; weak, medium, granular structure; slightly hard when dry, friable when moist, slightly sticky and slightly plastic when wet; common very fine and fine pores; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

C1—3 to 9 inches, brown (10YR 5/3) gravelly loam, dark brown to brown (10YR 4/3) when moist; massive; slightly hard when dry, friable when moist, slightly sticky and slightly plastic when wet; common very fine and fine pores; strongly calcareous; mildly alkaline; abrupt boundary.

C2cam—9 inches, fractured, platy, indurated caliche and cemented gravel; upper part of the horizon is laminar.

The A1 horizon ranges from 1 to 4 inches in thickness. The color ranges from 10YR to 7.5YR in hue, from 5 to 7 in value, and from 2 to 4 in chroma. The C1 horizon ranges from 1 to 9 inches in thickness. The color ranges from 10YR to 7.5YR in hue, from 5 to 6 in value, and from 3 to 4 in chroma. The depth to caliche ranges from 2 to 20 inches.

Upton soils are associated with Atoka, Reagan, and Simona soils.

Upton gravelly loam, 0 to 9 percent slopes (UG, Uo).—This soil has the profile (fig. 17) described as typical of the series. It occurs as whalebacks, or elongated areas with rounded crests. The areas are west of the Pecos River on broad plains and in valleys, and east and west of the River, from Carlsbad southward to the Texas State line. Included in mapping were small areas of Upton soils 0 to 1 percent slopes; Upton soils, 1 to 3 percent slopes; Atoka loam, 0 to 1 percent slopes; Atoka loam, 1 to 3 percent slopes; and Reagan loam, 0 to 1 percent slopes. The included areas make up less than 15 percent of the acreage.

Some of the acreage was mapped at high intensity, and some at low intensity. Most of the acreage is in the low-intensity survey. The principal difference between the soils mapped at the two intensities is the size of the individual areas and the kinds of included soils. In the low-intensity survey, the areas are generally large; some are as much as several hundred acres in size. In the high-intensity survey, most areas are 5 to 50 acres in size. The included areas of Atoka loam and Reagan loam are more extensive in the low-intensity survey.

This soil is used for native pasture. Roots are restricted by shallowness over hard caliche. Fertility is low. (Dryland capability unit VIIs–1; Shallow range site)

** 900 [redacted] Page 5 of 5.

EXHIBIT "R"

Atoka loam, 0 to 1 percent slopes (Ac).—This soil has the profile described as typical of the Atoka series. It occurs in broad swales on the plains west of the Pecos River near Artesia and Carlsbad. Included in mapping were areas of Reagan and Upton soils, which make up less than 5 percent of the acreage. Also included were areas of Atoka fine sandy loam.

This soil is used for irrigated crops and native pasture. It is fertile, but the underlying caliche and the moderate water-holding capacity limit the growth of deep-rooted crops. It can be used for shallow-rooted crops. (Irrigated capability unit IIIs-14; dryland capability unit VIs-3; Loamy range site)

Atoka Series

The Atoka series consists of well-drained, moderately dark colored, level to gently sloping soils that developed in moderately deep old alluvium derived from calcareous sedimentary rocks. These soils (fig. 10) occur on uplands along the Pecos River in the general area of Artesia and Carlsbad. They are loamy and calcareous.

Soils of the Atoka series typically have a surface layer of grayish-brown to brown loam about 8 inches thick. The next layer, about 15 inches thick, consists of brown to dark-brown loam. A layer, about 10 inches thick, that is enriched with calcium carbonate rests on fractured, indurated caliche at a depth below 33 inches.

These soils are uneroded or only slightly eroded. The natural fertility is moderate, and the organic-matter content is low. Permeability is moderate, and the water-holding capacity is moderate. Rainfall amounts to 10 to 14 inches annually, and the mean annual temperature ranges from 60° to 64° F. The frost-free season is 210 to 220 days. Elevations range from 3,050 to 4,300 feet.

Atoka soils are used for irrigated crops and native pasture. The vegetation consists of black grama, blue grama, tobosa, side-oats grama, bush muhly, and vine-mesquite.

Typical profile of Atoka loam, 0 to 1 percent slopes, NE¼NW¼SW¼NE¼ sec. 4, T. 23 S., R. 27 E.

A11—0 to 2 inches, grayish-brown (10YR 5/2) very fine sandy loam, dark brown (10YR 3/3) when moist; moderate, thin and very thin, platy structure; soft when dry, friable when moist, nonsticky when wet; common very fine and fine pores; abundant fine and medium roots; strongly calcareous; mildly alkaline; abrupt, smooth boundary.

A12—2 to 8 inches, brown (10YR 5/3) loam, dark brown (10YR 4/3) when moist; weak, course, subangular blocky structure; hard when dry, friable when moist; slightly sticky when wet; abundant worm casts; common very fine and fine pores; abundant fine and medium roots; strongly calcareous; mildly alkaline; gradual, smooth boundary.

AC—8 to 15 inches, brown (10YR 5/3) loam, dark brown (10YR 4/3) when moist; weak, coarse, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; abundant worm casts; common very fine and fine pores; plentiful very fine and fine roots; few seams of lime; strongly calcareous; mildly alkaline; gradual, smooth boundary.

C1—15 to 23 inches, dark-brown (10YR 4/3) loam, dark brown (7.5YR 4/4) when moist; very weak, coarse, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; abundant worm casts; common very fine and fine pores; plentiful very fine and fine roots; few seams of lime; strongly calcareous; mildly alkaline; clear, smooth boundary.

C2ca—23 to 33 inches, light yellowish-brown (10YR 6/4) loam, yellowish brown (10YR 5/4) when moist; very weak, coarse, subangular blocky structure; slightly hard when dry, friable when moist, slightly sticky when wet; common, fine to medium, white (10YR 8/2) lime concretions, very pale brown (10YR 8/3) when moist; common very fine and fine pores; few very fine roots; strongly calcareous; mildly alkaline; abrupt, wavy boundary.

C3cam—33 inches, fractured, indurated, gravelly caliche.

The A horizon ranges from 4 to 8 inches in thickness. Its texture is very fine sandy loam, loam, or fine sandy loam. The color of the A horizon ranges from 10YR to 7.5YR in hue, from 5 to 6 in value, and from 2 to 3 in chroma. The C2ca horizon ranges from 9 to 22 inches in thickness. Its texture is generally loam to light clay loam, but in places it is silty clay loam. The depth to indurated caliche or strongly cemented gravel ranges from 20 to 36 inches.

Atoka soils are associated with soils of the Upton and Reagan series.

FILE_NO	FIL_SUF	REF_BAS	REF_NO	REF_SUF	OWNERSHIP	DEPTH	WDF	DATECLTD	CLTR	USE	LOCATION	LSELEV	PT_CLTN	CHLORIDES	CONDUCT	TDS	TEMP	ADD_DATA	CARD_DATE	SOURCE	DPN	METER
						0						0.00		0	0	0	0					0
						0						0.00		0	0	0	0					0
						0						0.00		0	0	0	0					0
						0						0.00		0	0	0	0					0
						0						0.00		0	0	0	0					0
						0						0.00		0	0	0	0					0
						0						0.00		0	0	0	0					0
						0						0.00		0	0	0	0					0
						0						0.00		0	0	0	0					0
						0						0.00		0	0	0	0					0
						0	PAT	60/11/04	ONR	STK	01N.17E.28.32444	0.00	DP	39	3055	0	0	X	0586	P		0
						0	PAT	86/05/13	SEO	STK	01N.17E.28.32444	0.00	DP	168	4124	0	70		0187			0
						850	PSA	60/11/04	ONR	STK	01N.18E.09.222212	0.00	TANK	46	2730	0	0	X	0586	P		0
						0	PSA	86/05/12	SEO	STK	01N.18E.09.222212	0.00	DP	32	2492	0	0		0187			0
						0	PB	60/11/04	ONR	STK	01N.18E.21.233212	5564.00	TANK	2	730	0	0	X	0586	P		0
						1000	PSA	86/05/12	SEO	STK	01N.18E.30.32222	5582.00	DP	15	2706	0	0		0187			0
						1112	PSA	86/05/12	SEO	STK	01N.18E.34.34400	5375.00	DP	299	3457	0	70		0287			0
						0	PSA	60/11/04	ONR	STK	01N.18E.34.344421	0.00	TANK	362	3530	0	0	X	0586	P		0
						820	PSA	86/05/12	SEO	STK	01N.18E.36.34241	0.00	DP	1090	6088	0	0		0187			0
						264	PAT	60/11/04	ONR	DOM	01N.19E.33.41331	0.00	YT	28	2940	0	0	X	0586	P		0
						264	PAT	86/05/12	SEO	DOM	01N.19E.33.41331	0.00	YT	21	2533	0	0		0187			0
						53	PAT	65/10/25	USG	STK	01N.21E.30.13321	4744.00	DP	64	1770	0	0	X	0585	U	11-10864	0
						11	PAT	85/05/14	SEO	STK	01N.21E.30.13321	4744.00	DP	55	1563	0	0		0585		11-10864	0
						95	TRS	65/12/09	USG	STK	01N.22E.03.412424	4777.00	DP	20	562	0	0	X	0585	U	11-10868	0
						70	PAT	65/12/07	USG	STK	01N.22E.08.33120	4653.00	DP	24	2740	0	0	X	0585	U	11-10869	0
						0	PAT	65/12/09	USG	STK	01N.22E.27.232243	4716.00	DP	80	2040	0	0	X	0585	U	11-10872	0
						0	PAT	39/12/09	USG	STK	01N.23E.26.123444	0.00	DP	54	3070	0	0	X	0585	U		0
					BATES A E/ALAMO RANCH	160	TRS	89/10/26	SEO	DOM	01N.25E.01.334112	4136.00	YT	88	1248	0	0		0990			0
					BATES A E	0	TRS	89/10/12	SEO	STK	01N.25E.08.344140	4197.00	DP	100	1566	0	71		0990		11-10082	0
						0	PAT	65/07/27	USG	STK	01N.25E.09.112423	4278.00	DP	98	1510	0	0	X	0585	U	11-10083	0
						0	PAT	85/07/23	SEO	STK	01N.25E.09.112423	4278.00	DP	96	1473	0	70		0186		11-10083	0
					BATES A E	0	PAT	89/10/12	SEO	STK	01N.25E.14.221431	4152.00	DP	20	1566	0	67		0990		11-10084	0
					BATES A E	250	TRS	89/10/12	SEO	STK	01N.25E.24.214324	4077.00	DP	94	1508	0	70		0990		11-10085	0
					WILTON BILLY	268	TRS	89/09/22	SEO	STK	01N.25E.36.243333	4035.00	DP	86	1564	0	68		0990		11-10087	0
00048					BARNHART LOGAN	40	QAL	89/09/13	SEO	STK	01N.26E.01.431231	3937.00	DP	1140	6526	0	0		0990			0
00364					DUNCAN LORENA	140	TRS	89/09/29	SEO	STK	01N.26E.04.233114	3998.00	DP	80	1212	0	67		0990		11-10051	0
						197	QAL	58/02/12	SEO	IRR	01N.26E.04.42144	3992.00	DP	190	2160	0	0	X	0683	U	11-10085	0
						197	QAL	58/02/13	SEO	IRR	01N.26E.04.42144	3992.00	DP	190	2160	0	0	X	0585	U	11-10088	0
					DUNCAN T J	165	QAL	89/10/26	SEO	STK	01N.26E.08.21111	4057.00	DP	82	1557	0	69		0990		11-10090	0
					GOOLSBY L	234	QAL	89/09/29	SEO	IRR	01N.26E.09.23222	3988.00	YT	166	1864	0	66		0990			0
						0	QAL	67/02/15	USG	OBS	01N.26E.11.3431	0.00	BLR8	1560	8200	0	0		0685	U		0
00023						188	QAL	63/12/10	SEO	IRR	01N.26E.16.124144	3985.00	DP	310	2270	0	67				11-10091	0
00003	S				GOOLSBY A D & LARRY	200	QAL	89/09/29	SEO	IRR	01N.26E.16.23331	3978.00	YT	718	3664	0	68		0990		11-10092	0
00023	X					166	QAL	63/12/10	SEO	IRR	01N.26E.16.311112	4007.00	DP	110	1610	0	69				11-10093	0
00023	X					166	QAL	85/07/23	SEO	IRR	01N.26E.16.311112	4007.00	DP	112	1607	0	67		1185		11-10093	0
						0	QAL	39/12/15	USG	STK	01N.26E.17.13400	4057.00	DP	98	1310	0	0	X	0683	U	11-10095	0
					DUNCAN J T	0	QAL	89/10/26	SEO	STK	01N.26E.17.13400	4057.00	DP	90	1340	0	0		0990		11-10095	0
						0	QAL	40/06/11	USG	STK	01N.26E.18.13113	0.00	DP	82	956	0	0	X	0983	U		0
00217						147	TRS	80/01/16	SEO	STK	01N.26E.19.412444	4027.00	DP	70	1677	0	67		183		11-10096	0
00217						147	TRS	85/07/23	SEO	STK	01N.26E.19.412444	4027.00	DP	77	1686	0	70		1185		11-10096	0
00217					WILTON BILLY	255	QAL	89/09/22	SEO	STK	01N.26E.19.4124444	4027.00	DP	76	1664	0	68		0990		11-10097	0
						190	QAL	80/01/17	SEO	STK	01N.26E.21.411111	3971.00	DP	638	3296	0	68		0683		11-10098	0
00021						176	QAL	63/12/10	SEO	IRR	01N.26E.28.12222	3966.00	DP	450	2635	0	67				11-10100	0
00021						176	QAL	76/03/01	ONR	IRR	01N.26E.28.12222	3966.00	DP	314	2229	0	0				11-10100	0
						0	QAL	80/01/16	SEO	STK	01N.26E.32.1233313	3957.00	DP	548	3384	0	0		0683		11-10101	0
						0	QAL	80/01/17	SEO	STK	01N.26E.32.1233313	3957.00	DP	396	2601	0	64		0683		11-10101	0
						0	QAL	85/08/09	SEO	STK	01N.26E.32.1233313	3957.00	DP	440	2676	0	68		1185		11-10101	0
00320					TRIANGLE CATTLE CO	70	QAL	89/09/13	SEO	STK	01N.27E.06.131214	3968.00	DP	302	1823	0	0		0990			0

19174	C	00098	S																				
19175	C	00029																					
19176	C	00028																					
19177	C	00029																					
19178	C																						
19179	C	00195	S																				
19180	C	00195	S																				
19181	C	00508																					
19182	C	00766																					
19183	C	00291																					
19184	C	00291																					
19185	C	00310																					
19186	C	00155																					
19187	C	00155																					
19188	C	00155																					
19189	C	00368																					
19190	C																						
19191	C	00187																					
19192	C	00187																					
21320	C	00187																					
25817	C	00187				OGDEN J																	
21321	C	01195																					
25818	C	01195				WHEELER C																	
19193	C	00228	A																				
19194	C	00228	A																				
21322	C	00498	E																				
19195	C	00518																					
19196	C																						
19197	C	00276																					
19198	C	01473																					
19199	C	01473																					
19200	C																						
19201	C	00289																					
19202																							
19203	C	00563																					
19204	C	00563	S																				
19205	C	00069																					
19206	C	00309																					
19207	C	00309																					
19208	C	00326																					
19209	C	00326																					
19210	C	00326																					
19211	C	00512																					
19212	C																						
19213	C	00501																					
19214	C																						
19215	C	00379																					
19216	C	00312	S																				
19217	C	01891																					
19218	C	01891																					
21323	C	01891																					
19219	C	00231																					
19220	C	00231	S																				
19221	C	01892	S																				
19222	C	01892	S																				
19223	C	01892																					
19224	C	01892																					
19225	C	00306		C	01773																		
20930																							
19226	C	00024																					

140	QAL	51/01/16	USG	IRR	23S.27E.04.433334	3142.00	DP	635	4180	0	0	ABDN	U	15-10271									
231	QAL	53/07/14		IRR	23S.27E.06.213231	3192.00	DP	316	2350	0	0 X	0685	P										
0	QAL	81/05/19	SED	IRR	23S.27E.06.214213A	3188.00	DP	876	4514	0	67	183		15-20113									
263	QAL	53/07/14		IRR	23S.27E.06.231111	3195.00	DP	249	2000	0	0 X	0685	P	15-10275									
140	QAL	54/11/04	USG	DOM	23S.27E.08.11340	3186.00	DP	17	2620	0	0	ABDN	U	15-20114									
195	QAL	50/07/18	USG	IRR	23S.27E.09.211124	3143.00	DP	710	4610	0	0 X	0685	U	15-10276									
195	QAL	53/07/14	USG	IRR	23S.27E.09.211124	3143.00	DP	870	4800	0	0 X	0685	P	15-10276									
190	QAL	53/07/14	USG	IRR	23S.27E.10.413333	3106.00	DP	309	2350	0	0 X	0685	P	15-06697									
199	QAL	81/05/27	SED	IRR	23S.27E.11.113133	3089.00	DP	1260	6581	0	67	781		15-20115									
180	QAL	53/07/14	USG	IRR	23S.27E.11.33444	3104.00	DP	543	3450	0	0 X	0685	P										
180	QAL	81/05/22	SED	IRR	23S.27E.11.33444	3104.00	DP	2248	8910	0	66	183											
180	QAL	53/07/14	USG	IRR	23S.27E.11.43344	3103.00	DP	543	3600	0	0 X	0685	P	15-06698									
215	QAL	53/07/17	USG	IRR	23S.27E.12.134433	3084.00	DP	1136	6000	0	0 X	0685	P										
215	QAL	54/08/18	USG	IRR	23S.27E.12.134433	3084.00	DP	1140	6370	0	0	0685	U										
215	QAL	81/05/14	SED	IRR	23S.27E.12.134433	3084.00	DP	1540	7658	0	66	183											
237	QAL	81/05/27	SED	IRR	23S.27E.13.33311	3111.00	DP	86	1383	0	69	781											
230	QAL	46/09/26	USG		23S.27E.14.124414	3112.00	DP	195	1820	0	0 X	ABDN	U	15-10279									
125	QAL	53/07/14	USG	IRR	23S.27E.15.144334	3122.00	DP	518	2630	0	0 X	0685	P	15-20116									
125	QAL	85/09/05	SED	STK	23S.27E.15.144334	3122.00	YT	450	3341	0	0	1185		15-20116									
125	QAL	87/09/04	SED	DOM	23S.27E.15.144334	3122.00	YT	63	1204	0	0	0987		15-20116									
125	QAL	92/03/24	SED	IRR	23S.27E.15.144334	3122.00	YT	720	4430	0	66	0892		15-20116									
180	QAL	87/07/07	SED	DOM	23S.27E.19.421232	3192.00	YT	48	1040	0	0	0887		15-10280									
180	QAL	92/03/26	SED	DOM	23S.27E.19.421232	3192.00	DP	73	1090	0	69	0892		15-10280									
190	QAL	81/05/14	SED	MUN	23S.27E.21.31111	3170.00	DP	48	1036	0	69	183											
190	QAL	85/09/04	SED	MUN	23S.27E.21.31111	3170.00	DP	45	1082	0	70	1185											
210	QAL	87/09/04	SED	IRR	23S.27E.23.11421	3132.00	YT	61	2101	0	0	0987		15-06702									
203	QAL	81/05/11	SED	IRR	23S.27E.23.311424	3139.00	DP	28	1166	0	68	183											
210	QAL	54/09/21	USG	IRR	23S.27E.23.31230	3138.00	DP	105	2160	0	0 X	0685	U										
232	QAL	53/07/14	USG	IRR	23S.27E.24.11141	3112.00	DP	117	1190	0	0 X	0685	P	15-20117									
240	QAL	81/05/12	SED	IRR	23S.27E.25.31111	3142.00	DP	728	4461	0	69	183											
240	QAL	85/08/27	SED	IRR	23S.27E.25.31111	3142.00	DP	1004	5080	0	69	1185											
156	QAL	54/11/01	USG	STK	23S.27E.26.323332	3139.00	DP	89	2700	0	0	0685	U	15-10283									
210	QAL	53/04/09	USG	IRR	23S.28E.05.111444	3036.00	DP	731	6400	0	0 X	0685	P	15-20119									
160	QAL	85/09/05	SED	DOM	23S.28E.06.34331	3044.00	YT	2250	9251	0	0	0186											
165	QAL	81/05/14	SED	IRR	23S.28E.07.11331	3050.00	DP	1660	7658	0	0	183		15-10285									
195	QAL	54/09/20	USG	IRR	23S.28E.07.11333	3050.00	DP	1120	6030	0	0	0685	U	15-20120									
227	QAL	53/07/16	USG	IRR	23S.28E.07.33333	3059.00	DP	639	3800	0	0 X	0685	P	15-08046									
165	QAL	53/07/17	USG	IRR	23S.28E.08.13111	3033.00	DP	1001	5400	0	0 X	0685	P	15-10286									
165	QAL	81/05/14	SED	IRR	23S.28E.08.13111	3033.00	DP	1400	6821	0	66	183		15-10286									
196	QAL	53/07/16	USG	IRR	23S.28E.10.333423	3014.00	DP	1001	5300	0	0 X	0685	P	15-08048									
196	QAL	81/05/14	SED	IRR	23S.28E.10.333423	3014.00	DP	1310	7017	0	68	183		15-08048									
196	QAL	85/08/23	SED	IRR	23S.28E.10.333423	3014.00	DP	1570	7837	0	68	1185		15-08048									
100	QAL	53/04/16	USG	IRR	23S.28E.11.114421	2995.00	DP	1243	6750	0	0 X	0685	P	15-10288									
0		67/03/27	SED	MOD	23S.28E.13.22222	0.00	DISPIT	131000	203120	0	0	0285											
160	QAL	81/05/27	SED	IRR	23S.28E.15.32111	3004.00	DP	2020	8960	0	66	781		15-10290									
137	QAL	53/04/17	USG	IRR	23S.28E.15.32111A	3003.00	DP	1132	7000	0	0 X	0685	P	15-07062									
149	QAL	53/07/16	USG	IRR	23S.28E.15.433131	3005.00	DP	1079	5900	0	0 X	0685	P	15-08058									
250	QAL	53/03/03	USG	IRR	23S.28E.17.33333	3057.00	DP	89	1600	0	0 X	0685	P	15-20123									
150	QAL	53/02/00	USG	IRR	23S.28E.18.221242	3039.00	DP	628	4800	0	0 X	0685	P	15-10292									
150	QAL	81/05/18	SED	IRR	23S.28E.18.221242	3039.00	DP	1950	8163	0	67	183		15-10292									
150	QAL	87/07/08	SED	IRR	23S.28E.18.221242	3039.00	DP	1158	7109	0	68	0887		15-10292									
278	QAL	53/07/16	USG	IRR	23S.28E.18.33330	3085.00	DP	103	1500	0	0 X	0685	P	15-10293									
248	QAL	54/09/24	USG	IRR	23S.28E.18.333332	3086.00	DP	102	1620	0	0	0685	U	15-08060									
200	QAL	46/12/16	USG	IRR	23S.28E.20.144444	3054.00	DP	1620	7770	0	0 X	0685	U	15-10294									
200	QAL	54/09/07	USG	IRR	23S.28E.20.144444	3054.00	DP	725	4090	0	0	0685	U	15-10294									
150	QAL	53/07/16	USG	IRR	23S.28E.20.232433	3054.00	DP	245	2000	0	0 X	0685	P										
150	QAL	85/09/05	SED	IRR	23S.28E.20.232433	3054.00	DP	1080	4906	0	0	1185											
159	QAL	53/07/16	USG	IRR	23S.28E.21.13342	3052.00	DP	316	2250	0	0 X	0685	P										
0	QAL	85/09/04	SED	DOM	23S.28E.21.22223	3024.00	DP	1750	7985	0	69	0187											
150	QAL	53/07/16	USG	IRR	23S.28E.22.333343	3031.00	DP	2407	8500	0	0 X	0685	P	15-10295									

EXHIBIT H
PAGE 2 of 3

21257	C	02147					125	PCP	87/07/07	SEO	DOM	22S.26E.11.421	3160.00	YT	105	1092	0	70		088[illegible]			
21259	C	00503		C	182		129	PCP	87/07/14	SEO	IRR	22S.26E.12.11111	3138.00	DP	303	2226	0	69		0887		15-07021	
18809	C	01287					206	PCP	53/02/00	USD	IRR	22S.26E.12.11210	3134.00	DP	138	1280	0	0	X	0685	P	15-10211	
25762	C	01287				VOIGHT L	206	PCP	92/04/15	SEO	IRR	22S.26E.12.11210	3134.00	DP	30	2280	0	70		0892		15-10211	
21260	C	00133					59	QAL	87/07/08	SEO	IRR	22S.26E.12.31130	3139.00	DP	416	3315	0	67		0887		15-10212	
25763	C	00133				COX J	125	QAL	92/05/14	SEO	IRR	22S.26E.12.31130	3139.00	DP	630	3970	0	68		0892		15-10212	
18810	C	00771					0	QAL	78/01/17	ONR	DOM	22S.26E.12.31130A	0.00	YT	477	3881	0	0		0285			
18811	C	00499					180	QAL	53/02/00	USD	IRR	22S.26E.12.341421	3133.00	DP	405	3700	0	0	X	0685	P	15-20168	
25764						KING D	108	QAL	92/05/13	SEO	D&I	22S.26E.13.331241	3162.00	YT	66	990	0	0		0892		15-07022	
18812	C	00149					125	PT	53/07/21	USD	IRR	22S.26E.14.322331	3202.00	DP	75	800	0	0		0685	P	15-20169	
25765	C	00149				KLEIN EDWARD	125	PCP	92/05/14	SEO	IRR	22S.26E.14.322331	3202.00	TS@123	115	940	0	0		0892		15-20169	
21261	C	00149					125	PCP	87/07/16	SEO	DOM	22S.26E.14.322331A	0.00	DP	103	990	0	0		0887			
18813	C	[illegible]		TH	00001		443	PCP	55/04/07	USG	EXP	22S.26E.15.42200	3254.00	DP	56	803	0	0	X	0685	U	15-10214	
21262							257	PCP	87/07/08	SEO	STK	22S.26E.20.31412	3346.00	DP	9	575	0	0		0887		15-20170	
25766						WINDLAM J S	257	PCP	92/04/14	SEO	STK	22S.26E.20.31412	3347.00	DP	56	560	0	68		0892		15-20170	
25767	C	01404				RAYEOUX JESSE F	256	PCP	92/04/14	SEO	D&S	22S.26E.20.321311	3335.00	DP	40	670	0	0		0892			
21263	C	01404					285	PCP	87/07/08	SEO	DOM	22S.26E.20.32141	0.00	DP	7	556	0	0		0887			
21480							0	PYA	54/06/07	USG	STK	22S.26E.20.32300	0.00	DP	4	524	0	0		8805			
21773	C	00225	A				119	QAL	87/10/16	SEO	DOM	22S.26E.25.111231	3200.00	TANK	25	861	0	0		0788		15-05154	
25768	C	00225	A	C	00338	HAYES L	119	QAL	92/04/09	SEO	DOM	22S.26E.25.111231	3200.00	DP	61	950	0	0		0892		15-05154	
21485							0	QAL	54/07/07	USG	DOM	22S.26E.25.42113	0.00	DP	172	1680	0	0		8805			
21264	C	00635					580	PCP	87/08/07	SEO	NOT	22S.26E.28.41310	3300.00	TS@588	14	487	0	0		ABDN		15-10218	
21481							580	PCP	55/06/02	USG	OBS	22S.26E.28.41310	3300.00	DP	26	618	0	0		8805		15-10218	
25769	C	00635				CARLSBAD CITY OF	580	PCP	92/04/09	SEO	OBS	22S.26E.28.41310	3300.00	TS@212	57	550	0	0		0892		15-10218	
21452							389	PCP	87/10/15	SEO	STK	22S.26E.31.31244	3442.00	DP	21	500	0	70		1187			
25770	C	01445				GRANDI HENRY	389	PCP	92/04/14	SEO	STK	22S.26E.31.31244	3442.00	DP	55	380	0	66		0892			
21482							200	QAL	54/07/07	USG	OBS	22S.26E.35.222241	3229.00		26	842	0	0		8805		15-10220	
18814	C				ABO 00		300	QAL	00/05/07	USG	MUN	22S.26E.36.111214	3228.00	DP	25	803	0	0		0685	U	15-10221	
21265	C	00589					104	QAL	87/08/18	SEO	NOT	22S.27E.04.44231	3097.00	TS@21	564	3752	0	0		ABDN		15-07024	0
25771	C	00589				TRACY F G	104	QAL	92/04/02	SEO	IRR	22S.27E.04.44231	3097.00	TS@23	1090	4930	0	0		0892		15-07024	0
21266							400	PT	87/07/17	SEO	IRR	22S.27E.05.142314	3161.00	DP	812	4714	0	0		0887		15-20172	0
25772						JOYCE J R	400	PT	92/04/14	SEO	IRR	22S.27E.05.142314	3161.00	DP	1130	5300	0	68		0892		15-20172	0
18815	C						110	QAL	54/01/11	USG	IRR	22S.27E.08.312443	3096.00	DP	680	4450	0	0		0685	U	15-10225	0
18816	C						90	QAL	54/09/09	USG	IRR	22S.27E.08.31311	3102.00	DP	555	3880	0	0		0685	U	15-10224	0
18817	C	00360					125	QAL	53/07/06	USD	IRR	22S.27E.08.344443	3101.00	DP	582	3600	0	0	X	0685	P		0
18818	C	00023					90	QAL	53/07/06	USD	IRR	22S.27E.09.33334	3109.00	DP	770	4500	0	0	X	0685	P	15-10226	0
18819	C	00092					70	QAL	53/07/06	USD	IRR	22S.27E.09.33431	3102.00	DP	770	4750	0	0	X	0685	P	15-07026	0
21267							72	QAL	87/07/15	SEO	DOM	22S.27E.09.33431A	0.00	DP	972	5514	0	0		0887			0
25773						GILLESPIE JOHN	72	QAL	92/04/10	SEO	D&S	22S.27E.09.33431A	3099.00	DP	1090	5580	0	78		0892			0
18820	C	00021	A				118	QAL	82/10/20	SEO	IRR	22S.27E.09.44444	3080.00	DP	1054	6016	0	65		1282			0
21268	C	00021	A				118	QAL	87/07/15	SEO	IRR	22S.27E.09.44444	3080.00	YT	1668	8023	0	0		0887			0
25774	C	00021	A			SUNSET GARDENS MEMORIAL PARK	196	QAL	92/04/14	SEO	IRR	22S.27E.09.44444	3080.00	YT	1710	7970	0	0		0892			0
18821	C	00022					169	QAL	53/02/00	USD	IRR	22S.27E.10.333333	3079.00	DP	820	6000	0	0	X	0685	P	15-10228	0
18822	C	00700					132	QAL	53/04/09	USD	IRR	22S.27E.15.233344	3079.00	DP	667	6000	0	0	X	0685	P	15-07027	0
18823	C	00700					132	QAL	54/08/16	USG	IRR	22S.27E.15.233344	3079.00	DP	860	5370	0	0		0685	U	15-07027	0
18824	C						123	QAL	53/07/17	SEO	IRR	22S.27E.17.21333	3108.00	DP	575	3750	0	0	X	0685	P	15-10231	0
18825	C	00540					300	QAL	53/07/14	SEO	IRR	22S.27E.20.313333	3152.00	DP	660	4050	0	0	X	0685	P	15-10235	0
21269	C	00540					300	QAL	87/07/07	SEO	IRR	22S.27E.20.313333	3152.00	DP	906	5059	0	67		1087		15-10235	0
25775	C	00540				MARTIN M	300	QAL	92/04/08	SEO	IRR	22S.27E.20.313333	3152.00	YT	1090	5150	0	68		0892		15-10235	0
18826	C	01246					170	QAL	53/02/00	USD	IRR	22S.27E.20.333333	3154.00	DP	508	3500	0	0	X	0685	P	15-07031	0
18827	C	00114					253	QAL	53/07/16	USD	IRR	22S.27E.20.413333	3138.00	DP	699	4150	0	0	X	0685	P		0
18828	C	00016					167	QAL	53/05/15	USD	IRR	22S.27E.21.34231	3122.00	DP	973	5500	0	0	X	0685	P		0
18829	C	00027					166	QAL	53/07/21	USD	IRR	22S.27E.21.344444	3124.00	DP	763	4450	0	0	X	0685	P	15-10236	0
18830	C	00009					165	QAL	53/04/15	USD	IRR	22S.27E.22.333333	3112.00	DP	848	5000	0	0	X	0685	P	15-07032	0
18831	C	00294					156	QAL	53/07/21	USD	IRR	22S.27E.24.43334	3063.00	DP	1129	6000	0	0	X	0685	P	15-20174	0
18832	C	00393					141	QAL	53/04/09	USD	IRR	22S.27E.25.31311	3069.00	DP	671	6000	0	0	X	PLUG	P		0
18833	C	00078					0	QAL	53/05/14	USD	IRR	22S.27E.26.313331	0.00	DP	923	5500	0	0	X	0685	P		0
18834	C	00410					205	QAL	53/05/14	USD	IRR	22S.27E.26.443333	3077.00	DP	809	4700	0	0	X	0685	P	15-07069	0
18835	C	00014	S				205	QAL	53/01/09	USD	IRR	22S.27E.28.133333	3138.00	DP	643	4200	0	0	X	0685	P	15-10241	0
18836	C	00015					195	QAL	53/04/09	USD	IRR	22S.27E.28.444343	3124.00	DP	405	5000	0	0	X	0685	P	15-06648	0

EXHIBIT "H"

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

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Revised February 10, 1994
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Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1 Operator Name and Address	2 OGRID Number
Scurlock Permian Corporation P.O. Box 4648 Houston, Texas 77210-4648 MAY 31 '94	3 API Number 30 - 0

4 Property Code	5 Property Name	6 Well No.
	Dunaway ARTESIA, OFFICE	No 1

7 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	23	22S	27E		1480	FNL	1980	FWL	Eddy

8 Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

9 Proposed Pool 1	10 Proposed Pool 2

11 Work Type Code	12 Well Type Code	13 Cable/Rotary	14 Lease Type Code	15 Ground Level Elevation
N	(Brine Well)	R	P	3094
16 Multiple	**17 Proposed Depth**	**18 Formation**	**19 Contractor**	**20 Spud Date**
No	850 ft	Salado Salt	Unknown	June 1994

21 Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12½"	9 5/8"	40#	300'	150	Surface
8½"	7"	23#	+- 700'	200	Surface
6 1/8"	2 7/8"	6.5#	850'	0	

22 Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

This is Well No. 1 of a two well program to leach salt from the Salado salt formation. This well will serve as the recovery well during normal operation. Fresh water will be pumped down Well No. 2, transverse the 354' between Well No. 2 and Well No. 1 via a horizontal hydraulic fracture initiated between the well bores in the salt section. The fresh water will leach salt and be recovered via the 2 7/8" tubing in Well No. 1 as saturated brine.

Due to the shallow depth and low formation pressure in this area, only a diverter type system will be used.

23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: Steward E. Rogers

Printed name: Steward E. Rogers

Title: Operations Coordinator

Date: May 27, 1994 Phone: 713/646-4392

OIL CONSERVATION DIVISION

Approved by:

Title:

Approval Date: Expiration Date:

Conditions of Approval:
Attached ☐

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

RECEIVED
MAY 31 '94

Form C-101
Revised February 10, 1994
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Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1 Operator Name and Address	2 OGRID Number
Scurlock Permian Corporation P.O. Box 4648 Houston, Texas 77210-4648	
	3 API Number 30 - 0

4 Property Code	5 Property Name	6 Well No.
	Dunaway	No 2

7 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	23	22S	27E		1380	FNL	1640	FWL	Eddy

8 Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

9 Proposed Pool 1	10 Proposed Pool 2

11 Work Type Code	12 Well Type Code	13 Cable/Rotary	14 Lease Type Code	15 Ground Level Elevation
N	I	R	P	3094
16 Multiple	**17 Proposed Depth**	**18 Formation**	**19 Contractor**	**20 Spud Date**
No	850	Salado	Unknown	June 1994

21 Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12½"	9 5/8"	40#	300'	150	Surface
8½"	7"	23#	825'	225	Surface
6 1/8"	2 7/8"	6.5#	850'	0	0

22 Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

This is Well No. 2 of a two well program to leach salt from the Salado salt formation. This well will normally serve as the fresh water injection well. Fresh water will be pumped down the 2 7/8" tubing, transverse the 354' fractured salt section, and be recovered as saturated brine from the 2 7/8" tubing in Well No. 1.

Due to the shallow depth and low formation pressure in this area, only a diverter type system will be used.

23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: Steward E. Rogers

Printed name: Steward E. Rogers

Title: Operations Coordinator

Date: May 27, 1994

Phone: (713) 646-4392

OIL CONSERVATION DIVISION

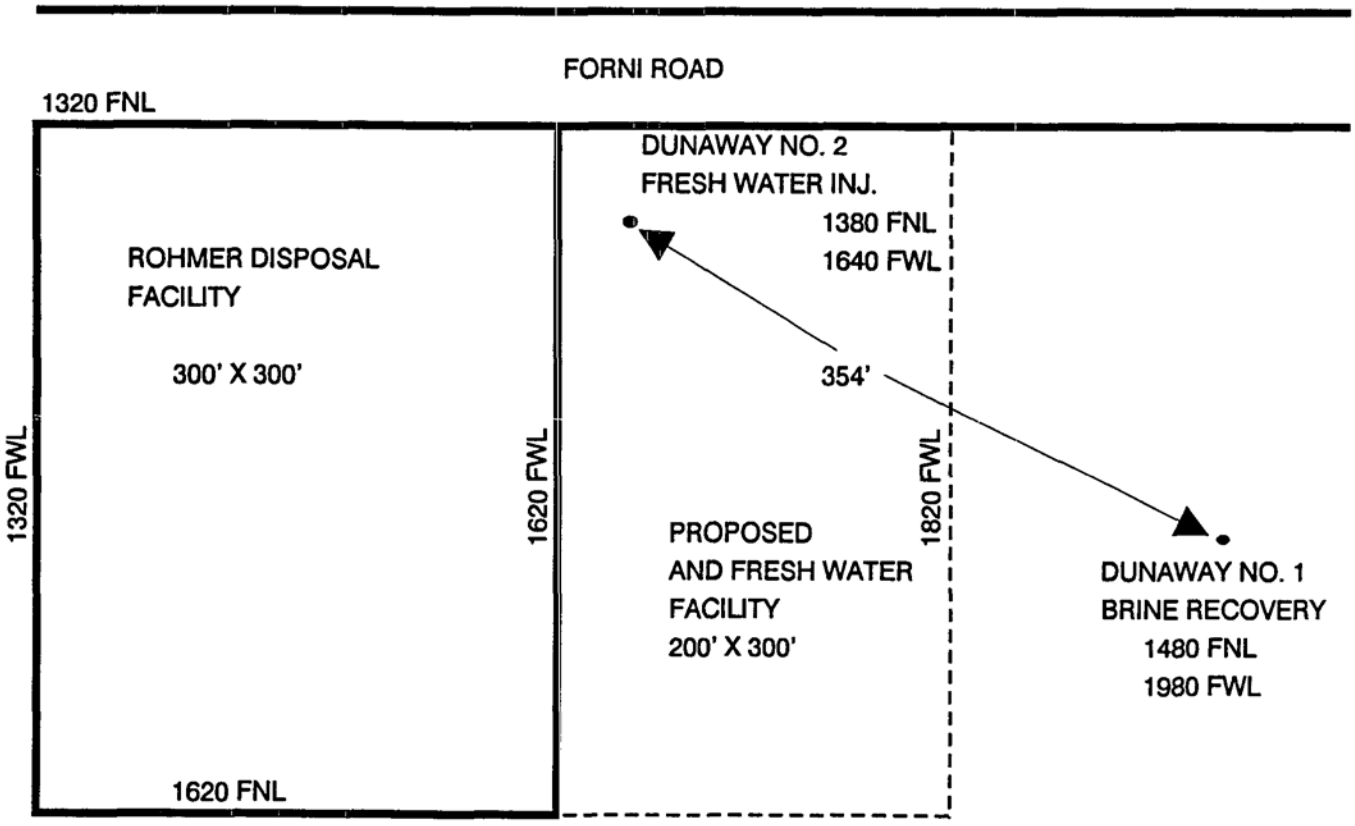
Approved by:

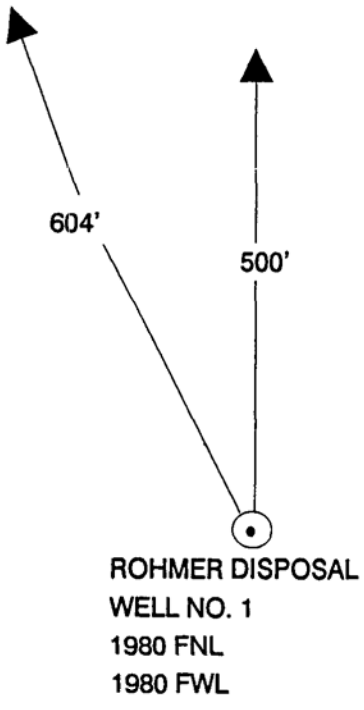
Title:

Approval Date: Expiration Date:

Conditions of Approval:
Attached ☐

BRINE RECOVERY AND FRESH WATER FACILITY
SEC 23, T22S, R27E





SCURLOCK PERMIAN CORPORATION
SUBSIDIARY OF ASHLAND OIL, INC.

STEWARD E. ROGERS
OPERATIONS COORDINATOR

OFFICE: (210) 620-1087
HOME: (210) 629-5607
FAX: (210) 620-1592
MOBILE: (210) 260-7519
PAGER: 1-800-374-6477 (0709)

P.O. BOX 310028
NEW BRAUNFELS, TX 78131-0028

****

TIME FAXED: _____

DATE: 5 MAY 94

TO: CHRIS EUSTICE

FROM: STEWARD E. ROGERS

FAX#: 505-827-5741

NO. OF PAGES SENT (INCLUDING COVER SHEET): 1

****

If the reader of this message is not the intended recipient or an agent responsible for delivering it to the intended recipient, you are hereby notified that you have received this document in error, and that any review, dissemination, distribution, or copying of this message is strictly prohibited. It is intended for the exclusive use of the named recipient. If you have received this communication in error, if necessary please notify us immediately by telephoning collect at (210)620-1087 to arrange for the return or destruction of the information and all copies.
THANK YOU.

****

COMMENTS: PROPOSED LOCATION - TWO WELL SYSTEM,

Please contact STEWARD E. ROGERS at (210) 620-1087 if any problems occur in receiving this fax. Our automatic telecopier # is (210)620-1592.

PLEASE DELIVER THIS FAX IMMEDIATELY UPON RECEIPT.

"SAFE PEOPLE CARE"

ABSHLAND PIPE LINE COMPANY ENGINEERING DEPARTMENT			SHEET
			AFE
SUBJECT PROPOSED LOCATION FOR BRINE RECOVERY			DISTRICT
UNIT F SEC 23 22S 27E EDDY Co.			DRAWING
BY	CHECKED BY	APPROVED BY	DATE

0427-6 (02/91)

FORNI ROAD

ROHMER DISPOSAL FACILITY
300' x 300'

PROPOSED LOC. OF BRINE & FRESH WATER FACILITY
200' x 300'

ROAD TO LOCATION.

DUNAWAY No. 2
FRESH H2O INJECTION.
1720 FNL
1660 FWL.

337'

DUNAWAY No. 1
BRINE RECOVERY
1880 FNL
1980 FWL

IF ALLOWED TO DRILL THE DUNAWAY No. 1 1880 FNL, I COULD TAKE ADVANTAGE OF ROHMER No. 1 LOCATION. AND THE ROAD LEADING INTO THE SITE. HOWEVER, IT IS NOT ESSENTIAL, AND IF YOU FEEL 100 ft. SEPERATION IS NOT ENOUGH DISTANCE TO PROTECT THE CEMENT AROUND OUR DISPOSAL, JUST LET ME KNOW.

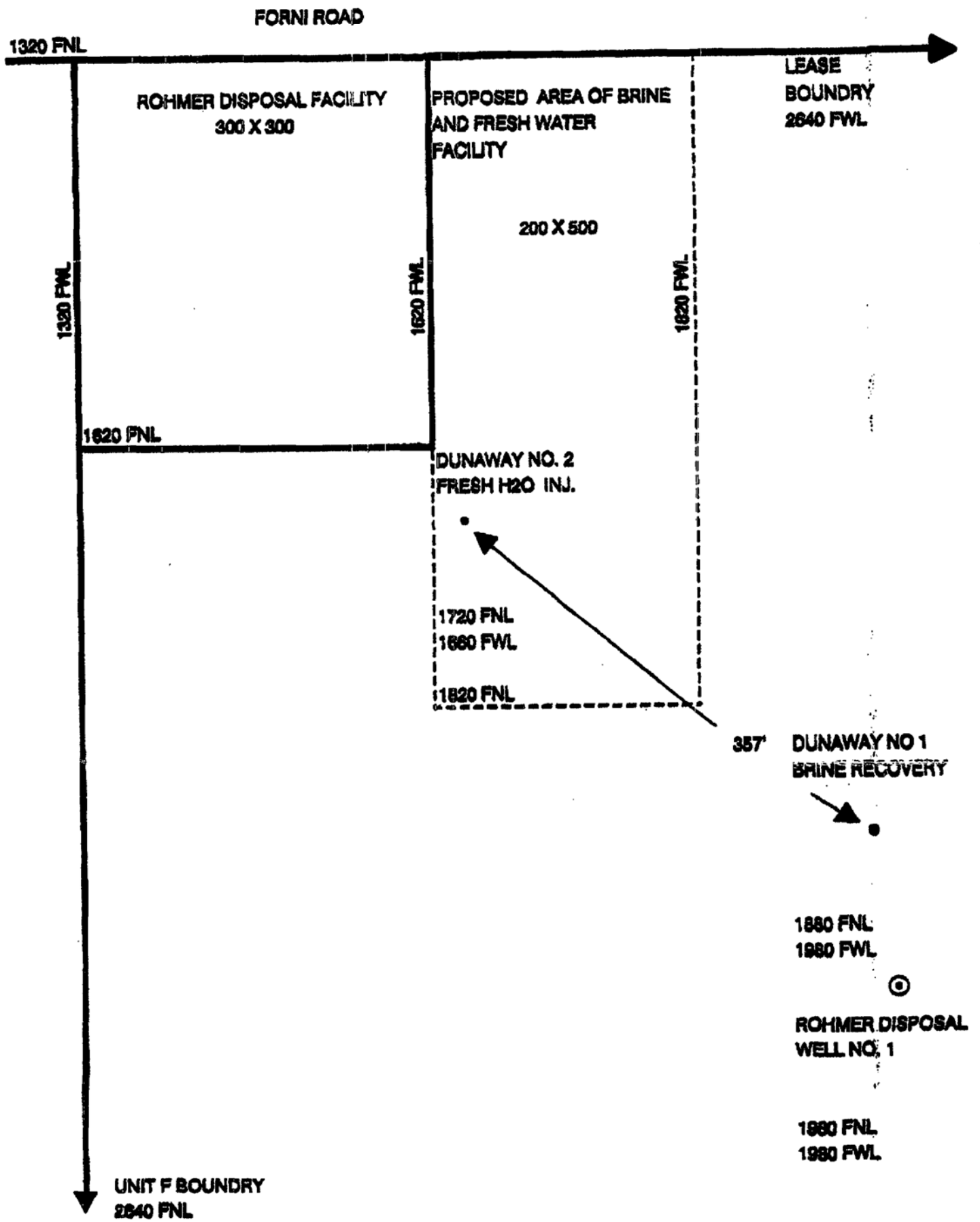
BRINE RECOVERY SHOULD BE BETWEEN 600 & 900 FT.

ROHMER DISPOSAL WELL No 1

1980 FNL
1980 FWL

277 FT 13 3/8 - CEMENT TO SURFACE
2154 FT 9 5/8 - CEMENT TO SURFACE
4205 FT 5½ - TOC, 728

BRINE RECOVERY AND FRESH WATER FACILITY
SEC 23, T22S, R27E



Two proposed drilling programs are as follows:

METHOD 1

Well No. 1 - Brine Recovery

1. Drill 12¼" hole to 300 feet.
2. Run 9$^{5/8"}$ 40#/ft casing to 300 feet, and circulate cement to surface.
3. Drill an 8½" hole to ± 550 feet through anhydrite trend and into soft salt.
4. Set 7" 23#/ft casing to 550 feet and circulate cement to surface.
5. Drill a 6$^{1/8"}$ hole to approximately 800 feet into anhydrite barrier.
6. Run 2$^{7/8"}$ 6.5# J-55 tubing to 800 feet, washing salt to increase target area.

Well No. 2 - Fresh Water Injection

1. Drill 12¼" hole to 300 feet.
2. Run 9$^{5/8"}$ 40#/ft casing to 300 feet and circulate cement to surface.
3. Drill 8½" hole to approximately 750 feet.
4. Set 7" 23#/ft. casing to 750 feet and circulate cement to surface.
5. Drill 6$^{1/8"}$ hole to 800 feet.
6. Run 2$^{7/8"}$ 6.5# tubing to 800 feet.

Setting 7" casing is slightly more expensive than setting 5½". The larger casing gives us the option of deepening the No. 2 well and resorting to a one well type system. If needed.

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PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-101
Revised February 10, 1994
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☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1 Operator Name and Address	2 OGRID Number
Scurlock Permian Corporation P.O. Box 4648 Houston, Texas 77210-4648	3 API Number 30-0

4 Property Code	5 Property Name	6 Well No.
	Dunaway	No 1

7 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	23	22S	27E		1470	FNL	1820	FWL	Eddy

8 Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

9 Proposed Pool 1	10 Proposed Pool 2

11 Work Type Code	12 Well Type Code	13 Cable/Rotary	14 Lease Type Code	15 Ground Level Elevation
N	(Brine Well)	R	P	3094
16 Multiple	**17 Proposed Depth**	**18 Formation**	**19 Contractor**	**20 Spud Date**
No	850 ft	Salado Salt	Unknown	June 1994

21 Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12¼	9 5/8	40#	~~275~~ 300	150	Surface
8¼	5½	17#	+- 700	200	Surface
4 3/4	2 7/8	6.5#	850	0	

22 Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

This is Well No. 1 of a two well program to leach salt from the Salado salt formation. This well will serve as the recovery well during normal operation. Fresh water will be pumped down Well No. 2, transverse the 350' between Well No. 2 and Well No. 1 via a horizontal hydraulic fracture initiated between the well bores in the salt section. The fresh water will leach salt and be recovered via the 2 7/8" tubing in Well No. 1 as saturated brine.

Due to the shallow depth and low formation pressure in this area, only a diverter type system will be used.

23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature:

Printed name:

Title:

Date: Phone:

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 2

To Mark.	From
Co.	Co.
Dept.	Phone #
Fax #	Fax #

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
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1000 Rio Brazos Rd., Aztec, NM 87410
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State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

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1 Operator Name and Address	2 OGRID Number
Scurlock Permian Corporation P.O. Box 4648 Houston, Texas 77210-4648	3 API Number 30-0

4 Property Code	5 Property Name	6 Well No.
	Dunaway	No 2

7 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	23	22S	27E		1470	FNL	1470	FWL	Eddy

8 Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

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11 Work Type Code	12 Well Type Code	13 Cable/Rotary	14 Lease Type Code	15 Ground Level Elevation
N	I	R	P	3094
16 Multiple	**17 Proposed Depth**	**18 Formation**	**19 Contractor**	**20 Spud Date**
No	850	Salado	Unknown	June 1994

21 Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12¼	9 5/8	40#	~~275~~ 200	150	Surface
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23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief.	OIL CONSERVATION DIVISION
Signature:	Approved by:
Printed name:	Title:
Title:	Approval Date: / Expiration Date:
Date: / Phone:	Conditions of Approval: Attached ☐

Affidavit of Publication

STATE OF NEW MEXICO)
) ss.
COUNTY OF LEA)

Joyce Clemens being first duly sworn on oath deposes and says that he is Adv. Director of THE LOVINGTON DAILY LEADER, a daily newspaper of general paid circulation published in the English language at Lovington, Lea County, New Mexico; that said newspaper has been so published in such county continuously and uninterruptedly for a period in excess of Twenty-six (26) consecutive weeks next prior to the first publication of the notice hereto attached as hereinafter shown; and that said newspaper is in all things duly qualified to publish legal notices within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico.

That the notice which is hereto attached, entitled

Notice Of Publication

was published in a regular and entire issue of THE LOVINGTON DAILY LEADER and not in any supplement thereof, for one (1) day consecutive weeks, beginning with the issue of

July 29, 19 94

and ending with the issue of

July 29, 19 94

And that the cost of publishing said notice is the sum of $ 48.96

which sum has been (Paid) as Court Costs

Joyce Clemens

Subscribed and sworn to before me this 29th day of August, 19 94

Notary Public, Lea County, New Mexico

My Commission Expires Sept. 28, 19 94

LEGAL NOTICE
NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND
NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan and discharge plan renewal application have been submitted to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505)827-5800:

(BW-024) - Scurlock Permian Corporation, Owen Mobley, Vice President, P.O. Box 4648, Houston, Texas, 77210-4648, has submitted a discharge plan application for their proposed Carlsbad Brine Station, located in the SE/4 NW/4 of Section 23, Township 22 South, Range 27 East, NMPM, Eddy County, New Mexico. An average of 1000 barrels per day of 1.2 specific gravity brine water will be produced for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth from approximately 50 to 200 feet with a total dissolved solids concentration of approximately 4000 mg/1. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(BW-009) - Sims-McCasland Water Sales, Bob Patterson, Manager, P.O. Box 99, Eunice New Mexico, 88231, has submitted an application for the renewal of a discharge plan for the Sims-McCasland Brine Station, located in the NE/4 NE/4 of Section 32, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico. Approximately 200 barrels per day of 1.2 specific gravity brine water is produced for use in the oil industry. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of 140 to 160 feet with a total dissolved solids concentration of 2500 to 3000 mg/1. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held.

A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 25th day of July, 1994.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
WILLIAM J. LEMAY, Director

SEAL

Published in the Lovington Daily Leader July 29, 1994.

Affidavit of Publication

No. 14782

STATE OF NEW MEXICO,

County of Eddy:

Gary D. Scott being duly sworn, says: That he is the Publisher of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive days weeks on the same day as follows:

First Publication August 3, 1994

Second Publication

Third Publication

Fourth Publication

Gary D. Scott

Subscribed and sworn to before me this 16th day of August 19 94

Barbara Ann Bowers

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1996

Copy of Publication

LEGAL NOTICE

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND
NATURAL RESOURCES
DEPARTMENT
OIL CONSERVATION

DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 25th day of July, 1994.

STATE OF NEW MEXICO
OIL CONSERVATION
DIVISION
s-William J. LeMay
WILLIAM J. LEMAY
Director

SEAL

Published in the Artesia Daily Press, Artesia, N.M. August 3, 1994.

Legal 14782