STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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

FORM C-108
Revised 7-1-81

RELEASE DATE 5-7-92

OIL CONSERVATION DIVISION
RECEIVED

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: Phillips Petroleum Company

Address: 4001 Penbrook Odessa, TX 79762

Contact party: Larry M. Sanders Phone: (915) 368-1488

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 _____.

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: Jack E. Pickett Title Reservoir Engineering Supervisor

Signature: J E Pickett Date: 3/12/92

* 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. _____

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

III. WELL DATA

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

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

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

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

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

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

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

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

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

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

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

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

XIV. PROOF OF NOTICE

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

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

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

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

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

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

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

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

APPLICATION FOR AUTHORIZATION TO INJECT

PHILLIPS PETROLEUM COMPANY
Luke Federal Well No. 1

III. WELL DATA (existing)

A. Name, Location, and Wellbore Data

1. Name & Location:		Luke Federal No. 1 1980' FNL & 660' FWL Sec. 31, T-21-S, R-32-E Lea County, New Mexico
2. Casing:	Surface	13-3/8", 48 lb/ft, H-40 set at 829'. (17-1/2" hole.) Cemented with 750 sx cement. Cement circulated.
	Intermediate	8-5/8", 24 lb/ft, J-55 set at 4302'. (12-1/4" hole.) Cmt'd with 3280 sx cement. Cement circulated.
	Production	5-1/2", 17 lb/ft, J-55 set at 8103'. (7-5/8" hole.) Cmt'd with 1595 sx cement. Cement circulated.
	Fish in hole	6-1/4" drill collars and 7-5/8" drill bit. Top of fish @ 8124'

(proposed)

3. Injection Tubing:	2-7/8", 6.5 lb/ft, J-55 (internally plastic coated) set at ±4550'.
4. Injection Packer:	Baker Loc-Set Retrievable packer with Baker Model "FL" On/Off tool set at ±4550'.

B. Reservoir Data

1. Injection Formation:	Bell Canyon & Cherry Canyon	
Field Name:	Lost Tank (Delaware)	
2. Proposed Injection Intervals:	4618'-4628'	10'
	4648'-4675'	27'

4682'-4712'	30'
4740'-4772'	32'
4786'-4798'	12'
4804'-4824'	20'
4834'-4860'	26'
4864'-4894'	30'
4901'-4912'	11'
4946'-4994'	48'
5030'-5048'	18'
5068'-5079'	11'
5102'-5122'	20'
5130'-5140'	10'
5150'-5176'	26'
5180'-5194'	14'
5214'-5240'	26'
5296'-5326'	30'
5373'-5386'	13'
5442'-5462'	20'
5496'-5506'	20'
5552'-5573'	21'
5604'-5636'	32'
5654'-5666'	12'
5716'-5748'	32'
5776'-5792'	16'
5820'-5830'	10'
5838'-5878'	40'
5892'-5916'	24'
5930'-5966'	36'
5982'-6012'	30'
697' net injection interval	

3. Original Intent: Brushy Canyon (Delaware) oil well

4. Other Perforated Zones: none

5. Productive Zones:

Next Higher	none
Next Lower	Brushy Canyon ±7100'

VII. PROPOSED INJECTIONS OPERATIONS

1. Injection Rate: Average = 3000 bwpd

Maximum = to be determined with a step-rate test.

2. Injection System: Closed

3. Injection Pressure: Average = 500 psi
Maximum = 200 psi below fracture pressure (to be determined with a step-rate test)

4. Injection Fluid: Produced water from Phillips' Luke Federal and Molly State leases. Chemical analysis of produced water from the Luke Federal and Molly State leases is attached.

VIII. Geologic Data

A. Injection Zone

1. Name: Bell Canyon & Cherry Canyon (Delaware)

2. Description: Injection will be into the Bell Canyon & Cherry Canyon (Delaware) formations through 31 perforated intervals 4618'-6012'.

The Bell Canyon is a siltstone formation with a gross thickness of ±685' and a net porosity thickness of ±371'. The depth to the top of the Bell Canyon is 4614'. The Cherry Canyon is a siltstone formation with a gross thickness of ±1431' and a net porosity thickness of ±326'. The depth to the top of the Cherry Canyon is 5299'.

B. Fresh Water Sources

There are no underground sources of drinking water above or below the Bell Canyon and Cherry Canyon formations.

IX. PROPOSED STIMULATION PROGRAM

The Bell Canyon and Cherry Canyon perforated intervals will be treated with 7-1/2% NEFe HCl acid with clay stabilizers as follows:

Perf'd Interval	Volume
4618'-4712'	3350 gallons
4740'-4912'	6550 gallons
4946'-5240'	8650 gallons
5296'-5506'	3650 gallons
5552'-5792'	5650 gallons
5820'-6012'	7000 gallons

X. LOGGING DATA

Well logs for this well have been filed with the Division.

XI. FRESH WATER ANALYSIS

There are no underground sources of fresh water within 1 mile of the Luke Federal No. 1 well location.

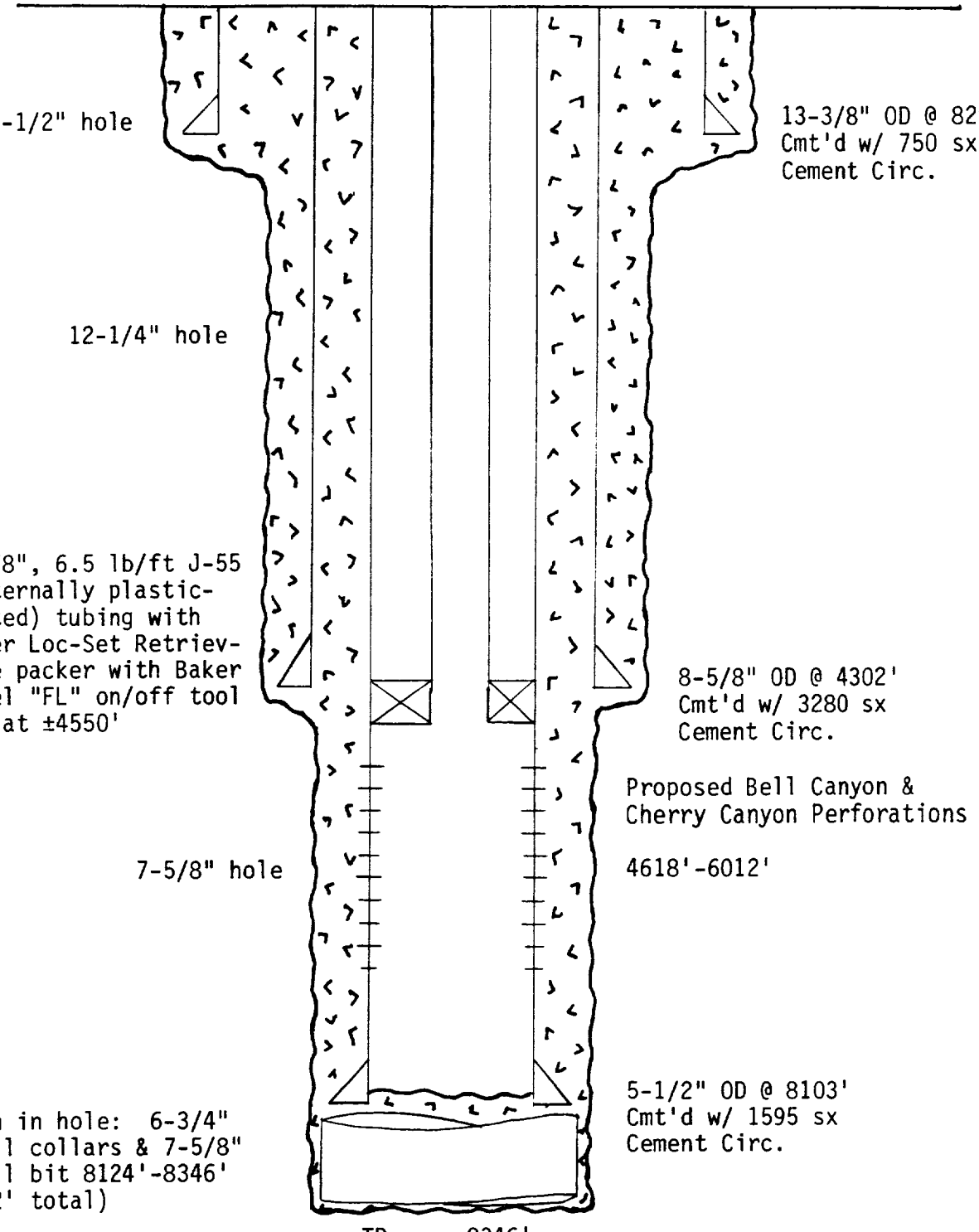
XIII. PROOF OF NOTICE

A copy of this application has been furnished to the land owner (Bureau of Land Management) of the land on which the Luke Federal No. 1 is located and the lease-hold operators within the Area of Review.

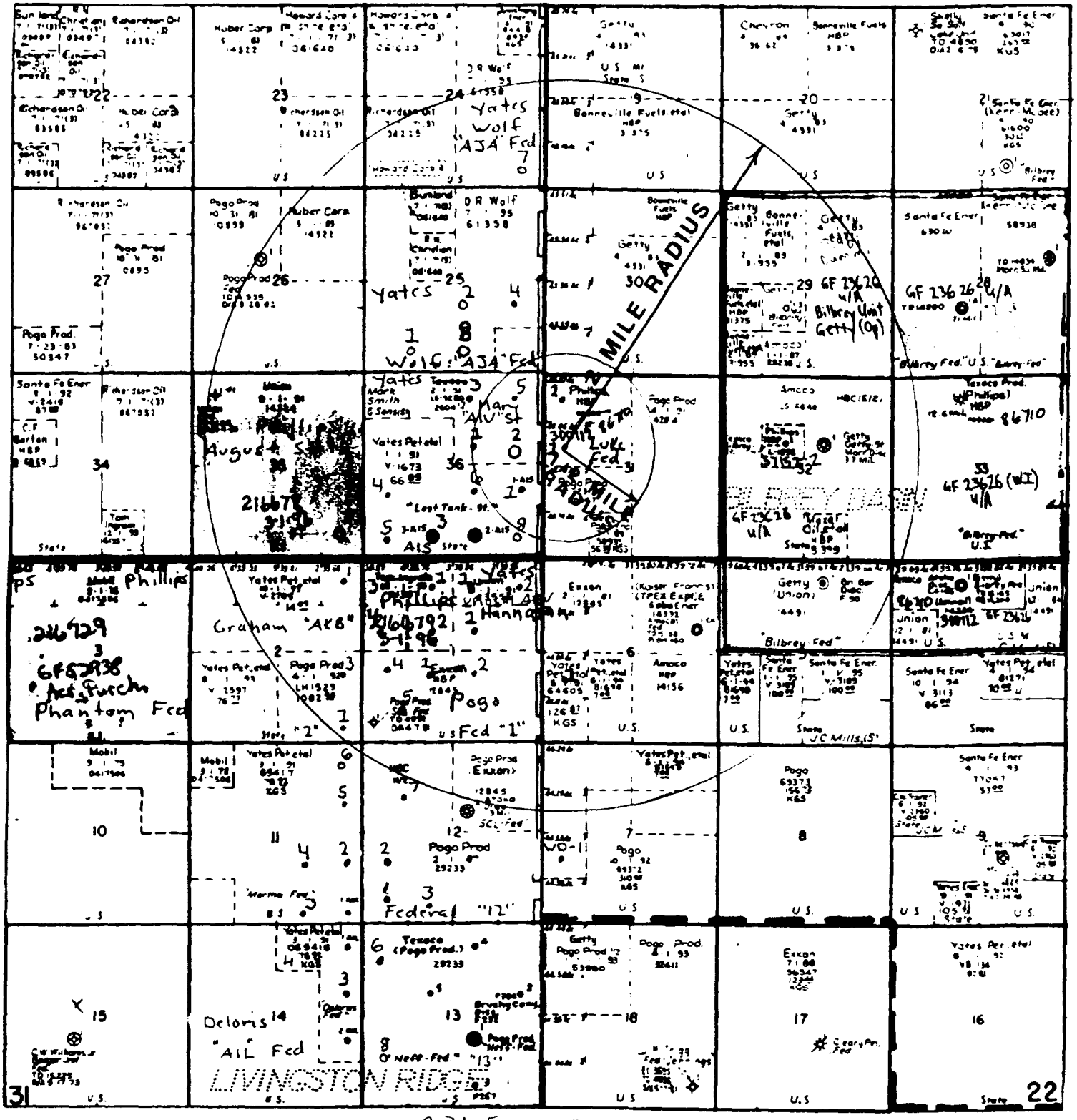
ATTACHMENT NO. 1

PHILLIPS PETROLEUM COMPANY

Luke Federal No. 1
Proposed Water Disposal Well
1980' FNL & 660' FWL
Section 31, T21S, R32E
Lea County, New Mexico



ATTACHMENT NO. 2



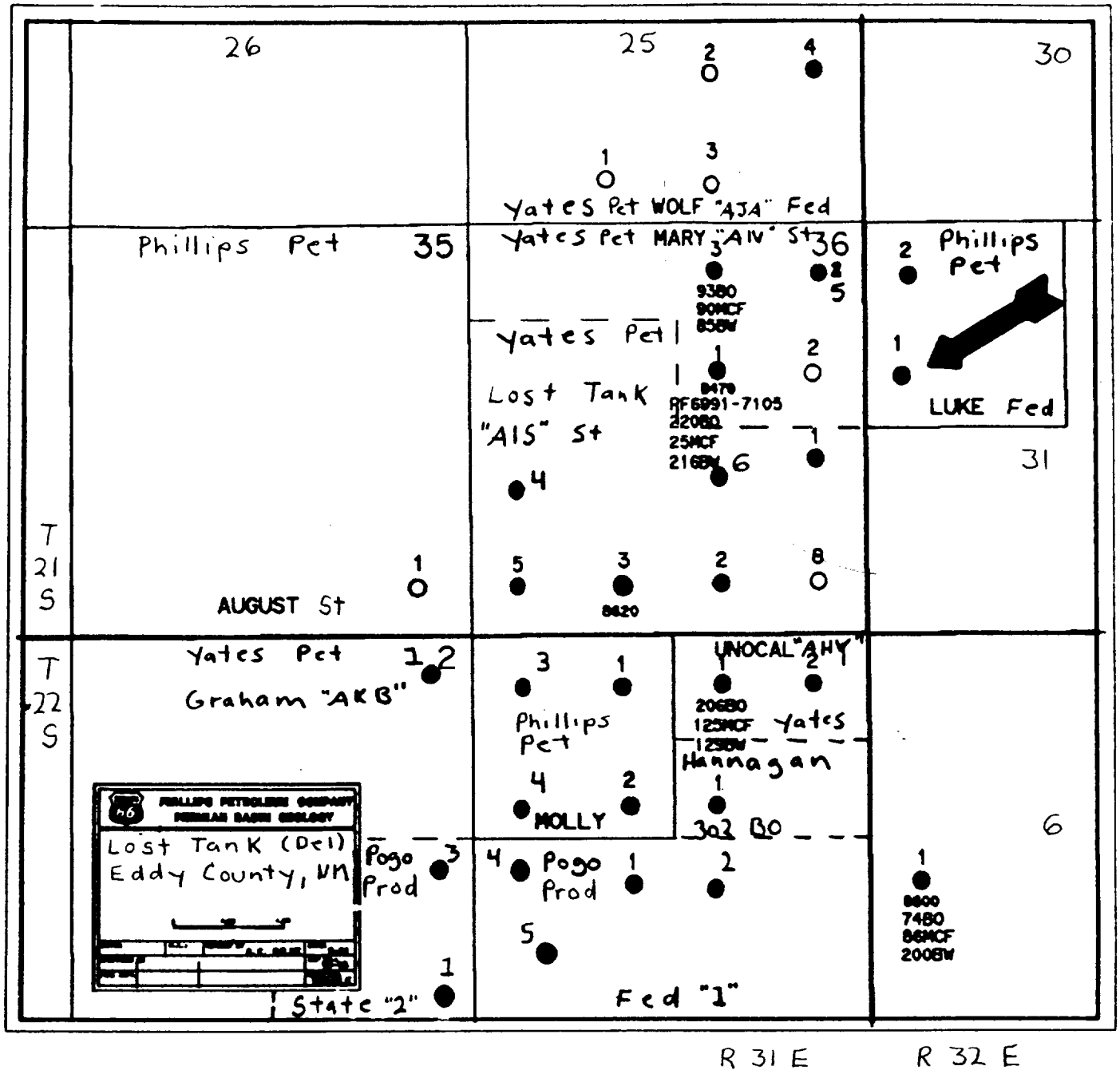
2 MILE RADIUS

OF PROPOSED WATER DISPOSAL

PHILLIPS PETROLEUM COMPANY

LUKE FEDERAL NO. 1

ATTACHMENT NO. 3



PHILLIPS PETROLEUM COMPANY

PROPOSED WATER DISPOSAL WELL

LUKE FEDERAL NO. 1

1980' FNL & 660' FWL

SEC. 31, T-21-S, R-32-E

LEA COUNTY, NEW MEXICO

TRETOLITE

Chemicals and Services

ATTACHMENT NO. 4

16010 Barker's Point Lane • Houston, Texas 77079
713 558-5200 • Telex: 4620346 • FAX: 713 589-4737

Reply to: P.O. Box 5250
Hobbs, New Mexico 88241
(505) 392-6711 Phone
(505) 392-3759 Fax

WATER ANALYSIS REPORT

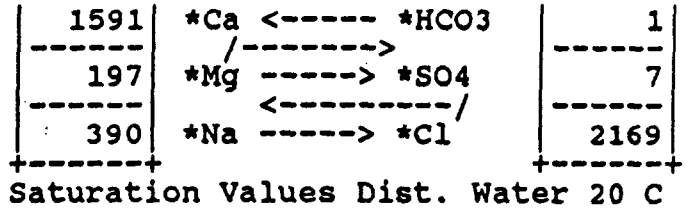
Company : PHILLIPS
Address :
Lease : LUKE FEDERAL
Well : #2
Sample Pt. : WELLHEAD

Date : 02/28/92
Date Sampled : 02/27/92
Analysis No. : 213

	ANALYSIS		mg/L		* meq/L
1.	pH	5.8			
2.	H2S	5 PPM			
3.	Specific Gravity	1.195			
4.	Total Dissolved Solids		120562.2		
5.	Suspended Solids		NR		
6.	Dissolved Oxygen		NR		
7.	Dissolved CO2		140 PPM		
8.	Oil In Water		NR		
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)		50.0		
11.	Bicarbonate	HCO3	61.0	HCO3	1.0
12.	Chloride	Cl	76891.0	Cl	2169.0
13.	Sulfate	SO4	350.0	SO4	7.3
14.	Calcium	Ca	31879.6	Ca	1590.8
15.	Magnesium	Mg	2392.1	Mg	196.8
16.	Sodium (calculated)	Na	8958.9	Na	389.7
17.	Iron	Fe	29.5		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		89460.4		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter



Saturation Values Dist. Water 20 C

CaCO3	13 mg/L
CaSO4 * 2H2O	2090 mg/L
BaSO4	2.4 mg/L

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	1.0	81
CaSO4	68.1	7.3	496
CaCl2	55.5	1582.5	87814
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	196.8	9369
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	389.7	22773

REMARKS: TEMPERATURE 86 DEGREES F
S. HOLLINGER / MLAB / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON

TRETOLITE
Chemicals and Services

16010 Barker's Point Lane • Houston, Texas 77079
713 558-5200 • Telex: 4620346 • FAX: 713 589-4737

Reply to: P.O. Box 5250
Hobbs, New Mexico 88241
(505) 392-6711 Phone
(505) 392-3759 Fax

WATER ANALYSIS REPORT

Company	: PHILLIPS PETROLEUM	Date	: 3-10-92
Address	: LOCO HILLS, N. M.	Date Sampled	: 3-10-92
Lease	: MOLLY STATE	Analysis No.	: 238
Well	:		
Sample Pt.	: BATT.		

	ANALYSIS		mg/L		* meq/L
1.	pH	5.9			
2.	H2S	2 PPM			
3.	Specific Gravity	1.200			
4.	Total Dissolved Solids		270158.0		
5.	Suspended Solids		NR		
6.	Dissolved Oxygen		NR		
7.	Dissolved CO2		NR		
8.	Oil In Water		NR		
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)		46.0		
11.	Bicarbonate	HCO3	56.1	HCO3	0.9
12.	Chloride	Cl	168493.8	Cl	4753.0
13.	Sulfate	SO4	200.0	SO4	4.2
14.	Calcium	Ca	34276.4	Ca	1710.4
15.	Magnesium	Mg	3364.5	Mg	276.8
16.	Sodium (calculated)	Na	63702.6	Na	2770.9
17.	Iron	Fe	49.5		
18.	Barium	Ba	15.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		99449.4		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter

1710	*Ca <----- *HCO3	1
	/------->	
277	*Mg -----> *SO4	4
	<----------/	
2771	*Na -----> *Cl	4753

Saturation Values Dist. Water 20 C

CaCO3	13 mg/L
CaSO4 * 2H2O	2090 mg/L
BaSO4	2.4 mg/L

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	0.9	75
CaSO4	68.1	4.2	283
CaCl2	55.5	1705.3	94628
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	276.8	13177
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	2770.9	161931

REMARKS: PAM BORING / LENDELL HAWKINS / JEFF HARGROVE
S. HOLLINGER / MLAB / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON

ATTACHMENT NO. 5

PHILLIPS PETROLEUM COMPANY
LUKE FEDERAL NO. 1

AREA OF REVIEW

WELL NAME	LOCATION	DATE SPUDDED (ORIG. INTENT)	PRESENT TD ORIGINAL TD	SURFACE CASING SIZE	DEPTH	CEMENT	PRODUCTION CASING SIZE	DEPTH	CEMENT	PRODUCING PERFORATIONS (ZONE)
Luke Fed No. 2	660' FNL & 660' FWL Sec. 31, T-21-S, R-32-E Lea County, NM	11-16-91 (Oil)	8500' 8585'	13-3/8"	866'	700 Sx	5-1/2" (TOC @ Surface)	8585'	1610 Sx	7080'-7122' (Brushy Canyon)
Mary "AIV" State No. 1	1980' FNL & 1980' FEL Sec. 36, T-21-S, R-31-E Eddy County, NM	01-31-91 (Oil)	8407' 8470'	13-3/8"	852'	800 Sx	5-1/2" (TOC @ 5710' TS)	8470'	670 Sx	6991'-7105' (Brushy Canyon)
Mary "AIV" State No. 5	660' FNL & 330' FEL Sec. 36, T-21-S, R-31-E Eddy County, NM	12-19-91 (Oil)	8565'	13-3/8"	850'	850 Sx	5-1/2" (TOC @ 4200' TS)	8557'	1450 Sx	Well not completed
Lost Tank "AIS" State No. 1	1980' FSL & 660' FEL Sec. 36, T-21-S, R-31-E Eddy County, NM	12-07-91 (Oil)	8550'	13-3/8"	869'	750 Sx	5-1/2" (TOC @ 2250' TS)	8550'	1525 Sx	7148'-8406' (Brushy Canyon)

ATTACHMENT NO. 5
Notification

I hereby certify that a complete copy of this application was sent by certified mail to the below listed persons on April 15, 1992.

Signed:
Name: L. M. Sanders
Title: Supervisor, Regulation & Proration
Date: April 15, 1992

Offset Operator:

Pogo Producing Company
P. O. Box 61289
Houston, Texas 77208

Yates Petroleum Corporation
105 S. Fourth St.
Artesia, NM 88210

Collins & Ware Inc.
303 W. Wall
Suite 2200
Midland, Texas 79701

Texaco Producing Inc.
P. O. Box 3109
Midland, Texas 79702

Surface Owner:

United States Department of the Interior
Bureau of Land Management
P. O. Box 1397
Roswell, NM 88201

Affidavit of Publication

No. 13898

STATE OF NEW MEXICO,

County of Eddy:

Gary D. Scott being duly sworn, says: That he is the Publisher of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive days weeks on the same day as follows:

First Publication April 8, 1992

Second Publication

Third Publication

Fourth Publication

Gary D. Scott

Subscribed and sworn to before me this 8th day of April 1992

Barbara Ann Boone
Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1996

Copy of Publication

LEGAL NOTICE

Notice is hereby given of the application of Phillips Petroleum Company, 4001 Penbrook Street, Odessa, Texas 79762, Attn: L.M. Sanders, (915) 368-1488, to the Oil Conservation Division, New Mexico Energy and Mineral Department, for approval of the following disposal well authorization for the purpose of produced water disposal:
Well Name: Luke Fed #1
Field: Lost Tank (Delaware)
Location: 1980 feet from the north line and 660 feet from the west line, Section 31, T-21-S, R-32-E, Lea County, NM.
The disposal formation is Bell Canyon & Cherry Canyon at a depth of 4618' -6012' below the surface of the ground.
Expected maximum injection rate is 3000 bbls water per day and expected maximum injection pressure is 500 pounds per square inch.
Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501, within fifteen (15) days.
Published in the Artesia Daily Press, Artesia, N.M. April 8, 1992.

Legal 13898

Received

APR 10 1992

P.B.R. Regulatory Section

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

'92 APR 24 AM 9 12

4-20-92

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

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

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

Gentlemen:

I have examined the application for the:

Phillips Petroleum Co. Luke Federal #1-E 31-21-32
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed