OIL CONSERVATION DIVISION

POST OFFICE BUX 2008
STATE LAND OFFICE BUILDING
BANTA FE, NEW MEXICO 87501

FORM C-108 Revised 7-1-81

PPLIC	CATION FOR AUTHORIZATION TO INJECT
I.	Purpose: Secondary Recovery Pressure Maintenance Disposal Storage Application qualifies for administrative approval? Myes Inc
II.	Operator: Amoco Production Company
	Address: P. O. Box 68, Hobbs, NM 88240
	Contact party: Dave Blazer Phone: (505) 393-1781
111.	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? \mathbb{X} yes \square no If yes, give the Division order number authorizing the project 3456 .
٧.	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:
	 Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOF 2. Whether the system is open or closed; Open N/A 4. Proposed average and maximum injection pressure;800 PSIG Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 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.).
III.	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.
х.	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
III.	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: 9-18-81
	Signature: Date: 9-18-81
adua	he information required under Sections VI, VIII, X, and XI above has been previously itted, it need not be duplicated and resubmitted. Please show the date and circumstance he carlier 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

111. 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 schemetre 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 tubine 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 assemble used.

Division District offices have subclies of Well Data Sheets which may be used or which may be used as models for this purcose. 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 for ation and, if applicable, the field or pool name.
 - (2) The injection interval and weather it is perforated or nown-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 liber cerforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
 - (5) Give the dopth to and name of the next higher and next lover oil or gas zone in the area of the well, if pay.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a new of the application has been furnished, by certified or registered model to a mer of the surface of the land on which the well is (a be located and to each lessible operator within one-calf 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 amilicant;
- (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 maxinum 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 2083, 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.

OPERATOR					
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W61 NO.	2310' FSL x 330'	FWL	Sec. 30	T-8-S TOWNSHIP	R-35-E RANGE
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			TOC surface		
			Hole size]]]	4	
			Intermediate Casing		
			Size $\frac{4^{1}}{2}$	Cemented with	200
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			Long string ·		
			Size	Computed with	
			190		
			Total depth 4739'		
			Injection interval		
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AMOCO

Amoco Production Company ENGINEERING CHART

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4220 GL

SUBJECT HORTON FEDERAL #6 Milnesand - San Andres Field 23/0 FSL X 330 FWL, SEC. 30, T85, R35E Roosevett County, NEW MEXICO

ELEV: 4230 RAB Completed: 6-30-64

8 58-24 CSA 397 M 200 SX CMT. 1244" HOLE

Z 2 3/8 TBG SA 4673

4/2"-9.5" CSA 4700 M200 SX CMT

O.H. 4700-4739

PERFS: 4656-4677 Wasp PERFS: 4677-4694 WasPF

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.

completion of the well.

OIL CONSERVATION DIVISION

FOST DEFICE BOX 2099
STATE LAND OFFICE BUILDING

FORM C-108 Revised 7-1-81

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	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 yesno If yes, give the Division order number authorizing the project 3456
٧.	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:
	 Proposed average and maximum daily rate and volume of fluids to be injected;667 BOP 2. Whether the system is open or closed; open Proposed average and maximum injection pressure;800 PSIG Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 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.).
111.	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.
х.	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
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111.	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 TitleAsst. Admin. Analyst
	Signature: 11/14 3 14 1/14 1 Date: 9-18-81

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.: Iscation 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 death of the packer used or a description of any other seal system or assembly used.

Division District offices have subdies 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.

- 8. 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 oben-bole.
 - (3) State if the well was drille: for injection or, if not, the original purpose of the well.
 - (4) Sive the depths of any other perforated intervals and detail on the sacks of cement or pridge plugs used to serious such perforations.
 - (5) Give the depth to and name on the next higher and next lower oil or gas zone in the irea of the well, if any.

XIV. PROUE OF NOTICE

All applicants must furnish or of 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 wall is to be located and to each leadehold operator within one-mail hile of the well location.

Where an application is subject to a ministrative 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 death 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, F. O. Box 2008, Santa Fe, New Mexico 87501 within 15 days.

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

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Amoco Production Company	Horton Federal		
		T-8-S	R-35-E
WELL NO. FORTAGE LOCATION	SECTION	fownship	RANGE
Schematic		Tabular Data	
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	Hole size 114"		
	Intermediate Casing		
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	Hole size 77,	/8"	
	Long string ·		
	Size	" Cemented with	5 x .
	TOC	feet determined by	
	Total depth 4/61'		
1 330 FML x 330 FML Sec. 30 T-8-5 R-35-E With No. Indicate the Mina Attitute Indicate Indicate Indicate See attachment Surface Engine Size 9 5/8 Communication 200 Total Surface Five determined by Hole size T1½" Intermediate Control Size 0 1/4" Conserted with 250 Whole size 7.7/8" Long string Size Total determined by Hole size 7.7/8" Long string Size Total depth 4761 Injection interval 4626 feet to 4588 feet (partnerscod or open-hole, indicate which) both Tubing size 2.3/8" lined with (partnerscod or open-hole, indicate which) Circard and wood: (partnerscod or open-hole) (partnerscod or open-hole) Circard and wood: (partnerscod or open-hole) (partnerscod or open-hole) Circard and wood: (partnerscod or open-hole) (partnerscod or open-hole) Circard and wood: (partnerscod or open-hole) (partnerscod or open-hole) Circard and wood: (partnerscod or open-hole) (partnerscod or open-hole) Circard and wood: (partnerscod or open-hole) (partnerscod or open-hole) Circard and wood: (partnerscod or open-hole) (partnerscod or open-hole) Circard and wood: (partnerscod or open-hole) (partnerscod or ope			
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	(periorated or open-a	ore, indicate which)	both
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	packer	at 4520	feet
	oing seal).		
Other Data			
1. Name of the injection format:	ion <u>San Andres</u>		
2. Name of Field or Pool (if app	olicable) <u>Milnesand - Sar</u>	n Andres	
3. Is this a new well drilled for	or injection? / Yes	<u>/X</u> 7 No	
If no, for what purpose was	the well originally drille	d? <u>Drilled as a pr</u>	oducing oil well
4. Has the well ever been performed give plugging detail (sac	cated in any other zone(s) eks of cement or bridge pl	? List all such per un(s) used) <u>no</u>	forated intervals
		1 = 11	
5. Give the depth to and name of this orea. N/A	f any overlying and/or end	etlyim oil or gas z	ones (pools) in



Amoco Production Company

SHEET NO.

FILE		

J.A.C.

ENG	NEE	RING	CHA	RT

SUBJECT HORTON Federal #1

Milnesand-SAN Andres Field

330 FNL X 330 FWL, SEC. 30, T8S, R35E Prosevent Courte NEW MEXICO

Roosevett County, NEW MEXICO

Completed: 1-27-64

ELEV: 4233 ROB 4273 BL

95/2-32*CSA 404' W 200 SX CMT. CIRC TO SURF. 12 1/4 * Hole O PERFS: 4626-34, 46-50, 56-74, O PERFS: 4678-4688 W 2SPF. # 1/2" 9.5 *CSA 4693' W 350 SX CMT.					-	\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					• = -
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12 4 4 Hole TCNT HIKWOWN O PERFS: 4626-34, 46-50, 56-74. O PERFS: 4678-4688 W 2SPF. 41/2" 9.5 #CSA 4693'		2		.]]	[2	<u> </u>	· - · · · · ·				
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77/8"HOLE		لمنهم ا			3-2' -					:	

T.D. 4761____

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.
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- 5. Pull workstring x treating pkr.
- 6. Run 2-3/8" plastic coated tubing and injection pkr to 4520'.
- 7. Rig up surface equipment.
- 3. Starting injection pressure not to exceed 800 psi surface pressure.

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 INJEC	APPL	ICATION	FUR	AUTHORIZ	ATION	מד	INJEC
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	Signature: 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
subr	the information required under Sections VI, VIII, X, and XI above has been previously nitted, it need not be duplicated and resubmitted. Please show the date and circumstance 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 to 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 cepth 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 he used as models for this nucrose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- 8. 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 witther 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 dement 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 located deperator 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 rumber, 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, 2. 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 SUBHITTED.

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.

Amoco Production Co.	Horton Federal			
7 330 FNL x 2241.3 FEL	LEASE Sec. 30	T-8-S	R-35	С
WELL NO. FOOTAGE LOCATION	SECTION	100NSIII		
Schematic				
SCHEMICH.	·	abular Data		
	Surface Casing		325	
See attachment	Size <u>8 5/8</u>			
	Note size 12 ½"			
	Intermediate Casing			
	Size $4\frac{1}{2}$	" Cement	ed with 200	5 X .
	TOC <u>unknown</u>	feet determi	ned by	
	Hole size			
	Long string .			
	Size	" Cement	ed with	sx.
	301	feet determi	ned by	· - · · · · · · · · · · · · · · · · · ·
	Hole size	·	· · · · · ·	
	Total depth 4732	· · · · · · · · · · · · · · · · · · ·		
	Injection interval			
	4605 feet (perforated or open-h	to 4693 ole, indicate	which) feet both	
			•	
				•
Tubing size 2 3/8" lined	with		s	et in a
	(mat packer			
(brand and model)		1002		
(or describe any other casing-tubing	seal).			
Other Data				
1. Name of the injection formation _				
2. Name of Field or Pool (if applica				
3. Is this a new well drilled for in		<u>/X</u> 7 No		
If no, for what purpose was the w	cell originally drille	d? <u>Drilled a</u>	s a producing	g oil well
4. Has the well ever been perforated and give plunging detail (sacks o	f in any other zone(s) of cement or bridge pl	? fist all su uq(s) used)	ch perforated NO	intervals
5. Give the depth to and name of any this area. N/A	overlying and/or und	rlying oil or	gus zones (p	ools) in

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SHEET NO. Amoco Production Company ENGINEERING CHART SUBJECT Horton Federal #7 DATE 9-9-80 BY J.A.C. MILNESAND - SAN ANDRES 330 FNL x 2241.3 FEL, SEC. 30, T8S, R35E Roosevelt County, NEW MEXICO ELEU: 4227 RDB Completed: 7-8-64 4217 BL 8%-24tcsA 412 4 225 SX CMT 124" Hole Z 23/8" 135 SA 4690 TemT UNKNOWN PERFS: 4605-26, 4636-42, 4650-74 45"-9.5" CSA 4696 4674-88, 4688-93 W/2SPF. W 200 SX CMT _0.H. 4696-4732 ___3 1/3" HOLE_ 7%" HOLE

T.O. 4732

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 sait 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.

OIL CONSERVATION DIVISION

FOST OFFICE BOX 2008

BTATE LAND OFFICE BUILDING

FORM C-108 Revised 7-1-81

BANTA FE, NEW MEXICO 87501 APPLICATION FOR AUTHORIZATION TO INJECT Secondary Recovery Pressure Maintenance Disposal L Storage Purpose: Application qualifies for administrative approval? X]yes Operator: Amoco Production Company II. P. O. Box 68, Hobbs, NM 88240 Address: Dave Blazer Phone: (505) 393-1781 Contact party: 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. X yes IV. Is this an expansion of an existing project? If yes, give the Division order number authorizing the project 3456 Attach a map that identifies all wells and leases within two miles of any proposed ٧. 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 Attach data on the proposed operation, including: VII. Proposed average and maximum daily rate and volume of fluids to be injected £67 BOPD Whether the system is open or closed; open 2. Proposed average and maximum injection pressure; 800 pSIG Sources and an appropriate analysis of injection fluid and compatibility with N/A the receiving formation if other than reinjected produced water; and N/A 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. Attach appropriate logging and test data on the well. (If well logs have been filed Х. with the Division they need not be resubmitted.) Attach a chemical analysis of fresh water from two or more fresh water wells (if XI. 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. Title <u>Asst. Admin. Analyst</u> Cathy L. Forman Date:9-<u>18</u>-81 Signature:

* 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.

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:
 - Lease name; Well No.; Inaction 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 hew such top was determined.
 - (3) A description of the tobing to be used including its size, lining material, and setting depth.
 - (4) The name, model, and setting cepth 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. Respondes 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 poel 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 on the area of the well, if any.

XIV. PRIOF OF NOTICE

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

Where an application is subject to identificative approval, a preof of publication must be submitted. Such proof shall complet 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 in ection well; with the exact location of single wells or the section, townsrip, 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 2083, 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 WILL DATA S			
moco Production Co.	Horton Federa	al		
	3' FEL Sec. 30		T-8-S	R-35-E
WELL NO. FOOTAGE LOCATION	SECTION		TOWNSHIP	RANGE
Schematic		<u> T</u> abula	- Data	
	Surface Casing			
See attachment	Size 8 5/8		Cemented with	250
	TOC <u>surface</u>	feet	determined by	
	Hole size 12 1	4		
	Intermediate Ca	sina		
	Size 4½	H	Cemented with	250
	τος <u>unknown</u>	feet	determined by _	
	Hole size	7 7/8"		
	Long string	٠		
	Size		Cemented with	
	TOC			
	Hole size			
	Total depth	1 851 '		
	Injection inter	val		
	4664 (perforated or		4747 ndicate which)	feet
		-		•
lubing size <u>2 3/8"</u>]	ined with	(material)	×	set in a
			4600	feet
(brand and model) (or describe any other casing-tu	bing seal).			
Other Data	,			
1. Name of the injection format	ion San Andres			



Amoco Production Company

ENGINEERING CHART

SHEET NO.	OF	
FILE		

SUBJECT HOST STORES	#-9			-		DATE	1-15-30
Milhespud - San		Field				ВУ	- _/
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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% NEFS 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 bhls 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 the x pkr to 4550'.
- 8. Install surface equipment.
- 9. Start injection at surface pressure not to exceed 800 psi.

OIL CONSERVATION DIVISION

FIRST OFFICE BOX 2008
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108 Revised 7-1-81

APPLICATION	FOR	AUTHORIZATION	TO	INJECT
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	CATION FOR AUTHORIZATION TO INJECT
I.	Purpose: 🛮 Secondary Recovery 🔲 Pressure Maintenance 🔲 Disposal 🔲 Storage Application qualifies for administrative approval? 🗒 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? \(\times \) yes \(\times \) no If yes, give the Division order number authorizing the project \(\times \) 3456 .
٧.	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:
	 Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOP 2. Whether the system is open or closed; 0pen Proposed average and maximum injection pressure: 800 PSIG Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 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
	Name: Cathy L. Forman Title Asst. Admin. Analyst Signature: 47/14.45.45.46.46.46.46.46.46.46.46.46.46.46.46.46.
* If t subm of t	the information required under Sections VI, VIII, X, and XI above has been previously bitted, it need not be duplicated and resubmitted. Please show the date and circumstance 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

111. 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, sucks of cement used, hole size, top of cement, and how such top was determined.
 - (3) A description of the tubin; 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" ratter 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 form tion 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 croof that a copy of the application has been furnished, by certified or registered mail, to the owner of the curface of the land on which the Hell is to be located and to each leasehold operator within one-malf 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 SHIFT

Amoco Production Co.	Horton Federal		
	Sec. 29	T-8-S	R-35 - E
20 330' FNL x 330' FWL WILL NO. FOUTAGE LOCATION	SECTION	TOWNSHIP	RANGE
Schematic	Īa	bular Data	
See attachment	Surface Casing		
	Size <u>85/8</u> "	Comented with	250 sx.
	toc <u>surface</u>		
	Hole size 12½"		
	Intermediate Casing		
	Size 4½ "	Cemented with	250 gx.
	TOC <u>unknown</u>	feet detérmined by	
	Hole size 7 7/8"		
	Long string		
	Size "	Comported with	
	тос		
	Total depth 4764		
	Injection interval	4740	
	4661 feet to the f	be, indicate which)	feet
Tubing size 2 3/8" lined	(mater	(101)	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 applic		Andres	
3. Is this a new well drilled for i	njection? <u>/</u> 7 Yes <u>/</u>	∕∏ No	
If no, for what purpose was the	well originally drilled?	Drilled as a pr	oducing oil wel
4. Has the well ever been perforate and give plugging detail (sacks	d in any other zone(s)? of cement or bridge plud	List all such perf j(s) used) <u>no</u>	orated intervals
5. Give the depth to and name of an	ny gyarlying and/or unito-	ly in all ar are to	nen (noole) in
N1 / A	y overlying and/or under	Tyre; Orr Or Gas 70	aca (puura) 10



Amoco Production Company

ENGINEERING CHART

FILE		

SHEET NO.

FILE		

DATE 10-9-78 SUBJECT HOPETON FOROS/ #20 BY D. W. Milwessyd - Say Sydnes Field Rosevelt County New Mexico 4209' G.L. Ex# I-5= 12/4 Hola 2/2 Tubba Landed at 4706 with Section Rivere st 4707 and Anchor 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 the x pkr to 4550'.
- 8. Install surface equipment.
- 9. Start injection at 800 psi maximum surface pressure.

OIL CONSERVATION DIVISION

POST OFFICE BOX 2098
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108 Revised 7-1-81

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APPLI	CATION FOR AUTHORIZATION TO INJECT
Ι.	Purpose: Secondary Recovery Pressure Maintenance Disposal Storage Application qualifies for administrative approval?
II.	Operator: Amoco Production Company
	Address: P. O. Box 68, Hobbs, NM 88240
	Contact party: Dave Blazer Phone: (505) 393-1781
111.	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? $\overline{\mathbb{X}}$ yes $\overline{\mathbb{Q}}$ no If yes, give the Division order number authorizing the project 3456 .
٧.	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 detailN/A
VII.	Attach data on the proposed operation, including:
	 Proposed average and maximum daily rate and volume of fluids to be injected; 667 BOI 2. Whether the system is open or closed; open Proposed average and maximum injection pressure; 800 PSIG Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 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.).
VIJI.	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.
х.	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: Mally X. Security Date: 9-18-81
subn	the information required under Sections VI, VIII, X, and XI above has been previously mitted, it need not be duplicated and resubmitted. Please show the date and circumstance the earlier submittal. Well logs were submitted to the NMOCD 10-26-64 upon completion

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 puriose. Applicants for several identical wells may submit a "typical data sheet" nather than submitting the cata 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 offer cerforeted 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 lease old 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 present 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 narties 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 SHIFT

21 2310 FSL x 330 FWL Sec. 29 T-8-5 R-35-E Will Aut Individual Substitute Substitute Substitute Individual Substitute Substitute Individual Substitute Individual Substitute Substitute Individual Substitute					Horton Federal			tion Co.		
Scheentin									LRATUR	OP £
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Scheening 2310' FSL x 330' FWL Sec. 29 T-8-S R-35-E With AD. TOWNALL WARTER Scheening Family Size attachment Size 5/8 "Cemented with 250 st. 100 Surface Family File Size 12 %" Intersective Family Size 45 "Cemented with 250 st. 100 Unknown fewt determined by Role size 17 7/8" Long strim Size "Creening by Role size 7 7/8" Long strim Size "Creening by Role size 7 7/8" Long strim Size "Creening by Role size 7 7/8" Long strim Size "Creening by Role size 7 7/8" Long strim Size "Creening by Role size 4775' Total depth Injection interval 4692 Feet to 4708 Institute of the Injection feet of the Injection of the Injection in the Injection in the Injection in the Injection and when I see the Injection of the Inj										
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. Give the depth to and name of any overlying and/or undertying oil or gas zones (pools) this area.N/A	s) in									



SUBJECT Hooton Fordood # 21

Amoco Production Company

ENGINEERING CHART

SHEET NO.

DATE 10-9-78

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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 $\frac{1}{61000}$ out to depth of $\approx 4744'$ (-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.
- 5. 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.
- Start injection at surface pressure not to exceed 800 psi.

of the well.

OIL CONSERVATION DIVISION

POST OFFICE BOX 2008 BTATE LAND OFFICE BUILDING BANTA FE, NEW MEXICO 87501

FORM C-108 Revised 7-1-81

APPLICATION :	FOR	AUTHORIZATION	10	INJECT
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APPLI	ATION FOR AUTHURIZATION TO INJECT
Ι.	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
111.	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? \square yes \square no If yes, give the Division order number authorizing the project 3456
٧.	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 BOP 2. Whether the system is open or closed; open 3. Proposed average and maximum injection pressure;800 PSIG 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 1. 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.).
*VI1I.	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 ng/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
	Name: Cathy L. Forman Title Asst. Admin. Analyst Signature: Cathy L. Forman Date: 9-18-81
subm	the information required under Sections VI, VIII, X, and XI above has been previously itted, it need not be duplicated and resubmitted. Please show the date and circumstance the earlier submittal. Well logs were submitted to the NMOCD 10-20-64 upon completion

DISTRIBUTION: Original and one copy to Santa fo 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 complies 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 cummitting 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 shows 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 perferated intervals and detail on the sacks of cement or bridge plugs used to seel 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 cortified or registered mail, to the number of the purface of the land on which the well is to be located and to each lessenoid operator within one-mail mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall correst 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, phose number, and contact party for the applicant;
- (2) the intended purpose of the in action well; with the exact location of single wells or the section, township, and range location of nultiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parries must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2008, 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 WILL DATA SHEET

	ction Co.	Horton Federal		
	330 FNL x 660' FWL	Sec. 31	T-8-S	R-35 - E
WELL NO.	FOUTAGE LOCATION	SECTION	LOANZIII.	RANGE
Sche	matic		Tabular Data	
OPERATOR 23 33 WILL NO. I Schematic See attachment 1. Name of the 2. Name of fiel 3. Is this a ne If no, for w 4. Has the well and give plu & squeezed 4730'- 4743	nent	Surface Casing		
		Size <u>8 5/8</u>	Cemented with	250 sx.
Tubing size 2 3/8" Timed with Center 14704 Total 1616 16	feet determined by			
		Hole size 12 ½"		
		Intermediate Casing		,
		Size 4½	Cemented with	250 sx.
		toc <u>unknown</u>	feet determined by	
		Hole size 7 7/8"		
		Long string		
		Size	" Cemented with	SX.
		Total depth 478	30 '	
		Injection interval		
			, 1701	6
	_	(perforated or open-	hole, indicate which)	_ 1880
Tubing size	2 3/8" line	d with		set in a
(br:	ind and model)	раскет	4000	1666
(or describe	e any other casing-tubin	g seal).		
2. Name of	Field or Pool (if appli	cable)M <mark>ilnesand - San</mark>	Andres	
If no, f	for what purpose was the	well originally drill	ed? Drilled as a pro	ducing oil well
and give & squee	: plugging detail (sacks ezed perfs 4756'-4763'	of cement or bridge ρ w/100 sx cement. Se	lug(s) used)Y <u>es. Set</u>	retainer at 4/50
		ny overlying and/or un	derlying oil or gas ze	ones (paols) in
		and the second section of the section		



Amoco Production Company

SHEET NO.

FILE

ENGINEERING CHART

JECT Hoston Fod	<u> 1997 # 23 </u>			DATE 70-/0	- / 6
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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. Greenout 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 the and injection pkr set at 4560'.
- 9. Rig up surface equipment.
- Start injection at surface pressure not to exceed 800 psi.

OIL CONSERVATION DIVISION

POST OFFICE BOX 2008
STATE LAND CHFICE BUILDING
BANTA FE, NEW MEXICO B7501

FORM C-108 Revised 7-1-81

	Purpose: Application qualifies for ac	y Pressure Maintenance Disposal Storage Uministrative approval? Yes no
II.	Operator: Amoco Production Co	mpany
	Address: P. O. Box 68, Hobbs	
	Contact party: Dave Blazer	Phone: (505) 393-1781
111.		equired on the reverse side of this form for each well ion. Additional sheets may be attached if necessary.
IV.	Is this an expansion of an exis If yes, give the Division order	ting project? X yes no no number authorizing the project
٧.	Attach a map that identifies al injection well with a one-half well. This circle identifies t	l wells and leases within two miles of any proposed mile radius circle drawn around each proposed injection he well's area of review.
VI.	penetrate the proposed injection well's type, construction, date	all wells of public record within the area of review which n zone. Such data shall include a description of each drilled, location, depth, record of completion, and illustrating all plugging detail.N/A
VII.	Attach data on the proposed ope	ration, including:
	2. Whether the system is on 3. Proposed average and ma N/A 4. Sources and an approprious the receiving formation N/A 5. If injection is for distant or within one mile	ximum injection pressure; 800 PSIG ate analysis of injection fluid and compatibility with on if other than reinjected produced water; and posal purposes into a zone not productive of oil or gas of the proposed well, attach a chemical analysis of mation water (may be measured or inferred from existing
V II I.	detail, geological name, thickn bottom of all underground sourc total dissolved solids concentr	ata on the injection zone including appropriate lithologic ess, and depth. Give the geologic name, and depth to es of drinking water (aquifers containing waters with ations of 10,000 mg/l or less) overlying the proposed uch source known to be immediately underlying the
IX.	Describe the proposed stimulati	on program, if any.
х.	Attach appropriate logging and with the Division they need not	test data on the well. (If well logs have been filed be resubmitted.)
XI.		resh water from two or more fresh water wells (if one mile of any injection or disposal well showing ples were taken. N/A
XII.	examined available geologic and	ust make an affirmative statement that they have engineering data and find no evidence of open faults ion between the disposal zone and any underground
(111.	Applicants must complete the "P	roof of Notice" section on the reverse side of this form.
xıv.	Certification	
	to the best of my knowledge and	
		Title Asst. Admin. Analyst Date: 9-18-81

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

TII. 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 tubin: 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 surplies 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.

- 8. 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 pepeated.
 - (1) The name of the injection ferration 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 cament 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. PRHOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail. In 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 arelicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of nultiple 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.

OPERATOR 24				
7./1		LEASE		
.4	330' FNL x 2310' FE	EL Sec. 31	T-8-S	R-35-E
WALL NO.	TUDIAGE EDUATION	SECTION	FOWNSHIP	RANGE
Saha	mati a	-		
<u> 5000</u>	matic	_	abular Cata	
		Surface Casing		
ee attachme	ent	Size <u>8 5/8</u>		
		TOC <u>surface</u>		
		Hole size $12\frac{1}{4}$ "		
		Intermediate Casing		
		Size 4½	" Cemented with	250
		TOC <u>unknown</u>	feet determined by	
		Hole size 7 7/8"		
		Long string		
		Size		
		TOC	feet determined by	
		Hole size		
		Total depth 4575'		
		Injection interval		
		4686 feet	to 4728	feet
		(perforated or open-ho		- both
•				
Tubing size	2 3/8" lin	ned with		set in a
lubing size	2 3/8" lin	(mate	4575	
lubing size	$\frac{2.3/8^{\text{H}}}{\text{and and model}}$	ned with	4575	set in a
(bra		packer o	4575	
(bra (or describe Other Data	and and model) c any other casing-tubi	packer o	4575	
(bra (or describe Other Data	and and model)	packer o	4575	
(bra (or describe Other Data 1. Name of	und and model) e any other casing-tubi the injection formatio	packer o	at 4575	
(bra (or describe Other Data 1. Name of 2. Name of	und and model) e any other casing-tubi the injection formatio	packer of packer	at 4575	
(bra (or describe Other Data 1. Name of 2. Name of 3. Is this	und and model) e any other casing-tubi the injection formatic Field or Pool (if app) a new well drilled for	packer of packer	Andres /X7 No	feet
(bra (or describe Other Data 1. Name of 2. Name of 3. Is this If no, the	the injection formation for what purpose was the well ever becauserfor:	packer of packer	Andres /X7 No Prilled as a pro List all such perf	ducing oil we

è.
CAVED
MMOCO

Amoco Production Company

SHEET NO

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-	-	_	

1	L	E		
_	_		_	

DATE 9-9-80

J.A.C.

MilNesaNd - SAN ANDRES 330FNLX2310FEL, SEC. 31, T85, R35E Roosevelt County, NEW MEXICO

SUBJECT HOSTON FEDERAL #24

Completed: 12-4-64

ELEV: 4220 RAE 4210 66

	858-24#CSA 4	12
·—	12/4" NOLE	-

Z23/ 136 SA 47/0

PERFS: 4686-4700, 47/2-28 W/25P:

4700-47/2

TomT HNKNOWN

4/2"-9.5#CSA4730 1776" NOLE

O.H. 4730-4767

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 Tog.
- 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. Pun 2-3/8" plastic coated tubing and injection pkr to 4575.
- 7. Rig up surface equipment.
- Starting injection pressure not to exceed 800 psi surface pressure.

OIL CONSERVATION DIVISION

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING BANTA FE, NEW MEXICO 87501

FORM C-108 Revised 7-1-81

Α

II. III.	Operator: Amoco Production Company Address: P. O. Box 68, Hobbs, NM 88240 Contact party: Dave Blazer Phone: (505) 393-1781 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.
III.	Contact party: Dave Blazer Phone: (505) 393-1781 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.
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.
III.	proposed for injection. Additional sheets may be attached if necessary.
IV.	Is this an expansion of an existing project? X yes X no If yes, give the Division order number authorizing the project X
٧.	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:
	 Proposed average and maximum daily rate and volume of fluids to be injected,667 BOP 2. Whether the system is open or closed; Open 3. Proposed average and maximum injection pressure 800 PSIG 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 4. 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.).
111.	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.
х.	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
111.	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 Date: 9-18-81
	Signature: Ottom Pate: 9-18-81
If the	information required under Sections VI, VIII, X, and XI above has been previously ted, it need not be duplicated and resubmitted. Please show the date and circumstance earlier submittal. Well logs were submitted to the NMOCD 12-23-64 upon completion

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 perferated or oven-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. PRESE OF NOTICE

All applicants must furnish groof that a copy of the application has been furnished, by certified or registered model, 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 coarist of a copy of the logal 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 parsies must file objections or requests for hearing with the Oil Conservation Division, P. 9. Box 2008, Sonta 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 WILL DATA SHEET

OPERATOR 26	ction Co.	Horton Federal		
20	330' FNL x 2310' FEL	Sec. 29	T-8-S	R-35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
Scho	ematic	Ţ	abular Data	
		Surface Casing		
See attachme	ent	Size 8 5/8	" Cemented wi	th 225 sx.
		10C surface		
		Hole size 12 ½"		
		Intermediate Casing		
		Size 4 ½	" Cemented wi	th 250 s,
		TOC unknown		
		Hole size 7 7/8"		
		Long string		-
		Size		
		700		
		Hole size		
		Total depth 4742		
		Injection interval		
		4658 feet to perforated or open-ho	4742	feet
Yubing size	2 3/8" linec	with		set in a
Tubing size		(mate	riai)	set in a
(br (or describ	2 3/8" lined and and model) e any other casing-tubing the injection formation	packer a	riai)	feet
(br (or describ Other Data 1. Name of	and and model) e any other casing-tubing	packer a packer a San Andres	4550 4550	feet
(br (or describ Other Data 1. Name of 2. Name of	and and model) e any other casing-tubing the injection formation	packer a packer a seal). San Andres cable) Milnesand - Sar	4550 4550	feet
(br (or describ Other Data 1. Name of 2. Name of 3. Is this	and and model) e any other casing-tubing the injection formation Field or Pool (if applic	San Andres packer a San Andres pable) Milnesand - San Anjection? /// Yes	4550 1. 4550 1. Andres	feet
(br (or describ Other Data 1. Name of 2. Name of 3. Is this If no,	and and model) e any other casing-tubing the injection formation Field or Pool (if applic	San Andres cable) Milnesand - San injection? / Yes well originally drilled	Andres /X/ No Prilled as a price of the state of the stat	producing oil we

e.
AYA
AMOCO

Amoco Production Company

Production Company	FILE
ENGINEERING CHART	APPN
#36	DATE 9-9-80

SUBJECT HOMON FEDERAL #26
MILNESAND - SAN ANDRES FIELD
330 FNL X 2310 FEL, SEC. 29, 785, R35E
RODSHALL COUNTY NEW MEXICO

4202 GL

SHEET NO.

			- · ·
85/11 2432 CSA 422 W 225 SX CMT			
124"HOLE		Z 2 3/8" TBG SA 4699	· · · ·
		TEMT UNKNOWN	
45"95#CSA 470	6 0	O PERFS: 4658-72, 4672-469. 0 4692-4706 WJSPF	
778" HOLE			

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 the and injection pkr. PSA 4550'.
- 8. Rig up surface equipment.
- 9. Starting injection surface pressure not to exceed 800 psi.

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' Sec 29, T-8-S, R-35-E; 330' Horton Federal Well No. 26; 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.

	Mid AmeriET. Brad	<u>н н. разия (7)</u>		M.W.F	owara.	37.19 /	State		State	Seth Alston, Est	Delber	U.S. ♀ † Brown.etal(S)	
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H.Hardingelal eth Alstony Cit. Serv. 23-85 1-25-85 agific West'n. R.Jenkins Top Previt C& M Inc.	4 10030	Top Previt, M.I. C.S. Fitzgerald, Tr.	Cities Serv. 2 · 7 · 85 Top Previt M.I. H.D. 3 chenck etal			31.11 3	31			W.G.Smith,Jr 32 Atlantic St. TD4564 D/A12-1-65		33	3
Top Previt, (S)	Top Previt(5)	A.M.Brownfield W.H.Harding,etol Seth Alston 4168 4141.61 3	O.L. Coleman Vic	Sto Terry Pr	te euit(s) 41.66 214175	39.09 41	State	41.85 1 41		tote 3 1:56 2 4:45	1 21.54 - 4121.52	State	
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OIL CONSERVATION DIVISION DISTRICT I

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OIL CONSERVATION DIVISION	DATE September 28, 1981
P. O. BOX 2088 SANTA FE, NEW MEXICO 87501	RE: Proposed MC Proposed DHC
OCT 01 1981 DIVISION	
OCT O DIVISION	Proposed SWD
OCT 01 1981 DIVISION DIVISION SANTA FE	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, # 2 4, #26
Operator Lease and Well No.	Unit, S - T - R Secs.29, 30, 31-8-
and my recommendations are as follows:	Jecs.29, 30, 31-0-
0.KJ.S.	· ·
Yours very truly,	
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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.

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- (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 -3-CASE No. 3804 Order No. R-3456

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,

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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. wacm producing well

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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:

$$\frac{\text{Aadj} = \frac{\text{TUA} \times \text{F}_a \times 2,000}{\frac{\text{P}_g - \text{I}_g}{\text{P}_Q}}$$

where:

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

TUA = top unit allowable for the pool

Fa = the well's acreage factor

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

Ig = 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, $P_g = I_g$, to P_o

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 -6-

CASE No. 3804 Order No. R-3456

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:

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

where:

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

Vw inj = Average daily volume of water injected, barrels

Vw prod = Average daily volume of water produced, barrels

5.61 = Cubic foot equivalent of one barrel of water

Pa = 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

Tr = 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		Reservoir		Reservoir			
Pressure	Z	Pressure	Z	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		

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- 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

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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

HYTON B. HYTS, Member

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

