P.O Box 977
Farmington, New Mexico 87499
(505) 327-1639

BHP Petroleum (Americas) Inc

AKE SWD 450

January 24, 1992

Mr. William J. Lemay
State of New Mexico
Oil Conservation Division

Dear Mr. Lemay,

In accordance with the Oil Conservation Divisions Administrative Order No. SWD-450, BHP Petroleum (Americas) Inc. has taken formation water samples from the Cliff House, Menefee and Point Lookout members of the Mesaverde formation and have had those samples analyzed. The formation water results are enclosed.

Sincerely,

Fred Lowery
Operations Supt.

cc: Cole McGary

API WATER ANALYSIS REPORT FORM

Laboratory No. 25-920113-3

Company	Sample No.	Date Sampled
BHP Petroleum		1-9-92

Field	Legal Description	County or Parish	State
	Sec 13 - T29N - R13W	San Juan	NM

Lease or Unit	Well	Depth	Formation	Water, B/D
	GCU 13 500 #7	2870' - 2772'	Mesa Verde Cliffhouse	

Type of Water (Produced, Supply, etc.)	Sampling Point	Sampled By
	Sweb Line	

DISSOLVED SOLIDS

CATIONS	*mg/l*	*me/l*
Sodium, Na (calc.)	8,700	380
Calcium, Ca	76	3.8
Magnesium, Mg	12	1
Barium, Ba		

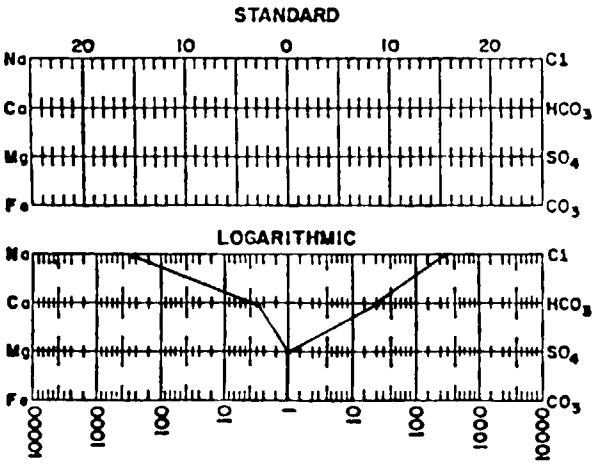
ANIONS		
Chloride, Cl	12,600	356
Sulfate, So_4	-	-
Carbonate, CO_3	-	-
Bicarbonate, HCO_3	1,780	29.2

Total Dissolved Solids (calc.)	23,000
Iron, Fe (total)	
Sulfide, as H_2S	

OTHER PROPERTIES

pH	7.60
Specific Gravity, 60/60 F.	1.0174
Resistivity (ohm-meters) 66 F.	0.58

WATER PATTERNS — *me/l*



REMARKS & RECOMMENDATIONS:

Date Received	Preserved	Date Analyzed	Analyzed By
13th Jan, 1992.		20th Jan, 1992.	R.H.

TECH, Inc.
333 East Main
Farmington
New Mexico
87401
505/327-3311

API WATER ANALYSIS REPORT FORM

Laboratory No. 25-920108-5

Company	Sample No.	Date Sampled
BHP Petroleum		1-7-92

Field	Legal Description	County or Parish	State
	Sec. 13 - T29N - R13W	San Juan	NM

Lease or Unit	Well	Depth	Formation	Water, B/D
	GCU 13 Swab #1	3291'-3604'	MESA VERDE Menefee	

Type of Water (Produced, Supply, etc.)	Sampling Point	Sampled By
	Swab Sample	

TECH, Inc.
333 East Main
Farmington
New Mexico
87401
505/327-3311

DISSOLVED SOLIDS

CATIONS	*mg/l*	*me/l*
Sodium, Na (calc.)	27,000	1,200
Calcium, Ca	1,900	94.8
Magnesium, Mg	280	23
Barium, Ba		

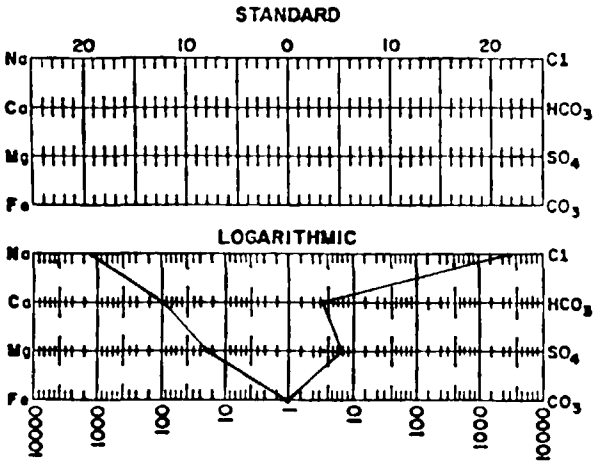
ANIONS		
Chloride, Cl	45,800	1,290
Sulfate, So_4	380	7.8
Carbonate, CO_3	–	–
Bicarbonate, HCO_3	260	4.2

Total Dissolved Solids (calc.)	76,000
Iron, Fe (total)	
Sulfide, as H_2S	

OTHER PROPERTIES

pH	7.15
Specific Gravity, 60/60 F.	1.0533
Resistivity (ohm-meters) 66 F.	0.1

WATER PATTERNS — *me/l*



REMARKS & RECOMMENDATIONS:

Date Received	Preserved	Date Analyzed	Analyzed By
8th Jan, 1992.		20th Jan, 1992.	R. H.

Fax 5-16-03

API WATER ANALYSIS REPORT FORM

Laboratory No. 25-920108-4

Company	Sample No.	Date Sampled
BHP Petroleum		1-5-92

Field	Legal Description	County or Parish	State
	S. 13 - T29N - R13W	San Juan	NM

Lease or Unit	Well	Depth	Formation	Water, B/D
	G.C.U. 13 SWD #1	3736'-3762'	MESA VERDE Point Lookout Sand	

Type of Water (Produced, Supply, etc.)	Sampling Point	Sampled By
	Swab Sample	

DISSOLVED SOLIDS

CATIONS	*mg/l*	*me/l*
Sodium, Na (calc.)	15,000	640
Calcium, Ca	1,190	59.6
Magnesium, Mg	150	12
Barium, Ba		

ANIONS		
Chloride, Cl	23,200	655
Sulfate, So_4	2,600	54
Carbonate, CO_3	-	-
Bicarbonate, HCO_3	400	6.6

Total Dissolved Solids (calc.) 43,000

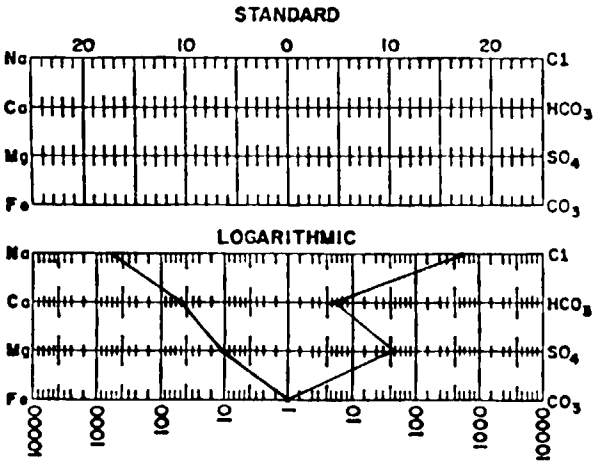
Iron, Fe (total)

Sulfide, as H_2S

OTHER PROPERTIES

pH	6.99
Specific Gravity, 60/60 F.	1.0319
Resistivity (ohm-meters) 66 F.	0.2

WATER PATTERNS — *me/l*



REMARKS & RECOMMENDATIONS: ATTN: JIM GRAVES

Date Received	Preserved	Date Analyzed	Analyzed By
8th Jan, 1992		20th Jan, 1992.	R.H.

TECH, Inc.
333 East Main
Farmington
New Mexico
87401
505/327-3311

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

OIL CONSERVATION DIVISION

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: BHP Petroleum (Americas), Inc.

Address: 5805 English Drive, Farmington, New Mexico 87401

Contact party: Fred Lowery Phone: 505-327-1639

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: Fred Lowery Title Operations Superintendent

Signature: Fred Lowery Date: 10/4/91

* 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.

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.

III. Well Data: Tabular (Schematic: See Attachment #1)

A. 1. Lease Name: Gallegos Canyon Unit, Fee Lease
Well Name: Gallegos Canyon Unit 13 SWD No. 1
Location: 1467' FSL & 2350' FEL, Section 13, T29N, R13W

2. Casing Program:

Hole Size	Casing Size	Setting Depth	Sacks of Cement	Cement Top	Cement Top Determined By
12 1/4"	8 5/8"	300'	215	Surface	Circulating on Temp Survey
7 7/8"	5 1/2"	4000'	535	Surface	Circulating/Temp Survey/CBL Log

3. Tubing Program:

2 3/8", 5.3 #/ft., J-55, EUE 8nd internally coated tubing set @ ± 2850 ft.
Internal coat: ICO type SC-650 or equivalent (corrosion resistant straight epoxy coating)

4. Packer: Baker 5 1/2" lock set packer or equivalent set at ± 2850 ft.

B. 1. Name of injection formations: a. Cliff House b. Menefee c. Point Lookout

2. Injection intervals (approximate footages):

Cliff House = 2855' - 3000', perforated.
Menefee = 3000' - 3750', perforated.
Point Lookout = 3750' - 4000', perforated.

3. This well will be drilled for the purpose of injection for water disposal.

4. None anticipated.

5. The Pictured Cliffs formation, top 1305', is the next higher formation to produce gas in this area; the Gallup formation, top 4995', is the next lower formation to produce oil and gas in this area.

V. See well and lease map: Attachment #2.

VI. Attachment #3 is a tabulation of data on all wells of public record within the area of review. As indicated, the first 4 wells listed penetrated the proposed injection zone. There are not any plugged wells within the area of review.

VII. 1. Rate of disposal will be determined by a step rate injection test to be run on the GCU 13 SWD No. 1.

2. The proposed injection system will be designed as a closed system.

3. The maximum injection pressure will be determined by a step rate injection test. The average injection pressure will be kept below this maximum pressure.

4. The source of injection fluid will be produced water from the Gallegos Canyon Unit wells. Water from gas wells with similar composition has not demonstrated incapatibility when injected into the Cliff House, Menefee and Point Lookout formations.

   Produced water analysis (injection fluid) from representative wells in the Gallegos Canyon Unit are: (Values in mg/L)

Well Name	Producing Formation	Na	Ca	Mg	Cl	HC03	S04	C03	pH	TDS
GCU #382	Fruitland	17,900	673	204	29,100	549	-	-	6.83	48,426
GCU #386	Fruitland	12,896	637	207	21,412	336	-	-	6.63	35,488
GCU #504	Pictured Cliffs	10,594	1,320	389	17,750	3,538	-	-	6.83	33,591
GCU #501	Pictured Cliffs	16,438	537	170	25,410	641	-	-	6.7	44,196

5. Disposal zone formation water analysis:
   Information source: "Hydrogeology and Water Resources of San Juan Basin, New Mexico". (Values in mg/L)

Location	Date Sampled	Aquifer	pH	Ca	Mg	Na	HC03	C03	S04	Cl	Fluoride	TDS
Sec 13, 25N-13W	2-4-55	Cliff House	-	86	34	-	140	0	4200	380	3.2	6840
Sec 10, 23N-13W	5-2-67	Cliff House	9.1	14	.6	970	500	31	1500	100	7.0	2950
Sec 35, 23N-13W	1-24-74	Menefee	8.3	120	86	180	330	21	630	12	.2	1320
Sec 5, 23N-12W	10-22-75	Pt. Lookout	8.1	9.2	2.8	2600	2360	0	27	2600	4.9	6440

VIII. The closest known overlying drinking water aquifer is the Ojo Alamo. The Ojo Alamo will be encountered in this well from surface to an approximate depth of 5'. There are no known drinking water aquifers below the Point Lookout formation.

The proposed injection zones are the sandy and porous portions of the Cliff House, Menefee and Point Lookout formations. At the proposed Gallegos Canyon Unit 13 SWD No. 1 location the zones could be described as follows:

Cliff House Sandstone - light to medium grey, angular to subangular, very fine grained, well cemented and laminated with light to dark grey carbonaceous shales. Overall depth would be estimated at 2855' - 3000' with overlying unit being Lewis Shale and the underlying unit being the Menefee formation.

Menefee Formation - interbedded claystone, carbonaceous siltstone and shale, coal and immature to submature fine grained sandstone. Overall depth would be estimated at 3000' - 3750' with overlying unit being Cliff House Sandstone and underlying unit being the Point Lookout Sandstone.

Point Lookout Sandstone - light to medium grey, angular to subangular, fine to very fine grained, well cemented sandstone with laminations of light to dark grey carbonaceous shale. Overall depth would be estimated at 3750' - 4000' with overlying unit being Menefee formation and underlying unit being the Mancos Shale.

IX. Stimulation will consist of perforating selected porous intervals in the Cliff House, Menefee and Point Lookout and stimulating using a sand frac treatment. Details will be provided to the District NMOCD Office prior to stimulation.

X. Test information and logs will be provided to the District NMOCD Office as available.

XI. Attachment #4 is an API chemical analysis of two (2) fresh water wells located within one mile of the proposed disposal well.

XII. I hereby certify that I have examined available geologic and engineering data and can find no evidence of connection between the disposal zone and underground drinking water sources.

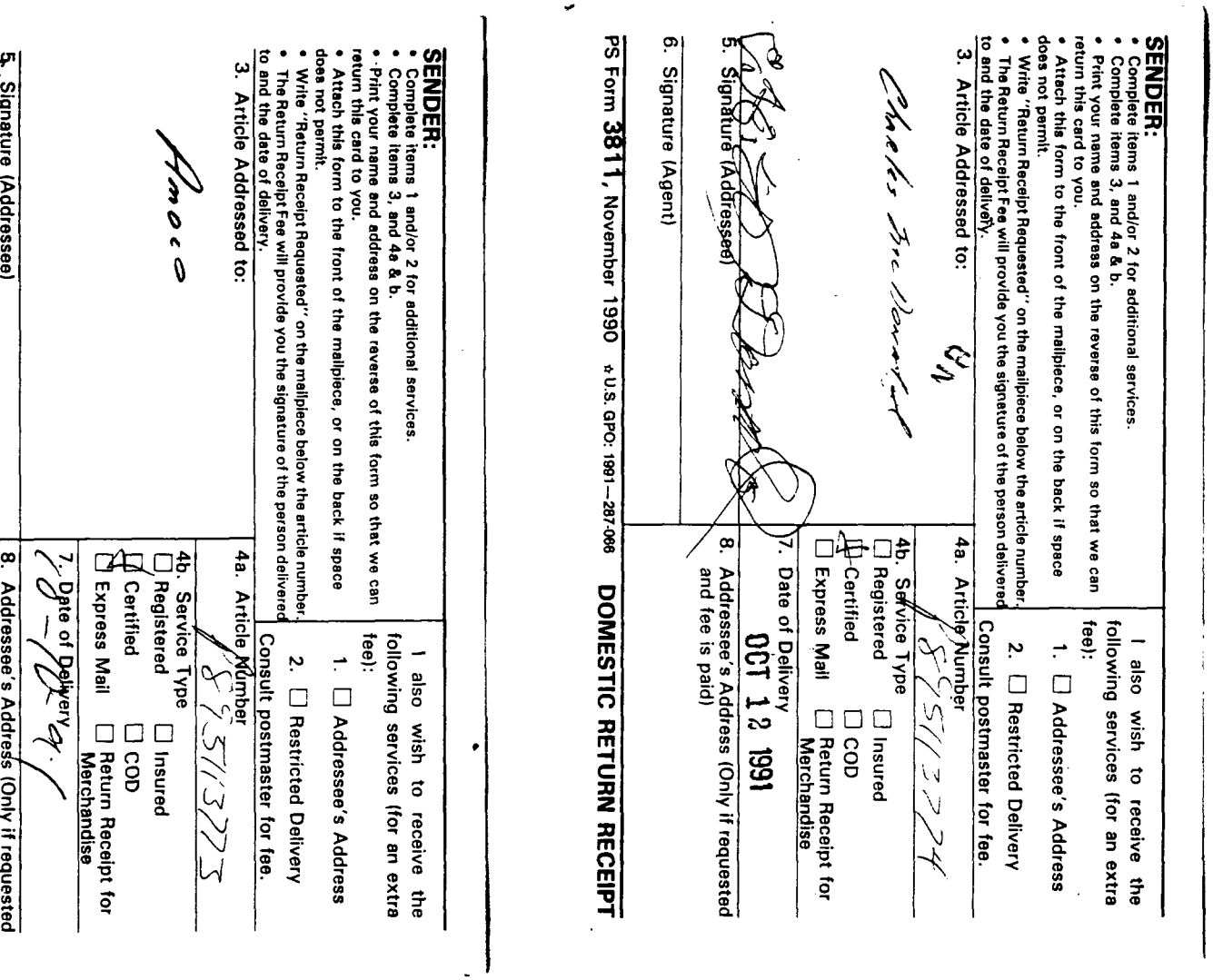
XIII. Proof of Notice:

Copy of ad from Farmington Daily Times attached.

Copies of application have been furnished by certified mail to the following parties:

Mr. Charles McDonald
3130 W. Pierce Street
Phoenix, AZ 85009

Amoco Production Company
Attn: Mr. Clark Bennett
200 Amoco Court
Farmington, New Mexico 87401



SENDER:
• Complete items 1 and/or 2 for additional services.
• Complete items 3, and 4a & b.
• Print your name and address on the reverse of this form so that we can return this card to you.
• Attach this form to the front of the mailpiece, or on the back if space does not permit.
• Write "Return Receipt Requested" on the mailpiece below the article number.
• The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery
Consult postmaster for fee.

3. Article Addressed to: Charles McDonald

4a. Article Number P 665 513 274

4b. Service Type
☐ Registered ☐ Insured
☑ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery OCT 12 1991

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)

PS Form 3811, November 1990 ☆U.S. GPO: 1991—287-068 DOMESTIC RETURN RECEIPT

SENDER:
• Complete items 1 and/or 2 for additional services.
• Complete items 3, and 4a & b.
• Print your name and address on the reverse of this form so that we can return this card to you.
• Attach this form to the front of the mailpiece, or on the back if space does not permit.
• Write "Return Receipt Requested" on the mailpiece below the article number.
• The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery
Consult postmaster for fee.

3. Article Addressed to: Amoco

4a. Article Number P 665 513 273

4b. Service Type
☐ Registered ☐ Insured
☐ Certified ☐ COD
☒ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery 10-7-91

5. Signature (Addressee) Marie Gallagher

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)

PS Form 3811, November 1990 ☆U.S. GPO: 1991—287-068 DOMESTIC RETURN RECEIPT

AFFIDAVIT OF PUBLICATION

No. 28427

STATE OF NEW MEXICO,
County of San Juan:

CHRISTINE HILL being duly sworn, says: "That she is the NATIONAL AD MANAGER of The Farmington Daily Times, a daily newspaper of general circulation published in English in Farmington, said county and state, and that the hereto attached LEGAL NOTICE

was published in a regular and entire issue of the said Farmington Daily Times, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for TWO consecutive (days) (/////) on the same day as follows:

First Publication WEDNESDAY, OCTOBER 9, 1991

Second Publication SUNDAY, OCTOBER 13, 1991

Third Publication

Fourth Publication

and that payment therefore in the amount of $ 23.33 has been made.

Christine Hill

Subscribed and sworn to before me this 15th day of OCTOBER, 1991.

Connie Andrae
Notary Public, San Juan County, New Mexico

My Comm expires: JULY 3, 1993

COPY OF PUBLICATI

NOTICE

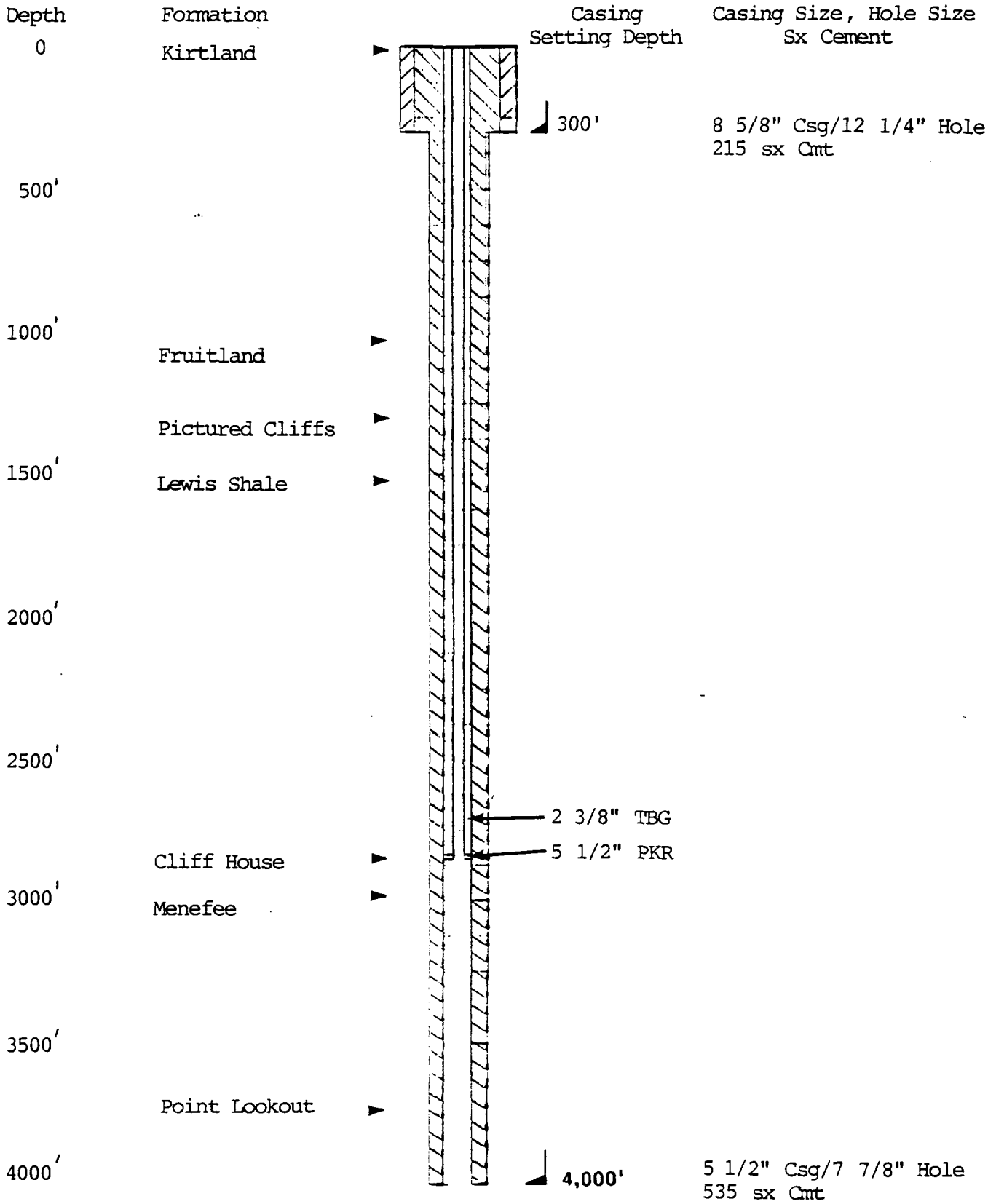
Intent to dispose of water in the subsurface. BHP Petroleum (Americas), Inc., proposes to dispose of produced water in the Cliff House, Menefee and Point Lookout formations. The injection well will be the Gallegos Canyon Unit 13 SWD#1 located 1467' FSL & 2350' FEL of Section 13, T29N, R13W, San Juan Co., New Mexico. Water will be injected in San Juan Co., New Mexico. Water will be injected in intervals from 2855' to 4000'. Maximum rate and pressure are to be determined by step rate testing.

Questions should be addressed to Mr. Fred Lowery, c/o BHP Petroleum (Americas), Inc., 5805 English Drive, Farmington, New Mexico, 87401, or call 505-327-1639. Objections or requests for hearing by interested parties must be filed with the New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87501 within 15 days.

Legal No 28427 published in the Farmington Daily Times, Farmington, New Mexico on Wednesday and Sunday, October 9 and 13, 1991.

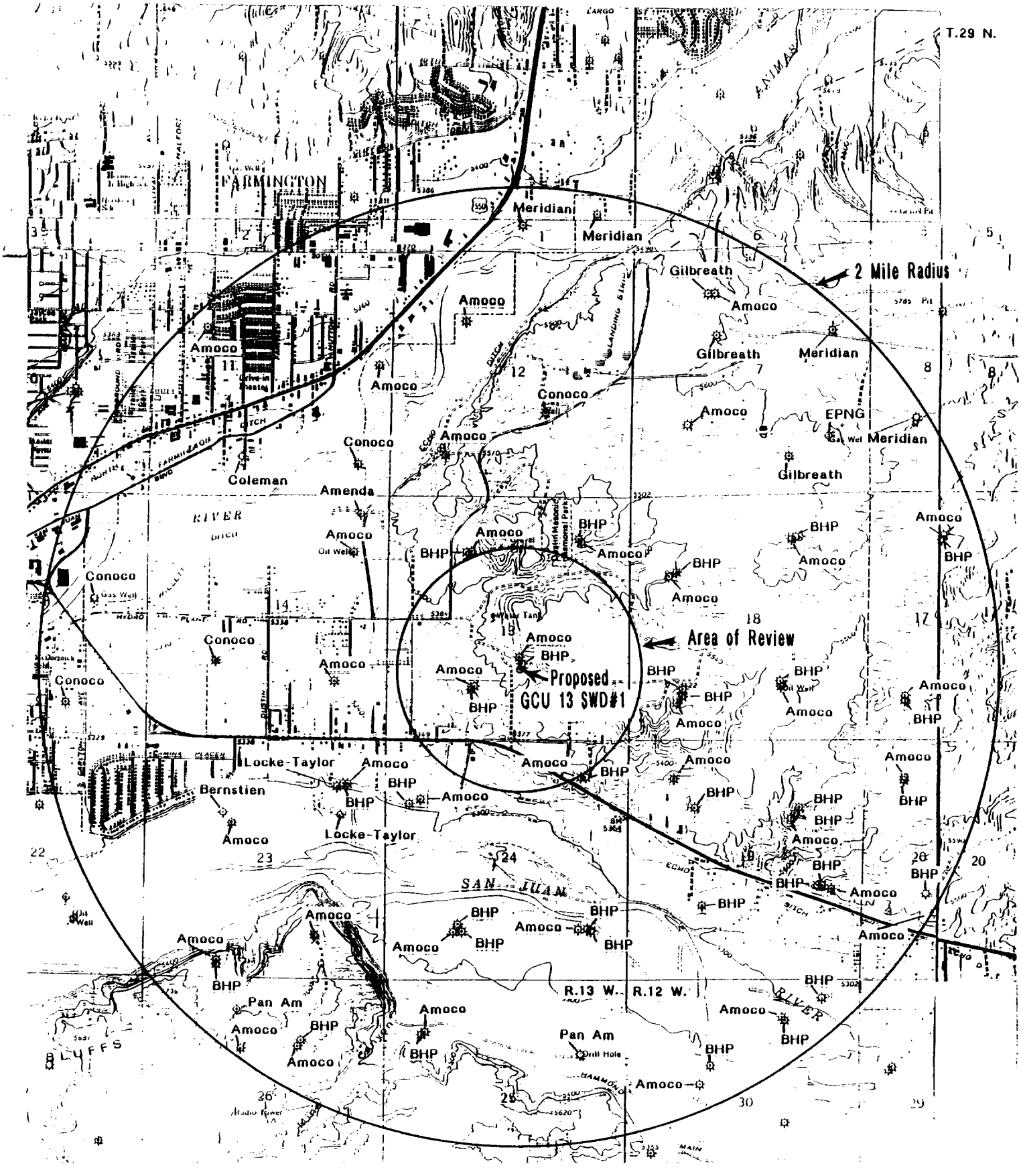
III. Well Data Attachment #1
Schematic Diagram

BHP Petroleum (Americas), Inc.
Gallegos Canyon Salt Water Disposal Well 13-1
1467' FSL & 2350' FEL, Sec. 13, T29N, R13W,
NMPM



Well & Lease Map: Attachment #2

BHP Petroleum (Americas), Inc.
Gallegos Canyon Unit 13 SWD No. 1
1467' FSL & 2350' FEL
Section 13, T29N, R13W, NMPM



Attachment #3

All Wells of Public Record Within Area of I
Proposed Gallegos Canyon Unit
13 SWD No. 1

OPERATOR	WELL NAME	LOCATION	PENETRATE INJECTION ZONE	STATUS	FORMATION	TD	COMPLETION DATE	HOLE SIZE	CASIN SIZE
Amoco	Gallegos Canyon Unit #102	1190' FNL-1740'FWL Sec. 13, T29N-R13W	Yes	PGW	Dakota	6088'	01/06/91	12 1/4" 7 7/8"	8 5/ 4 1/
Amoco	Gallegos Canyon Unit #106	790' FNL-990' FEL Sec. 24, T29N-R13W	Yes	PGW	Dakota	6020'	09/10/61	12 1/4" 7 7/8"	8 5/ 4 1/
Amoco	Gallegos Canyon Unit #108	1770' FSL-2400' FEL Sec. 13, T29N-R13W	Yes	PGW	Dakota	6052'	06/10/80	12 1/4" 7 7/8	8 5/ 4 1/
Amoco	Gallegos Canyon Unit #108E	1120' FSL-1835' FWL Sec. 13, T29N-R13W	Yes	PGW	Dakota	6054'	06/10/80	12 1/4" 7 7/8"	8 5/ 4 1/
BHP	Gallegos Canyon Unit #330	790' FNL-1020' FEL Sec. 24, T29N-R13W	No	PGW	Pictured Cliff	1380'	01/14/84	12 1/4" 6 1/4"	7 5/ 4 1/
BHP	Gallegos Canyon Unit #382	1020' FSL-1744' FWL Sec. 13, T29N-R13W	No	-	Fruitland Coal	1405'	11/26/90	8 3/4" 6 1/4"	7" 4 1/
BHP	Gallegos Canyon Unit #500	1175' FNL-1585' FWL Sec. 13, T29N-R13W	No	-	Pictured Cliff	1486'	Not Completed	8 3/4" 6 1/4"	7" 4 1/
BHP	Gallegos Canyon Unit #501	1655' FSL-2315' FEL Sec. 13, T29N-R13W	No	-	Pictured Cliff	1447'	02/21/91	8 3/4" 6 1/4"	7" 4 1/

Attachment #4

Fresh Water Analysis (Values in Mg/L)

Sample Number	Approximate Location	pH	Na	Ca	Mg	Fe	Cl	HC03	S04	C03	Oh	TDS
1	1200' FNL & 1040' FEL Sec. 23, T29N, R13W	7.0	193	128	15	0	142	732	0	0	0	1210
2	1840' FNL & 220' FEL Sec. 23, T29N, R13W	7.9	598	96	29	0	639	464	TR	0	0	1820

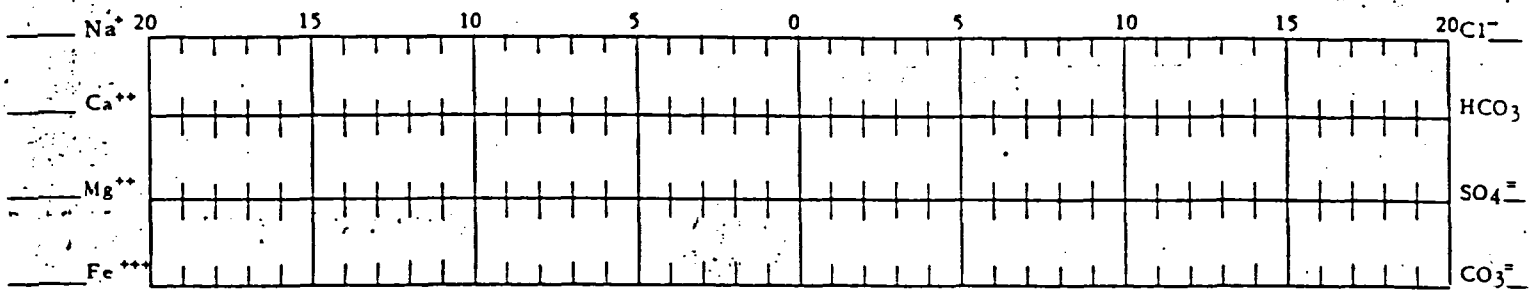
BAROID TREATING CHEMICALS

Exhibit D

COMPANY: Energy Reserves			SHEET NUMBER / DATE: 6-10-77
FIELD: Basin Dakota	COUNTY OR PARISH: San Juan		STATE: N Mexico
LEASE OR UNIT: King Gas Com.	WELL(S) NAME OR NO.: #1	WATER SOURCE (FORMATION): Mesaverde - Cliffhouse	
DEPTH, FT.	BHT, F	SAMPLE SOURCE	TEMP, F
WATER, BBL/DAY	OIL, BBL/DAY	GAS, MMCF/DAY	
TYPE OF OIL	API GRAVITY: 0	TYPE OF WATER: ☒ PRODUCED WATER ☐ INJECTION WATER OTHER	

WATER ANALYSIS PATTERN

(NUMBER BESIDE ION SYMBOL INDICATES me/l * SCALE UNIT)



DISSOLVED SOLIDS

CATIONS	me/l *	mg/l *
Total Hardness	0	
Sodium, Na+ (calc.)		
Calcium, Ca++	2	40
Magnesium, Mg++	6	73
Iron (Total), Fe+++		1.9
ANIONS		
Chloride, Cl-		10,600
Sulfate, SO4=		90
Carbonate, CO3=		1,200
Bicarbonate, HCO3-	232	14,152
Hydroxyl, OH-		-0-
Sulfide, S=		
Phosphate-Meta, PO3-		
Phosphate-Ortho, PO4≡		

DISSOLVED GASES

Hydrogen Sulfide, H_2S		mg/l *
Carbon Dioxide, CO_2		mg/l *
Oxygen, O_2		mg/l *

PHYSICAL PROPERTIES

pH	8.4	
Eh (Redox Potential)		MV
Specific Gravity		
Turbidity, JTU Units		
Total Dissolved Solids (Calc.)		mg/l *
Stability Index @ F		
@ F		
$CaSO_4$ Solubility @ F		mg/l *
@ F		mg/l *
Max. $CaSO_4$ Possible (Calc.)		mg/l *
Max. $BaSO_4$ Possible (Calc.)		mg/l *
Residual Hydrocarbons		ppm (Vo

SUSPENDED SOLIDS (QUALITATIVE)

Iron Sulfide ☐ Iron Oxide ☐ Calcium Carbonate ☐ Acid Insoluble ☐

REMARKS AND RECOMMENDATIONS:

* NOTE: me/l and mg/l are commonly used interchangeably for epm and ppm respectively. Where epm and ppm are used, corrections should be made for specific gravity.

BTC ENGINEER	DIST. NO.	ADDRESS	OFFICE PHONE	HOME PHONE
Max Woolery		Farmington, NM	325-9701	
TECHNICIAN: Woolery	DATE: 6-10-77	DISTRIBUTION: ☐ CUSTOMER ☐ AREA OR ☐ DISTRICT OFFICE ☐ BTC ENGINEER OR ☐ BTC LAB ☐ BTC SALES SUPERVISOR		

OK

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

OIL CONSERVATION DIVISION
RECEIVED
'91 OCT 30 AM 9 00

ARREY CARRUTHERS
GOVERNOR

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Date: 10-28-91

Attn: David Catanach

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

Re: Proposed NC_____
Proposed DHC_____
Proposed NSL_____
Proposed SWD X
Proposed WFX_____
Proposed PMX_____

Gentlemen:

I have examined the application dated 10-18-91
for the BHP Petroleum (Americas) Inc. GCU 13 #1
Operator Lease & Well No.
J-13-29N-13W and my recommendations are as follows:
Unit, S-T-R

Approve

Yours truly,

Jerry Sexton