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: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Amoco Production Company

Address: P. O. Box 68, Hobbs, NM 88240

Contact party: Dave Blazer Phone: (505) 393-1781

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [X] yes [ ] no
If yes, give the Division order number authorizing the project 3456.

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. N/A

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOPD
2. Whether the system is open or closed; open
3. Proposed average and maximum injection pressure; 800 PSIG
N/A 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
N/A 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. None

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. N/A

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. N/A

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: Cathy L. Forman Title Asst. Admin. Analyst

Signature: Cathy L. Forman Date: 9-18-81

* 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. Well logs were submitted to the NMOCD 7-7-64 upon completion of the well.

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.

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

INJECTION WELL DATA SHEET

OPERATOR	LEASE			
Amoco Production Co.	Horton Federal			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
6	2310' FSL x 330' FWL	Sec. 30	T-8-S	R-35-E

Schematic

see attachment

Tabular Data

Surface Casing

Size 8 5/8 " Cemented with 200 sx.

TOC surface feet determined by _____

Hole size 11 ¼"

Intermediate Casing

Size 4½ " Cemented with 200 sx.

TOC unknown feet determined by _____

Hole size 7 7/8"

Long string

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Total depth 4739'

Injection interval

4656 feet to 4694 feet

(perforated or open-hole, indicate which) both

Tubing size 2 3/8" lined with _____ (material) set in a

_____ (brand and model) packer at 4480 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Milnesand - San Andres

3. Is this a new well drilled for injection? /_/ Yes /X/ No

If no, for what purpose was the well originally drilled? Drilled as a producing oil well

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. N/A

Amoco Production Company

ENGINEERING CHART

SHEET NO. OF

FILE

APPN

DATE 9-9-80

BY J.A.C.

SUBJECT HORTON FEDERAL #6

Milnesand - San Andres Field

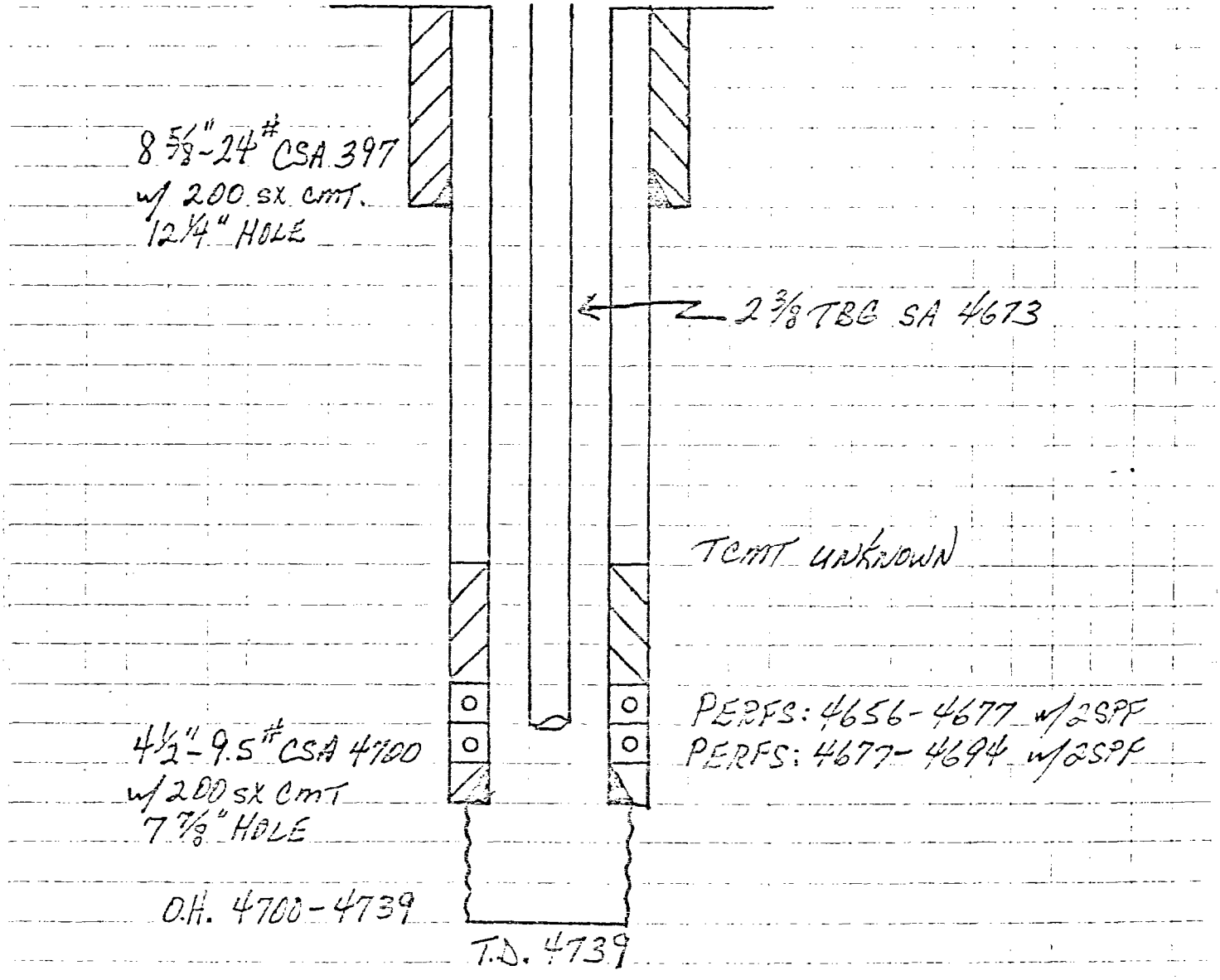
2310 FSL X 330 FWL, SEC. 30, T8S, R35E

Roosevelt County, NEW MEXICO

ELEV: 4230 RAB

4220 GL

Completed: 6-30-64



Date: June 11, 1981

Workover: Horton Federal Well No. 6
Section 30, T-8-S, R-35-E
Milnesand-San Andres Field

Purpose: To convert to an injection well.

Procedure:

1. RUSU x pull prod. equipment. Tag bottom cleanout to 4739' if necessary.

2. Run workstring to 4610' with PSA 4580'.

3. Run base GR-Temp log.

4. Acidize with 2500 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor. Include 250 gal Musol-A. Maximum surface pressure 800 psi.

   a. Pump 1250 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor and 125 gals Musol-A. Tag acid with 1 millicurie of I-131 per 1000 gals of acid.

   b. Flush with 22 bbls of 9#/gal brine water.

   c. Run GR-Temp survey to detect treated interval.

   d. Pump 300 gals of 9#/gal gelled brine carrying 200 lbs of graded rock salt and 100 lbs of 100 mesh salt. Follow with 22 bbls of 9#/gal brine water as a spacer. Vary block as necessary.

   e. Repeat Steps a-c.

   f. Flush with 25 bbls of fresh water.

5. Pull workstring x treating pkr.

6. Run 2-3/8" plastic coated tubing and injection pkr to 4550.

7. Rig up surface equipment.

8. Starting injection pressure not to exceed 800 psi surface pressure.

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: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Amoco Production Company

Address: P.O. Box 68, Hobbs, NM 88240

Contact party: Dave Blazer Phone: (505) 393-1781

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [X] yes [ ] no
If yes, give the Division order number authorizing the project 3456.

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. N/A

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOPD
2. Whether the system is open or closed; open
3. Proposed average and maximum injection pressure; 800 PSIG
N/A 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
N/A 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. None

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. N/A

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. N/A

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: Cathy L. Forman Title Asst. Admin. Analyst

Signature: [signature] Date: 9-18-81

* 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. Well logs were submitted to the NMOCD 1-30-64 upon completion of the well.

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

III. WELL DATA

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

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

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

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

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

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

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

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

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

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

INJECTION WELL DATA SHEET

Amoco Production Company	Horton Federal			
OPERATOR	LEASE			
1	330' FNL x 330' FWL	Sec. 30	T-8-S	R-35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

See attachment

Tabular Data

Surface Casing

Size 9 5/8" Cemented with 200 sx.

TOC surface feet determined by _____

Hole size 11¼"

Intermediate Casing

Size 4½" Cemented with 350 sx.

TOC unknown feet determined by _____

Hole size 7 7/8"

Long string

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Total depth 4761'

Injection interval

4626 feet to 4688 feet

(perforated or open-hole, indicate which) both

Tubing size 2 3/8" lined with _____ (material) set in a

_____ (brand and model) packer at 4520 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Milnesand - San Andres

3. Is this a new well drilled for injection? [ ] Yes [X] No

If no, for what purpose was the well originally drilled? Drilled as a producing oil well

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. N/A

Amoco Production Company

ENGINEERING CHART

SHEET NO. OF

FILE

APPN

DATE 9-9-80

BY J.A.C.

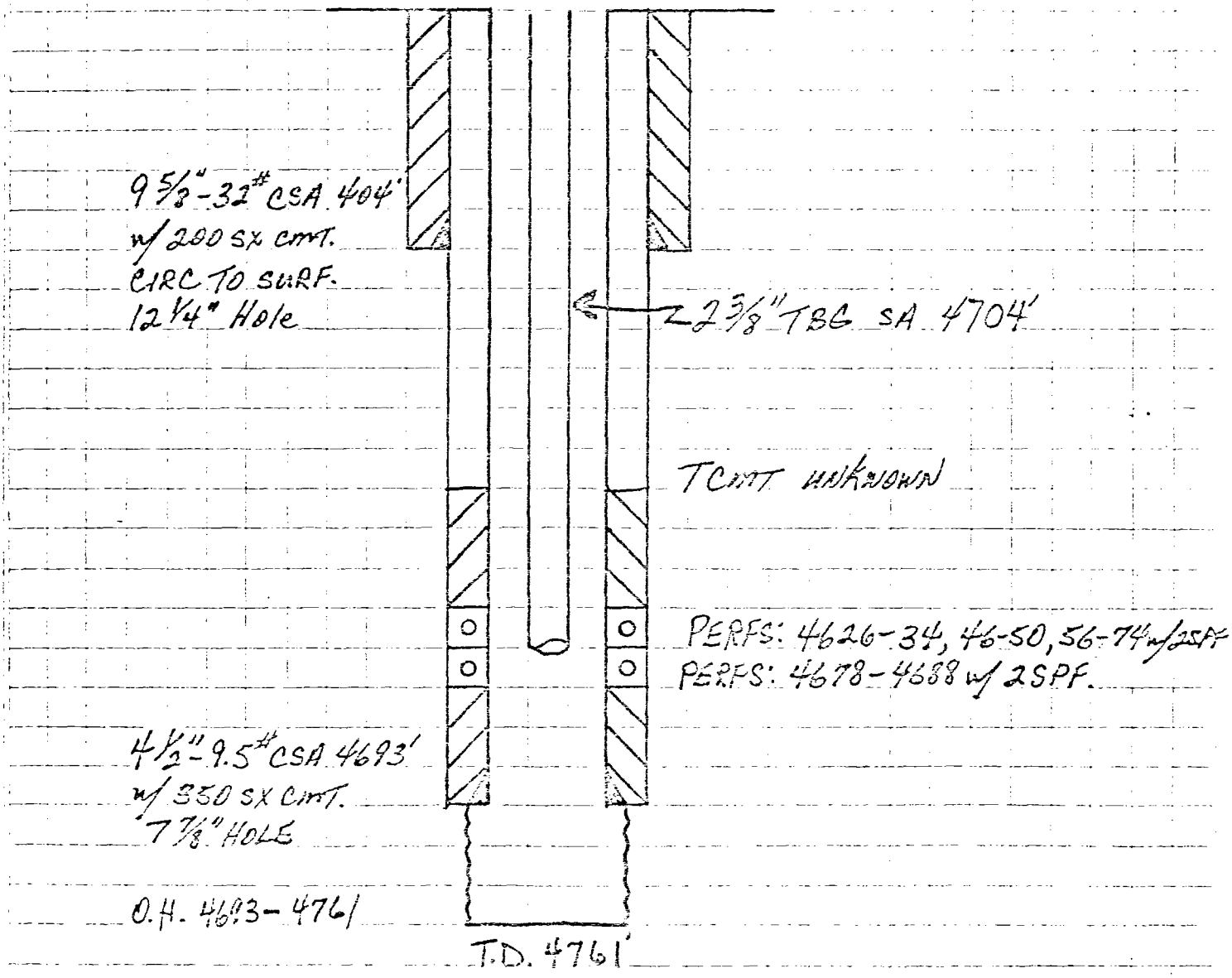
SUBJECT Horton Federal #1

Milnesand - San Andres Field

330 FNL x 330 FWL, SEC. 30, T8S, R35E
Roosevelt County, NEW MEXICO

ELEV: 4233' RDB
4223' GL

Completed: 1-27-64



Date: June 11, 1981

Workover: Horton Federal Well No. 1
Section 30, T-8-S, R-35-E
Milnesand-San Andres Field

Purpose: To convert to an injection well.

Procedure:

1. RUSU x pull prod. equipment. Tag bottom cleanout to 4761' if necessary.

2. Run workstring to 4580' with PSA 4550'.

3. Run base GR-Temp log.

4. Acidize with 3000 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor. Include 300 gal Musol-A. Maximum surface pressure 800 psi.

   a. Pump 1500 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor and 150 gals Musol-A. Tag acid with 1 millicurie of I-131 per 1000 gals of acid.

   b. Flush with 23 bbls of 9#/gal brine water.

   c. Run GR-Temp survey to detect treated interval.

   d. Pump 300 gals of 9#/gal gelled brine carrying 200 lbs of graded rock salt and 100 lbs of 100 mesh salt. Follow with 23 bbls of 9#/gal brine water as a spacer.

   e. Repeat Steps a-c.

   f. Flush with 25 bbls of fresh water.

5. Pull workstring x treating pkr.

6. Run 2-3/8" plastic coated tubing and injection pkr to 4520'.

7. Rig up surface equipment.

8. Starting injection pressure not to exceed 800 psi surface pressure.

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: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Amoco Production Company

Address: P. O. Box 68, Hobbs, NM 88240

Contact party: Dave Blazer Phone: (505) 393-1781

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [X] yes [ ] no
If yes, give the Division order number authorizing the project 3456.

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. N/A

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOPD
2. Whether the system is open or closed; open
3. Proposed average and maximum injection pressure; 800 PSIG
N/A 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
N/A 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. None

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. N/A

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. N/A

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: Cathy L. Forman Title Asst. Admin. Analyst

Signature: [signature] Date: 9-18-81

* 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. Well logs were submitted to the NMOCD 7-10-64 upon completion of the well.

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.

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

INJECTION WELL DATA SHEET

OPERATOR		LEASE		
Amoco Production Co.		Horton Federal		
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
7	330 FNL x 2241.3 FEL	Sec. 30	T-8-S	R-35-E

Schematic

See attachment

Tabular Data

Surface Casing

Size 8 5/8 " Cemented with 225 sx.

TOC surface feet determined by _____

Hole size 12 ¼"

Intermediate Casing

Size 4½ " Cemented with 200 sx.

TOC unknown feet determined by _____

Hole size 7 7/8"

Long string

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Total depth 4732'

Injection interval

4605 feet to 4693 feet
(perforated or open-hole, indicate which)

both

Tubing size 2 3/8" lined with _____ (material) set in a

_____ (brand and model) packer at 4632 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Milnesand - San Andres

3. Is this a new well drilled for injection? / / Yes /X/ No

   If no, for what purpose was the well originally drilled? Drilled as a producing oil well

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. N/A

Amoco Production Company

ENGINEERING CHART

SHEET NO. OF

FILE

APPN

DATE 9-9-80

BY J.A.C.

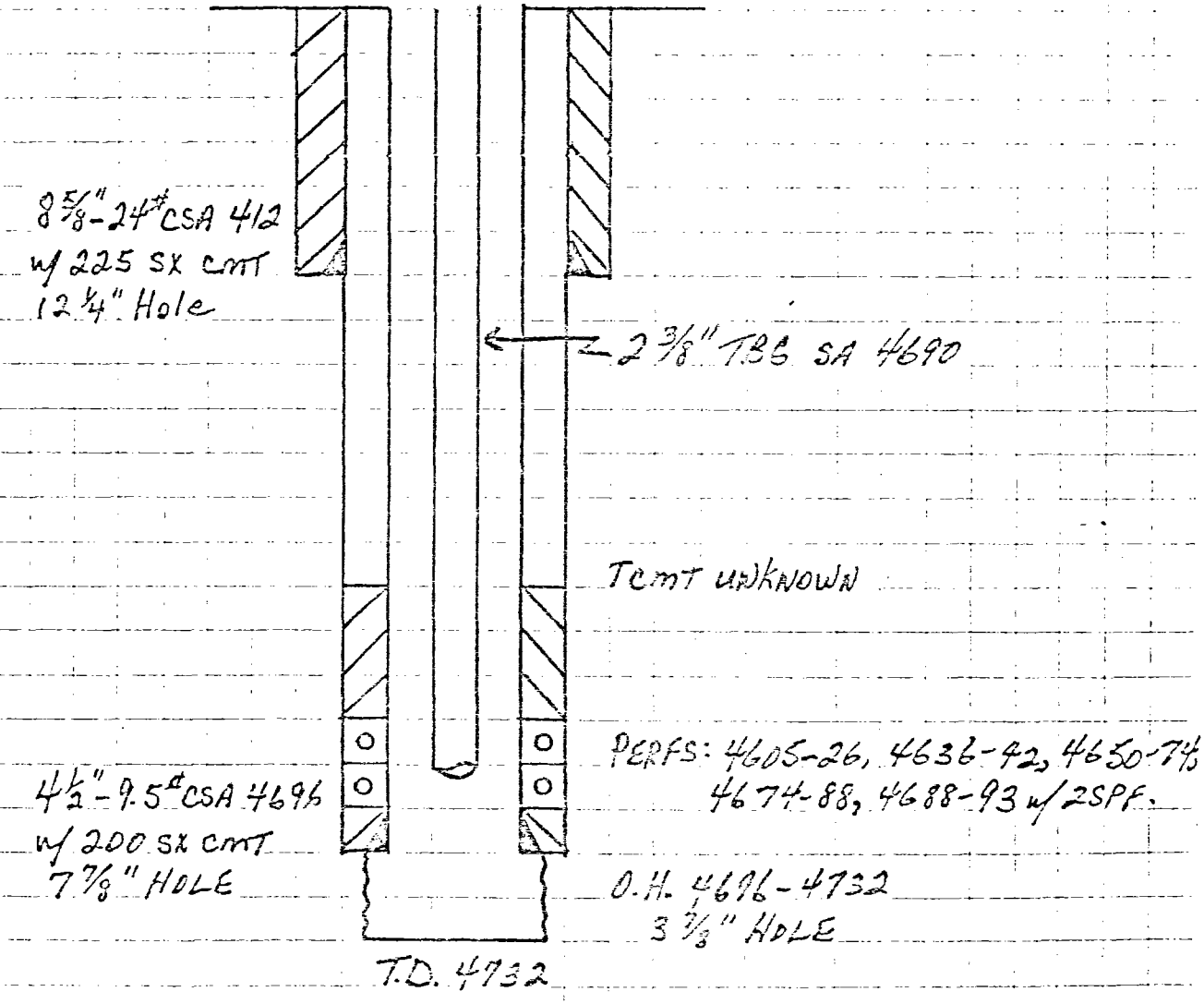
SUBJECT Horton Federal #7

MILNESAND - SAN ANDRES

330 FNL x 2241.3 FEL, SEC. 30, T8S, R35E
Roosevelt County, NEW MEXICO

ELEV: 4227 RDB
4217 GL

Completed: 7-8-64



Workover Brief

Date: June 9, 1981

Workover: Horton Federal Well No. 7
Section 30, T-8-S, R-35-E
Milnesand-San Andres Field

Purpose: To convert to an injection well

Procedure:

1. RUSU x pull prod equipment. Tag bottom cleanout to 4732' if necessary.

2. Run in hole with packer and spot control valve.

3. Run packer to 4540, run tailpipe to within 5' of bottom. Do not set packer.

4. Spot 2 bbl C-Dex into annulus, set packer.

5. Displace 5 bbl C-Dex into formation. SI for 24 hours.

6. Shear spot valve.

7. Swab back 50 bbls of fluid.

8. Pull tbg x pkr.

9. Run workstring to 4570' with PSA 4540'.

10. Run base GR-Temp survey.

11. Acidize with 3000 gals 15% NEFE acid with 1 gal/1000 corrosion inhibitor. Include 300 gals Musol-A. Maximum surface pressure 800 psi.

    a. Pump 1500 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor and 150 gals Musol-A. Tag acid with 1 millicurie of I-131 per 1000 gals of acid.

    b. Flush with 23 bbls of 9#/gal brine water.

    c. Run GR-Temp survey to detect treated interval.

    d. Block with 300 gals of 9# gelled brine carrying 200 lbs. of graded rock salt and 100 lbs. of 100 mesh salt. Follow with 23 bbls of 9#/gal brine as spacer. Vary block as necessary.

    e. Repeat steps a-c.

    f. Flush with 25 bbls of fresh water.

12. Pull workstring x trt pkr.

13. Run 2 3/8" plastic coated tbg with PSA 4550.

14. Install surface equipment.

15. Start injection at surface pressure not to exceed 800 psi.

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: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Amoco Production Company

Address: P. O. Box 68, Hobbs, NM 88240

Contact party: Dave Blazer Phone: (505) 393-1781

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [X] yes [ ] no
If yes, give the Division order number authorizing the project 3456.

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. N/A

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOPD
2. Whether the system is open or closed; open
3. Proposed average and maximum injection pressure; 800 PSIG
N/A 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
N/A 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. None

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. N/A

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. N/A

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: Cathy L. Forman Title Asst. Admin. Analyst

Signature: [signature] Date: 9-18-81

* 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. Well logs were submitted to the NMOCD 8-6-64 upon completion of the well.

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.

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

INJECTION WELL DATA SHEET

Amoco Production Co.	Horton Federal			
OPERATOR	LEASE			
9	2310' FSL x 2246.3' FEL	Sec. 30	T-8-S	R-35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

See attachment

Tabular Data

Surface Casing

Size 8 5/8" Cemented with 250 sx.

TOC surface feet determined by _____

Hole size 12 ¼

Intermediate Casing

Size 4½" Cemented with 250 sx.

TOC unknown feet determined by _____

Hole size 7 7/8"

Long string

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Total depth 4851'

Injection interval

4664 feet to 4747 feet

(perforated or open-hole, indicate which)

Tubing size 2 3/8" lined with _____ (material) set in a _____ (brand and model) packer at 4600 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Milnesand - San Andres

3. Is this a new well drilled for injection? / / Yes /X/ No

If no, for what purpose was the well originally drilled? Drilled as a producing oil well

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. N/A

SHEET NO. ____ OF ____

Amoco Production Company

ENGINEERING CHART

FILE ____

APPN ____

DATE 4-15-3[illegible]

BY D.W.

SUBJECT Hastain Federal #9

Milnesand - San Andres Field

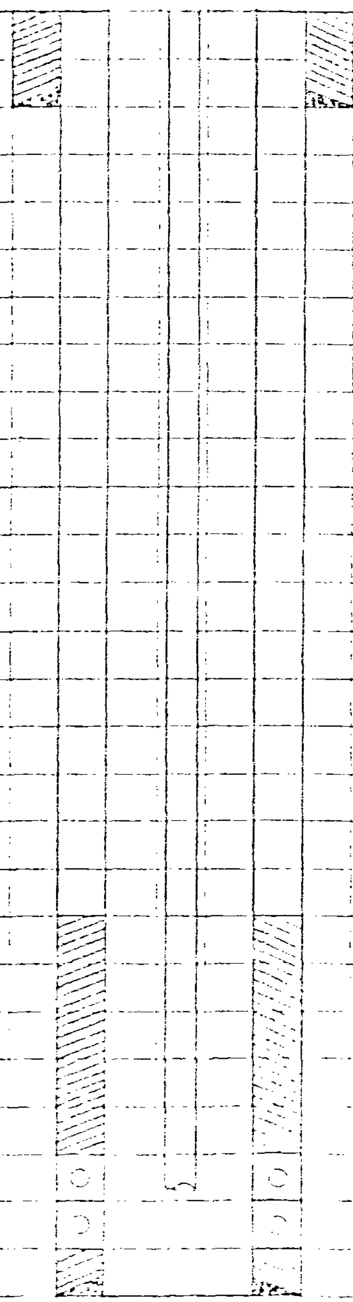
2310' FSL & 2246.3' FEL, Sec. 30, T8S, R35E

Roosevelt County, New Mexico.

Elev: 432[illegible] K.B.

Completed: 8-3-64

4314' G.L.



8 5/8" CSA 404'

24#, J-55 ST&C

Cmt w/250 sxs. Circ.

12 1/4" Hole.

2 3/8" Tubing Landed at 4704' with Seating Nipple at Bottom.

TCMT - UNKNOWN

Perfs: 4664'-4702' [illegible]

Perfs: 4[illegible]-47[illegible] [illegible]

4 1/2" CSA 48[illegible]'

9.5# [illegible] ST&C [illegible] 48[illegible]'

Cmt w/ [illegible] sx. [illegible] 48[illegible]'

[illegible]

[illegible]

Date: June 9, 1981

Workover: Horton Federal Well No. 9
Section 30, T-8-S, R-35-E
Milnesand-San Andres Field

Purpose: To convert to an injection well.

Procedure:

1. RUSU x pull prod. equipment.

2. Tag bottom and clean out to 4764' if necessary.

3. Run workstring set pkr @ 4570' with one joint of tailpipe.

4. Run base GR-Temp Log.

5. Acidize with 2000 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor. Include 200 gals Musol-A. Maximum surface pressure 800 psi.

   a. Pump 1000 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor and 100 gals Musol-A. Tag acid with 1 millicurie of I-131 per 1000 gals of acid.

   b. Flush with 23 bbls of 9#/gal brine water.

   c. Run GR-Temp survey to detect treated interval.

   d. Block with 200 lbs of graded rock salt and 100 lbs 100 mesh salt carried in 300 gals of 9# gelled brine. Follow with 23 bbls of 9#/gal brine water as a spacer.

   e. Repeat Steps a-c.

   f. Flush with 25 bbls of fresh water.

6. Pull workstring x trt. pkr.

7. Run 2-3/8" plastic coated tbg x pkr to 4550'.

8. Install surface equipment.

9. Start injection at surface pressure not to exceed 800 psi.

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: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Amoco Production Company

Address: P. O. Box 68 Hobbs, NM 88240

Contact party: Dave Blazer Phone: (505) 393-1781

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [X] yes [ ] no
If yes, give the Division order number authorizing the project 3456.

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. N/A

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOPD
2. Whether the system is open or closed; open
3. Proposed average and maximum injection pressure: 800 PSIG
N/A 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
N/A 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. None

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. N/A

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. N/A

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: Cathy L. Forman Title Asst. Admin. Analyst

Signature: Cathy L. Forman Date: 9-18-81

* 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. Well logs were submitted to the NMOCD 10-9-64 upon completion of the well.

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.

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

INJECTION WELL DATA SHEET

Amoco Production Co.		Horton Federal		
OPERATOR		LEASE		
20	330' FNL x 330' FWL	Sec. 29	T-8-S	R-35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

See attachment

Tabular Data

Surface Casing

Size 8 5/8" Cemented with 250 sx.

TOC surface feet determined by _____

Hole size 12 ½"

Intermediate Casing

Size 4½" Cemented with 250 sx.

TOC unknown feet determined by _____

Hole size 7 7/8"

Long string

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Total depth 4764'

Injection interval

4661 feet to 4740 feet

(perforated or open-hole, indicate which)

Tubing size 2 3/8" lined with _____ (material) set in a

_____ (brand and model) packer at 4550 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Milnesand - San Andres

3. Is this a new well drilled for injection? [ ] Yes [X] No

If no, for what purpose was the well originally drilled? Drilled as a producing oil well

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 plugs) used) no

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. N/A

Amoco Production Company

ENGINEERING CHART

SHEET NO. OF

FILE

APPN

DATE 10-9-78

BY D.W.

SUBJECT Horton Federal #20

Milnesand - San Andres Field

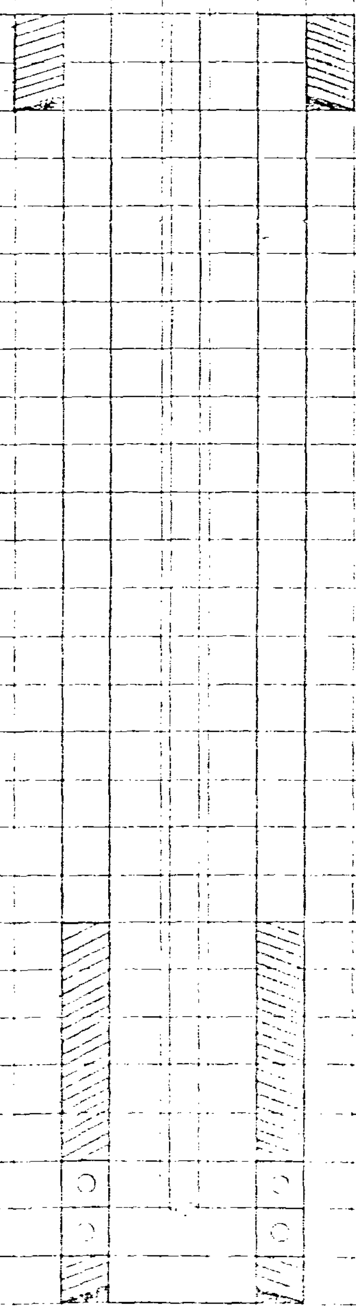
330 FNL & 330 FWL Sec. 29 T8S R35E

Roosevelt County, New Mexico

Elev: 4219' R.D.B.

4209' G.L.

Completed: 10-10-64



8 5/8" CSR 402'

24# J-55 12 1/4" Hole

Cmt w/250 sx Circ.

2 3/8" Tubing Landed at 4706' with Seating Nipple at 4707' and Anchor at 4710'.

TCMT - Unknown

Perf [illegible]

Perf 4720-4740' w/ JSPF

4 1/2" [illegible]

9.5# [illegible]

Cmt [illegible]

[illegible]

Date: June 10, 1981

Workover: Horton Federal Well No. 20
Section 29, T-8-S, R-35-E
Milnesand-San Andres Field

Purpose: To convert to an injection well.

Procedure:

1. RUSU x pull prod. equipment.

2. Tag bottom and clean out to 4763' if necessary.

3. Run workstring and treating packer with one joint of tailpipe. PSA 4580.

4. Run base GR-Temp Log.

5. Acidize with 2000 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor. Include 200 gals Musol-A. Maximum surface pressure 800 psi.

   a. Pump 1000 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor and 100 gals Musol-A. Tag acid with 1 millicurie of I-131 per 1000 gals of acid.

   b. Flush with 23 bbls of 9#/gal brine water.

   c. Run GR-Temp survey to detect treated interval.

   d. Block with 200 lbs of graded rock salt and 100 lbs 100 mesh salt carried in 300 gals of 9# gelled brine. Follow with 23 bbls of 9#/gal brine water as a spacer.

   e. Repeat Steps a-c.

   f. Flush with 23 bbls of fresh water.

6. Pull workstring x trt. pkr.

7. Run 2-3/8" plastic coated tbg x pkr to 4550'.

8. Install surface equipment.

9. Start injection at 800 psi maximum surface pressure.

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: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Amoco Production Company

Address: P. O. Box 68, Hobbs, NM 88240

Contact party: Dave Blazer Phone: (505) 393-1781

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [X] yes [ ] no
If yes, give the Division order number authorizing the project 3456.

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 N/A

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOPD
2. Whether the system is open or closed; open
3. Proposed average and maximum injection pressure; 800 PSIG
N/A 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
N/A 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. None

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. N/A

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. N/A

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: Cathy L. Forman Title Asst. Admin. Analyst

Signature: Cathy L. Forman Date: 9-18-81

* 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. Well logs were submitted to the NMOCD 10-26-64 upon completion of the well.

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.

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

INJECTION WELL DATA SHEET

Amoco Production Co.		Horton Federal		
OPERATOR		LEASE		
21	2310' FSL x 330' FWL	Sec. 29	T-8-S	R-35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

See attachment

Tabular Data

Surface Casing

Size 8 5/8 " Cemented with 250 sx.

TOC surface feet determined by _____

Hole size 12 ¼"

Intermediate Casing

Size 4½ " Cemented with 250 sx.

TOC unknown feet determined by _____

Hole size 7 7/8"

Long string

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size 4775'

Total depth _____

Injection interval

4692 feet to 4708 feet

(perforated or open-hole, indicate which)

Tubing size no tbg. lined with _____ (material) set in a

_____ (brand and model) packer at 4580 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Milnesand- San Andres

3. Is this a new well drilled for injection? ☐ Yes ☒ No

If no, for what purpose was the well originally drilled? Drilled as a producing oil well

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. Set cement retainer at 4722' and squeezed perfs 4734' - 4752' w/150 sacks Incor with .6% Halad - 9

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. N/A

SHEET NO. OF

Amoco Production Company

ENGINEERING CHART

FILE

APPN

DATE 10-9-78

BY D.W.

SUBJECT Hooton Federal #21

Milnesand - San Andres Field

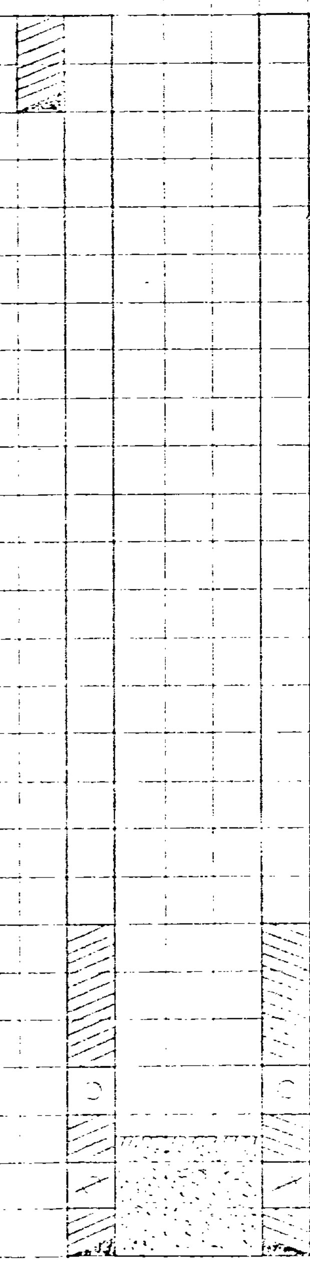
2310' FS & 330' FWL Sec. 23, T8S, R35E

Roosevelt County, New Mexico

Elev: 4219' R.D.B.

4209' G.L.

Completed: 10-22-64



8 5/8" CSG 418'

24# J-55 12 1/4" hole

Cmt w/250 sxs. Circ.

Notes: No tubing in hole. Well T.A.'d.

TCMT - (Unknown)

[illegible] 4682' [illegible] 35.05' [illegible]

[illegible] (PBD 4720').

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Date: June 9, 1981

Workover: Horton Federal Well No. 21
Section 29, T-8-S, R-35-E
Milnesand-San Andres Field

Purpose: To convert to an injection well

Procedure:

1. RUSU x ~~clean~~ Drill-out to depth of ≈ 4744' (-525).

2. Perforate interval from 4720 (-501) to 4740 (-521) w/2 JSPF.

3. Run workstring set trt. pkr @ 4600' with one joint of tailpipe.

4. Run base GR-Temp Log.

5. Acidize with 2000 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor. Include 200 gals Musol-A. Maximum surface treating pressure 800 psi.

   a. Pump 1000 gals of 15% NEFE acid with 1 gal corrosion inhibitor and 100 gals Musol-A. Tag acid with 1 millicurie I-131 per 1000 gals of acid.

   b. Flush with 22 bbls of 9#/gal brine water.

   c. Run GR-Temp log to detect treated interval.

   d. Block with 150 lbs of graded rock salt and 75 lbs 100 mesh salt carried in 250 gals of 9# gelled brine. Follow with 22 bbls of 9#/gal brine water as a spacer.

   e. Repeat Steps a-c.

   f. Flush with 25 bbls of fresh water.

6. Pull workstring x trt pkr.

7. Run 2-3/8" plastic coated tbg and plastic coated pkr to depth of 4580'.

8. Install surface equipment.

9. Start injection at surface pressure not to exceed 800 psi.

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: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Amoco Production Company

Address: P. O. Box 68, Hobbs, NM 88240

Contact party: Dave Blazer Phone: (505) 393-1781

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [X] yes [ ] no
If yes, give the Division order number authorizing the project 3456.

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. N/A

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOPD
2. Whether the system is open or closed; open
3. Proposed average and maximum injection pressure; 800 PSIG
N/A 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
N/A 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. None

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. N/A

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. N/A

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: Cathy L. Forman Title Asst. Admin. Analyst

Signature: Cathy L. Forman Date: 9-18-81

* 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. Well logs were submitted to the NMOCD 10-20-64 upon completion of the well.

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

III. WELL DATA

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

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

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

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

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

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

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

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

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

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

INJECTION WELL DATA SHEET

Amoco Production Co.	Horton Federal			
OPERATOR	LEASE			
23	330 FNL x 660' FWL	Sec. 31	T-8-S	R-35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

See attachment

Tabular Data

Surface Casing

Size 8 5/8 " Cemented with 250 sx.

TOC surface feet determined by _____

Hole size 12 ¼"

Intermediate Casing

Size 4½ " Cemented with 250 sx.

TOC unknown feet determined by _____

Hole size 7 7/8"

Long string

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Total depth 4780'

Injection interval

4673 feet to 4704 feet

(perforated or open-hole, indicate which)

Tubing size 2 3/8" lined with _____ (material) set in a

_____ (brand and model) packer at 4560 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Milnesand - San Andres

3. Is this a new well drilled for injection? /_/ Yes /X/ No

If no, for what purpose was the well originally drilled? Drilled as a producing oil well

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. Set retainer at 4750' & squeezed perfs 4756'-4763' w/100 sx cement. Set retainer at 4720' & squeezed perfs 4730'- 4743' w/100 sacks cement.

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. N/A

Amoco Production Company

ENGINEERING CHART

SHEET NO. ____ OF ____

FILE ____

APPN ____

DATE 10-10-78

BY D.W.

SUBJECT Hanton Federal #23

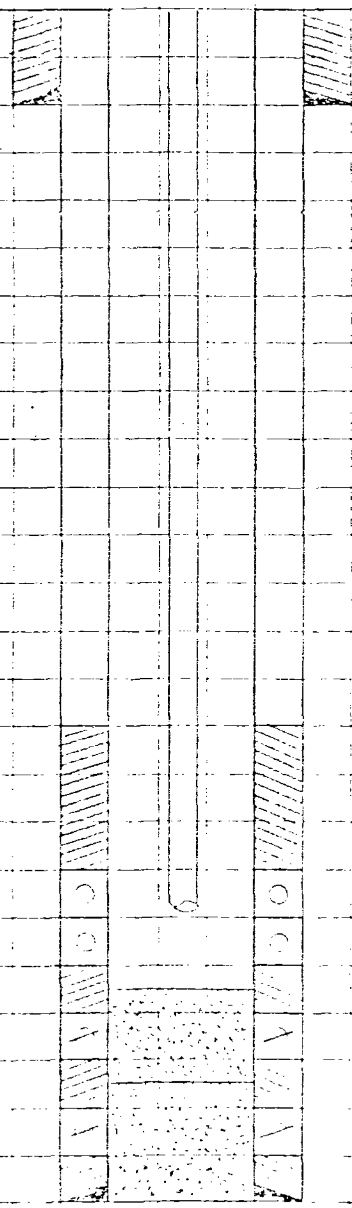
Milnesand - San Andres Field

330' FNL & 660' FWL, Sec. 31, T-8S, R-35E

Roosevelt County, New Mexico

Elev: 4226' R.D.B.
4216' G.L.

Completed 3-16-65



8 5/8" csg 420'
24#, J-55 12 1/4 hole
Cmt w/250 sxs. Circ.

2 3/8" Tubing Landed at 4687' with Seating Nipple on Bottom

TOC - Unknown

Perfs 4673-78 & 4683-88' w/2 JSPF
Perfs 4696-4704' w/2 JSPF
Retainer at 47[illegible]
Perfs 4730-4743' w/2 JSPF
Retainer at 47[illegible]
Perfs 47[illegible] w/2 JSPF

[illegible] csg. at 47[illegible]
[illegible] TD - 47[illegible]
Cmt w/[illegible] PBD - 4720
[illegible]

Date: June 10, 1981

Workover: Horton Federal Well No. 23
Section 31, T-8-S, R-35-E
Milnesand-San Andres Field

Purpose: To expose all pay and convert to injection well.

Procedure:

1. RUSU x pull prod. equipment.
2. ~~Cleanout~~ Drl out Cement to 4756 (-530).
3. Perforate interval from 4720-4750 w/2 JSPF.
4. Run workstring to 4630 with PSA 4600.
5. Run base GR-Temp Survey.
6. Acidize with 2000 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor. Include 200 gals Musol-A. Maximum surface pressure 800 psi.
   a. Pump 1000 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor and 100 gals Musol-A. Tag acid with 1 millicurie of I-131 per 1000 gals of acid.
   b. Flush with 23 bbls of 9#/gal brine water.
   c. Run GR-Temp survey to detect treated interval.
   d. Pump 300 gals of 9#/gal gelled brine carrying 200 lbs. of graded rock salt and 100 lbs. of 100 mesh salt. Follow with 23 bbls. of 9#/gal brine as a spacer.
   e. Repeat Steps a-c.
   f. Flush with 25 bbls of fresh water.
7. Pull workstring x trt. pkr.
8. Run 2-3/8" plastic coated tbg and injection pkr set at 4560'.
9. Rig up surface equipment.
11. Start injection at surface pressure not to exceed 800 psi.

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: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Amoco Production Company

Address: P. O. Box 68, Hobbs, NM 88240

Contact party: Dave Blazer Phone: (505) 393-1781

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [X] yes [ ] no
If yes, give the Division order number authorizing the project _____.

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. N/A

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOPD
2. Whether the system is open or closed; open
3. Proposed average and maximum injection pressure; 800 PSIG

N/A 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and

N/A 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. None

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. N/A

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. N/A

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: Cathy L. Forman Title Asst. Admin. Analyst

Signature: Cathy L. Forman Date: 9-18-81

* 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. Well logs were submitted to the NMOCD 12-7-64 upon completion of the well.

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

III. WELL DATA

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

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

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

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

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

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

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

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

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

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

INJECTION WELL DATA SHEET

Amoco Production Co.		Horton Federal		
OPERATOR		LEASE		
24	330' FNL x 2310' FEL	Sec. 31	T-8-S	R-35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

See attachment

Tabular Data

Surface Casing

Size 8 5/8" Cemented with 225 sx.

TOC surface feet determined by _____

Hole size 12 ¼"

Intermediate Casing

Size 4½" Cemented with 250 sx.

TOC unknown feet determined by _____

Hole size 7 7/8"

Long string

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Total depth 4575'

Injection interval

4686 feet to 4728 feet

(perforated or open-hole, indicate which)

both

Tubing size 2 3/8" lined with _____ (material) set in a

_____ (brand and model) packer at 4575 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Milnesand - San Andres

3. Is this a new well drilled for injection? /_/ Yes /X/ No

If no, for what purpose was the well originally drilled? Drilled as a producing oil well

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. N/A

Amoco Production Company

ENGINEERING CHART

SHEET NO. OF

FILE

APPN

DATE 9-9-80

BY J.A.C.

SUBJECT HORTON FEDERAL #2

MILNESAND - SAN ANDRES

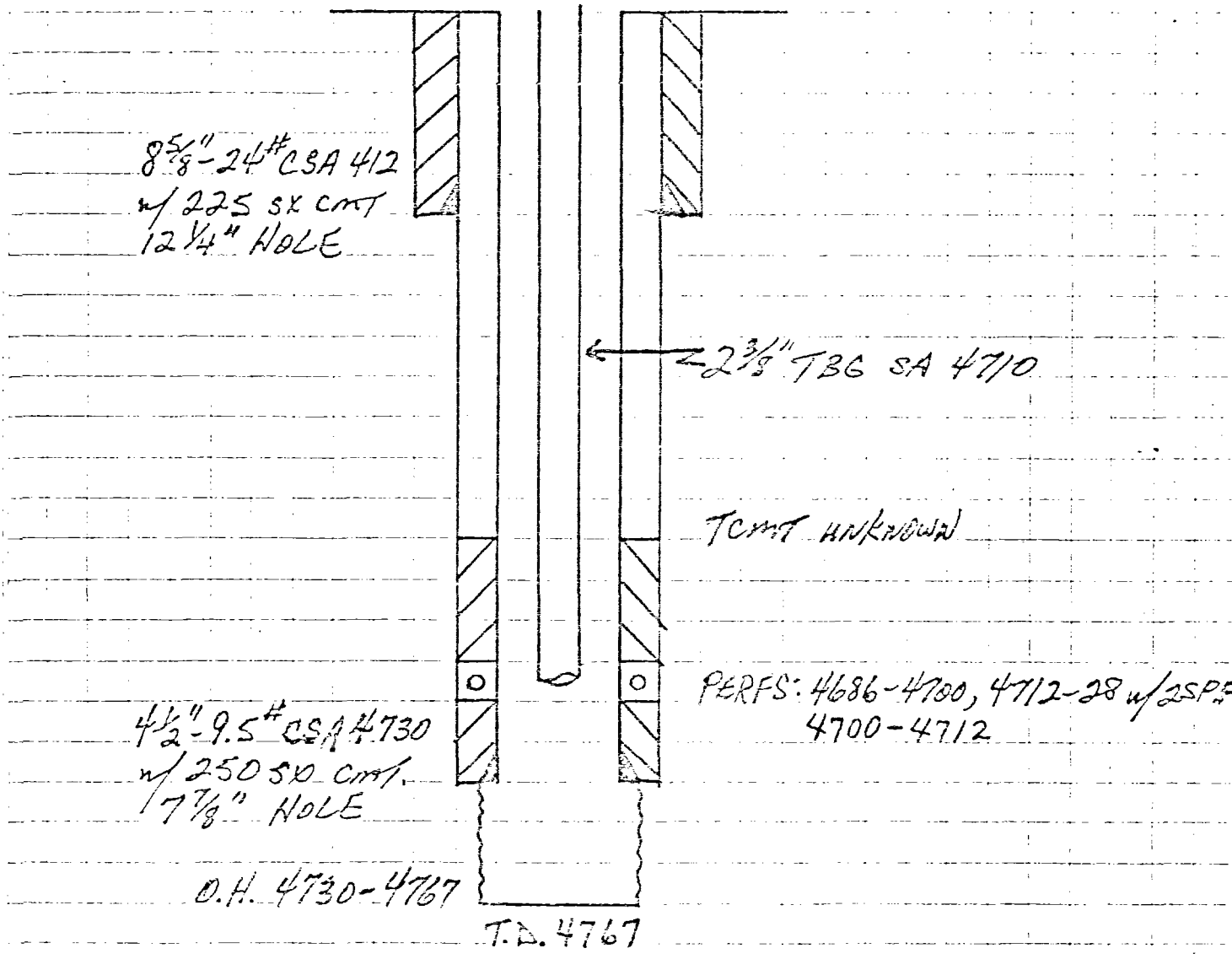
330FNL X 2310FEL, SEC. 31, T8S, R35E

Roosevelt County, NEW MEXICO

Completed: 12-4-64

ELEV: 4220 RDB

4210 GL



Date: June 11, 1981

Workover: Horton Federal Well No. 24
Section 31, T-8-S, R-35-E
Milnesand-San Andres Field

Purpose: To convert to an injection well.

Procedure:

1. RUSU x pull prod. equipment. Tag bottom cleanout to TD if necessary.

2. Run workstring to 4630' with PSA 4600'.

3. Run base GR-Temp log.

4. Acidize with 2000 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor. Include 200 gal Musol-A. Maximum surface pressure 800 psi.

   a. Pump 1000 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor and 100 gals Musol-A. Tag acid with 1 millicurie of I-131 per 1000 gals of acid.

   b. Flush with 23 bbls of 9#/gal brine water.

   c. Run GR-Temp survey to detect treated interval.

   d. Block with 200 lbs of graded rock salt and 100 lbs 100 mesh salt carried in 300 gals of 9#/gal gelled brine water. Follow with 23 bbls of 9#/gal brine as a spacer.

   e. Repeat Steps a-c.

   f. Flush with 25 bbls of fresh water.

5. Pull workstring x treating pkr.

6. Run 2-3/8" plastic coated tubing and injection pkr to 4575.

7. Rig up surface equipment.

8 Starting injection pressure not to exceed 800 psi surface pressure.

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: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Amoco Production Company

Address: P. O. Box 68, Hobbs, NM 88240

Contact party: Dave Blazer Phone: (505) 393-1781

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [X] yes [ ] no
If yes, give the Division order number authorizing the project 3456.

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. N/A

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOPD
2. Whether the system is open or closed; open
3. Proposed average and maximum injection pressure; 800 PSIG
N/A 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
N/A 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. None

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. N/A

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. N/A

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: Cathy L. Forman Title Asst. Admin. Analyst

Signature: Cathy L. Forman Date: 9-18-81

* 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. Well logs were submitted to the NMOCD 12-23-64 upon completion of the well.

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

III. WELL DATA

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

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

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

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

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

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

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(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.

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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.

INJECTION WELL DATA SHEET

OPERATOR	LEASE			
Amoco Production Co.	Horton Federal			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
26	330' FNL x 2310' FEL	Sec. 29	T-8-S	R-35-E

Schematic

See attachment

Tabular Data

Surface Casing

Size 8 5/8 " Cemented with 225 sx.

TOC surface feet determined by _____

Hole size 12 ¼"

Intermediate Casing

Size 4 ½ " Cemented with 250 sx.

TOC unknown feet determined by _____

Hole size 7 7/8"

Long string

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Total depth 4742

Injection interval

4658 feet to 4742 feet

(perforated or open-hole, indicate which) both

Tubing size 2 3/8" lined with _____ (material) set in a

_____ (brand and model) packer at 4550 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Milnesand - San Andres

3. Is this a new well drilled for injection? / / Yes /X/ No

If no, for what purpose was the well originally drilled? Drilled as a producing oil well

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. N/A

Amoco Production Company

ENGINEERING CHART

SHEET NO. OF

FILE

APPN

DATE 9-2-80

BY J. A. C.

SUBJECT HORTON FEDERAL #26

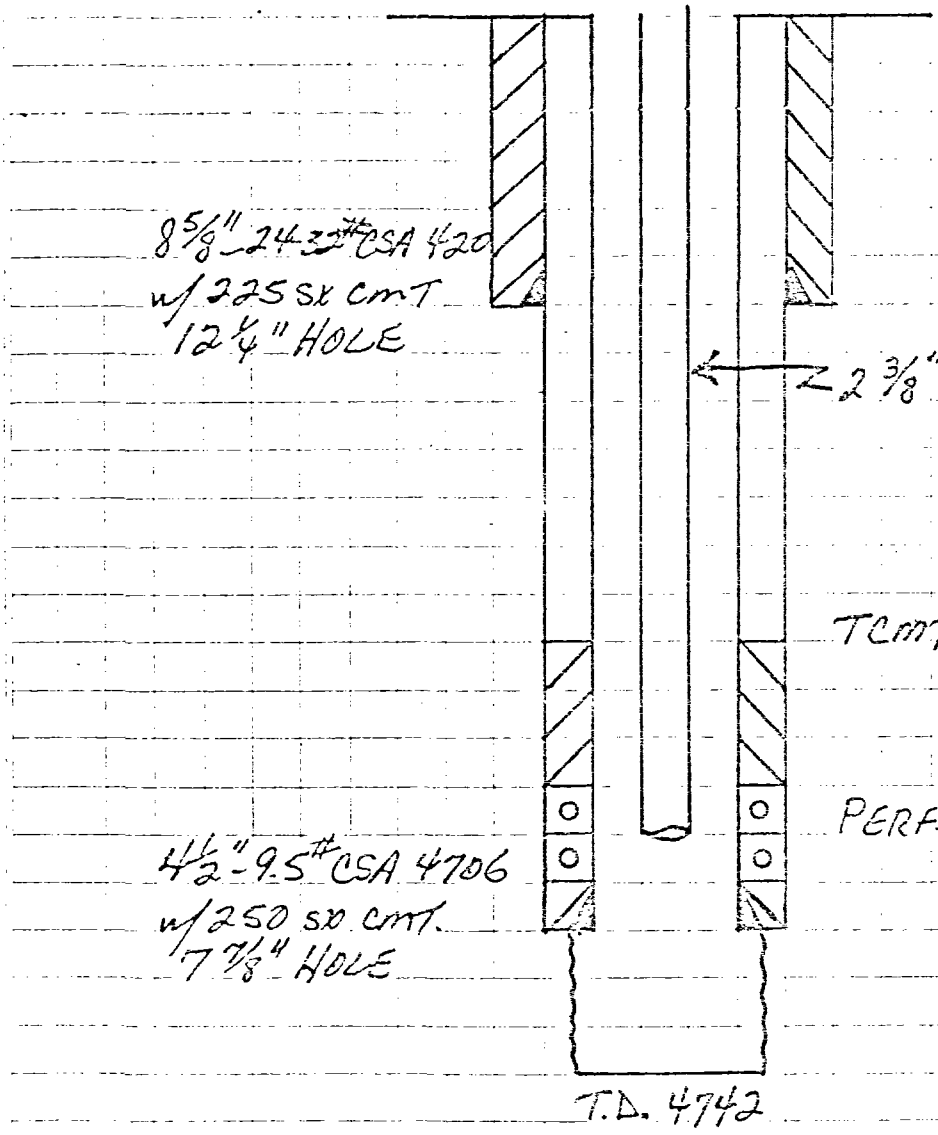
MILNESAND - SAN ANDRES FIELD

330 FNL X 2310 FEL, SEC. 29, T8S, R33E

ROOSEVELT COUNTY, NEW MEXICO

ELEV: 4212 RDB
4202 GL

Completed: 12-22-64



Date: June 11, 1981

Workover: Horton Federal Well No. 26
Section 29, T-8-S, R-35-E
Milnesand-San Andres Field

Purpose: To convert to an injection well.

Procedure:

1. RUSU x pull prod. equipment.

2. Tag bottom if necessary clean out to 4742.

3. Run workstring with one joint of tailpipe and PSA 4580'.

4. Run base GR-Temp Log.

5. Acidize with 2200 gals of 15% NEFF acid with 1 gal/1000 corrosion inhibitor. Include 220 gals Musol-A. Maximum surface pressure 800 psi.

   a. Pump 1100 gals of 15% NEFE acid with 1 gal/1000 corrosion inhibitor.and 110 gals Musol-A. Tag acid with 1 millicurie of I-131 per 1000 gals of acid.

   b. Flush with 23 bbls of 9#/gal brine water.

   c. Run GR-Temp survey to detect treated interval.

   d. Pump 300 gals of 9#/gal gelled brine carrying 200 lbs. of graded rock salt and 100 lbs. of 100 mesh salt. Follow with 23 bbls. of 9#/gal brine as a spacer.

   e. Repeat Steps a-c.

   f. Flush with 23 bbls of fresh water.

6. Pull workstring x trt. pkr.

7. Run 2-3/8" plastic coated tbg and injection pkr. PSA 4550'.

8. Rig up surface equipment.

9. Starting injection surface pressure not to exceed 800 psi.

PROOF OF NOTICE

Daily News-Sun, Hobbs, N.M.—Fri., Sept. 11, 1981—Page 20

LEGAL NOTICE
September 11, 1981
NOTICE

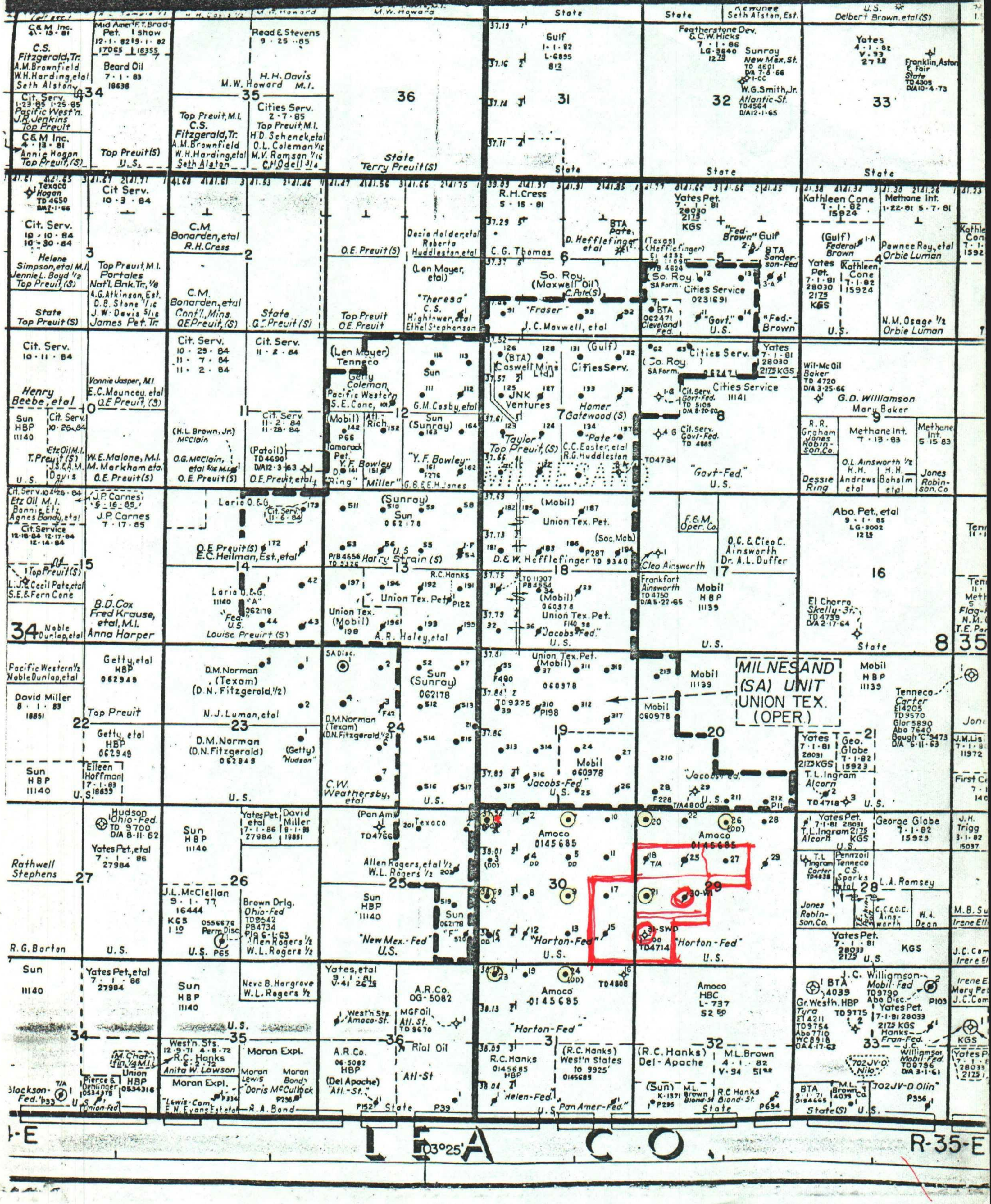
To Whom It May Concern:

Amoco Production Company proposes to convert the following wells to injection:

Horton Federal Well No. 1;	Sec 30, T-8-S, R-35-E; 330' FNL x 330' FWL; TD 4761'
Horton Federal Well No. 6;	Sec 30, T-8-S, R-35-E; 2310' FSL x 330' FWL; TD 4739'
Horton Federal Well No. 7;	Sec 30, T-8-S, R-35-E; 330' FNL x 2241.3' FEL; TD 4732'
Horton Federal Well No. 9;	Sec 30, T-8-S, R-35-E; 2310' FSL x 2246' FEL; TD 4851'
Horton Federal Well No. 20;	Sec 29, T-8-S, R-35-E; 330' FNL x 330' FWL; TD 4764'
Horton Federal Well No. 21;	Sec 29, T-8-S, R-35-E; 2310' FSL x 330' FWL; TD 4775'
Horton Federal Well No. 23;	Sec 31, T-8-S, R-35-E; 330' FNL x 660' FWL; TD 4780'
Horton Federal Well No. 24;	Sec 31, T-8-S, R-35-E; 330' FNL x 2310' FEL; TD 4767'
Horton Federal Well No. 26;	Sec 29, T-8-S, R-35-E; 330' FNL x 2310' FEL; TD 4742'

The intended purpose of the injection wells is for secondary recovery to enhance oil production on the Horton Federal Lease in the San Andres formation with expected maximum injection rates of 800 BPD and pressure 800 PSIG. 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 from date of this publication.

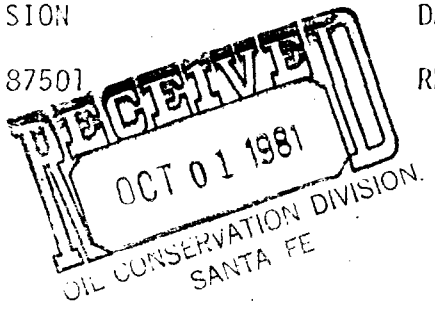
For further information, contact Dave Blazer at Amoco Production Company, P. O. Box 68, Hobbs, New Mexico 88240, or telephone (505) 393-1781.



MILNESAND (SA) UNIT
UNION TEX. (OPER.)
LEA CO.
R-35-E
103°25'
State
U.S.
Amoco 0145685
"Horton-Fed"
Amoco HBC L-737
Sun HBP 11140
Mobil HBP 11139
Union Tex. Pet.
Cities Service
Cities Serv.
Yates Pet.
Yates Pet., etal
Gulf
R.H. Cress
C.G. Thomas
So. Roy. (Maxwell Oil)
J.C. Maxwell, etal
"Fraser"
JNK Ventures
Homer Gatewood (S)
Taylor Top Preuit (S)
D.E.W. Hefflefinger
"Jacobs-Fed."
Mobil 060978
"Jacobs-Fed."
D.M. Norman (Texam) (D.N. Fitzgerald ½)
N.J. Luman, etal
C.W. Weathersby, etal
"New Mex.-Fed" U.S.
Allen Rogers, etal ½ W.L. Rogers ½
Brown Drlg. Ohio-Fed
R.G. Barton
Rathwell Stephens
Hudson Ohio-Fed.
Getty, etal HBP 062949
Top Preuit
David Miller
Pacific Western ½ Noble Dunlap, etal
B.D. Cox Fred Krause, etal, M.I.
Anna Harper
Louise Preuit (S)
A.R. Haley, etal
Harry Strain (S)
E.C. Heilman, Est., etal
Lario O.&G.
Henry Beebe, etal
Cit. Serv.
Texaco Hogan
C.S. Fitzgerald, Tr.
M.W. Howard
Read & Stevens 9·25·85
Beard Oil 7·1·83
Terry Preuit (S)
Featherstone Dev. & C.W. Hicks
Sunray New Mex. St.
W.G. Smith, Jr. Atlantic-St.
Delbert Brown, etal (S)
Seth Alston, Est.
Franklin, Aston & Fair State
Kathleen Cone
Methane Int.
Pawnee Roy., etal Orbie Luman
N.M. Osage ½ Orbie Luman
G.D. Williamson Mary Baker
Abo Pet., etal
El Charro Skelly-St.
Cleo Ainsworth
O.C. & Cleo C. Ainsworth Dr. A.L. Duffer
Frankfort Ainsworth
F.&M. Oper. Co.
Tenneco Carter
T.L. Ingram Alcorn
Geo. Globe
George Globe 7·1·82 15923
L.A. Ramsey
Jones Robin-son, Co.
Yates Pet. 7·1·81 28033 2175 KGS
J.C. Williamson-Mobil-Fed
Gr. Westn. HBP
BTA
Yates Pet. 7·1·81 28033 2175 KGS Hanks-Fran-Fed.
702 JV-D Nilo
702 JV-D Olin
M.L. Brown 4·1·82 V-94
R.C. Hanks Blond-St.
(R.C. Hanks) Del-Apache
(R.C. Hanks) West'n States to 9925'
R.C. Hanks 0145685 HBP
Helen-Fed.
Pan Amer-Fed.
Rial Oil
A.R. Co. OG-5082
MGF Oil Atl. St.
West'n Sts. Amoco-St.
Yates, etal V-41
A.R. Co. 06-5082 HBP (Del Apache) Atl.-St.
Atl-St
Moran Expl.
Neva B. Hargrove W.L. Rogers ½
Sun HBP 11140
West'n Sts. R.C. Hanks Anita W. Lawson
Moran Expl. Lewis-Com E.N. Evans Est. etal
R.A. Bond
Doris McCullock
Pierce & Dehlinger
Union HBP 0534316
Blackson-Fed.
Union Fed
Yates Pet, etal 7·1·86 27984
J.L. McClellan 9·1·77 16444 KGS

OIL CONSERVATION DIVISION
DISTRICT I

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



DATE September 28, 1981

RE: Proposed MC
Proposed DHC
Proposed NSL
Proposed NSP
Proposed SWD
Proposed WFX X
Proposed PMX

Gentlemen:

I have examined the application for the:

Amoco Production Co. Horton Federal #1, #6, #7, #9, #20, #21, #23, #24, #26
Operator Lease and Well No. Unit, S - T - R
Secs.29, 30, 31-8-35

and my recommendations are as follows:

O.K.-----J.S.

Yours very truly,

/mc

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3804
Order No. R-3456

APPLICATION OF PAN AMERICAN PETROLEUM
CORPORATION FOR A PRESSURE MAINTENANCE
PROJECT, ROOSEVELT COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 10, 1968, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 25th day of July, 1968, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Pan American Petroleum Corporation, seeks authority to institute a pressure maintenance project in the Milnesand-San Andres Pool on its R. E. Horton Federal Lease located in Sections 29, 30, and 31, Township 8 South, Range 35 East, NMPM, Roosevelt County, New Mexico, by the injection of water into the San Andres formation through its R. E. Horton Federal Well No. 30, located in Unit K, and through its R. E. Horton Federal Well No. 31, located in Unit M and currently authorized as a salt water disposal well, both in Section 29, Township 8 South, Range 35 East, NMPM, Roosevelt County, New Mexico.

(3) That the applicant further seeks the reclassification of the above-described R. E. Horton Federal Well No. 31 from a salt water disposal well to a pressure maintenance project injection well.

(4) That the applicant further seeks the designation of the project area and the promulgation of special rules and regulations governing said project.

(5) That initially the project area should comprise only the following-described area:

ROOSEVELT COUNTY, NEW MEXICO
TOWNSHIP 8 SOUTH, RANGE 35 EAST, NMPM
Section 29: SW/4 NE/4, S/2 NW/4, N/2 SW/4, and SW/4 SW/4
Section 30: E/2 SE/4

(6) That a pressure maintenance project, designated the Pan American Milnesand-Horton Pressure Maintenance Project, comprising the above-described area is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(7) That the aforesaid R. E. Horton Federal Well No. 31 should be reclassified as an authorized pressure maintenance project injection well.

(8) That an administrative procedure should be established whereby said project area may be expanded for good cause shown and whereby additional wells in the project area may be converted to water injection.

(9) That special rules and regulations for the operation of the Pan American Milnesand-Horton Pressure Maintenance Project should be promulgated and, for operational convenience, such rules should provide certain flexibility in authorizing the production of the project allowable from any well or wells in the project area in any proportion, provided that no well in the project area which directly or diagonally offsets a well on another lease producing from the same common source of supply should be allowed to produce in excess of top unit allowable for the Milnesand-San Andres Pool until such time as the well has experienced a substantial response to water injection. When such a response has occurred, the well should be permitted to produce up to two times top unit allowable for the Milnesand-San Andres Pool. Production of such well at a higher rate should be authorized only after notice and hearing.

IT IS THEREFORE ORDERED:

(1) That the applicant, Pan American Petroleum Corporation, is hereby authorized to institute a pressure maintenance project

in the Milnesand-San Andres Pool on its R. E. Horton Federal Lease, Roosevelt County, New Mexico, to be designated the Pan American Milnesand-Horton Pressure Maintenance Project, by the injection of water into the San Andres formation through the following-described wells in Section 29, Township 8 South, Range 35 East, NMPM, Roosevelt County, New Mexico:

R. E. Horton Federal Well No. 30, located in Unit K, and

R. E. Horton Federal Well No. 31, located in Unit M.

(2) That the applicant's above-described R. E. Horton Federal Well No. 31 is hereby reclassified from a salt water disposal well to a pressure maintenance project injection well.

(3) That each of the aforesaid water injection wells shall be equipped with tubing set in a packer, said packer being located within 100 feet of the uppermost perforation. Further, that the casing-tubing annulus shall be filled with an inert fluid and the annulus equipped with a pressure gauge or left open to facilitate detection of leakage in the tubing or packer.

(4) That Special Rules and Regulations governing the operation of the Pan American Milnesand-Horton Pressure Maintenance Project, Roosevelt County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
PAN AMERICAN MILNESAND-HORTON PRESSURE MAINTENANCE PROJECT

RULE 1. The project area of the Pan American Milnesand-Horton Pressure Maintenance Project, hereinafter referred to as the Project, shall comprise the area described as follows:

ROOSEVELT COUNTY, NEW MEXICO
TOWNSHIP 8 SOUTH, RANGE 35 EAST, NMPM
Section 29: SW/4 NE/4, S/2 NW/4, N/2 SW/4, and SW/4 SW/4
Section 30: E/2 SE/4

RULE 2. The allowable for the Project shall be the sum of the allowables of the several wells within the project area,

including those wells which are shut-in, curtailed, or used as injection wells. Allowables for all wells shall be determined in a manner hereinafter prescribed.

RULE 3. Allowables for injection wells may be transferred to producing wells within the project area, as may the allowables for producing wells which, in the interest of more efficient operation of the Project, are shut-in or curtailed because of high gas-oil ratio or are shut-in for any of the following reasons: pressure regulation, control of pattern or sweep efficiencies, or to observe changes in pressures or changes in characteristics of reservoir liquids or progress of sweep.

RULE 4. The allowable assigned to any well which is shut-in or which is curtailed in accordance with the provisions of Rule 3, which allowable is to be transferred to any well or wells in the project area for production, shall in no event be greater than its ability to produce during the test prescribed by Rule 6, below, or greater than the current top unit allowable for the pool during the month of transfer, whichever is less.

RULE 5. The allowable assigned to any injection well on a 40-acre proration unit shall be top unit allowable for the Milnesand-San Andres Pool.

RULE 6. The allowable assigned to any well which is shut-in or curtailed in accordance with Rule 3, shall be determined by a 24-hour test at a stabilized rate of production, which shall be the final 24-hour period of a 72-hour test throughout which the well should be produced in the same manner and at a constant rate. The daily tolerance limitation set forth in Commission Rule 502 I (a) and the limiting gas-oil ratio (2,000 to 1) for the pool shall be waived during such tests. The project operator shall notify all operators offsetting the well, as well as the Commission, of the exact time such tests are to be conducted. Tests may be witnessed by representatives of the offsetting operators and the Commission, if they so desire.

RULE 7. The allowable assigned to each producing well in the Project shall be equal to the well's ability to produce or to top unit allowable for the pool, whichever is less, provided that any producing well in the project area which directly or diagonally offsets a well on another lease producing from the same common source of supply shall not produce in excess of two times top unit allowable for the pool. Each producing well

shall be subject to the limiting gas-oil ratio (2,000 to 1) for the pool, except that any well or wells within the project area producing with a gas-oil ratio in excess of 2,000 cubic feet of gas per barrel of oil may be produced on a "net" gas-oil ratio basis, which net gas-oil ratio shall be determined by applying credit for daily average gas injected, if any, into the pool within the project area to such high gas-oil ratio well. The daily adjusted oil allowable for any well receiving gas injection credit shall be determined in accordance with the following formula:

$$A_{adj} = \frac{TUA \times F_a \times 2{,}000}{\frac{P_g - I_g}{P_o}}$$

where:

A_{adj} = the well's daily adjusted allowable

TUA = top unit allowable for the pool

F_a = the well's acreage factor

P_g = average daily volume of gas produced by the well during the preceding month, cubic feet

I_g = the well's allocated share of the daily average gas injected during the preceding month, cubic feet

P_o = average daily volume of oil produced by the well during the preceding month, barrels

In no event shall the amount of injected gas being credited to a well be such as to cause the net gas-oil ratio, $\frac{P_g - I_g}{P_o}$, to be less than 2,000 cubic feet of gas per barrel of oil produced.

RULE 8. Credit for daily average net water injected into the pool through any injection well located within the project area may be converted to its gas equivalent and applied to any well producing with a gas-oil ratio in excess of two thousand cubic feet of gas per barrel of oil. Total credit for net water

injected in the project area shall be the gas equivalent volume of the daily average net water injected during a one-month period. The daily average gas equivalent of net water injected shall be computed in accordance with the following formula:

$$E_g = (V_{w\ inj} - V_{w\ prod}) \times 5.61 \times \frac{P_a}{15.025} \times \frac{520^\circ}{T_r} \times \frac{1}{Z}$$

where:

E_g = Average daily gas equivalent of net water injected, cubic feet

$V_{w\ inj}$ = Average daily volume of water injected, barrels

$V_{w\ prod}$ = Average daily volume of water produced, barrels

5.61 = Cubic foot equivalent of one barrel of water

P_a = Average reservoir pressure at mid-point of the pay-zones of the pool in the project area, psig + 13.2, as determined from most recent survey

15.025 = Pressure base, psi

520° = Temperature base of 60°F expressed as absolute temperature

T_r = Reservoir temperature of 115°F expressed as absolute temperature (575°R)

Z = Compressibility factor from analysis of Milnesand-San Andres gas at average reservoir pressure, P_a, interpolated from compressibility tabulation below:

Reservoir Pressure	Z	Reservoir Pressure	Z	Reservoir Pressure	Z
0	.998	550	.795	1100	.570
50	.990	600	.775	1150	.555
100	.970	650	.755	1200	.540
150	.950	700	.735	1250	.525
200	.930	750	.720	1300	.510
250	.905	800	.700	1350	.500
300	.890	850	.675	1400	.490
350	.875	900	.650	1450	.482
400	.855	950	.630	1500	.480
450	.835	1000	.610	1550	.482
500	.815	1050	.590	1600	.485

RULE 9. Each month the project operator shall, within three days after the normal unit allowable for Southeast New Mexico has been established, submit to the Commission a Pressure Maintenance Project Operator's Report, on a form prescribed by the Commission, outlining thereon the data required, and requesting allowables for each of the several wells in the Project as well as the total project allowable. The aforesaid Pressure Maintenance Project Operator's Report shall be filed in lieu of Form C-120 for the Project.

RULE 10. The Commission shall, upon review of the report and after any adjustments deemed necessary, calculate the allowable for each well in the Project for the next succeeding month in accordance with these rules. The sum of the allowables so calculated shall be assigned to the Project and may be produced from the wells in the Project in any proportion except that no well in the Project which directly or diagonally offsets a well on another lease producing from the same common source of supply shall produce in excess of two times top unit allowable for the pool.

RULE 11. The conversion of producing wells to injection, the drilling of additional wells for injection, and expansion of the project area shall be accomplished only after approval of the same by the Secretary-Director of the Commission. To obtain such approval, the project operator shall file proper application with the Commission, which application, if it seeks authorization to convert additional wells to injection or to drill additional injection wells shall include the following:

(1) A plat showing the location of proposed injection well, all wells within the project area, and offset operators, locating wells which offset the project area.

(2) A schematic drawing of the proposed injection well which fully describes the casing, tubing, perforated interval, and depth showing that the injection of gas or water will be confined to the San Andres formation.

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

The Secretary-Director may approve the proposed injection well if, within 20 days after receiving the application, no objection to the proposal is received. The Secretary-Director

may grant immediate approval, provided waivers of objection are received from all offset operators.

Expansion of the project area may be approved by the Secretary-Director of the Commission administratively when good cause is shown therefor.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

A. L. PORTER, Jr., Member & Secretary

esr/