

J. CLEO THOMPSON AND JAMES CLEO THOMPSON, JR., OIL PRODUCERS  
101 MEDICAL DRIVE  
OZONA, TEXAS 76943  
PO BOX 2099

PHONE: 325-392-3721

FAX: 325-392-3823

January 14, 2016

University Lands  
PO Box 553  
Midland, TX 79702-0553

Dear Ladies and Gentlemen:

Enclosed please find a copy of our application to amend the injection permit on our University 66, 67, 68 Unit, Well No. 302W. This well is located in the Midway Lane (Permian) field, Crockett County, Texas. We are filing to increase the permitted volume only. As pursuant to Railroad Commission rules, we respectfully submit this copy of our application for your review.

If you have any questions, please feel free to contact our office.

Sincerely,  
J. CLEO THOMPSON



Vonda G. Flanagan  
Production/Regulatory Specialist  
Ozona Area

Enclosure

J. CLEO THOMPSON & JAMES CLEO THOMPSON, JR., L. P.  
P. O. BOX 2099  
OZONA, TEXAS 76943  
(325) 392-3721

January 14, 2016

Railroad Commission of Texas  
Oil and Gas Division  
Underground Injection Control  
P. O. Box 12967  
Austin, Texas 78711-2967

Re: Application of J. Cleo Thompson (855610) to amend permit for injection  
Project No. F-7-46,378. UNIVERSITY 66, 67, 68 UNIT, WELL NO. 302W LEASE NO. 01017;  
Midway Lane (Permian) Field, Crockett County, Texas.

Ladies and Gentlemen:

The following items are being submitted for your consideration:

1. Railroad Commission Forms H-1 & H-1A
2. Map showing all wells within ½ mile and
3. Documentation of communication with land owners and operators within ½ mile.
4. Supporting documentation of initial permit obtained from Central Records.

J. Cleo Thompson hereby files this application to amend the permitted volume.

Due to the age of the well and the lack of information, the cement information behind the surface pipe and intermediate pipe is not available. I have included the supporting documentation of the initial permit obtained from well file and Central Records for your convenience.

This application should be complete, however, should you feel that you need further information or should you have any questions, please do not hesitate to contact me at the letterhead telephone number or by email: [vflanagan@jcleo.com](mailto:vflanagan@jcleo.com)

I request that all correspondence concerning this application, including the issued permit be emailed to me at [vflanagan@jcleo.com](mailto:vflanagan@jcleo.com)

Respectfully submitted,

J CLEO THOMPSON



Vonda G. Flanagan  
Regulatory Specialist

**RAILROAD COMMISSION OF TEXAS  
OIL AND GAS DIVISION**

**Form H-1**

05/2004

DBC 0504

**APPLICATION TO INJECT FLUID INTO A RESERVOIR PRODUCTIVE OF OIL OR GAS**

1. Operator name J CLEO THOMPSON 2. Operator P-5 No. 855610  
(as shown on P-5, Organization Report)

3. Operator Address 325 N. ST PAUL, STE. 4300 DALLAS, TX 75201

4. County CROCKETT 5. RRC District No. 7C

6. Field Name MIDWAY LANE (PERMIAN) 7. Field No. \_\_\_\_\_

8. Lease Name UNIVERSITY 66, 67, 68 UNIT 9. Lease/Gas ID No. 01017

10. Check the Appropriate Boxes: New Project ☐ Amendment ☒  
If amendment, Fluid Injection Project No. F- 7-46,378  
Reason for Amendment: Add wells ☐ Add or change types of fluids ☐ Change pressure ☐  
Change volume ☒ Change interval ☐ Other (explain) SEE ATTACHED RE: INTERVAL

**RESERVOIR DATA FOR A NEW PROJECT**

11. Name of Formation \_\_\_\_\_ 12. Lithology \_\_\_\_\_  
(e.g., dolomite, limestone, sand, etc.)  
13. Type of Trap \_\_\_\_\_ 14. Type of Drive during Primary Production \_\_\_\_\_  
(anticline, fault trap, stratigraphic trap, etc.)  
15. Average Pay Thickness \_\_\_\_\_ 16. Lse/Unit Acreage \_\_\_\_\_ 17. Current Bottom Hole Pressure (psig) \_\_\_\_\_  
18. Average Horizontal Permeability (mds) \_\_\_\_\_ 19. Average Porosity (%) \_\_\_\_\_

**INJECTION PROJECT DATA**

20. No. of Injection Wells in this application 1  
21. Type of Injection Project: Waterflood ☒ Pressure Maintenance ☐ Miscible Displacement ☐ Natural Gas Storage ☐  
Steam ☐ Thermal Recovery ☐ Disposal ☐ Other \_\_\_\_\_  
22. If disposal, are fluids from leases other than the lease identified in Item 9? Yes ☐ No ☒  
23. Is this application for a Commercial Disposal Well? Yes ☐ No ☒  
24. If for commercial disposal, will non-hazardous oil and gas waste other than produced water be disposed? Yes ☐ No ☐  
25. Type(s) of Injection Fluid:  
Salt Water ☒ Brackish Water ☐ Fresh Water ☐ CO<sub>2</sub> ☐ N<sub>2</sub> ☐ Air ☐ H<sub>2</sub>S ☐ LPG ☐ NORM ☐  
Natural Gas ☐ Polymer ☐ Other (explain) \_\_\_\_\_

26. If water other than produced salt water will be injected, identify the source of each type of injection water by formation, or by aquifer and depths, or by name of surface water source:

**CERTIFICATE**

I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, that this report was prepared by me or under my supervision and direction, and that the data and facts stated therein are true, correct, and complete, to the best of my knowledge.

Signature

VONDA FLANAGAN

Name of Person (type or print)

Date

1-14-16

Phone (325)392-3721

Fax (325)392-3823

For Office Use Only

Register No.

Amount \$

## INSTRUCTIONS FOR FORM H-1

1. **Application.** File the original Form H-1 application, including all attachments, with Assistant Director, Environmental Services, Railroad Commission of Texas, P. O. Box 12967, Capitol Station, Austin, Texas 78711. File one copy of the application and all attachments with the appropriate Railroad Commission District Office. Include with the original application a non-refundable fee of \$200, payable to the Railroad Commission of Texas. Submit an additional \$150 for each request for an exception to Statewide Rule 46(g)(3) and/or (j)(5)(B).
2. **Well Logs.** Attach the complete electric log or a similar well log for one of the proposed injection wells or for a nearby well. Attach any other logging and testing data, such as a cement bond log, available for the well that supports this application.
3.
  - (a) **For a new project,** attach a map with surveys marked showing the location and depth of all wells of public record within one-quarter (1/4) mile radius of the proposed injection well(s).
  - (b) **For an amendment to add wells to a previous authority,** attach a map with surveys marked showing the location and depth of all wells of public record within one-quarter (1/4) mile radius of the additional wells, unless such data has been submitted previously for the project.
  - (c) **Table of Wells.** For those wells in 3(a) or 3(b) that penetrate the top of the injection interval, attach a table of wells showing the dates drilled and their current status. The Commission may adjust or waive this data requirement in accordance with provisions in the "Area of Review" section of Statewide Rule 46 (Rule 46(e)).
4. **Water Letter.** Attach a letter from the Texas Commission on Environmental Quality (TCEQ) or its predecessor or successor agencies for a well within the project area stating the depth to which usable quality water occurs.
5. **Form(s) H-1A.** Attach Form H-1A showing each injection well to be used in the project. Up to TWO wells can be listed on each Form H-1A.
6. **Use of Fresh Water.** Attach Form H-7, Fresh Water Data Form, for a new injection project that includes the use of fresh water. An updated Form H-7 must be attached to Form H-1 for an expansion of a previously authorized fresh water injection project unless the fresh water is purchased from a commercial supplier, public entity, or from another operator.
7. **Plat of Leases, Notice and Hearings**
  - (a) **Plat of Leases.** Attach a plat of leases showing producing wells, injection wells, offset wells and identifying ownership of all surrounding leases within one-half (1/2) mile.
  - (b) **Notice.**
    - (1) Send or deliver a copy of the application to the owner of record of the surface tract on which the well(s) is located; each Commission-designated operator of any well located within one-half (1/2) mile of the proposed injection well(s); and the clerk of the city and county in which the well(s) is located. If this is the initial application for fluid injection authority for this reservoir, send copies of the application to all operators in the reservoir. Attach a signed statement indicating the date the copies of the application were mailed or delivered and the names and addresses of the persons to whom copies were sent.
    - (2) **Attach an affidavit of publication** signed by the publisher that notice of the application has been published in a newspaper of general circulation in the county where the well(s) will be located. Notice instructions and forms may be obtained from the Commission's Austin Office, the Commission's website ([www.rrc.state.tx.us](http://www.rrc.state.tx.us)) or the District Offices. Attach a newspaper clipping of the published notice.
  - (c) **Protests and Hearings.** An affected person or local government may protest this application. A hearing on the application will be held if a protest is received and the applicant requests a hearing, or if the Commission determines that a hearing is in the public interest. Any such request for a public hearing shall be in writing and contain: (1) the name, mailing address and phone number of the person making the request; and (2) a brief description of how the protestant would be adversely affected by the granting of the application. If the Commission determines that a valid protest has been received, or that a hearing would be in the public interest, a hearing will be held after issuance of proper and timely notice of the hearing by the Commission. If no protest is received within fifteen (15) days of publication or receipt in Austin of the application, the application may be processed administratively.

## RAILROAD COMMISSION OF TEXAS -- OIL AND GAS DIVISION

Form H-1A  
DBC 0504

## INJECTION WELL DATA (attach to Form H-1)

1. Operator Name (as shown on P-5) <b>J CLEO THOMPSON</b>					2. Operator P-5 No. <b>855610</b>				
3. Field Name <b>MIDWAY LANE (PERMIAN)</b>					4. Field No. <b>61204500</b>				
5. Current Lease Name <b>UNIVERSITY 66, 67, 68 UNIT</b>					6. Lease/Gas ID No. <b>01017</b>				
7. Lease is <b>15</b> miles in a <b>N</b> direction from <b>OZONA</b> (center of nearest town).									
8. Well No. <b>302W</b>	9. API No. <b>42-105-02635</b>	10. UIC No. <b>000009999</b>	11. Total Depth <b>7593</b>	12. Date Drilled <b>04/26/1948</b>	13. Base of Usable Quality Water (ft)				
14. (a) Legal description of well location, including distance and direction from survey lines: <b>660' FSL &amp; 660' FWL WEST 1/2 OF SEC 26, BLK 45 ULS</b>									
(b) Latitude and Longitude of well location, if known (optional) Lat. _____ Long. _____									
15. New Injection Well <input type="checkbox"/> or Injection Well Amendment <input checked="" type="checkbox"/>				Reason for Amendment: Pressure <input type="checkbox"/> Volume <input checked="" type="checkbox"/> Interval <input type="checkbox"/> Fluid Type <input type="checkbox"/>					
Other (explain) _____									
Casing	Size	Setting Depth	Hole Size	Casing Weight	Cement Class	# Sacks of Cement	Top of Cement	Top Determined by	
16. Surface	<b>10-3/4</b>	<b>603</b>		<b>40.5</b>	<b>COMMON</b>	<b>250</b>			
17. Intermediate	<b>7-5/8</b>	<b>2138</b>		<b>26.4</b>	<b>COMMON</b>	<b>600</b>			
18. Long string									
19. Liner	<b>4-1/2</b>	<b>1004</b>	<b>7-7/8</b>	<b>9.5</b>	<b>HOWCO LT250</b>		<b>SURFACE</b>	<b>SIGHT</b>	
20. Tubing size <b>2-3/8</b>	21. Tubing depth <b>993</b>		22. Injection tubing packer depth <b>993</b>			23. Injection interval <b>1076</b> to <b>1150</b>			
24. Cement Squeeze Operations (List all)			Squeeze Interval (ft)			No. of Sacks		Top of Cement (ft)	
25. Multiple Completion? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			26. Downhole Water Separation? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			NOTE: If the answer is "Yes" to Item 25 or 26, provide a Wellbore Sketch			
27. Fluid Type <b>PRODUCED WATER</b>			28. Maximum daily injection volume for each fluid type (rate in bpd or mcf/d) <b>600</b>			29. Estimated average daily injection volume for each fluid type (rate in bpd or mcf/d) <b>413</b>			
30. Maximum Surface Injection Pressure: for Liquid <b>650</b> psig for Gas _____ psig.									
8. Well No.	9. API No.	10. UIC No.	11. Total Depth	12. Date Drilled	13. Base of Usable Quality Water (ft)				
14. (a) Legal description of well location, including distance and direction from survey lines:									
(b) Latitude and Longitude of well location, if known (optional) Lat. _____ Long. _____									
15. New Injection Well <input type="checkbox"/> or Injection Well Amendment <input type="checkbox"/>				Reason for Amendment: Pressure <input type="checkbox"/> Volume <input type="checkbox"/> Interval <input type="checkbox"/> Fluid Type <input type="checkbox"/>					
Other (explain) _____									
Casing	Size	Setting Depth	Hole Size	Casing Weight	Cement Class	# Sacks of Cement	Top of Cement	Top Determined by	
16. Surface									
17. Intermediate									
18. Long string									
19. Liner									
20. Tubing size	21. Tubing depth		22. Injection tubing packer depth			23. Injection interval _____ to _____			
24. Cement Squeeze Operations (List all)			Squeeze Interval (ft)			No. of Sacks		Top of Cement (ft)	
25. Multiple Completion? Yes <input type="checkbox"/> No <input type="checkbox"/>			26. Downhole Water Separation? Yes <input type="checkbox"/> No <input type="checkbox"/>			NOTE: If the answer is "Yes" to Item 25 or 26, provide a Wellbore Sketch			
27. Fluid Type			28. Maximum daily injection volume for each fluid type (rate in bpd or mcf/d)			29. Estimated average daily injection volume for each fluid type (rate in bpd or mcf/d)			
30. Maximum Surface Injection Pressure: for Liquid _____ psig for Gas _____ psig.									

## FORM H-1A INSTRUCTIONS

05/2004

1. File as an attachment to Form H-1 to provide injection well data for each application for a new injection well permit or to amend an injection well permit.
2. Complete the current field name and number (Items 3 and 4) with the current field designation in Commission records.
3. Complete the current lease name and number (Items 5 and 6) with the current lease identification in Commission records for each well in the application. Use separate H-1A Forms for each lease.
4. Provide the current well number(s) for existing wells in Item 8. Provide the proposed well numbers for wells that have not yet been drilled.
5. Check in Item 15 the appropriate box for a new injection well permit or an amendment to an injection well permit. If an amendment, check the appropriate boxes for the reason(s) for the application(s) for amendment. If "other" is checked, provide a brief explanation.
6. Provide complete well construction information (Items 16 through 26), including all proposed re-completion (e.g. liner, cement squeeze, tubing, packer). Attach additional sheets if necessary. For Item 19, if the liner was not to the surface, indicate both the top and the bottom depth of the liner as the "Setting Depth."



**RAILROAD COMMISSION OF TEXAS  
OIL AND GAS DIVISION**

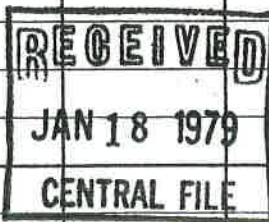
Form W-15  
(Rev. 11-1-69)

**CEMENTING REPORT**

*Repair  
Csg leak*

*1. Field Name (as per RRC Records or Wildcat) <b>Midway Lane (Permian)</b>	*2. RRC District <b>7-C</b>
*3. Operator <b>Atlantic Richfield</b>	*4. County <b>Crockett</b>
*5. Lease Name(s) and RRC Lease Number(s) or I. D. Number(s) <b>University 66,67,68 Unit (01017)</b>	*6. Well Number <b>#3-2</b>
*7. Location (Section, Block, and Survey) <b>Sec 26, Blk 45, U1s</b>	

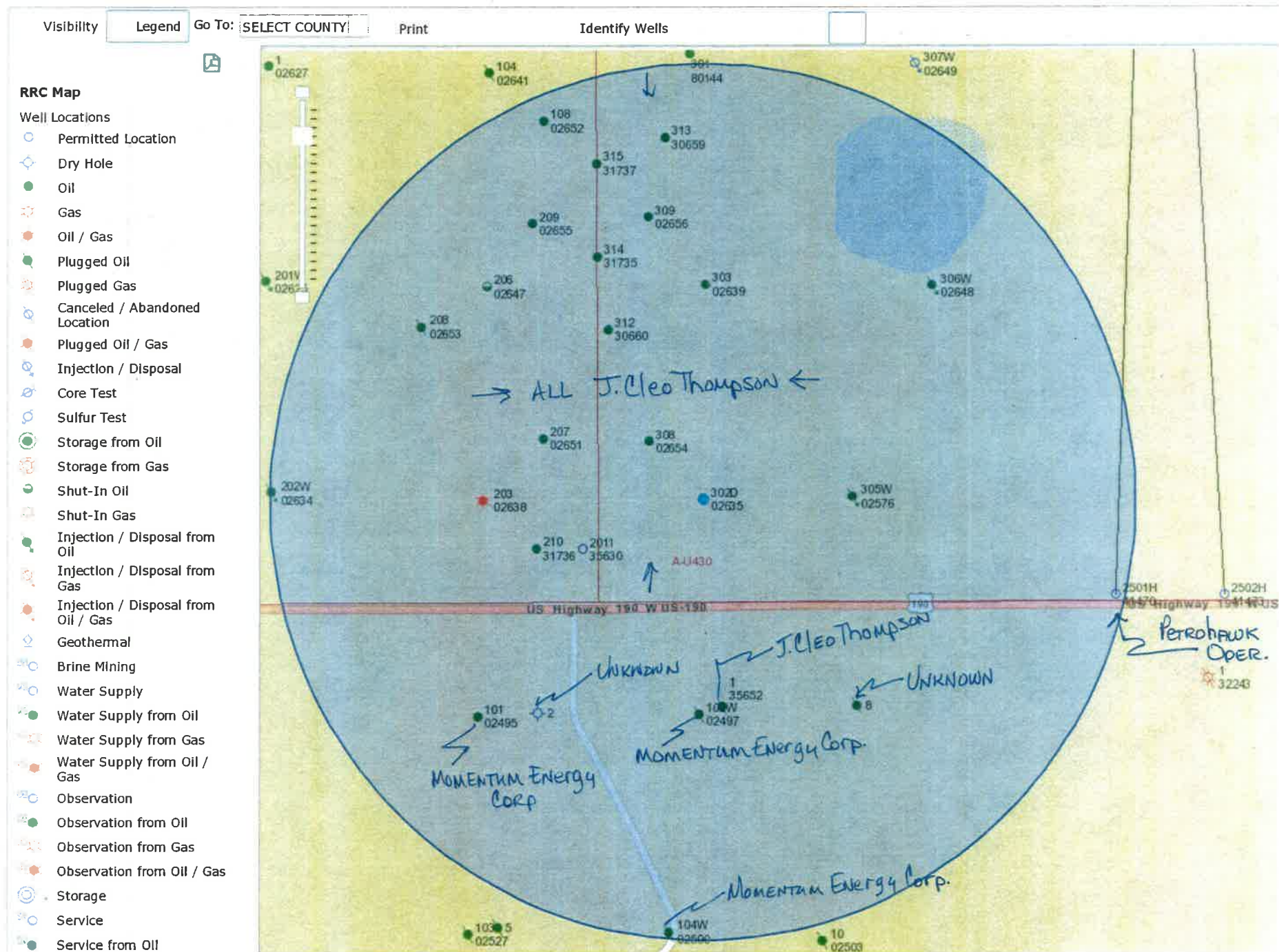
CASING CEMENTING DATA:	SURFACE CASING	INTER-MEDIATE CASING	PRODUCTION CASING		MULTI-STAGE CEMENTING PROCESS	
			Single String	Multiple Parallel Strings	Tool	Shoe
*8. Cementing Date			11-1-78			
*9. (a) Size of Drill Bit (inches)			7-7/8"			
(b) Estimated % Wash or Hole Enlargement Used in Calculations.						
*10. Size of Casing (inches O.D.)			4-1/2"			
*11. Top of Liner (if liner used) (ft.)						
*12. Setting Depth of Casing (ft.)			1004'			
13. Type API Class Cement & Amount of Additives Used: (a) In First (Lead) or Only Slurry (If additional space is needed, use "REMARKS" on reverse side.)			HLC			
(b) In Second Slurry			C-2% CC			
(c) In Third Slurry						
14. Sacks of Cement Used: (a) In First (Lead) or Only Slurry			50			
(b) In Second Slurry			200			
(c) In Third Slurry						
(d) Total Sacks of Cement Used			250			
15. Slurry Volume per Sack of Cement (cu.ft./sack): (a) In First (Lead) or Only Slurry			1.54			
(b) In Second Slurry			1.32			
(c) In Third Slurry						
16. Volume of Slurry Pumped; (cu.ft.) (Item 14 x Item 15) (a) In First (Lead) or Only Slurry			77			
(b) In Second Slurry			264			
(c) In Third Slurry						
(d) Total Slurry Volume Pumped (cu.ft.)			341			
17. Calculated Annular Height of Cement Slurry behind Pipe (ft.)			Surface			
18. Was cement circulated to ground surface (or bottom of cellar) outside casing? (Yes or No)			Yes			
<b>CEMENTING TO PLUG AND ABANDON DATA:</b>	<b>PLUG NO. 1</b>	<b>PLUG NO. 2</b>	<b>PLUG NO. 3</b>	<b>PLUG NO. 4</b>	<b>PLUG NO. 5</b>	<b>PLUG NO. 6</b>
19. Cementing Date						
*20. Size of Hole or Pipe in which Plug Placed (inches)						
*21. Depth to Bottom of Tubing or Drill Pipe (ft.)						
22. Sacks of Cement Used (each plug)						
23. Slurry Volume Pumped (cu. ft.)						
24. Calculated Top of Plug (ft.)						
*25. Measured Top of Plug (if tagged) (ft.)						



(CEMENTING COMPANY AND OPERATOR MUST COMPLY WITH THE INSTRUCTIONS ON REVERSE SIDE HEREOF.)

- OVER -

\* Designates items to be completed by Operator. Items not so designated shall be completed by Cementing Company.





J. CLEO THOMPSON & JAMES CLEO THOMPSON, JR., L.P.  
OIL PRODUCERS  
325 NORTH ST. PAUL, SUITE 4300  
DALLAS, TEXAS 75201  
PHONE: 214-953-1177

January 14, 2016

Assistant Director, Environmental Services  
Railroad Commission of Texas  
PO Box 12967 – Capitol Station  
Austin, Texas 78711

RE: **J. Cleo Thompson**  
**University 66, 67, 68 Unit (01017)**  
**Well No. 302W**  
**Midway Lane(Permian) Field Crockett County, Texas**

Dear Ladies and Gentlemen:

Please let this letter attest to the fact that J. Cleo Thompson Jr., L. P. has notified the following of their application for an injection permit amendment for our University 66, 67, 68 Unit Well No. 302W (01017) located in Midway Lane (Permian) field of Crockett County, Texas. Notifications and copies of the application including the instruction sheets for forms H-1 and H-1A were sent to each on the days indicated.

**Surface Owners**  
**University Lands**  
PO Box 553  
Midland, TX 79702  
Notification sent: 11/15/16

**Operators with ½ mile**  
Petrohawk Operating Co.  
Regulatory Department  
1360 Post Oak Blvd., Ste. 150  
Houston, TX 77056  
Notification sent: 11/15/16

Momentum Energy Corp.  
5410 Bee Caves RD.  
Austin, TX 78746  
Notification sent: 11/15/16

If there is anything else that we need to do, please contact me at the address below.

Sincerely,

J. CLEO THOMPSON

  
Vonda G. Flanagan  
PO Box 2099  
Ozona, TX 76943  
325-392-3721

J. CLEO THOMPSON AND JAMES CLEO THOMPSON, JR., OIL PRODUCERS  
101 MEDICAL DRIVE PO BOX 2099  
OZONA, TEXAS 76943

PHONE: 325-392-3721

FAX: 325-392-3823

January 14, 2016

Petrohawk Operating Company  
Regulatory Department  
1360 Post Oak Blvd., Ste. 150  
Houston, TX 77056

Dear Ladies and Gentlemen:

Enclosed please find a copy of our application to amend the injection permit on our University 66, 67, 68 Unit, Well No. 302W. The well is located in the Midway Lane (Permian) Field, Crockett County, Texas. We are filing to increase the permitted volume only. As pursuant to Railroad Commission rules, we respectfully submit this copy of our application for your review.

If you have any questions, please feel free to contact our office.

Sincerely,  
J. CLEO THOMPSON



Vonda G. Flanagan  
Production/Regulatory Specialist  
Ozona Area

Enclosure

J. CLEO THOMPSON AND JAMES CLEO THOMPSON, JR., OIL PRODUCERS  
101 MEDICAL DRIVE PO BOX 2099  
OZONA, TEXAS 76943

PHONE: 325-392-3721

FAX: 325-392-3823

January 14, 2016

Momentum Energy Corp.  
5410 Bee Caves RD.  
Austin, TX 78746

Dear Ladies and Gentlemen:

Enclosed please find a copy of our application to amend the injection permit on our University 66, 67, 68 Unit, Well No. 302W. The well is located in the Midway Lane (Permian) Field, Crockett County, Texas. We are filing to increase the permitted volume only. As pursuant to Railroad Commission rules, we respectfully submit this copy of our application for your review.

If you have any questions, please feel free to contact our office.

Sincerely,  
J. CLEO THOMPSON



---

Vonda G. Flanagan  
Production/Regulatory Specialist  
Ozona Area

Enclosure

## RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

JIM C. LANGDON, Chairman  
BEN RAMSEY, Commissioner  
MACK WALLACE, Commissioner



ARTHUR H. BARBECK  
Chief Engineer

ERNEST O. THOMPSON BUILDING

CAPITOL STATION - P. O. DRAWER 12967

AUSTIN, TEXAS 78711

Atlantic Richfield Co.  
Box 1610  
Midland, Texas 79701

October 25, 1973

IN RE: Fluid Injection on Your

University 66, 67, 68 Unit 01017 Lease(s)Midway Lane (Permian) FieldCrockett County

Gentlemen:

This will acknowledge receipt of your application on Commission Form H-1 and supporting evidence submitted in connection with this Application for Fluid Injection on the subject lease(s) in compliance with Commission Statewide Rule Number 46. Since you have complied with all of these requirements, a formal order will not be issued in this case.

The Commission hereby grants you permission to inject brackish water into the Permian Sand Formation at an average depth of 1055 feet underlying the subject lease(s), and to use only the following well(s) for fluid injection purposes, provided that fluid injection shall be through tubing set on a mechanical packer:

No. 3-2, No. 3-6 University 66, 67, 68 Unit wells, permitted as an expansion of authority granted in S. O. No. 7-46,378 dated August 14, 1961.

Provided that injection pressure does not exceed 650 psi and provided that the Commission's District Director is notified prior to any workover or remedial operation, including running tubing and setting a packer.

A new Form W-2 must be filed to show the current status of the injection well(s), and to show the current production test allowable to be transferred from converted wells to producing wells on the same lease. It shall be necessary to notify our Austin Office the date the subject injection well(s) cease to produce oil and/or the date injection operations will commence. Provided, further, that should it be determined by the Commission that such injected fluid is not confined to the approved strata, then the permission given herein shall be suspended, and the fluid injection stopped until the fluid migration from such strata is eliminated.

Yours very truly,

Billy D. Thomas  
Senior Staff Geologist

BDT:ct

cc RRC - San Angelo 7C  
Proration Analyst - Norman Johnston

# TECHNICAL REVIEW OF EXISTING PERMIT

UIC NUMBER: 000009999

TECHNICIAN: R. CANTU

PERMIT TYPE:

REVIEW DATE: INITIAL 6/4/87

W-14 [NO. AND/OR AUTHORITY DATE \_\_\_\_\_]

FINAL 6/9/87

✓ H-1 [NO. AND/OR AUTHORITY DATE F1046/10-25-73]

# 302

## REASON FOR REVIEW

✓ EXISTING FILE REVIEW PROGRAM

       H-10/CYCLE: \_\_\_\_\_

       MECHANICAL INTEGRITY FAILURE

       FIELD OPERATION REQUEST

       W-2 OR G-1/DATE: \_\_\_\_\_

       OTHER: \_\_\_\_\_

       P-4 CHANGE/DATE: \_\_\_\_\_

## PROCEDURE ITEMS

1. W-14 (H-1) ✓
2. ELECTRIC LOG ✓
3. TWC LETTER: 600' PROTECTION DEPTH
4. MAP OF WELLS OF PUBLIC RECORD ✓
5. (W-2) G-1 DATE 12-17-73

## COMPLETION REVIEW

1. USABLE-QUALITY WATER PROTECTION ✓
2. CONFINEMENT OF INJECTION FLUIDS ✓
3. PACKER SETTING: COMPLIANCE WITH SWR 9(H)(1) \_\_\_\_\_  
COMPLIANCE WITH SWR 46(c)(1) ✓
4. INJECTION INTERVAL: PERMITTED 1076 - 1150  
COMPLETED 1080 - 1154
5. COMPLIANCE WITH SPECIAL CONDITIONS: \_\_\_\_\_

ADDITIONAL DATA REQUIRED: \_\_\_\_\_

COMMENTS: Amend permit well in compliance.



BUOW@ 600'

10 $\frac{3}{4}$ " CASING 603'

13" HOLE

2 $\frac{7}{8}$ " TUBING

PACKER 993'

LEASE University 66, 67, 68 Unit (01017)

Well No. 302W

PERMITTED INTERVAL 1076-1150'

Inj. 1076-1184'

7 $\frac{5}{8}$ " CASING 2138'

9 $\frac{7}{8}$ " HOLE

R. CANTU

6/4/87

RAILROAD COMMISSION OF TEXAS  
OIL AND GAS DIVISION

OIL AND GAS DOCKET NO. 125

#7- 46,378

IN RE: CONSERVATION AND PREVENTION OF  
WASTE OF CRUDE PETROLEUM AND  
NATURAL GAS IN THE MIDWAY  
LANE (PERMIAN) FIELD, CROCKETT  
COUNTY, TEXAS

Austin, Texas

August 14, 1961

SPECIAL ORDER

PERMITTING SINCLAIR OIL & GAS COMPANY TO CONDUCT  
WATERFLOODING OPERATIONS IN THE QUEEN SAND RESERVOIR  
UNDERLYING ITS UNIVERSITY 66 "B", UNIVERSITY 67 "C" and UNIVERSITY 68 "D" Leases  
IN THE MIDWAY LANE (PERMIAN) FIELD, CROCKETT COUNTY, TEXAS

WHEREAS, After due notice, the Railroad Commission of Texas held a hearing on June 9, 1961, to consider the application of Sinclair Oil & Gas Company for permission to conduct waterflooding operations in the Queen Sand reservoir underlying its University 66 "B", University 67 "C" and University 68 "D" Leases in the Midway Lane (Permian) Field, Crockett County, Texas; and

WHEREAS, From evidence adduced at said hearing, it appears to the Commission that the applicant proposes to waterflood the Queen Sand at an average depth of 1,055' underlying three leases in said field; that said reservoir includes approximately 1,200 productive acres, and said leases include approximately 264 productive acres with average effective thickness of 7' with average porosity and permeability of 15% and 85 md.; that the three leases are developed with a total of 12 wells with average production of three barrels per well per day at the present time, and the cumulative production is 212,000 barrels; that the applicant proposes to plug-back and re-complete four Ellenburger Wells as water injection wells in the Queen Sand; that the applicant estimates that at least 200,000 additional barrels of oil will be recovered as a direct result of the proposed water injection; that this application was not protested; and

WHEREAS, From evidence adduced at said hearing, the Commission is of the opinion and finds that waste can be prevented and the ultimate recovery of oil can probably be increased by waterflooding operations in the Queen Sand reservoir underlying the applicant's University 66 "B", University 67 "C", and University 68 "D" Leases at approximately 1055 feet in the Midway Lane (Permian) Field, Crockett County, Texas.

NOW, THEREFORE, IT IS ORDERED By the Railroad Commission of Texas that effective June 19, 1961, Sinclair Oil & Gas Company be and it is hereby permitted to conduct a waterflooding operation on its University 66 "B", University 67 "C", and University 68 "D" Leases, Midway Lane (Permian) Field, Crockett County, Texas, by the injection of water into the Queen Sand reservoir underlying such leases at approximately 1055 feet.

IT IS FURTHER ORDERED That the operator concerned herein may use the following wells for water injection purposes, provided that before any well is used for water injection purposes, such well must be so cased and completed that water can enter no other strata than that approved for waterflooding in this order:

University 66 "B" Well No. 5,

University 67 "C" Well No. 1,

University 68 "D" Wells No. 5 and No. 7.

ORDER # 7- 46,378

Page 2

IT IS FURTHER ORDERED That as the waterflood operation progresses, said operator may expand the water injection facilities and may use for injection purposes additional wells, either converted producing wells and/or wells drilled for such use; provided that prior to the use of such additional wells for injection purposes, the operator must file with the Commission's Engineering Department, for its approval, a plat showing thereon the location of such additional injection wells with the date that injection into such wells will be commenced; and if such are converted producing wells, the date such wells ceased to produce oil; and provided, further, that no water injection well location will be approved at or nearer to a lease boundary line than a regular location for producing wells projected to this reservoir unless and until the operator furnishes waivers from any such offsetting operator or until evidence that such offsetting operator has been notified and that no protest is made to the Commission concerning such location within ten days after such request for approval of the injection well location is received by the Commission's Engineering Department.

IT IS FURTHER ORDERED That during such time as any well is used for injection purposes, a daily allowable of oil shall be assigned to it which will not exceed its ability to produce as determined by the hereinafter mentioned test, and in no event shall exceed the allowable that said well would receive by application of the field's allocation formula. Said allowable shall be distributed to any other well or wells on said lease so that the total lease allowable shall consist of the initial allowable for each actually producing well augmented by the transferred allowable of said input well; and provided, further, that no producing well may be assigned a greater amount of transferred oil allowable than the equivalent of the unpenalized allowable for said well before the transfer of any additional allowable to it. No oil allowable will be transferred from a converted well unless a twenty four (24) hour potential test is conducted prior to conversion. The operator shall notify the Commission's Deputy Supervisor and offset operators as to the date the twenty four (24) hour potential test will be conducted. The results thereof shall be reported to the Commission on Form 3 (Potential Test Form) and designated, "A Test Determining the Producing Ability of a Well Prior to Transferring the Allowable."

IT IS FURTHER ORDERED That this cause be held open on the docket for such other and further orders as may be necessary.

RAILROAD COMMISSION OF TEXAS

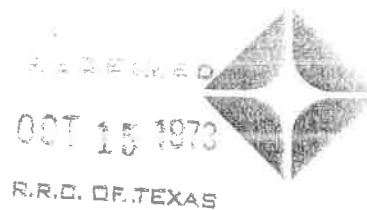
*W. M. Murray*  
Chairman  
*W. M. Murray*  
Commissioner

ATTEST:

*W. M. Murray*  
Secretary

MLC:oor

Secretary



October 10, 1973

Railroad Commission of Texas  
Oil and Gas Division  
P. O. Drawer 12967, Capitol Station  
Austin, Texas 78711

Gentlemen:

Application to Expand Water Injection  
Atlantic Richfield Company  
University 66, 67, 68 Unit  
Well Nos. 3-2 and 3-6  
Midway Lane (Permian) Field  
Crockett, Texas

---

We are hereby requesting to expand the waterflood operations previously granted by Special Order 7-46,378 dated August 14, 1961. The proposed additional injection wells are to be plugged back from the Ellenburger to the Permian. Form W-1 for these proposed recompletions have been filed. The following items are submitted for your consideration.

1. Form H-1
2. Plat of Unit
3. Plot of production and injection since began
4. Copy of letter to offset operators requesting waiver
5. Log of Well No. 3-6

We respectfully request approval of the waterflood expansion.

Very truly yours,

A handwritten signature in dark ink, appearing to read "B. C. Sides".

B. C. Sides  
Senior Engineer

BCS:hr

Attach.

cc: Railroad Commission of Texas  
P. O. Box 2141  
San Angelo, Texas 76901

**RAILROAD COMMISSION OF TEXAS**  
OIL AND GAS DIVISION

RECEIVED  
OCT 15 1973  
Form H-1  
(Rev. 3-24-70)

**APPLICATION TO INJECT FLUID INTO A RESERVOIR PRODUCTIVE OF OIL OR GAS**

1. Field Name (as per current proration schedule - including reservoir, if applicable.) <b>Midway Lane (Permian)</b>		2. RRC District <b>7C</b>
3. Operator <b>Atlantic Richfield Co.</b>		4. County <b>Crockett</b>
5. Lease Name(s) and RRC Lease Number(s) <b>University 66, 67, 68 Unit (01017)</b>		6. Reservoir Discovery Date <b>Sept. 1950</b>
7. Have any injection permits been granted previously to any operator in this reservoir? <input type="checkbox"/> Yes <input type="checkbox"/> No If answer to this question is "NO", ALL OPERATORS IN THE RESERVOIR MUST BE NOTIFIED of this application, and copies of notification attached hereto.		
8. Check the Appropriate Block(s): <input type="checkbox"/> New Project or <input checked="" type="checkbox"/> Expansion of Previous Authority to Add Either: <input type="checkbox"/> New Lease(s) or <input checked="" type="checkbox"/> Additional Well(s) on Same Lease(s) Previous Authority Dated <b>8-14-61</b> by <input type="checkbox"/> Administrative Action or <input checked="" type="checkbox"/> Hearing, Special Order No. <b>7-46, 378</b>		
<b>RESERVOIR AND FLUID DATA ON ENTIRE RESERVOIR</b>		
9. Name of Reservoir <b>Permian</b>		10. Estimated Productive Area of Entire Reservoir (acres) <b>1200</b>
11. Composition (sand, limestone, dolomite, etc.) <b>Sand</b>		12. Type of Structure (Include cross-section and structural maps.) <b>Anticline</b>
13. Subsea Depth of Oil-Water Contact (ft.) <b>+1516</b>		14. Subsea Depth of Gas-Oil Contact (ft.) <b>--</b>
15. Original Bottom Hole Pressure (psig) <b>313</b>		16. Current Bottom Hole Pressure (psig) <b>N.A.</b>
17. Was a Gas Cap Present Originally? <b>No</b>		18. Is a Gas Cap Present Now? <b>No</b>
19. Ratio of Gas Cap Volume to Oil Zone Volume <b>-----</b>		20. Saturation Pressure (psig) <b>-----</b>
21. Formation Volume Factor Original: <b>NA</b> Current: <b>NA</b>		22. Type Drive During Primary Production <b>Sol</b>
<b>RESERVOIR AND FLUID DATA</b>		
23. Number of Productive Acres in Lease(s) within Project Area <b>264</b>	24. Average Depth to Top of Pay (ft.) <b>1055</b>	25. Average Effective Pay Thickness (ft.) <b>7</b>
26. Average Horizontal Permeability (mds.) <b>85</b>	27. Range of Horizontal Permeability (mds.) <b>---</b>	28. Connate Water Saturation (% of pore space) <b>40</b>
29. Average Porosity (%) <b>15</b>	30. Gravity of Oil (deg. API) <b>31°</b>	31. Viscosity (cps. @ ° F) <b>10</b>
<b>PRODUCTION HISTORY OF RESERVOIR</b>		
32. Date First Well Completed on Lease(s) <b>Sept. 1950</b>		33. Stage of Primary Depletion of Project Area <b>All Secondary</b>
34. Current Average Gas-Oil Ratio (SCF/bbl.) <b>500</b>		35. Current Water Production (% of total fluid production or bbls./day) <b>85</b>
36. Current Number of Producing Wells on Each Lease in Project Area <b>10</b>		37. Current Average Daily Oil Production per Well (bbls./day/well) <b>14</b>
38. Cumulative Oil Production to Date from Lease(s) (bbls.) <b>420,000 since start of waterflood</b>		39. SUBMIT ATTACHED SHEET(S) GIVING THE OIL, GAS, & WATER PRODUCTION BY YEARS SINCE DISCOVERY & TOTALS. FOR THE LAST 3 YEARS, GIVE THESE FIGURES BY MONTHS.
<b>TYPE OF INJECTION PROJECT AND RESULTS EXPECTED</b>		
40. Type of Injection Project (Check the appropriate block(s):) <input checked="" type="checkbox"/> Waterflood, <input type="checkbox"/> Miscible Displacement, <input type="checkbox"/> Thermal Recovery, <input type="checkbox"/> Pressure Maintenance, <input type="checkbox"/> Other _____ (specify)		
41. Current Estimated Oil Saturation (% of pore space) <b>36</b>		42. Estimated Residual Oil Saturation at Abandonment (% of pore space) <b>30</b>
43. Estimated Original Oil-In-Place (bbls.) <b>1,800,000</b>		44. Estimated Ultimate Additional Oil that will be Recovered as a Direct Result of Injection (bbls.) <b>16,000 bbls. these add'l. 2 wells</b>
<b>INJECTION DATA</b>		
45. Type of Injection Fluid (Check the appropriate block(s):) <input type="checkbox"/> Salt Water, <input checked="" type="checkbox"/> Brackish Water, <input type="checkbox"/> Fresh Water, <input type="checkbox"/> Gas, <input type="checkbox"/> Air, <input type="checkbox"/> LPG, <input type="checkbox"/> Other _____ (specify)		
46. Source of Injected Fluid(s) (formation(s) and depth(s) in ft.) <b>Ellenburger Produced Water</b>		47. Injection Pattern and Spacing <b>Peripheral</b>
48. Total Number of Injection Wells to be Approved in this Application <b>2</b>		49. Estimated Maximum Daily Rate of Injection per Well (bbls./day/well) <b>350</b>
50. Total Estimated Maximum Daily Rate of Injection for All Wells in this Application. (bbls./day)		51. Maximum Injection Pressure to be Used. (psig) <b>650</b>
52. LIST COMPLETE INJECTION WELL DATA ON REVERSE SIDE OF THIS SHEET.		

DATA ON PROPOSED PROJECT AREA

(APPLICANTS MUST COMPLY WITH THE INSTRUCTIONS ON REVERSE SIDE HEREOF.)

(OVER)



INJECTION WELL DATA

LEASE NAME & WELL NUMBER		UNIVERSITY 66, 67, 68 Unit 3-2                      3-6				
SURFACE CASING	SIZE	10-3/4	10-3/4			
	LENGTH	603	606			
	CEMENT VOL. & % GEL	250	150			
PRODUCTION CASING	SIZE	7-5/8	7-5/8			
	LENGTH	2138	2138			
	CEMENT VOL. & % GEL	600 SX	600 SX			
TUBING	LENGTH	1050	1050			
	PACKER DEPTH	1050	1050			
INJECTION	DEPTH	1076-80 1146-50	1087-91 1156-60			
	THRU CASING OR TUBING?	Tbg.	Tbg.			

I declare under penalties prescribed in Article 6036c, R. C. S., that I am authorized to make this report, that this report was prepared by me or under my supervision and direction, and that data and facts stated therein are true, correct, and complete, to the best of my knowledge.

October 10, 1973

Date

Atlantic Richfield Co.

Operator

P. O. Box 1610

Street Address or P.O. Box

Midland, Texas

City, State

79701

Zip Code

Signature

B. C. Sides

Name of Person (type or print)

Senior Engineer

Title of Person

Telephone: 915

Area Code

682-8631

- INSTRUCTIONS -

1. ATTACH waivers from each operator offsetting the subject lease(s), or attach copies of letters of "Request for Waivers" sent to each operator offsetting the subject lease(s); provided, that if this is the initial application for fluid injection authority for this reservoir, waivers from all operators, or copies of "Request for Waivers", for all operators in the reservoir shall be attached.
2. ATTACH a list of names and addresses of all offset operators.
3. ATTACH plat of lease(s) in project area, showing producing wells, injection wells, offset wells, and also identify ownership of all surrounding leases.
4. ATTACH a complete electrical log or similar well log of one of the proposed injection wells.
5. No application will be considered unless Items 1, 2, 3, and 4 are attached to this application. If all necessary waivers are not attached, the Commission will hold this application for a period of ten (10) days from date of receipt in the Austin office. If no protest has been received in the Austin office within ten (10) days, the application will be processed.
6. Mail the complete application (including waivers) directly to the Austin office of the Railroad Commission; and the same day mail a copy of the application form, copy of plat and log to the appropriate District office.

OIL WELL POTENTIAL TEST COMPLETION OR RECOMPLETION REPORT AND LOG	
1. FIELD NAME (See RRC Records or Well Log)	2. LEASE NAME
Midway Lane (Permian)	University 66-67-68 Unit
3. OPERATOR	7. RRC District
Atlantic Richfield Company	7-C
4. ADDRESS	8. Well Number
P.O. Box 1610 Midland, Texas 79701	01017
5. If Operator has changed within last 60 Days -- Give former Operator	9. Well Number
	3-2
6. LOCATION (Section, Block, and Survey)	10. County
Sec. 26, Blk. 45, University Lands Survey	Crockett
12. If Workover -- Give former Field (with Reservoir)	11. Purpose of Test
Midway Lane (Ellenburger)	Initial Potential <input checked="" type="checkbox"/>
	Retest
	Reclose <input checked="" type="checkbox"/>
13. Type of Electric or other Log run	14. Completion Date
GR-N	10/20/73

Section I		POTENTIAL TEST DATA				14. Choke Size	
15. Date of Test	16. No. of Hours Tested	17. Production Method (Flowing, Gas Lift, Jetting, Pumping - Size & Type of Pump)				18. Flowing Tubing Pressure PSI	
19. Production for Test Period	Oil - BBLs	Gas - MCF	Water - BBLs	Gas - Oil Ratio	Casing Pressure PSI		
20. Calculated 24 Hour Rate	Oil - BBLs	Gas - MCF	Water - BBLs	Oil Gravity - API - 60°	21. Injection Gas-Oil Ratio		
21. Was Swab or Artificial Flowing Device Used During this Test? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		22. Oil Produced Prior to Test (New & Reworked Wells)					

NOTE: TEST SHOULD BE FOR 24 HOURS UNLESS OTHERWISE SPECIFIED IN FIELD RULES

INSTRUCTIONS: All potential test Forms, with all information requested thereon filled in, shall be filed in the District Office of the Railroad Commission not later than ten (10) days after the test is completed and, should the operator fail to file potential test in an acceptable Form within the ten (10) days as specified, then the effective date of the allowable resulting from such test shall not extend back more than ten (10) days prior to receipt and acceptance of the potential test Form in the District Office. This Ten-Day provision shall govern regardless of whether the potential test is taken during the month in which it is received in the District Office or any prior month. Fill in only the front of this Form when reporting only a potential test; if well is newly completed or recompleted, fill in reverse side also.

EACH WITNESS MUST PERSONALLY SIGN.  
We, the undersigned, witnessed this test, by observation of meter readings, or the top and bottom gauges of each tank, whichever is applicable, into which production was run during duration of this test.

*G. L. Stark*  
Signature: REPRESENTATIVE OF COMPANY MAKING TEST  
List of Offset Operators Notified:

Signature: REPRESENTATIVE OF RAILROAD COMMISSION  
Date of Notification:

RECEIVED  
R R C OF TEXAS  
OCT 17 1973  
SAN ANGELO, TEXAS

CERTIFICATE:  
I declare under penalties prescribed in Article 6036c, R. C. S., that I am authorized to make this report, that this report was prepared by me or under my supervision and direction, and that data and facts stated therein are true, correct, and complete, to the best of my knowledge.

*N. F. Gullledge*  
REPRESENTATIVE OF COMPANY  
District Production Supervisor - 11/20/73  
TITLE DATE

REMARKS Well completed as water injection well on 11/20/73 as per RRC Permit Dated 10/25/73.

24. Type of completion:

DATA ON WELL COMPLETION AND LOG (Not Required on Re-test)

25. Date Permit Issued

New Well ☐

Deepening ☐

Plug Back ☒

Other ☐

March 12, 1973

26. Notice of intention to drill this well was filed in Name of

Sinclair Prairie Oil Company

27. If Special Permit Give Permit Number

Case 69,642

28. Number of Producing Wells on this Lease in This Field (Reservoir) including this Well

29. Total Number of Acres in this Lease

30. Date Plug Back, Deepening, Work Over or Drilling Operations:

Commenced  
9/17/73

Completed  
10/20/73

31. Distance to Nearest Well, Same Lease & Reservoir

32. Location of Well, Relative to Lease Boundaries of Lease on which this Well is Located

2093.8  
South

Feet From  
Line of The

East  
University 66-67-68 Unit

Feet From  
Lease

33. Elevation (OF, MBB, RT, GR, ETC)

2675' GR

34. Was Directional Survey Made

Yes ☐

No ☐

35. Top of Pay

7593

36. Total Depth

2040

37. P.B. Depth

38. Surface Casing Determined By:

Recommendation of Texas Water Development Board

Field Rules

Railroad Commission (Special)

39. Is Well Multiple Completion?

Yes ☐

No ☒

40. If Multiple Completion List All Reservoir Names (Completions in this Well)

41. Intervals Drilled By:

Rotary Tools

Cable Tools

0-7593

42. Name of Drilling Contractor

Tompson-Carr

43. Is Cementing Affidavit Attached?

Yes ☐

No ☐

44.

CASING RECORD (Report All Strings Set in Well)

Casing Size	Weight LB./FT.	Depth Set	Hole Size	Cementing Record	Amount Pulled
10 3/4	40.5	603		250 sx	None
7 5/8	26.4	2138		600 sx	None
5 1/2	15 1/2 & 20	7553		300 sx	2272

45.

LINER RECORD

Size	Top	Bottom	Sacks Cement	Screen
None				

46.

TUBING RECORD

Size	Depth Set	Packer Set
2 3/8	1005	1005

47. Producing Interval (this completion) indicate Depth of Perforations or Open Hole

From	1150	To	1154
From	1080	To	1084
From		To	
From		To	

48.

ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

Depth Interval

1150-1154

Amount and Kind of Material Used

50 gals acid fraced with 2000 gals gelled brine - 2500 # sd.

1080-1084

50 gals acid fraced with 2000 gals gelled brine - 2500# sd

49.

FORMATION RECORD (LIST DEPTHS OF PRINCIPAL GEOLOGICAL MARKERS AND FORMATION TOPS)

Formations	Depth	Formations	Depth

REMARKS well formerly known as University 68D-2, Midway Lane (Ellenburger) (01013)