



Amoco Production Company

South Permian Basin
Business Unit
501 WestLake Park Boulevard
Post Office Box 3092
Houston, Texas 77253-3092

March 9, 1992

State of New Mexico
Oil Conservation Division
310 Old Santa Fe Trail
Room 206
Santa Fe, NM 87501

Attention: David Catanach

File: KWB-852-WF

Requested Information on Application for Authority to Inject
South Hobbs (GSA) Unit
Hobbs Grayburg-San Andres Pool
Lea County, New Mexico

Please find enclosed the additional information you requested on our
Application for Authority to Inject (Form C-108, Item VI).

Should you have any questions or require additional information, please
call me at 713/596-7686.

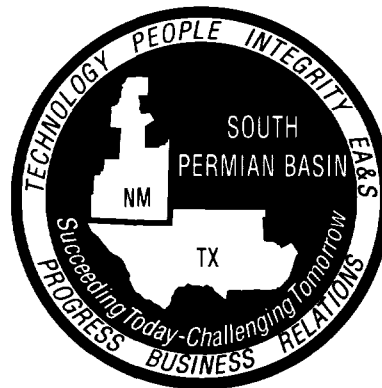
Yours very truly,

K. W. Brand
HB

K. W. Brand
Administrative Services Manager

KAC/avd

Attachment





STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

December 12, 1991

Amoco Production Company
P.O. Box 3092
Houston, Texas 77253

Attention: Kim Colvin

Dear Ms. Colvin:

Reference is made to your request dated October 23, 1991, for authorization to convert five wells to injection within the South Hobbs Grayburg San Andres Unit Pressure Maintenance Project. In order to properly evaluate your application, I am requesting that area of review well information (Item VI) be submitted. Since the majority of this information was submitted several years ago within the referenced orders, I feel that this information may be outdated or may not reflect current well status.

Please submit the above-described information at which time your application will be processed. If you should have any questions, please contact me at (505) 827-5800.

Sincerely,

A handwritten signature in cursive script that reads "David Catanach".

David Catanach
Engineer



Amoco Production Company

501 WestLake Park Boulevard
Post Office Box 3092
Houston, Texas 77253

October 24, 1991

State of New Mexico
Commissioner of Public Lands
P. O. Box 1148
Santa Fe, NM 87504

File: KWB-812-WF

Notification of Application to Inject
South Hobbs (GSA) Unit Nos. 229, 230, 233, 235, 238
Hobbs Grayburg-San Andres Pool
Lea County, New Mexico

Amoco Production Company, as operator of the South Hobbs (GSA) Unit, hereby notifies you that we have applied to the NMOCD for administrative approval to add five water injection wells to our secondary recovery project.

If you have any objections to this application, you must notify the NMOCD in Santa Fe within 15 days upon receipt of this application.

Should you have any questions, please contact Kim Colvin at 713/596-7686.

Yours very truly,

K. W. Brand _{HB}

K. W. Brand
Administrative Services Manager

KAC:avd

Attachments



Amoco Production Company

501 WestLake Park Boulevard
Post Office Box 3092
Houston, Texas 77253

October 23, 1991

State of New Mexico
Energy & Minerals Department
310 Old Santa Fe Trail
Santa Fe, New Mexico 87504

Attention: David Catanach

File: KWB-809-WF

Application for Authority to Inject
South Hobbs (GSA) Unit
Hobbs Grayburg-San Andres Pool
Lea County, New Mexico

Amoco Production Company, as operator of the South Hobbs (Grayburg-San Andres) Unit, Lea County, New Mexico, hereby applies for administrative approval to add five South Hobbs (GSA) Unit water injection wells to our secondary recovery project. Please find enclosed Form C-108 and the necessary documentation.

As required, a copy of this application complete with all attachments has been served by certified mail to each of the parties shown on the attached service list.

If you should have any questions concerning this application, please contact Kim Colvin at 713/596-7686.

Yours very truly,

K. W. Brand
Administrative Services Manager

KAC:avd

Attachments

cc: State of New Mexico
Oil Conservation Division
P. O. Box 1980
Hobbs, NM 88240

Service List
South Hobbs (GSA) Unit
Injection Wells
South Hobbs Unit Nos. 229, 230, 233, 235, & 238

Surface Owners

State of New Mexico
Commissioner of Public Lands
P. O. Box 1148
Santa Fe, NM 87504

Offset Owners

Shell Western E&P, Inc.
P. O. Box 576
Houston, TX 77001

APPLICATION 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 3092, Houston, TX 77253 Rm. 17.182
Contact party: Billy Abbott Phone: 505/397-8219
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☒ yes ☐ no
If yes, give the Division order number authorizing the project R-4934
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- * VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Kim A. Colvin Title Asst. Admin. Analyst
Signature: Kim A. Colvin Date: 10/24/91
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

III. WELL DATA

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

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

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

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

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

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

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

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

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

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

III. Well Data

- A. (1) South Hobbs (GSA) Unit #229: 1088' FNL X 1977' FWL of Sec. 4,
T-19-S, R-38-E, NMPM, Lea County, NM

South Hobbs (GSA) Unit #230: 1100' FNL X 2220' FEL of Sec. 4,
T-19-S, R-38-E, NMPM, Lea County, NM

South Hobbs (GSA) Unit #233: 2245' FNL X 2420' FEL of Sec. 4,
T-19-S, R-38-E, NMPM, Lea County, NM

South Hobbs (GSA) Unit #235: 2160' FSL X 2414' FWL of Sec. 4,
T-19-S, R-38-E, NMPM, Lea County, NM

South Hobbs (GSA) Unit #238: 660' FSL X 2610' FEL of Sec. 4,
T-19-S, R-38-E, NMPM, Lea County, NM

(2) Proposed Casing and Cementing Program

<u>Size of Hole</u>	<u>Size of Casing</u>	<u>Setting Depth</u>	<u>Sacks of Cement</u>	<u>Top of Cement</u>
12-1/4"	8-5/8"	1600'	1100 sx	Surface (Circ.)
7-7/8"	5-1/2"	4350'	1300 sx	Surface (Circ.)

- (3) Tubing size 2-3/8" lined with plastic coating and set at 4000'.

- (4) Guiberson 5-1/2 Uni VI packer set at 4000'.

- (B)(1) Injection Formation: Grayburg San Andres.
Pool: Hobbs Grayburg San Andres.

- (2) Injection interval 4100' - 4250' will be perforated.

- (3) Wells will be drilled for injection.

- (4) Not applicable.

- (5) Next Higher Zone: Bowers
Next Lower Zone: Paddock

- V. Please refer to attached maps.

VI.

The data within Item VI has already been submitted. Please reference approved orders:

<u>Order No.</u>	<u>Date</u>
R-4934	12/03/74
R-4934-A	8/04/83
R-4934-C	9/30/83
PMX-81	4/15/80
PMX-130	10/17/84
PMX-132	10/31/84
PMX-134	2/05/85
PMX-142	9/03/86

VII.

1. Average daily injection rate: 2,000 BWIPD/well
Maximum daily injection rate: 3,500 BWIPD/well
2. The system is CLOSED.
3. Average injection pressure: 450 psi surface pressure
Maximum injection pressure: 800 psi surface pressure
4. Please refer to attached water analysis report.
5. Not applicable

VIII. Previously submitted by earlier referenced orders.

IX. Stimulation program consists of acidizing with 15% HCl NEFE using 50-75 gals/foot of perfs (total 5,000-6,000 gallons acid per well).

X. Previously submitted by earlier referenced orders.

XI. Previously submitted by earlier referenced orders (PMX-142).

XII. Not applicable.

XIII. Copy of this application and attachments have been mailed, as required by "Proof of Notice" section, to all parties on the attached service list.

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7269

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NO. HOBBS
DEEP UNIT

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Exxon Corp.
Nuan
1(29229)
14,399' 4

Sinclair O & G
Saunders Es

2 - W. Huber Corp
B. Conner Uran
B. Conner

8

9

10

Bishop Uranium
P. Forrest
Quinn
3135 Sinclair
P. Forrest
(27416)
5100
W. R. Webb
Mrs. C. A. Taylor

1XO
Taylor N 1(29664)
4170'

Sinclair O
Taylor et al
11040

15 23N-26W

38

16

Mapenza O
Taylor
4517

22

26

35

BYERS

VIT
RJ

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17

16

HOBBS POOL

UN 53650

1(28330)
4300'

Amoco
Sa Hobbs
DC 8(07629)
243

Midwest
C. A. Taylor
4500'

Stanford
Easton
1(28386)
7818'

1(28342)
7990'

Felmont Oil
Terry
4415

1(25192)

4565'

A. Y. 65
S. J. 66
4564

Carado 4101
W. R. Webb
S. J. 66
4564

Carado 4101
W. R. Webb
S. J. 66
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Carado 4101
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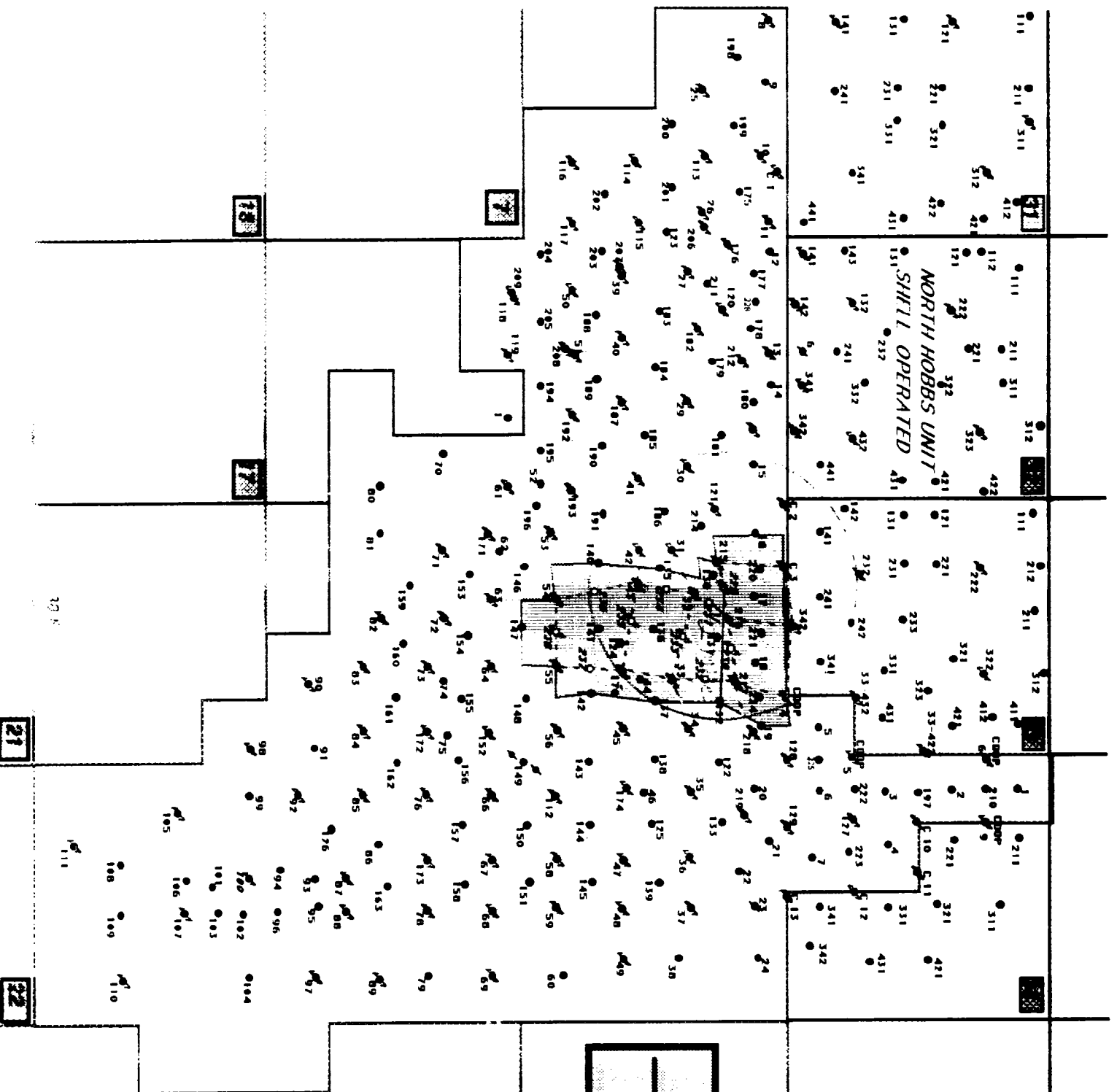
NORTH HOBBS UNIT
SHILL OPERATED

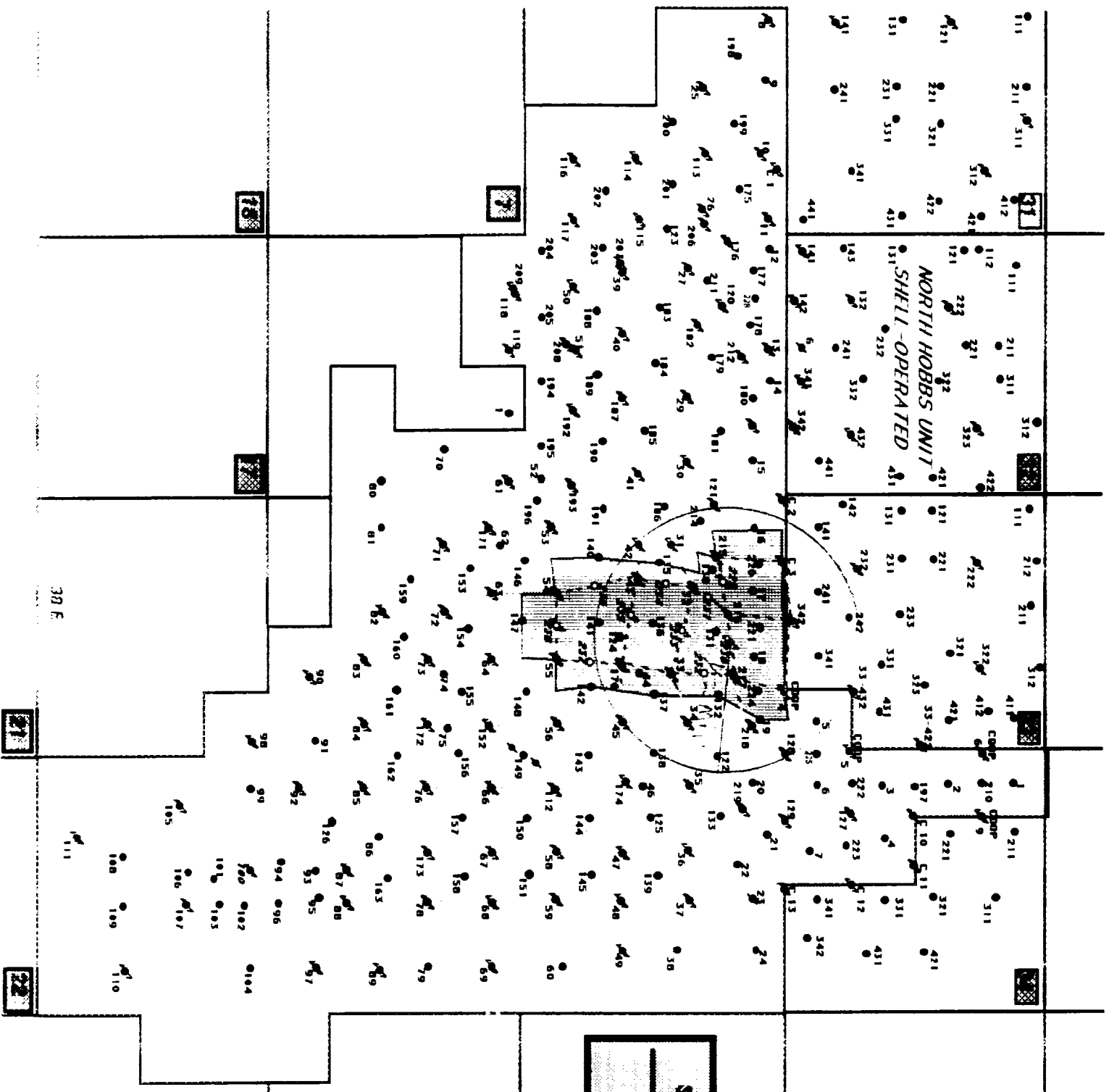
SOUTH HOBBS (GSA) UNIT
LEA COUNTY, NM

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S

LEGEND

- PRODUCERS
- INJECTORS
- P.V.A. DWELLS
- DISPOSAL WELLS
- PROPOSED PRODUCTION
- PROPOSED INJECTION
- 20-ACRE INFILL AREA

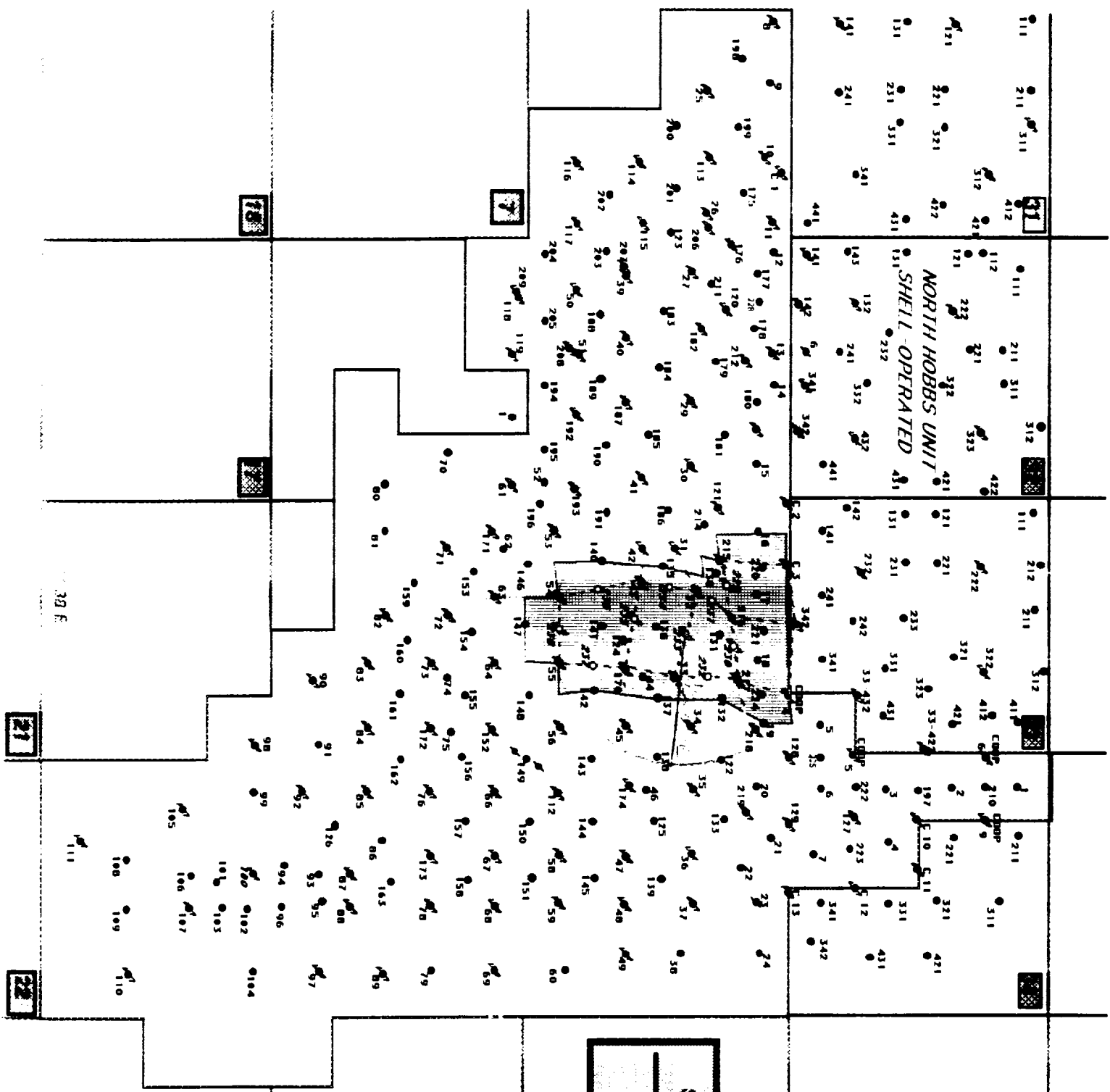




SOUTH HOBBS (GSA) UNIT
LEA COUNTY, N.M.

LEGEND

- PRODUCER
- DISPOSAL WELLS
- ◻ PROPOSED PRODUCER
- ◻ 20-ACRE INFILL AREA

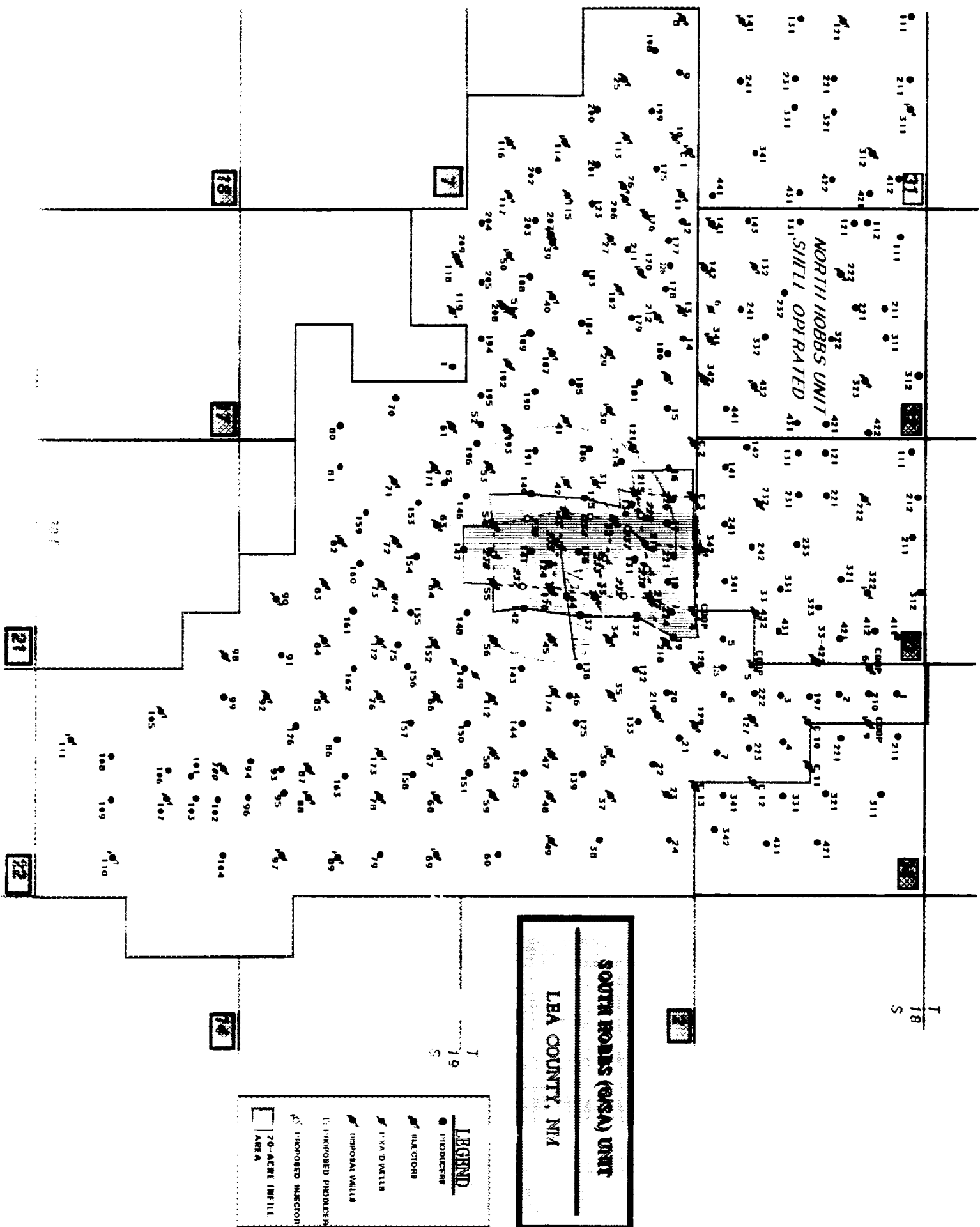


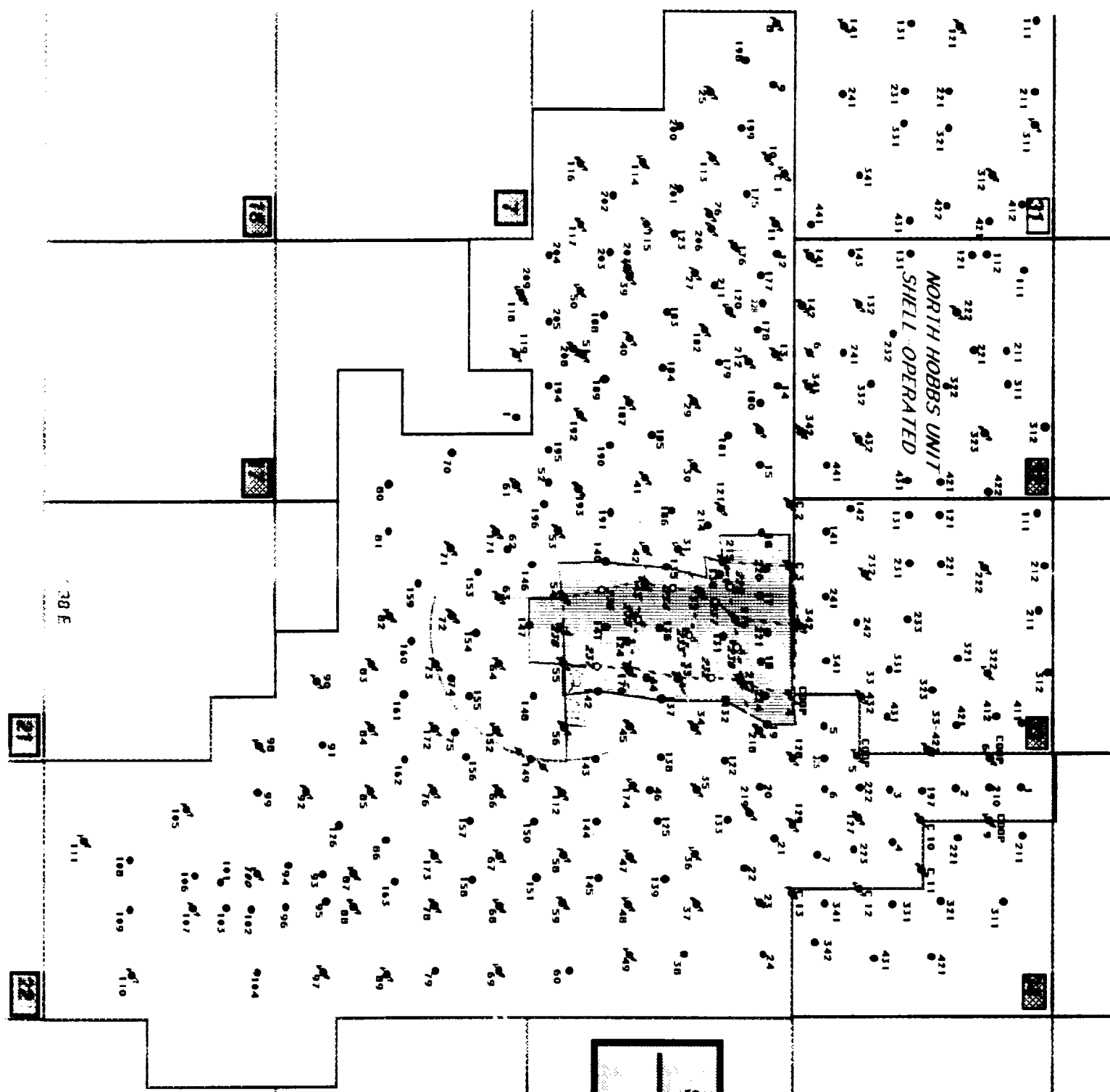
SOUTH HOBBS (GSA) UNIT
LEA COUNTY, N/A

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SOUTH HOBBS (GSA) UNIT
LEA COUNTY, NIA

LEGEND

- PRODUCERS
- INJECTORS
- 20-ACRE INFILL AREA

T
18
S

T
19
S

38 E



WELCHEM, INC.
706 N. Main
P.O. Box 179
Seminole, Texas 79360-0179
915-758-5867

LATS NO. 35228



ANALYTICAL SERVICES REPORT
WATER ANALYSIS

Produced Water

Date Received: 10/29/90

By: LS

Date Out: 11/16/90

Company: AMOCO PRODUCTION COMPANY
Salesman: WHITE
Lease: SOUTH HOBBS UNIT
Source: TANK

Date Sampled: 10/25/90
County: LEA
State: NM
Well: NORTH 5K

DISSOLVED SOLIDS
CATIONS

	mg/l	me/l
Sodium, Na(calc)	2366.0	102.9
Calcium, Ca	573	28.59
Magnesium, Mg	227	18.61
Potassium, K	204	5.22
Iron, Fe	0.45	0.02
Manganese, Mn	0.29	0.01

OTHER PROPERTIES

pH	6.89
Specific Gravity, 60/60 F	1.007
Nomograph Sp. Gr.	1.004- 1.013
Specific Gravity, Uncorr	1.005
Temperature (F)	70.3
Resistivity, OHMS-CM	100 @ 70.3F
H2S =	475
O2 =	0

ANIONS

	mg/l	me/l
Chloride, Cl	4040	113.8
Sulfate, SO4	650	13.54
Carbonate, CO3	0	0.0
Bicarbonate, HCO3	1708	28.0

Total Dissolved Solids (calc.) 9,769 ppm

SCALING TENDENCIES (MG/L):

TEMP (F)	P (PSI)	CO2 (PSI)	PH	CASO4	SCALE BASO4	INDEX (MG/L) SRSO4	CACO3
80	14.7	0.625	6.9	-2188	-0	-108	1013
110	14.7	0.625	6.9	-1496	-0	-113	1106
140	14.7	0.625	6.9	-1002	-0	-87	1178
170	14.7	0.625	6.9	-626	-0	-32	1236
200	14.7	0.625	6.9	-330	-0	-17	1279

Remarks & Recommendations:

Calculations based upon entered pH.

WELCHEM Representative

Brent Sargent



WELCHEM, INC.
706 N. Main
P.O. Box 179
Seminole, Texas 79360-0179
915-758-5867

LATS NO. 35229



Produced Water

ANALYTICAL SERVICES REPORT
WATER ANALYSIS

Date Received: 10/29/90

By: LS

Date Out: 11/16/90

Company: AMOCO PRODUCTION COMPANY
Salesman: WHITE
Lease: SOUTH HOBBS UNIT
Source: TANK

Date Sampled: 10/25/90
County: LEA
State: NM
Well: NORTH 10K

DISSOLVED SOLIDS
CATIONS

	mg/l	me/l
Sodium, Na(calc)	2220.0	96.53
Calcium, Ca	578	28.84
Magnesium, Mg	219	17.95
Potassium, K	202	5.17
Iron, Fe	0.01	0.0
Manganese, Mn	0.26	0.01

OTHER PROPERTIES

pH	6.85
Specific Gravity, 60/60 F	1.007
Nomograph Sp. Gr.	1.004- 1.013
Specific Gravity, Uncorr	1.005
Temperature (F)	70.3
Resistivity, OHMS-CM	120 @ 70.3F
H2S =	350
O2 =	0

ANIONS

	mg/l	me/l
Chloride, Cl	4020	113.24
Sulfate, SO4	550	11.46
Carbonate, CO3	0	0.0
Bicarbonate, HCO3	1452	23.8

Total Dissolved Solids (calc.) 9,241 ppm

SCALING TENDENCIES (MG/L):

TEMP (F)	P (PSI)	CO2 (PSI)	PH	CASO4	SCALE INDEX (MG/L)		
					BASO4	SRSO4	CACO3
80	14.7	0.625	6.9	-2023	-0	-120	798
110	14.7	0.625	6.9	-1403	-0	-125	893
140	14.7	0.625	6.9	-959	-0	-97	970
170	14.7	0.625	6.9	-620	-0	-37	1024
200	14.7	0.625	6.9	-356	-0	-19	1067

Remarks & Recommendations:

Calculations based upon entered pH.

WELCHEM Representative

Brent Hargett



WELCHEM, INC.
706 N. Main
P.O. Box 179
Seminole, Texas 79360-0179
915-758-5867

LATS NO. 35230



Produced Water

ANALYTICAL SERVICES REPORT
WATER ANALYSIS

Date Received: 10/29/90

By: LS

Date Out: 11/16/90

Company: AMOCO PRODUCTION COMPANY
Salesman: WHITE
Lease: SOUTH HOBBS UNIT
Source: TANK

Date Sampled: 10/25/90
County: LEA
State: NM
Well: SOUTH 5K

DISSOLVED SOLIDS
CATIONS

	mg/l	me/l
Sodium, Na(calc)	2278.0	99.05
Calcium, Ca	687	34.28
Magnesium, Mg	235	19.26
Potassium, K	199	5.09
Iron, Fe	1.51	0.05
Manganese, Mn	0.29	0.01

OTHER PROPERTIES

pH	6.65
Specific Gravity, 60/60 F	1.008
Nomograph Sp. Gr.	1.005- 1.013
Specific Gravity, Uncorr	1.006
Temperature (F)	70.9
Resistivity, OHMS-CM	105 @ 70.9F
H2S = 400	
O2 = 0	

ANIONS

	mg/l	me/l
Chloride, Cl	4100	115.49
Sulfate, SO4	780	16.25
Carbonate, CO3	0	0.0
Bicarbonate, HCO3	1586	26.0

Total Dissolved Solids (calc.) 9,867 ppm

SCALING TENDENCIES(MG/L):

TEMP(F)	P(Psi)	CO2(Psi)	PH	CASO4	SCALE INDEX(MG/L)	BASO4	SRSO4	CACO3
80	14.7	1.250	6.7	-2017	-0	-93	801	
110	14.7	1.250	6.7	-1323	-0	-97	922	
140	14.7	1.250	6.7	-826	-0	-74	1020	
170	14.7	1.250	6.7	-451	-0	-27	1089	
200	14.7	1.250	6.7	-158	-0	-14	1144	

Remarks & Recommendations:

Calculations based upon entered pH.

WELCHEM Representative

Brent Seigent



WELCHEM, INC.
706 N. Main
P.O. Box 179
Seminole, Texas 79360-0179
915-758-5867

LATS NO. 35231



Produced Water

ANALYTICAL SERVICES REPORT
WATER ANALYSIS

Date Received: 10/29/90

By: LS

Date Out: 11/16/90

Company: AMOCO PRODUCTION COMPANY
Salesman: WHITE
Lease: SOUTH HOBBS UNIT
Source: TANK

Date Sampled: 10/25/90
County: LEA
State: NM
Well: SOUTH 10K

DISSOLVED SOLIDS
CATIONS

	mg/l	me/l
Sodium, Na(calc)	2299.0	99.97
Calcium, Ca	693	34.58
Magnesium, Mg	239	19.59
Potassium, K	200	5.12
Iron, Fe	0.56	0.02
Manganese, Mn	0.29	0.01

OTHER PROPERTIES

pH	6.76
Specific Gravity, 60/60 F	1.008
Nomograph Sp. Gr.	1.005- 1.013
Specific Gravity, Uncorr	1.006
Temperature (F)	71.1
Resistivity, OHMS-CM	95 @ 71.1F
H2S = 400	
O2 = 0	

ANIONS

	mg/l	me/l
Chloride, Cl	4220	118.87
Sulfate, SO4	740	15.42
Carbonate, CO3	0	0.0
Bicarbonate, HCO3	1525	25.0

Total Dissolved Solids (calc.) 9,917 ppm

SCALING TENDENCIES (MG/L):

TEMP (F)	P (PSI)	CO2 (PSI)	PH	CASO4	SCALE INDEX (MG/L)		
					BASO4	SRSO4	CACO3
80	14.7	1.250	6.7	-1986	-0	-98	750
110	14.7	1.250	6.7	-1314	-0	-102	872
140	14.7	1.250	6.7	-833	-0	-78	969
170	14.7	1.250	6.7	-469	-0	-29	1038
200	14.7	1.250	6.7	-183	-0	-15	1093

Remarks & Recommendations:

Calculations based upon entered pH.

WELCHEM Representative

Brent Hargett



WELCHEM, INC.
706 N. Main
P.O. Box 179
Seminole, Texas 79360-0179
915-758-5867

LATS NO. 35232



Injection Water

ANALYTICAL SERVICES REPORT
WATER ANALYSIS

Date Received: 10/29/90

By: LS

Date Out: 11/16/90

Company: AMOCO PRODUCTION COMPANY
Salesman: WHITE
Lease: SOUTH HOBBS UNIT
Source: PUMP

Date Sampled: 10/25/90
County: LEA
State: NM
Well: #2 TURBINE

DISSOLVED SOLIDS
ANALYSIS

	mg/l	me/l
Sodium, Na(calc)	2122.0	92.29
Calcium, Ca	597	29.79
Magnesium, Mg	217	17.79
Potassium, K	181	4.63
Iron, Fe	0.01	0.0
Manganese, Mn	0.26	0.01

OTHER PROPERTIES

pH	6.84
Specific Gravity, 60/60 F	1.007
Nomograph Sp. Gr.	1.004- 1.013
Specific Gravity, Uncorr	1.005
Temperature (F)	71.1
Resistivity, OHMS-CM	120 @ 71.1F
H2S =	60
O2 =	0

ANIONS

	mg/l	me/l
Chloride, Cl	3760	105.92
Sulfate, SO4	710	14.79
Carbonate, CO3	0	0.0
Bicarbonate, HCO3	1452	23.8

Total Dissolved Solids (calc.) 9,039 ppm

SCALING TENDENCIES (MG/L):

TEMP (F)	P (PSI)	CO2 (PSI)	PH	CASO4	SCALE INDEX (MG/L)	CACO3	
					BASO4	SRSO4	
80	14.7	0.625	6.9	-2121	-0	-97	799
110	14.7	0.625	6.9	-1421	-0	-100	893
140	14.7	0.625	6.9	-921	-0	-77	970
170	14.7	0.625	6.9	-542	-0	-29	1024
200	14.7	0.625	6.9	-246	-0	-15	1067

Remarks & Recommendations:

Calculations based upon entered pH.

WELCHEM Representative

Brant Argent



WELCHEM, INC.
706 N. Main
P.O. Box 179
Seminole, Texas 79360-0179
915-758-5867

LATS NO. 35233



ANALYTICAL SERVICES REPORT
WATER ANALYSIS

City (makeup) Water

Date Received: 10/29/90

By: LS

Date Out: 11/16/90

Company: AMOCO PRODUCTION COMPANY
Salesman: WHITE
Use: SOUTH HOBBS UNIT
Source: CITY WATER

Date Sampled: 10/25/90
County: LEA
State: NM
Well:

DISSOLVED SOLIDS
IONS

	mg/l	me/l
Sodium, Na (calc)	339.0	14.74
Calcium, Ca	125	6.24
Magnesium, Mg	31	2.54
Potassium, K	20	0.51
Copper, Fe	0.01	0.0
Manganese, Mn	0.27	0.01

OTHER PROPERTIES

pH	7.20
Specific Gravity, 60/60 F	1.002
Nomograph Sp. Gr.	1.000- 1.006
Specific Gravity, Uncorr	1.000
Temperature (F)	71.1
Resistivity, OHMS-CM	580 @ 71.1F
H2S = 0	
O2 = 0.1	

IONS

	mg/l	me/l
Chloride, Cl	460	12.96
Sulfate, SO4	100	2.08
Bicarbonate, CO3	0	0.0
Carbonate, HCO3	549	9.0

Total Dissolved Solids (calc.) 1,624 ppm

ALKALINITY TENDENCIES (MG/L):

MP (F)	P (PSI)	CO2 (PSI)	PH	CASO4	SCALE BASO4	INDEX (MG/L) SRSO4	CACO3
80	14.7	0.156	7.3	-1562	-0	-150	121
110	14.7	0.156	7.3	-1130	-0	-153	166
140	14.7	0.156	7.3	-827	-0	-113	203
170	14.7	0.156	7.3	-604	-0	-28	230
200	14.7	0.156	7.3	-435	-0	-12	251

Remarks & Recommendations:

Calculations based upon entered pH.

WELCHEM Representative

Brent Hergert



WELCHEM, INC.
706 N. Main
P.O. Box 179
Seminole, Texas 79360-0179
915-758-5867

LATS NO. 46468

ANALYTICAL SERVICES REPORT
WATER ANALYSIS

Injection Water

Date Received: 10/14/91

By: LS

Date Out: 10/14/91

Company: AMOCO PRODUCTION COMPANY
Salesman: WHITE
Lease: SOUTH HOBBS UNIT
Source:

Date Sampled: 10/14/91
County: LEA
State: NM
Well: TURBINE #1

DISSOLVED SOLIDS
CATIONS

	mg/l	me/l
Sodium, Na(calc)	1945.0	84.59
Calcium, Ca	700	34.93
Magnesium, Mg	210	17.21
Potassium, K	200	5.12
Iron, Fe	1.0	0.04
Manganese, Mn	.1	0.0

OTHER PROPERTIES

pH	7.02
Specific Gravity, 60/60 F	1.005
Honograph Sp. Gr.	1.004- 1.013
Specific Gravity, Uncorr	1.003
Temperature (F)	70.0
Resistivity, OHMS-CM	100 @ 70.0F

ANIONS

	mg/l	me/l
Chloride, Cl	4000	112.68
Sulfate, SO4	250	5.21
Carbonate, CO3	0	0.0
Bicarbonate, HCO3	1464	24.0

Total Dissolved Solids (calc.) 8,770 ppm

SCALING TENDENCIES(MG/L):

TEMP (F)	P (PSI)	CO2 (PSI)	PH	CASO4	SCALE INDEX (MG/L)	BASO4	SRSO4	CACO3
80	14.7	0.313	7.1	-1312	-0	-193	895	
110	14.7	0.313	7.1	-957	-0	-204	969	
140	14.7	0.313	7.1	-697	-0	-167	1025	
170	14.7	0.313	7.1	-498	-0	-72	1070	
200	14.7	0.313	7.1	-340	-1	-40	1104	

Remarks & Recommendations:

Calculations based upon entered pH.

WELCHEM Representative

Arthur Hernandez

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, Kathi Bearden

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

of _____

One weeks.
Beginning with the issue dated

Oct. 17 1991
and ending with the issue dated

Oct. 17 1991.

Kathi Bearden
General Manager

Sworn and subscribed to before

me this 24 day of

Oct 1991

Paula Parrish
Notary Public.

My Commission expires _____

Aug. 5 1995
Seal

This newspaper is duly qualified to
publish legal notices or adver-
tisements within the meaning of
Section 6, Chapter 157, Laws of
1987, and payment of fees for said
publication has been made.

LEGAL NOTICE
October 17, 1991

Ameco Production Company will on or before October 14, 1991, apply for administrative approval to drill five water injection wells in the South Hobbs (GSA) Unit. The well names, numbers, and locations are as follows:

South Hobbs (GSA) Unit No. 229	Unit C,	Sec. 4,	T-19-S,	R-38-E
South Hobbs (GSA) Unit No. 230	Unit B,	Sec. 4,	T-19-S,	R-38-E
South Hobbs (GSA) Unit No. 233	Unit G,	Sec. 4,	T-19-S,	R-38-E
South Hobbs (GSA) Unit No. 235	Unit K,	Sec. 4,	T-19-S,	R-38-E
South Hobbs (GSA) Unit No. 238	Unit O,	Sec. 4,	T-19-S,	R-38-E

The purpose of this work is to expand the South Hobbs (GSA) Unit Pressure Maintenance Project. Water will be injected into the Grayburg-San Andres Formation at an average rate of 2000 BWIPD per well with an average injection pressure of 450 psi. Any questions concerning this project may be directed to:

Ameco Production Company
Attn: Mr. B. W. Abbott
Operation Foreman
P.O. Box 44
Hobbs, N.M. 88241
Phone: 505/397-8219

Interested parties must file objections or request for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, N.M. 87504-2088 within 15 days.

K.W. Brand
Administrative Services Manager
Ameco Production Company
P.O. Box 3092
Houston, TX 77253

CALCULATED CEMENT TOPS for APER OF REVTEW PRNDOM GROUP

Proposed Injection Well: RMDCO South Hobbs GSH Pressure Maintenance Project

Proposed Injection Zone: 3875 to 4340

Minimum Required TOC: 3375 Feet

Formation: Grayburg/San Andres

Yield: 702

Well Name	No.	Type	I.O.	Casing	Depth	Borehole	Cement	TOC	Remarks
North Hobbs Unit 33	141	PP00	4258	9.625	2738	12.25	500 sk	1,419	Top of 5.5" Liner @ 3028'
				7	3976	10.5	275	3,296	
				5.5	4061	7.875	45	4,046	
North Hobbs Unit 33	341	PP00	4247	9.625	2755	12.25	600 sk	1,173	5" Liner 3903'-4237'
				7	3981	10.5	325	3,127	
				5	4237	7.875	75	3,930	
South Hobbs Unit	#15	PP00	4225	9.625	2746	12.25	500 sk	1,437	3000' by Temp Survey
				7	3984	10.5	225	3,436	
				5.5	4170	7.875	50	3,563	
South Hobbs Unit	#16	PP00	4241	9.625	2798	12.25	700 sk	352	5.5" Liner 3680'-4198'
				6.625	3976	10.5	200	3,520	
				5.5	4198	7.875	75	3,840	
South Hobbs Unit	#18	PP00	4243	10.75	2740	15.5	400 sk	2,454	Top of 5.5" Liner @ 3082'
				8.625	3950	12.25	135	3,680	
				5.5	4215	7.875	75	3,857	
South Hobbs Unit	#19	PP00	4233	10.75	2752	15.5	400 sk	2,056	Top of 5.5" Liner @ 2645'
				8.625	3952	12.25	150	3,652	
				5.5	4200	7.875	300	2,770	
South Hobbs Unit	#121	INI	4268	11.75	1431	15.5	600 sk	542	2620' by UBL
				8.625	3865	12.25	1275	1,313	
				5.5	4268	7.875	690	978	
South Hobbs Unit	#35	PP00	4239	10.75	2790	15.5	450 sk	2,243	
				8.625	3990	12.25	150	3,090	
				5.5	4210	7.875	650	1,111	
South Hobbs Unit	#30	INI	4230	13	192	17	150 sk	3	3100' by Temp Survey
				9.625	2750	12.25	500	1,431	
				5.5	4169	7.875	50	3,931	
South Hobbs Unit	#41	INI	4232	10.75	419	15.5	300 sk	55	
				4.5	4088	6.25	200	2,478	
								EPR	

Numbers in () denote negative values, i.e., cement circulated to surface.

CALCULATED CEMENT TOPS for AREA OF REVIEW RANDOM GROUP

Proposed Injection Well: RMDCO South Hobbs GSR Pressure Maintenance Project
Proposed Injection Zone: 3875 to 4340
Minimum Required TOC: 3375 Feet
Formation: Grayburg/San Andres
Yield: 70%

Well Name	No.	Type	T.D.	Casing	Depth	Borehole	Cement	TOC	Remarks
North Hobbs Unit 33	141	PROD	4258	9.625 7	2738 3976	12.25 10.5	500 sx 275	1,419 3,296	Top of 5.5" Liner @ 3328'
				5.5	4261	7.875	45	4,046	
North Hobbs Unit 33	341	PROD	4247	9.625 7 5	2755 3981 4237	12.25 10.5 7.875	600 sx 325 75	1,173 3,177 3,930	5" Liner 3923'-4237'
South Hobbs Unit	#15	PROD	4225	9.625 7 5.5	2746 3984 4198	12.25 10.5 7.875	500 sx 225 50	1,427 3,428 3,960	3700' by Temp Survey
South Hobbs Unit	#16	PROD	4241	9.625 6.625 5.5	2798 3976 4198	12.25 10.5 7.875	700 sx 200 75	952 3,520 3,840	5.5" Liner 3886'-4198'
South Hobbs Unit	#18	PROD	4243	10.75 8.625 5.5	2740 3950 4215	15.5 12.25 7.875	400 sx 135 75	2,254 3,680 3,857	Top of 5.5" Liner @ 3882'
South Hobbs Unit	#19	PROD	4233	10.75 8.625 5.5	2752 3952 4200	15.5 12.25 7.875	400 sx 150 300	2,266 3,652 2,770	Top of 5.5" Liner @ 2645'
South Hobbs Unit	#121	INJ	4268	11.75 8.625 5.5	1431 3865 4268	15.5 12.25 7.875	600 sx 1275 690	542 1,313 978	2620' by CBL
South Hobbs Unit	#35	PROD	4239	10.75 8.625 5.5	2790 3990 4210	15.5 12.25 7.875	450 sx 150 650	2,243 3,690 1,111	
South Hobbs Unit	#30	INJ	4230	13 9.625 5.5	192 2750 4169	17 12.25 7.875	150 sx 500 50	3 1,431 3,931	3100' by Temp Survey
South Hobbs Unit	#41	INJ	4232	10.75 4.5	419 4088	15.5 6.25	300 sx 200	55 2,478 EPR	

Numbers in () denote negative values, i.e., cement circulated to surface.

CALCULATED CEMENT TOPS for AREA OF REVIEW RANDOM GROUP

Proposed Injection Well: RMOCO South Hobbs GSR Pressure Maintenance Project
Proposed Injection Zone: 3875 to 4340 Formation: Grayburg/San Andres
Minimum Required TOC: 3375 Feet Yield: 70%

Well Name	No.	Type	T.O.	Casing	Depth	Borehole	Cement	TOC	Remarks
South Hobbs Unit ✓	#17	PROD	4254	10.75	2754	15.5	400 sx	2,268	
				8.625	3976	12.25	150	3,676	
				5.5	4212	7.875	75	3,854	
South Hobbs Unit	#31	INJ	4275	13	259	15.5	106 sx	34	
				9.625	2785	12.25	300	1,994	5" Liner 3993'-4217'
				6.625	3993	8.25	135	3,147	
South Hobbs Unit	#32	INJ	4242	13	253	15.5	80 sx	83	
				9.625	2772	12.25	300	1,981	5" Liner 3936'-4199'
				6.625	3997	8.25	135	3,151	
South Hobbs Unit	#33	INJ	4255	10.75	1523	15.5	75 sx	1,432	
				8.625	3259	12.25	60	3,139	4.5" Liner 3868'-4254'
				4.5	3867	6.049	465	(443)	
South Hobbs Unit ✓	#45	INJ	4221	10.75	1552	15.5	75 sx	1,461	
				8.625	3960	12.25	150	3,660	Top of 5.5" Liner @ 3904'
				5.5	4204	7.875	75	3,846	
South Hobbs Unit ✓	#46	PROD	4281	10.75	1751	15.5	400 sx	1,265	
				8.625	3984	12.25	150	3,684	Top of 5.5" Liner @ 3928'
				5.5	4212	7.875	75	3,854	
South Hobbs Unit ✓	#54	INJ	4221	10.75	3265	15.5	650 sx	2,476	
				8.625	3977	12.25	100	3,777	Top of 5.5" Liner @ 3939'
				5.5	4190	7.875	85	3,785	
South Hobbs Unit ✓	#63	INJ	4257	10.75	2768	15.5	350 sx	2,343	
				8.625	4038	12.25	100	3,838	Top of 5.5" Liner @ 3918'
				5.5	4159	7.875	575	1,418	
South Hobbs Unit	#64	INJ	4280	10.75	2810	15.5	200 sx	2,567	
				7	3993	12.25	100	3,843	Top of 4.5" Liner @ 3680'
				4.5	4280	6.25	100	3,475	
Buyers "B" ✓	#34	PROD	7318	11.75	391	15.5	275 sx	(17)	
				8.625	3882	12.25	500	2,881	
				5.5	7318	7.875	575	4,577	

Numbers in () denote negative values.

CALCULATED CEMENT TOPS for AREA OF REVIEW RANDOM GROUP

Proposed Injection Well: FMDCO South Hobbs 658 Pressure Maintenance Project
Proposed Injection Zone: 3875 to 4340 Formation: Grayburg/San Andres
Minimum Required TOC: 3375 Feet Yield: 70%

Well Name	No.	Type	T.O.	Casing	Depth	Borehole	Cement	TOC	Remarks
South Hobbs Unit	#17	PROD	4254	10.75 8.625 5.5	2754 3976 4212	15.5 12.25 7.875	400 sx 150 75	2,268 3,676 3,854	
South Hobbs Unit	#31	INJ	4275	13 9.625 6.625	259 2785 3993	15.5 12.25 8.25	106 sx 300 135	34 1,994 3,147	5" Liner 3993'-4217"
South Hobbs Unit	#32	INJ	4242	13 9.625 6.625	253 2772 3997	15.5 12.25 8.25	80 sx 300 135	83 1,981 3,151	5" Liner 3936'-4199"
South Hobbs Unit	#33	INJ	4255	10.75 8.625 4.5	1523 3259 3867	15.5 12.25 6.049	75 sx 60 465	1,432 3,139 (443)	4.5" Liner 3868'-4254"
South Hobbs Unit	#45	INJ	4221	10.75 8.625 5.5	1552 3960 4204	15.5 12.25 7.875	75 sx 150 75	1,461 3,660 3,846	Top of 5.5" Liner @ 3904"
South Hobbs Unit	#46	PROD	4281	10.75 8.625 5.5	1751 3984 4212	15.5 12.25 7.875	400 sx 150 75	1,265 3,684 3,854	Top of 5.5" Liner @ 3928"
South Hobbs Unit	#54	INJ	4221	10.75 8.625 5.5	3265 3977 4190	15.5 12.25 7.875	650 sx 100 85	2,476 3,777 3,785	Top of 5.5" Liner @ 3939"
South Hobbs Unit	#63	INJ	4257	10.75 8.625 5.5	2768 4038 4159	15.5 12.25 7.875	350 sx 100 575	2,343 3,838 1,418	Top of 5.5" Liner @ 3918"
South Hobbs Unit	#64	INJ	4280	10.75 7 4.5	2810 3993 4280	15.5 12.25 6.25	200 sx 100 100	2,567 3,843 3,475	Top of 4.5" Liner @ 3680"
Buyers "B"	#34	PROD	7318	11.75 8.625 5.5	391 3882 7318	15.5 12.25 7.875	275 sx 500 575	(17) 2,881 4,577	

Numbers in () denote negative values.

CALCULATED CEMENT TOPS for AREA OF REVIEW RANDOM GROUP

Proposed Injection Well: AMOCO South Hobbs GSA Pressure Maintenance Project
Proposed Injection Zone: 3875 to 4340 Formation: Grayburg/San Andres
Minimum Required TOC: 3375 Feet Yield: 70%

Well Name	No.	Type	T.D.	Casing	Depth	Borehole	Cement	TOC	Remarks
South Hobbs Unit	#17	PROD	4254	10.75 8.625 5.5	2754 3976 4212	15.5 12.25 7.875	400 sx 150 75	2,268 3,676 3,854	
South Hobbs Unit	#31	INJ	4275	13 9.625 6.625	259 2785 3993	15.5 12.25 8.25	106 sx 300 135	34 1,994 3,147	5" Liner 3993'-4217'
South Hobbs Unit	#32	INJ	4242	13 9.625 6.625	253 2772 3997	15.5 12.25 8.25	80 sx 300 135	83 1,981 3,151	5" Liner 3936'-4199'
South Hobbs Unit	#33	INJ	4255	10.75 8.625 4.5	1523 3259 3867	15.5 12.25 6.049	75 sx 60 465	1,432 3,139 (443)	4.5" Liner 3868'-4254'
South Hobbs Unit	#45	INJ	4221	10.75 8.625 5.5	1552 3960 4204	15.5 12.25 7.875	75 sx 150 75	1,461 3,660 3,846	Top of 5.5" Liner @ 3904'
South Hobbs Unit	#46	PROD	4281	10.75 8.625 5.5	1751 3984 4212	15.5 12.25 7.875	400 sx 150 75	1,265 3,684 3,854	Top of 5.5" Liner @ 3928'
South Hobbs Unit	#54	INJ	4221	10.75 8.625 5.5	3265 3977 4190	15.5 12.25 7.875	650 sx 100 85	2,476 3,777 3,785	Top of 5.5" Liner @ 3939'
South Hobbs Unit	#63	INJ	4257	10.75 8.625 5.5	2768 4038 4159	15.5 12.25 7.875	350 sx 100 575	2,343 3,838 1,418	Top of 5.5" Liner @ 3918'
South Hobbs Unit	#64	INJ	4280	10.75 7 4.5	2810 3993 4280	15.5 12.25 6.25	200 sx 100 100	2,567 3,843 3,475	Top of 4.5" Liner @ 3680'
Bugers "B"	#34	PROD	7318	11.75 8.625 5.5	391 3882 7318	15.5 12.25 7.875	275 sx 500 575	(17) 2,881 4,577	

Numbers in () denote negative values, i.e., cement circulated to surface.

South Hobbs GSA Unit Casing Information
Wells within 1 mile radius of Pressure Maintenance Project (10/91)

WELL #	TYPE	DATE DRILLED	LOCATION	TOTAL DEPTH	COMPLETION INTERVAL	CSG @	SIZE	CEMENT TYPE	CMT SACK	T/C	MEASURED TOOL
NHU 33142	PROD	12/5/83	1250 FSL X 185 FWL T18S,R38E	4370	4027-4211	40 1540 5.5	16 8.625 4370		150 910	SURFACE 320	CIRC CBL
NHU 33141	PROD	3/20/69	660 FSL X 660 FWL T18S,R38E	4258	3976-4062	209 2738 3976 3328-4261	12.5 9.625 7 505		156 500 275 45	SURFACE 903 2201 3828	CIRC CBL
NHU 33232	INU	9/80	1595 FSL X 1370 FWL T18S,R38E	4453	4050-4248	40 1590 4439	16 8.625 5.5		40 800 750	SURFACE SURFACE 2620	CIRC CIRC CBL
NHU 33234	PROD	6/21/85	1372 FSL X 2563 FWL T18S,R38E	4373	4046-4224	40 1503 4372	13.375 9.625 7	RED-MIX	2YD 650 1125	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
NHU 33341	PROD	4/57	1980 FEL X 660 FSL T18S,R38E	4247	4058-4190	215 2755 3981 3923-4237	15.5 9.625 7 5		350 600 325 75	SURFACE 1013 1570 3923	CIRC CBL
NHU 33241	PROD	8/72	660 FSL X 1980 FWL T18S,R38E	4252	3971-4229	223 2754 3971 3918-4236	15.5 9.625 7 5.5		387 600 350 150	SURFACE 1012 1990 3918	CIRC CBL
NHU 33342	INU	10/83	125 FSL X 2730 FWL T18S,R38E	4380	4068-4256	40 1565 4380	16 8.625 5.5		40 650 725	SURFACE SURFACE 100	CIRC CIRC CBL
SHU 15	PROD	8/4/30	660 FNL 550 FEL SEC 5 T19S R38E	4225	4084-4175	192 2746 3984 4175	13.375 9.625 7 5.5	SLO-SET	150 500 225 50	SURFACE 640 2150 3700	CIRC CALCULATED CALCULATED TEMP SURV
16	PROD	5/30/30	660 FNL X 660 FWL,SEC4,T19S,R38E	4241	4102-4198	251 2798 3976 3886-4198	16 9.625 6.625 5.5		135 700 200 75	SURFACE SURFACE SURFACE TOL	CALC CALC CIRC CIRC

South Hobbs GSA Unit Casing Information
Wells within 1 mile radius of Pressure Maintenance Project (10/91)

WELL #	TYPE	DATE DRILLED	LOCATION	TOTAL DEPTH	COMPLETION INTERVAL	CSG @	SIZE	CEMENT TYPE	CMT SACK	T/C	MEASURED TOOL
C2	INU	8/15/83	645 FNL X 453 FWL SEC 4, T19S, R38E	4395	4159-4348	40 1500 4423	16 8.625 5.5	CLASS C CLASS C	4.5YD 739 1046	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
C3	INU	9/4/83	660 FWL X 1980 FNL, SEC 34, T18S, R38E	4494	4248-4447	40 1500 4494	14 8.625 7.875	REDI-MIX CLASS C CLASS H	2 780 1400	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
17	PROD	12/17/31	645 FNL X 2045 FWL, SEC4, T19S, R38E	4254	4090-4204	201 2754 3976 0-3899 3900-4212	16 10.75 8.625 5.5 5.5	CLASS C	125 400 150 75	SURFACE SURFACE SURFACE 3900	CIRC CIRC CIRC TOL
C4	INU	8/18/83	494 FNL X 1025 FEL, SEC4, T19S, R38E	4374	4126-4262	40 1529 4374	14 8.625 5.5	REDI-MIX CLASS C CLASS C	2 773 525	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
18	PROD	10/29/31	660 FNL X 1980 FEL, SEC4, T19S, R38E	4243	4060-4212	207 2740 3950 3882-4215	16 10.75 8.625 5.5	LONESTAR	100 400 135 75	NA 1425 SURFACE 3882	CALCULATED CIRC CIRC TOL
19	PROD	1932	660 FNL X 660' FEL, SEC 4, T19S, R38E	4233	4064-4198	211 2752 3952 2645-4200	16 10.75 8.625 5.5		125 400 150 300	SURF SURF 2150 2645	CALC CALC CALC TOP OF LINER
Byers B34	PROD	6/28/72	713 FNL X 1840 FEL, SEC 4, T19S, R38E	7318	1990-4126	391 3882 7318	11.75 8.625 5.5	CLASS C CLASS C CLASS C x INCOR	275 500 575	SURFACE SURFACE SURF	CIRC CALC CALC
SHU 218	INU	11/6/86	652 FNL X 563 FEL, SEC 4, T19S, R38E	4353	4106-4250	40 1568 4353	14 8.625 5.5	REDI-MIX CLASS C CLASS A	2.5YD 716 760	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
SHU 128	INU	10/18/83	335 FNL X 520 FWL, SEC3, T19SR38E	4389	4132-4340	40 1616 4389	14 8.625 5.5	REDI-MIX CLASS C REG, CLASS C X H	4YD 925 1375	SURFACE SURFACE SURFACE	CALC

South Hobbs GSA Unit Casing Information
Wells within 1 mile radius of Pressure Maintenance Project (10/91)

WELL #	TYPE	DATE DRILLED	LOCATION	TOTAL DEPTH	COMPLETION INTERVAL	CSG @	SIZE	CEMENT TYPE	CMT SACK	T/C	MEASURED TOOL
224	PROD	10/88	625 FNL X 1530 FEL SEC 4 T19S,R38E	4300	4000-4044	40 10,375 7	16 1544 4300		1000 1300	SURFACE SURFACE	CIRC CIRC
121	INJ	11/11/78	1450 FNL X 150 FWL, SEC4, T19S,R38E	4268	0	1431 3865 4268	11.75 8.625 5.5	CLASS C CLASS C CLASS C	600 1275 690	SURFACE SURFACE 2620	CIRC CIRC CBL
215	INJ	10/24/86	1398 FNL X 1227' FWL, SEC. 4 T19S,R38E	4348	4110-4244	40 1485 4348	14 8.625 5.5	RED-MIX 2.5YD CLASS C CLASS A	602 810	SURFACE SURFACE	CIRC CIRC
220	PROD	5/21/87	550 FNL X 1400 FWL, SEC 4,T19S,R38E	4479	4220-4346	41 1449 4479	16 10.75 7	RED-MIX 3.7 YD CLASS C CLASS C	650 818	SURFACE SURFACE	CIRC CIRC
130	PROD	10/19/83	1403 FNL X 1403 FWL, SEC4, T19S,R38E	4298	4070-4194	40 1496 4301	14 8.625 5.5	RED-MIX 2YD CLASS C CLASS H	2YD 650 1092	SURFACE SURFACE	CIRC CIRC
221	PROD	6/4/87	1091 FNL X 2411 FWL SEC 4, T19S,R38E	4404	4070-4106	40 1534 4404	16 10.625 7	RED-MIX 3.5YD CLASS C CLASS C	800 1134	SURFACE SURFACE	CIRC CIRC
216	INJ	10/3/86	1166 FNL X 2411 FWL, SEC. 4,T19S,R38E	4310	4060-4209	40 1523 4053	13.625 8.625	RED-MIX 2.7 YD CLASS C CLASS A	9YD 1114 1321	SURFACE SURFACE	CIRC CIRC
131	PROD	10/8/83	1383 FNL X 2498 FEL, SEC 4,T19S,R38E	4300	4062-4234	40 1525 4300	14 8.625 5.5	RED-MIX 9YD CLASS C CLASS H	9YD 675 1326	SURFACE SURFACE	CIRC CIRC
217	INJ	10/13/86	1407 FNL X 2203 FEL, SEC 4, T19S,R38E	4427	4194-4312	40 1548 4427	14 8.625 5.5	RED-MIX 2.5YD CLASS C CLASS A	2.5YD 650 773	SURFACE SURFACE	CIRC CIRC
132	PROD	12/2/83	1790 FNL X 1185 FEL,SEC4,T19S,R38E	4345	4104-4269	40 1562 4345	14 8.625 5.5	RED-MIX 2YD CLASS C CLASS C	2YD 100 915	SURFACE SURFACE	CIRC CIRC

South Hobbs GSA Unit Casing Information
Wells within 1 mile radius of Pressure Maintenance Project (10/91)

WELL #	TYPE	DATE DRILLED	LOCATION	TOTAL DEPTH	COMPLETION INTERVAL	CSG @	SIZE	CEMENT TYPE	CMT SACK	T/C	MEASURED TOOL
122	PROD	11/28/78	1725 FNL X 167 FEL, SEC4, T19S, R38E	4320	4113-4280	1571 3927 4320	11.75 8.625 5.5	LITE x CLASS C CLASS C CLASS C NEAT	725 715 620	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
35	PROD	3/30/33	1980 FNL 660 FWL SEC 3 T19S, R38E	4239	4089-4200	216 2790 3990 4210	16 10.75 8.625 5.5	INCOR INCOR	100 450 150 650	SURFACE SURFACE SURFACE SURFACE	CIRC CIRC CIRC CIRC
30	INJ	10/14/30	1980 FNL X 660 FEL SEC 5 T19S, R38E	4230	4085-4162	192 2750 4169	13 9.625 5.5		150 500 50	SURFACE SURFACE SURFACE	CIRC CIRC TEMP SURV
186	PROD	10/15/84	2420 FNL X 213 FWL, SEC 4, T19S, R38E	4310	4116-4203	39 1479 4310	14 8.625 5.5	REDIMIX CLASS C CLASS C	2YD 675 1950	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
31	INJ	6/28/30	2310 FNL X 990 FWL, SEC 4, T19S, R38E	4275	3975-4207	259 2785 3993-4217 3993	13 9.625 5 6.625		106 300 75 135	NA 1000 3949 SURFACE	CALC CALC TOP OF LINER CIRC
32	INJ	7/10/30	1980 FNL X 1980 FWL, SEC 4, T19S, R38E	4242	4078-4198	253 2772 3997 3936-4199	13 9.625 6.625 5		80 300 135 70	1050 SURFACE SURFACE TOP OF LINER	CALC CIRC CIRC CIRC
136	PROD	11/6/83	2490 FNL X 2504 FWL, SEC 4, T19S, R38E	4322	4090-4236	40 1500 4322	14 8.625 5.5	REDIMIX CLASS C CLASS A, x C	2YD 625 1125	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
33	INJ	4/14/30	2310 FNL X 1650 FEL, SEC4, T19S, R38E	4255	4006-4248	153 1523 3259 0-3867 3868-4254 3952	16 10.75 8.625 4.5 4.5 6.625		360 75 60 465 75 50	SURFACE SURFACE SURFACE SURFACE TOP OF LINER SURFACE	CIRC CALC CALC CALC CIRC CIRC CALC
41	INJ	7/10/64	2310 FSL X 460 FEL, SEC 5, T19S, R38E	4232	4088-4232	419 4098	10.75 4.5	CLASS C CLASS C	300 200	SURFACE	CIRC

*File
Side
F&C
Calc*

Check

Check

Check

South Hobbs GSA Unit Casing Information
Wells within 1 mile radius of Pressure Maintenance Project (10/91)

WELL #	TYPE	DATE DRILLED	LOCATION	TOTAL DEPTH	COMPLETION INTERVAL	CSG @	SIZE	CEMENT TYPE	CMT SACK	T/C	MEASURED TOOL
42	INU	6/14/30	2310 FSL X990 FWL, SEC4, T19S, R38E	4231	3905-4214	164 2750 3960	12.5 8.25 6.625		175 600 200	SURFACE SURFACE SURFACE	CALC CALC CALC
43	INU	6/21/30	1650 FWL X 2310 FSL, SEC4, T19S, R38E	4225	4080-4208	250 2779 3988 3914-4214	13 9.625 6.625 4.5	CLASS C CLASS C CLASS C INCOR	150 300 200 85	TOP OF LINER 1059 2988 3914	CALC CALC CALC TOP OF LINER
124	PROD	11/29/78	1925 FSL X 2380 FEL SEC 4, T19S, R38E	4270	4097-4226	1495 0-3676 3905 3676-4270	11.75 5.5 8.625 5.5	CLASS C CLASS C LITE x CLASS C	750 575 828 58	SURFACE SURFACE SURFACE SURFACE	CIRC CIRC CIRC CIRC
170	INU	1/14/80	1980 FSL X 1832 FEL, SEC 4, T19S, R38E	7100	4108-4226	395 4302 7096	13.375 9.625 7	CLASS C CLASS C INCOR CLASS C	370 912 700	SURFACE SURFACE TEMP SURV	CIRC CIRC CIRC
44	PROD	7/22/30	2310 FSL X 1650 FEL, SEC4, T19S, R38E	4245	4084-4190	140 2745 3976 3809-4190	16 10.75 6.625 4.5		75 350 135 425	950 3270 SURFACE	CALC CALC CIRC
State A 38	PROD	2/1/81	1880 FSL X 1730 FEL SEC 4 T19S R38E	3750	3161-3260	408 3750	9.625 7	CLASS C CLASS C x LITE	475 1042	SURFACE SURFACE	CIRC CIRC
137	PROD	11/22/83	2458 FSL X 1180 FEL SEC4, T19S, R38E	4303	4086-4216	40 1551 4307	14 8.625 5.5	RED-MIX CLASS C CLASS C NEAT	2.5YD 675 902	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
45	INU	11/20/32	1980 FSL X 660 FEL, SEC 4, T19S, R38E	4221	3200-4194	210 1552 3904-4204 3960	16 10.75 5.5 8.625	CLASS C CLASS C CLASS C	75 75 75 150	800 3904 SURFACE	CALC CALC CIRC
46	PROD	1/23/33	1980 FSL X 660 FWL SEC 3, T19S, R38E	4281	2900-4190	204 1751 3928-4212 3984	16 10.75 5.5 8.625		85 100 75 150	SURFACE SURFACE TOP OF LINER SURFACE	CIRC CALC CALC CIRC

South Hobbs GSA Unit Casing Information
Wells within 1 mile radius of Pressure Maintenance Project (10/91)

WELL #	TYPE	DATE DRILLED	LOCATION	TOTAL DEPTH	COMPLETION INTERVAL	CSG @	SIZE	CEMENT TYPE	CMT SACK	T/C	MEASURED TOOL
140	PROD	11/20/83	1485 FSL X 1245 FWL SEC 4,T19S,R38E	4300	4089-4228	40 1507 4295	14 8.625 5.5	REDI-MIX CLASS C CLASS C NEAT	2YD 875 1280	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
141	PROD	9/26/83	1478 FSL X 2595 FWL SEC 4,T19S,R38E	4300	4104-4231	31 1541 4300	14 8.625 5.5	REDI-MIX CLASS C CLASS H	54 772 1075	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
142	PROD	10/22/83	1310 FSL X 1370 FEL SEC 4,T19S,R38E	4297	4101-4228	40 1521 4297	14 8.625 5.5	REDI-MIX CLASS C CLASS H	2YD 675 1600	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
143	PROD	12/01/83	1160 FSL X330 FEL,SEC 4,T19S,R38E	4334	4130-4254	40 1558 4334	14 8.625 5.5	REDI-MIX CLASS C CLASS C NEAT	3.5YD 625 1368	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
144	PROD	9/12/83	580 FSL X 755 FWL SEC 3,T19S,R38E	4487	4300-72	40 1582 4486	14 8.625 5.5	REDI-MIX CLASS C CLASS H NEAT	2YD 650 1190	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
112	INU	10/15/75	585 FSL X 710 FWL SEC 3,T19S,R38E	4265	4124-4218	375 4265	8.625 4.5	CLASS C CLASS C	271 1650	SURFACE SURFACE	CIRC CIRC
193	INU	11/17/84	945 FSL X 270 FEL SEC 5,T19S,R38E	4300	4124-4230	40 1450 4300	14 8.625 5.5	REDI-MIX CLASS C CLASS A x C	4.5YD 875 1175	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
53	INU	10/6/30	660 FSL X 660 FWL,SEC4,T19S,R38E	4231	4143-4206	196 2778 3965 3702-4220	12.5 9 7 4.5		200 600 200 50	SURFACE SURFACE SURFACE TOP OF LINER	CALC CALC CIRC CIRC
54	INU	9/10/30	660 FSL X 1980 FWL SEC 4,T19S,R38E	4221	4084-4184	190 3265 3977 3939-4190	16 10.75 8.625 5.5		50 650 100 85	SURFACE SURFACE SURFACE TOP OF LINER	CALC CALC CIRC CIRC
55	INU	1/20/33	660 FSL X1980 FEL,SEC 4,T19S,R38E	4261	4100-4197	199 1585 3978 4261	16 10.75 8.625 5.5		75 75 150 630	SURFACE SURFACE SURFACE SURFACE	CIRC CALC CALC CIRC

South Hobbs GSA Unit Casing Information
Wells within 1 mile radius of Pressure Maintenance Project (10/91)

WELL #	TYPE	DATE DRILLED	LOCATION	TOTAL DEPTH	COMPLETION INTERVAL	CSG @	SIZE	CEMENT TYPE	CMT SACK	T/C	MEASURED TOOL
56	INJ	6/15/30	660 FSL X 660 FEL, SEC4, T19S, R38E	4260	4092-4220	148 1583 4000 4261	16 10.75 8.625 5.5		50 75 40 513	SURFACE SURFACE SURFACE SURFACE	CIRC CALC CALC CIRC
57	INJ	3/9/29	205 FSL X 205 FWL SEC 3, T19S, R38E PLUGGED AND ABANDONED	4220	1556-2800	185 696.4 1549 2498.8 4025	20 15.5 12.5 10.75 8.25		0 0 125 300 80		
52	PROD	2/29/48	303 FEL X330 FSL, SEC5, T19S, R38E	4290	4100-4230	259 4109 3849-4290	13.375 5.5 2.875		200 150 50	SURFACE SURFACE TOP OF LINER	CIRC TEMP SURV TOP OF LINER
196	PROD	11/6/84	245 FSL X 96 FWL, SEC4, T19S, R38E	4300	4120-4232	40 1503 4300	14 8.625 5.5		5YD 875 950	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
146	PROD	11/20/83	75 FNL X 1205 FWL SEC 9, T19S, R38E	4302	4123-4208	40 1526 4302	14 8.625 15.5		2YD 663 1289	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
147	PROD	10/15/83	70 FNL X 2570 FWL SEC 9, T19S, R38E	4300	4129-4256	40 1529 4300	14 8.625 5.5		2YD 792 1230		TEMP SURV
148	PROD	11/24/83	192 FNL X 990 FEL SEC 9, T19S, R38E	4339	4160-4270	40 1559 4346	14 8.625 5.5		2.5YD 700 1050	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
149	PROD	/12/10/83	150 FNL X 380 FEL SEC 9, T19S, R38E	4343	4153-4278	40 1522 4343	14 8.625 5.5		663 933	SURFACE SURFACE	CIRC CIRC
65	INJ	10/12/27	205 FNL X 205 FEL, SEC 9, T19S, R38E (REPLACED BY 152) 1984 PLUGGED AND ABANDONED	4242	PXA	271 747 1517 3050 4026 1978-4242	20 16 13 10.625 8.625 5.5		0 0 75 10 0 300		
										1978	TOP OF LINER

South Hobbs GSA Unit Casing Information
Wells within 1 mile radius of Pressure Maintenance Project (10/91)

WELL #	TYPE	DATE DRILLED	LOCATION	TOTAL DEPTH	COMPLETION INTERVAL	CSG @	SIZE	CEMENT TYPE	CMT SACK	T/C	MEASURED TOOL
62	PROD	12/17/31	660 FNL X 660 FWL, SEC9, T19S, R38E	4230	3985-4088	210 2793 3999 0-3955 3951-4192	16 10.75 8.625 5.5 5.5		100 300 100 545 100	1050 3400	CALC BOND LOG CIRC CIRC
171	INU	2/8/84	710 FNL 640 FWL SEC 9 T19S R38E	4300	4152-4231	40 1532 4300	14 8.625 5.5	REDI-MIX CLASS C CLASS C NEAT	595 1275	SURFACE SURFACE	CIRC CIRC
153	PROD	9/12/83	1105 FNL X 1485 FWL SEC 9 T19S, R38E	4300	4020-4224	30 1524 4300	14 8.625 5.5	REDI-MIX CLASS C CLASS H NEAT	2YD 760 1362	SURFACE SURFACE	CIRC CIRC
63	INU	10/30/30	660 FNL X 1980 FWL SEC9 T19S, R38E	4257	4133-65	144 2768 0-3909 4038 3918-4159	16 10.75 5.5 8.625 5.5	CLASS C CLASS C CLASS C CLASS C	125 350 575 100 147	SURFACE SURFACE SURFACE SURFACE	CIRC CIRC CIRC CIRC
64	INU	5/33	660 FNL X 1980 FEL SEC 9, T19S, R38E	4280	3875-4221	217 2810 3993 4000	16 10.75 7 4.5		100 450 100	SURFACE SURFACE SURFACE	CIRC CIRC CIRC
155	INU	11/7/83	1160 FNL X 1168 FEL, SEC 9 T19S R38E	4342	4168-4252	40 1580 4324	14 8.625 5.5	CLASS C CLASS C POZ x CLASS A x C	3YD 620 930	SURFACE SURFACE	CIRC CIRC
152	INU	11/3/83	623 FNL X 632 FEL, SEC 9, T19S, R38E	4306	4120-4222	40 1512 4302	14 8.625 5.5	REDIMIX CLASS C CLASS C NEAT	3.5YD 683 940	SURFACE SURFACE	CIRC CIRC
154	PROD	10/7/83	1163 FNL X 2600 FEL SEC 9 T19S, R38E	4315	4161-4226	40 1580 4315	14 8.625 4.315	REDIMIX CLASS C CLASS H	2.5YD 805 912	SURFACE SURFACE	CIRC CIRC
72	INU	7/29/53	1650 FNL X 2310 FWL SEC 9, T19S, R38E	4310	4144-4220	304 4309	8.625 5.5	NEAT	140 420	SURFACE SURFACE	CIRC

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