



Midland Division
Exploration and Production

Conoco Inc.
10 Desta Drive West
Midland, TX 79705-4514
(915) 686-5400

December 21, 1990

Mr. Michael Stogner
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

RECEIVED

DEC 22 1990

OIL CONSERVATION DIVISION

Dear Mr. Stogner:

Request for Examiner Hearing
January 24, 1991 for Approval to
Create a New Oil and Gas Pool,
Special Pool Rules, and Contraction
of the Blinebry and Warren Tubb Pool,
Lea County, New Mexico

- (1) Conoco seeks the creation of a new oil and gas pool for Blinebry and Tubb production to be designated the Warren Blinebry-Tubb Oil and Gas Pool comprising the following described acreage in Lea County, New Mexico:

TOWNSHIP 20 SOUTH, RANGE 38 EAST

Section 22: S2/S2
Section 26: All
Section 27: All
Section 33: All
Section 34: All
Section 35: N2/N2

- (2) Conoco further proposes that the vertical limits of this pool be defined from the top of the Blinebry Pool (75' above the Blinebry Marker) down to the base of the Warren Tubb Pool (top of Drinkard). These vertical limits are specifically identified in Warren Unit Well No. 37, located in Unit J, Section 27, T-20S, R-38E, with the Blinebry top at 5865' and the Tubb base at 6741'.
- (3) The creation of this new pool is for the purpose of expanding the current North Blinebry Waterflood Secondary Recovery Project to include all of the above described horizontal acreage and vertical interval.
- (4) Conoco also seeks the promulgation of special rules and regulations for the new Warren Blinebry-Tubb Oil and Gas Pool including the establishment of a gas-oil ratio limitation of 4,000 cubic feet of gas per barrel of oil.
- (5) In conjunction with the proposed pool creation, Conoco further seeks the concomitant contraction of the Blinebry Oil and Gas Pool and the Warren Tubb Gas Pool by the following described acreage:

TOWNSHIP 20 SOUTH, RANGE 38 EAST

Section 22: S2/S2 Section 26: All Section 27: All Section 33: All Section 34: All
Section 35: N2/N2

(6) It is proposed that this application be set for hearing at the January 24, 1991 docket.

Very truly yours,

A handwritten signature in cursive script that reads "Jerry W. Hoover". The signature is fluid and written in dark ink.

Jerry W. Hoover
Regulatory Coordinator

JWH/tm



Midland Division
Exploration and Production

Conoco Inc.
10 Desta Drive West
Midland, TX 79705-4514
(915) 686-5400

December 21, 1990

Mr. Michael Stogner
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

RECEIVED

20 11 90
OIL CONSERVATION DIVISION

Dear Mr. Stogner:

Request for Examiner Hearing January 24,
1991 for Approval of Expansion and
Contraction of Conoco's North Blinebry
Waterflood Project Located in the
Warren Unit, Lea County, New Mexico

16220

- (1) With the filing of the attached C-108, Conoco seeks approval to expand its Blinebry Waterflood Project in the Warren Unit for water injection into 20 additional wells in Sections 22, 26, 27, 33, 34, and 35, T-20S, R-38E, Lea County, New Mexico.

Of these 20 proposed injectors 14 will be converted producing wells and 6 will be newly drilled wells.

- (2) The existing Blinebry Waterflood was authorized by Division Order No. R-6906. This project, as approved, consisted of nine injection wells, located in Sections 33 and 34, T-20S, R-38E and in Sections 3 and 4, T-21S, R-38E, for water injection and oil and gas recovery from the Blinebry Pool.
- (3) Conoco proposes to expand this project to include the following described acreage in Lea County, New Mexico:

TOWNSHIP 20 SOUTH, RANGE 38 EAST

Section 22: S2/S2
Section 26: All
Section 27: All
Section 33: All
Section 34: All
Section 35: N2/N2

- (4) Conoco further seeks approval to expand this project for water injection into both the Blinebry and Tubb formations in downhole-commingled operations of the above described acreage.
- (5) Conoco also requests that provisions be included in the OCD Order for administrative approval of future expansions of this project.

- (6) It is also proposed that the initial Blinebry Waterflood as authorized by Division Order No. R-6906, be contracted for injection into two wells in the following locations:

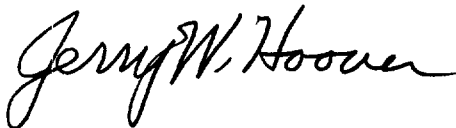
TOWNSHIP 21 SOUTH, RANGE 38 EAST

<u>Well Name</u>	<u>Location</u>	<u>Operator</u>
Hawk B-3 No. 15	Unit B, Sec. 3	Conoco Inc.
State Well No. 6	Unit D, Sec. 2	Southland Royalty

The two locations, as described above, were unitized into Shell's Northeast Drinkard Unit and are no longer under Conoco operations.

- (7) This proposed waterflood project expansion should result in the recovery of otherwise unrecoverable oil, thereby preventing waste, and otherwise protecting correlative rights.
- (8) Conoco requests that this application be set for hearing at the January 24, 1991 docket.

Very truly yours,



Jerry W. Hoover
Regulatory Coordinator

JWH/tm

APPLICATION FOR AUTHORIZATION TO INJECT

Case 10220

- I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no
- II. Operator: Conoco Inc.
Address: 10 Desta Drive West, Midland, TX 79705
Contact party: Jerry W. Hoover Phone: (915) 686-6548
- 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-6906.
- 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: Jerry W. Hoover Title Regulatory Coordinator
Signature: *Jerry W. Hoover* Date: 12/21/90
- * 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.

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.

North Blinebry Waterflood Expansion

ATTACHMENT TO FORM C-108 NOS. VII, VIII, IX, X, XI, XII

VII

1. Proposed average and maximum daily rate:

12,500 BWPD average (500 BWPD/well)
17,500 BWPD total maximum (700 BWPD/well)

2. System is open. Water is treated for bacteria and salinity increased.

3. Proposed average and maximum injection pressure:

1700 psi average pressure
2000 psi maximum pressure

4. Injection fluid will be treated City of Hobbs sewerage effluent. Analysis of this water and compatibility tests with the Blinebry/Tubb commingled formation water are attached.
5. N/A

VIII

The proposed zones of injection are the Blinebry and Tubb formations. These zones are located at -2300' SSD and -2880' SSD respectively. The Blinebry zone is 570' and Tubb zone is 300'. Both zones are composed of dolomite and interbedded dolomite and anhydrite. The Blinebry zone is composed of primarily fine granular to fine crystalline silty dolomite with numerous small anhydrite inclusions and shale partings. The Tubb is characterized by dolomite which is very similar to the Blinebry, however, it contains a sandy dolomite interval. Both zones exhibit intercrystalline and intergranular porosity and fairly low permeability (5 md).

IX

Proposed Stimulation Program: See Attached

X

Logs and test data were submitted when the well was initially completed.

XI

Chemical analysis of fresh water wells: See Attached

XII

Yes, there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

70	660' FSL & 660' FEL	22	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing

Size 8-5/8" Cemented with 718 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 5-1/2" Cemented with 2814 sx.
TOC Surface feet determined by circ.
Hole size 7-7/8"
Total Depth 6400'

Injection Interval

5975 feet to 6256 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Baker AD-1 packer within 100' of top perforation.
(brand and model)

Other Data

- Name of the Injection formation Blinebry
- Name of Field or Pool (if applicable) NMFU
- Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and equip Blinebry
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Yates - 2854', Seven Rivers - 3128', Queen - 3693', Penrose - 3844', Grayburg - 4025', San Andres - 4325', Glorieta - 5578', Blinebry - 5975'.

WELLBORE DIAGRAM

WARREN UNIT NO. 70

NEW MEXICO FEDERAL UNIT

GLE: 3555'

KBE: 3571'

SURFACE CASING
8 5/8", 24#, K-55, @ 1500'
TOC @ SURFACE

TUBING
2 3/8", 4.7#, J-55, EUE, IPC

PACKER
5 1/2", BAKER AD-1, SET WITHIN
100' OF TOP PERFORATION

PRODUCTION CASING
5 1/2", 15.5#, K-55, @ 6380'
TOC @ SURFACE

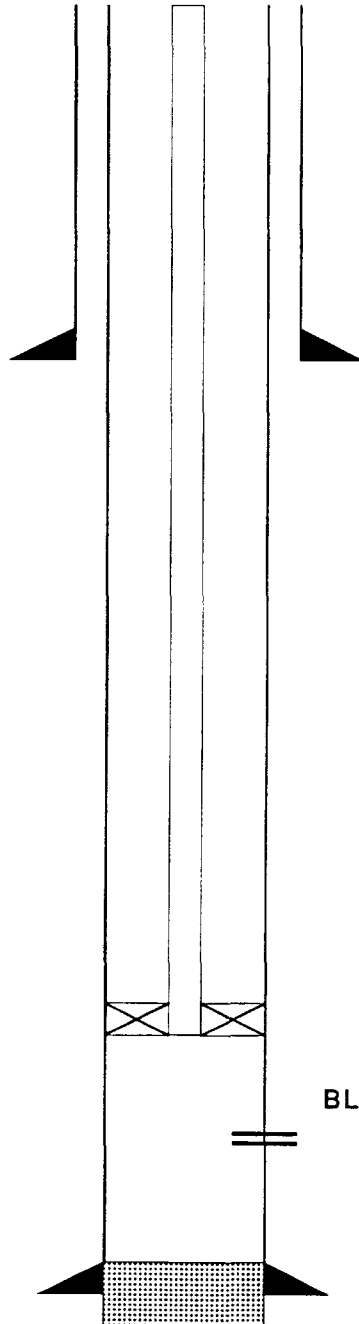
BLINEBRY PERFS
5975'-6256'

PBTD: 6323'

TD: 6400'

BY: T. C. ADUDELL

DATE: 12/12/90



Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

56	660' FNL & 1980' FEL	26	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing

Size 9-5/8 " Cemented with 600 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 1700 sx.
TOC 1640 feet determined by temp. survey
Hole size 8-3/4"
Total Depth 6850'

Injection Interval

5954 feet to 6796 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

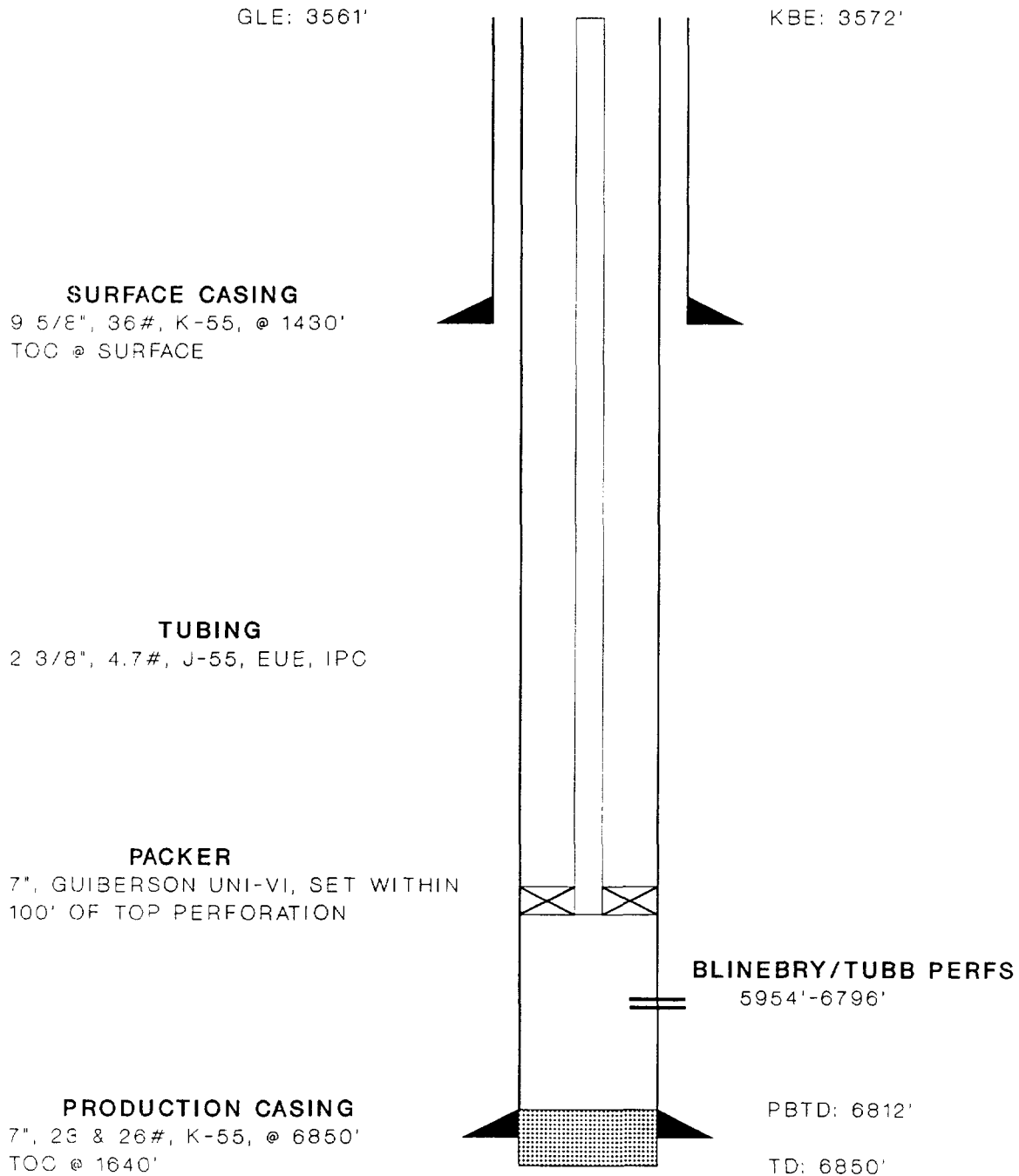
Other Data

- Name of the Injection formation Blinebry/Tubb
- Name of Field or Pool (If applicable) NMFU
- Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and equip Blinebry/Tubb dual
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Yates - 2868', Seven Rivers - 3130',
Queen - 3690', Penrose - 3842', Grayburg - 4033', San Andres - 4323',
Glorieta - 5555', Blinebry - 5954', Tubb - 6511', Drinkard - 6796'

WELLBORE DIAGRAM

WARREN UNIT NO. 56

NEW MEXICO FEDERAL UNIT



BY: T. C. ADUDELL

DATE: 12/14/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

57	660' FNL & 660' FWL	26	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing

Size 9-5/8 " Cemented with 600 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 1850 sx.
TOC Surface feet determined by circ.
Hole size 8-3/4"
Total Depth 6820'

Injection Interval

5928 feet to 6773 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

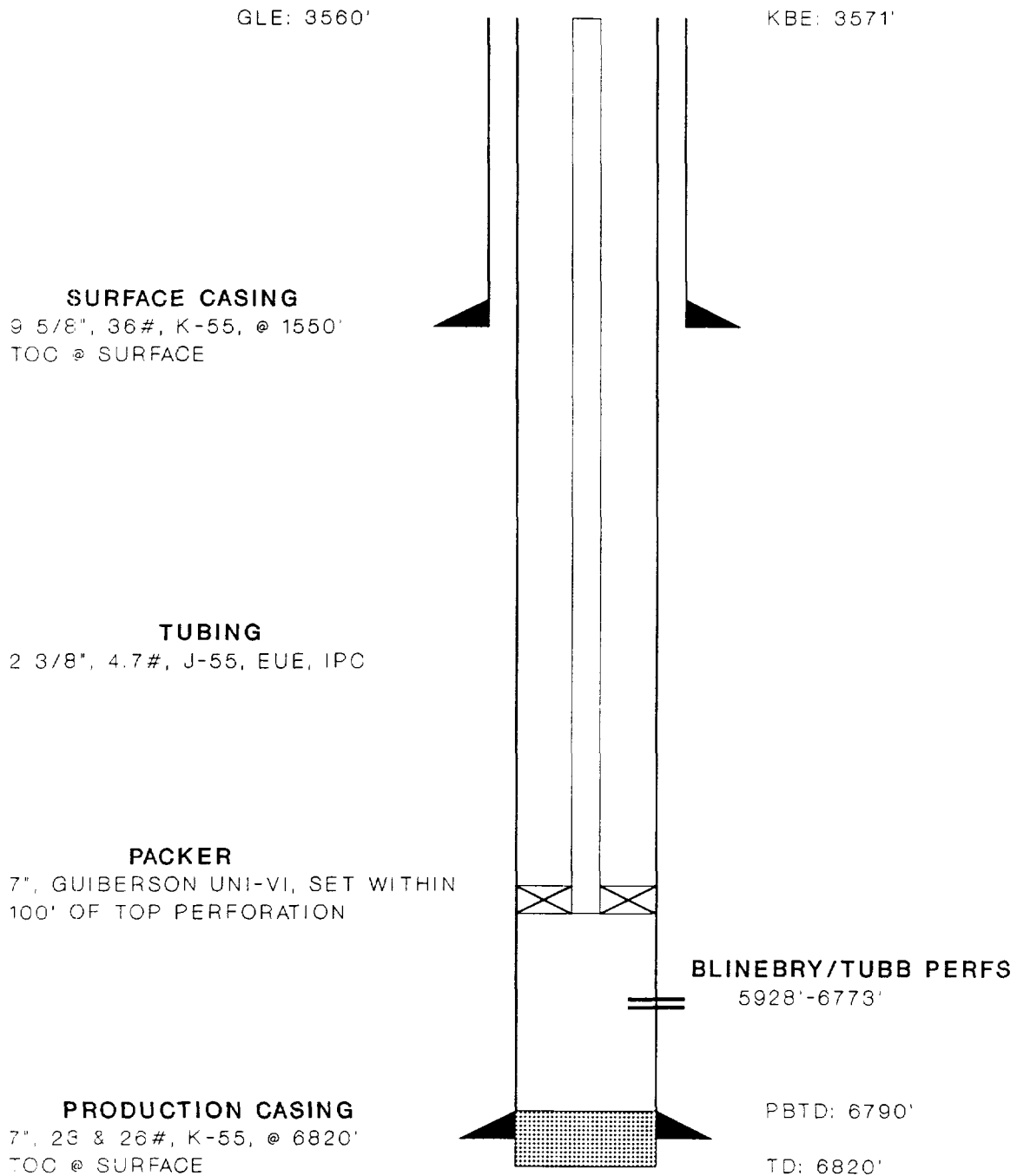
Other Data

- Name of the injection formation Blinebry/Tubb
- Name of Field or Pool (If applicable) NMFU
- Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and equip Blinebry/Tubb dual
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Yates - 2845', Seven Rivers - 3115', Queen - 3677', Penrose - 3828', Grayburg - 4011', San Andres - 4300' Glorieta - 5542', Blinebry - 5928', Tubb - 6485', Drinkard - 6773'.

WELLBORE DIAGRAM

WARREN UNIT NO. 57

NEW MEXICO FEDERAL UNIT



BY: T. C. ADUDDALL

DATE: 12/14/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.		Warren Unit		
OPERATOR		LEASE		
48	2030' FNL & 1980' FWL	26	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing

Size 9-5/8 " Cemented with 630 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 2425 sx.
TOC Surface feet determined by circ.
Hole size 8-3/4"
Total Depth 7070'

Injection Interval

5920 feet to 6744 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

Other Data

1. Name of the injection formation Blinebry/Tubb
2. Name of Field or Pool (If applicable) NMFU
3. Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Test Drinkard. Drill
and equip Blinebry/Tubb dual.
4. Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or
bridge plug(s) used) Yes. Drinkard 6960'-6969'. CIBP set @ 6900' w/10'
cmt. on top.
5. Give the depth to and name of any overlying and/or underlying oil or gas
zones (pools) in this area. Yates - 2848', Seven Rivers - 3111',
Queen - 3669', Penrose - 3822', Grayburg - 4006', San Andres - 4292'
Glorieta - 5522', Blinebry - 5911', Tubb - 6460', Drinkard - 6744'. Abo - 7012'

WELLBORE DIAGRAM

WARREN UNIT NO. 48

NEW MEXICO FEDERAL UNIT

GLE: 3559'

KBE: 3570'

SURFACE CASING

9 5/8", 36#, K-55, @ 1562'
TOC @ SURFACE

TUBING

2 3/8", 4.7#, J-55, EUE, IPC

PACKER

7", GUIBERSON UNI-VI, SET WITHIN
100' OF TOP PERFORATION

BLINEBRY/TUBB PERFS

5920'-6744'

CIBP SET @ 6900'

DRINKARD PERFS

6960'-6969'

PRODUCTION CASING

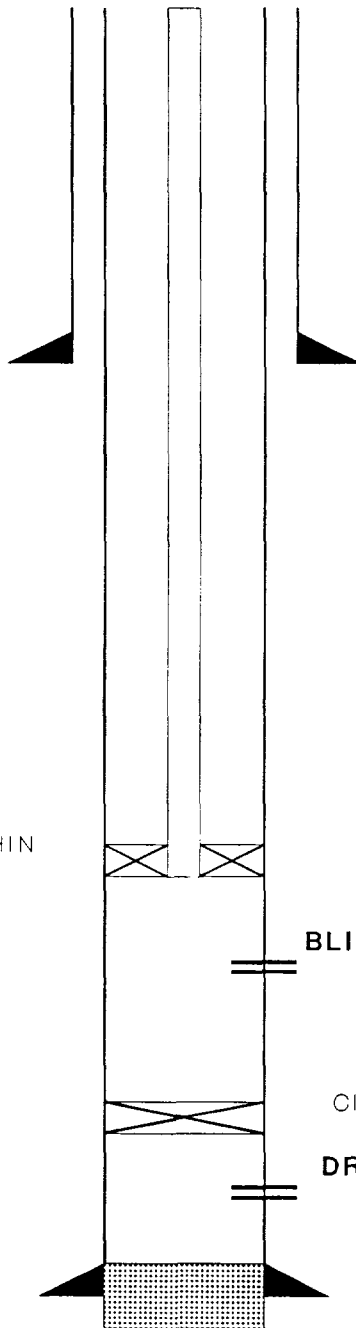
7", 23#, K-55, @ 7065'
TOC @ SURFACE

PBTD: 6900'

TD: 7070'

BY: T. C. ADUDDALL

DATE: 12/18/90



Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.		Warren Unit		
OPERATOR		LEASE		
49	1980' FSL & 1980' FEL	26	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing
Size 9-5/8 " Cemented with 630 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing
Size 7 " Cemented with 2000 sx.
TOC Surface feet determined by circ.
Hole size 8-3/4"
Total Depth 7000'

Injection Interval
5950 feet to 6782 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

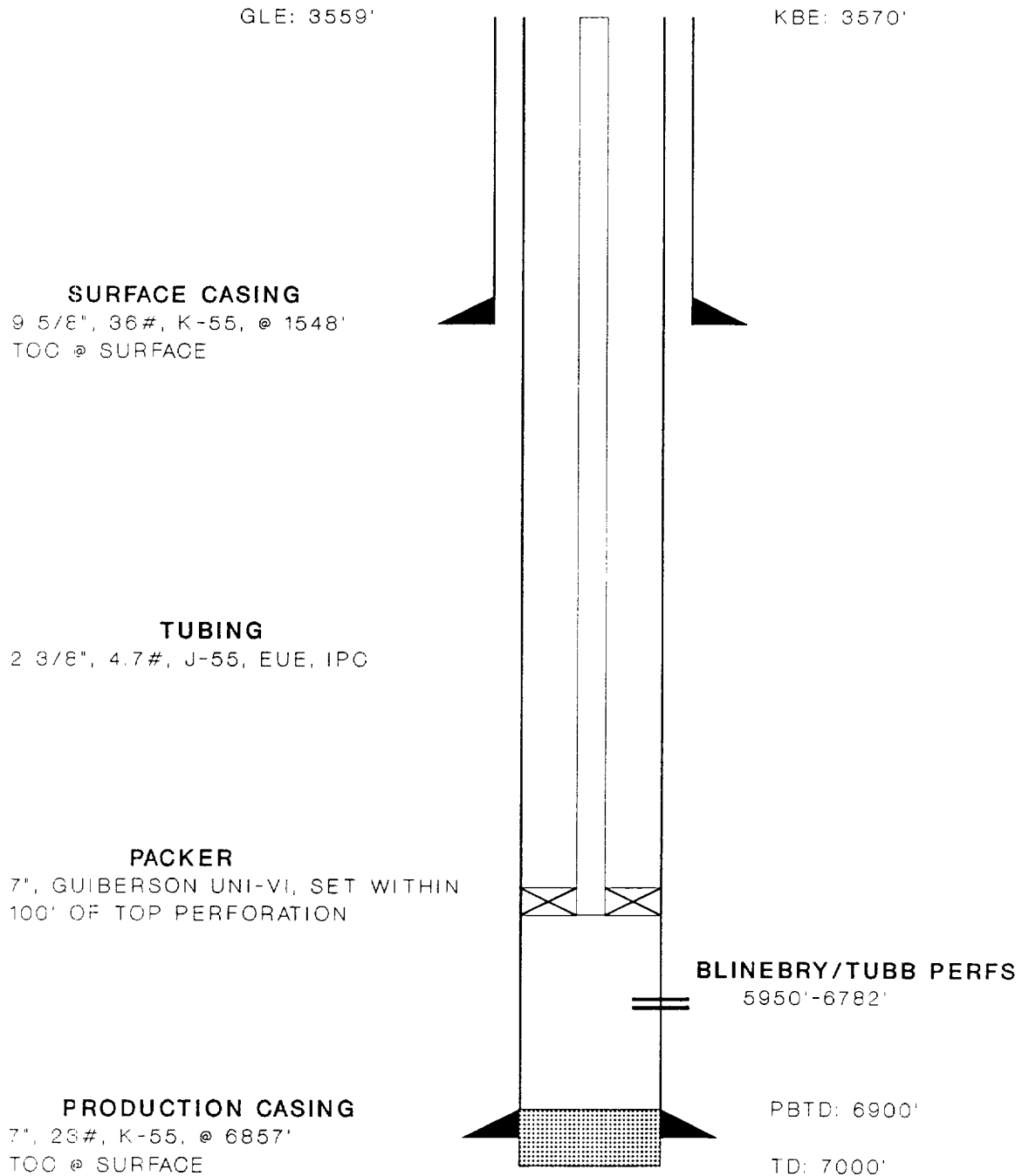
Other Data

- Name of the injection formation Blinebry/Tubb
- Name of Field or Pool (if applicable) NMFU
- Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and equip Blinebry/Tubb dual.
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Yates - 2855', Seven Rivers - 3120', Queen - 3680', Penrose - 3832', Grayburg - 4022', San Andres - 4308', Glorieta - 5534', Blinebry - 5935', Tubb - 6500', Drinkard - 6782'.

WELLBORE DIAGRAM

WARREN UNIT NO. 49

NEW MEXICO FEDERAL UNIT



BY: T. G. ADUDDALL

DATE: 12/14/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

59	1980' FSL & 660' FWL	26	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing

Size 9-5/8 " Cemented with 600 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 1250 sx.
TOC Surface feet determined by circ.
Hole size 8-3/4"
Total Depth 6850'

Injection interval

5905 feet to 6738 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

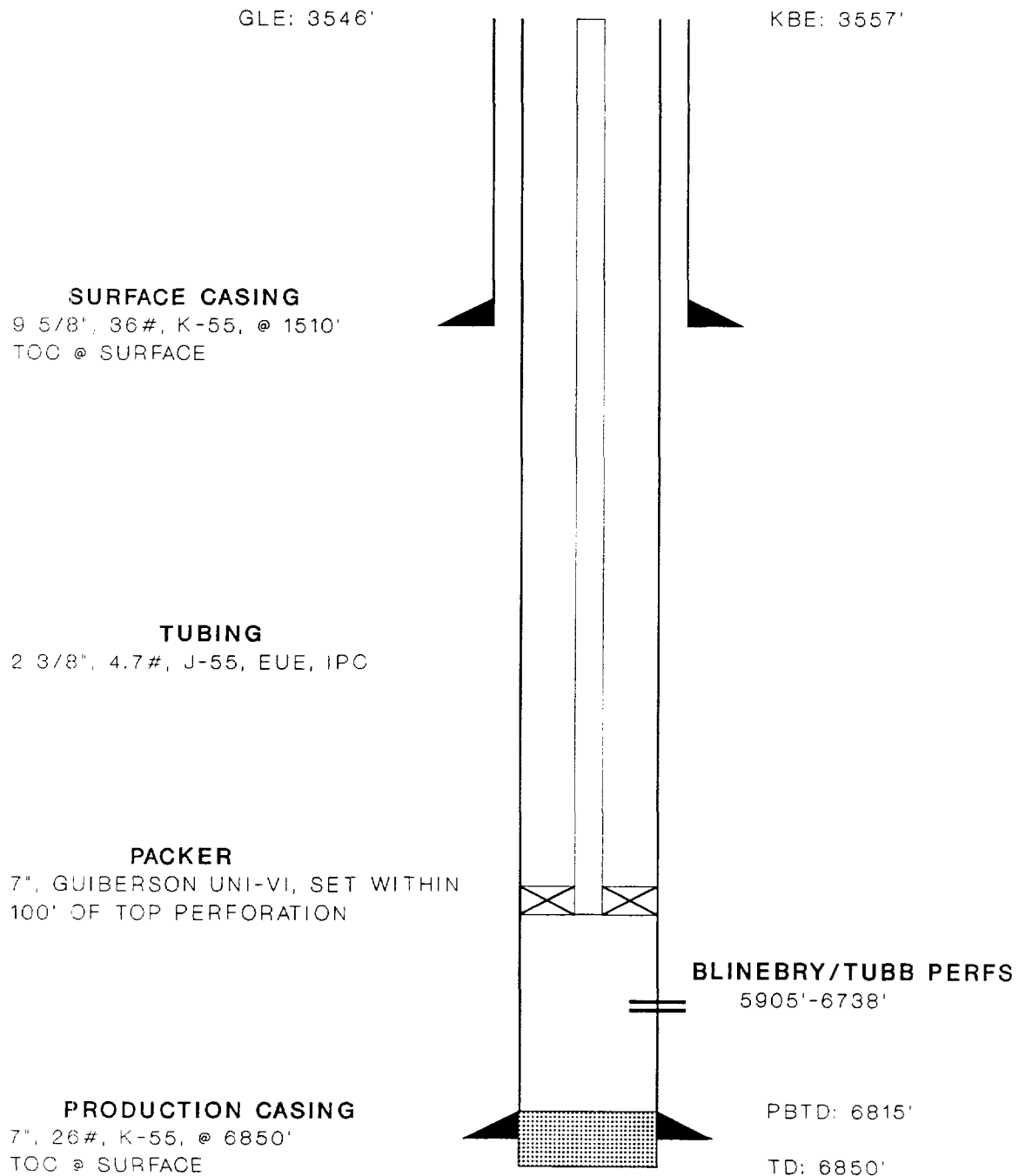
Other Data

- Name of the injection formation Blinebry/Tubb
- Name of Field or Pool (If applicable) NMFU
- Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and
equip Blinebry/Tubb dual.
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or
bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas
zones (pools) in this area. Yates - 2822', Seven Rivers - 3090',
Queen - 3650', Penrose - 3800', Grayburg - 3995', San Andres - 4270'
Glorieta - 5510', Blinebry - 5896', Tubb - 6448', Drinkard - 6738'.

WELLBORE DIAGRAM

WARREN UNIT NO. 59

NEW MEXICO FEDERAL UNIT



BY: T. C. ADUDELL

DATE: 12/14/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.		Warren Unit		
OPERATOR		LEASE		
45	660' FSL & 1980' FWL	26	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

See Attached

Tubular Data

Surface Casing

Size 9-5/8 " Cemented with 625 sx.
TOC Surface feet determined by clrc.
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 2025 sx.
TOC Surface feet determined by clrc.
Hole size 8-3/4"
Total Depth 6995'

Injection Interval

5920 feet to 6751 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

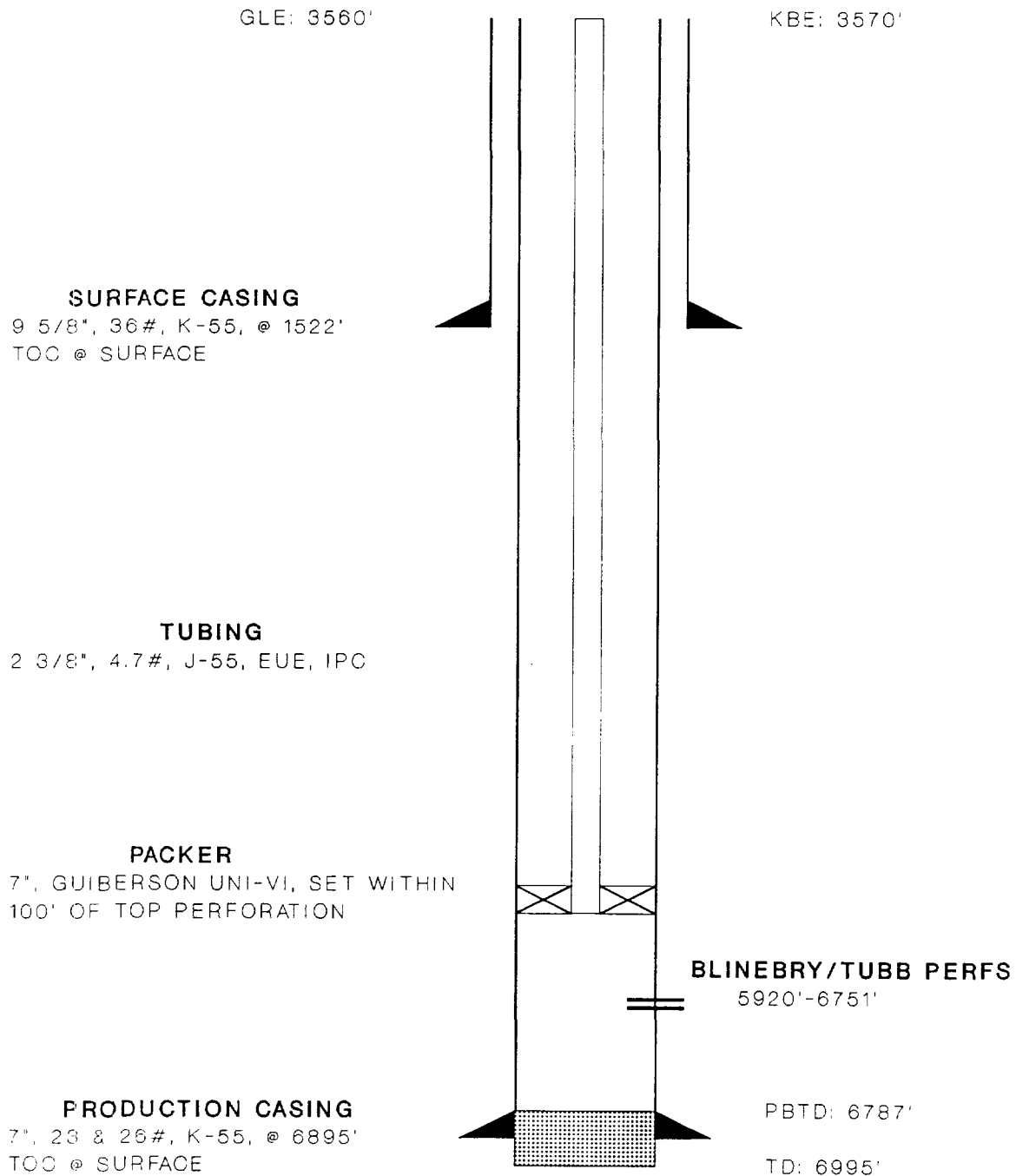
Other Data

1. Name of the injection formation Blinebry/Tubb
2. Name of Field or Pool (if applicable) NMFU
3. Is this a new well drilled for Injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and
equip Blinebry/Tubb dual.
4. Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or
bridge plug(s) used) No
5. Give the depth to and name of any overlying and/or underlying oil or gas
zones (pools) in this area. Yates - 2839', Seven Rivers - 3103',
Queen - 3662', Penrose - 3815', Grayburg - 4000', San Andres - 4280'
Glorieta - 5510', Blinebry - 5912', Tubb - 6467', Drinkard - 6751'.

WELLBORE DIAGRAM

WARREN UNIT NO. 45

NEW MEXICO FEDERAL UNIT



BY T. C. ADUDELL

DATE: 12/14/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

33	1980' FNL & 1980' FWL	27	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing

Size 9-5/8 " Cemented with 1020 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 1225 sx.
TOC 2570 feet determined by CBL
Hole size 8-3/4"
Total Depth 7050'

Injection Interval

5900 feet to 6710 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

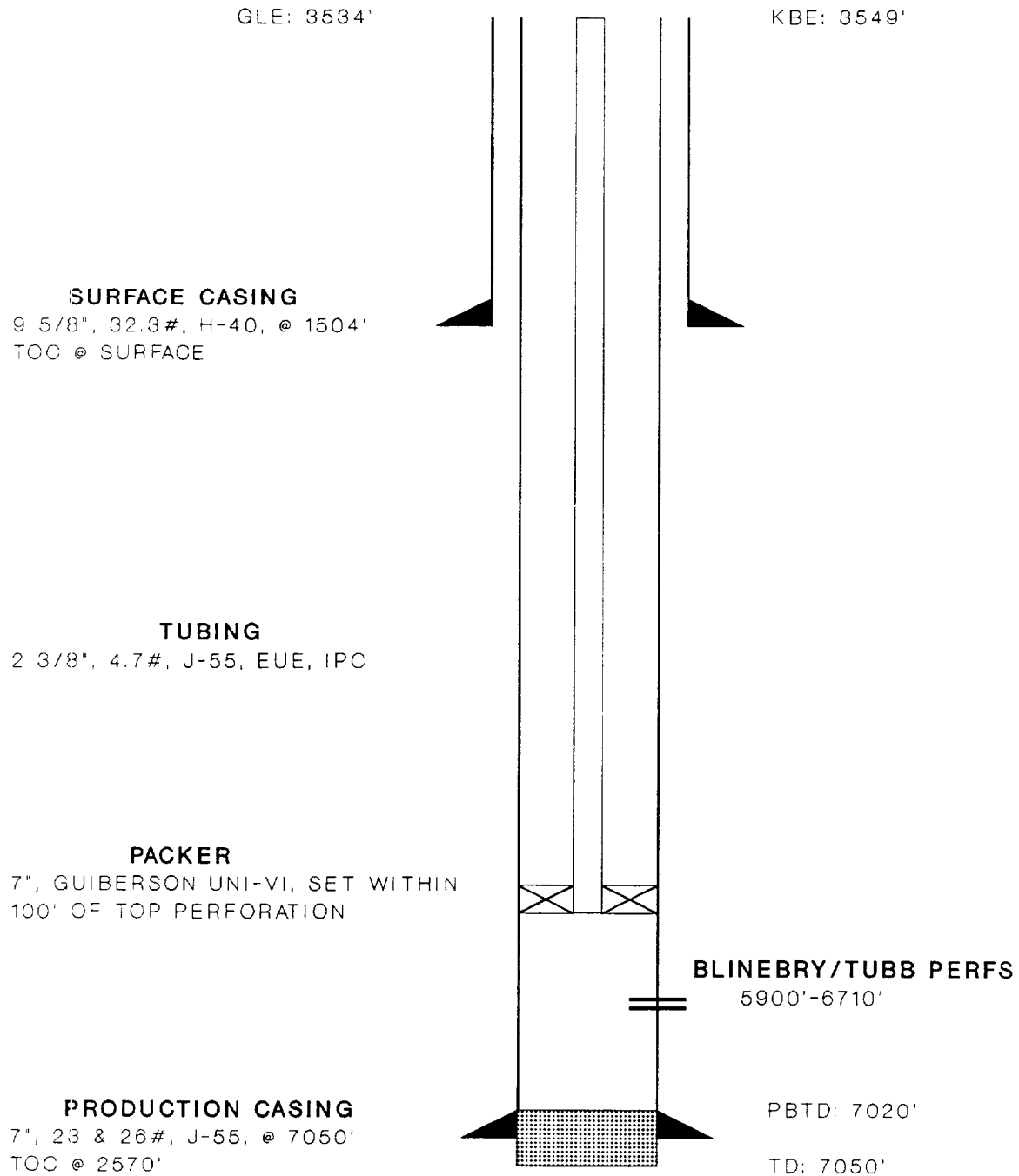
Other Data

- Name of the injection formation Blinebry/Tubb
- Name of Field or Pool (if applicable) NMFU
- Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and
equip Blinebry/Tubb dual.
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or
bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas
zones (pools) in this area. Yates - 2790', Seven Rivers - 3052',
Queen - 3612', Penrose - 3760', Grayburg - 3945', San Andres - 4223'
Glorieta - 5470', Blinebry - 5934', Tubb - 6425', Drinkard - 6726', Abo - 7022'

WELLBORE DIAGRAM

WARREN UNIT NO. 33

NEW MEXICO FEDERAL UNIT



BY: T. C. ADUDELL

DATE: 12/14/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

37	1980' FSL & 1980' FEL	27	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

See Attached

Tubular Data

Surface Casing

Size 9-5/8 " Cemented with 1025 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 1450 sx.
TOC 2450 feet determined by CBL
Hole size 8-3/4"
Total Depth 7060'

Injection Interval

5870 feet to 6741 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

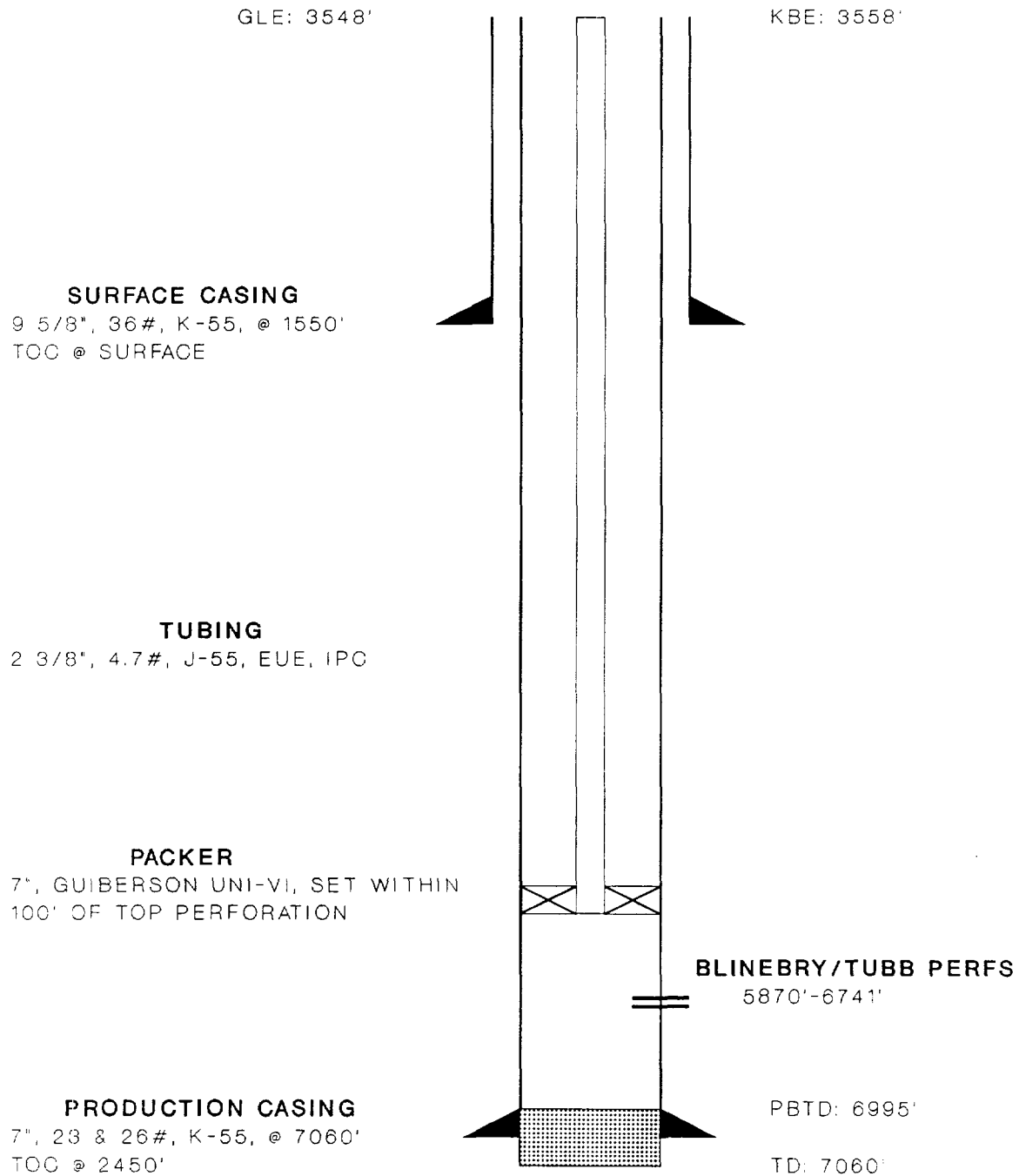
Other Data

1. Name of the injection formation Blinebry/Tubb
2. Name of Field or Pool (if applicable) NMFU
3. Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and
equip Blinebry/Tubb dual.
4. Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or
bridge plug(s) used) No
5. Give the depth to and name of any overlying and/or underlying oil or gas
zones (pools) in this area. Yates - 2796', Seven Rivers - 3057',
Queen - 3614', Penrose - 3768', Grayburg - 3948', San Andres - 4213'
Glorieta - 5475', Blinebry - 5940', Tubb - 6437', Drinkard - 6741', Abo - 7014'.

WELLBORE DIAGRAM

WARREN UNIT NO. 37

NEW MEXICO FEDERAL UNIT



BY: T. C. ADUDELL

DATE: 12/14/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.		Warren Unit		
OPERATOR		LEASE		
41	660' FSL & 1980' FWL	27	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

See Attached

Tubular Data

Surface Casing

Size 9-5/8" Cemented with 625 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7" Cemented with 1200 sx.
TOC 2500 feet determined by CBL
Hole size 8-3/4"
Total Depth 7001'

Injection Interval

5870 feet to 6666 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

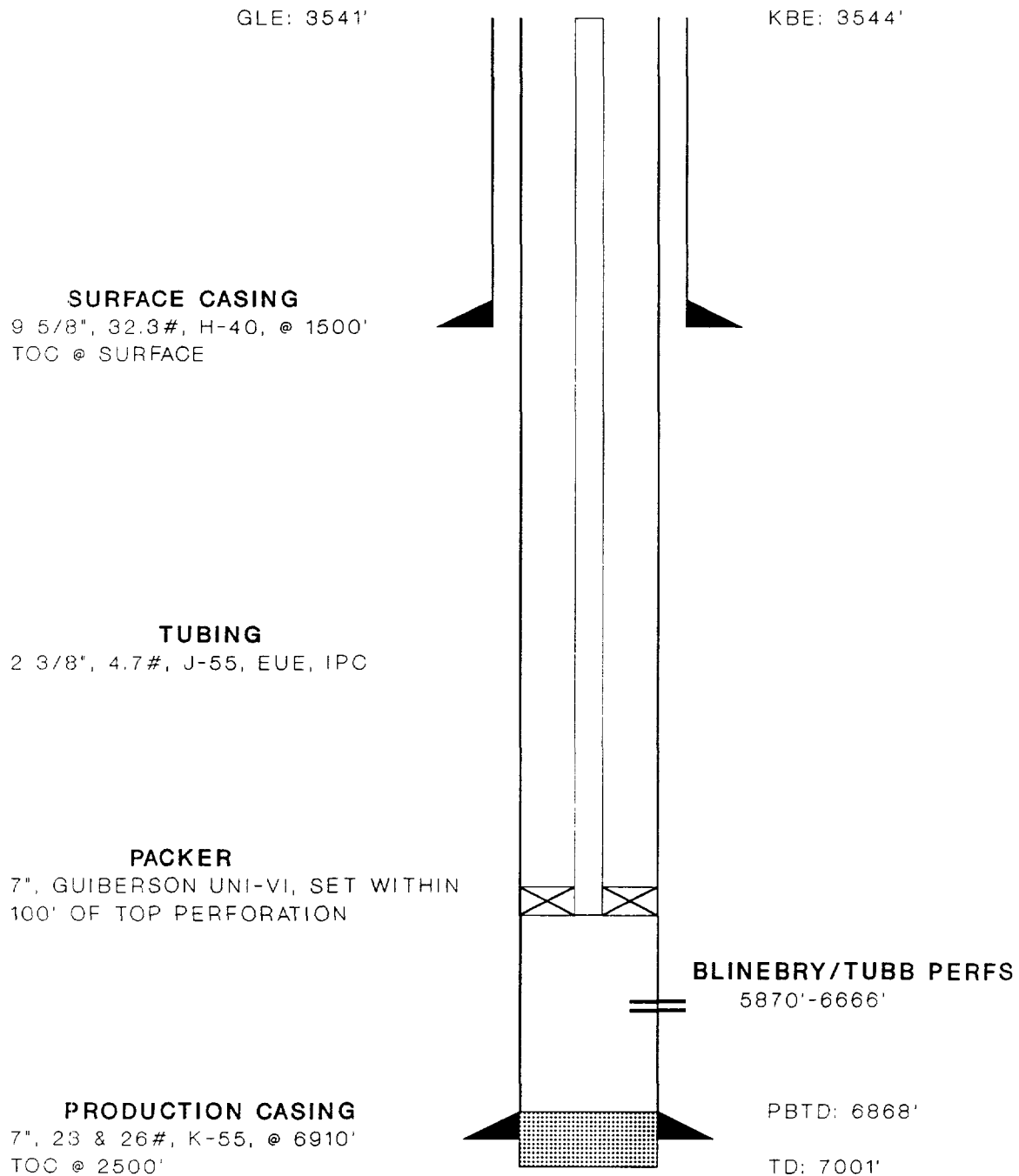
Other Data

- Name of the injection formation Blinebry/Tubb
- Name of Field or Pool (if applicable) NMFU
- Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and
equip Blinebry/Tubb dual.
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or
bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas
zones (pools) in this area. Yates - 2743', Seven Rivers - 3001',
Queen - 3560', Penrose - 3715', Grayburg - 3898', San Andres - 4172'
Glorieta - 5396', Blinebry - 5871', Tubb - 6363', Drinkard - 6666'

WELLBORE DIAGRAM

WARREN UNIT NO. 41

NEW MEXICO FEDERAL UNIT



BY: T. C. ADUDELL

DATE: 12/14/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

32	660' FSL & 660' FEL	27	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing

Size 9-5/8 " Cemented with 660 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 1200 sx.
TOC 2600 feet determined by CBL
Hole size 8-3/4"
Total Depth 6825'

Injection Interval

5920 feet to 6767 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

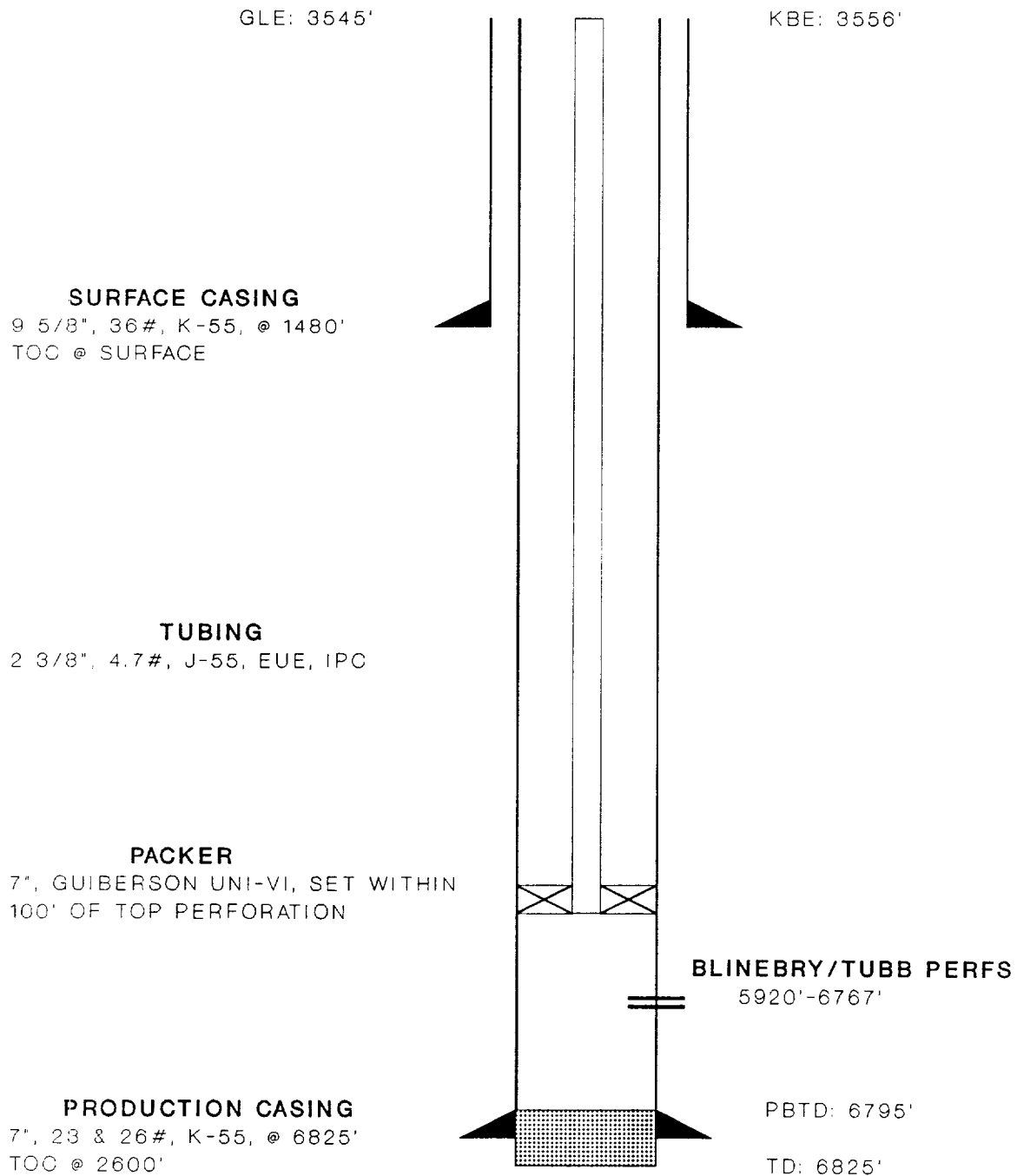
Other Data

- Name of the injection formation Blinebry/Tubb
- Name of Field or Pool (if applicable) NMFU
- Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and
equip Blinebry/Tubb dual.
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or
bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas
zones (pools) in this area. Yates - 2830', Seven Rivers - 3102',
Queen - 3659', Penrose - 3811', Grayburg - 3996', San Andres - 4280'
Glorieta - 5514', Blinebry - 5905', Tubb - 6471', Drinkard - 6767

WELLBORE DIAGRAM

WARREN UNIT NO. 32

NEW MEXICO FEDERAL UNIT



BY: T. C. ADUDELL

DATE: 12/14/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

84	660' FNL & 1920' FWL	33	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing

Size 8-5/8 " Cemented with 696 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 5-1/2 " Cemented with 2350 sx.
TOC Surface feet determined by circ.
Hole size 7-7/8"
Total Depth 6170'

Injection Interval

6000 feet to 6084 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Baker AD-1 packer within 100' of top perforation.
(brand and model)

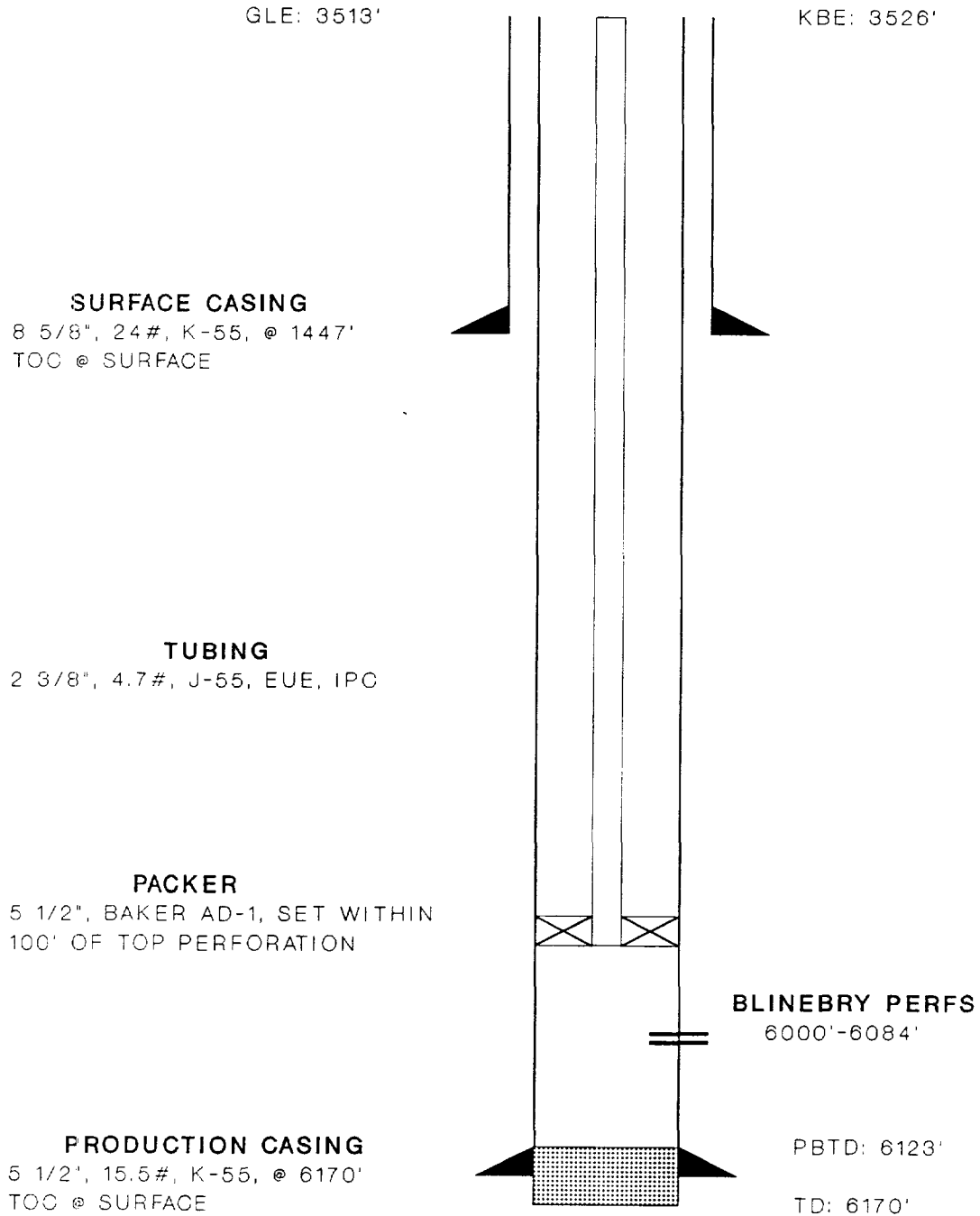
Other Data

- Name of the injection formation Blinebry
- Name of Field or Pool (if applicable) NMFU
- Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and equip Blinebry
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Yates - 2710', Seven Rivers - 2980', Queen - 3549', Penrose - 3698', Grayburg - 3882', San Andres - 4145' Glorieta - 5370', Blinebry - 5785'

WELLBORE DIAGRAM

WARREN UNIT NO. 84

NEW MEXICO FEDERAL UNIT



BY: T. O. ADUDDALL

DATE: 12/14/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

39	660' FNL & 1980' FEL	34	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing
Size 9-5/8 " Cemented with 700 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing
Size 7 " Cemented with 1225 sx.
TOC 2530 feet determined by CBL
Hole size 8-3/4"
Total Depth 7025'

Injection Interval
5870 feet to 6761 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

Other Data

- Name of the Injection formation Blinebry/Tubb
- Name of Field or Pool (if applicable) NMFU
- Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Test Tubb.
Drill and equip Blinebry.
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) Yes. Tubb 6580'-6716'. CIBP set @ 6275' w/1 sx cmt. on top.
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Yates - 2781', Seven Rivers - 3041', Queen - 3600', Penrose - 3750', Grayburg - 3939', San Andres - 4213' Glorieta - 5430', Blinebry - 5831', Tubb - 6445', Drinkard - 6762'.

WELLBORE DIAGRAM

WARREN UNIT NO. 39

NEW MEXICO FEDERAL UNIT

GLE: 3529'

KBE: 3540'

SURFACE CASING

9 5/8", 32.3#, H-40, @ 1525'
TOC @ SURFACE

TUBING

2 3/8", 4.7#, J-55, EUE, IPC

PACKER

7", GUIBERSON UNI-VI, SET WITHIN
100' OF TOP PERFORATION

PRODUCTION CASING

7", 23 & 26#, K-55, @ 7025'
TOC @ 2530'

BLINEBRY/TUBB PERFS

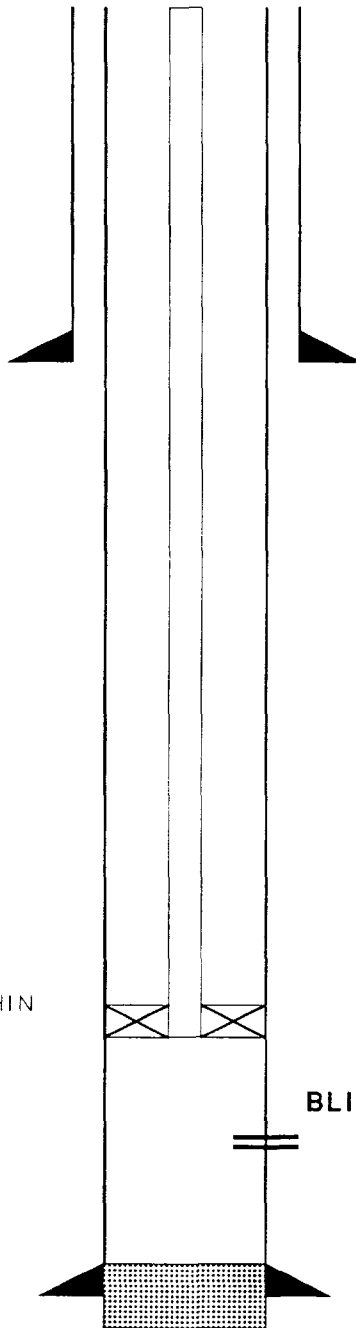
5870'-6761'

PBTD: 6900'

TD: 7025'

BY: T. C. ADUDELL

DATE: 12/14/90



Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

79	660' FNL & 660' FWL	35	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing

Size 9-5/8 " Cemented with 593 sx.
TOC 50 feet determined by temp. survey
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 2175 sx.
TOC Surface feet determined by circ.
Hole size 8-3/4"
Total Depth 6830'

Injection Interval

5900 feet to 6790 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

Other Data

1. Name of the injection formation Blinebry/Tubb
2. Name of Field or Pool (if applicable) NMFU
3. Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Drill and equip Tubb.
4. Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No.
on top.
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Yates - 2830', Seven Rivers - 2996', Queen - 3655', Penrose - 3810', Grayburg - 4002', San Andres - 4273', Glorieta - 5506', Blinebry - 5921', Tubb - 6479'

WELLBORE DIAGRAM

WARREN UNIT NO. 79

NEW MEXICO FEDERAL UNIT

GLE: 3549'

KBE: 3560'

SURFACE CASING

9 5/8", 36#, K-55, @ 1587'
TOC @ 50'

TUBING

2 3/8", 4.7#, J-55, EUE, IPC

PACKER

7", GUIBERSON UNI-VI, SET WITHIN
100' OF TOP PERFORATION

PRODUCTION CASING

7", 26#, K-55, @ 6830'
TOC @ SURFACE

BLINEBRY/TUBB PERFS

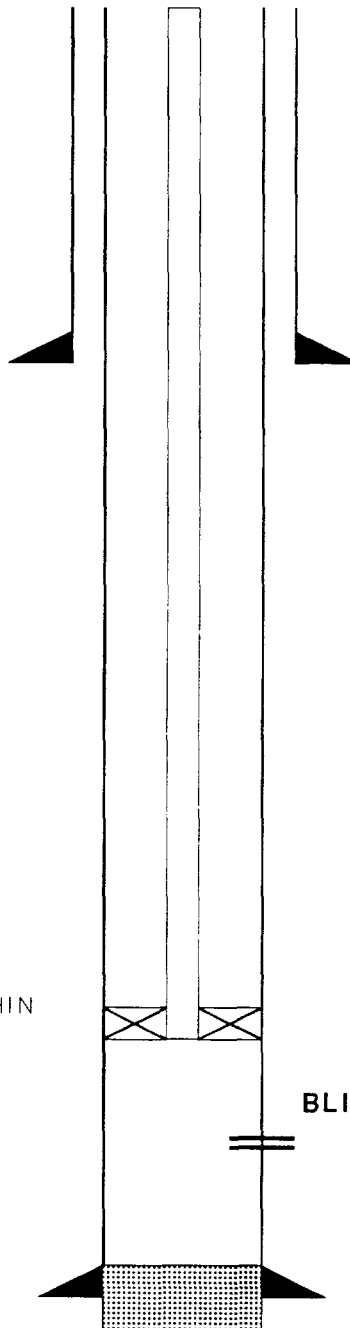
5900'-6790'

PBTD: 6820'

TD: 6830'

BY: T. C. ADUDDLELL

DATE: 12/14/90



Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

102	1980' FNL & 1980' FEL	34	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing

Size 9-5/8 " Cemented with 1350 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 3100 sx.
TOC Surface feet determined by circ.
Hole size 8-3/4"
Total Depth 6550'

Injection Interval

5905 feet to 6450 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Baker AD-1 packer within 100' of top perforation.
(brand and model)

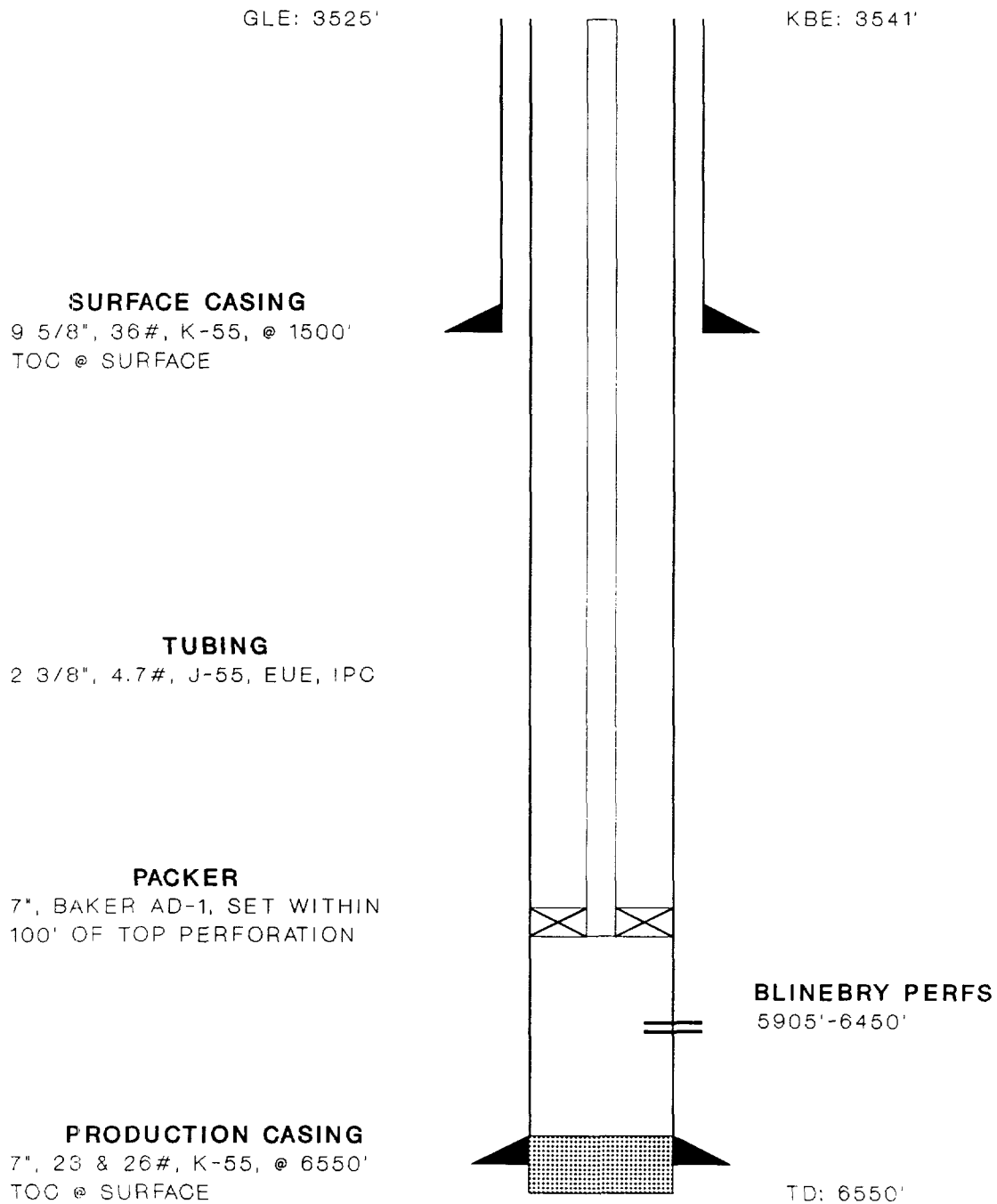
Other Data

- Name of the Injection formation Blinebry
- Name of Field or Pool (if applicable) NMFU
- Is this a new well drilled for injection? X Yes No
If no, for what purpose was the well originally drilled?
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Yates - 2795', Seven Rivers - 3060',
Grayburg - 3930', San Andres - 4215', Glorieta - 5415', Blinebry - 5905',
Tubb - 6450'.

WELLBORE DIAGRAM

WARREN UNIT NO. 102

NEW MEXICO FEDERAL UNIT



BY: T. C. ADUDDLELL

DATE: 12/17/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.		Warren Unit		
OPERATOR		LEASE		
103	1980' FNL & 660' FEL	26	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tubular Data

See Attached

Surface Casing

Size 9-5/8 " Cemented with 1350 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 3224 sx.
TOC Surface feet determined by circ.
Hole size 8-3/4"
Total Depth 6900'

Injection Interval

6041 feet to 6815 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

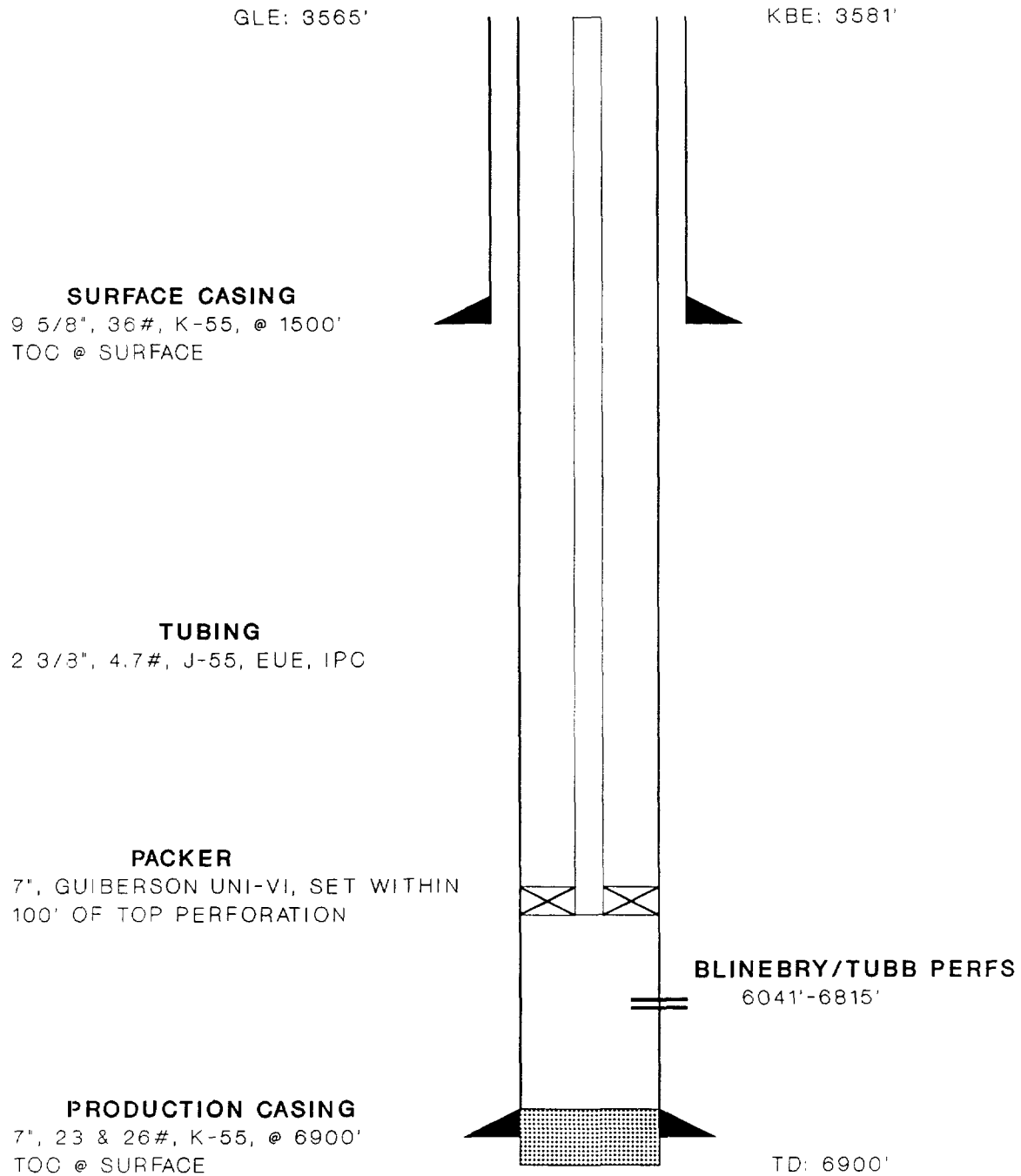
Other Data

- Name of the injection formation Blinebry/Tubb
- Name of Field or Pool (if applicable) NMFU
- Is this a new well drilled for injection? X Yes No
If no, for what purpose was the well originally drilled?
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Yates - 2880', Seven Rivers - 3140',
Grayburg - 4045', San Andres - 4300', Glorieta - 5555', Blinebry - 6041',
Tubb - 6540', Drinkard - 6815'.

WELLBORE DIAGRAM

WARREN UNIT NO. 103

NEW MEXICO FEDERAL UNIT



BY: T. C. ADUDELL

DATE: 12/17/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.	Warren Unit
OPERATOR	LEASE

104	660' FNL & 1980' FEL	27	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

See Attached

Tubular Data

Surface Casing

Size 9-5/8 " Cemented with 1350 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7 " Cemented with 3224 sx.
TOC Surface feet determined by circ.
Hole size 8-3/4"
Total Depth 6900'

Injection Interval

6011 feet to 6800 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

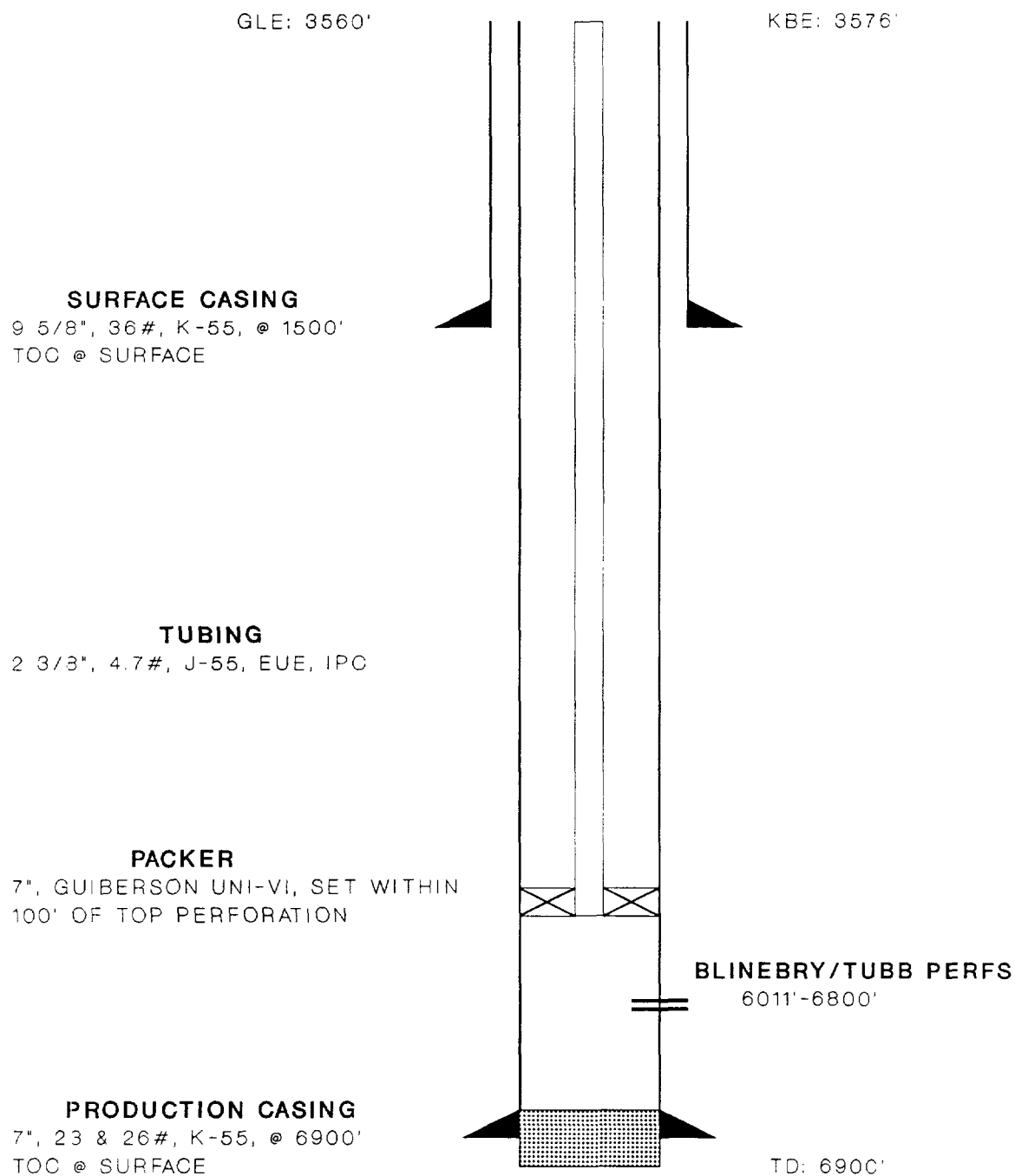
Other Data

- Name of the injection formation Blinebry/Tubb
- Name of Field or Pool (If applicable) NMFU
- Is this a new well drilled for injection? X Yes No
If no, for what purpose was the well originally drilled?
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Yates - 2835', Seven Rivers - 3100', Grayburg - 4000', San Andres - 4290', Glorieta - 5550', Blinebry - 6011', Tubb - 6525', Drinkard - 6800'.

WELLBORE DIAGRAM

WARREN UNIT NO. 104

NEW MEXICO FEDERAL UNIT



BY: T. C. ADUDELL

DATE: 12/17/90

Proposed Well Schematic

INJECTION WELL DATA SHEET

Conoco Inc.		Warren Unit		
OPERATOR		LEASE		
105	1980' FNL & 660' FEL	27	20S	38E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

See Attached

Tubular Data

Surface Casing

Size 9-5/8" Cemented with 1350 sx.
TOC Surface feet determined by circ.
Hole size 12-1/4"

Production Casing

Size 7" Cemented with 3224 sx.
TOC Surface feet determined by circ.
Hole size 8-3/4"
Total Depth 6900'

Injection Interval

5996 feet to 6785 feet
(perforated or open-hole)

Tubing size 2-3/8" lined with plastic coating set in a
(material)

Guiberson UNI-VI Double Grip packer within 100' of top perforation.
(brand and model)

Other Data

- Name of the injection formation Blinebry/Tubb
- Name of Field or Pool (if applicable) NMFU
- Is this a new well drilled for injection? X Yes No
If no, for what purpose was the well originally drilled?
- Has the well ever been perforated in any other zone(s)?
List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Yates - 2830', Seven Rivers - 3100',
Grayburg - 4000', San Andres - 4280', Glorieta - 5520', Blinebry - 5996',
Tubb - 6480', Drinkard - 6785'.

WELLBORE DIAGRAM

WARREN UNIT NO. 105

NEW MEXICO FEDERAL UNIT

GLE: 3555'

KBE: 3571'

SURFACE CASING

9 5/8", 36#, K-55, @ 1500'
TOC @ SURFACE

TUBING

2 3/8", 4.7#, J-55, EUE, IPC

PACKER

7", GUIBERSON UNI-VI, SET WITHIN
100' OF TOP PERFORATION

PRODUCTION CASING

7", 23 & 26#, K-55, @ 6900'
TOC @ SURFACE

BLINEBRY/TUBB PERFS

5996'-6785'

TD: 6900'

BY: T. C. ADUDEL

DATE: 12/17/90