



OIL CONSERVATION DIVISION

RECEIVED

BTA OIL PRODUCERS

104 SOUTH PEOPLES
MIDLAND, TEXAS 79701
AC 915-662-3753

ROCKY MOUNTAIN DIVISION

555-17TH STREET
SUITE 835
DENVER, CO 80202
AC 303-292-9299

MIDLAND PARTNERS
CARLTON BEAL
CARLTON BEAL, JR.
BARRY BEAL
SPENCER BEAL
KELLY BEAL

DENVER PARTNER
BARRY BEAL, JR.

31 DEC 1991 9 35

December 17, 1991

Re: Application for Salt Water Disposal
BTA - Grama -B-, 8817 JV-P, Well No. 1 SWD
Unit -N-, Sec 27, T21S, R34E
Lea County, N.M.

State of New Mexico
Energy & Minerals Dept.
Oil Conservation Commission
P. O. Box 2088
Santa Fe, N.M. 87504-2088

Attn: Mr. David Catanach

Dear Mr. Catanach,

BTA hereby requests the enclosed application for Salt Water Disposal be set for hearing on January 23, 1992.

The surface owner and all offset operators have been mailed a complete copy of our application by certified mail. Our legal notice has been published and we will furnish the "proof of publication" as soon as received.

If no objections are received to this application, we request your review of our application for possible administrative approval.

Should further information be required to grant this application, please advise.

Sincerely,


Dorothy Houghton
For BTA Oil Producers

attachments: C-108
Map
Exhibits

xc: Hobbs District Office

DH/bc

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no
- II. Operator: BTA Oil Producers
Address: 104 S. Pecos, Midland, TX 79701
Contact party: Dorothy Houghton Phone: (915) 682-3753
- 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: Dorothy Houghton Title Regulatory Administrator
Signature: *Dorothy Houghton* Date: 12-17-91
- * 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:

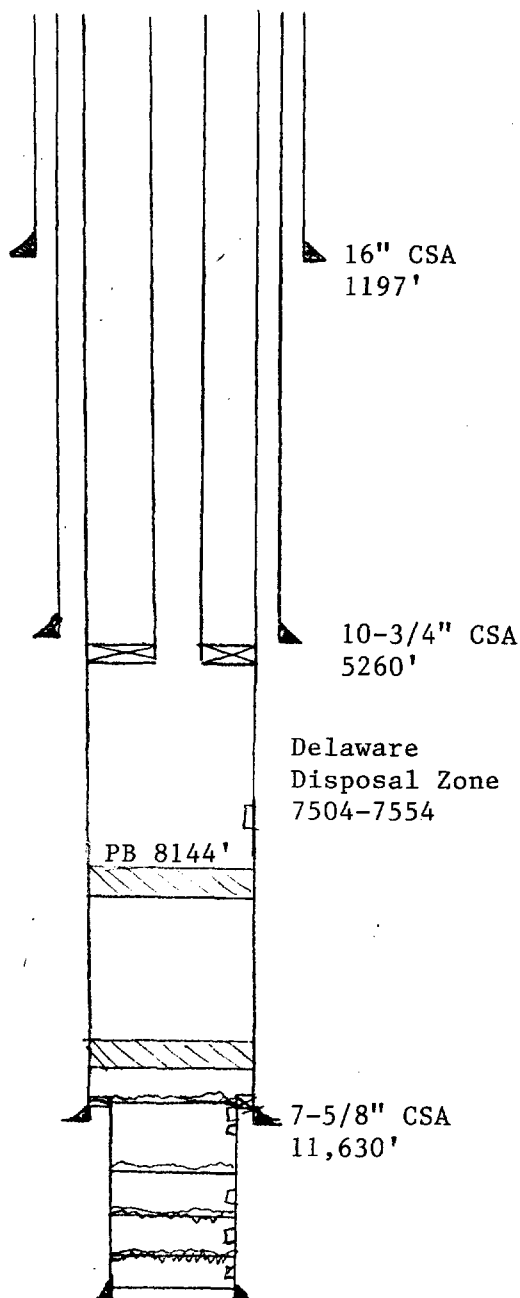
- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates 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.

BTA Oil Producers		8817 JV-P Grama "B"	
OPERATOR		LEASE	
1	660' FSL & 1980' FWL	27	21S 34E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP RANGE

Schematic



Tabular Data

Surface Casing

Size 16 " Cemented with 1300 sx.
 TOC Surface feet determined by Circulating
 Hole size 20"

Intermediate Casing

Size 10-3/4 " Cemented with 2750 sx.
 TOC Surface feet determined by Circulating
 Hole size 14-3/4"

Long string

Size 7-5/8 " Cemented with 2625 sx in 2 stgs
 TOC Surface feet determined by DV tool @ 6487'
 Hole size 9-1/2"

Total depth 13,306'

Injection interval

7504 feet to 7554 feet
 (perforated ~~XXXXXXXXXXXX~~ indicate which)

Delaware
 Disposal Zone
 7504-7554

PB 8144'

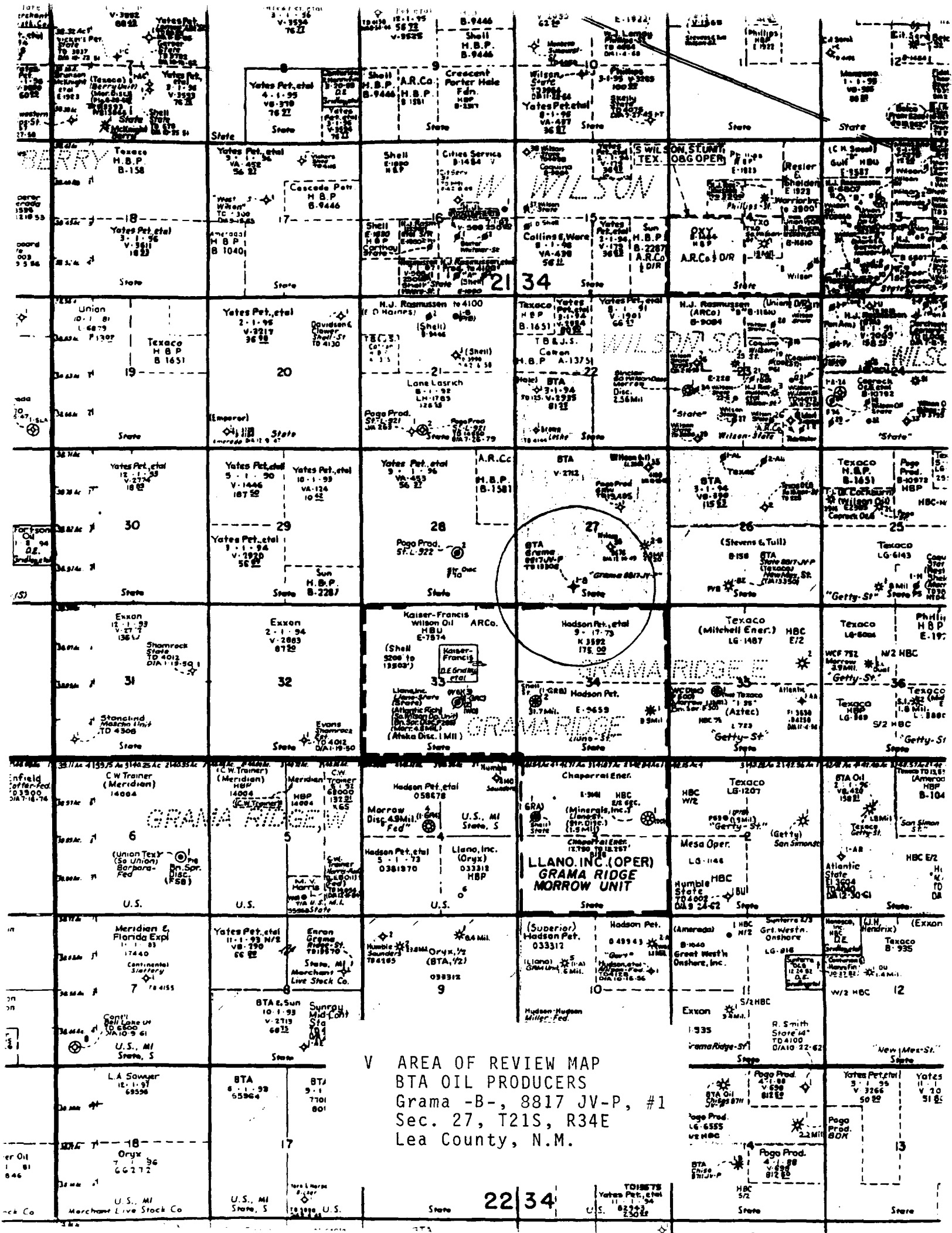
7-5/8" CSA
 11,630'

Tubing size 2-7/8" lined with fiberglass set in a
 (material)
Baker Loc-Set packer at 7450' feet
 (brand and model)

(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation Delaware
- Name of Field or Pool (if applicable) N/A
- Is this a new well drilled for injection? ☐ Yes ☒ No
 If no, for what purpose was the well originally drilled? Well originally drilled as
producer in 1989.
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) Yes, Morrow 13,142-13,181'; CIBP @ 13,080' capped w/40' cmt, Morrow 12,953-12,984'; CIBP @ 12,500' capped w/40' cmt/ Morrow 12,352-12359'; CIBP @ 12,000 capped w/35' cmt; Wolfcamp 11,493-11534; CIBP @ 11400 capped w/35' cmt; Spot cmt plugs @ 11000-10788, 8400-8188', 5300-5088, 3800-3588, 1250-1038
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pairs) in this area. 10 sx @ surf.
Morrow 13000'; Wolfcamp 11,500'; Bone Spring 10000'; Delaware 8300'; Yates-SevenRiver 3600'



BTA OIL PRODUCERS

Gramma -B-, 8817 JV-P
No. 1 SWD
660' FSL & 1980' FWL
N, Sec 27, T21S, R34E
Lea Co., N.M.

Attachment to C-108

- Item VI: There are no wells within 1/2 mile radius which penetrates the proposed disposal zone.
- Item VII: 1) Proposed average daily injection rate - 1000 BWPD
 Proposed maximum daily injection rate - 1500 BWPD
 2) This will be a closed system
 3) Proposed average injection pressure - 1200 psi
 Proposed maximum injection pressure - 1500 psi
 4) Sources of disposal water will be Morrow and Delaware analysis attached - See Exhibit A, B1 & B2
 5) Delaware analysis attached
- Item VIII: Copy of mud log over interval on offset well, Sand, Lime, Dolomite and Shale of Delaware zone 7504-7554' interval.
Exhibit -C-
Capitan Reef 4395-5350'
- Item IX: Acidize with 6000 gal 15% HCl; trac with 25000 gal and 20000 sand if necessary.
- Item X: Logs submitted earlier. 10/3/89
- Item XI: Attached analysis of two fresh water wells within one mile of our proposed injection well. See Exhibit -D-
- Item XII: We have examined the geologic and engineering data in the area and find no evidence of open faults which would connect disposal zone with a source of drinking water.
- XIII: A copy of our application has been furnished by certified mail to the surface owner and to each leasehold operator within one-half mile of our proposed injection well. See listing on Exhibit -E-.

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

LABORATORY NO. 489147

To: Mr. Tom Williams
104 South Pecos, Midland, Texas

SAMPLE RECEIVED 4-13-89

RESULTS REPORTED 4-19-89

COMPANY BTA Oil Producers

LEASE Chiso

FIELD OR POOL Ojo Chiso (Morrow)

SECTION _____ BLOCK _____ SURVEY _____ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Produced water - taken from Chiso "B" #1 (stack pack).

NO. 2 Produced water - taken from Chiso "C" #1 (stack pack).

NO. 3

NO. 4

REMARKS: _____ MORROW

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0361	1.0350		
pH When Sampled				
pH When Received	6.57	5.94		
Bicarbonate as HCO ₃	561	586		
Supersaturation as CaCO ₃				
Undersaturation as CaCO ₃				
Total Hardness as CaCO ₃	6,000	5,800		
Calcium as Ca	1,920	1,740		
Magnesium as Mg	292	352		
Sodium and/or Potassium	18,119	15,943		
Sulfate as SO ₄	836	889		
Chloride as Cl	31,248	27,697		
Iron as Fe	33.8	72.0		
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	52,976	47,207		
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0	0.0		
Resistivity, ohms/m at 77° F.	0.153	0.173		
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks It is apparent in the above results that these two waters have essentially the same characteristics, indicating the same origin. We note that there is a very slight change in the water from Chisos "B" #1 as compared to laboratory #68885 (6-13-88). In comparing these with our records, it is apparent that both have characteristics that are reasonably comparable to what we would expect from natural Morrow.

EXHIBIT -B-1-

THE WESTERN COMPANY OF NORTH AMERICA WATER ANALYSIS

ANALYSIS NO: 911210A

GENERAL INFORMATION

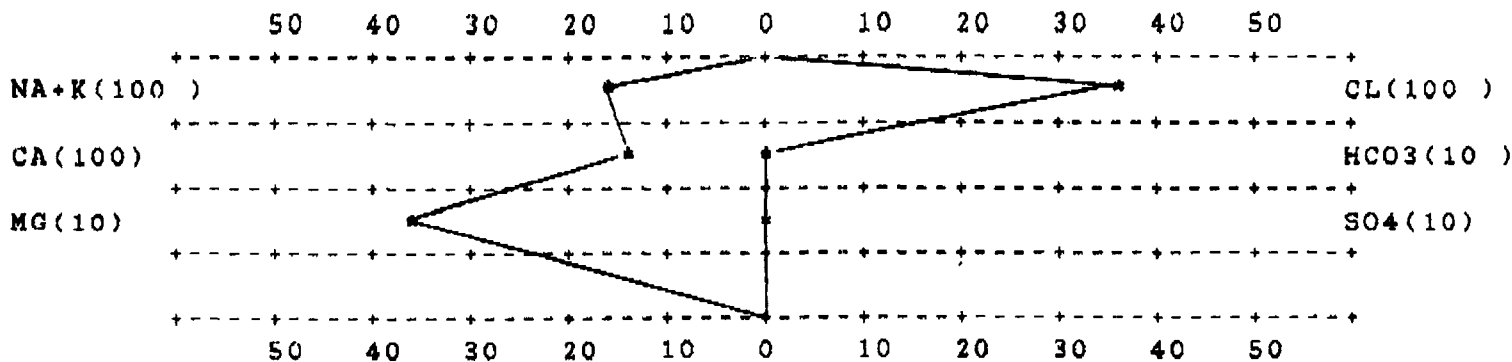
OPERATOR: BTA OIL PRODUCERS	DEPTH: 8300
WELL: GRAMMA "B" NO. 2	DATE SAMPLED: 12-10-91
FIELD: GRAMMA RIDGE	DATE RECEIVED: 12-10-91
FORMATION: DELEWARE	SUBMITTED BY: ED AVERY
COUNTY: LEA	WORKED BY: WILKERSON
STATE: NM	PHONE: 505-392-5556

SAMPLE DESCR: SAMPLE OF WATER AFTER FRAC.

PHYSICAL AND CHEMICAL DETERMINATIONS

SPECIFIC GRAVITY: 1.175 AT 65 DEG. F		PH = 6.05	
IRON:	NOT DETERMINED	SULFATE:	319 PPM
FE2+:	100 PPM	CHLORIDE:	131034 PPM
SODIUM+POTASS:	48667 PPM	SODIUM CHLORIDE (CALC):	216010 PPM
CALCIUM:	25217 PPM	BICARBONATE:	1101 PPM
MAGNESIUM:	4136 PPM	TOT. HARDNESS AS CaCO3:	80072 PPM
PHOSPHATE:	NOT DETERMINED	TOT. DISSOLVED SOLIDS:	261193 PPM
RESISTIVITY (CALCULATED): 0.044 OHM/METER @ 75 DEGREES F.			
REMARKS: .5% KCL. IN SAMPLE.			

STIFF TYPE PLOT (IN MEQ/L)



ANALYST

WILKERSON

EXHIBIT -B-2-THE WESTERN COMPANY OF NORTH AMERICA
WATER ANALYSIS

ANALYSIS NO: 911210B

GENERAL INFORMATION

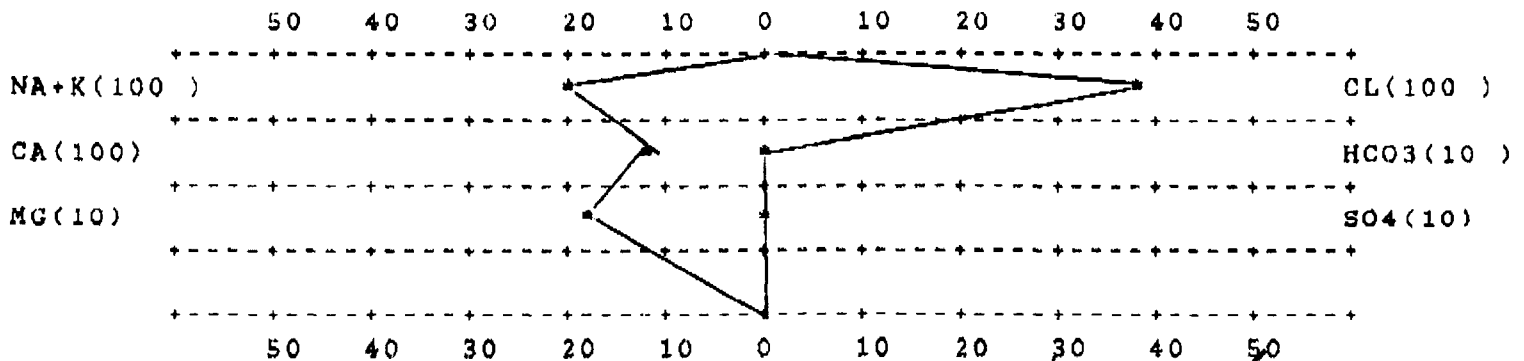
OPERATOR:	BTA OIL PRODUCERS	DEPTH:	
WELL:	GRAMMA "BZ"	DATE SAMPLED:	12-10-91
FIELD:	GRAMMA RIDGE	DATE RECEIVED:	12-10-91
FORMATION:	DELEWARE	SUBMITTED BY:	ED AVERY
COUNTY:	LEA	WORKED BY:	SHEPHERD
STATE:	NM	PHONE:	505-392-5556

SAMPLE DESCR: SAMPLE FROM OFF-SET BZ.

PHYSICAL AND CHEMICAL DETERMINATIONS

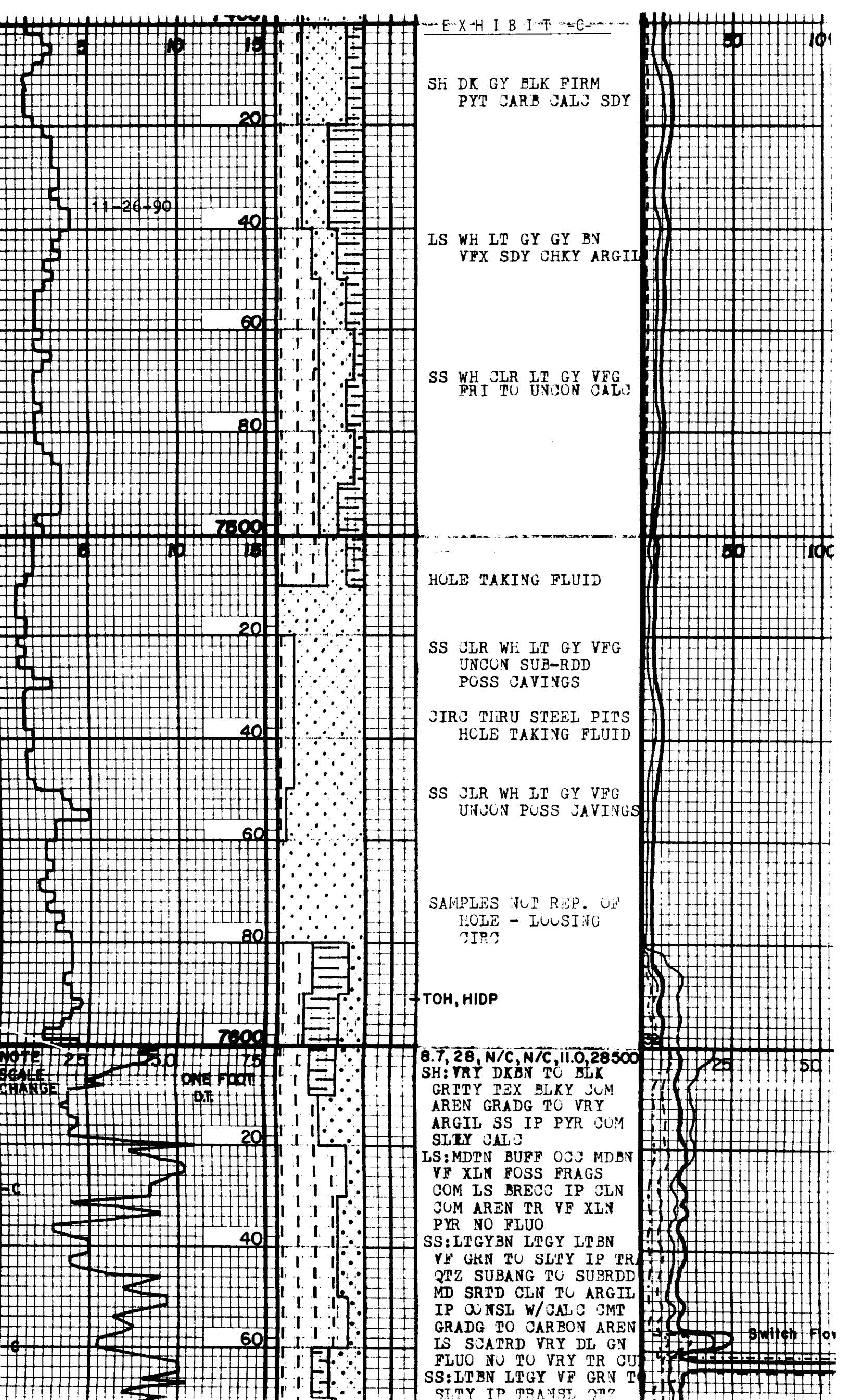
SPECIFIC GRAVITY:	1.185	AT	65 DEG. F	PH =	6.20
IRON:	NOT DETERMINED	SULFATE:		84	PPM
FE2+:	100	PPM			
SODIUM+POTASS:	61891	PPM	CHLORIDE:	140896	PPM
			SODIUM CHLORIDE (CALC):	232268	PPM
CALCIUM:	22301	PPM	BICARBONATE:	206	PPM
MAGNESIUM:	2051	PPM	TOT. HARDNESS AS CaCO ₃ :	64193	PPM
PHOSPHATE:	NOT DETERMINED	TOT. DISSOLVED SOLIDS:	267271	PPM	
RESISTIVITY (CALCULATED):	0.044 OHM/METER @ 75 DEGREES F.				
REMARKS:					

STIFF TYPE PLOT (IN MEQ/L)



ANALYST

SHEPHERD



SH DK GY BLK FIRM
PYT CARB CALC SDY

LS WH LT GY GY BN
VFX SDY CHKY ARGIL

SS WH CLR LT GY VFG
FRI TO UNCON CALC

HOLE TAKING FLUID

SS CLR WH LT GY VFG
UNCON SUB-RDD
POSS CAVINGS

CIRC THRU STEEL PITS
HOLE TAKING FLUID

SS CLR WH LT GY VFG
UNCON POSS CAVINGS

SAMPLES NOT REP. OF
HOLE - LOOSING
CIRC

TOH, HIDP

8.7, 28, N/C, N/C, 11.0, 28500

SH: VRY DKN TO BLK
GRITTY TEX BLKY COM
AREN GRADG TO VRY
ARGIL SS IP PYR COM
SLTY CALC

LS: MDTN BUFF OCC MDBN
VF XLN FOSS FRAGS
COM LS BRECC IP CLN
COM AREN TR VF XLN
PYR NO FLUO

SS: LTGYBN LTGY LTBN
VF GRN TO SLTY IP TR
QTZ SUBANG TO SUBRDD
MD SRTD CLN TO ARGIL
IP CONSL W/CALC CMT
GRADG TO CARBON AREN
LS SCATRD VRY DL GN
FLUO NO TO VRY TR CU
SS: LTBN LTGY VF GRN T
SLTY IP TRANSL QTZ

Switch Flow

Martin Water Laboratories, Inc.

P. O. BOX 1488
MONAHAN, TEXAS 79756
PH. 943-8224 OR 863-1040

708 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4821

RESULT OF WATER ANALYSES

TO: Mr. Tom Williams LABORATORY NO. 129149
104 South Pecos, Midland, TX 79701 SAMPLE RECEIVED 12-12-91
RESULTS REPORTED 12-13-91

COMPANY BTA Oil Producers LEASE Gramma "B"

FIELD OR POOL _____

SECTION _____ BLOCK _____ SURVEY _____ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water - taken from South Windmill. 12-11-91

NO. 2 Raw water - taken from North Windmill. 12-11-91

NO. 3 _____

NO. 4 _____

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0012	1.0014		
pH When Sampled				
pH When Received	7.53	7.40		
Bicarbonate as HCO ₃	253	277		
Supersaturation as CaCO ₃				
Undersaturation as CaCO ₃				
Total Hardness as CaCO ₃	186	228		
Calcium as Ca	52	67		
Magnesium as Mg	13	15		
Sodium and/or Potassium	47	50		
Sulfate as SO ₄	38	43		
Chloride as Cl	30	47		
Iron as Fe	0.16	0.40		
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	433	498		
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	0.0	0.0		
Resistivity, ohms/m at 77° F.	21.90	17.20		
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	2.3	4.1		

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

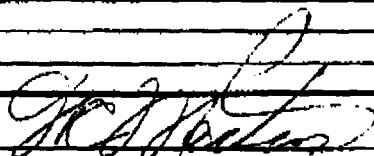
By 
Waylan C. Martin, M.A.

EXHIBIT -E-

BTA OIL PRODUCERS
Grama -B-, 8817 JV-P
Well No. 1-D
Lea County, N.M.

Surface State of New Mexico
Owner: Commissioner of Public Lands
 P. O. Box 1148
 Santa Fe, NM 87504-2088

Surface Merchant Livestock Co.
Lessee: P. O. Box 1166
 Carlsbad, NM 88220

Leasehold Operators within one-half mile of well location:

Yates Petroelum Corp.
105 S. 4th St.
Artesia, NM 88210
Attn: Mr. Bob Bullock

Kaiser-Francis Oil Co.
P.O. Box 21468
Tulsa, OK 74121-1468
Attn: Eric Lowe

H.J. Rasmussen Operator, Inc.
Six Desta Dr, Suite 2700
Midland, TX 79705


Arco Oil & Gas Co.
P.O. Box 1610
Midland, TX 79702

Texaco, Inc.
P.O.Box 3109
Midland, TX 79702

Lane Lasrich Oil & Gas Invest.
2597 E. Bridger Blvd.
Sandy, UT 84093-1839

Hadson Petroleum USA, Inc.
P.O.Box 26770
Oklahoma City, OK 73126-0770

I hereby certify the above were mailed a complete copy of our application
by certified mail on December 17, 1991.

Signed: 



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
RECEIVED

OIL CONSERVATION DIVISION

HOBBS DISTRICT OFFICE

91 DEC 23 AM 10 02

12-18-91

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 ☒ _____
WFX _____
PMX _____

Gentlemen:

I have examined the application for the:

BTA oil producers drama B 8817-JV-P #1-N 27-21-34
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed