HEYCO

PETROLEUM PRODUCERS

HARVEY E. YATES COMPANY

P. O. BOX 1933 SUITE 300, SECURITY NATIONAL BANK BUILDING 505/623-6601
ROSWELL, NEW MEXICO 88201

June 24, 1983

Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Joe Ramey
Division Director & State Petroleum Engineer

Re: Additional Information for Case 7875 (Travis Penn Unit Tertiary Recovery Exhibits)

Dear Mr. Ramey:

Please find attached three copies of information describing volumetrics and economics comparisons for the Travis Upper Penn Pool. Please note that expenses for economics on the attached exhibits indicate current project area operating expenses and correct for estimated operating expenses for the entire reservoir area to allow for the additional operating cost. This is also reflected in the expense for the polymer augmented flood for the entire reservoir.

I hope this information is helpful in evaluating the Travis Penn Unit. If I can help in any additional way, please let me know by contacting my office at 1-505-623-6601.

Sincerely yours,

Ray F. Nokes
Reservoir Engineer

RFN:mlb

Attachments

TRAVIS UPPER PENN POOL

DESCRIPTION	AREA ACRES	AVERAGE THICKNESS (Feet)	RESERVOIR VOLUME (AC FT)	VOLUMETRICS (STB)
Unit Area	1505	27.75	41,774	10,694,100 (11,909,300 by Material Balance)
*Project Area:	480	46.50	22,320	5,713,920
(S/2 SE/4 Sec. 12)	80	61	4,880	1,249,280
(N/2 NE/4 Sec. 13)	80	55	4,400	1,126,400
(S/2 NE/4 Sec. 13)	80	49	3,920	1,003,520
(S/2 NW/4 Sec. 13)	80	38	3,040	778,240
(N/2 SW/4 Sec. 13)	80	54	4,320	1,105,920
(N/2 NW/4 Sec. 13)	80	22	1,760	450,560

*Additional information requested by Oil Conservation Division

Volumetric estimate of oil in place in Barrels/Acre Foot

$$q = \frac{(0.0639)(1-.24)(7758)}{1.4725} = 256 \text{ Barrel/Acre Foot.}$$

Economic Evaluation of Travis Upper Penn Pool

Description	Reservoir	Project Area
Operating Expense ($/Mo)	*5,813.00	**3,106.00
Monthly Production:		
Oil (BO)	---	1980
Gas (MCFG)	---	2982
Estimated Life of Unit Production:	---	12 years
A) Estimated Recovery to ELC w/Present Waterflood Conditions:	129,627 BO 195,226 MCF	69,260 BO 104,310 MCF
B) Estimated Recovery to ELC w/K-Trol Treatment and Polymer Augmented Flooding (1 cps Vis):	924,345 BO 1,392,119 MCF	493,883 BO 743,817 MCF
Estimated Life Time Expense vs. Income During 12 Year Life:		
A) 12 Year Operating Expense:	$837,093.00	$447,264.00
12 Year Income w/Present Waterflood Condition:	$4,864,940.00	$2,599,350.00
Gross Profit:	$4,027,847.00	$2,152,086.00
B) 12 Year Operating Expense:	$837,093.00	$447,264.00
Plus K-Trol Treatment (Initial)	$21,491.00	$21,491.00
Plus Polymer Flooding (1 CPS Vis)	$12,289,586.00	$6,566,400.00
***Total Expenses:	$13,148,170.00	$7,035,155.00
12 Year Income with Polymer Augmented Flood	$34,690,945.00	$18,535,575.00
Gross Profit:	$21,542,775.00	$11,500,420.00

*Estimated Cost of Operating Total Reservoir Area/month
**Current Operating Cost of Project Area/month
***Adjusted expenses for Area Acres and Project Acres
Economics Based on Current Income of $30.00/BO and $5.00/MCF (March 1983)

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
P. O. Box 1933
Roswell, NM 88201

ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

August 28, 1981

Re: CASE NO. 7320
ORDER NO. R-6765

Mr. Thomas J. Hall III
Attorney
Harvey E. Yates Company
P. O. Box 1933
Roswell, New Mexico 88201

Applicant:

Harvey E. Yates Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

BEFORE EXAMINER Richard L. Stamets
OIL CONSERVATION DIVISION
Applicants' EXHIBIT NO. 1
CASE NO. 7875
SUBMITTED BY HEYCO
HEARING DATE 05/25/83

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
Aztec OCD

Other

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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

CASE NO. 7320
Order No. R-6765

APPLICATION OF HARVEY E. YATES COMPANY FOR A WATERFLOOD PROJECT, EDDY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on August 12, 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 28th day of August, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Harvey E. Yates Company, seeks authority to institute a waterflood project on its Travis Deep Unit Area, Travis-Upper Pennsylvanian Pool, by the injection of water into the Cisco-Canyon formation through one well located in the NW/4 NE/4 of Section 13, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico.

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

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

(5) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations

or onto the surface from injection, production, or plugged and abandoned wells.

(6) That the injection well or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 1200 psi, but the Division Director should have authority to increase said pressure limitation, should circumstances warrant.

(7) That the subject application should be approved and the project should be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Harvey E. Yates Company, is hereby authorized to institute a waterflood project on its Travis Deep Unit Area, Travis-Upper Pennsylvanian Pool, by the injection of water into the Cisco-Canyon formation through one well located in the NW/4 NE/4 of Section 13, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico.

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

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

(4) That the injection well herein authorized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 1200 psi, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(5) That the subject waterflood project is hereby designated the Travis Deep Waterflood Project and shall be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

(6) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

S E A L

fd/

CORRECTED COPY

APPLICATION OF HARVEY E. YATES COMPANY TO EXPAND ITS WATERFLOOD PROJECT IN THE TRAVIS-UPPER PENNSYLVANIAN POOL IN EDDY COUNTY, NEW MEXICO.

ORDER No. WFX-499

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Order No. R-6765, Harvey E. Yates Company has made application to the Division on April 12, 1982 for permission to expand its Travis Deep Unit Area Waterflood Project in the Travis-Upper Pennsylvanian Pool in Eddy County, New Mexico.

NOW, on this 10th day of May, 1982, the Division Director finds:

1. That application has been filed in due form.

2. That satisfactory information has been provided that all offset operators have been duly notified of the application.

3. That no objection has been received within the waitin period as prescribed by Rule 701 B.

4. That the proposed injection well is eligible for conversion to water injection under the terms of Rule 701.

5. That the proposed expansion of the above referenced waterflood project will not cause waste nor impair correlative rights.

6. That the application should be approved.

IT IS THEREFORE ORDERED:

That the applicant, Harvey E. Yates Company, be and the same is hereby authorized to inject water into the Cisco-Canyo formation through plastic-lined tubing set in a packer at approximately 9760 feet in the following described well for purposes of secondary recovery to wit:

Travis State Com Well No. 1, NE/4 SW/4 of Sec. 13, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico

IT IS FURTHER ORDERED:

That the operator shall take all steps necessary to ensur that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

That the casing-tubing annulus (in each well) shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing or packer.

DOYLE HARTMAN, R. L. Stamets

OIL CONSERVATION DIVISION
Applicant's EXHIBIT NO. 2a
CASE NO. 7875
SUBMITTED BY HEYCO
DATE 05/25/83

That the injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure to a maximum of 1200 pounds per square inch; provided however that the Division Director may administratively authorize a pressure limitation in excess of the above upon the operator's establishing that such higher pressure will not result in fracturing of the confining strata.

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

That the operator shall immediately notify the Supervisor of the Division's Artesia District Office of the failure of the tubing, casing, or packer in said well or the leakage of water from or around said well and shall take such steps as may be timely or necessary to correct such failure or leakage.

That the subject well shall be governed by all provisions of Division Order No. R-6765 and Rules 702, 703, 704, 705, and 706 not inconsistent herewith.

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY,
Division Director

S E A L

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] Yes [ ] No

II. Operator: Harvey E. Yates Company

Address: P. O. Box 1933 Roswell, NM 88201

Contact party: Thomas J. Hall III Phone: (505) 623-6601

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? [X] Yes [ ] No
If yes, give the Division order number authorizing the project R-6765.

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 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;
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.).

BEFORE EXAMINER Richard L. Stamets
OIL CONSERVATION DIVISION
Applicants EXHIBIT NO. 2b
7875
SUBMITTED BY HEYCO
HEARING DATE 05/25/83

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: Ray E. Nokes Title Reservoir Engineer

Signature: Ray E. Nokes Date: March 31, 1982

* 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. Reference is made to Case No. 7875 & 12-82 & Order R-6765 of

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.

SECTION III

Well Data

(For Proposed Injection Well)

Prepared by:
Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, NM 88201

HARVEY E. YATES COMPANY

tory Summary Sheet

Operator Harvey E. Yates Co. Well Name & # Travis State #1 Lease # State E-139

District Roswell Made By Ray F. Nokes Date 3-26-82

Location K, 1780' FSL & 2080' FWL, Sec 13, T-18S, R-28E, Eddy Co., NM

Spud Date 3-19-79 Compl. Date 7-11-79 TD 11,061' KB PBTD 10,538' EB

Type Well: Oil X Gas Other Field Travis Upper Penn

IP 7-13-79 Fl 103 BO/1033 MCF/2 BW in 6 hrs * GOR 1003 Zone Canyon

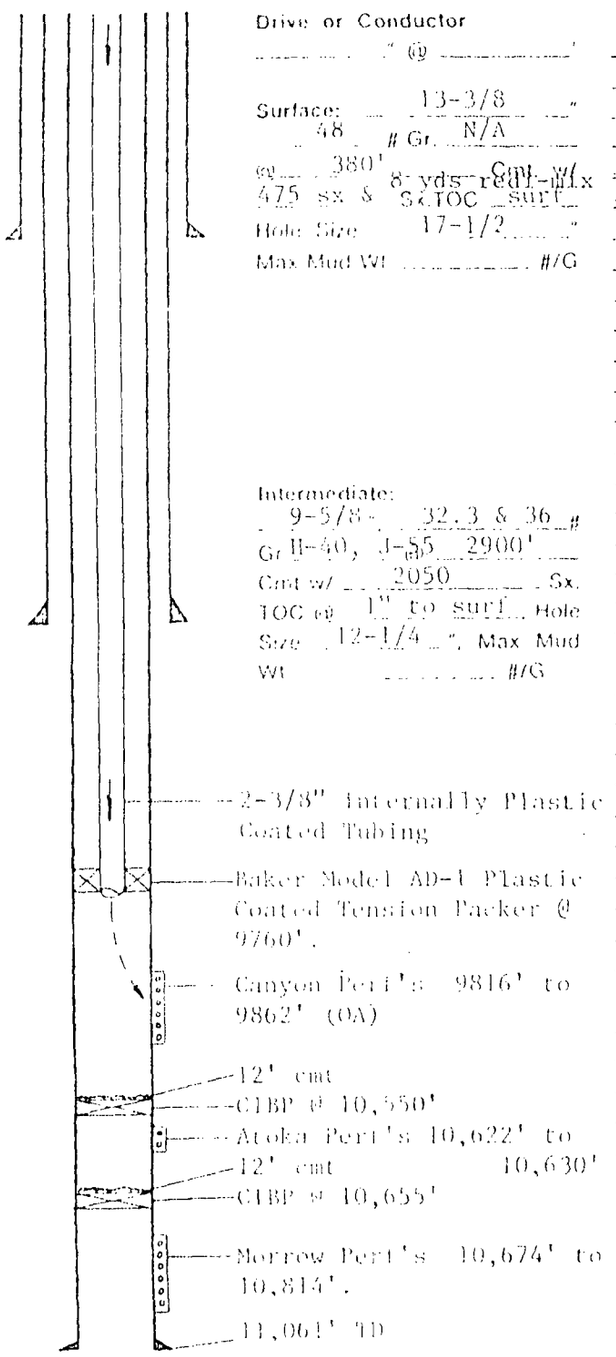
Perfs 9816' to 9862' Total Holes 70 1/2"

Stimulation A/12o gals 10% acetic acid & 6000 gals 15% DS-30 acid.

Cumul. Oil 53270 bbls MCF 48538 Water none recorded

Recent Test SI Lift Equipment

Misc. Elevation: 3585.5' GL



Drive or Conductor

" @

Surface: 13-3/8" 48 # Gr. N/A @ 380' Cmt w/ 8 yds redi-mix 475 sx & Circ TOC surf Hole Size 17-1/2" Max Mud Wt #/G

Intermediate: 9-5/8" 32.3 & 36 # Gr H-40, J-55 @ 2900' Cmt w/ 2050 Sx. TOC @ 1" to surf Hole Size 12-1/4", Max Mud Wt #/G

Production: 5-1/2", 17 #, N80 & J55 Gr. @ 11,061' Cmt. w/ 1190 Sx. TOC calc. @ 2750', Hole Size 8-3/4" Mx Mud Wt. #/G

TD 11,061' KB

WELL HISTORY

*calculated 24 hr rate = 412 BO/413.2 MCF/8 BW

PLAN OF OPERATION

Acidize to break down all perforations in the injection interval. Swab to recover load and clean up perf's. Pull out of hole and prepare to run injection assembly.

Go in hole with internal plastic coated Baker Model AD-1 tension packer and 2-3/8" plastic coated tubing and set at 9760'.

Prepare to inject Ogallala water when administrative approval is given.

Note: At such time the two upper zones approach depletion, the lower zone from 9880' to 9888' will be perforated and flooded.

Tubing ", #, Gr, @

Tubing ", #, Gr, @

Packer @

SRC-0258

SECTION III, cont.

B) 1. Travis Upper Penn (Canyon)

2. Injection interval: 9816' to 9862' initially plus additional lower zone from 9880' to 9888'. (All cased)

3. Original purpose of drilling well was for development of the Travis Upper Penn Pool, Canyon formation. Cummulative production to date: 53,270 BO/48,538 MCF.

4. See diagramatic sketch of well bore, Section III (A).

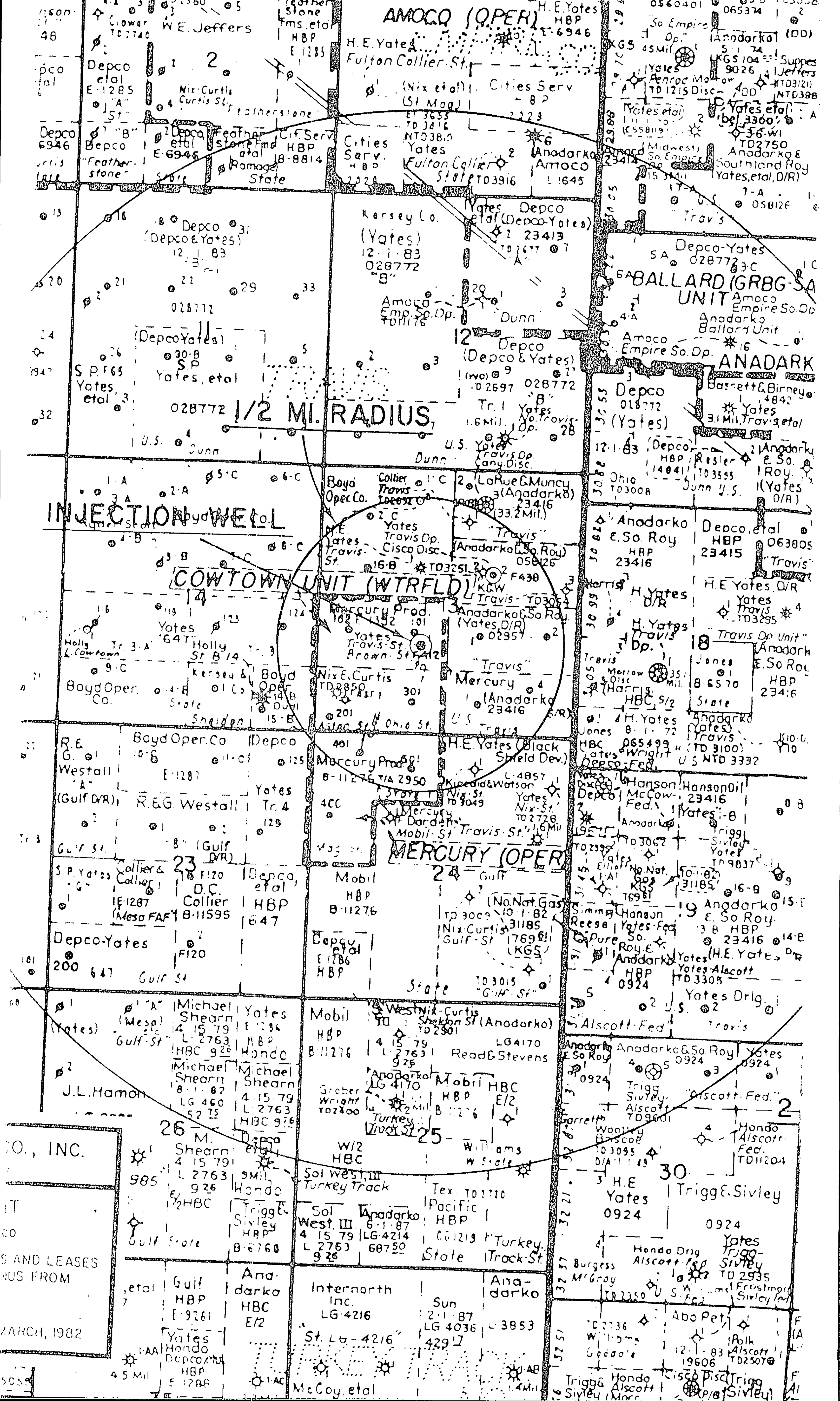
5. There are no other oil or gas zones producing above the Travis Upper Penn Pool, Canyon formation in the Travis Deep Unit Area at the present. The Cisco completion listed under the Travis Deep Unit #2 is the same Canyon pay. The next lower producing interval in the Travis Upper Penn Area is the Morrow formation, which is a Morrow Sand productive of gas at a depth of 10,645' in the proposed injection well.

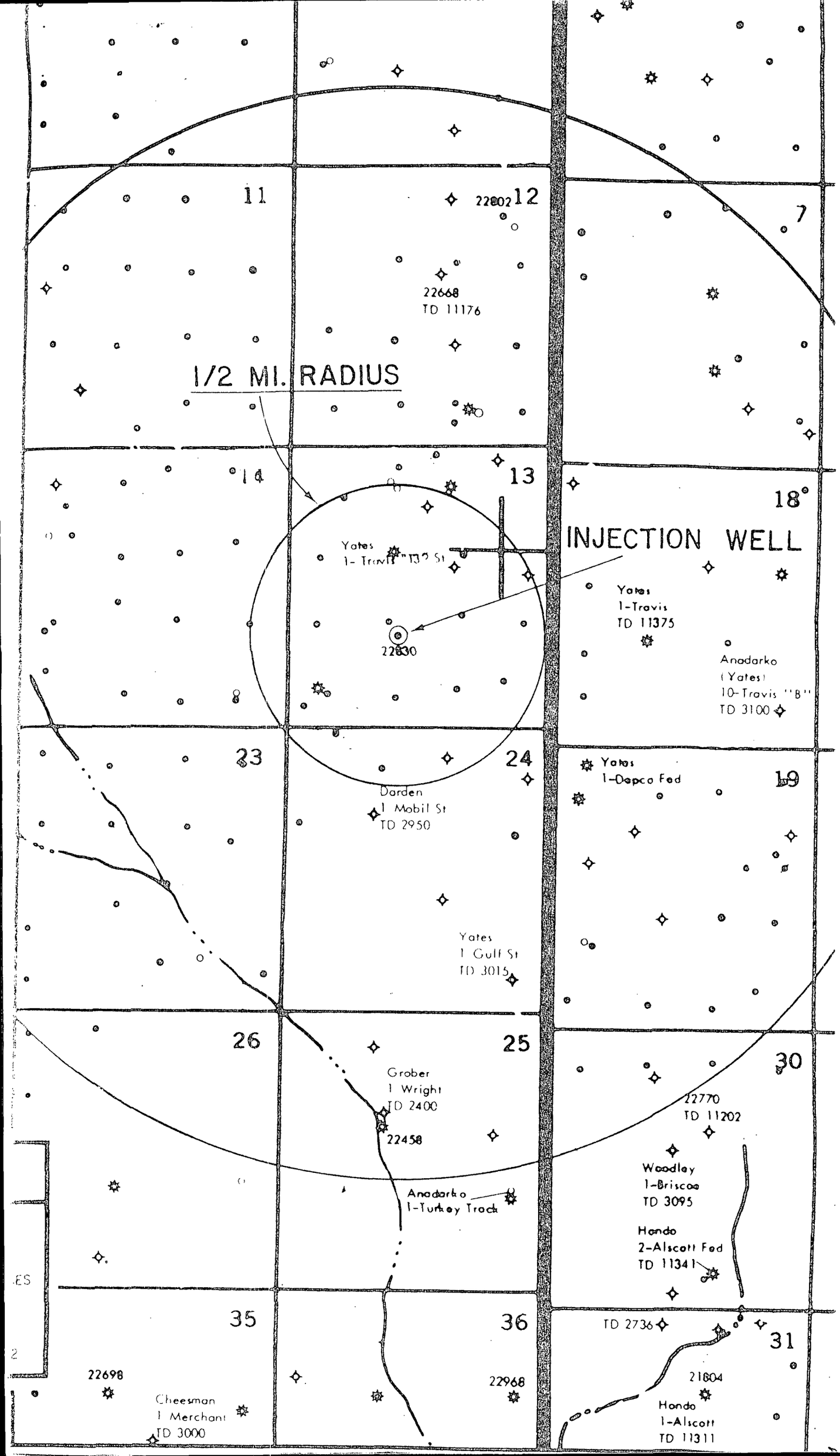
Prepared by:
Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, NM 88201

SECTION V

Maps

Prepared by:
Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, NM 88201


AMOCO (OPER)
1/2 MI. RADIUS
INJECTION WELL
COWTOWN UNIT (WTRFLD)
MERCURY (OPER)
BALLARD (GRBG-SA) UNIT
ANADARKO
W.E. Jeffers
Depco etal
Cities Serv HBP
Anadarko Amoco
Kersey Co. (Yates) 12-1-83 028772 "B"
Depco (Depco & Yates)
Yates, etal 028772
Boyd Oper. Co.
Mercury Prod.
Yates Travis St. Brown St.
Nix & Curtis
Anadarko & So. Roy
R.&G. Westall
D.C. Collier B-11595
Mobil HBP B-11276
Depco-Yates
Michael Shearn
Hondo
J.L. Hamon
Read & Stevens
Trigg & Sivley
H.E. Yates 0924
Internorth Inc. LG-4216
Sun 2-1-87 LG 4036
Abo Pet.
Alscott Fed.
Turkey Track St.
Sol West III
Texas Pacific HBP
McCoy, etal
CO., INC.
S AND LEASES
IUS FROM
MARCH, 1982


11
22802
12
7
22668
TD 11176
1/2 MI. RADIUS
14
13
18
INJECTION WELL
Yates
1- Travis "13" St
Yates
1-Travis
TD 11375
22630
Anadarko
(Yates)
10-Travis "B"
TD 3100
8
23
24
Yates
1-Depco Fed
19
Darden
1 Mobil St
TD 2950
Yates
1 Gulf St
TD 3015
26
25
30
Grober
1 Wright
TD 2400
22458
22770
TD 11202
Woodley
1-Briscoe
TD 3095
Anadarko
1-Turkey Track
Hondo
2-Alscott Fed
TD 11341
35
36
TD 2736
31
22698
22968
21804
Cheesman
1 Merchant
TD 3000
Hondo
1-Alscott
TD 11311

SECTION VI

Well Histories in Area

Prepared by:
Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, NM 88201

SECTION VI

Well Name	Travis Deep Ohio Com	Travis Deep Unit	Travis "13" State
Well No.	Well #1	Well #2	Well #1
Legal Location	M, 760' FSL & 660' FWL Sec 13, T-18S, R-28E Eddy County, NM	G, 1980' FNL & 1780' FEL Sec 13, T-18S, R-28E Eddy County, NM	F, 1980' FN & WL Sec 13, T-18S, R-28E Eddy County, NM
Field & Pool	South Empire Morrow	Travis Upper Penn (Canyon)	Travis Upper Penn (Canyon)
Spud Date	9-19-81	5-6-77	7-14-80
Completion Date	11-19-81	8-24-77	12-26-80
Type Completion	Morrow Gas Well	Canyon Penn Oil Well	Canyon Penn Oil Well
TD	11,000'	11,270'	11,100'
PBTD	10,955'	11,223'	10,725'
Completion Interval	10,850-10,858' (OA)	9824-9903' (OA)	9824-9870' (OA)
Casing Design	13-3/8" to 343' w/390 sx 8-5/8" to 3114' w/4780 sx 5-1/2" to 11,000' w/800 sx	12-3/4" to 360' w/425 sx 8-5/8" to 3500' w/300 sx 5-1/2" to 11,268' w/950 sx	13-3/8" to 350' w/350 sx 8-5/8" to 3100' w/1930 sx 5-1/2" to 11,100' w/925 sx
Top of Cement @	8325' by CBL	7060' to Temp Survey	7140' by CBL

Prepared by:
Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, NM 88201

(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: NM-23417

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

7. UNIT AGREEMENT NAME: Travis Deep Unit

8. FARM OR LEASE NAME:

2. NAME OF OPERATOR: Harvey E. Yates Company, Inc.

9. WELL NO.: 2

3. ADDRESS OF OPERATOR: P. O. Box 1933, Roswell, New Mexico 88201

10. FIELD AND POOL, OR WILDCAT: Wildcat

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 1980' FNL & 1780' FEL
At top prod. interval reported below: Same
At total depth: Same

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 13, T-18S, R-28E

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: Eddy | 13. STATE: N. M.

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
5-6-77	6-23-77	8-24-77	3618' GL	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
11,270'KB	11,223'KB	Single	→	0' - 11,270'	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: Cisco 9824' - 9903'KB

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: CNL & DLL

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
12 3/4"	34#	360'	17 1/2"	425 Sx Class C 2% CaCl	
8 5/8"	24# & 28#	3500'	"	300 Sx Class C 2% CaCl	
5 1/2"	17#	11268'	7 7/8"	950 Sx Class H	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8"	9775' KB	9772' KB

31. PERFORATION RECORD (*Interval, size and number*)
**Please see attachment

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
**Please see attachment	

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
8-24-77	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
9-8-77	24 Hrs	18/64		433.35	630.85	-0-	1456

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
965	Packer		433.35	630.85	-0-	

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY: Tefteller, Inc.

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED [signature] TITLE Vice President DATE July 26, 1977

*(See Instructions and Spaces for Additional Data on Reverse Side)

(1) Lower Morrow 7-28-77 to 8-09-77

Perforations: 10,934, 36, 38, 40, 70, 71, 72, 73, 79, 82, 85, 88 - 12 Shots

Treatment: 10,970 - 10,988 - 250 Gals 10% acetic acid
10,934 - 10,940 - 150 Gals 10% acetic acid
10,934 - 10,988 - 2500 Gals 7½% E Z Flo acid

10,934 - 10,988 - 30,000 Gals 3% E Z Flo Morrow frac fluid w/14,500# 100 FLA sand, 18,000# 20-40 sand and 2,000# glass beads.

Model DB packer @ 10,830 KB(above Lower Morrow perforations)

(2) Upper Morrow 8-09-77 to 8-15-77

Perforations: 10,648 - 10,653 - 11 Shots

Treatment: 10,648 - 10,653 - 1000 Gals 7½% E Z Flo Morrow type acid
10,648 - 10,653 - 5000 Gals 7½% E Z Flo Morrow type acid

Packer @ 10,579(above Upper Morrow perforations)

(3) Cisco 8-16-77 to 8-18-77

Perforations: 9824, 28, 31, 33, 35, 37, 41, 44, 50, 52, 54, 57, 63, 65, 68, 71, 78, 83, 94, 96, 98 & 9903 - 22 Shots

Treatment: 9,824 - 9,903 - 250 Gals 10% acetic acid
9,824 - 9,903 - 4000 Gals 20% HCL acid

(4) The production packer is set @ 9772' and we are producing from the perforations in the Cisco formation.

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Form C-105
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]
5. State Oil & Gas Lease No.: B-11594-3

1a. TYPE OF WELL: OIL WELL [XX] GAS WELL [ ] DRY [ ] OTHER
b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [XX] DEEPEN [ ] PLUG BACK [XX] DIFF. RESVR. [XX] OTHER

2. Name of Operator: Harvey E. Yates Company
3. Address of Operator: P. O. Box 1933, Roswell, New Mexico 88201
4. Location of Well: Unit Letter F, Located 1980 Feet From The North Line and 1980 Feet From The West Line of Sec. 13, Twp. 18S, Rge. 28E, NMPM

6. Farm or Lease Name: Travis 13 State Com
8. Well No.: 1
9. Pool, or Wildcat: Travis Upper Penn.
12. County: Eddy

10. Date Spudded: xxxx Rec 12-4-80 started 7/14/80 12-7-80
11. Date T.D. Reached: 12/2/80
12. Date Compl. (Ready to Prod.): 12/26/80
13. Elevations (DF, RKB, RT, GR, etc.): 3604.5' GL
14. Elev. Casinghead: 3604.5'

15. Total Depth: 11,100'
16. Plug Back T.D.: 10,725'
17. If Multiple Compl., How Many: ---
18. Intervals Drilled By: Rotary Tools 0-11,100' Cable Tools

19. Producing Interval(s), This Completion, Top, Bottom, Name: 9824' to 9870' Upper Penn.
20. Was Directional Survey Made: NO
21. Type Electric and Other Logs Run: Dresser Atlas CD/CN, DLL & MLL, PVTCo GR-CBL
22. Was Well Cored: YES

23. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8"	54.5#	350'	17 1/2"	350 sxs	-0-
8 5/8"	28#-24#	3100'	11"	1930 sxs	-0-
5 1/2"	17#-15.5#	11,100'	7 7/8"	925 sxs	-0-

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
	NONE			

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2 3/8"	9761'	9761'

26. Perforation Record (Interval, size and number): 9824' to 9870' 80 1/2" dia holes

27. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
9824'-9870'	250 gal - 10% acetic
	2500 gal - 20% MSR-100

PRODUCTION

Date First Production: 12/26/80
Production Method (Flowing, gas lift, pumping - Size and type pump): FLOWING
Well Status (Prod. or Shut-in): Shut In

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil - Bbls.	Gas - MCF	Water - Bbls.	Gas - Oil Ratio
12/26/80	8	32/64"		146	219	0	2278
Flow Tubing Press.	**Casing Pressure**	**Calculated 24-Hour Rate →**	**Oil - Bbl.**	**Gas - MCF**	**Water - Bbl.**	**Oil Gravity - API (Corr.)**	
250	0		438	998	0	47°	

28. Disposition of Gas (Sold, used for fuel, vented, etc.): VENTED
Test Witnessed By: M. Young
29. List of Attachments

30. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED Ted Sandle TITLE Engineer DATE 1/5/81

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Form C-105
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: E-1392

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] OTHER

1. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

7. Unit Agreement Name:

8. Farm or Lease Name: Travis State Com

2. Name of Operator: Harvey E. Yates Company

9. Well No.: 1

3. Address of Operator: P. O. Box 1933, Roswell, New Mexico 88201

10. Field and Pool, or Wildcat: Und. S. Empire Morr

4. Location of Well: UNIT LETTER K LOCATED 1780 FEET FROM THE South LINE AND 2080 FEET FROM

THE West LINE OF SEC. 13 TWP. 18S RGE. 28E NMPM

12. County: Eddy

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
3-19-79	4-22-79	7-14-79	3585.5' GL	

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
11,061' KB	10,538' KB		→	0'-11,061'	

24. Producing Interval(s), of this completion - Top, Bottom, Name: 9816' - 9862' Canyon

25. Was Directional Survey Made: No

26. Type Electric and Other Logs Run: CNL-DLL; GR-Depth Control

27. Was Well Cored: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8"	48#	380' KB	17 1/2"	475 Sx + 8 Yds Redi-mix	None
9 5/8"	32.3#, 36#	2900' KB	12 1/4"	2050 Sx	None
5 1/2"	17#	11,061' KB	8 3/4"	1190 Sx - 2 stages TOC - 2750'	None

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2 3/8"	9733'	9733'

31. Perforation Record (Interval, size and number)

9850 - 9862' w/2/JSPF - 70 1/2" dia holes
9816 - 9824'; 9830 - 9836'; 9838 - 9847'

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
9816 - 9862	126 gals 10% acetic acid
	6000 gals 15% DS-30 acid

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
7-11-79	Flowing	Shut In

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
7-13-79	6 hrs	24/64"		103	103.3	2	1100

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API (Corr.)
330	---		412	413.2	8	45

34. Disposition of Gas (Sold, used for fuel, vented, etc.): Vented

Test Witnessed By: Gerald Lynch

35. List of Attachments: Deviation survey

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED Jack Sandee TITLE Engineer DATE 7-25-79

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Form C-105
Revised 11-1-76

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: B-11594-2

7. Unit Agreement Name:

8. Farm or Lease Name: Travis Deep Ohio Com

9. Well No.: 1

10. Field and Pool, or Wildcat: So. Empire Morrow

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] DRY [ ] OTHER

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

2. Name of Operator: Harvey E. Yates Company

3. Address of Operator: P. O. Box 1933 Roswell, NM 88201

4. Location of Well: UNIT LETTER M LOCATED 760 FEET FROM THE South LINE AND 660 FEET FROM

West LINE OF SEC. 13 TWP. 18S RGE. 28E NMPM

12. County: Lea

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
9/19/81	10/31/81		3539.1' GL	3539.1'

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
11,000'	10,955'		→	0-11,000'	

24. Producing Interval(s), of this completion — Top, Bottom, Name: 10,850' to 10,858' Morrow

25. Was Directional Survey Made: No

26. Type Electric and Other Logs Run: Dresser Atlas - CN-CDL w/GR; DLL-ML GeoVann - GR-N; CBL

27. Was Well Cored: No

CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	54.5#	343'	17-1/2"	390 sx	None
8-5/8"	24# - 32#	3114'	11"	4780 sx	None
5-1/2"	10.5# - 11.6#	11,000'	7-7/8"	800 sx	None

LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
NONE				

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8"	10,801'	10,806'

31. Perforation Record (Interval, size and number): 10,850' to 10,858' 1/2" dia - 32 holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
	NONE

PRODUCTION

First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
9/19/81	Flowing	Shut in

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
9/19/81	1.5	1/2"		trace	240	0	--

Flow. Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API (Corr.)
600	0		0	3840	0	--

34. Disposition of Gas (Sold, used for fuel, vented, etc.): Vented

Test Witnessed By: Bob Williams

35. List of Attachments:

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED _____ TITLE Vice President of Operations DATE November 21, 1981

SECTION VII

Injection Data

(Reference is made to Order No. R-6765 and "Proposed Plan of Operation")

1) See attached "Proposed Plan of Operations."
2) Closed System - Gas Blanket (See Order R-6765).
3) See attached "Proposed Plan of Operation" & Order R-6765.
4) See attached Ogallala water analysis from Double Eagle Water Co.
5) N.A.

Prepared by:
Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, NM 88201

PROPOSED PLAN OF OPERATION
Travis Penn Unit
Travis Upper Penn Pool
Eddy County, New Mexico
April 2, 1982

Harvey E. Yates Company plans to initiate a pilot water injection program in the following manner:

1) Inject Ogallala water supplied by the Double Eagle Water Company operated by the City of Carlsbad, New Mexico. Water will be injected into the proposed injector well, the Travis State No. 1, located 1780' FSL and 2080' FWL of Section 13, Township 18 South, Range 28 East, Eddy County, New Mexico.

2) Injection rate is estimated to be 1000 barrels water per day with an injection pressure not to exceed 1000 psi in the early stages of injection. It is expected that the injection rate will decrease as the reservoir void is filled. The maximum pressure anticipated later in the pilot project is not expected to exceed 1200 psi. Produced water will be re-injected into the Travis Upper Penn Pool as flood response occurs and water production increases.

3) For injection schematics refer to the Applicant's Exhibit No. 6 (Ralph W. Viney & Associates Engineering Report), of the Oil Conservation Division Case No. 7320, submitted August 12, 1981, and the attached copy of the Applicant's request for Administrative Approval for expansion of the Travis Deep Unit pilot waterflood approved under Order No. R-6765.

4) The development of additional injector wells will depend on the production response to the injection of water during the pilot project.

To preserve and protect the correlative rights of all parties concerned it is requested that the above Plan of Operation be accepted for immediate approval.

Enclosures

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, NM 88201

SECTION VIII

Geological Comments

(See attached exhibits from Case 7320.)

Prepared by:
Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, NM 88201

VIII. Exhibit A is an illustration of our proposed Travis Penn Uni The illustration shows the initial six wells and five tracts that will be involved in the proposed secondary recovery project.

The reservoir that will be flooded in the proposed waterflood project is composed of Pennsylvanian (Canyon) age rock. This rock was deposited at a shelf edge in shallow water, where a carbonate buildup occurred, resulting in a limestone bank. The stratigraphic cross-section shows that the limestone bank is 100 to 140 feet thick and trends northeast-southwest through the Travis Penn Unit. Enclosed is a structure map contoured on the top of the Canyon pay zone (the proposed waterflood reservoir). The map shows the proposed injection well and other wells within a 1/2 mile radius of the proposed injection well.

Primary effective porosity in this type of depositional environment usually is the result of leaching and dissolution effects caused by periodic subaerial exposure and exposure to fresh water. Effective porosity is enhanced selectively during diagenesis along these horizontally stratified porous zones due to migrating solutions causing additional leaching and dissolution.

The depth to the top of the injection zone (limestone bank) ranges between 9693 and 9827 in the Travis Penn Unit. Average porosity calculated from log analysis, ranges between 4 and 6%. Log analysis indicates net pay in the reservoir averages between 25 and 50 feet and occurs in three zones within the gross hydrocarbon bearing section.

1342-A

HALLIBURTON DIVISION LABORATORY
HALLIBURTON SERVICES
MIDLAND DIVISION
HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

No. W82-341

To Harvey E. Yates

Box 1933

Roswell, New Mexico

RECEIVED APR 05 1982

Date 4-2-82

Submitted by _____ Date Rec. 4-2-82

Well No. As Marked Depth _____ Formation _____

County _____ Field _____ Source _____

	Travis #1	Double Eagle Water		
Resistivity	0.730 @ 74°F.	14.0 @ 74°F.		
Specific Gravity	1.003	1.001		
pH	6.9	7.3		
Calcium (Ca)	1,200	220		*MPL
Magnesium (Mg)	360	12		
Chlorides (Cl)	2,500	400		
Sulfates (SO_4)	400	150		
Bicarbonates (HCO_3)	315	195		
Soluble Iron (Fe)	Nil	Nil		

Remarks:

*Milligrams per liter

(Copies forwarded to partners) 4-5-82 mb

Respectfully submitted,

Analyst: Brewer

HALLIBURTON COMPANY

cc:

By W. L. Brewer
CHEMIST

NOTICE

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.

Edward Kinney, a consultant Geologist in Artesia, has completed publications on freshwater aquifers in southeast New Mexico. He stated in a telephone conversation that in T-18-S, R-28-E, the freshwater aquifers are very spotty and there are no good freshwaster aquifers in this area. He said the Ogallala formation, which is a good aquifer, begins on the Caprock and extends to the east. He went on to say that the San Andres is not a freshwater aquifer in this area (it contains saltwater) and if we set intermediate casing at the top of the San Andres, at approximately 4600 feet, we will have all aquifers sealed off from contamination.

Jim Wright is employed by the State Engineer's Office in Roswell and is familiar with freshwater aquifers in the subject ara. He also stated that freshwaster aquifers are spotty in T-18-S, R-28-E. Jim indicated in a telephone conversation that the closest freshwater to this area he knew of was found in the Grayburg, which will be behind cemented casing above the San Andres in the subject area, near Twelve Mill Hill and Illinois Camp.

SECTION IX

Stimulation: Acidize w/7000 gals 15% DS-30 w/210 7/8" RCN Ball Sealers to break down perforations from 9816' to 9862'.
Swab to recover load and clean up perforations.
Pull out of hole.

SECTION X

Refer to Exhibit #6 of Case 7320 of 8/12/81. Logs also submitted to New Mexico Oil Conservation Division.

SECTION XI

Refer to Exhibit #6 of Case 7320 of 8/12/81.

SECTION XII

N.A.

SECTION XIII

See attached copy of statement printed and published in a County newspaper.

Prepared by:
Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, NM 88201

HEYCO

PETROLEUM PRODUCERS

HARVEY E. YATES COMPANY

P. O. BOX 1933 SUITE 300, SECURITY NATIONAL BANK BUILDING 505/623-6601
ROSWELL, NEW MEXICO 88201

NEWSPAPER RELEASE

(Eddy County Newspaper)

Harvey E. Yates Company
P. O. Box 1933
Security National Bank, Ste. 300
Roswell, NM 88201
Phone: (505) 623-6601

Contact Party: Thomas J. Hall III

Harvey E. Yates Company proposes to expand the pilot injection project of the Travis Deep Unit by injecting into the Travis State #1. The Travis State #1, State Lease #E-1392, is located 1780' FSL & 2080' FWL of Section 13, Township 18 South, Range 28 East, N.M.P.M., Eddy County, New Mexico.

Ogallala water will be injected at a rate of approximately 1000 barrels per day at not more than 1200 psi into the Travis Upper Penn Pool at a depth of 9816' to 9888'.

Interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, NM 87501 within 15 days.

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, NM 88201

COMPLETION SCHEDULE

WELL: Travis Penn Unit #5 WIW DATE: March 24, 1983

LOCATION: K, 1780' FSL & 2080' FWL, Sec. 13, T-18S, R-28E, Eddy County, NM

FIELD: Travis Upper Penn ELEVATION: 3585.5' GL TD: 11,061'KB PBTD: 10,538' KB

CASING RECORD:	SIZE	WT. & GRADE	DEPTH	CEMENT	CEMENT TOP
	13-3/8"	48#	380'	8 yd RM+475 sxs	Surface
	9-5/8"	32.3 & 36; H-40 & J-55	2050'	1" to Surface (Total NA)	Surface
	5-1/2"	17# N-80 J-55	11061'	1190 sxs	2750' calc
	2-3/8"	4.7# N-80 Plastic Coated	9770'	Nickle Plated Lok-Set @ 9770' w/SN	

FORMATION TOPS:

Yates	905'	San Andres	2660'	Strawn	10014'
7-River	1210'	Wolfcamp	8260'	Atoka	10296'
Queen	1892'	Penn	9260'	Morrow	10645'
Grayburg	2260'	Canyon	9796'		

PRESENT PERFORATIONS:

Canyon Perfs: 9816'-9862' (70 holes)

PRESENT PRODUCTION:

WIW @ Avg. 880 BPD Rate @ 1420 psi for Feb.

RECOMMENDED PROCEDURE:

1) 48 hours prior to treatment SI injection pumps at plant to allow fluid level to stabilize. Take reading of fluid level to determine displacement volume to flush with.
2) Drop flow check treating valve down tbg (1.90 OD) prior to treatment.
3) Previously established injection rate of .61 BPM or 25 gal/min. Do not exceed this rate for any reason.
4) Load hole w/injection water to establish pressure then switch to acid.
5) Pump 15% NEFE @ 20-25 gals/min.
6) Follow w/250 gal. HySol 704.
7) Follow w/1000 gallons filtered injection water w/K-33 oxygen scavenger.
8) Follow w/100 bbls. crosslinked K-Trol IV.
9) Follow w/50 bbls. crosslinked K-Trol X w/4 hour retarder (1-3/4 hr to pump to perfs).
10) Follows w/100 bbls. crosslinked K-Trol IV.
11) Displace w/vol of filtered injection water determined in step 1. (Do not over displace).
12) Shut well in for 5 days.
13) After 5th day, rig up and pull flow check valve w/5/8" rod fish.
14) Resume injection @ reduced rate:
    Notify pumper & Ray Coor about beginning injection very slowly to prevent sheering K-Trol Polymer. Gradually increase rate back to normal rate over 2 day period.
15) Continue to monitor injection volume & rate.
16) Polymer additive for injection fluid under evaluation by Halliburton & Heyco.

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, New Mexico 88201

BEFORE EXAMINER Richard L. Stamets
OIL CONSERVATION DIVISION
Applicant's EXHIBIT NO. 3
CASE NO. 7875
SUBMITTED BY HEYCO
HEARING DATE 05/25/83

LEASE Travis Penn Unit WELL NUMBER WIW #5

LOCATION K, 1780' FSL & 2080' FWL, Sec. 13, T-14S, R-28E

COUNTY Eddy DEPTH 11,061 PRODUCING FORMATION WIW in Canyon Penn

	Producing Well Cost	Dry Hole Cost
Drilling and completion costs		
Intangible drilling costs		
Location	$	$
Footage _____ @ _____		
Daywork _____ @ _____		
Surface casing service		
Intermediate casing service		
Mud, water		
Company supervisor, engineer		
Rentals, coring service		
Miscellaneous		
Total intangible drilling costs		
Intangible formation evaluation cost		
Logs, _____, _____, _____		
DST _____ @ _____		
Geological mud logging service		
Miscellaneous		
Total intangible formation evaluation		
Intangible completion costs		
Unit cost 875/day @ day slick line	875	
Production casing service to retrieve flow		
Completion fluid regulator	600	
Perforating/production logging		
Treating	16949	
Company supervision	750	
Plugging expense		
Miscellaneous + contingency	1917	
Total intangible completion costs	21091	
Tangible drilling costs and completion costs		
Surface casing _____ of _____		
Intermediate casing _____ of _____		
Production casing _____ of _____		
Production tubing _____ of _____		
Casing head		
Tubing head		
Christmas tree		
Subsurface equipment		
Total tangible drilling costs and completion costs		
Lease equipment		
Tanks _____, _____		
Separator		
Flow lines _____		
Meter runs		
Pumping unit		
Installation costs		
Total lease equipment		
Total intangible costs	21091	
Total tangible costs		
Total lease equipment		
Administrative	400	
TOTAL COSTS	$ 21491	$

Prepared by: Ray F. Nokes Date: March 28, 1983

"It is recognized that the amounts provided for herein are estimated only, and approval of this authorization shall extend to the actual costs incurred in conducting the operations specified, whether more or less than herein set out."

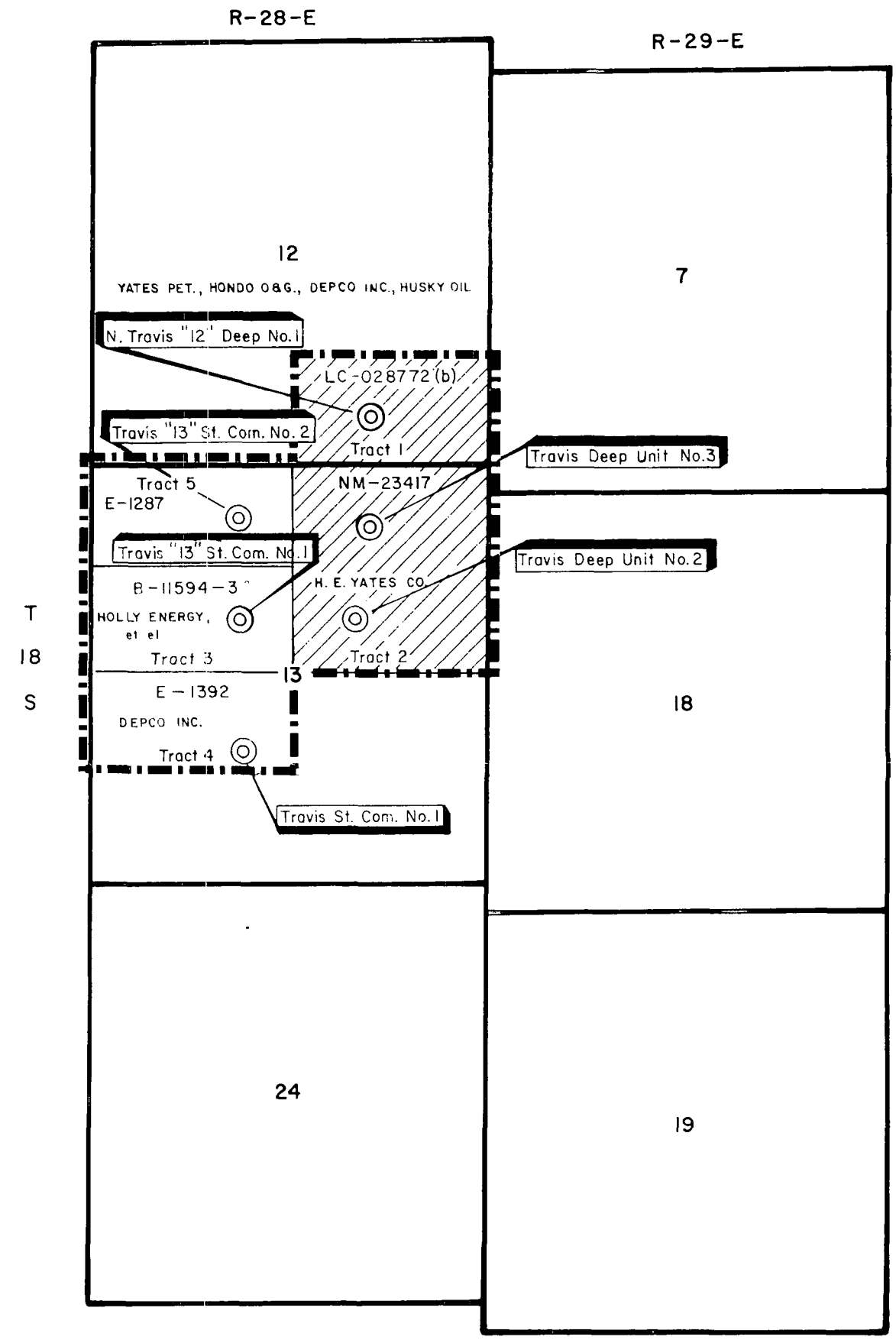
APPROVED BY:

_____

Company

_____

Date



LEGEND

FEDERAL LAND 240.00 = 50.00% OF UNIT AREA

STATE LAND 240.00 = 50.00% OF UNIT AREA
TOTAL Ac. 100 %

UNIT BOUNDARY

BEFORE EXAMINER Richard L. Stamets
OIL CONSERVATION DIVISION
Applicants' EXHIBIT NO. 4
CASE NO. 7875
SUBMITTED BY HEYCO
HEARING DATE 05/25/83

TRAVIS PENN UNIT

EDDY COUNTY, NEW MEXICO

EXHIBIT "A"

0 1,000 2,000

	Initials	Date
Prepared by		
Approved by		

HARVEY E. YATES COMPANY

Travis Upper Penn Oil

Travis Penn Unit #1

		1	2	3	4	5	6
		Oil	Cum	Gas	Cum	Water	Cum
1982							
January	29	3575	3575	5144	5144		
February	21	3128	6703	4134	9278		
March	24	3078	9781	5101	14379		
April	12	2349	12130	4741	19120		
May	31	2012	14142	5517	24637		
June	30	1645	15787	3956	28593		
July	31	1488	17275	3067	31660		
August	31	1242	18517	3308	34968	143	143
September	30	663	19180	3490	38458	44	187
October	31	844	20024	2304	40762	132	319
November	30	794	20818	3304	44066	127	456
December	31	605	21423	1603	45669	151	597
Total Cums - 1982			21423 BO		45669 MCF		597 BW
1983							
January	24	1259	1259	1133	1133	199	199
February	27	1226	2485	324	1457	43	242
March	31	1395	3880	2059	3516	84	326

BEFORE EXAMINER Richard L. Stamets
OIL CONSERVATION DIVISION
Applicants' EXHIBIT NO. 8
CASE NO. 7875
SUBMITTED BY HEYCO
HEARING DATE 05/25/83

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, New Mexico 88201

	Initials	Date
Prepared by		
Approved by		

HARVEY E. YATES COMPANY

Travis Upper Penn Oil

Travis Penn Unit #2

		1 Oil	2 Cum	3 Gas	4 Cum	5 Water	6 Cum
1979 Cums			105976		190197		
1980 Cums			15826		32229		
1981 Cums			16098		24317		
1982							
January	31	1551	1551	2393	2393		
February	24	1158	2709	2166	4559		
March	24	1020	3729	4470	9029		
April	13	610	4339	3204	12233		
May	0	0	4339	22	12255		
June	7	241	4580	822	13077		
July	31	920	5500	2190	15267		
August	31	525	6025	3054	18321	334	334
September	30	453	6478	2787	21108	199	533
October	31	620	7098	1930	23038	302	835
November	30	476	7574	1645	24683	211	1046
December	31	363	7937	801	25484	251	1297
Total Cums - 1982			7937 BO		25484 MCF		1297 BW
Cums-to-Date			145837 BO		272227 MCF		
1983							
January	24	327	327	505	505	174	174
February	27	273	600	135	640	187	361
March	31	322	922	855	1495	168	529

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, New Mexico 88201

	Initials	Date
Prepared by		
Approved by		

HARVEY E. YATES COMPANY

Travis Upper Penn Oil

Travis Penn Unit #3

		1	2	3	4	5	6
		Oil	Cum	Gas	Cum	Water	Cum
1979 Cums			158988		351393		
1980 Cums			26137		34471		
1981 Cums			5058		5190		
1982							
January	11	632	632	752	752		
February	23	1965	2597	4632	5384		
March	24	1816	4413	6103	11487		
April	13	1618	6031	5144	16631		
May	23	1503	7534	4139	20770		
June	28	1275	8809	3308	24078		
July	31	1245	10054	3213	27291		
August	31	1122	11176	3238	30529	119	119
September	30	628	11804	2787	33316	155	274
October	31	394	12198	1702	35018	302	576
November	30	529	12727	2511	37529	886	1462
December	31	403	13130	1212	38741	1056	2518
Total Cums - 1982			13130 BO		38741 MCF		2518 BW
Cums-to-Date			203313 BO		429795 MCF		
1983							
January	24	126	126	765	765	2287	2287
February	27	273	399	81	846	2054	4341
March	31	241	640	622	1468	2999	7340

Ray E. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, New Mexico 88201

	Initials	Date
Prepared by		
Approved by		

HARVEY E. YATES COMPANY

Travis Upper Penn Oil

Travis Penn Unit #4

		1 Oil	2 Cum	3 Gas	4 Cum	5 Water	6 Cum
1981 Cums			37291		76684		
1982							
January	31	2263	2263	6278	6278		
February	24	1519	3782	2844	9122		
March	23	1764	5546	4810	13932		
April	13	2144	7690	5945	19877		
May	30	2206	9896	10241	30118		
June	31	1964	11860	8169	38287		
July	30	1758	13618	8326	46613		
August	31	931	14549	3353	49966	119	119
September	30	1604	16153	4174	54140	707	826
October	31	929	17082	2864	57004	1547	2373
November	30	1270	18352	3025	60029	2869	5242
December	31	967	19319	1459	61488	3418	8660
Total Cums - 1982			19319 BO		61488 MCF		8660 BW
Cums-to-Date			56610 BO		138172 MCF		
1983							
January	24	164	164	934	934	1678	1678
February	27	136	300	162	1096	1365	3043
March	31	161	461	1140	2236	1992	5035

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, New Mexico 88201

	Initials	Date
Prepared by		
Approved by		

HARVEY E. YATES COMPANY

Travis Upper Penn Oil

Travis Penn Unit #5

WIW as of June 1982

		1 Oil	2 Cum	3 Gas	4 Cum	5 Water	6 Cum
1982							
January	0		0		0		
February	0		0		0		
March	10	517	517	307	307		
April	7	2118	2635	725	1032		
May	0	0	2635	0	1032		
June	10				272# inj.	8488	8488
July	31				591# inj.	30168	38656
August	31				1006# inj.	29981	68637
September	30				1197# inj.	23422	92059
October	31				1070# inj.	28646	120705
November	30				1214# inj.	24669	145374
December	12				1357# inj.	9668	155042
Total Cums - 1982			2635 BO		1032 MCF		
1983							
January	27				1232# inj.	25344	25344
February	25				1420# inj.	22008	47352
March	29				1524# inj.	24059	71411

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, New Mexico 88201

	Initials	Date
Prepared by		
Approved by		

HARVEY E. YATES COMPANY

Travis Upper Penn Oil

Travis Penn Unit #6

		1 Oil	2 Cum	3 Gas	4 Cum	5 Water	6 Cum
1982							
January							
February	24	84	84	840	840		
March	23	18	102	418	1258		
April	13	39	141	105	1363		
May	30	40	181	180	1543		
June	30	36	217	145	1688		
July	31	27	244	146	1834	86	86
August	31	24	268	345	2179	165	251
September	30	35	303	280	2459	22	273
October	31	16	319	207	2666	19	292
November	30	14	333	235	2901	20	312
December	31	10	343	103	3004	24	336
Total cums - 1982			343 BO		3004 MCF		336 BW
1983							
January	24	13	13	76	76	13	13
February	27	11	24	27	103	7	20
March	31	13	37	129	232	10	30

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, New Mexico 88201

TRAVIS PENN UNIT

Lease Cums Through 1981: 365,374 BO, 714,481 MCF

1982:

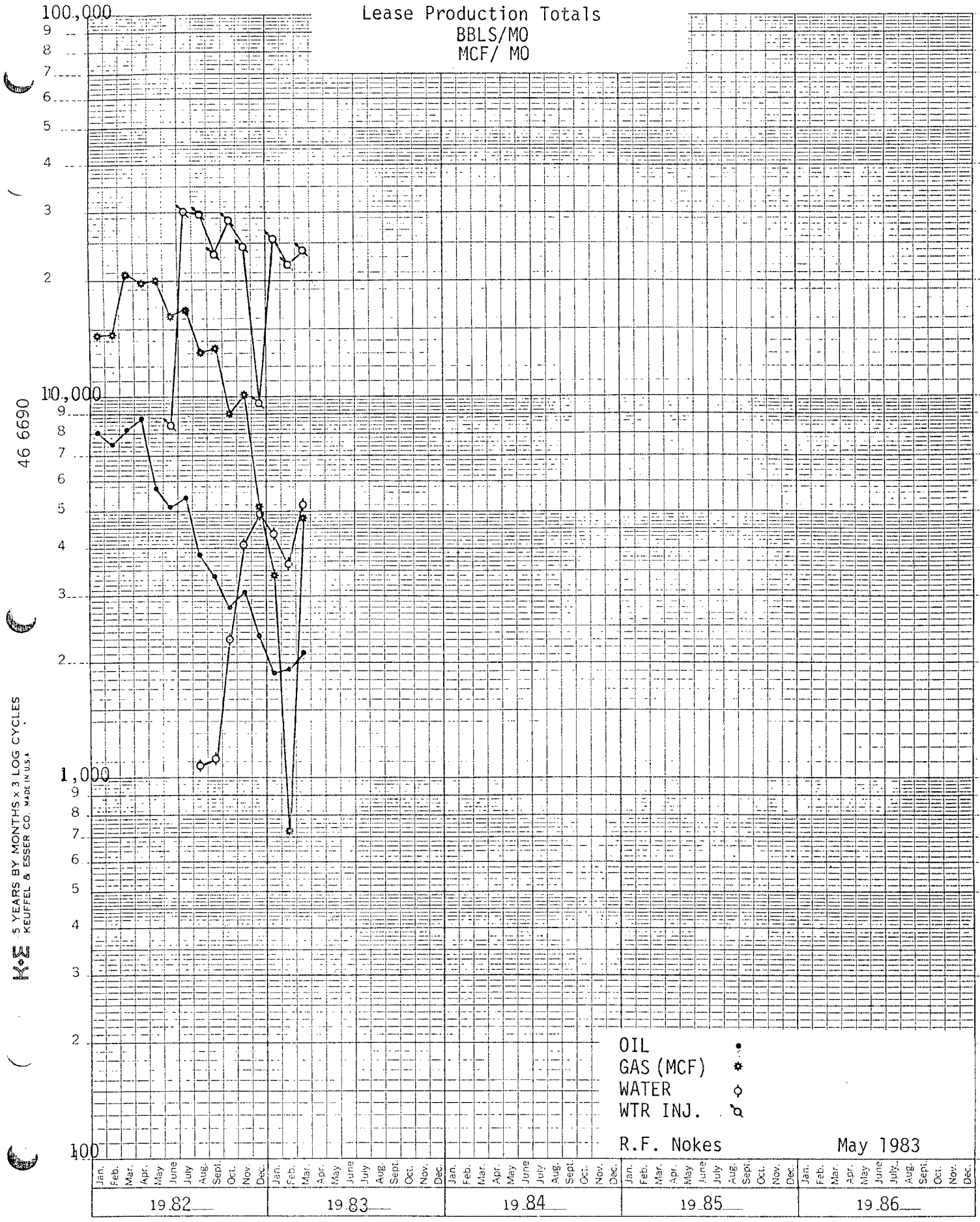
Month:

	BO	Cums	Gas	Cums	BW	Cums
January (4 wells + 1 SI)	8,021	8,021	14,567	14,567	NR	NR
February (5 wells + 1 SI)	7,854	15,875	14,616	29,183	NR	NR
March (6 wells)	8,213	24,088	21,209	50,392	NR	NR
April (6 wells)	8,878	32,966	19,864	70,256	NR	NR
May (4 wells + 2 SI)	5,761	38,727	20,099	90,355	NR	NR
June (5 wells + 1 SI)	5,161	43,888	16,400	106,755	NR	NR
July (5 wells)	5,438	49,326	16,942	123,697	86	86
August (5 wells)	3,844	53,170	13,298	136,995	880	966
September (5 wells)	3,383	56,553	13,518	150,513	1,127	2,093
October (5 wells)	2,803	59,356	9,007	159,520	2,302	4,395
November (5 wells)	3,083	62,439	10,720	170,240	4,113	8,508
December (5 wells)	2,348	64,787	5,178	175,418	4,900	13,408
Cumulatives to 1982		430,161 BO		889,899 MCF		13,408 BW
1983:						
January (5 wells)	1,889	1,889	3,413	3,413	4,351	4,351
February (5 wells)	1,919	3,808	729	4,142	3,656	8,007
March (5 wells)	2,132	5,940	4,805	8,947	5,253	13,260

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, New Mexico 88201

BEFORE EXAMINER Richard L. Stamets
OIL CONSERVATION DIVISION
Applicant's EXHIBIT NO. 6
CASE NO. 7875
SUBMITTED BY HEYCO
HEARING DATE 05/25/83

TRAVIS PENN UNIT



Cumulative Production Through 1981: 365,374 BO
714,481 MCF

HARVEY E. YATES COMPANY
TRAVIS PENN UNIT
TRAVIS UPPER PENN FIELD
AVERAGE DAILY PRODUCTION
From C-115's in BO/MCF/BW Per day

WELL NAME	6/82	7/82	8/82	9/82	10/82	11/82	12/82
Travis Penn Unit #1	55/132/0	60/123/0	41/110/5	24/125/2	27/74/4	26/110/4	23/62/6
Travis Penn Unit #2	19/63/0	37/88/0	18/102/11	16/100/7	20/62/10	16/55/7	14/31/10
Travis Penn Unit #3	43/110/0	50/129/0	37/108/4	22/100/6	13/55/10	18/84/30	16/47/41
Travis Penn Unit #4	65/272/0	70/333/0	31/112/4	57/149/25	30/92/50	42/101/96	37/56/131
Travis Penn Unit #5 (wiw) BW Inj/Press	8488/272# (Mo)	30168/591# (Mo)	29981/1006# (Mo)	23422/1197#	28646/1070#	24669/1214#	9668/1357#
Travis Penn Unit #6	1/5/0	1/6/0	1/12/12	1/10/1	1/7/1	.5/8/1	.4/4/1
Cum Injection	8488 BW	38656 BW	68637 BW	92059 BW	120705 BW	145374 BW	155042 BW
						Sold gas for only 2 days, due to high line pressure.	Production down 2 weeks due to ice. Sold gas for only 2 days, due to high line pressures.

Injection Began: June 21, 1982, water production was not being monitored until August, 1982.

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company

HARVEY E. YATES COMPANY
TRAVIS PENN UNIT
TRAVIS UPPER PENN FIELD
AVERAGE DAILY PRODUCTION
From C-115's in BO/MCF/BW Per Day

WELL NAME	1/83	2/83	3/83
Travis Penn Unit #1	52/47/8	45/14/2	45/66/3
Travis Penn Unit #2	14/21/7	10/5/7	10/28/5
Travis Penn Unit #3	5/32/95	10/3/76	8/20/97
Travis Penn Unit #4	7/39/70	5/6/51	5/37/64
Travis Penn Unit #5 (wiw) BW Inj/Press	25344/1232# (Mo)	22008/1420# (Mo)	24059/1524# (Mo)
Travis Penn Unit #6	1/3/1	.4/1/.3	.4/4/.3
Cum Injection:	180386 BW	202394 BW	226453 BW

FILE NAME:POLYMER

BEFORE EXAMINER Richard L. Stamets
OIL CONSERVATION DIVISION
Applicants EXHIBIT NO. 9
CASE NO. 7875
SUBMITTED BY HEYCO
HEARING DATE 05/25/83

COMPANY: HARVEY E. YATES COMPANY
LEASE: TRAVIS PENN UNIT
FIELD: TRAVIS UPPER PENN (OIL)
FORMATION: CISCO-CANYON
DATE: 5-20-83

PROPERTIES OF THE RESERVOIR

FORMATION NET PAY(FT)	110.00
AVERAGE PERMEABILITY(MD)	1.71
POROSITY %	6.37
CONNATE WATER SATURATION (%PV)	24.08
CURRENT AVERAGE OIL SATURATION (%PV)	58.00
CURRENT AVERAGE GAS SATURATION (%PV)	2.00
CURRENT WATERCUT (%PV)-2/28/83	65.58
VISCOSITY OF OIL(CPS)	0.90
VISCOSITY OF WATER (CPS)	0.55
CURRENT RESERVIOR PRESSURE (PSIG) 2/28/83	1138.00
BOTTOM HOLE TEMPERATURE (F)	160.00
RESERVOIR OIL FORMATION VOLUME FACTOR(INITIAL)	1.48
RESERVOIR OIL FORMATION VOLUME FACTOR(CURRENT)	1.22
PRODUCTION AREA (ACRES)	1505.00
OIP BY MATERIAL BALANCE FOR UNIT (BBLS)	11,909,300.00
CUMULATIVE PRODUCTION:(BBLS/OIL) 2/28/83	433,969.00 from Travis Penn Unit
(MCF/GAS) 2/28/83	894,041.00

WATERFLOOD CALCULATIONS (CURRENT)

VISCOSITY OF DISPLACING FLUID (CPS)	0.55
UNIT DISPLACEMENT EFFICIENCY	0.52
VERTICAL CONFORMANCE EFFICIENCY	0.25
AREAL SWEEP EFFICIENCY	1.00
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(B/AF)	3.40
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(BBLS)	563,596.00
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(%OIP)	1.09

VISCOSITY OF DISPLACING FLUID (CPS)	1.00
UNIT DISPLACEMENT EFFICIENCY	0.54
VERTICAL COMFORMANCE EFFICIENCY	0.39
AREAL SWEEP EFFICIENCY	1.00
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(B/AF)	8.20
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(BBLS)	1,358,314.00
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(%OIP)	7.76

VISCOSITY OF DISPLACING FLUID (CPS)	1.50
UNIT DISPLACEMENT EFFICIENCY	0.55
VERTICAL COMFORMANCE EFFICIENCY	0.48
AREAL SWEEP EFFICIENCY	1.00
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(B/AF)	14.86
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(BBLS)	2,460,324.00
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(%OIP)	17.01

VISCOSITY OF DISPLACING FLUID (CPS)	2.00
UNIT DISPLACEMENT EFFICIENCY	0.56
VERTICAL CONFORMANCE EFFICIENCY	0.51
AREAL SWEEP EFFICIENCY	1.00
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(B/AF)	19.24
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(BBLS)	3,185,594.00
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(%OIP)	23.10

VISCOSITY OF DISPLACING FLUID (CPS)	2.00
UNIT DISPLACEMENT EFFICIENCY	0.57
VERTICAL CONFORMANCE EFFICIENCY	0.53
AREAL SWEEP EFFICIENCY	1.00
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(B/AF)	20.19
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(BBLS)	3,343,580.00
RECOVERABLE OIL FROM PRESENT TO 95% WATERCUT(%OIP)	24.40

TRAVIS PENN UNIT

Economics:

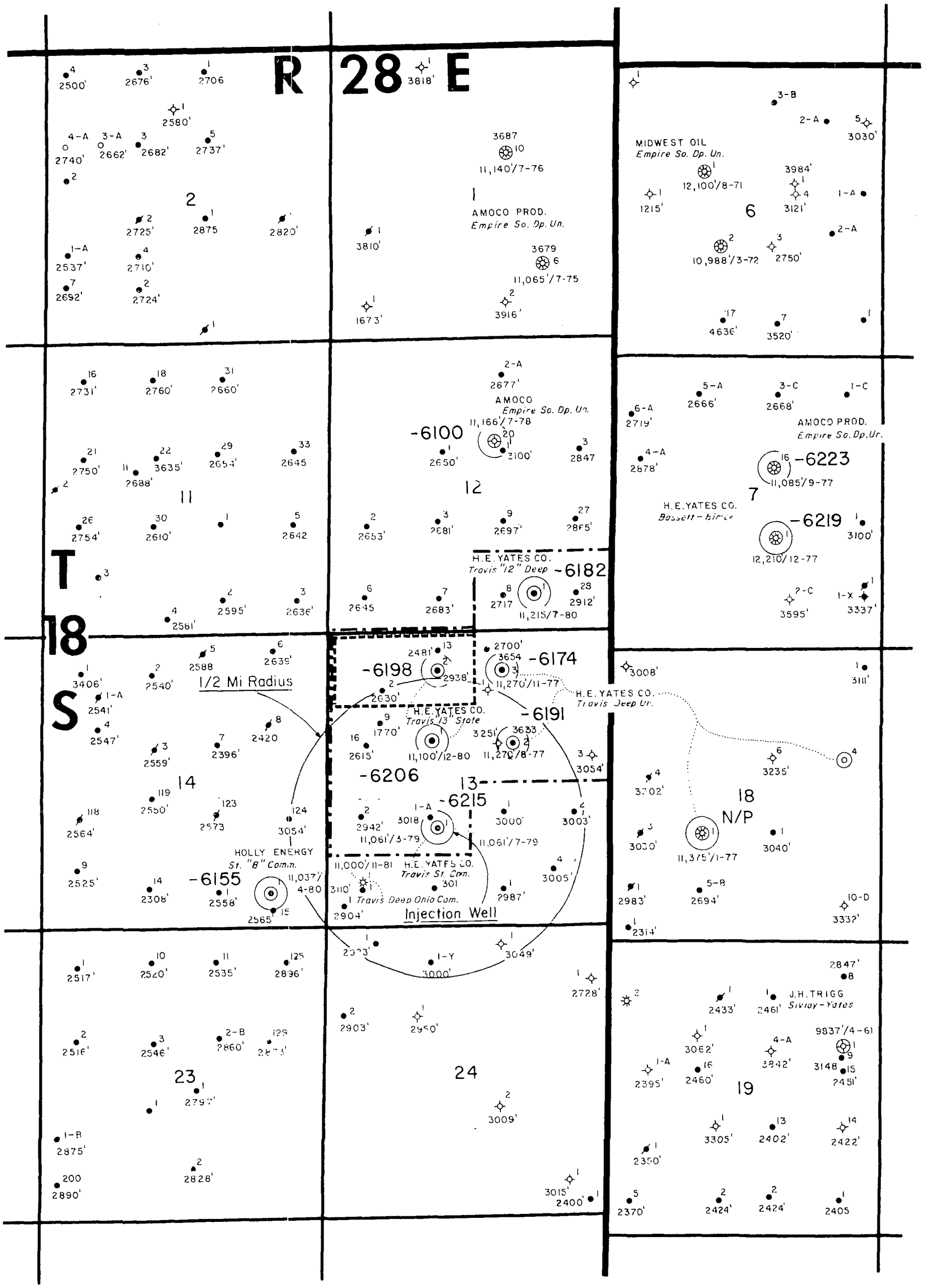
Current Average Monthly Operating Expense		$3,106.00
Current Average Monthly Production:		
	Oil	1,980 bbls
	Gas	2,982 MCF
Estimated Productive Life of Unit to Economic Limit		12 years
A) Estimated Recovery to ELC with waterflood Response (Viscosity of .55 CPS)		129,627 BO 195,226 MCF
B) Estimated Recovery to ELC w/Polymer Treatment Polymer Augmented Flooding (Viscosity of 1 CPS)		924,345 BO 1,392,119 MCF

Estimated Life Time Expense vs. Income:

A) 12 years Operating Expense	$447,264.00
12 years Income (Oil and Gas)	$4,864,940.00
Gross Profit BFIT	$4,417,676.00
B) 12 years Operating Expense	$447,264.00
w/(350-400 ppm Polymer w/pump rental) 500 BPD inj. rate	$6,566,400.00
w/Initial K-Trol Treatment	$20,491.00
Total Expense	$7,034,155.00
12 year Income (Oil and Gas)	$34,690,945.00
Gross Profit BFIT	$27,656,790.00

BEFORE EXAMINER Richard L. Stamets
OIL CONSERVATION DIVISION
Applicants EXHIBIT NO. 9
CASE NO. 7875
SUBMITTED BY HEYCO
HEARING DATE 05/25/83

Ray F. Nokes
Reservoir Engineer
Harvey E. Yates Company
Roswell, New Mexico
May 20, 1983



BEFORE EXAMINER Richard L. Stamets
OIL CONSERVATION DIVISION
Applicant's EXHIBIT NO. 10
CASE NO. 7875
SUBMITTED BY HEYCO
HEARING DATE 05/25/83

HARVEY E. YATES CO., INC
Roswell, New Mexico

TRAVIS DEEP STRUCTURE
TOP OF CANYON
PERMEABILITY

R. THOMPSON — MARCH, 1982
1"=2000'