# CAMPBELL & BLACK, P.A.

JACK M. CAMPBELL BRUCE D. BLACK MICHAEL B. CAMPBELL WILLIAM F. CARR BRADFORD C. BERGE MARK F. SHERIDAN J. SCOTT HALL JOHN H. BEMIS WILLIAM P. SLATTERY PATRICIA A. MATTHEWS JEFFERSON PLACE SUITE I - 110 NORTH GUADALUPE POST OFFICE BOX 2208 SANTA FE, NEW MEXICO 87504-2208 TELEPHONE: (505) 988-4421 TELECOPIER: (505) 983-6043

November 6, 1989

# HAND-DELIVERED

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OIL CONSERVATION DIVISION	
(9833)	the states of the second se

William J. LeMay, Director Oil Conservation Division New Mexico Department of Energy, Minerals and Natural Resources State Land Office Building Santa Fe, New Mexico 87503

Re: In the Matter of the Application of Texaco, Inc. for Approval of Salt Water Disposal, Lea County, New Mexico

Dear Mr. LeMay:

Enclosed in triplicate is the above-referenced application of Texaco, Inc. Texaco, Inc. respectfully requests that this matter be placed on the docket for the Examiner hearings scheduled on November 29, 1989.

Vdry truly yours,

ullan &

WILLIAM F. CARR

WFC:mlh Enclosures cc w/enclosures:

Oil Conservation Division Office Post Office Box 1980 Hobbs, New Mexico 88240

Glenn Carter, Texaco, Inc.

ENERGY	STATE OF NE AND MINERAL	W MEXICO S DEPARTMENT	OIL T	CONSERVATION DIVISI POST OFFICE BOX 2008 STATE LAND OFFICE BUILDING SANTA FE. NEW MEXICO 87501	on Receivei	FC Re	RM C-108 vised 7-1-81
APPLICAT	ION FOR AUTH	ORIZATION TO	) INJECT	N	OV - 6 1	989 Case	9833
Ι.	Purpose:   Applicati	Secondary on qualifies	Recovery s for admini	Pressure Main	tenance NSERVATONY	X Disposal BRVISION X no	Storage
II.	Operator:	Texaco	o Inc.				
	Address:	<u>P. O.</u>	Box 730,	Hobbs, New M	lexico	88240	
	Contact part	y: <u>J. A.</u>	Head		Phone	:(505)	393-7191
111.	Well data:	Complete the proposed for	e data requi r injection.	ired on the rever . Additional she	se side o ets may b	f this form e attached i	for each well f necessary.
IV.	ls this an e If yes, give	xpansion of the Divisio	an existing on order nur	g project? 🔲 mber authorizing	yes [ the proje	Xno ct	·
۷.	Attach a map injection we well. This	that ident: ll with a or circle ident	ifies all we ne-half mile tifies the w	ells and leases w e radius circle d well's area of re	ithin two rawn arou view.	miles of ar nd each prop Attached	ly proposed losed injection l
∗ VI.	Attach a tab penetrate th well's type, a schematic	ulation of e proposed constructions of any pluga	data on all injection zo on, date dr: ged well il:	wells of public one. Such data s illed, location, lustrating all pl	record wi hall incl depth, re ugging de	thin the are ude a descri cord of comp tail. At	a of review which ption of each )letion, and tached
VII.	Attach data	on the prop	osed operat:	ion, including:			
	1. Prop 2. Whet 3. Prop 4. Sour 5. If i at th li	osed average her the system osed average ces and an e receiving njection is or within de disposal terature, s	e and maximu tem is open e and maximu appropriate formation : for dispose one mile of zone format; tudies, nea	um daily rate and or closed; um injection pres analysis of inje if other than rei al purposes into the proposed wel ion water (may be rby wells, etc.).	volume o sure; ction flu njected p a zone no l, attach measured At	f fluids to id and compa roduced wate t productive a chemical or inferred ttached	be injected; atibility with er; and e of oil or gas analysis of d from existing
VIII.	Attach appro detail, geol bottom of al total dissol injection zo injection in	opriate geol ogical name l undergrou ved solids one as well nterval.	ogical data , thickness nd sources ( concentration as any such Attached	on the injection , and depth. Giv of drinking water ons of 10,000 mg/ source known to	zone inc e the geo (aquifer 1 or less be immedi	luding appro logic name, s containing ) overlying ately under	opriate lithologic and depth to y waters with the proposed lying the
IX.	Describe the	proposed s	timulation	program, if any.	Atta	ached	
* X.	Attach appro with the Div	priate logg vision they	ing and tes need not be	t data on the wel resubmitted.)	l. (If w Copy of	ell logs had log atta	ve been filed ched.
* XI.	Attach a che available ar location of	emical analy nd producing wells and d	sis of fres ) within on ates sample	h water from two e mile of any inj s were taken.	or more f jection or Att	resh water disposal w tached	vells (if ell showing
XII.	Applicants f examined ava or any other source of dr	for disposal ailable geol hydrologic rinking wate	wells must ogic and en connection r. Att	make an affirmat gineering data an between the disp cached	ive state nd find no posal zone	ement that t evidence o e and any un	ney have f open faults derground
XIII.	Applicants r	nust complet	e the "Proo	f of Notice" sect	ion on th	e reverse s	ide of this form.
XIV.	Certificatio	on					
	I hereby cer to the best	rtify that t of my knowl	he informat edge and be	ion submitted wit lief.	h this ap	plication i	s true and correct
	Name: J	. A. Head			Title	Area Ma	nager
	Signature: _	Jak	eal		Date: _	Novembe	r 1, 1989

\* 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. ٠

OPERATOR		LEASE	** <u></u>	
TEXACO INC.		N.M. "DM" STAT	<u>'E NCT-2</u>	
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
1	1980' FNL & 330'	FWL 21	13-S	33-E
Schema	atic	1	labular Data	
		Surface Casing Se	t @ 365'	
		Size <u>11 3/4</u>	" Cemented with	<u> </u>
		TOCSurface	fest determined by	<u>circulated</u>
		Hole size <u>15"</u>		
		Intermediate Casing	set @ 4103'	
		Size 8 5/8	" Cemented with	<u>865</u> sx.
		roc1100	feet determined by	<u>calculated</u>
		Hole size10	5/8"	(45% fillup)
		Long string set @	9850'.	
		Size <u>5 1/2</u>	" Cemented with	<u>750</u> sx.
		toc 5500	feet determined by	<u>calculated</u>
		Hole size7	7/8"	(/5% fillup)
		Total depth 9 <u>850'</u>	(PBTD 9803')	
	`	Injection interval		
		9734 feet (perforated XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	to <u>9740</u> XMe, indicate which)	_ feet

Tub	ing size	2 3/8"	lined with	<u>internal plastic</u>	<u>coating</u>	set in a
_	, , ,			(material)		• .
B	aker Lok-s	et		packer at	9680	feet
1	(prand a	ing model)	a tubion cool)			
(01	describe any	other casin	g-cubing sear/.			
Oth	er Data					
1.	Name of the	injection fo	rmation I	Bough C	· ·····	
۷.	Name of Fiel	d or Pool (i	f applicable) _	Lazy J Penn		
3.	Is this ine	w well drill	ed for injectio	n? /_7 Yes /_X N	0	
	If no, for w	hat purpose	was the well or	iginally drilled? Oil	production	
		•				
4.	Has the well and give plu	ever been p Igging detail	erforated in an (sacks of ceme	y other zone(s)? List nt or bridge plug(s) u	all such perfor sed) <u>NO.</u>	sated intervals None.
5.	Give the dep	th to and na	me of any overl	ying and/or underlying	oil or gas zone	es (pools) in
	this area	No oth	er oil or ga	is zones are known	to exist.	





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#### ATTACHMENT TO FORM C-108

### WELLS WITHIN 1/2 MILE RADIUS OF TEXACO INC. N.M. "DM" STATE NCT-2 WELL NO. 1

GULF OIL CORPORATION STATE B-10307 NO. 1 UNIT LETTER M, 660' FSL & 660' FWL SECTION 16, T-13-S, R-33-E LEA COUNTY, NEW MEXICO

13 3/8" 48# casing set at 365' in 15 1/2" hole with 574 sx. Cement circulated.

TD 660'

12-53 P&A

COASTAL OIL & GAS CORPORATION BAUM SWD NO. 1 UNIT LETTER A, 660' FNL & 660' FEL SECTION 20, T-13-S, R-33-E LEA COUNTY, NEW MEXICO 13 3/8" 48# casing set at 385' in 15" hole with 450 sx. Cement circulated. 9 5/8" 29.3, 36# casing set at 4060' in 10" hole with 2150 sx. Cement circulated. 5 1/2" 15.5, 17# casing set at 9780' in 7 7/8" hole with 2162 sx. Cement circulated. 4 1/2" 13# liner set from 9345-13,347 in 7 7/8" hole with 1000 sx. Cement circulated. Completed as oil producer in Baum Upper Penn through 8-53 perforations at 9590-9718'. 3-67 P&A Re-entered. Ran 4 1/2" liner. Cement circulated behind 1-69 liner (sealed off perforations at 9590-9718). Convert to SWD into Devonian open hole from 13,347-13,572. 3-85 P&A

COASTAL OIL & GAS CORPORATION FEDERAL "20" NO. 4 UNIT LETTER G, 2080' FNL & 2080' FEL SECTION 20, Y-13-S, R-33-E LEA COUNTY, NEW MEXICO

- 13 3/8" 48# casing set at 375' in 17 1/2" hole with 400 sx. Cement circulated.
- 8 5/8" 24, 32# casing set at 4075' in 11" hole with 300 sx. Top of cement calculated at 2500' (45% fillup).
- 5 1/2" 15.5, 17# casing set at 9854' in 7 7/8" hole with 200 sx. Top of cement calculated at 8700' (75% fillup).

TD 9852' PBTD 9852'

- 1-69 Completed as an oil producer in Baum Upper Penn through perforations at 9713-9732.
  11-83 Shut-in.
- COASTAL OIL & GAS CORPORATION FEDERAL "20" NO. 1 UNIT LETTER P, 660' FSL & 660' FEL SECTION 20, T-13-S, R-33-E LEA COUNTY, NEW MEXICO
- 13 3/8" 48# casing set at 387' in 17 1/2" hole with 375 sx. Cement circulated to surface.
- 8 5/8" 24, 32# casing set at 4075' in 11" hole with 300 sx. Top of cement calculated at 2500' (45% excess).
- 5 1/2" 15.5, 17# casing set at 9840' in 7 7/8" hole with 250 sx. Top of cement calculated at 8400' (75% fillup).

TD 9840' PBTD 9840'

- 3-68 Completed as an oil producer in Baum Upper Penn through perforations at 9748-9800.
- 4-85 Converted to SWD into perforations 9748-9800.

TEXACO INC. N.M. "DM" STATE NCT-2 NO. 1 UNIT LETTER E, 1980' FNL & 330' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO 11 3/4" 42# casing set at 365' in 15" hole with 250 sx. Cement circulated to surface. 8 5/8" 24, 28, 32# casing set at 4103' in 10 5/8" hole with 865 sx. Top of cement calculated at 1100' (45% fillup). 5 1/2" 17# casing set at 9850' in 7 7/8" hole with 750 sx. Top of cement calculated at 5500' (75% fillup).

- 2-70 Completed as oil producer in Lazy J Penn through perforations 9734-9740.
- 2-86 Shut-in (0 BOPD, 174 BWPD).

COQUINA OIL CORPORATION HANAGAN STATE NO. 1 UNIT LETTER K, 1650' FSL & 2310' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO

- 11 3/4" 23.8# casing set at 360' in 15" hole with 300 sx. Cement circulated to surface.
- 8 5/8" 24, 32# casing set at 4030' in 11" hole with 450 sx. Top of cement calculated at 2800' (45% fillup).
- 5 1/2" 15.5, 17# casing set at 9827' in 7 7/8" hole with 250 sx. Top of cement calculated at 8400' (75% fillup).

TD 9828' PBTD 9773'

- 4-68 Completed as oil producer in Lazy J Penn through perforations 9719-9765.
- 9-74 P&A

COQUINA OIL CORPORATION HANAGAN STATE NO. 2 UNIT LETTER L, 1980' FSL & 430' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO

13 3/8" 48# casing set at 393' in 17 1/2" hole with 375 sx. Cement circulated to surface.

8 5/8" 24, 28, 32# casing set at 4199' in 11" hole with 500 sx. Top of cement calculated at 2850' (45% fillup).

5 1/2" 17# casing set at 9810' in 7 7/8" hole with 450 sx. Top of cement calculated at 7250' (75% fillup).

TD 9810' PBTD 9806'

11-69 Completed as oil producer in Lazy J Penn through perforations at 9718-9734.
9-74 P&A

TEXACO INC. N.M. "DM" STATE NCT-1 NO. 2 UNIT LETTER M, 990' FSL & 660' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO

11 3/4" 42# casing set at 363' in 15" hole with 250 sx. Cement circulated to surface.

8 5/8" 24, 28, 32# casing set at 4146' in 11" hole with 865 sx. Top of cement calculated at 1040' (45% fillup).

5 1/2" 17# casing set at 9900' in 7 7/8" hole with 765 sx. Top of cement calculated at 5500' (75% fillup).

TD 9900' PBTD 9847'

5-70 Completed as oil producer in Lazy J Penn through perforations at 9737-9752.

9-76 P&A

TEXACO INC. LAZY J PENN SWD WELL N.M. "DM" STATE NCT-1 NO. 1 UNIT LETTER N, 660' FSL & 1980' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO

- 11 3/4" 23.72# casing set at 364' in 15" hole with 300 sx. Cement circulated to surface.
- 8 5/8" 24# casing set at 4150' in 10 5/8" hole with 650 sx. Top of cement calculated at 2000'.
- 4 1/2" 11.60# casing set at 9899' in 7 7/8" hole with 1100 sx. Top of cement calculated at 3400'.

TD 9900' PBTD 9867'

- 12-67 Completed as oil producer in Lazy J Penn through perforations at 9742-9792'.
- 9-75 Converted to SWD into perforations 9742-9792'.
- 9-89 Shut-in.

GULF OIL CORPORATION STATE B - 10307 No. 1 UNIT LETTER M, 660' FS & WL SECTION 16, T-13-S, R-33-E LEA COUNTY, NEW MEXICO



COASTAL OIL & GAS CORPORATION BAUM SWD NO. 1 UNIT LETTER A, 660' FN & EL SECTION 20, T-13-S, R-33-E LEA COUNTY, NEW MEXICO



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# COQUINA OIL CORPORATION HANAGAN STATE NO. 1 UNIT LETTER K, 1650' FSL & 2310' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO



COQUINA OIL CORPORATION HANAGAN STATE NO. 2 UNIT LETTER L, 1980' FSL & 430' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO



### TEXACO INC. N.M. "DM" STATE NCT-1 NO. 2 UNIT LETTER M, 990' FSL & 660' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO



#### ATTACHMENT TO FORM C-108

- PART VII. 1. The average injection rate will be 250 BWPD with a maximum injection rate of 1,000 BWPD.
  - 2. The system will be closed.
  - 3. The average injection pressure will be 0 (zero) psi with the maximum injection pressure of 150 psi.
  - 4. The source of the injected water is the Lazy J Penn.
  - 5. Not applicable, as Lazy J Penn water will be reinjected into the Lazy J Penn.
- PART VIII. Injection is proposed into the Permo Penn (Bough C) at 9734-40. The proposed injection zone is correlative to the injection zone in Texaco's Lazy J SWD well located approximately one-half mile southeast of the proposed SWD well. The lithology of the Permo Penn consists of phylloid algal limestone interbedded with dense limestone and thin shales. The Bough C is 80' thick in the subject well.

The Ogallala is the only source of drinking water in the area. The base of the Ogallala is at approximately 240', as per the State Engineers Office. There are no other known sources of drinking water above or below the proposed injection zone.

- PART IX. The injection perforations 9734-9740 will be acidized with 1500 gallons of 20% NEFE acid.
- PART XII. Texaco Inc. has examined available geologic and engineering data and found no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.



Company Address Lease Well Sample	Y : Texaco : Hobbs, NM : Saunders Field : Windmill Pt. : SE/4-SW/4-S22-T13S	-R	Date Date Sampled Analysis No.	: 10-20- : 10-13- : 5	89 89
	ANALYSIS		mg/L		* meq/L
1.	рН 7.8				
2.	H2S NR	_			
3.	Specific Gravity 1.00	1			
4.	Total Dissolved Solids		951.4		
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)			
11.	Bicarbonate	HCO3	329.0	HCO3	5.4
12.	Chloride	Cl	254.0	Cl	7.2
13.	Sulfate	SO4	75.0	SO4	1.6
14.	Calcium	Ca	128.0	Ca	6.4
15.	Magnesium	Mg	14.7	Mg	1.2
16.	Sodium (calculated)	Na	150.0	Na	6.5
17.	Iron	Fe	0.8		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		380.0		

# PROBABLE MINERAL COMPOSITION

			-		
*milli equivalents per Lite	r	Compound	Equiv wt	X meq/L	= mg/L
6 *Ca < *HCO3 /> 1 *Mg> *SO4 </td <td>5 2</td> <td>Ca(HCO3)2 CaSO4 CaCl2 Mg(HCO3)2</td> <td>81.0 68.1 55.5 73.2</td> <td>5.4 1.0</td> <td>437 68</td>	5 2	Ca(HCO3)2 CaSO4 CaCl2 Mg(HCO3)2	81.0 68.1 55.5 73.2	5.4 1.0	437 68
7  *Na> *Cl ++	7  ++	MgSO4 MgCl2	60.2 47.6	0.6 0.6	34 30
Saturation Values Dist. Wat CaCO3 13 m CaSO4 * 2H2O 2090 m BaSO4 2.4 m	er 20 C g/L g/L g/L	NaHCO3 Na2SO4 NaCl	84.0 71.0 58.4	6.5	381

REMARKS: Resistivity: 15.4 @ 48 deg. F

Petrolite Oilfield Chemicals Group

Company Address Lease Well Sample	Pt.	: Texaco : Hobbs, NM : Saunders Fiel : Windmill : NE/4-SW/4-S21	ld L-T13S-R		Date Date Sampled Analysis No.	: :	10-20-89 10-13-89 4	)
	ANALYS	IS			mg/L			* meq/L
1.	рН		8.2					
2.	H2S		NR					
3.	Specif	ic Gravity	1.002					
4.	Total	Dissolved Solic	ls		813.7			
5.	Suspen	ded Solids			NR			
6.	Dissol	ved Oxygen			NR			
7.	Dissol	ved CO2			NR			
8.	Oil In	Water			NR			
9.	Phenol	phthalein Alkal	inity (C	aco3)				
10.	Methyl	Orange Alkallr	ity (Cac	:03)		_		
11.	Bicarb	onate		HCO3	183.0	F	ICO3	3.0
12.	Chlori	de		CI	255.0	C	21	7.2
13.	Sullat	e		504	125.0	2	504	2.6
14.	Calciu	m 		Ca	104.0	C	a	5.2
15.	Magnes	1um		Mg	31.6	P	lg	2.6
16.	Sodium	(calculated)		Na	115.0	N	a	5.0
17.	Iron			re	0.0			
18.	Barium	•		ва	0.0			
19.	Stront	1um Nauda a con (0= 000	•	sr	0.0			
20.	TOTAL	Haraness (CaCO)			390.0			

# PROBABLE MINERAL COMPOSITION

					-		
1	milli e	equivalents per Lite	r	Compound	Equiv wt	X meq/L =	mg/L
1	5	*Ca < *HCO3	3	Ca (HCO3) 2	81.0	3.0	243
		/>		CaSO4	68.1	2.2	149
	3	*Mg> *SO4	3	CaCl2	55.5		
ĺ		</td <td>  </td> <td>Mg(HCO3)2</td> <td>73.2</td> <td></td> <td></td>		Mg(HCO3)2	73.2		
	5	*Na> *Cl	7	MgSO4	60.2	0.4	25
÷		-	++	MgCl2	47.6	2.2	104
S	Saturati	on Values Dist. Wat	er 20 C	NaHCO3	84.0		
	CaCC	)3 13 m	g/L	Na2SO4	71.0		
	CaSC	04 * 2H2O 2090 m	g/L	NaCl	58.4	5.0	292
	BaSC	)4 2.4 m	g/L				

REMARKS: Resistivity: 14.7 @ 48 deg. F

Petrolite Oilfield Chemicals Group

Company Address Lease Well Sample	: Texaco : Hobbs, NM : Saunders Field : Windmill Pt. : SE/4-SW/4-S20-T13S-R	Date Date Sampled Analysis No.	: 10-20-8 : 10-13-8 : 3	9 9
	ANALYSIS	mg/L		* meq/L
1.	рН 8.2			
2.	H2S NR			
3.	Specific Gravity 1.005			
4.	Total Dissolved Solids	1415.6		
5.	Suspended Solids	NR		
6.	Dissolved Oxygen	NR		
7.	Dissolved CO2	NR		
8.	Oil In Water	NR		
9.	Phenolphthalein Alkalinity (CaCO	3)		
10.	Methyl Orange Alkalinity (CaCO3)			
11.	Bicarbonate HC	549.0	HCO3	9.0
12.	Chloride Cl	278.0	C1	7.8
13.	Sulfate SO	125.0	S04	2.6
14.	Calcium Ca	160.0	Ca	8.0
15.	Magnesium Mg	-43.6	Mg	-3.6
16.	Sodium (calculated) Na	345.9	Na	15.0
17.	Iron Fe	1.3		
18.	Barium Ba	0.0		
19.	Strontium Sr	0.0		
20.	Total Hardness (CaCO3)	220.0		

# PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter		Compound	- Equiv wt	X meg/L =	mg/L
8 *Ca < *HCO3 > /> -4 *Mg> *SO4 / 15 *Na> *Cl	9  3  8	Ca (HCO3) 2 CaSO4 CaCl2 Mg (HCO3) 2 MgSO4	81.0 68.1 55.5 73.2 60.2	8.0	647
++         A           Saturation Values Dist. Wate         CaCO3           CaCO3         13 mg           CaSO4 * 2H2O         2090 mg           BaSO4         2.4 mg	er 20 C g/L g/L g/L	MgC12 NaHCO3 Na2SO4 NaCl	47.6 84.0 71.0 58.4	1.0 2.6 7.8	85 185 458

REMARKS: Resistivity: 11.7 @ 48 deg. F

Petrolite Oilfield Chemicals Group

Company Address Lease Well Sample	, : ; : ; Pt. :	Texaco Hobbs, NM Saunders Field Windmill NW/4-NE/4-S8-7	1 1135-R3	Date Date Sampled Analysis No.	•••••••••••••••••••••••••••••••••••••••	10-20-89 10-13-89 2	•
	ANALYSIS			mg/L			* meg/L
1.	pН		8.2				
2.	H2S		NR				
3.	Specific	Gravity	1.005				
4.	Total Di	ssolved Solids	5	676.5			
5.	Suspende	d Solids		NR			
6.	Dissolve	d Oxygen		NR			
7.	Dissolve	d_C02		NR			
8.	Oil In W	ater		NR			
9.	Phenolph	thalein Alkali	nity (CaCO3)				
10.	Methyl O	range Alkalini	ty (CaCO3)		-		
11.	Bicarbon	ate	HCO3	157.0	H	ICO3	2.6
12.	Chloride		CL	185.0	C	:1	5.2
13.	Sulfate		S04	125.0	S	04	2.6
14.	Calcium		Ca	120.0	C	a	6.0
15.	Magnesiu	m	Mg	14.7	M	g	1.2
16.	Sodium (	calculated)	Na	73.6	N	a	3.2
17.	Iron		Fe	1.3			
18.	Barium		Ba	0.0			
19.	Strontiu	m	Sr	0.0			
20.	Total Ha	rdness (CaCO3)		360.0			

# PROBABLE MINERAL COMPOSITION

*milli 4	 mivalents per Lite	 97	Compound	- Ecuiv wt 1	x meg/T. =	ma /T
	Equivalence per bie.	++			· mcg/ D -	
6	*Ca < *HCO3	3	Ca(HCO3)2	81.0	2.6	209
	/>		CaSO4	68.1	2.6	177
1	*Mg> *SO4	3	CaCl2	55.5	0.8	45
	</td <td></td> <td>Mg(HCO3)2</td> <td>73.2</td> <td></td> <td></td>		Mg(HCO3)2	73.2		
3	*Na> *Cl	5	MgSO4	60.2		
+		++	MgC12	47.6	1.2	57
Saturat	ion Values Dist. Wat	ter 20 C	NaHCO3	84.0		•••
CaC	13 1	ng/L	Na2SO4	71.0		
CaSC	04 * 2H2O 2090 1	ng/L	NaCl	58.4	3.2	187
BaSC	2.4 1	ng/L				

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REMARKS: Resistivity: 13.5 @ 48 deg. F

Petrolite Oilfield Chemicals Group

# LAZY J PENN PRODUCED WATER ANALYSIS REPORT

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Company Address Lease Well Sample	, : ; : ; Pt. :	Texaco Hobbs, NM NM BY St. #1 Wellhead	NCT-2		Date Date Sampled Analysis No.	•	10-20-89 10-19-89 1	
	ANALYSI	S			mg/L			* meq/L
_		-	~ ~		~~~~			
1.	рН		7.7					
2.	H2S		7.0					
3.	Specifi	C Gravily	1.040		72050 1			
4.	Total D	issurved Sc ad Colida	bitus		72059.I			
5.	Suspend	ed Sollas			ND			
<b>b.</b> 7	Dissolv	ed Oxygen			ND			
/.	DISSUIV	eu coz Wator			NR			
o. 0	Dhenoln	hthalein A'	kalinity (C	aC031	1/1/			
10	Methyl	Orange Alk:	alinity (CaC	031				
11	Bicarbo	nate		нсоз	573.4	н	1003	9.4
12.	Chlorid	e		C1	40513.0	C	1 1	142.8
13.	Sulfate	-		SO4	3125.0	S	04	65.1
14.	Calcium			Ca	3000.0	С	a	149.7
15.	Magnesi	um		Mg	-338.0	M	ig ·	-27.8
16.	Sodium	(calculated	i)	Na	25183.4	N	ia 1	095.4
17.	Iron			Fe	2.3			
18.	Barium			Ba	0.0			
19.	Stronti	um		Sr	0.0			
20.	Total Ha	ardness (Ca	aCO3)		6100.0			

# PROBABLE MINERAL COMPOSITION

+milli 4	 mivalents ner Lit	 07	Compound	- Rouiv wt	X meg/L	
+	equivalence per bie	~_ ++				
150	*Ca < *HCO3	9	Ca (HCO3) 2	81.0	9.4	762
	/>		CaSO4	68.1	65.1	4429
-28	*Mg> *SO4	65	CaCl2	55.5	75.2	4174
	</td <td>[</td> <td>Mg (HCO3) 2</td> <td>73.2</td> <td></td> <td></td>	[	Mg (HCO3) 2	73.2		
1095	*Na> *Cl	1143	MgSO4	60.2		
+	• •		MgCl2	47.6		
Saturati	ion Values Dist. Wa	ter 20 C	NaHCO3	84.0		
CaCO	<b>13</b> 13	mg/L	Na2SO4	71.0		
CaSC	04 * 2H2O 2090 1	mg/L	NaCl	58.4	1067.6	62390
BaSC	2.4	mg/L				

#### **REMARKS:**

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Petrolite Oilfield Chemicals Group

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# OFFSET OPERATORS REPORT

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# COVERING

VARIOUS LANDS IN T-13-S, R-33-E

# LEA COUNTY, NEW MEXICO

AS OF: 10-26-89

OWNER	MIN INT	NET ACRES	LESSEE/OPERATOR		EXP DATE
NOTE: THE FOLLOWING LANDS AN LEA COUNTY, NEW MEXIC	RE CONTIGU O.	OUS WITH THE	NW/4 OF SECTION 21, T-13-S	, R-33)	Ξ,
SE/4 OF SECTION 17. T-13-S. R-	33-3				
State of New Mexico State Land Office P. O. Box 1148 Santa Fe, New Maxico 87504	Full		STATE LEASE V-2853 Yates Petroleum Co. ABO Patroleum Corp. Myco Industries, Inc. Yates Drilling Co. 105 South Fourth St. Artesia, NM 88210	40.07 20.07 20.07 20.07	2-1-94
ALL OF SECTION 16, T-13-5, R-3	<u>3-E</u>				
State of New Mexico State Land Office P. O. Box 1148 Santa Fe, New Mexico 87504	Full		STATE LEASE V-2852 Yates Petroleum Co. ABO Petroleum Corp. Mydo Industries, Inc. Yates Drilling Co. 105 South Fourth St. Artesia, NM 88210	40.02 20.02 20.02 20.02	2-1-94
NE/4 OF SECTION 21, T-13-S, R-	<u>33-E</u>				
State of New Mexico State Land Office P. O. Box 1148 Sante Fe, New Mexico 87504	Full		<u>STATE LEASE E-9087</u> Kaiser-Francis Oil Co. P. O. Box 21468 Tulea, OK 74121-1468		H. B. P.
N/2 SW/4 & SE/4 OF SECTION 21.	T-13-8, R	-33-E			
State of New Mexico State Land Office P. O. Box 1148 Santa Fe, New Mexico 87504	Full				OPEN
E/2 OF SECTION 20. T-13-S. R-3	<u>3-E</u>				
United States of America Bureau of Land Management New Mexico State Office P. O. Box 1449	Full		PEDERAL LEASE NM-2842-A Cairn Energy USA, Inc. 8235 Douglas Avenue Suite 1221	50%	Н. В. Р.
Janta Fe, new mexico 0/504			Dallas, TX 75225 (214) 369-0316		
			Coastal Oil & Gas Co. 9 Greenway Plaza Houston, TX 77046 (713) 577-1400	50%	
OTE: Federal Abstract Co. c ownership (Operating R (Note continued next p	of Santa Fe Lights) for age)	e, New Mexico : Federal Leas	provided the above leaseho e NM-2842-A.	1d	

ENERGY	STATE OF NEW ME And Minerals De	EXICO EPARTMENT	DIL CONSERVATION DIVI POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING GANTA FE. NEW MEXICO 87501	sion RECEIVED	FORM C Revise	-108 d 7-1-81 33
APPLICAT	ION FOR AUTHORIZ	ATION TO INJECT	n	VOV - 6 198	(ask 10	
Ι.	Purpose: DS Application of	econdary Recovery qualifies for adm	Pressuren Mai	NSERVATION , OI	X Disposal [ WSION X no	Storage
11.	Operator:	Texaco Inc.			4. 	
	Address:	P. O. Box 73	0, Hobbs, New	Mexico 8	88240	
	Contact party: _	J. A. Head	·····	Phone:	(505)39	3-7191
III.	Well data: Com prop	blete the data re bosed for injecti	equired on the reve ion. Additional st	erse side of neets may be	this form for attached if ne	each well cessary.
IV.	Is this an expan If yes, give the	nsion of an exist e Division order	ing project?	yes X the project	no t	·
۷.	Attach a map the injection well w well. This cire	at identifies all with a one-half m cle identifies th	l wells and leases mile radius circle me well's area of r	within two r drawn around review.	miles of any pr d each proposed Attached	oposed injection
* VI.	Attach a tabulat penetrate the pr well's type, con a schematic of a	tion of data on a roposed injection nstruction, date any plugged well	all wells of public a zone. Such data drilled, location, illustrating all p	c record with shall includ depth, reco blugging det	hin the area of de a descriptio ord of completi ail. Attac	review which n of each on, and hed
VII.	Attach data on s	the proposed open	ration, including:			
	<ol> <li>Propose</li> <li>Whether</li> <li>Propose</li> <li>Sources</li> <li>the rest</li> <li>If inje</li> <li>at or</li> <li>the dist</li> </ol>	d average and may the system is op a average and may and an appropria ecciving formatic ction is for disp within one mile isposal zone for ature, studies, n	kimum daily rate ar ben or closed; kimum injection pre ate analysis of inj on if other than re bosal purposes into of the proposed we nation water (may the nearby wells, etc.)	nd volume of essure; jection fluid einjected pro- ba zone not ell, attach be measured o ). Att	fluids to be i d and compatibi oduced water; a productive of a chemical anal or inferred fro cached	njected; nd oil or gas ysis of m existing `
*VIII.	Attach appropria detail, geologia bottom of all un total dissolved injection zone a injection inter	ate geological da cal name, thickna nderground source solids concentra as well as any su val. Attache	ata on the injection ess, and depth. Gives of drinking wate ations of 10,000 mo uch source known to ed	on zone incl ive the geol er (aquifers g/l or less) o be immedia	uding appropria ogic name, and containing wat overlying the tely underlying	te lithologic depth to ers with proposed the
IX.	Describe the pr	oposed stimulatio	on program, if any.	• Attac	ched	
* X.	Attach appropriation with the Division	ate logging and f on they need not	test data on the we be resubmitted.)	ell. (If we Copy of ]	11 logs have be log attached	en filed •
* XI.	Attach a chemic available and p location of wel	al analysis of fi roducing) within ls and dates sam	resh water from two one mile of any ir oles:were taken.	o or more fr njection or Atta	esh water wells disposal well s ached	(if howing
XII.	Applicants for examined availa or any other hy source of drink	disposal wells m ble geologic and drologic connect ing water.	ust make an affirma engineering data a ion between the dis Attached	ative statem and find no sposal zone	ent that they h evidence of ope and any undergr	ave n faults ound
XIII.	Applicants must	complete the "P	roof of Notice" sea	ction on the	reverse side o	f this form.
XIV.	Certification					
	I hereby certif to the best of	y that the inform my knowledge and	mation submitted wi belief.	ith this app	lication is tru	e and correct
	Name: J. A	. Head	<b>y</b>	_ Title	Area Manage	r
	Signature:	1 a Head	/	Date:	November 1,	1989
* If the submit of the	e information re ted, it need no earlier submit	quired under Sec t be duplicated a tal.	tions VI, VIII, X, and resubmitted. {	and XI abov Please show	e has been prev the date and ci	iously rcumstance

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VII. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
  - Lease name; Well No.; 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 parker 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. •

OPERATOR		LEASE		······
TEXACO INC.		N.M. "DM"	STATE NCT-2	
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
1	1980' FNL & 330	FWL 21	13-S	33-E
Schem	stic		Tabular Data	
	•	Surface Casing	set @ 365'	
		Size <u>11 3/</u>	4 "Cemented wi	th <u>250</u> sx.
		TOCSurface	feet determined b	y circulated
		Hole size15	11	
		Intermediate Cas	ing set 0 4103'	
		Size <u>8 5/8</u>	" Cemented wi	th <u>865</u> sx.
		TOC 1100	feet determined b	y calculated
		Hole size	10 5/8"	(45% fillup)
		Long string s	et @ 9850'.	
	-	Size 5 1/2	Cemented wi	th 750_sx.
		TOC 5500	feet determined b	y calculated
		Hole size	7 7/8"	(75% fillup)
		Total depth 9 <u>85</u>	0' (PBTD 9803')	
	、	Injection interv	a 1	
	.•	9734	feet to <u>9740</u>	feet
		(perforated AKX)	PRIMARE, INDICATE Which	n <i>)</i>

Tub	ing size2 3/8" lined with _	internal plastic (material)	<u>coating</u>	set in a
В	aker Lok-set	packer at	9680	feet
	(brand and model)			
(or	describe any other casing-tubing seal).			
Oth	er Data			
1.	Name of the injection formation	Bough C		a na taona a sanana
Ż.	Name of Field or Pool (if applicable)	Lazy J Penn		<u></u>
3.	Is this a new well drilled for injection	on? <u>/7</u> Yes <u>/7</u> No		
	If no, for what purpose was the well or	iginally drilled? <u>oil</u>	production	
4.	Has the well ever been perforated in an and give plugging detail (sacks of ceme	ny other zone(s)? List a ent or bridge plug(s) use	ll such perfo d) <u>NO.</u>	rated intervals None.
5.	Give the depth to and name of any over this area. <u>No other oil or g</u>	ying and/or underlying o as zones are known	il or gaa zon to exist	es (pools) in





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	• <sup>3</sup>   \$1-31 • <sup>2</sup>	Pyre Emergy MWJ	\$725 C 785	lock White) (Jock White 1 197422 Blackote)	15 2016 el General 2	1919 NET. 2
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#### ATTACHMENT TO FORM C-108

### WELLS WITHIN 1/2 MILE RADIUS OF TEXACO INC. N.M. "DM" STATE NCT-2 WELL NO. 1

GULF OIL CORPORATION STATE B-10307 NO. 1 UNIT LETTER M, 660' FSL & 660' FWL SECTION 16, T-13-S, R-33-E LEA COUNTY, NEW MEXICO

13 3/8" 48# casing set at 365' in 15 1/2" hole with 574 sx. Cement circulated.

TD 660'

12-53 P&A

COASTAL OIL & GAS CORPORATION BAUM SWD NO. 1 UNIT LETTER A, 660' FNL & 660' FEL SECTION 20, T-13-S, R-33-E LEA COUNTY, NEW MEXICO 13 3/8" 48# casing set at 385' in 15" hole with 450 sx. Cement circulated. 9 5/8" 29.3, 36# casing set at 4060' in 10" hole with 2150 sx. Cement circulated. 5 1/2" 15.5, 17# casing set at 9780' in 7 7/8" hole with 2162 sx. Cement circulated. 4 1/2" 13# liner set from 9345-13,347 in 7 7/8" hole with 1000 sx. Cement circulated. Completed as oil producer in Baum Upper Penn through 8-53 perforations at 9590-9718'. 3-67 P&A Re-entered. Ran 4 1/2" liner. Cement circulated behind 1-69 liner (sealed off perforations at 9590-9718). Convert to SWD into Devonian open hole from 13,347-13,572. 3-85 P&A

COASTAL OIL & GAS CORPORATION FEDERAL "20" NO. 4 UNIT LETTER G, 2080' FNL & 2080' FEL SECTION 20, Y-13-S, R-33-E LEA COUNTY, NEW MEXICO

13 3/8" 48# casing set at 375' in 17 1/2" hole with 400 sx. Cement circulated.

8 5/8" 24, 32# casing set at 4075' in 11" hole with 300 sx. Top of cement calculated at 2500' (45% fillup).

5 1/2" 15.5, 17# casing set at 9854' in 7 7/8" hole with 200 sx. Top of cement calculated at 8700' (75% fillup).

TD 9852' PBTD 9852'

1-69 Completed as an oil producer in Baum Upper Penn through perforations at 9713-9732.
11-83 Shut-in.

COASTAL OIL & GAS CORPORATION

FEDERAL "20" NO. 1 UNIT LETTER P, 660' FSL & 660' FEL SECTION 20, T-13-S, R-33-E LEA COUNTY, NEW MEXICO

13 3/8" 48# casing set at 387' in 17 1/2" hole with 375 sx. Cement circulated to surface.

- 8 5/8" 24, 32# casing set at 4075' in 11" hole with 300 sx. Top of cement calculated at 2500' (45% excess).
- 5 1/2" 15.5, 17# casing set at 9840' in 7 7/8" hole with 250 sx. Top of cement calculated at 8400' (75% fillup).

TD 9840' PBTD 9840'

- 3-68 Completed as an oil producer in Baum Upper Penn through perforations at 9748-9800.
- 4-85 Converted to SWD into perforations 9748-9800.

TEXACO INC. N.M. "DM" STATE NCT-2 NO. 1 UNIT LETTER E, 1980' FNL & 330' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO

11 3/4" 42# casing set at 365' in 15" hole with 250 sx. Cement circulated to surface.

8 5/8" 24, 28, 32# casing set at 4103' in 10 5/8" hole with 865 sx. Top of cement calculated at 1100' (45% fillup).

5 1/2" 17# casing set at 9850' in 7 7/8" hole with 750 sx. Top of cement calculated at 5500' (75% fillup).

TD 9850' PBTD 9803'

2-70 Completed as oil producer in Lazy J Penn through perforations 9734-9740.

2-86 Shut-in (0 BOPD, 174 BWPD).

COQUINA OIL CORPORATION HANAGAN STATE NO. 1 UNIT LETTER K, 1650' FSL & 2310' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO

11 3/4" 23.8# casing set at 360' in 15" hole with 300 sx. Cement circulated to surface.

8 5/8" 24, 32# casing set at 4030' in 11" hole with 450 sx. Top of cement calculated at 2800' (45% fillup).

5 1/2" 15.5, 17# casing set at 9827' in 7 7/8" hole with 250 sx. Top of cement calculated at 8400' (75% fillup).

TD 9828' PBTD 9773'

- 4-68 Completed as oil producer in Lazy J Penn through perforations 9719-9765.
- 9-74 P&A

COQUINA OIL CORPORATION HANAGAN STATE NO. 2 UNIT LETTER L, 1980' FSL & 430' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO 13 3/8" 48# casing set at 393' in 17 1/2" hole with 375 sx. Cement circulated to surface. 8 5/8" 24, 28, 32# casing set at 4199' in 11" hole with 500 sx. Top of cement calculated at 2850' (45% fillup). 5 1/2" 17# casing set at 9810' in 7 7/8" hole with 450 sx. Top of cement calculated at 7250' (75% fillup). TD 9810' PBTD 9806'

11-69 Completed as oil producer in Lazy J Penn through perforations at 9718-9734. 9-74 P&A

TEXACO INC. N.M. "DM" STATE NCT-1 NO. 2 UNIT LETTER M, 990' FSL & 660' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO

11 3/4" 42# casing set at 363' in 15" hole with 250 sx. Cement circulated to surface.

8 5/8" 24, 28, 32# casing set at 4146' in 11" hole with 865 sx. Top of cement calculated at 1040' (45% fillup).

5 1/2" 17# casing set at 9900' in 7 7/8" hole with 765 sx. Top of cement calculated at 5500' (75% fillup).

TD 9900' PBTD 9847'

- 5-70 Completed as oil producer in Lazy J Penn through perforations at 9737-9752.
- 9-76 P&A

TEXACO INC. LAZY J PENN SWD WELL N.M. "DM" STATE NCT-1 NO. 1 UNIT LETTER N, 660' FSL & 1980' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO

- 11 3/4" 23.72# casing set at 364' in 15" hole with 300 sx. Cement circulated to surface.
- 8 5/8" 24# casing set at 4150' in 10 5/8" hole with 650 sx. Top of cement calculated at 2000'.
- 4 1/2" 11.60# casing set at 9899' in 7 7/8" hole with 1100 sx. Top of cement calculated at 3400'.

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TD 9900' PBTD 9867'

- 12-67 Completed as oil producer in Lazy J Penn through perforations at 9742-9792'.
- 9-75 Converted to SWD into perforations 9742-9792'.

9-89 Shut-in.

GULF OIL CORPORATION STATE B - 10307 No. 1 UNIT LETTER M, 660' FS & WL SECTION 16, T-13-S, R-33-E LEA COUNTY, NEW MEXICO



13 3/8" 48# casing set @ 365'.in 15 1/2" hole with 574 sx. Cement circulated to surface.

TD 660'

COASTAL OIL & GAS CORPORATION BAUM SWD NO. 1 UNIT LETTER A, 660' FN & EL SECTION 20, T-13-S, R-33-E LEA COUNTY, NEW MEXICO



**as** :

# COQUINA OIL CORPORATION HANAGAN STATE NO. 1 UNIT LETTER K, 1650' FSL & 2310' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO



COQUINA OIL CORPORATION HANAGAN STATE NO. 2 UNIT LETTER L, 1980' FSL & 430' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO



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# TEXACO INC. N.M. "DM" STATE NCT-1 NO. 2 UNIT LETTER M, 990' FSL & 660' FWL SECTION 21, T-13-S, R-33-E LEA COUNTY, NEW MEXICO



#### ATTACHMENT TO FORM C-108

- PART VII. 1. The average injection rate will be 250 BWPD with a maximum injection rate of 1,000 BWPD.
  - 2. The system will be closed.
  - 3. The average injection pressure will be 0 (zero) psi with the maximum injection pressure of 150 psi.
  - 4. The source of the injected water is the Lazy J Penn.
  - 5. Not applicable, as Lazy J Penn water will be reinjected into the Lazy J Penn.
- PART VIII. Injection is proposed into the Permo Penn (Bough C) at 9734-40. The proposed injection zone is correlative to the injection zone in Texaco's Lazy J SWD well located approximately one-half mile southeast of the proposed SWD well. The lithology of the Permo Penn consists of phylloid algal limestone interbedded with dense limestone and thin shales. The Bough C is 80' thick in the subject well.

The Ogallala is the only source of drinking water in the area. The base of the Ogallala is at approximately 240', as per the State Engineers Office. There are no other known sources of drinking water above or below the proposed injection zone.

- PART IX. The injection perforations 9734-9740 will be acidized with 1500 gallons of 20% NEFE acid.
- PART XII. Texaco Inc. has examined available geologic and engineering data and found no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.



Company Address Lease Well Sample	Pt.	: Texaco : Hobbs, NM : Saunders Fiel : Windmill : SE/4-SW/4-S2	ld 2-T13S-R	D D A	ate ate Sampled nalysis No.	::	10-20-89 10-13-89 5	)
	ANALYS	SIS			mg/L			* meq/L
-			7 9					
1.	pn		ND					
2.	nzo Specif	fic Cravity	1 001					
J. A	motal	Discolved Solid	1.001 Je		951 /			
4. 5	Sugner	ded Solids			ND			
5.	Diesol	ved Oxygen			ND			
7	Dissol	ved CO2			NR			
2 2	0il Tr	Water			NR			
9.	Phenol	phthalein Alkal	inity (Cad	203)				
10.	Methv]	Orange Alkali	nity (CaCO3	3)				
11.	Bicarb	onate	E E	ICO3	329.0	F	1003	5.4
12.	Chlori	de	C	21	254.0	C	21	7.2
13.	Sulfat	e	S	504	75.0	S	604	1.6
14.	Calciu	ım	C	Ca	128.0	Č	Ca	6.4
15.	Magnes	sium	M	ſg	14.7	M	la	1.2
16.	Sodium	n (calculated)	N	Ia	150.0	N	la	6.5
17.	Iron	•	F	'e	0.8			
18.	Barium	1 and a state of the state of t	E	Ba 👘	0.0			
19.	Stront	ium	S	Sr	0.0			
20.	Total	Hardness (CaCO3	5)		380.0			

### PROBABLE MINERAL COMPOSITION

			-		
*milli equivalents per Lite	er	Compound	Equiv wt	X meq/L =	mg/L
6  *Ca < *HCO3	5	Ca (HCO3) 2	81.0	5.4	437
>		CaSO4	68.1	1.0	68
1 *Mg> *SO4	2	CaCl2	55.5		
/ </td <td>  </td> <td>Mg(HCO3)2</td> <td>73.2</td> <td></td> <td></td>		Mg(HCO3)2	73.2		
7 *Na> *Cl	7	MgSO4	60.2	0.6	34
++	++	MgC12	47.6	0.6	30
Saturation Values Dist. Wat	er 20 C	NaHCO3	84.0		
CaCO3 13 m	lg∕L	Na2SO4	71.0		
CaSO4 * 2H2O 2090 m	ig∕L	NaCl	58.4	6.5	381
BaSO4 2.4 m	g/L				

REMARKS: Resistivity: 15.4 @ 48 deg. F

Petrolite Oilfield Chemicals Group

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Company Address Lease Well Sample	y : Texaco s : Hobbs, NM : Saunders Field : Windmill Pt. : NE/4-SW/4-S21-T13	3S-R	Date Date Sampled Analysis No.	: 10-20-8 : 10-13-8 : 4	9 9
	ANALYSIS		mg/L		* meq/L
1.	pH 8.	2			
2.	H2S NR				
3.	Specific Gravity 1.0	02			
4.	Total Dissolved Solids		813.7		
5.	Suspended Sollas		NR		
6.	Dissolved Oxygen		NK		
7.	Dissolved CO2		NK		
8.	Dhonolphthaloin Alkalinit	v (CaCO3)	NK		
9.	Methyl Orange Alkalinity	(CaCO3)			
10.	Bicarbonate	нсоз	183 0	нсоз	2 0
12	Chloride	Cl	255.0	C1	7.2
13.	Sulfate	S04	125.0	S04	2.6
14.	Calcium	Ca	104.0	Ca	5.2
15.	Magnesium	Ma	31.6	Ma	2.6
16.	Sodium (calculated)	Na	115.0	Na	5.0
17.	Iron	Fe	0.0		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		390.0		

### PROBABLE MINERAL COMPOSITION

*milli equivalents per Lit	ter	Compound	Equiv wt	X meq/L =	mg/L
5  *Ca < *HCO3	3	Ca (HCO3) 2	81.0	3.0	243
>		CaSO4	68.1	2.2	149
3 *Mg> *SO4	3	CaCl2	55.5		
/ </td <td>  </td> <td>Mg (HCO3) 2</td> <td>73.2</td> <td></td> <td></td>		Mg (HCO3) 2	73.2		
5 *Na> *Cl	. 7	MgSO4	60.2	0.4	25
++	++	MgCl2	47.6	2.2	104
Saturation Values Dist. Wa	ater 20 C	NaHCO3	84.0		
CaCO3 13	mg/L	Na2SO4	71.0		
CaSO4 * 2H2O 2090	mg/L	NaCl	58.4	5.0	292
BaSO4 2.4	mg/L				

REMARKS: Resistivity: 14.7 @ 48 deg. F

Petrolite Oilfield Chemicals Group

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Company Address Lease Well Sample	y : ; : ; Pt. :	Texaco Hobbs, NM Saunders Field Windmill NW/4-NE/4-S8-T	1 135-R3	D D A	ate Sate Sampled Inalysis No.	::	10-20-89 10-13-89 2	•
	ANALYSI	S			mg/L			* meq/L
		-						
1.	pН		8.2					
2.	H2S		NR					
3.	Specific Gravity 1.005							
4.	Total Dissolved Solids				676.5			
5.	Suspended Solids				NR			
6.	Dissolved Oxygen				NR			
7.	Dissolved CO2				NR			
8.	Oil In Water				NR			
9.	Phenolp	hthalein Alkali	nity (Cac	CO3)				
10.	Methyl	Orange Alkalini	ty (CaCO:	3)		_		
11.	Bicarbo	nate	H	HCO3	157.0	F	1003	2.6
12.	Chlorid	e	(	C1	185.0	C	21	5.2
13.	Sulfate			S04	125.0	5	304	2.6
14.	Calcium		(	Ca	120.0	C	la	6.0
15.	Magnesi	um	1	Mg	14.7	ŀ	lg	1.2
16.	Sodium	(calculated)	1	Na	73.6	N	la	3.2
17.	Iron		1	Fe	1.3			
18.	Barium		I	Ba	0.0			
19.	Stronti	um	2	Sr	0.0			
20.	Total H	ardness (CaCO3)			360.0			

## PROBABLE MINERAL COMPOSITION

				-		
*milli equ	ivalents per Lite	er	Compound	Equiv wt	X meq/L =	mg/L
++	*Ca < *HCO3	3	Ca(HCO3)2	81.0	 2.6	209
	/>		CaSO4	68.1	2.6	177
1 *	Mg> *SO4	3	CaCl2	55.5	0.8	45
	</td <td></td> <td>Mg (HCO3) 2</td> <td>73.2</td> <td></td> <td></td>		Mg (HCO3) 2	73.2		
3 *	Na> *Cl	5	MgSO4	60.2		
++		++	MgC12	47.6	1.2	57
Saturation	n Values Dist. Wat	cer 20 C	NaHCO3	84.0		
CaCO3	13 n	ng/L	Na2SO4	71.0		
CaSO4	* 2H2O 2090 m	ng/L	NaCl	58.4	3.2	187
BaSO4	2.4 1	ng/L				

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Petrolite Oilfield Chemicals Group

REMARKS: Resistivity: 13.5 @ 48 deg. F

# LAZY J PENN PRODUCED WATER ANALYSIS REPORT

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Company Address Lease Well Sample	Pt.	: Texaco : Hobbs, NM : NM BY St. 1 : #1 : Wellhead	NCT-2		Date Date Sampled Analysis No.	: 10-20 : 10-19 : 1	0-89 0-89
	ANALYS	IS			mg/L		* meq/L
1.	рН		7.7				
2.	H2S		7.0				
3.	Specif	ic Gravity	1.040				
4.	Total Dissolved Solids				72059.1		
5.	Suspended Solids			NR			
6.	Dissol	ved Oxygen			NR		
7.	Dissolved CO2			NR			
8.	Oil In Water			NR			
9.	Phenol	phthalein All	calinity (	CaCO3)			
10.	Methyl	Orange Alkal	linity (Ca	CO3)			
11.	Bicarbo	onate		HCO3	573.4	HCO3	9.4
12.	Chlorid	de		C1	40513.0	Cl	1142.8
13.	Sulfate	e		S04	3125.0	S04	65.1
14.	Calciu	n		Ca	3000.0	Ca	149.7
15.	Magnes	ium		Mg	-338.0	Mg	-27.8
16.	Sodium	(calculated)		Na	25183.4	Na	1095.4
17.	Iron			Fe	2.3		
18.	Barium			Ba	0.0		
19.	Stront	ium		Sr	0.0		
20.	Total I	Hardness (Ca	203)		6100.0		

# PROBABLE MINERAL COMPOSITION

				-		
*milli equivale	ents per Lite	r	Compound	Equiv wt	X meq/L	= mg/L
++   150  *Ca <-	*HCO3	9	Ca (HCO3) 2	81.0	9.4	762
/	>		CaSO4	68.1	65.1	4429
-28 *Mg	> *SO4	65	CaCl2	55.5	75.2	4174
< <-	/		Mg(HCO3)2	73.2		
1095 *Na	> *Cl	1143	MgSO4	60.2		
++		++	MgC12	47.6		
Saturation Values Dist. Water 20 C			NaHCO3	84.0		
CaCO3	13 m	g/L	Na2SO4	71.0		
CaSO4 * 2H2	2090 m	g/L	NaCl	58.4	1067.6	62390
BaSO4	2.4 m	g/L				

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REMARKS:
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Petrolite Oilfield Chemicals Group

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# OFFSET OPERATORS REPORT

# COVERING

# VARIOUS LANDS IN T-13-S, R-33-E

# LEA COUNTY, NEW MEXICO

# AS OF: 10-26-89

OWNER	MIN INT	NET ACRES	LESSEE/OPERATOR	EXP DATE
NOTE: THE FOLLOWING LANDS A LEA COUNTY, NEW MEXIC	ARE CONTIGUE	OUS WITH THE	NW/4 OF SECTION 21, T-13-S	, R-33E,
SE/4 OF SECTION 17. T-13-S. R	<u>-33-3</u>			
State of New Mexico State Land Office P. O. Box 1148 Santa Fe, New Mexico 87504	Full		STATE LEASE V-2853 Yates Petroleum Co. ABO Petroleum Corp. Myco Industries, Inc. Yates Drilling Co. 105 South Fourth St. Artesia, NM 88210	2-1-94 40.07 20.07 20.07 20.07
ALL OF SECTION 16, T-13-5, R-	<u>33-E</u>			
State of New Mexico State Land Office P. O. Box 1148 Santa Fe, New Mexico 87504	Full		STATE LEASE V-2852 Yates Petroleum Co. ABO Petroleum Corp. Myco Industries, Inc. Yates Drilling Co. 105 South Fourth St. Artesia, NM 88210	2-1-94 40.02 20.02 20.02 20.02
NE/4 OF SECTION 21, T-13-S, R	<u>-33-E</u>			
State of New Mexico State Land Office P. O. Box 1148 Santa Fe, New Mexico 87504	Full		STATE LEASE E-9087 Kaiser-Francis Oil Co. P. O. Box 21468 Tulse, OK 74121-1468	H. B. P.
N/2 SW/4 & SE/4 OF SECTION 21.	<u>, T-13-S, R</u>	<u>-33-E</u>		
State of New Mexico State Land Office P. O. Box 1148 Santa Fe, New Mexico 87504	Full		•-	OPEN
E/2 OF SECTION 20. T-13-S. R-3	<u> 33-E</u>			
United States of America Bureau of Land Management New Mexico State Office P. O. Box 1449	Full		FEDERAL LEASE NM-2842-A Cairn Energy USA, Inc. 8235 Douglas Avenue Suite 1221	H. B. P. 50%

Coastal Oil & Gas Co. 9 Greenway Plaza	50%
Houston, TX 77046	
(/13) 577-1400	

Dallas, TX 75225 (214) 369-0316

NOTE: Federal Abstract Co. of Santa Fe, New Mexico provided the above leasehold ownership (Operating Rights) for Federal Lease NM-2842-A. (Note continued next page)

Janta Fe, New mexico 8/504

#### CASE 9797: (Readvertised)

Application of Santa Fe Energy Operating Partners, L.P. for compulsory pooling and a non-standard gas proration unit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the Morrow formation underlying the following described acreage in Irregular Section 20, Lownship 23 South, Range 25 East, and in the following described manner: all of said Section 20 to form a non-standard 599.41acre, more or less, gas spacing and proration unit for the Undesignated Rock Tank-Lower Morrow Gas Pool and Undesignated Rock Tank-Upper Morrow Gas Pool (both pools which are developed on 540-acre spacing); and, Lots I through 7 and the NW/4 NE/4 (N/2 equivalent) of said Section 20, forming a non-standard 301.37-acre gas spacing and proration unit for any and all formations and/or pools developed on 320-acre spacing within said vertical extent. Both units are to be dedicated to a single well to be drilled at a standard gas well location 1980 feet from the North and West lines (Unit F) of said Section 20. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision and a charge for risk involved in drilling said well. Said units are located approximately 6 miles south by east of Riverside, New Mexico.

- <u>CASE 9833</u>: Application of Texaco, Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced water into the Lazy J-Pennsylvanian Pool in the perforated interval from approximately 9734 feet to 9740 feet in its N.M. "DM" State NCT-2 Well No. 1 located 1980 feet from the North line and 330 feet from the West line (Unit E) of Section 21, Township 13 South, Range 33 East. Said well is located approximately 15.5 miles south-southeast of Caprock, New Mexico.
  - <u>CASE 9834</u>: Application of Texaco, Inc. for a non-standard gas proration unit, 2 unorthodox gas well locations and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval to redesignate acreage in the Eumont Gas Pool to form a non-standard 320-acre gas proration unit comprising the SE/4 SW/4, NE/4 SE/4, and S/2 SE/4 of Section 23, the W/2 NW/4 of Section 25, and the E/2 NE/4 of Section 26, all in Township 19 South, Range 36 East. Said unit is to be simultaneously dedicated to its William Weir Wells Nos. 1 and 2, both located at unorthodox gas well locations 1980 feet from the North line and 660 feet from the West line (Unit E) of said Section 25 and 660 feet from the South line and 1980 feet from the West line (Unit N) of said Section 23, respectively. Said unit is located approximately 4.5 miles south-southeast of Arkansas Junction, New Mexico.
  - CASE 9799 (Continued from November 1, 1989, Examiner Hearing.)

Application of Bannon Energy Incorporated for an unorthodox oil well location, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox oil well location for its Grace Federal "24" Well No. 1-R to be drilled 330 feet from the North line and 2130 feet from the West line (Unit C) of Section 24, Township 24 North, Range 7 West, Devil's Fork-Gallup Associated Pool, said well to be simultaneously dedicated to an existing standard 160acre oil spacing and proration unit comprising the NW/4 of said Section 24 along with the Grace Federal "24" Well Nos. 1 and 2 located 950 feet from the North line and 1640 feet from the West line (Unit C) and 1850 feet from the North line and 1820 feet from the West line (Unit F) of said Section 24, respectively. Said unit is located approximately 5 miles north by east of the Southern Union Gas Company Lybrook Plant.

CASE 9818: (Continued from November 15, 1989, Examiner Hearing.)

Application of Blackwood & Nichols Co., Ltd. for an unorthodox coal gas well location. San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox coal gas well location for its Northeast Blanco Unit Well No. 440 to be drilled 530 feet from the North line and 2135 feet from the East line (Unit B) of Section 11, Township 31 North, Range 7 West, Basin-Fruitland Coal Gas Pool, the N/2 of said Section 11 to be dedicated to said well forming a standard 320-acre gas spacing and proration unit for said pool. This well location is approximately 5.5 miles south of Mile Post No. 247.5 located on the New Mexico/Colorado Stateline.

CASE 9819: (Continued from November 15, 1989, Examiner Hearing.)

Application of Blackwood & Nichols Co., Ltd. for compulsory pooling and an unorthodox gas well location, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the Fruitland formation underlying Lots 7 and 8, the S/2 NW/4, and the SW/4 of Section 4, Township 30 North, Range 7 West, in both San Juan and Rio Arriba Counties, forming a 319.38-acre gas spacing and proration unit for any and all formations and/or pools within said vertical extent developed on 320-acre spacing, which presently includes the Basin-Fruitland Coal Gas Pool, to be dedicated to its Northeast Blanco Unit Well No. 424, to be drilled at an unorthodox coal gas well location 2075 feet from the North line and 1330 feet from the West line (Unit F) of said Section 4. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is approximately 3.5 miles north-northeast of the Navajo Reservoir Dam.

CASE 9820: (Continued from November 15, 1989, Examiner Hearing.)

Application of Blackwood & Nichols Co., Ltd. for compulsory pooling and a non-standard gas provation unit. San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the Fruitland formation underlying the E/2 equivalent of Irregular Section 13, Township 30 North, Range 8 West, for any and all formations and/or pools within said vertical extent of this tract developed on 320-acre spacing (which presently includes but is not necessarily limited to the Basin-Fruitland Coal Gas Pool). Said unit is to be dedicated to its Northeast Blanco Unit Well No. 469, to be drilled at a previously approved (NSL-2685) unorthodox coal gas well location 1315 feet from the North line and 645 feet from the East line (Unit H) of said Section 13. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Said unit is approximately 1 mile northwest of the Navajo Reservoir Dam.

- <u>CASE 9835</u>: Application of Grand Production Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the Atoka formation underlying the E/2 SE/4 of Section 10, Township 17 South, Range 37 East, forming a standard 80-acre oil spacing and proration unit for any and all formations and/or pools developed on 80-acre spacing within said vertical extent, which includes but is not necessarily limited to the Humble City-Strawn and Undesignated Humble City-Atoka Pools. Said unit is to be dedicated to a well to be drilled at a standard oil well location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision and a charge for risk involved in drilling said well. Said unit is located approximately 4.5 miles northwest by north of Humble City, New Mexico.
- <u>CASE 9836</u>: Application of Grand Resources, Inc. for statutory unitization, San Juan County, New Mexico. Applicant, in the abovestyled cause, seeks an order unitizing, for the purpose of establishing a secondary recovery project, all mineral interests in the designated and Undesignated Mesa-Gallup Oil Pool underlying 2,120 acres, more or less, of Federal Indian lands in portions of Sections 10, 13, 14, 15, 23, 24, and 25, Township 32 North, Range 18 West, all as projected into the unsurveyed Navajo Indian Reservation. Said unit is to be designated the Mesa Gallup Unit Area. Among the matters to be considered at the hearing will be the necessity of unit operations; the designation of a unit operator; the determination of the horizontal and vertical limits of the unit area; the determination of the fair, reasonable, and equitable allocation of production and costs of production, including capital investment, to each of the various tracts in the unit area; the determination of credits and charges to be made among the various owners in the unit area for their investment in wells and equipment; and such other matters as may be necessary and appropriate for carrying on efficient unit operations; including but not limited to, unit voting procedures, selection, removal or substitution of unit operator, and time of commencement and termination of unit operations. Applicant also requests that any such order issued in this case include a provision for carrying any non-consenting working interest owner within the unit area upon such terms and conditions to be determined by the Division as just and reasonable. Said Unit Area is located approximately 12 miles north of Shiprock, New Mexico.
- <u>CASE 9837</u>: Application of Benson-Montin-Greer Drilling Corporation for amendment of Division Order No. R-3401, as amended, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks to amend Division Order No. R-3401, as amended, which order promulgated special pool rules for the West Puerto Chiquito-Mancos Pressure Maintenance Project including provisions to permit the calculation of injection credits on a cumulative or annual basis. Applicant now seeks to revise Rules 7, 8, and 9 of said Special Rules to permit the accumulation of gas injection credits on an annual basis and to establish procedures for reporting and, otherwise, accounting for this credit to the Division. Said project comprises acreage in Townships 24, 25, and 26 North, Range 1 West, and is centered approximately 5 miles north-northeast of Lindrith, New Mexico.
- CASE 9788: (Continued from November 15, 1989, Examiner Hearing.)

Application of Yates Petroleum Corporation for directional drilling and an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authorization to directionally drill a well from a surface location of 563 feet from the South line and 2125 feet from the East line (Unit 0) of Section 11, Township 20 South, Range 29 East, to an unorthodox bottomhole gas well location in the Morrow formation within 50 feet of a point 2480 feet from the North line and 1980 feet from the East line (Unit G) of Section 14, Township 20 South, Range 29 East, the E/2 of said Section 14 to be dedicated to said well forming a standard 320-acre gas spacing and proration unit for the Undesignated East Burton Flat-Morrow Gas Pool. This well location is approximately 4 miles north-northwest of the junction of U.S. Highway 62/180 and New Mexico State Highway 31.

CASE 9809: (Continued from November 15, 1989, Examiner Hearing.)

Application of Yates Drilling Company for statutory unitization, Chaves County, New Mexico. Applicant, in the abovestyled cause, seeks an order unitizing, for the purpose of establishing a secondary recovery project, all mineral interests in the Southeast Chaves Queen Gas Area Associated Pool, underlying 560 acres, more or less, of Federal, State and Fee lands in portions of Sections 26, 27, 34, and 35, Township 12 South, Range 31 East. Said unit is to be designated the Cactus Queen Unit. Among the matters to be considered at the hearing will be the necessity of unit operations; the designation of a unit operator; the determination of horizontal and vertical limits of the unit area; the determination of the fair, reasonable, and equitable allocation of production and costs of production, including capital investment, to each of the various tracts in the unit area; the determination of credits and charges to be made among the various owners in the unit area for their investment in wells and equipment; and such other matters as may be necessary and appropriate for carrying on efficient unit operations; including but not limited to, unit operations. Applicant also requests that any such order issued in this case include a provision for carrying any non-consenting working interest owner within the unit area upon such terms and conditions to be determined by the Division as just and reasonable. Said Unit Area is centered approximately 12 miles southwest by south of Caprock, New Mexico.

CASE 9810: (Continued from November 15, 1989, Examiner Hearing.)

Application of Yates Drilling Company for a waterflood project, Chaves County, New Mexico. Applicant, in the abovestyled cause, seeks authority to institute a waterflood project by the injection of water into the Southeast Chaves Queen Gas Area Associated Pool in its proposed Cactus Queen Unit Area (Division Case No. 9809), underlying portions of Sections 26, 27, 34 and 35, Township 12 South, Range 31 East. Said area is centered approximately 12 miles southwest by south of Caprock, New Mexico.