

CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: POGO PRODUCTION Co. Well: LOST TANK '33' FED No. 2

Contact: SCOTT McDANIEL Title: SR. LANDMAN Phone: 915-685-8100

DATE IN 3-11-98 RELEASE DATE 3-26-98 DATE OUT 5-22-98

Proposed Injection Application is for: ☐ WATERFLOOD ☐ Expansion ☐ Initial

Original Order: R- ☐ Secondary Recovery ☐ Pressure Maintenance

SENSITIVE AREAS

☒ SALT WATER DISPOSAL ☐ Commercial Well

YES WIPR ☐ Capitan Reef

Data is complete for proposed well(s)? YES Additional Data Req'd _____

AREA of REVIEW WELLS

3 Total # of AOR

0 # of Plugged Wells

YES Tabulation Complete

☐ Schematics of P & A's

YES Cement Tops Adequate

☐ AOR Repair Required

INJECTION FORMATION

Injection Formation(s) BELL CANYON / UPPER CERRY CANYON Compatible Analysis YES

Source of Water or Injectate AREA PRODUCTION

PROOF of NOTICE

☒ Copy of Legal Notice

☒ Information Printed Correctly

☒ Correct Operators

☒ Copies of Certified Mail Receipts

NO Objection Received

☐ Set to Hearing _____ Date

NOTES:

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? YES

COMMUNICATION WITH CONTACT PERSON:

1st Contact: ☐ Telephoned ☐ Letter _____ Date _____ Nature of Discussion _____

2nd Contact: ☐ Telephoned ☐ Letter _____ Date _____ Nature of Discussion _____

3rd Contact: ☐ Telephoned ☐ Letter _____ Date _____ Nature of Discussion _____

SWD 3/26/98

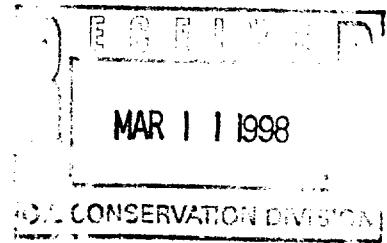
OVERNIGHT MAIL



POGO PRODUCING COMPANY

March 10, 1998

New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
Attention: Mr. David R. Catanach



Re: Lost Tank Prospect NM-621
Eddy County, New Mexico
Application for Administrative Approval to Inject
Saltwater into the Lost Tank "33" Federal No. 2 Well
located 330' FSL & 510' FWL
Section 33, T-21-S, R-31-E, N.M.P.M.

Gentlemen:

Pogo hereby respectfully submits two (2) original Applications for Authorization to Inject (Form C-108) pertaining to the captioned well and requests that same be given Administrative Approval.

Pursuant thereto, enclosed are the following:

- (1) Copy of Notification Letter sent on this date to all Offset Leasehold Operators within a one-half (1/2) mile radius of the proposed injection well and to the surface owner of the land upon which such well is located, along with copies of proof of mailing (copy of Return Receipts will be forwarded to your attention when same are available); and
- (2) Copy of letter concerning publication of legal notice, which was sent to Carlsbad Current-Argus on this date (proof of legal publication will be forwarded to your attention when same is available).

If you have any questions regarding this Application, please contact the undersigned.

Yours very truly,

POGO PRODUCING COMPANY

R. Scott McDaniel

c:\NMOCD.LTR

Enclosures

cc: New Mexico Oil Conservation Division (w/enclosures)
District II Office
P. O. Drawer DD
Artesia, New Mexico 88210
Attention: Mr. Tim Gum

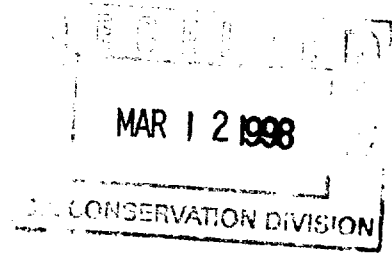


POGO PRODUCING COMPANY

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 10, 1998

To: Offset Leasehold Operators and
Surface Owner
(See Attached List)



Re: Lost Tank Prospect NM-621
Eddy County, New Mexico
Application for Administrative Approval to Inject Saltwater
into the Lost Tank "33" Federal No. 2 Well Located 330'
FSL & 510' FWL Section 33, T-21-S, R-31-E, N.M.P.M.

Gentlemen:

Pogo Producing Company has applied to the New Mexico Oil Conservation Division for Administrative Approval to inject saltwater into the captioned well.

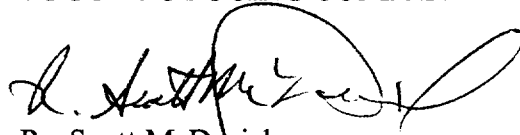
A copy of the Form C-108 submitted by Pogo to the Division is enclosed.

If you object to and/or request that a hearing be held pertaining to this Application, you must notify the Division within fifteen (15) days from the date of this letter.

If you have any questions, please contact the undersigned or Pogo's Mr. Richard L. Wright.

Yours very truly,

POGO PRODUCING COMPANY


R. Scott McDaniel
Senior Landman

c:\nm621\leasehold operators.ltr
Enclosure

cc: New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
Attention: Mr. David R. Catanach

Attached to Notification Letter dated March 10, 1998
regarding Pogo's Application for Administrative Approval
to Inject Saltwater into the Lost Tank "33" Federal No. 2 Well

Bureau of Land Management
P. O. Box 27115
Santa Fe, New Mexico 87502-0115

Penwell Energy, Inc.
600 N. Marienfeld, Suite 1100
Midland, Texas 79701
Attention: Mr. Mark Wheeler

Bass Enterprises Production Company
201 Main Street, Suite 2900
Ft. Worth, Texas 76102
Attention: Mr. Wayne Bailey
Division Landman



POGO PRODUCING COMPANY

VIA FAX (505-885-1066) / MAIL

March 10, 1998

Carlsbad Current-Argus
620 South Main
Carlsbad, New Mexico 88220
Attention: Ms. Amy McKay

Re: Lost Tank Prospect NM-621
Eddy County, New Mexico
Legal Notice of Application
for Authorization to Inject
Lost Tank "33" Federal #2 Well

Ladies and Gentlemen:

Please find attached hereto a copy of Legal Notification which Pogo requests be advertised in your newspaper as soon as possible.

Please provide the undersigned with proof of publication, which should include a copy of the legal advertisement, returning same by overnight mail, billing our Federal Express Account Number 1008-9250-2.

If you have any questions, please contact the undersigned.

Yours very truly,

POGO PRODUCING COMPANY

R. Scott McDaniel
Senior Landman

c:\nm621\carlsbad current-argus.ltr

Attachment

Public Notice

Application for Authorization to Inject Saltwater

Pogo Producing Company, P. O. Box 10340, Midland, Texas 79702-7340 (Contact - Richard L. Wright at 915/685-8100) has applied to the New Mexico Oil Conservation Division for Administrative Approval for Authorization to inject saltwater into its Lost Tank "33" Federal No. 2 Well, located 330' FSL & 510' FWL of Section 33, T-21-S, R-31-E, N.M.P.M., Eddy County, New Mexico. The purpose of such well will be to dispose of saltwater produced from Pogo's nearby wells. The injection interval will be in the Delaware (Bell Canyon and Upper Cherry Canyon) formation between 4,166'-5,160' beneath the surface, with an expected maximum injection rate of approximately 3,000 BWPD within an expected maximum injection pressure of approximately 830 psi. Any interested parties must file objections or requests for a hearing with the New Mexico Oil Conservation Division, 2040 South Pacheco Street, Santa Fe, New Mexico 87505 within fifteen (15) days from the date of this publication.

OVERNIGHT MAIL



POGO PRODUCING COMPANY

March 10, 1998

New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
Attention: Mr. David R. Catanach

MAR 26 1998

Re: Lost Tank Prospect NM-621
Eddy County, New Mexico
Application for Administrative Approval to Inject
Saltwater into the Lost Tank "33" Federal No. 2 Well
located 330' FSL & 510' FWL
Section 33, T-21-S, R-31-E, N.M.P.M.

Gentlemen:

By letter dated March 10, 1998, you were submitted two (2) original Applications for Authorization to Inject (Form C-108) and various other materials relative to the referenced well. Additionally, you were advised that Return Receipts for Notification Letters sent to offset leasehold operators and proof of legal publication relative to the aforesaid application would be forwarded to your attention when same were available.

With the above in mind, enclosed is a copy of each of the Return Receipts relative to the above-mentioned Notification Letters, together with a copy of Affidavit of Publication concerning Pogo's application.

If you have any questions or need additional information regarding Pogo's application, please call.

Yours very truly,

POGO PRODUCING COMPANY


R. Scott McDaniel

c:\NMQCD.LTR

Enclosures

cc: New Mexico Oil Conservation Division (w/enclosures)
District II Office
P. O. Drawer DD
Artesia, New Mexico 88210
Attention: Mr. Tim Gum

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Bureau of Land Management
P.O. Box 27115
Santa Fe, NM 87205-0115

4a. Article Number

Z 296 593 989

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
MAR 12 1994

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)

X *[Signature]*

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
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I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Penwell Energy, Inc.
600 N. Marienfeld, Suite 1100
Midland, Texas 79701

Attention: Mark Wheeler

4a. Article Number

Z 296 593 990

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

3-11-98

5. Received By: (Print Name)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature: (Addressee or Agent)

Mark Wheeler

PS Form 3811, December 1994

Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
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- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Bass Enterprises Production
Company

201 Main Street, Suite 2900
Ft. Worth, TX 76102

Attn: Wayne Bailey

4a. Article Number

Z 296 593 991

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

3/13/98

5. Received By: (Print Name)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature: (Addressee or Agent)

X *Wayne Bailey*

PS Form 3811, December 1994

Domestic Return Receipt

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

Amy McKay

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:

March 15, 19 98
_____, 19 ____
_____, 19 ____
_____, 19 ____
_____, 19 ____
_____, 19 ____

That the cost of publication is \$ 26.31,
and that payment thereof has been made and will
be assessed as court costs.

Amy McKay

Subscribed and sworn to before me this

16th day of March, 19 98

Donna Crump

My commission expires 8/1/98

Notary Public

Nº 18342
RECEIVED

MAR 17 1998

MIDLAND

March 15, 1998

Public Notice

Application for Authorization to
Inject Saltwater

Pogo Producing Company,
P.O. Box 10340, Midland,
Texas 79702-7340 (Contact -
Richard L. Wright at 915/685-
8100) has applied to the New
Mexico Oil Conservation Division for Administrative Approval for Authorization to inject saltwater into its Lost Tank "33" Federal No. 2 Well, located 330' FSL & 510' FWL of Section 33, T-21-S, R-31-E, N.M.P.M., Eddy County, New Mexico. The purpose of such well will be to dispose of saltwater produced by Pogo's nearby wells. The injection interval will be in the Delaware (Bell Canyon and Upper Cherry Canyon) formation between 4,166'-5,160' beneath the surface, with an expected maximum injection rate of approximately 3,000 BWPD within an expected maximum injection pressure of approximately 830 psi. Any interested parties must file objections or requests for a hearing with the New Mexico Oil Conservation Division, 2040 South Pacheco Street, Santa Fe, New Mexico 87505 within fifteen (15) days from the date of this publication.

APPROVED FOR PAYMENT

DATE _____

SIGNATURE _____

Lost Tank "33" Fed. No.2

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: POGO PRODUCING COMPANY
Address: P. O. BOX 10340, MIDLAND, TEXAS 79702
Contact party: RICHARD L. WRIGHT Phone: 915/685-8100
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☐ yes ☒ no
If yes, give the Division order number authorizing the project _____.
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: BILL F. HALEPESKA Title: AGENT
Signature: *Bill Halepeska* Date: 2/19/98
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

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

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string, used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

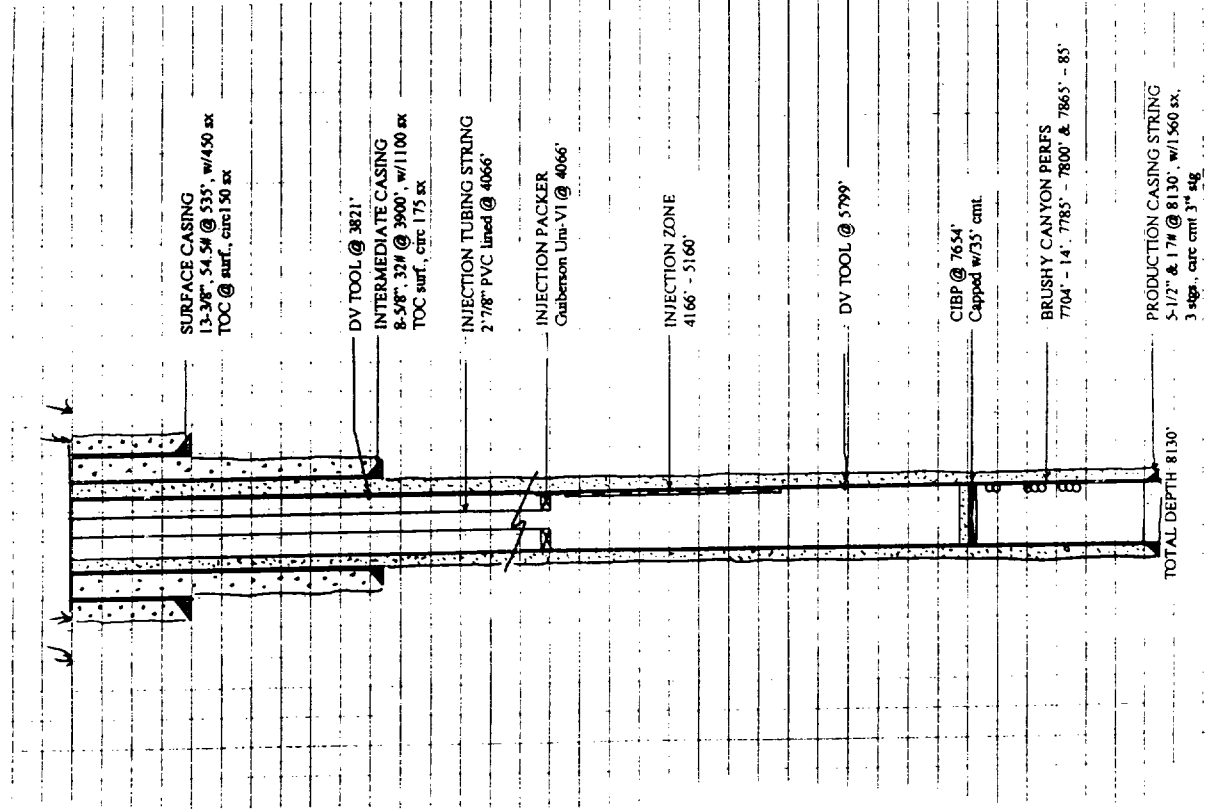
- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

SCHEMATIC

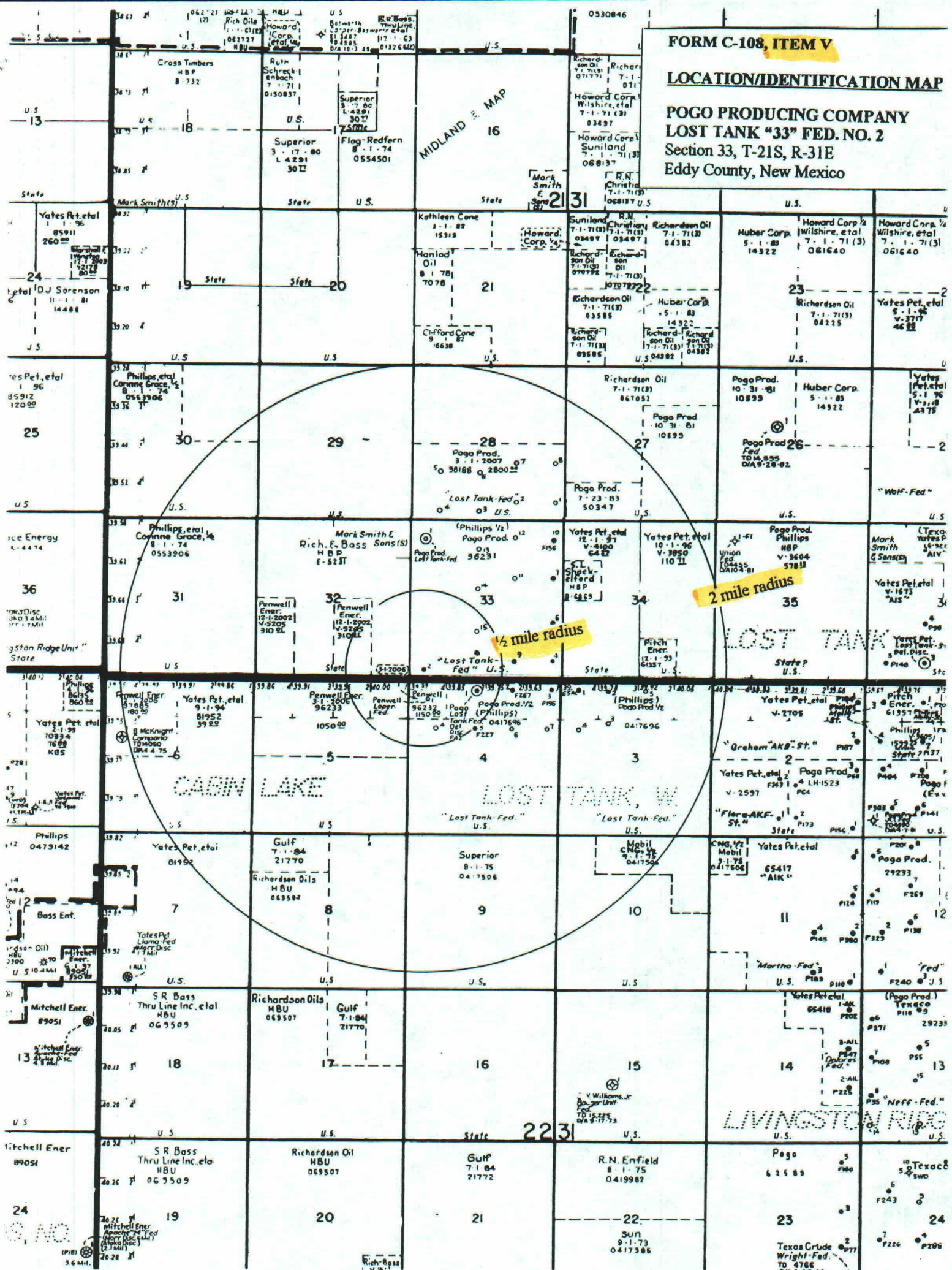


TABULAR DATA

- (1). LEASE: Lost Tank "33" Federal WELL # 2
LOCATION: Sec. 33 TWP 21-S Range 31-E
County Eddy
Footage 330' FSL & 510' FWL
- (2). CASING STRINGS:
Surface Casing
Size 13-3/8 Depth 535' Cemented w/ 450 sx.
TOC surf. Determined by circ. amt
Hole size 17-1/2"
- Intermediate Casing
Size 8-5/8" Depth 3900' Cemented w/ 1100 sx.
TOC surf. Determined by circ. amt.
Hole size 11"
- Long String
Size 5-1/2" Depth 8130' Cemented w/ 1560 sx.
TOC surf. Determined by circ. amt, 3rd stg.
Hole size 7-7/8"
Injection interval, from 4166' to 5160 ft.
- (3). INJECTION TUBING STRING:
Size 2-7/8 in., ~~cased~~ lined with PVC
Setting depth 4066 ft.
- (4). INJECTION PACKER:
Size 5-1/2 in.; Make/Model Guiberson Uni VI
Setting depth 4066 ft.

INJECTION WELL DATA

- (1). Injection Formation: Delaware/ Bell Canyon & Up. Cherry Canyon
Field/Pool: Lost Tank Delaware, West
- (2). Injection interval, from 4166 Ft. to 5160 Ft.
Perforated xx Open Hole _____
- (3). Original purpose well drilled -- test for production from Lower Delaware
- (4). Other perforated intervals; xx Yes _____ No
Squeezed with _____ sx., or isolated by CIBP @ 7654', capped w/35'
cement above perfs 7704' - 14', 7785' - 7800' & 7865' - 85'
- (5). Oil or gas productive zone(s):
Next higher: none
Next lower: Brushy Canyon at +/-7700'



ITEM VI

WELL DATA - AREA OF REVIEW

(1). Location: 660' ESL & 2310' FWL, Sec 33, T-21S, R-31E, Eddy Co.
 Operator: Pogo Producing Co. Lease: Lost Tank "33" FedWell # 8
 Well type: Oil X Gas DSA Total depth 8150 ft.
 Date drilled: spud 9/19/97; test 10/31/97
 Completion Data: 10-3/4" @ 696' w/650 sx, circ cmt; 7-5/8" @ 3950'
w/950 sx, circ cmt; 4-1/2" @ 8150' w/1350 sx, 3 stgs; perf 7805'
-19'; A/1000g 7-1/2%; F/79,000# sd; perf 7620'-34'; A/1000g 7-1/2%;
pump 90 BOPD, 122 BW + 67 MCFG

Plugged Date: (Schematic attached)

(2). Location: 330' FNL & 2310' FWL, Sec 4, T-22S, R-31E, Eddy Co.
 Operator: Pogo Producing Co. Lease: Lost Tank "4" FedWell # 1
 Well Type: Oil X Gas DSA Total Depth: 10,020 ft. PB8595'
 Date Drilled: spud 11/15/95; test 11/22/96
 Completion Data: 13-3/8" @ 425' w/425 sx, circ cmt; 8-5/8" @ 3945'
w/122 sx, DNC; perf @ 700' to sq. & tie-back to surf; 5-1/2" @
8575' w/1690 sx, 3 stg; perf 7772'-7822'; A/1500g 7-1/2%;
F/58,440 sd; pump 88 BOPD, 93 BW + 79 MCFG
 Plugged Date (Schematic attached)

(3). Location: 650' FNL & 2310' FWL, Sec 4, T-22S, R-31E, Eddy Co.
 Operator: Pogo Producing Co. Lease: Lost Tank "4" Fed. Well # 5
 Well Type ; Oil X Gas DSA Total Depth: 8116 ft.
 Date Drilled: spud 8/14/97; tested 9/9 97
 Completion Data: 10-3/4" @ 656' w/550 sx, circ cmt; 7-5/8" @ 3976'
w/1100 sx, circ cmt; 4-1/2" @ 8116' w/1300 sx, circ 3rd stg; perf
7806'-30'; A/1000g 7-1/2%; F/96,500# sd; flo 227 BOPD, 125 BW +
231 MCFG

Plugged Date (Schematic attached)

ITEM VII

OPERATIONAL DATA

(1). Average expected injection rate: 1000 BWPB; maximum anticipated rate: 3000 BWPB

(2). Closed system

(3). Estimated average injection pressure: 750 psi.

Estimated maximum pressure: 830 psi.

(4). Source of injection water: Lower Delaware wells nearby operated by Pogo Producing Co.

Analysis of waters attached. EXHIBIT I

(5). Analysis of injection zone water attached. EXHIBIT II

Data source: Corbin Delaware Fld., 31-17-33

Roswell Geological Society Symposium

ITEM VIII

GEOLOGICAL DATA

INJECTION ZONE

Lithological description: ss, lt gray, fine - vf grain, poorly
consolidated, poor calc. cementGeological name: Delaware, Bell Canyon & Up. Cherry CanyonZone thickness: 994 Ft.; Depth: 5160 ft.

FRESH WATER SOURCES

Geological name: Santa RosaDepth to bottom of zone: +/-650 ft.

ITEM IX

STIMULATION PROGRAM (Proposed)

ACIDIZE:

Volume: 2000 Type acid: 7-1/2% HClRate: 5 BPM; Misc. Ball Sealers

FRACTURE:

Fluid volume: 55,000 gal.; Type: XLGWProp type: 16/30 sd Volume (#): 250,000Rate: 30 BPM; Conductor: 5-1/2" in.

Misc. _____

LOGGING PROGRAM

Copy of GR/CND log included in attachments

FRESH WATER ANALYSIS

Date sampled:

HYDROLOGY

Various engineering data and area well logs reveal no evidence that there might exist hydrologic connection between the intended injection zone and possible fresh water zone above 650'

COMMERCIAL INTENTION

Initially, only water from Pogo operated wells will be disposed of into the subject well/system. Eventually, Pogo could take water from leases in the area operated by someone else. Only piped water will be accepted into the system.

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943.3234 OR 563.1040

Martin Water Laboratories, Inc.

FORM C-108, ITEM VII(4)

RESULT OF WATER ANALYSES

ANALYSIS-BRUSHY CANYON
PRODUCED WATER

TO: Mr. Barrett Smith
P. O. Box 10340, Midland, TX 79702

LABORATORY NO.
SAMPLE RECEIVE
RESULTS REPORT

POGO PRODUCING COMPANY
LOST TANK "33" FED. NO.2
Section 33, T-21S, R-31E
Eddy County, New Mexico

COMPANY Pogo Producing CompanyLEASE Lost

FIELD OR POOL

SECTION _____ BLOCK _____ SURVEY _____ COUNTY Eddy STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Produced water - taken from Lost Tank 4 Federal #1 (wellhead). 4-3-97
NO. 2 Produced water - taken from Lost Tank 33 Federal #2 (wellhead). 4-3-97
NO. 3 Produced water - taken from Lost Tank 33 Federal #4 (wellhead). 4-3-97
NO. 4 Produced water - taken from Lost Tank 33 Federal #6 (wellhead). 4-3-97

REMARKS: Sample submitted by Terry Solansky, Endura Products

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F	1.2022	1.2034	1.2038	1.1971
pH When Sampled				
pH When Received	5.91	6.10	5.85	6.08
Bicarbonate as HCO ₃	46	44	41	37
Supersaturation as CaCO ₃				
Undersaturation as CaCO ₃				
Total Hardness as CaCO ₃	89,000	88,000	94,000	91,000
Calcium as Ca	28,400	28,400	30,000	28,400
Magnesium as Mg	4,374	4,131	4,617	4,860
Sodium and/or Potassium	77,043	79,334	83,038	76,129
Sulfate as SO ₄	160	136	173	179
Chloride as Cl	181,760	184,600	194,540	181,760
Iron as Fe	23.4	63.2	23.9	24.4
Barium as Ba	0	0	0	0
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	291,783	296,645	312,410	291,365
Temperature °F				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	0.0	0.0	0.0	0.0
Resistivity, ohms/cm at 77° F	0.046	0.046	0.044	0.046
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks Please contact us if we can be of any assistance in interpretation of the above results.

FORM C-108, ITEM VII(5)

ANALYSIS-INJECTION ZONE WATER

POGO PRODUCING COMPANY
 LOST TANK "33" FED. NO. 2
 Section 33, T-21S, R-31E
 Eddy County, New Mexico

EXHIBIT 11

name: Corbin Delaware

Location: NE $\frac{1}{4}$ Sec. 31, T.17 S., R. 33 E.
 County & State: Lea Co., N. Mex.

COMPLETION DATE: March 31, 1960

TYPICAL CORE ANALYSIS OF A PAY INTERVAL IN THIS FIELD: No cores taken

Perm. in millidarcys		% Porosity	Liquid Saturation (% of pore space)	
Horizontal	Vertical		Water	Oil

OTHER SHOWS ENCOUNTERED IN THIS FIELD: None

TRAP TYPE: Stratigraphic, sand pinchout

NATURE OF OIL: 37.8° gravity, sweet

NATURE OF GAS: sweet

NATURE OF PRODUCING ZONE WATER: Salt

Resistivity:

ohm-meters @

°F.

	Total Solids	Na+K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
ppm		47,700	6160	2060	100	1500	89,400		160		neg

INITIAL FIELD PRESSURE: Unknown

TYPE OF DRIVE: Unknown

NORMAL COMPLETION PRACTICES: Set through, perforate & sand frac.

PRODUCTION DATA:

Year	Type	No. of wells @ yr. end		Production Oil in barrels Gas in MMCF	
		Producing	Shut in or Aband.	Annual	Cumulative
1956	oil				
	gas				
1957	oil				
	gas				
1958	oil				
	gas				
1959	oil				
	gas				
1960*	oil	0	1 **	631.5	631.5
	gas				

* 1960 Figure is production to July 1, 1960.

** well shut in on April 19, 1960.

FORM C-108, ITEM XI**ANALYSIS SANTA ROSA WATER****POGO PRODUCING COMPANY****LOST TANK "33" FED. NO.2**

Section 33, T-21S, R-31E

Eddy County, New Mexico

EXHIBIT III**Chemical and radiochemical analyses of water from test hole H-5****Water produced from the Santa Rosa Sandstone, sample taken 5/24/78**

Alkalinity Field (mg/l as HCO ₃)	200
Bicarbonate FET-FLD (mg/l as HCO ₃)	240
Nitrogen, NO ₂ + NO ₃ Dissolved (mg/l as N)	0.36
Hardness (mg/l as CaCO ₃)	150
Hardness, noncarbonate(mg/l as CaCO ₃)	150
Calcium Dissolved (mg/l as Ca)	56
Magnesium, Dissolved (mg/l as Mg)	51
Sodium, Dissolved (mg/l as Na)	280
Potassium, Dissolved (mg/l as K)	25
Chloride, Dissolved (mg/s as CL)	120
Sulfate, Dissolved (mg/l as SO ₄)	530
Fluoride, Dissolved (mg/l as F)	1.2
Silica, Dissolved (mg/l as SiO ₂)	11.0
Boron, Dissolved (ug/l as B)	890
Solids Residue at 105 Deg C, Dissolved (mg/l)	1200

COMPANY: Pogo Producing Company

WELL: Lost Tank "33" Federal No. 2

FIELD: Wildcat

COUNTY: Eddy **STATE: New Mexico**

Schlumberger

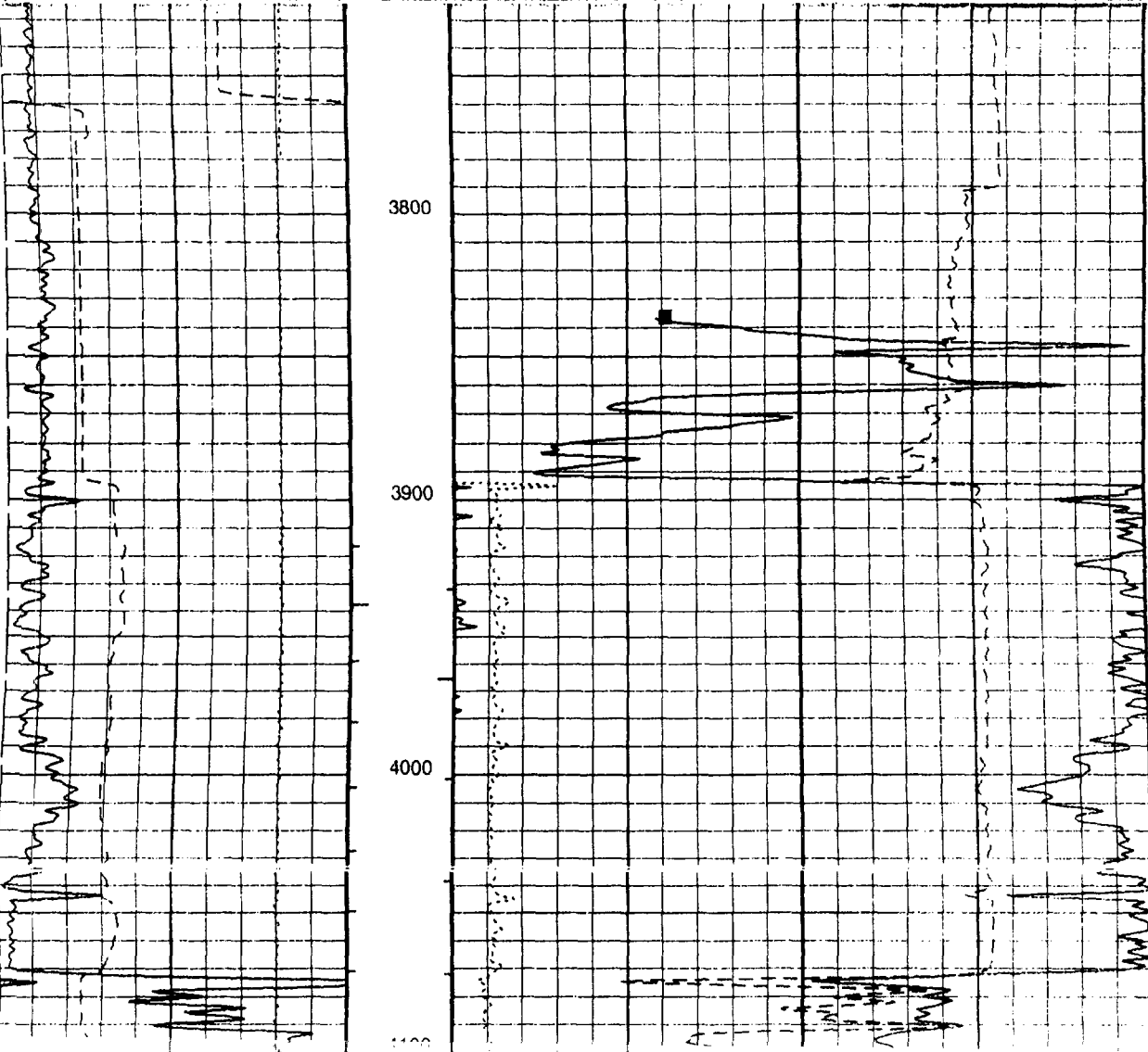
Litho-Density

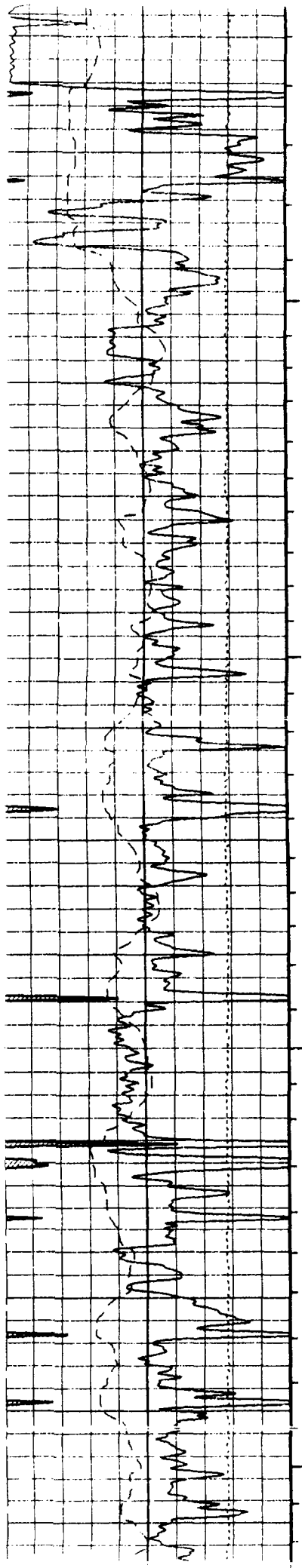
Compensated Neutron

Gamma Ray

330' FSL and 510' FWL		Elev.	K.B.	3448.5 F
Permanent Datum		Ground Level	G.L.	3436 F
Log Measured From		Kelly Bushing	D.F.	3447.5 F
Drilling Measured From:		Kelly Bushing		
API Serial No.	SECTION 33	TOWNSHIP 21-S	RANGE 31-E	

Logging Date	November 6 1996
Run Number	One
Length Driller	9130 F
Slurber Depth	8125 F
Bottom Log Interval	8106 F
Top Log Interval	200 F
Casing Driller Size @ Depth	8.625 IN @ 3900 F
Casing Schlumberger	3995 F
Bit Size	7.875 IN
Type Fluid in Hole	Fresh Water
Density	8.4 LB/G
Viscosity	28 S
PH	7
Source Of Sample	
RM @ Measured Temperature	0.531 OHMM @ 64 DEGF
RMF @ Measured Temperature	0.531 OHMM @ 64 DEGF
RM @ Measured Temperature	
Source RMF	
RM @ MRT	0.284 @ 121 0.284 @ 121
RMF @ MRT	
Maximum Recorded Temperatures	118 DEGF
Circulation Stopped	Nov. 6 1996 18:00
Logger On Bottom	Nov. 6 1996 23:30
Unit Number	3015 Roswell
Location	Woodard
Recorded By	Garland Lamb





4100

4200

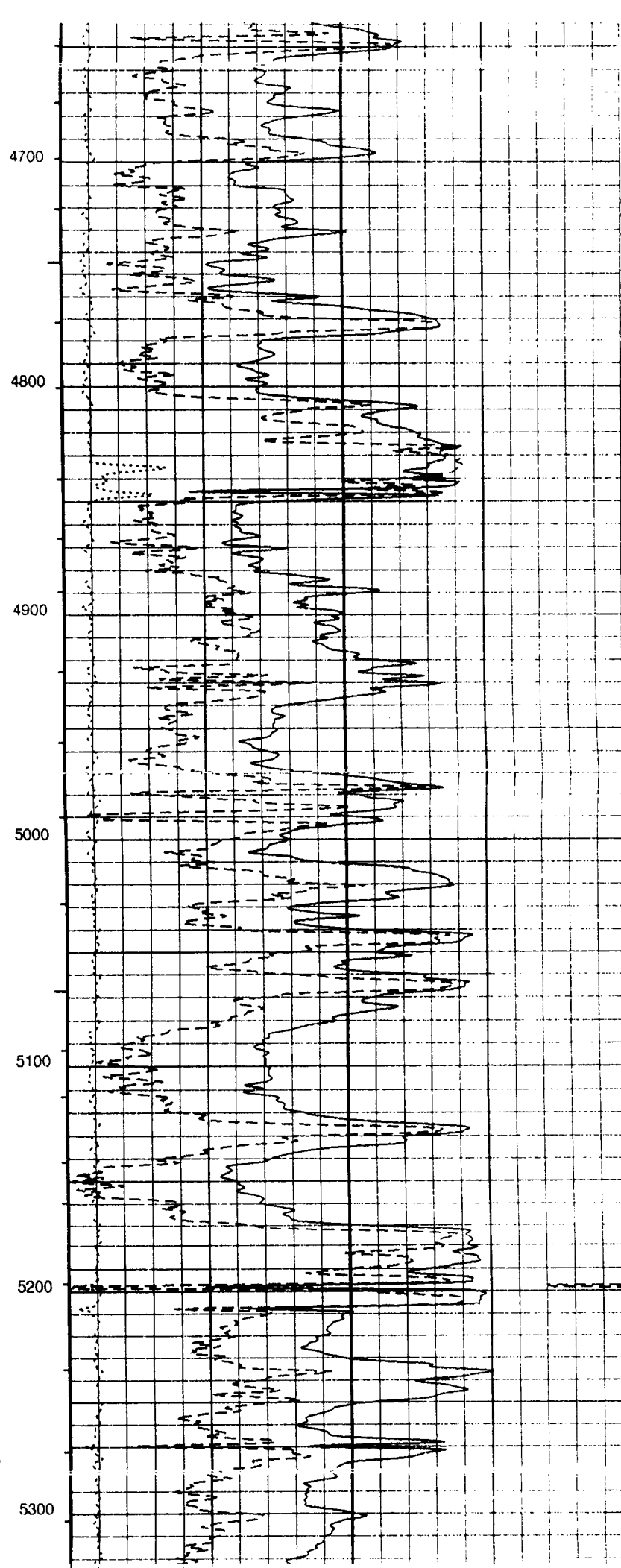
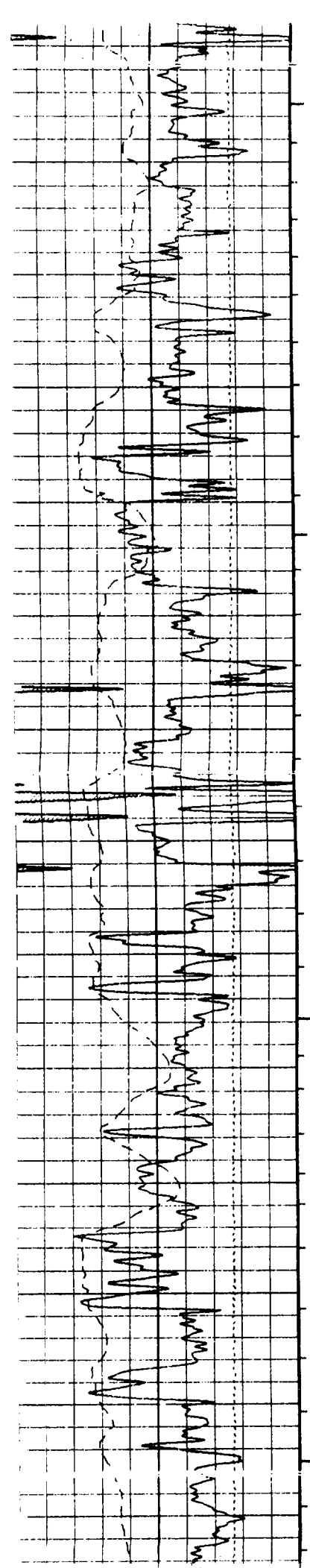
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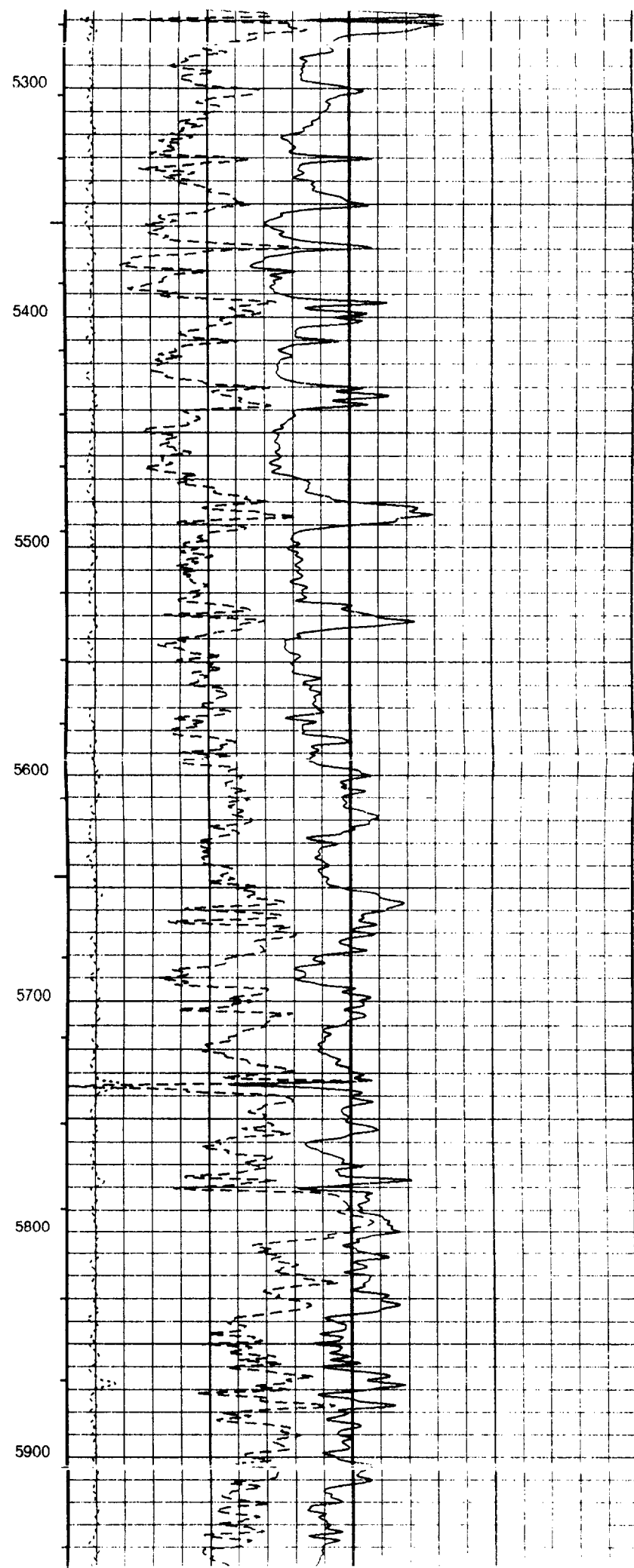
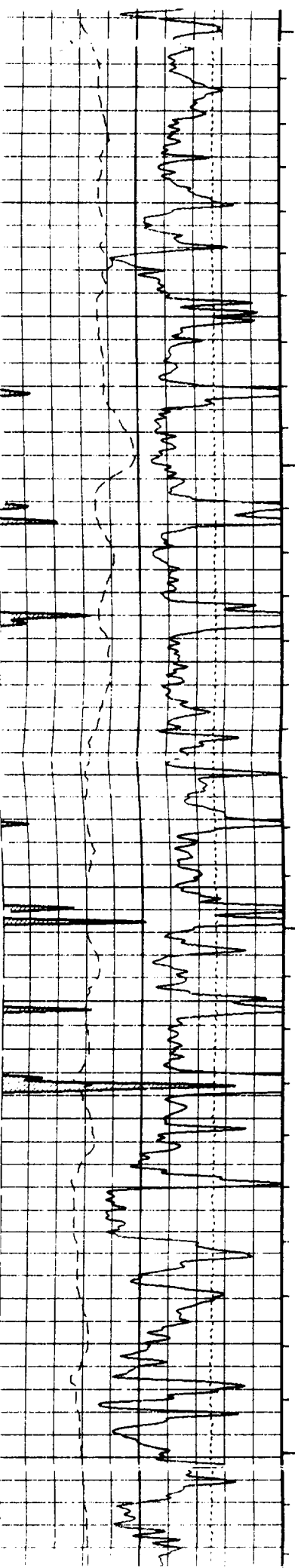
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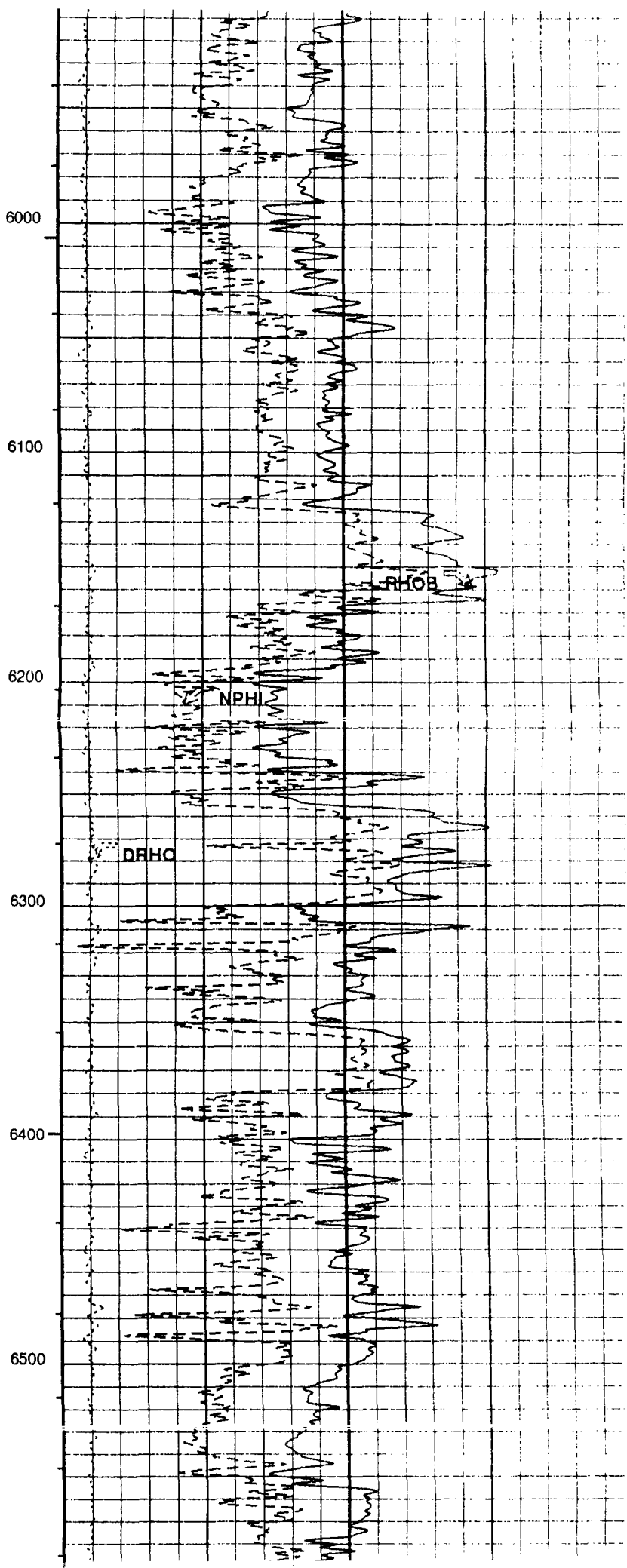
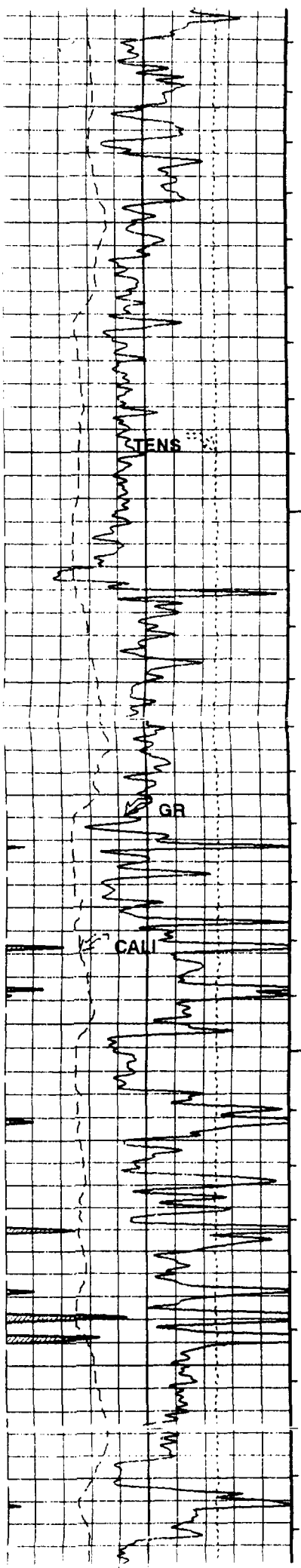
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NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON

Governor

Betty Rivera

Cabinet Secretary

May 3, 2002

Lori Wrotenbery

Director

Oil Conservation Division

Pogo Producing Company
300 North Marienfeld
Suite 600, PO Box 10340
Midland, Texas 79702-7340

Attn: Mr. Barrett L. Smith

**Re: Injection Pressure Increase
Lost Tank 33 Federal Well No.2 SWD
Eddy County, New Mexico**

Dear Mr. Smith:

Reference is made to your request dated March 22, 2002 (received in this office April 9, 2002), to increase the surface injection pressure on the above referenced SWD well. This request is based on a step rate test conducted on the well on January 29, 2002. After reviewing test results, we feel an increase in injection pressure is justified at this time.

This well is equipped with 2 7/8" coated tubing and injection packer. With size and type of tubing remaining the same, you are authorized to increase the surface injection pressure to the following:

Well and Location	Maximum Surface Injection Pressure
Lost Tank 33 Federal Well No. 2 SWD (API: 30-015-29330) 330 FSL, 510 FWL, Sec 33, T21S, R31E, NMPM, Eddy County	900 PSIG Water

The Division Director may rescind this injection pressure increase if it becomes apparent that the injected water is not being confined to the injection zone or is endangering any fresh water aquifers.

Sincerely,

Lori Wrotenbery (wss)
Lori Wrotenbery

Director

cc: Oil Conservation Division – Artesia
Bureau of Land Management - Carlsbad
Files: SWD-708; IPI 2002