**HEYCO** **HARVEY E. YATES COMPANY**

**PETROLEUM PRODUCERS**

P O BOX 1933 ONE SUNWEST CENTRE 505/623-6601

ROSWELL, NEW MEXICO 88201

February 21, 1986

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

RE: Request to Convert Young Deep Unit #5 to a Water Injection Well.

ATTENTION: Mr. Dick Staments

Dear Dick:

Please find enclosed three copies for application for administrative approval to convert the aforementioned well to a water injection well. This request is an expansion of the previous Order #R-7023 subsequent to Case #7595 of May 26, 1982. A copy of said division order is enclosed for your evaluation.

Copies are being sent to the Oil Conservation Division District I office in Hobbs and the Bureau of Land Management office in Carlsbad. The surface owner (Amoco Production Company) has also been sent a copy.

If there are any questions regarding this application for administrative approval, please contact my office.

Sincerely yours,

Ray F. Nokes
Prod. Manager/Prod. Engineer

RFN:lc

Enclosures

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no

II. Operator: Harvey E. Yates Company

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

Contact party: Ray F. Nokes 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? ☒ yes ☐ no
If yes, give the Division order number authorizing the project R-7023.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

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

Name: Ray F. Nokes Title Prod. Manager/Production Eng.

Signature: Ray F. Nokes &c Date:

* 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. Refer to case #7595 before Daniel S. Nutter on May 26, 1982.

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

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.

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

LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE

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. 7595
Order No. R-7023

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

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on May 26, 1982, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 15th day of July, 1982, 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 pilot waterflood project in the North Young-Bone Spring Pool by the injection of water into the perforated interval from 8444 feet to 8488 feet in its Young Deep Unit Well No. 2, located in Unit C of Section 10, Township 18 South, Range 32 East, NMPM, Lea County, New Mexico. Applicant would also inject into certain as yet undetermined selective intervals between the depths of 8500 feet and 8597 feet.

(3) That the wells in the proposed project are not in an advanced state of depletion and may not properly be classified as "stripper" wells.

(4) That although the proposed project does not fit the definition of a waterflood project contained in Rule 701 F.1 of the Division Rules and Regulations, it does fit the definition of a pressure maintenance project contained in Rule 701 E.1 of the Division Rules and Regulations.

(5) That the proposed project should be classified as a pressure maintenance project and, in accordance with Rule 701 E., project rules, including the allowable formula, promulgated therefor.

(6) That the proposed pressure maintenance project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste, and will not impair correlative rights.

(7) That the initial project area should comprise the following described lands within applicant's proposed Young Deep (Bone Spring) Unit Area, Lea County, New Mexico:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 3: S/2 SW/4 and W/2 SE/4
Section 4: SE/4 SE/4
Section 9: NE/4 NE/4
Section 10: N/2 NW/4 and NW/4 NE/4

(8) That the project area should be expanded upon completion of additional injection wells or producing wells in the Bone Spring formation in the proposed Young Deep (Bone Spring) Unit Area which may be shown to be affected by the injection program.

(9) That the project allowable should be equal to top unit allowable for the North Young-Bone Spring Pool times the number of developed (production or injection) proration units within the project area.

(10) That the transfer of allowable between wells within the project area should be permitted.

(11) 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 including the recementing of the 4 1/2-inch casing string back to at least 7900 feet when the Young Deep "4" Federal Well No. 1 in Unit M of Section 3, Township 18 South, Range 32 East, NMPM, is plugged back.

(12) That the injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 1690 psi, but the Division Director should have authority to increase said pressure limitation, should circumstances warrant.

(13) That the subject application should be approved and the project should be governed by the provisions of Rules 702 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 pressure maintenance project in the North Young-Bone Spring Pool by the injection of water into selected perforated intervals between the depths of 8444 feet and 8597 feet in its Young Deep Unit Well No. 2, located in Unit C of Section 10, Township 18 South, Range 32 East, NMPM, Lea 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 said 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 Hobbs district office of the failure of the tubing or packer in any injection well, the leakage of water or oil from or around any producing well, or the leakage of water or oil from or around 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 1690 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 pressure maintenance project is hereby designated the North Young-Bone Spring Pressure Maintenance Project and shall be governed by Special Rules and by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

(6) That Special Rules and Regulations governing the operation of the North Young Bone Spring Pressure Maintenance Project are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
NORTH YOUNG BONE SPRING PRESSURE MAINTENANCE PROJECT

Rule 1. That the initial project area shall comprise the following described lands in Lea County, New Mexico:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 3: S/2 SW/4 and W/2 SE/4
Section 4: SE/4 SE/4
Section 9: NE/4 NE/4
Section 10: N/2 NW/4 and NW/4 NE/4

Rule 2. That the project area may be expanded administratively within the applicant's proposed Young Deep (Bone Spring) Unit Area by the Division Director upon completion of additional injection wells or production wells, provided it can be shown that such production wells are affected by the injection of water into the Bone Spring formation.

Rule 3. The allowable for the project area shall be any amount up to and including a volume equal to the top unit allowable for the North Young-Bone Spring Pool times the number of proration units in the project area.

Rule 4. The allowable assigned to the project area may be produced from any well or wells within the project area in any proportion.

Rule 5. The Division Director is hereby authorized to approve such additional producing wells and injection wells at orthodox and unorthodox locations within the boundaries of the proposed Young Deep (Bone Spring) Unit Area as may be necessary to complete an efficient production and injection pattern, provided said producing wells are drilled no closer than 330 feet to the outer boundary of said unit nor closer than 10 feet to any quarter-quarter section or subdivision inner boundary. To obtain such approval, the project operator shall file proper application with the Division, which application, if it seeks authorization to convert additional wells to injection or to drill additional production or injection wells shall include the following:

(a) A plat identifying the lands committed to the unit agreement and these lands not committed to said agreement, and showing the location of the proposed well, all wells within the unit area, and offset operators.

(b) A schematic drawing of any proposed injection well which fully describes the casing, tubing, packer, monitoring equipment, perforated interval, and depth.

(c) A letter stating that all offset operators to the proposed well have been furnished a complete copy of the application and the date of notification.

(d) Such other applicable requirements as may be contained in Rule 701 of the Division Rules and Regulations.

The Division Director may approve the proposed well if, within 20 days after receiving the application, no objection to the proposal is received. The Director may grant immediate approval, provided waivers of objection are received from all offset operators.

(7) That the pressure maintenance project herein authorized shall be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY,
Director

S E A L

Ray
Well File

APPLICATION OF HARVEY E. YATES COMPANY TO EXPAND ITS PRESSURE MAINTENANCE PROJECT IN THE NORTH YOUNG BONE SPRINGS POOL IN LEA COUNTY, NEW MEXICO.

ORDER No. PMX 123

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Order No. R-7023, Harvey E. Yates Company has made application to the Division on May 5, 1983, for permission to expand its Young Deep Unit Pressure Maintenance Project in the North Young-Bone Springs Pool in Lea County, New Mexico.

NOW, on this 25th day of May, 1983, the Division Director finds:

1. That application has been filed in due form.

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

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

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 pressure maintenance 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 North Young-Bone Springs formations through plastic-lined tubing set in a packer at approximately 8350 feet in the following described well for purposes of pressure maintenance to wit:

Young Deep Unit No. 1
Unit D, Section 10, Township 18 South,
Range 32 East, NMPM.

IT IS FURTHER ORDERED:

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

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

That the injection well shall be equipped with a pressure limiting device which will limit the wellhead pressure to a maximum of 1684 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. Establishment of a higher pressure limitation shall be done through means of a step-rate test run in accordance with and acceptable to the Division's standards.

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

That the operator shall immediately notify the Supervisor of the Division's Hobbs 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-7023 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

# HARVEY E. YATES COMPANY

## Well History Summary Sheet

Operator Harvey E. Yates Co. Well Name & # Young Deep Unit #5 Lease # NM-16350

District Carlsbad Made By Stephen R. Locke Date 8-9-85

Location 660' FNL & 1980' FEL, Sec 10, T-18S, R-32E, Lea County, NM

Spud Date 6-4-81 Compl. Date 7-24-81 TD 8800' PBTD 8759'

Type Well: Oil X Gas ____ Other ____ Field North Young

I P ____ Zone Bone Springs

Perfs.: 8478-93' Total Holes 30

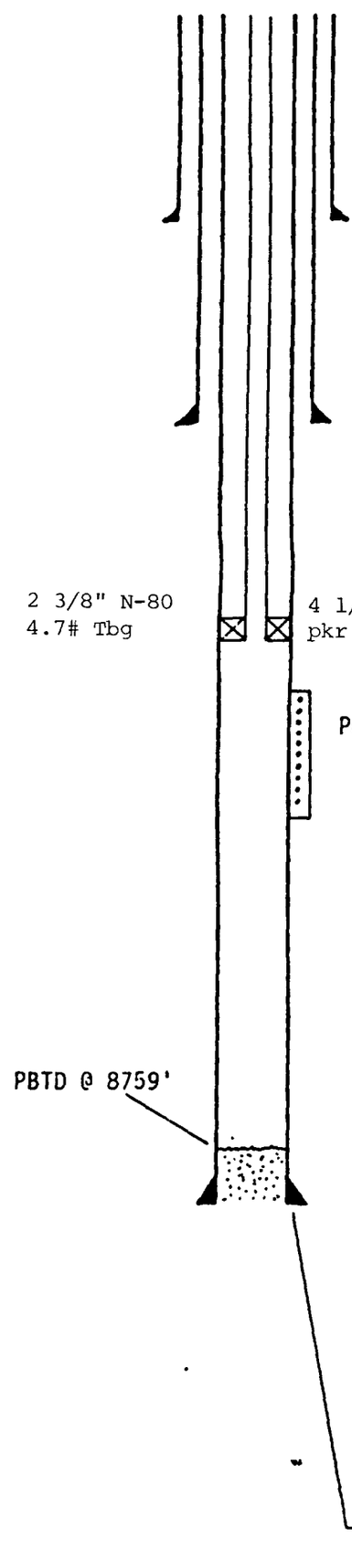
Stimulation ____

Cumul. Oil 81966 STB MCF 83656 MSCF Water 174882 STB

Recent Test ____ Lift Equipment ____

Misc. Elevation=3862' GL (3877' KB)

PROPOSED WATER INJECTION WELL




Surface: 13-3/8" 48 & 54 # Gr. ____ @ 645' Cmt. w/ 550 Sx. TOC cir 50 sx Hole Size 17-1/2" Max Mud Wt. ____ #/G

Intermediate: 8-5/8", 24,28, & 32 # Gr J-55 @ 4650' Cmt w/ 2100 Sx. TOC @ cir 200 sx. Hole Size 11", Max Mud Wt. ____ #/G

Production: 4-1/2", 10.5,11.6 #, J55,N80 Gr. @ 8800' Cmt. w/ 700 Sx, TOC @ 5622' (CBL), Hole Size 7-7/8" Mx Mud Wt. ____ #/G

TD 8800'

Tubing 2-3/8", 4,7 #, Gr. @ 8375

Tubing ____, ____ #, Gr. @ ____

Packer @ 8435'

WELL HISTORY

HARVEY E. YATES COMPANY

**Well History Summary Sheet**

Operator Harvey E. Yates Co. Well Name & # Young Deep Unit #1 Lease # NM 14789-A

District Carlsbad Made By Stephen R. Locke Date 8-9-85

Location 660' FNL & 660' FWL, Sec 10, T-18S, R-32E, Lea County, NM

Spud Date 1-28-80 Compl. Date 4-18-80 TD 14095' PBTD

Type Well: Oil ____ Gas ____ Other Water Injector Field North Young

I P ____ Zone Bone Springs

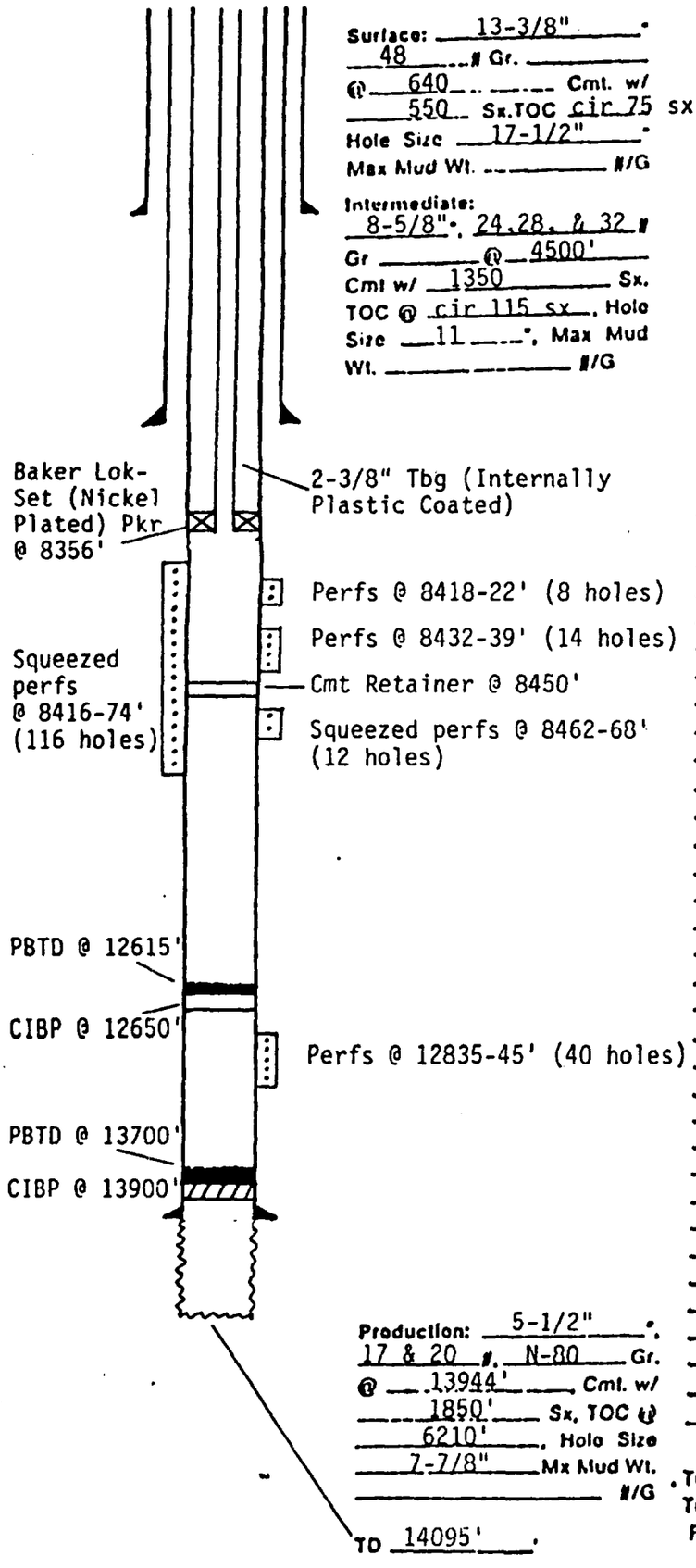
Perfs.: 8418-22', 8432-39' Total Holes 22

Stimulation ____

Cumul. Oil 202659 STB MCF 154088 Inj Water 686270 STB

Recent Test ____ Lift Equipment ____

Misc. Elevation=3849 GL (3864' KB)




**WELL HISTORY**

Tubing 2-3/8", ____ #, ____ Gr. @ 8356'

Tubing ____, ____ #, ____ Gr. @ ____

Packer @ 8356'

HARVEY E. YATES COMPANY

**Well History Summary Sheet**

**Operator** Harvey E. Yates Co. **Well Name & #** Young Deep Unit #2 **Lease #** NM 16350-A

**District** Carlsbad **Made By** Stephen Locke **Date** 8-8-85

**Location** 660' FNL & 1980' FWL, Sec 10, T-18S, R-32E, Lea County, NM

**Spud Date** 11-5-80 **Compl. Date** 12-11-80 **TD** 8650' **PBTD** 8589'

**Type Well:** Oil ____ Gas ____ Other Water Injector **Field** North Young

**I P** ____ **Zone** Bone Springs

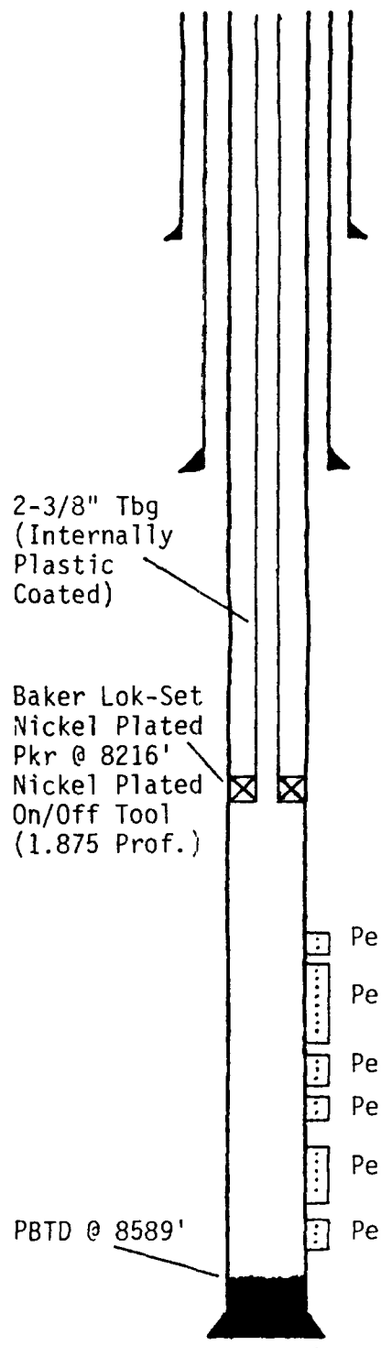
**Perfs.:** 8444-46, 8450-64, 8477-80, 8486-88, 8500-11, 8524-28 **Total Holes** 72

**Stimulation** ____

**Cumul. Oil** 109066 BO (7-1-85) **MCF** 91396 (7-1-85) **Inj. Water** 2166774 BW

**Recent Test** ____ **Lift Equipment** ____

**Misc.** Elevation = 3854' GL (18' KB)




**Surface:** 13-3/8", 54 & 68 # Gr. ____ @ 666' Cmt. w/ 650 Sx. TOC cir 30 sx Hole Size 17-1/2" Max Mud Wt. ____ #/G

**Intermediate:** 8-5/8", 24,28, & 32 # Gr ____ @ 4640' Cmt w/ 1400 Sx. TOC @ cir 170 sxs. Hole Size 11", Max Mud Wt. ____ #/G

**Production:** 4-1/2", 11.6, 10.5#, N80,J55 Gr. @ 8650' Cmt. w/ 300 Sx. TOC @ 7381' (CBL), Hole Size 7-7/8" Mx Mud Wt. ____ #/G

TD 8650'

**WELL HISTORY**

12-11-80: Acidized 8444-88' w/250 gal acetic acid & 2000 gal 15% MSR-100 w/500 scf N2/bbl. Avg rate=4 BPM @ 4200#. ISIP=2400#, 5"=1400#.
6-20-82: Acidized 8500-28' w/250 gal 20% MCA. Avg rate=2 BPM @ 0#. ISIP=vac.
8-82: Converted to water injector.
8-10-83: Treated perfs w/1500 gal 15% HCl.
11-12-83: Treated w/500 gal 15% HCl.
3-3-84: Injection Profile:

| Perfs | % Fluid Taken |
|---|---|
| 8444-8446 | 27% |
| 8450-8464 | 17% |
| 8477-8480 | 5% |
| 8486-8488 | 3% |
| 8500-8511 | 44% |
| 8524-8528 | 4% |

Tubing 2-3/8", ____ #, ____ Gr. @ 8216'
Tubing ____ ", ____ #, ____ Gr. @ ____
Packer @ 8216'

# HARVEY E. YATES COMPANY

## Well History Summary Sheet

**Operator** Harvey E. Yates Company **Well Name & #** Young Deep Unit **Lease #** _____

**District** Hobbs **Made By** Layne Collis **Date** 2/11/86

**Location** 1980' FNL & 1980' FEL, Sec. 10, T-18S, R-32E

**Spud Date** 1/25/81 **Compl. Date** P&A 12/4/84 **TD** 9500 **PBTD** _____

**Type Well: Oil** _____ **Gas** _____ **Other** _____ **Field** _____

**I P** _____ **Zone** _____

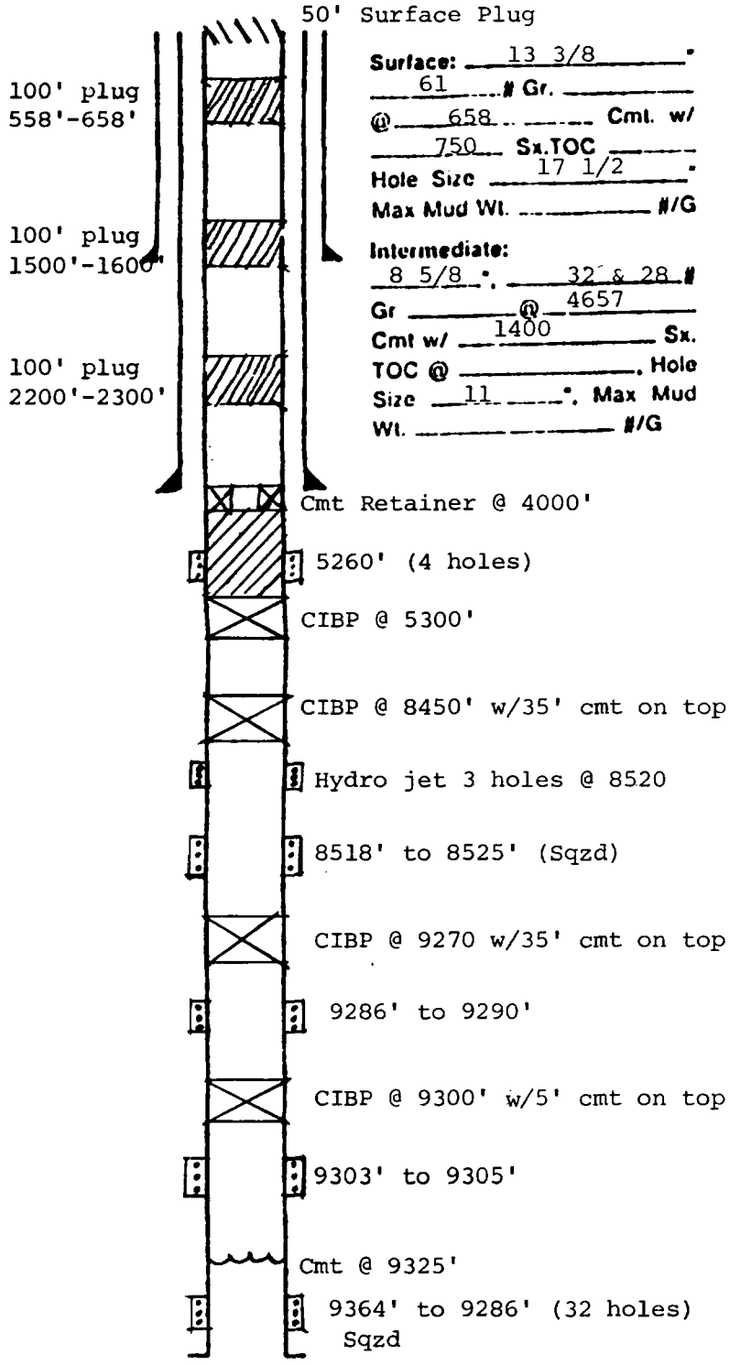
**Perfs.:** _____ **Total Holes** _____

**Stimulation** _____

**Cumul. Oil** _____ **MCF** _____ **Water** _____

**Recent Test** _____ **Lift Equipment** _____

**Misc.** _____




**Surface:** 13 3/8", 61 # Gr. _____ @ 658 Cmt. w/ 750 Sx. TOC _____, Hole Size 17 1/2", Max Mud Wt. _____ #/G

**Intermediate:** 8 5/8", 32 & 28 # Gr _____ @ 4657, Cmt w/ 1400 Sx. TOC @ _____, Hole Size 11", Max Mud Wt. _____ #/G

**Production:** 4 1/2", 11.6 #, _____ Gr. @ 9505 Cmt. w/ _____ Sx. TOC @ _____, Hole Size _____, Mx Mud Wt. _____ #/G

**TD** 9500'

**WELL HISTORY**

**Tubing** _____", _____ #, _____ Gr. @ _____

**Tubing** _____", _____ #, _____ Gr. @ _____

**Packer @** _____

# HARVEY E. YATES COMPANY
## Well History Summary Sheet

**Operator** Harvey E. Yates Co. **Well Name & #** Young Deep Unit #4 **Lease #** LC064009D

**District** Carlsbad (Hobbs) **Made By** Stephen R. Locke **Date** 10-22-85

**Location** H, 1980' FNL & 660' FEL, Sec 9, T-18S, R-32E, Lea County, NM

**Spud Date** 4-10-81 **Compl. Date** 5-20-81 **TD** 9026' **PBTD** _____

**Type Well: Oil** X **Gas** _____ **Other** _____ **Field** North Young

**I P** _____ **Zone** Bone Springs (2nd Sand

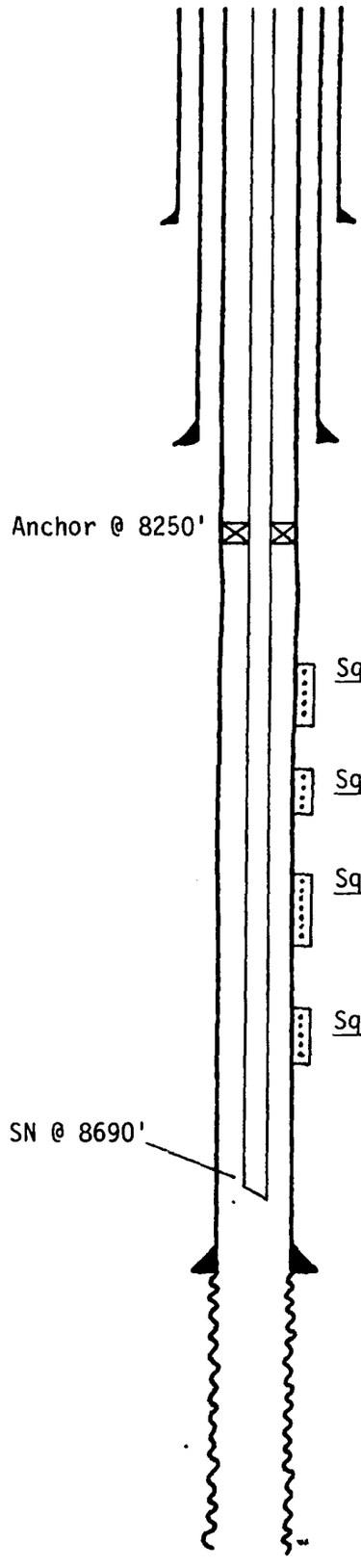
**Perfs.:** Open-Hole @ 8700-9026' **Total Holes** _____

**Stimulation** _____

**Cumul. Oil** 11415 STB (2nd Sand) **MCF** 11871 MCF (2nd Sand) **Water** _____

**Recent Test** _____ **Lift Equipment** 2" x 1-1/2" x 20' Pump

**Misc.** Elevation = 3828' GL (15' KB); 2nd Sand Production began in July 1984




**Surface:** 13-3/8" •, 54.5 #, Gr. H40, @ 650, Cmt. w/ 750 Sx. TOC cir 70 sx, Hole Size 17-1/2" •, Max Mud Wt. _____ #/G

**Intermediate:** 8-5/8" •, 24,28, & 32 #, Gr _____, @ 4650', Cmt w/ 1400 Sx., TOC @ cir 69 sx, Hole Size 11" •, Max Mud Wt. _____ #/G

**Production:** 4-1/2" •, 10.5,11.6#, J55,N80 Gr., @ 8700', Cmt. w/ 700 Sx. TOC @ 5990' (CBL), Hole Size 7-7/8", Mx Mud Wt. _____ #/G

TD 9026' •

**WELL HISTORY**

5-02-81: DST #1 @ 8185-8337'

5-20-81: Perfed @ 8440-74'.

5-22-81: Acidized perfs @ 8440-74' w/2000 gal 15% NEFE acid w/1000 scf N2/bbl & 136 balls. Treated @ 3.1 BPM @ 5600# ISIP=4100#,5"=3800#,10"=3500#.

5-29-81: Perfed @ 8380-92'.

6-02-81: Acidized perfs @ 8380-92' w/1500 gal 15% MSR-100. Treated @ 2 BPM @ 3500# ISIP=3200#,5"=3000#, 10"=2950#.

6-04-81: Acidized perfs @ 8380-92' w/3000 gal 20% MSR-100 w/1000 scf N2/bbl & 48 balls. Treated @ 4.8 BPM @ 6000#. ISIP=4300#,5"=4100#,15"=3900#.

6-10-81: Acidized perfs @ 8380-92' w/8000 gal WF20, 10000 gal 15% SGA w/400 scf N2/bbl. Treated @ 5 BPM @ 5350#. ISIP=4000#,5"=3830#,15"=3550#.

6-30-81: Perfed @ 8312-37'.

7-01-81: Acidized perfs @ 8312-37' w/250 gal 15% MSR-100. Treated @ 1.75 BPM @ 3100#. ISIP=2800#,5"=2300#.

7-06-81: Acidized perfs @ 8312-37' w/2500 gal 15% MSR-100 w/1000 scf N2/bbl & 100 balls. Treated @ 4.1 BPM @ 5050#. ISIP=4300#,5"=4200#.

7-11-81: Fraced perfs @ 8312-37' w/7000 gal WF30,8000# 100 mesh sand,10000 gal 20% HCl w/350 scf N2/bbl. Treated @ 6.2 BPM @ 4950#. ISIP=3650#,5"=3450#,15"=3270#.

11-07-81: Perfed @ 8490-8510'.

11-10-81: Acidized perfs @ 8490-8510' w/500 gal 20% MSR-100. Treated @ 1 BPM @ 3500# ISIP=3100#,5"=2700#,10"=2650#.

11-11-81: Acidized perfs @ 8490-8510' w/5000 gal 20% MSR-100 & 60 balls. Treated @ 2 BPM @ 3500#. ISIP=2800#,5"=2600#

4-26-84: Squeezed perfs @ 8312-8510'. Squeezed to 1000#.

5-01-84: Tested squeeze to 4500# - had slight leak.

5-26-84: Fraced open-hole interval 8700-9026' w/70000 gal WF40 & 114500# 20-40 snd Treated @ 30 BPM @ 3100#. ISIP=2450#,5"=2300#.

**Tubing** 2-3/8" •, _____ #, _____ Gr, @ 8690'

**Tubing** _____ •, _____ #, _____ Gr, @ _____

**Packer @** Anchor @ 8250'

Rod Count:

(1) 2' x 3/4" pony
(217) 3/4" rods
(126) 7/8" rods
(2) 4' x 7/8" pony
(2) 6' x 7/8" pony

Formation Tops:

| | |
|---|---|
| Rustler | 1142' |
| Yates | 2700' |
| 7 Rivers | 3130' |
| Queen | 3856' |
| Penrose | 4100' |
| Bone Springs | 6133' |
| 1st Sand | 7947' |
| Main Pay | 8432' |
| 2nd Sand | 8578' |

HARVEY E. YATES COMPANY

Well History Summary Sheet

Operator Harvey E. Yates Co. Well Name & # Young Deep Unit #5 Lease # NM-16350

District Carlsbad Made By Stephen R. Locke Date 8-9-85

Location 660' FNL & 1980' FEL, Sec 10, T-18S, R-32E, Lea County, NM

Spud Date 6-4-81 Compl. Date 7-24-81 TD 8800' PBTD 8759'

Type Well: Oil X Gas ____ Other ____ Field North Young

I P ____ Zone Bone Springs

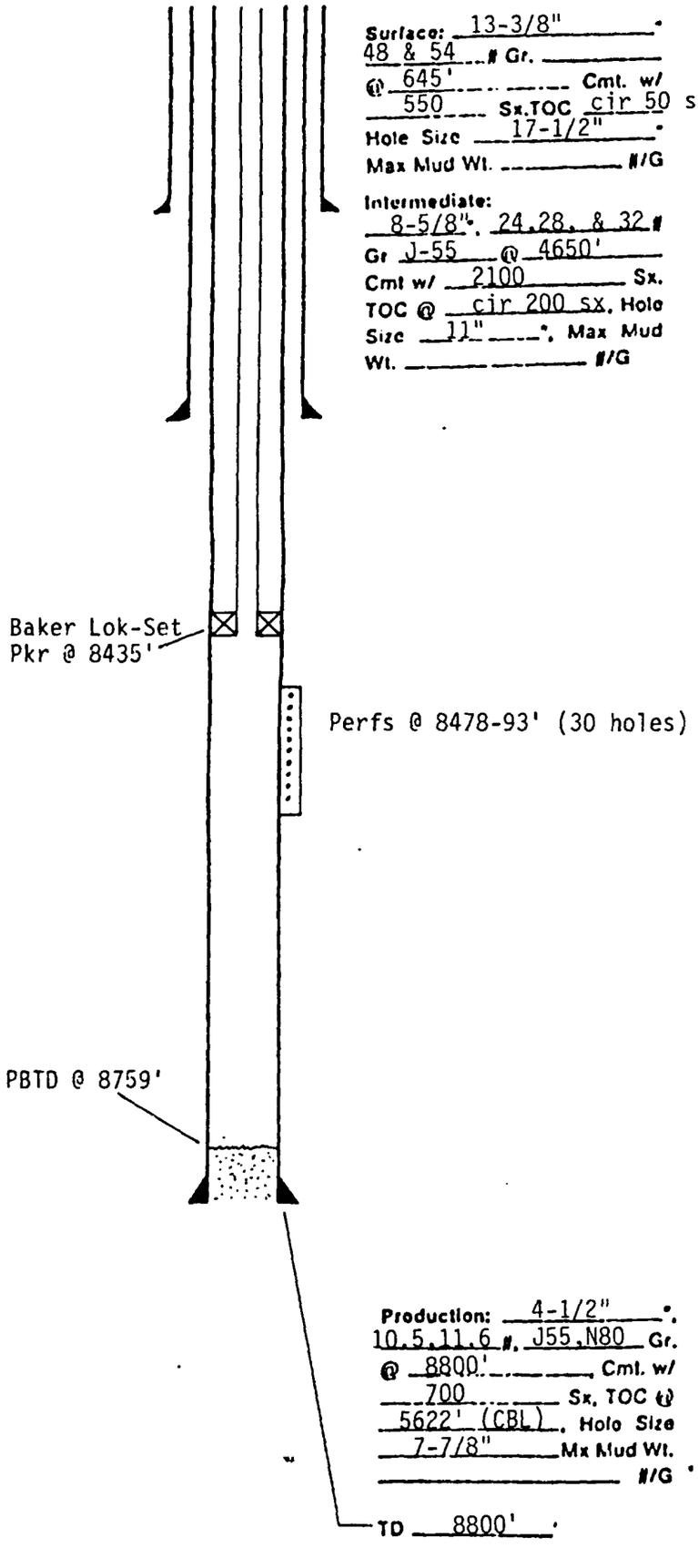
Perfs.: 8478-93' Total Holes 30

Stimulation ____

Cumul. Oil 81966 STB MCF 83656 MSCF Water 174882 STB

Recent Test ____ Lift Equipment ____

Misc. Elevation=3862' GL (3877' KB)




WELL HISTORY

Tubing 2-3/8", ____ #, ____ Gr. @ 8435'

Tubing ____, ____ #, ____ Gr. @ ____

Packer @ 8435'

HARVEY E. YATES COMPANY

**Well History Summary Sheet**

Operator Harvey E. Yates Company Well Name & # Young Deep Unit #6 Lease # _____

District Hobbs Made By Machelle Byrum Date 2/6/85

Location 1980' FWL & 660' FSL, Sec. 3, T-18S, R-32E, Lea Co, NM

Spud Date 7/11/81 Compl. Date 9/22/81 TD 9608' PBTD 9415'

Type Well: Oil X Gas _____ Other _____ Field North Young Bone Springs

I P _____ Zone Bone Springs

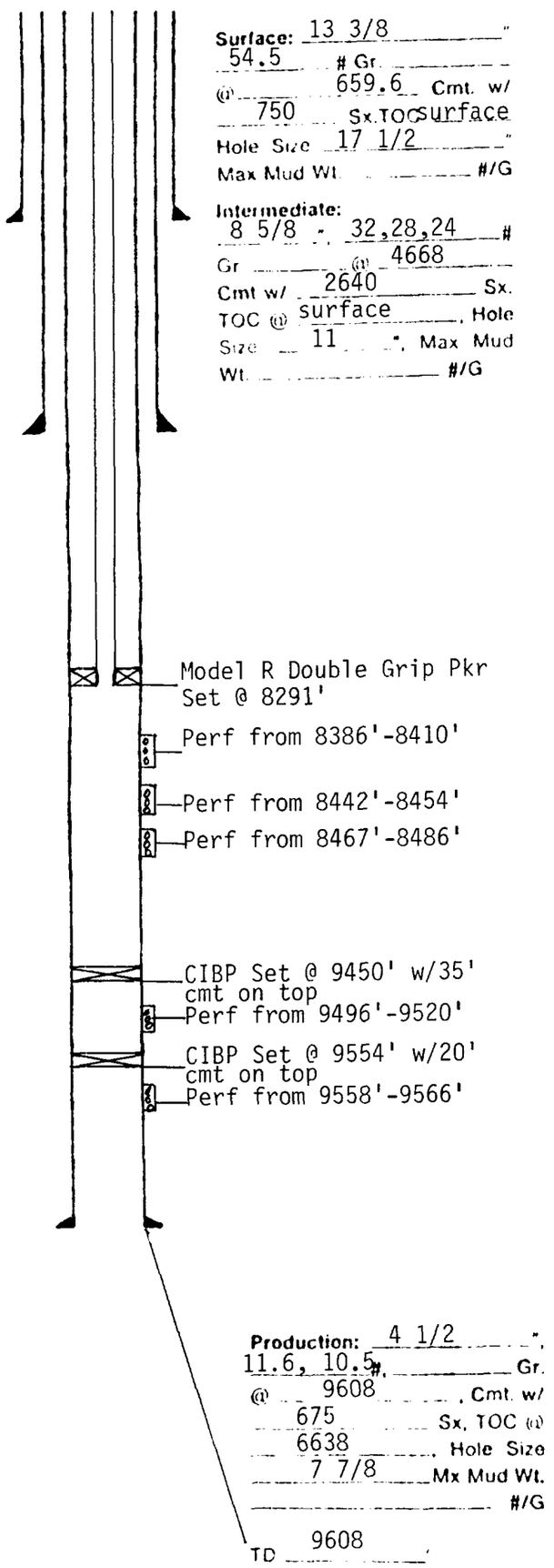
Perfs.: 8386'-8410'; 8442'-8454'; 8467'-8486' Total Holes 110-1/2" holes

Stimulation _____

Cumul. Oil _____ MCF _____ Water _____

Recent Test _____ Lift Equipment _____

Misc. 3879.3' KB




WELL HISTORY

Tubing 2 3/8", #, Gr. @ 8291

Tubing ", #, Gr. @

Packer @ 8291

HARVEY E. YATES COMPANY

**Well History Summary Sheet**

Operator Harvey E. Yates Company Well Name & # Young Deep "3" Federal #1 Lease # NM-036852

District Hobbs Made By Machelle Byrum Date 8/9/84

Location 1980' FEL & 660' FSL, Sec. 3, T-18S, R-32E, Lea County, New Mexico

Spud Date 4/19/81 Compl. Date 6/22/81 TD 9500' PBTD 8535'

Type Well: Oil X Gas ____ Other ____ Field North Young

I P 335 BO/287 MCF/36 BW per day Zone Bone Springs

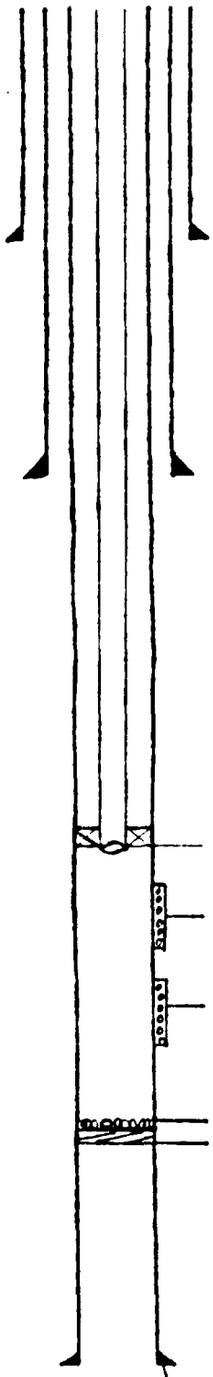
Perfs.: 8469' to 8502' (50 holes); 8434' to 8446' (26 holes) Total Holes 76

Stimulation See below

Cumul. Oil 184787 BO MCF 171259 Water 25189 BW

Recent Test ____ Lift Equipment ____

Misc. Elevation: 3874.9' GL (15' KB)



Surface: 13 3/8" ", 54.5 # Gr. ____ @ 662' Cmt. w/ 750 Sx. TOC surface Hole Size 17 1/2" Max Mud Wt. ____ #/G

Intermediate: 8 5/8", 24,28, 32 # Gr ____ @ 4650' Cmt w/ 1400 Sx. TOC @ surface, Hole Size 11", Max Mud Wt. ____ #/G

2 3/8" tbg @ 8363'
Baker Lok-Set Pkr

26 holes from
8434'-8446' Added 12/14/83

50 holes from
8469'-8502'

PBTD @ 8535' w/cmt
& CIBP

Production: 5 1/2", 15.5,17 #, ____ Gr. @ 9500', Cmt. w/ 700 Sx, TOC @ 5962' by CBL, Hole Size 7 7/8" Mx Mud Wt. ____ #/G

TD 9500'

**WELL HISTORY**

12/14/83: RU Hughes & spot 100 gal acid. Acid w/5000 gal 20% SRA, Rate 4 BPM @ 4000#, Form Brk @ 2500#. ISIP 1000#, 5" 0#.

Tubing 2 3/8", ____ #, ____ Gr. @ 8363'

Tubing ____", ____ #, ____ Gr. @ ____

Packer @ 8363'

HARVEY E. YATES COMPANY

**Well History Summary Sheet**

Operator Harvey E. Yates Company Well Name & # Young Deep "3" Federal #2 Lease # _____

District Hobbs Made By Machelle Byrum Date 2/6/85

Location 660' FSL & 660' FEL, Sec. 3, T-18S, R-32E, Lea Co, NM

Spud Date 9/5/84 Compl. Date 11/19/84 TD 9360' PBTD 9040'

Type Well: Oil X Gas _____ Other _____ Field North Young Bone Springs

I P _____ Zone Bone Springs

Perfs.: 8458' Sand Jet Total Holes _____

Stimulation _____

Cumul. Oil _____ MCF _____ Water _____

Recent Test _____ Lift Equipment _____

Misc. Elevation: 3883.6' KB

**Surface:** 13 3/8" 54.5 # Gr. _____ @ 650 Cmt. w/ 500 Sx.TOC surface Hole Size 17 1/2" Max Mud Wt. _____ #/G

**Intermediate:** 8 5/8", 24,32 # Gr _____ @ 2653 Cmt w/ 900 Sx. TOC @ surface, Hole Size 11", Max Mud Wt. _____ #/G

Tubing anchor set @ 8343'

Sand Jet @ 8458'

2 3/8" tbg & SN set @ 8474'

CIBP @ 9075' w/35' cmt on top

Perf from 9108'-9120'

**Production:** 5 1/2", 15.5, 20 #, _____ Gr. @ 9360', Cmt. w/ 1375 Sx, TOC @ 2706 by CBL, Hole Size 7 7/8 Mx Mud Wt. _____ #/G

TD 9360'

**WELL HISTORY**

Tubing 2.3/8", _____ #, _____ Gr. @ 8474

Tubing _____", _____ #, _____ Gr. @ _____

Packer @ _____

HARVEY E. YATES COMPANY

**Well History Summary Sheet**

Operator Harvey E. Yates Company Well Name & # Young Deep "3" Federal #3 Lease # _____

District Hobbs Made By Machelle Byrum Date 2/6/85

Location 1980' FSL & 1980' FEL, Sec. 3, T-18S, R-32E, Lea Co, NM

Spud Date 11/6/81 Compl. Date 1/13/82 TD 9500 PBTD 8680'

Type Well: Oil X Gas _____ Other _____ Field North Young Bone Springs

I P _____ Zone Bone Springs

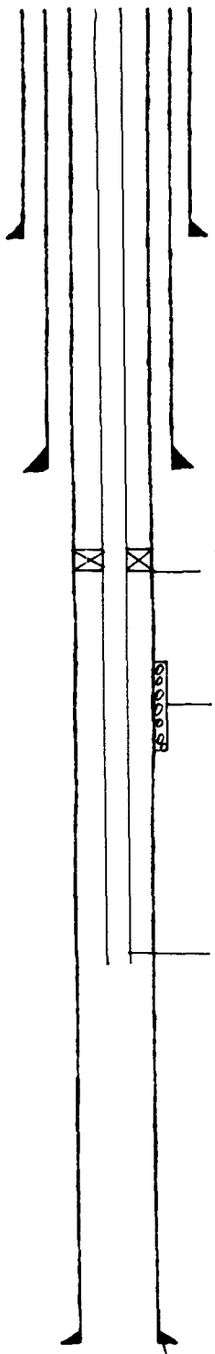
Perfs.: See Below Total Holes _____

Stimulation _____

Cumul. Oil _____ MCF _____ Water _____

Recent Test _____ Lift Equipment _____

Misc. Elevation: 3895' KB



**Surface:** 13 3/8" 54.5 # Gr. _____ @ 658 Cmt. w/ 500 Sx. TOC surface Hole Size 17 1/2" Max Mud Wt. _____ #/G

**Intermediate:** 8 5/8", 24,28,32 # Gr _____ @ 3598 Cmt w/ 1500 Sx. TOC @ surface, Hole Size 11", Max Mud Wt. _____ #/G

Tbg anchor @ 8288'

Perf: 1/9/82: 8432-8446' & 8450-8456'
2/11/82: 8354-8358', 8368-8380', 8347-8401'
8/31/84: 8471-8481'

2 3/8" tbg set @ 8512

**Production:** 5 1/2", 15.5,17 #, Gr. _____ @ 8595, Cmt. w/ 190 Sx. TOC @ 7420, Hole Size 7 7/8 Mx Mud Wt. _____ #/G

TD 9500

**WELL HISTORY**

Tubing 2 3/8", _____ #, _____ Gr. @ 8512

Tubing _____", _____ #, _____ Gr. @ _____

Packer @ _____

HARVEY E. YATES COMPANY

**Well History Summary Sheet**

Operator Harvey E. Yates Company Well Name & # Young Deep 3 Federal #4 Lease # _____

District Hobbs Made By Machelle Byrum Date 2/7/85

Location 1200' FSL & 1650' FEL, Sec. 3, T-18S, R-32E, Lea Co, NM

Spud Date 12/2/83 Compl. Date 4/18/84 TD 12915 PBTD 10965

Type Well: Oil X Gas _____ Other _____ Field North Young Bone Springs

I P _____ Zone Bone Springs

Perfs.: See below Total Holes _____

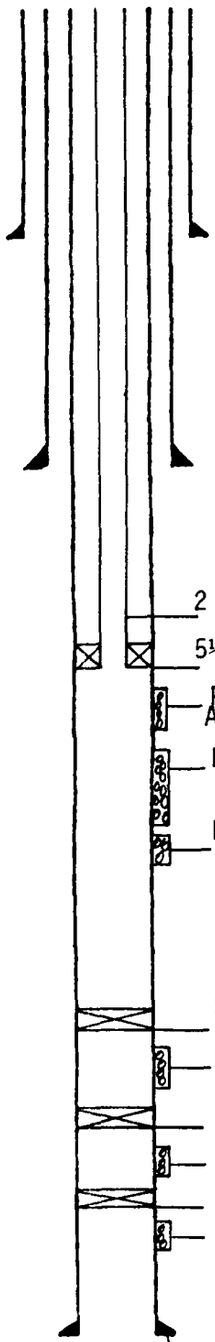
Stimulation _____

Cumul. Oil _____ MCF _____ Water _____

Recent Test _____ Lift Equipment _____

Misc. Elevation: 3894' KB

**WELL HISTORY**



**Surface:** 13 3/8" 48,54 # Gr. _____ @ 664 Cmt. w/ 700 Sx.TOC surface Hole Size 17 1/2" Max Mud Wt. _____ #/G

**Intermediate:** 8 5/8", 28,24,32 # Gr _____, @ 3788 Cmt w/ 2000 Sx. TOC @ surface, Hole Size 11", Max Mud Wt. _____ #/G

2 3/8" tbg set @ 8344'

5½" Lok-Set Pkr @ 8344'

Perf 8432-8442,8482-90' 2 spf Added 8/29/84

Perf 8611,18,28,35;8680,96, 8701;8724,28,32,42

Perf 8827,34,39,47,57,64,66 72,76,78,84 (11 holes)

CIBP @ 11,000' w/35' cmt on top

Perf 11,060-66;11,116-24; 11,161-71;11,220-26;11,320-30'; 11,344-47

CIBP @ 12,550 w/35' cmt on top

Perf from 12,636-56'

CIBP set @ 12,830' w/35' cmt on top

Perf 12,844-58'

**Production:** 5 1/2", 17,20 #, _____ Gr. @ 12,915, Cmt. w/ 1050 Sx, TOC @ 6000, Hole Size 7 7/8 Mx Mud Wt. _____ #/G

TD 12915

Tubing .2 3/8", _____ #, _____ Gr. @ 8344

Tubing _____", _____ #, _____ Gr. @ _____

Packer @ 8344

| | | | |
|---|---|---|---|
| Well Name | Young Deep Unit | Young Deep Unit | Young Deep Unit |
| Well Number | #1 | #2 | #3 |
| Legal Location | 660' FNL & 660' FWL<br>Sec. 10, T-18S,R-32E<br>Lea County, New Mexico | 660' FNL & 1980' FWL<br>Sec. 10, T-18S, R-32E<br>Lea County, New Mexico | 1980' FNL & 1980' FEL<br>Sec. 10, T-18S, R-32E<br>Lea County, New Mexico |
| Field Pool | North Young Bone Springs | North Young Bone Springs | North Young Bone Springs |
| Spud Date | 1/28/80 | 11/5/80 | 1/25/81 |
| Completion or Rec Date | 2/27/82 (Recompl) | 12/11/80 | P & A |
| Type Completion | WIW | WIW | |
| TD | 14,095'. | 8650' | 9505' |
| PBTD | 12,615 | 8589' | |
| Completion interval | 8418' to 8468' (OA) | 8444' to 8528' (OA) | |
| Casing Design | 13 3/8" to 640' w/550 sxs<br>8 5/8" to 4500' w/1350 sxs<br>5 1/2" to 13,944' w/1850 sxs | 13 3/8" to 660' w/650 sxs<br>8 5/8" to 4640' w/1400 sxs<br>4 1/2" to 8650' w/300 sxs | 13 3/8" to 658' w/750 sxs<br>8 5/8" to 4657' w/1400 sxs<br>4 1/2" to 9505' w/450 sxs |
| Tubing | 2 3/8" tbg @ 8356'. | 2 3/8" tbg @ 8216' | |
| Top of Cement | 6210' by Temp Survey | 7381' by CBL | |

| | | | |
|---|---|---|---|
| Well Name | Young Deep "3" Federal | Young Deep "3" Federal | Young Deep Unit "3" Federal |
| Well Number | #1 | #2 | #3 |
| Legal Location | 1980' FEL & 660' FSL<br>Sec. 3, T-18S, R-32E<br>Lea County, New Mexico | 660' FSL & 660' FEL<br>Sec. 3, T-18S, R-32E<br>Lea County, New Mexico | 1980' FSL & 1980' FEL<br>Sec. 3, T-18S, R-32E<br>Lea County, New Mexico |
| Field Pool | North Young Bone Springs | North Young Bone Springs | North Young Bone Springs |
| Spud Date | 4/19/81 | 9/5/84 | 11/6/81 |
| Completion or Rec Date | 6/22/81 | 11/19/84 | 1/13/82 |
| Type Completion | Oil | Oil | Oil |
| TD | 9500' | 9360' | 9500' |
| PBTD | 8535' | 9040' | 8680' |
| Completion Interval | 8434' to 8502' (OA) | Sand Jet @ 8458' | 8432' to 8481' (OA) |
| Casing Design | 13 3/8" to 662' w/750 sxs<br>8 5/8" to 4650' w/1400 sxs<br>5 1/2" to 9500' w/700 sxs | 13 3/8" @ 650' w/500 sxs<br>8 5/8" @ 2653' w/900 sxs<br>5 1/2" @ 9360' w/1375 sxs | 13 3/8" to 658' w/500 sxs<br>8 5/8" to 3598' w/1500 sxs<br>5 1/2" to 8598' w/190 sxs |
| Tubing | 2 3/8" @ 8363' | 2 3/8" @ 8474' | 2 3/8" to 8512' |
| Top of Cement | 5962' by GBL | 2706 by CBL | 7420' by CBL |

| Well Name | Young Deep 3 Federal | Young Deep Unit | Young Deep Unit |
|---|---|---|---|
| Well Number | #4 | #5 | #6 |
| Legal Location | 1200' FSL & 1650' FEL<br>Sec. 3, T-18S, R-32E<br>Lea County, New Mexico | 1980' FEL & 660' FNL<br>Sec. 10, T-18S, R-32E<br>Lea County, New Mexico | 1980' FWL & 660' FSL<br>Sec. 3, T-18S, R-32E<br>Lea County, New Mexico |
| Field Pool | North Young Bone Springs | North Young Bone Springs | North Young Bone Springs |
| Spud Date | 12/2/83 | 6/4/81 | 7/11/81 |
| Completion or Rec Date | 4/18/84 | 7/24/81 | 9/22/81 |
| Type Completion | Oil | Oil | Oil |
| TD | 12915 | 8800' | 9608' |
| PBTD | 10965 | 8759' | 9415' |
| Completion Interval | 8432' to 8884' (OA) | 8478' to 8493' | 8386' to 8486' (OA) |
| Casing Design | 13 3/8" @ 664' w/700 sxs<br>8 5/8" @ 3788' w/2000 sxs<br>5 1/2 @ 12,915' w/1050 sxs | 13 3/8" @ 645' w/550 sxs<br>8 5/8" @ 4650' w/2100 sxs<br>4 1/2" @ 8800' w/700 sxs | 13 3/8" @ 659' w/750 sxs<br>8 5/8" @ 4663' w/2640 sxs<br>4 1/2" @ 9608' w.675 sxs |
| Tubing | 2 3/8" @ 8344' | 2 3/8" @ 8435' | 2 3/8" @ 8291' |
| Top of Cement | 6000' | 5622' by CBL | 6638' by CBL |

SECTION III (B)

WELL DATA

1. Bone Springs, North Young Bone Springs

2. Injection interval: 8478' to 8493', cased hole perforations.

3. Well was originally drilled as a producing oil well.

4. N. A.

5. No producing zones above. Next lower producing horizon is the Morrow formation (sand) which was productive in the Young Deep "4" Federal #1 at a depth of 12,767' to 12,784'. This well has been plugged back & recompleted in the Bone Springs.

SECTION VII

Injection Data

(Reference is made to the "Proposed Plan of Operation")

1. See attached "Proposed Plan of Operation."

2. Closed System - Gas Blanket

3. See attached "Proposed Plan of Operation."

4. See attached Ogallala water analysis from Double Eagle Water Company and North Young Bone Spring Formation.

5. N.A.

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

Proposed Plan of Operation

Young Deep Unit

North Young Bone Spring Pool

Lea County, New Mexico

February 15, 1986

Harvey E. Yates Company plans to initiate a pilot water injection program for secondary recovery 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 Young Deep Unit #5, located 1980' FEL & 660' FNL of Section 10, Township 18 South, Range 32 East, Lea County, New Mexico.

2) The injection rate is estimated to average 2200 barrels water per day. It is estimated that an average injection pressure of 1600 psi will be required in the later stages of the waterflood program, but will initially only require approximately 1200 psi. It is expected that the injection rate will decrease as the reservoir responds to the waterflood. Produced water will be re-injected into the North Young Bone Springs Pool as flood response occurs and water production increases.

3) For injection schematics, please refer to the Applicant's Exhibits under Section III of form C-108.

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 approval.

Perpared by:
Ray F. Nokes
Prod. Manager/Prod. Engineer
Harvey E. Yates Company
Roswell, New Mexico 88201

1942-A

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

# LABORATORY WATER ANALYSIS

No. W82-419

To Harvey E. Yates

Box 1933

Roswell, New Mexico

Date 4-26-82



Submitted by

Date Rec. 4-23-82

Well No. As Marked Depth Formation

County Field Source

| | Young Deep Unit #2 | Double Eagle Water (From W82-341) | | |
|---|---|---|---|---|
| Resistivity | ND | 14.0 @ 74°F. | | |
| Specific Gravity | ND | 1.001 | | |
| pH | ND | 7.3 | | |
| Calcium (Ca) | 11,500 | 220 | | *MPL |
| Magnesium (Mg) | Nil | 12 | | |
| Chlorides (Cl) | 147,000 | 400 | | |
| Sulfates ($SO_4$) | ND | 150 | | |
| Bicarbonates ($HCO_3$) | ND | 195 | | |
| Soluble Iron (Fe) | ND | Nil | | |
| API Gr. of Oil | 35.0 @ 60°F. | -- | | |
| | | | | |
| | | | | |

Remarks: Sample from Young Deep Unit #2 had insufficient water available for a complete analysis.

*Milligrams per liter

Respectfully submitted,

Analyst: Brewer

HALLIBURTON COMPANY

By W. L. Brewer
CHEMIST

cc:

NOTICE

## SECTION VIII

### Geological Comments

Refer to the Geological Section of the Ralph H. Viney & Associates, Inc. Report submitted in case 7595 before Daniel Nutter May 26, 1982.

SECTION VIII, cont.

(Fresh Water Aquifers and Area Water Wells)

On April 22, 1982, Mr. Edward Kinney, a consultant geologist living in Artesia, New Mexico was contacted by Ray F. Nokes of Harvey E. Yates Company, in regards to fresh water aquifers in the Young Deep Unit Area. Mr Kinney has completed publications on fresh water aquifers in the southeast part of New Mexico. In our conversation, Mr. Kinney said that the only fresh water aquifers in the area of Township 18 South, Range 32 East would be the Ogallala occuring at an approximate depth of 350' to 400' and the Santa Rosa at a depth of approximately 1100' to 1200' below surface. He said that the San Andres aquifer which is present to the west, is spotly in location and that, if present, would be very salty in nature. Surface and intermediate casing were set through both possible aquifers and cemented back to surface and therefore, all fresh water aquifers (Ogallala and Santa Rosa), if present, are protected from contamination. See Section VI for casing and cementing report.

Mr. Delbert Nelson with the New Mexico State Engineer's Office in Roswell, New Mexico, was contacted on the same day as Mr. Kinney. He checked local records to determine if any fresh water wells were present in the immediate area of the Young Deep Unit. One well, located in the SE/SE/NW of Section 4, Township 18 South, Range 32 East, Lea County, New Mexico, was drilled in the area in 1977 by Abbott Brothers of Hobbs, New Mexico. The 133' domestic well was drilled for Mr. B. E. Frizzell of Hobbs, New Mexico. The well was located and evidence indicates that the well has long since been abandoned and covered up. No water sample was obtained for analysis.

This zone is behind two strings of cemented casing and is protected from contamination from the proposed injector well.

Prepared by:
Ray F. Nokes
Prod. Manager/Prod. Engineer
Harvey E. Yates Company
Roswell, New Mexico 88201

## SECTION IX

None

## SECTION X

Logs have been submitted previously to the N.M.O.C.D. For further information refer to the Ralph H. Viney & Associates, Inc. submitted in case 7595 before Daniel Nutter on May 26, 1982.

## SECTION XI

(Fresh Water Analysis)

Not applicable.

## SECTION XII

Not applicable.

## SECTION XIII & XIV

The surface owner of Section 11, T-18S, R-32E is the Bureau of Land Management and the surface owner of Section 2, T-18S R-32E is the State of New Mexico. The offset operator for both sections is Amoco Production Company. By copy of this application the offsetting surface owner and operator has been notified of the proposed waterflood. Harvey E. Yeates Company is the operator of the remaining acreage to the North, West and South of the proposed Water Injection Well.

1342-A

Section XI

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

# LABORATORY WATER ANALYSIS

No. W82-419

To Harvey E. Yates

Box 1933

Roswell, New Mexico

Date 4-26-82



Submitted by _____ Date Rec. 4-23-82

Well No. As Marked Depth _____ Formation _____

County _____ Field _____ Source _____

| | Young Deep Unit #2 | Double Eagle Water (From W82-341) | |
|---|---|---|---|
| Resistivity | ND | 14.0 @ 74°F. | |
| Specific Gravity | ND | 1.001 | |
| pH | ND | 7.3 | |
| Calcium (Ca) | 11,500 | 220 | *MPL |
| Magnesium (Mg) | Nil | 12 | |
| Chlorides (Cl) | 147,000 | 400 | |
| Sulfates ($SO_4$) | ND | 150 | |
| Bicarbonates ($HCO_3$) | ND | 195 | |
| Soluble Iron (Fe) | ND | Nil | |
| API Gr. of Oil | 35.0 @ 60°F. | -- | |
| | | | |
| | | | |

Remarks: Sample from Young Deep Unit #2 had insufficient water available for a complete analysis.

*Milligrams per liter

Respectfully submitted,

Analyst: Brewer

HALLIBURTON COMPANY

cc:

By W. L. Brewer
CHEMIST

NOTICE

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USE OF THIS REPORT

**HEYCO** **HARVEY E. YATES COMPANY**

**PETROLEUM PRODUCERS**

P O BOX 1933 ONE SUNWEST CENTRE 505/623-6601

ROSWELL, NEW MEXICO 88201

February 5, 1986

Hobbs Daily News Sun
201 North Thorp
Legal Department
Hobbs, New Mexico 88240

Dear Sir:

Please print the attached legal notice at your soonest possible date in the legal section of your paper. If there are any questions, please contact me at 1-505-623-6601.

Please forward a copy of the publication for documentation to my office at the address above.

Sincerely yours,

Layne Collis

for Ray F. Nokes
Prod. Manager/Prod. Engineer

RFN:lc

NEWS PAPER RELEASE
(Lea County, New Mexico)

Harvey E. Yates Company
P. O. Box 1933
Roswell, New Mexico 88201
Phone No. 1-505-623-6601

Contact Party: Ray F. Nokes
Prod. Manager/Prod. Engineer

Harvey E. Yates Company proposes to expand the pilot injection project of the Young Deep Unit by injecting into the Young Deep Unit #5. The Young Deep Unit #5 federal lease number NM-16350 is located 1980' FEL & 660' FNL of Section 10, T-18S, R-32E, N.M.P.M., Lea County, New Mexico.

Ogallaha water will be injected at a rate of approximately 2200 barrels per day at not higher than 1696 psig into the North Young Bone Springs pool at a depth of 8478' to 8493'.

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

**AFFIDAVIT OF PUBLICATION**

State of New Mexico,

County of Lea.

I, _____

Robert L. Summers

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not in a supplement thereof for a period

of _____

One weeks.

Beginning with the issue dated

February 11, 19 86

and ending with the issue dated

February 11, 19 86

Robert L. Summers
Publisher.

Sworn and subscribed to before me this 11 day of February, 19 86

Vera Murphy
Notary Public.

My Commission expires

Nov. 14, 1988
(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

FEB 13 RECD

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**LEGAL NOTICE**
**FEBRUARY 11, 1986**
(Lea County, New Mexico)
Harvey E. Yates Company
P.O. Box 1933
Roswell, New Mexico 88201
Phone No. 1-505-623-6601
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Prod. Manager/Prod. Engineer

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STATE OF NEW MEXICO
# ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

TONEY ANAYA
GOVERNOR

March 3, 1986

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88240
(505) 393-6161

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RE: Proposed:
MC_____
DHC_____
NSL_____
NSP_____
SWD_____
WFX_____
PMX x [redacted] 141

Gentlemen:

I have examined the application for the:

| Harvey E. Yates Company | Young Deep Unit #5-B | 10-18-32 |
|---|---|---|
| Operator | Lease & Well No. Unit | S-T-R |

and my recommendations are as follows:

OK -- Jerry Sexton

Yours very truly,

Jerry Sexton
Supervisor, District 1

/mc