Case NO.

7349

Application

Transcripts.

Small Exhibits

FTC



STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

TONEY ANAYA

April 6, 1983

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FS, NEW MEXICO 97501 (506) 927-5800

M & G Oil, Inc. P. O. Box 957 Crossroads, New Mexico 88114

Attention: W. M. Groesbeck Vice-President

> Re: Jack Martin SWD Well No. 2 SE/4 SE/4 Section 11, Township 9 South, Range 35 East, NMPM, Lea County

Order No. R-6787 Case No. 7349

Dear Mr. Groesbeck:

Pursuant to your letter dated February 23, 1983, and the provisions of Order (6) of Division Order No. R-6787 for disposal of waters produced from other formations subject to submission of evidence establishing the compatibility of such waters with the native waters of the Pennsylvanian Bough "C" zone, approval is hereby granted to dispose of produced water from a Devonian producer in the vicinity and water being transported from the area to the disposal well.

Also you requested the substitution of 2 7/8" OD plasticlined tubing for the originally proposed 2 3/8" OD plasticlined tubing. This request is hereby granted.

If you have any questions concerning this matter, please contact me.

Yours very truly,

JOE D. RAMEY Director

JDR/MES/fd

cc: OCD Hobbs Case File 7349

M & G Oil, Inc. OIL PRODUCERS

P. O. Box 957 Crossroads, New Mexico 88114 FEB 28 1983

OIL CONSERVATION DIVISION SANTA FE

Gene Milford - President Office (505) 675-2478 Home (505) 398-8844 W. M. Groesbeck - Vice-President Office (505) 675-2478 Home (505) 393-2740

February 23, 1983

nutter

State of New Mexico

Energy and Minerals Department
Oil Conservation Commission
P.O. Box 2088

Santa Fe, New Mexico 87501

Attn: Mr. Joe Ramey

Re: Markham No. 2-SWD (Order No. R-6787)
UL "P", Sec. 11, T-9-S, R-35-E, Lea County

Dear Sir:

M & G Oil Inc. recently purchased the referenced salt water disposal well from Apollo Oil Company of Hobbs, New Mexico. A copy of our C-104, changing operator name, is enclosed.

The original order (Case No. 7349) authorized in paragraph (8) disposal of water produced from the Pennsylvanian (Bough "C" zone) only. However, provision was made in paragraph (8) for disposal of water from other zones subject to submission of evidence of compatibility.

We desire to dispose of water produced from the Devonian and also to allow transporters to haul in water from other zones. We obtained water samples from a (1) Pennsylvanian (Bough "C") well located near the disposal well; (2) from a Devonian producer in the vicinity from which we hope to receive water for disposal; and (3) from a representative sample of water being transported to disposal in this area. We delivered these three samples to Halliburton's laboratory in Hobbs, New Mexico for analysis and compatibility testing. The result of these tests is enclosed.

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change in equipment. Paragraph (4) of Order No. R-6787 authorized use of 2 3/8" OD plastic lined tubing. We wish to use 2 7/8" OD plastic lined tubing.

Your consideration of these requests will be much appreciated.

Yours, truly.

W.M. Groesbeck Vice President

WMG/ts c: Gene Milford

HALLIBURTON DIVISION LABORATORY HALLIBURTON SERVICES MIDLAND DIVISION

HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

No. W83-214

To Maurice L. Brown			Date	2-17-83	
Box 957		it nor any	y part thereof n	y of Halliburton Compan or a copy thereof is to securing the express wr	be published
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ATTN: Mr. Bill Gr	oesbeck , N	and empl Company.	M	eceiving such report fro	m Hailiburton
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Resistivity	#1 0.060 @ 74°F.	#2 0.078 @ 74°F	·	#3 0.136 @ 74°F	
•	1,132	1.086		1.046	
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Calcium (Ca)	11,200	3,400		900	*MPL
Magnesium (Mg)	5,400	2,400		1,200	and the same particles
Chlorides (CI)	120,000	75,000		37,500	
Sulfates (SO ₄)	1,650	1,300		2,250	
Bicarbonates (HCO ₃)	280	205		380	
Soluble Iron (Fe)	110	10		Nil	
Sodium, Na(Calc.)	55,568	40,848		22,218	
TDS, mpl	194,208	123,163		64,448	
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.	Respectfully	submitted,	en publisher in the service of the service		
Analyst: Brewer		۲	HALLIBURTON	U COMPANY	
cc:		ву. W:	Y	Brewler	

NOTICE
THIS PERCET IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL

DESTRIBUTION

Vice President

2-17-83 (Date)

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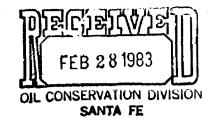
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M & G Oil, Inc. OIL PRODUCERS

Crossroads, New Mexico 88114

P. O. Box 957

Gene Milford - President Office (505) 675-2478 Home (505) 398-8844



W. M. Groesbeck - Vice-President Office (505) 675-2478 Home (505) 393-2740

February 23, 1983

State of New Mexico Energy and Minerals Department Oil Conservation Commission P.O. Box 2088 Santa Fe. New Mexico 87501

Attn: Mr. Joe Ramey

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IALLIBURTON DIVISION LABORATOR' HALLIBURTON SERVICES MIDLAND DIVISION HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

No. W83-214

To Maurice L. Brown		Date	2-17-83			
<u>Crossroads, New M</u>	exico oesbeck	it nor any part thereof no or disclosed without first of laborationy management course of regular business and employees thereof re	This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton			
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		Date Rec.				
Well No. As Marked	Depth	Formation.	The state of the s			
Resistivity	Water from Kenneta's Tank Service #1 0.060 @ 74°F.	Walker Fed. #1 Penn - Htr. Trtr. #2 0.078 @ 74°F.	#3			
Specific Gravity		1.086	1.046			
pH		6.2				
Calcium (Ca)	11,200	3,400	900*MPL			
Magnesium (Mg)	5,400	2,400	1,200			
Chlorides (Cl)	120,000	75,000	37,500			
Sulfates (SO ₄)	1,650	1,300	2,250			
Bicarbonates (HCO ₃)	280	205	380			
Soluble Iron (Fe)	110	10	Nil			
Sodium, Na (Calc.)	55,568	40 , 848	22,218			
TDS, mpl	194,208	123,163	64,448			
Remarks: Compatibility results as f	tests were observed f	for 24 hours, with the	*Milligrams per liter			
#1,2,&3 mi #1  #2 & #3	<pre>xed equally = Compatib # " = Compatib " " = Compatib</pre>	ole	qually - Compatible .			
Terr come	Respectfully	submitted,	-			
Analyst: Brewer		HALLIBURTON	COMPANY			
cc:		By W. J.	Brewler			

NOTICE

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2-17-83 (Date)

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"IALLIBURTON DIVISIÓN LABÓRÁTOR" HALLIBURTON SERVICES

MIDLAND DIVISION HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

W83-214

To Maurice L. Brown		Date	2-17-83
Box 957		it nor any part thereof n	y of Halliburton Company and neither or a copy thereof is to be published
Crossroads, New M	lexico	of laboratory managemen	securing the express written approval it; it may however, be used in the operations by any person or concern
	oesbeck	and employees thereof re	celving sucii (epurt ituii imiliburu
Submitted by		Date Rec.	2-16-83
		Formation.	
County	Water from Kenneth's Tank Service #1	Walker Fed. #1 Penn - Htr. Trtr. #2	Mobil- Santa Fe Pacific #11 #3
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Analyst: Brewer		HALLIBURTON	I COMPANY
CC:		By W. S. CHE	Brewer

NOTICE

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MO, OF COPIES DECEIVED Increment ton NEW MEXICO OIL. CONSURVATION COMMIS SARTATE REQUEST FOR ALLOWABLE Superseder Old C-101 and C-110 FILE **CHV** U.b.O.6, AUTHORIZATION TO TRANSPORT OIL, AND NATURAL, # LAND OFFICE OIL THAHSPORTER PERATOR OIL CONSERVATION DIVISION PROBATION OFFICE SANTA FE Metalm M & G Oil, Inc. Villegas Crossroads, New Merico 88114 P. D. Box 957 tenson(s) for filing (Check proper box) Other (l'lease expluen) few Well Change in Transporter oil lecompletion OIL Dry Goa Thomas in Ownership 2 Casinahead Gas Condensate change of ownership give name ad address of previous owner ___ Apollo Energy, Inc. P.O. Box 5315 Hobbs. New Mexico 83240 ESCRIPTION OF WELL AND LEASE. | Well No. | Pool Plane, Including Formation Kind of Lense Leane No. Markham 2-SWD State, Federal of Fee Vada Penn R-6787 Fee calles SWD · P 6601 Feet From The South Unit Letter Feel From Tha Line of Section 11 Township 9-S 35-E Lea NMPM. County ESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS Address (Give address to which approved copy of this form is to be sent) deme of Authorized Transporter of Oil or Condensate Name of Authorized Transporter of Castaghead Gas _____ or Dry Gas ____ Address (Give address to which approved copy of this form is to be sent) Unit Soc. Twp. P.ge. is an actually connected? When i well produces oil or liquids, The location of tanks. this production is commingled with that from any other lease or pool, give commingling order number: COMPLETION DATA Cil Well Gas Well New Well Workover Designate Type of Completion - (X) Jata Sauddad P.D.T.D. Daile Compl. Ready to Fred. Total Depth Jovations (Dr. RKB, RT, GR, etc.) Nume of Producing Fermulion Top Oll/Cas Pay Tuting Depth Depth Casing Shoe erfocations TUBING, CASING, AND CEMENTING RECORD CASING & TUBING SIZE SACKS CEMENT HOLE SIZE DEPTH SET EST DATA AND PEQUEST FOR ALLOWABLE (Test must be after receivery of total valume of load oil and must be equal to or excable for this depth or be for full 24 hours) Jute Flist New Oil Run To Tonks Date of Yest Producing Method (Flow, pump, gas lift, etc.) -ongth of Test Choke Size Tubing Pressure Cooling Preseure Oll - Bbla. Vator - lible. Gua - MCF Sejual Pred, During Test RAS WELL Actual Frod, Test-MCF/O Longth of Tool Bbie. Condensate/No.ICF Gravity of Condensate Casing Prossure (Lhut-An) Choke Size Teating kielhod (pitel, back pr.) Tubica Proceure (Shut-in) OIL CONSERVATION COMMISSION PERTUPICATE OF COMPLIANCE APPROVED. hereby certify that the roles and regulations of the Oil Connervation omnission have been compiled with and that the information given bove in true and compilete to the best of my knowledge and bellef. This form to to be filed in compliance with RULE 1104, If this he a request for alloyable for a newly diffied or despend well, this form must be accompanied by a teleplation of the a vietles tone traken on the well in accordance with much titl.

Vice President

(Fide)

2-17-83 (Date)

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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 7349 Order No. R-6787

APPLICATION OF APOLLO OIL COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DEVISION:

This cause came on for hearing at 9 a.m. on September 9; 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 30th day of September, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Apollo Gil Company, is the owner and operator of the Jack Markham Well No. 2, located in Unit P of Section II, Township 9 South, Range 35 East, NMPM, Bough-Permo Pennsylvanian Pool, Lea County, New Mexico.
- (3) That the applicant proposes to utilize said well to dispose of produced salt water into the Bough C formation, with injection into the perforated interval from approximately 2645 feat to 9654 feet.
- (4) That the injection should be accomplished through 2 3/8-inch plastic lined tubing installed in a packer set at approximately 9495 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

-2-Case No. 7349 Order No. R-6787

- (5) That the injection well or system should be equipped with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1925 psi.
- (0) That the operator should notify the supervisor of the Hobbs district office of the Division of the Unit will the of the installation of disposal equipment so that the same may be inspected.
- (7) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or boto the surface.
- (8) That disposal should be limited to waters produced from the Bough C zene of the Pennsylvanian unless additional evidence has been submitted as to the compatibility of maters from other formations, and the Division Director has approved the disposal of such other waters in the subject well.
- (9) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Apollo Dii Company, is hereby authorized to utilize its Jack Markham Wall No. 2, located in Unit P of Section 11, Township 9 South, Range 35 East, NMPM, Bough-Permo Pennsylvanian Pool, Lea County, New Mexico, to dispose of produced ealt water into the Bough C formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 9495 feet, with injection into the perforated interval from approximately 9645 feet to 9654 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1925 psi.

- (3) That the operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.
- (4) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing, easing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.
- (5) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Division Rules and Regulations.
- (6) That disposal into the subject well shall be limited to water produced from the Bough C zone of the Pennsylvanian formation, unless the Division Director has approved the disposal of waters produced from other formations upon receipt of evidence establishing the compatibility of such waters with the native waters of the Bough C zone.
- (7) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabout designated.

ACC HOLING

STATE OF NEW MEXICO

DIL CONSERVATION DIVISION

JOE D. RAHEY Director

SEAL

DIRECT EXAMINATION

BY MR. KELLAHIN:

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Mr. Ralston, this is an application for salt water disposal in the Jake -- in the Jack Marham Well

Number Two?

It's a listing of the balance of this packet.

I'm sorry, Exhibit Number Two is the tabulation.

Oh, okay, okay.

There you go.

It's a tabular summery of the offset operators within a half mile radius of the Jack Marham No. 2.

All right, sir, you've caused to be searched the various well records and have located the wells on this tabulation that at one time or another penetrated through the disposal formation?

Yes, sir.

And have you reviewed this summary to determine whether these wells are completed, plugged in such a fashion that they will not serve as a source to allow disposal fluids to migrate up into shallower fresh water sands?

Yes, sir, I have.

All right. And you don't see any defect in any of these wells that will cause them to be sources of contamination?

No, these wells all have three strings of casing in them and those that are plugged were plugged by

Cil Conservation Commission rules.

All right, sir, let's turn to Exhibit

Number Three and have you tell us what you generally intend

to do with this disposal well.

Dispose of waters from the area and they will be from the Bough C, San Andres, and the Queen formations.

We should not have over approximately 1800 barrels a day disposal. There is no -- there is one disposal well in this area but it is on the downhill. It's just about where it won't take any more water, so there is a need for another disposal well.

These producing wells that produce water in this area produce from what formations, Mr. Ralston?

In the immediate area they produce from the Bough C.

Q Okay.

There's other waters in -- within a 20 mile radius there that possibly could be injected in this well.

You'll have the same limitation in this case as you had in the other insofar as you'll not be allowed to dispose of water produced from other formations until you submit the data to show that the formation fluids are compatible?

A. Yes, sir.

All right, sir. You don't have presently with you the fluid analysis for any other fermations apart from the Bough C. do you?

•

I was not able to obtain these from any of the water companies for the water in that area. I will have to get sumples and have a special analysis run on these waters.

•

a All right, sir.

In terms of the injection pressure, Mr. Ralston, tell us a little something about your well. Will it take these fluids under vacuum or will it require pressure injection?

recently purchased these wells from Tenneco and they were temporarily abandoned at the time. We tried to establish production. We gave them 1000 gallons of acid and about 75 barrels flush. We never saw the acid hit. There was no pressure of any kind and the flush never showed any pressure. We finally got some fluid back in the hole three days later after this small acid job.

So I don't anticipate very much injection pressure at all.

All right, sir, would a pressure limita-

Q.

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2	tion based upon .2 of a pound per foot of depth be adequate
3	for your purposes?
4	A More than adequate.
5	All right, sir, let's turn to Exhibit
6	Number Four and have you confirm the information contained
7	on that exhibit.
8	A It's true.
9	All right, sir, Ediblt Number Five is
10	a copy of one of the logs for the disposal well?
11	Let's to to Exhibit Number Six, then.
12	In fact it wight be easier if we'll take Exhibits Number Six
13	and Seven at the same time and if you'll correlate the tabu-
14	lation with the schematic and then describe generally how you
15	propose to complete this as a disposal well.
16	Well, we'll install a packer and packer
17	fluid and 2-3/8ths plastic lined steel tubing. We'll have
18	packer fluid, inert fluid on the annulus side, and a pressur
19	gauge.
20	All right, sir, with regards to the
21	tubing, the 2-3/8ths, this is plastic lined tubing, is it not?
22	A Plastic lined steel tubing.
23	Ω All right, so we should correct that
24	Exhibit Number Six and Seven to indicate plastic lined.
25	If you'll look at the 9-5/8ths inch

A I can't say if the 7-inch circulated.

Sometimes in these wells when they're re-entered they have such large washouts in some of the more porous zones that just about any amount of cement you pump will not circulate.

But it should be back covering — just a minute.

No, excuse me. The 7-inch is circulated because that was one of the deals we got from Tenneco. It's

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not indicated here but Tenneco said there's no casing salvage on these wells, so there would -- I mean if there's -- if it's not circulated, it's within 200 to 300 feet of surface, because there's not any salvagible material as far as casing in these wells.

Exhibit Number Six shows an indication of old perforations in this well. Apart from the Bough C perforations, Mr. Ralston, are the other perforations at shallower depth adequately sealed with communic or otherwise to insure that they'll not be conduits for contamination of shallower zones?

Yes, sir, they were squeezed when they re-entered this well and then the 7-inch casing was circulated when they completed it.

So that's more or less double insurance.

All right, sir, let's go to Exhibit

Number Eight, which is a series of four downhole schematics.

What are these, Mr. Ralston?

This is the offset well belonging to
Layton Enterprises, Layton Enterprises, Coquina Oil Company,
and Layton Enterprises.

Have you examined the information contained on those exhibits to satisfy yourself that they will not be sources of contamination of shallower sand?

servation, prevention of waste, and the protection of corre-

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MR. AGMANIN: We move the introduction

of Exhibits One through Eleven.

MR. NUTTER: Exhibits One through Eleven will be admitted in evidence.

Yes, sir.

Mr. Ralston, I don't have any questions of you regarding this case; however, when I get to maible Mine, you say see attached map for location, that would be the locations of the water wells, and there is a plat here that shows wells indicated with red dots. Are those those water

Yes, sir.

MR. NUTTER: Okay, in my portfolio on the previous case that map was not attached, although the notation was there, see attached map.

MR. KELLAHIN: We've got one here, Mr. Nutter, we'll give it to you. See if you have one, Alan.

MR. NUTTER: A red dot map for the midway well. It would be about six red dots on a map there,

MR. KELLAHIN: Yeah, this is it.

MR. NUTTER: Yeah, that's the one.

Okay, fine. Are there any other questions of Mr. Ralston?

- 1	·				13
2	He may be	excused.			
3			Do you have a	nyth ing fur th	er, Mr. Kellahin?
4			MD WETTENTE	No, sir.	
\$, , , , ,,,,, , , ,	MR. NUTTER:	Does anyone h	ave anything
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CERTIFICATE

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by ma; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Song W. Boyd C.S.E.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 734 heard by me on

, Examiner Conservation Division

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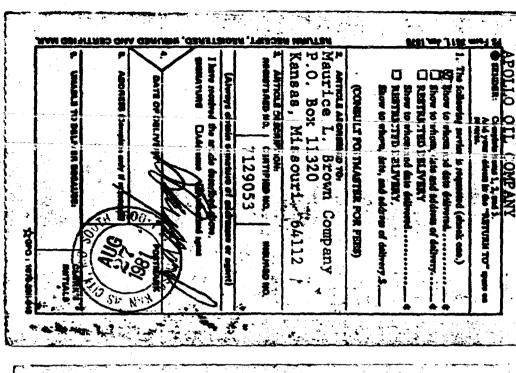
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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

LIE CLINSENVATION UNVISION POLE OFFICE BOX STANS STATE LAND OFFICE BUILDING BANTA FE NEW MEXICO 87501

FORM C-108 Revised 7-1-81 عد 7349

APPLICATION FOR AUTHORIZATION TO INJECT

Purpose: /7 Secondary Recovery /7 Pressure Haintenance Application qualifies for administrative approval? /7 yes OIL II. Operator: APOLLO OIL COMPANY

HVATION DIVISION P. O. Box 1737, Hobbs, New Mexico, 88240 SANTA FE Phone: 505-397-3554 Contact party: Alan W. Ralston

Well date: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

Is this an expansion of an existing project? $\frac{1}{2}$ yes $\frac{1}{2}$ of If yes, give the Division order number authorizing the project 14.

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.

Attach a tebulation 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. .¥**†**::

Attach data on the proposed operation, including:

Proposed average and maximum daily rate and volume of fluids to be injected;

Whether the system is open or closed;

Proposed average and maximum injection pressure;
Sources and an appropriate analysis of injection fluid and compatibility with

the receiving formation if other than reinjected produced water; and 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.).

Athach 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 . TIIV 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.

- Describe the proposed stimulation program, if any. IX.
- 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.
 - Applicants for disposal wells must make an affirmative statement that they have XII. 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.
- Applicants must complete the "Proof of Notice" section on the reverse side of this form. XIII.
- XIY. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief

W_Thomas Kellahin Title Attorney for applicant which Date: August 3, 1981 Signature:

If the information required under Sections VI, VIII, X, and XI above has been previously aubmitted, 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. Andon Ma Cubibit A

. - 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 of 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 or multiple wells;
- ()) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties #Jst file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa fe, New Mexico 87501 within 15 days.

MO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBHITTED.

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.

APOLLO OIL COMPANY

Jack Markham #2 Sec. 11, T9S, R35E Lea County New Mexico

Exhibit 1 - Map required by Paragraph V C-108

Exhibit 2 - Tabular Summary Reuiqred by Paragraph VI of C-108

Exhibit 3 - Data sheet required by Faragraph VII of C-108

Exhibit 4 - Geological Data - Paragraph VIII

Exhibit 5 - Log of Disposal Well

Exhibit 6 - Data Sheet on Disposal Well

Exhibit 7 - Schematic SWP well

Exhibit 8 - Schematic of P & A wells within 1 mile

Exhibit 9 - Water Quality

Exhibit 10 - Statement per Paragraph XII of C-108

Exhibit 11 - Notice Requirements

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Tabular Summary Wells Within One-Half Male of Apollo Energy, Inc. Jack Markham No. 2

Layton Enterprises, Inc.	Layton Enterprises, Inc.	L yton Enterprisec, Inc.	Apollo Energy, Inc.	Mærks & Garner Prod. Co.	Maurice L. Brown (%).	
Benenbough B #3	Joim Allen #1	Bezenbough B #2	Jack Markham #1	Betenbough #2	Hooper #1	
660' FNL & 1980' FEL, Sec. 14, T9S, R35E Total Depth 12,574, Perfs 9710-9730, TA 7/31/80 Csg: 13 3/8" @ 410 w/400 sx Top cmt: surface 9 5/8" @ 4260 w/2550 sx Top cmt: surface 7" @ 9805 w/2470 sx Top cmt: 5290 TS Cut & pulled from 4690 Run 7" w/csg bowl on re-entry	660' FNL & 2310' FWL, Sec 14, T9S, R35E Total Depth 9860, Perfs 975C-9774, P&A 10/7/80 Csg: 13 3/8" @ 400 *//450 sx Top cnt: surface 9 5/8" @ 4085 **/1800 sx Top cnt: 570 TS 7" 8304-9733 **/200 sx Top cmt: 8745 TS Cut & pulled from 8304 5 1/2" liner 9638-9748 **/80 sx. (orig: TD 9757 & P&A) Hole sidetracked @ 8187 5 1/2" @ 9860 **/195 sx. Top cmt: 8735 est Cut & pulled from 5513	330' FSL & 2310' FWL, Sec. 11, T9S, R35E Total Depth 9758, Perfs 9749-4754, P&A 9/11/80 Csg: 10 3/4" @ 478 w/450 ex Top cmt: surface 7 5/8" @ 4240 w/1059 sx Top cmt: 480 TS 5 1/2" liner 4105-9747 w/1192 ex Top cmt: 4.05 circ. 4" liner 9686-9754 w/sx NA	660' FSL & 1980' FEL, Sec 11, T9S, R35E Total Depth 9726, OH 9705-9726 CHg: 10 3/4" @ 467 w/450 ex Top cmt: surface 7 5/8" @ 4258 w/2175 ex Top cmt: surface 5 1/2" liner 4124-9705 w/1850 ex Top cmt: 4124 est	660' FSL & 660' FWL, Sec. 12, T9S, R35E Total Depth 11,569, Perfs 9596-9616 Ceg: 13 3/8" @ 354 w/375 sx Top cmt: surface 9 5/8" @ 6200 w/4500 sx Top cmt: surface 7" liner 4493-9641 w/775 sx Top cmt: 4965 est Cut & pulled from 4493	2310' FNL & 330' FEL, Sec. 11, T9S, R35E Total Depth 9900, Perfs 9793-9822, TA 5/15/81 Csg: 10 3/4" @ 428 w/425 sx Top cmt: surface 7 5/8" @ 4250 w/1800 sx: Top cmt: surface 5 1/2" @ 9900 w/300 sx Top cmt: 6309 est	
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EXHIBIT

Apollo Energy, Inc. Jack Markha: #2 Tabular Summary

Layton Enterprises, Inc.

detenbough B #1

Rederal 13 #1

Coquina Oil Corp.

Layton Enterprises, Inc. Batenbough B #4

1874

660" FNL & 660' FEL, Sec. 14, T9S, R35E
Csg: 13 3/8" @ 372 w/350 ex
T
9 5/8" @ 4429 w/1500 sx
T
7" @ 9638 w/1987 sx Total Depth 9659, Perfs 4757-4769

Top cmt: surface Top cmt: 2300 TS C Top cmt: 300 TS

Total Depth 9615, Perfs 9585-9605, P&A 7/5/77
Top cmt: surface
Top cmt: surface
Top cmt: surface

660' FNI & 660' FWI, Sec. 13, T9S, R35E Csg: 13 3/8" @ 375 w/350 sx T 9 5/8" @ 4433 w/1900 sx T 7" @ 9615 w/1790 sx T

FNL & 554" PEL, Sec. 14, T9S, R35E
12 3/4" @ 380 w/375 sx
To
8 5/8" @ 4055 w/300 sx
To
5 1/2" @ 9752 w/250 sx
To Total Depth 12,088, Perfs 9601-9623, PsA 9/8/80

Top cmt: surface Top cmt: 2875 est Top cmt: 8310 est Cut & pulled from 4211 Cut & pulled from 11:28

Apollo Oil Company Exhibit 3

1500

Jack Markham #2
Salt Water Disposal Well
Section 11
T9S, R35E, NMPM
Lea County, New Mexico

Data on Proposed Operation

 Proposed average and maximu daily rate and volume of fluids to be injected:

Average daily rate of 1,000 B/D Maximum daily rate of 2,500 B/D

- System is closed.
- 3. Proposed average and maximum injection pressure:

Average injection pressure: 250 psi Maximum injection pressure: 800 psi

4. (a) Source of injection fluid: Producing leases in area

Bough "C" Devonian Queen

(b) Analysis of formation fluid:

The Bough C Formation (milligrams per liter)

chloride: 36 to 25 Calcium: 2500 magnesium: 2 to 500 sodium: 20,000 bi-carbonate: 370 to 400 sulfate: 11 to 1500 ph: 6.2 to 6.4

carbonate hardness: 8500 to 9000

non-carbonate:

8000 to 9500

5. Zone of disposal is productive of oil and gas within one mile of the proposed disposal well.

Ref: Para VIII-C-108

Apollo Oil Company Exhibit 4

Jack Markham #2
Salt Water Disposal Well
Section 11
T9S, R35E, NMPM
Lea County, New Mexico

Geological Data on Injection Zone

Pool: Bough-Permo Pennsylvanian Pool

Formation: Bough C

Geological Name: Bough C

Thickness: at 44 feet

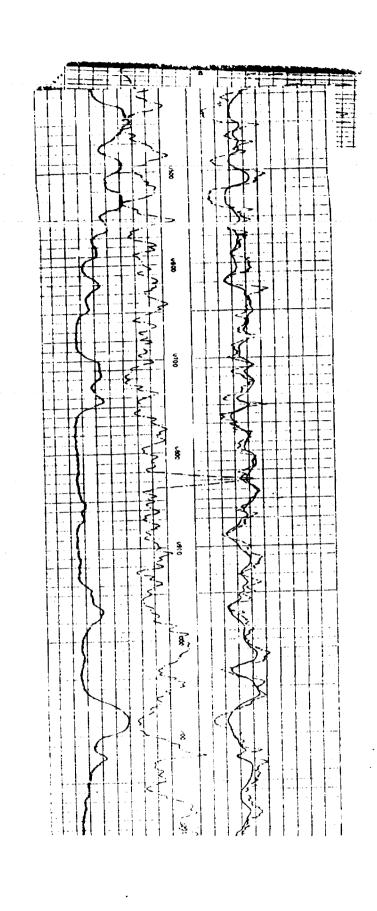
Depth: 9645

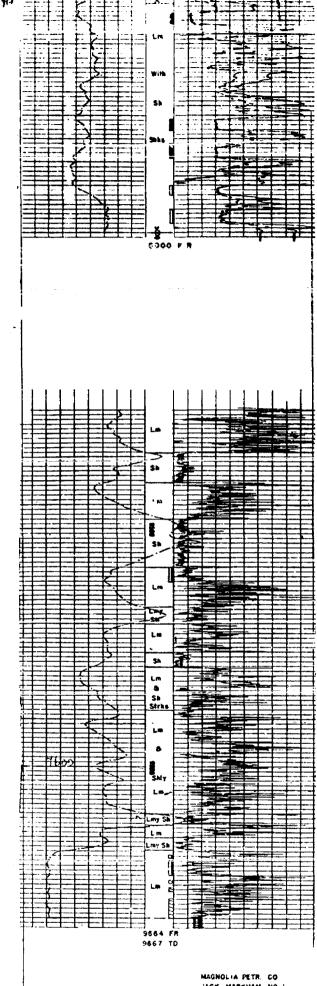
Injection Interval: 51 perforations

51 perforations 9645 feet to 9654 feet SCHOOL SE IN OUR SE - | + LATERAL RADIOACTIVILY

Log of disposal well







MAGNOLIA PETR. CO JACK MARKHAM HOLI WC LEA CO NLMEX.

Ref: Para III-C-108

APOLLO OIL COMPANY

Exhibit 6

Jack Markham #2 Salt Water Disposal Well Section 11 T9S, R35E, NMPM Lea County, New Mexico

WELL DATA ON DISPOSAL WELL

Stimulation Program: none anticipated

Log: See attached

A(1) W. Holmes Lovejoy Lease Jack Markham #2 well Unit P 660 feet from South and East Section 11, T9S, R35E, NMPM, Lea County, New Mexico

- A(2) Casing Strings:
 - 1. 13 3/8" casing at 383 feet with 375 sacks, circulated
 - 2. 9 5/8" casing at 5000 feet with 395 sacks, ciruclated
 - 3. top of coment 5350 feet, calculated
 - 4. 7" casing at 9668 feet with 1425 sacks.
- A(3) Tubing:

2 3/8" plastic tubing set at 9495 feet

- A(4) Baker Loc-set packer at 9495 feet
- B(1) Injection formation is the Bough C in the Permo-Penn Pool
- B(2) Injection interval through perforations at 9645 to 9654 feet
- B(3) Well drilled as a producing well in October 1964

perforated: 4764-68 squeezed on

December 14, 1964 with

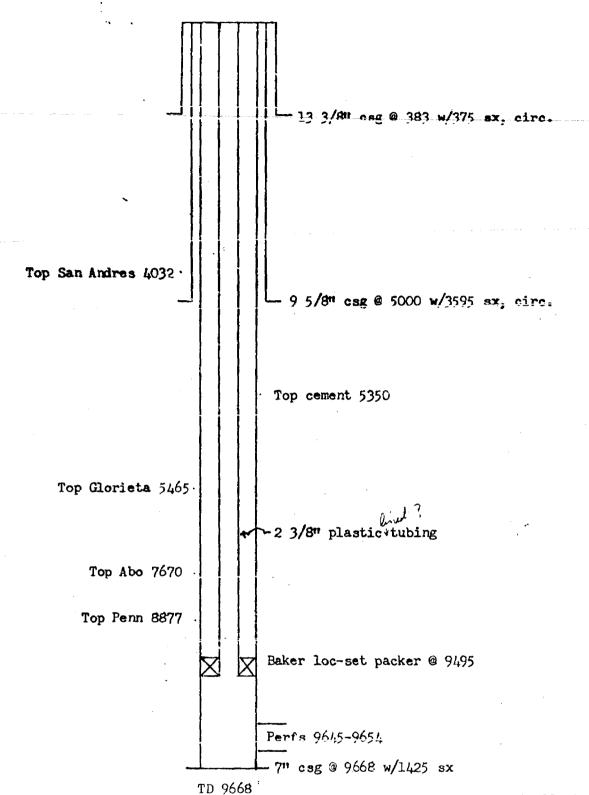
100 sacks

perforated:

4747, 4750, 4757, 4759 on December 14, 1964 and squeezed with 25 sacks

9645-9654 produced from perforated:

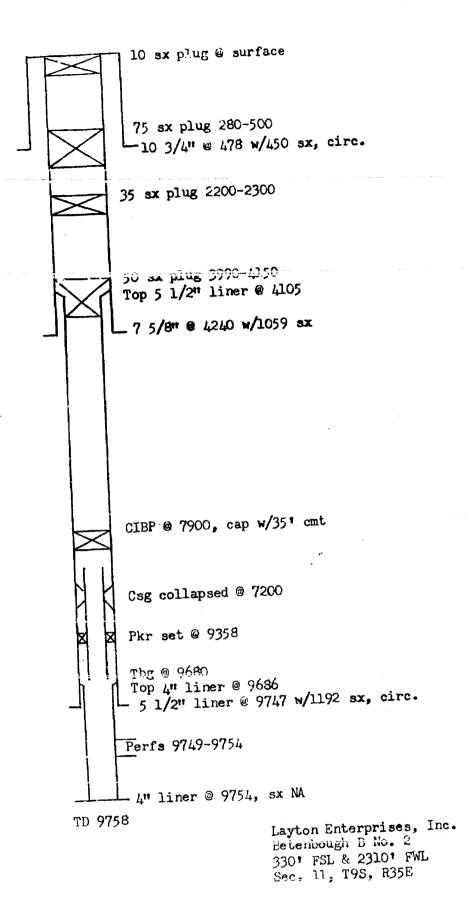
Bough "C"



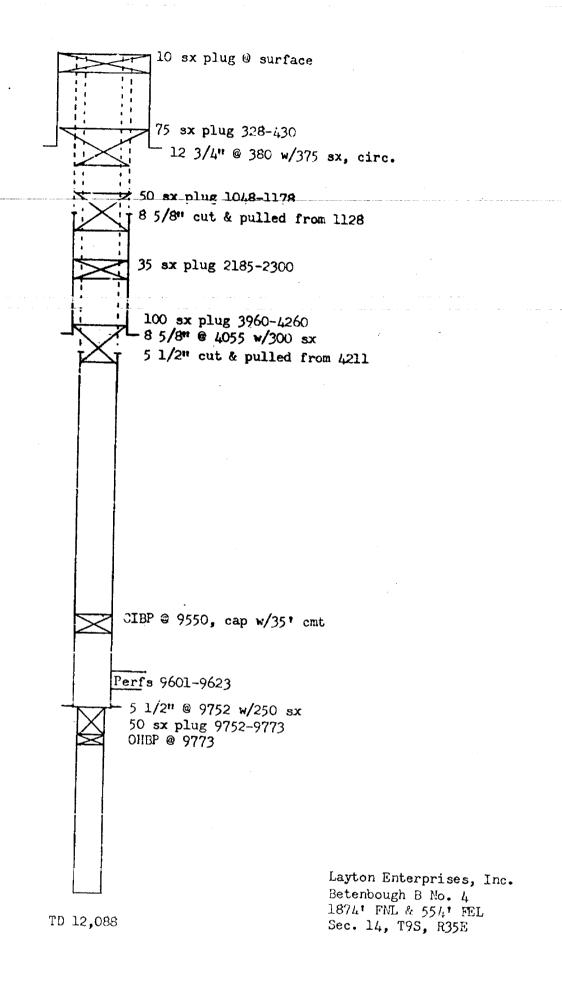
Proposed Water Injection Well

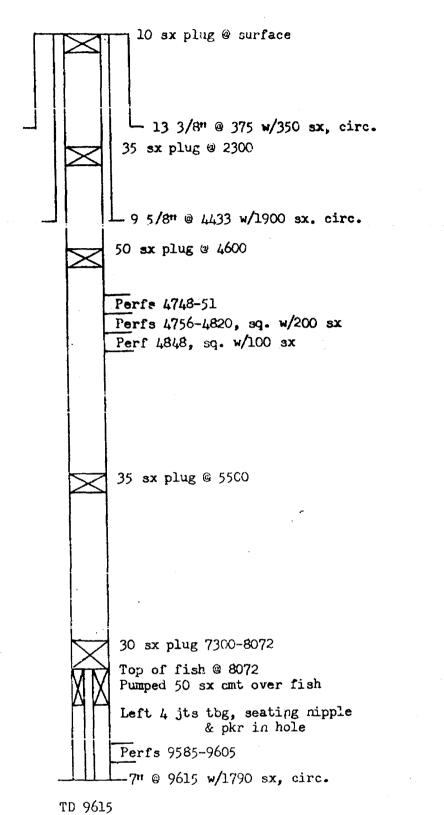
Apollo Energy, Inc. Jack Markham No. 2 660' FSL & 660' FEL Sec. 11, T9S, R35E

EXHIBIT 7

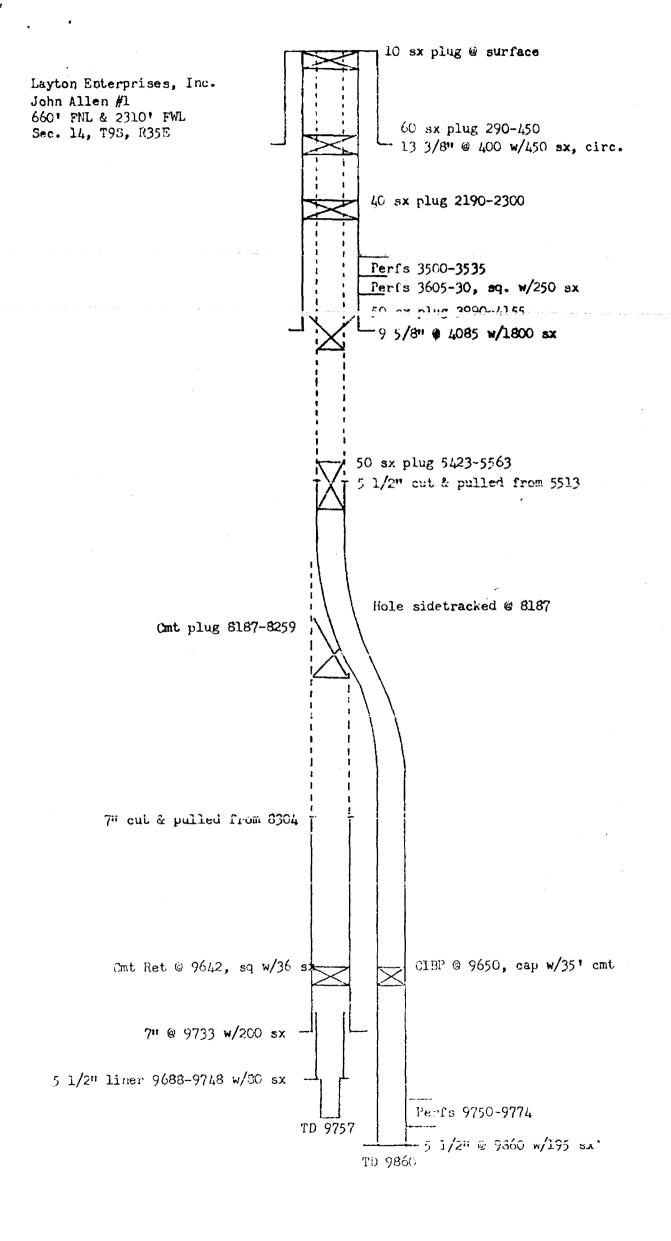


EXHIBIT





Coquina Oil Corporation Federal 13 No. 1 660' PNL & 660' FWL Sec. 13, T9S, R35E



Ref: Para XI C-108

Apollo Oil Company Exhibit 9

Jack Markham #2
Salt Water Disposal Well
Section 11
T9S, R35E, NMPM
Lea County, New Mexico

QUALITY OF WATER CONTROL IN SECTIONS NEAR SECTION 11-9S-35E

LOCATION	DATE SPLD.	CHLORIDE	SPECIFIC ELECTRIC CONDUCTANCE	TOTAL DISSOLVED SOLIDS
Section 7-9S-35E	11-09-79	104	1108	720.0
Section 10-9S-35E	11-08-79	110	1037	674.05
Sections 11, 12, 14	None			
Section 17-9S-35E	12-06-79	122	1139	740.35

NOTE: See attached map for locations.

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Ref: Para XII C-108

APOLLO OIL COMPANY Exhibit 10

Jack Markham #2 Salt Water Disposal Well Section 11 T9S, R35E, NMPM Lea County, New Mexico

AFFIRMATIVE STATEMENT

APOLLO OIL COMPANY has examined available geologic and engineering data and finds no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

Ref: Para XIV

APOLLO OIL COMPANY

Exhibit 11

Jack Markham #2
Salt Water Disposal Well
Section 11
T9S, R35E, NMPM
Lea County, New Mexico

NOTICE

Pursuant to Section XIV,

Applicant has mailed copies of the application to the following:

Surface owner:

W. Holmes Lovejoy General Delivery Milnesand, New Mexico 88125

Leasehold Operators within one-half mile:

Maurice L. Brown Company Box 2237 Midland, Texas 79702

Marks & Garner Production Co. Box 1175 Lovington, New Mexico 88260

Layton Enterprises, Inc. 3103-79th Street Lubbock, Texas 79423

Coquina Oil Corporation 400 North Marienfeld Drawer 2960 Midland, Texas 79702

Applicant has caused to be published in the Lovington Leader, a newspaper of general circulation in Lea County the attached notice.

NOTICE OF PUBLICATION

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

SANTA PE, NEW MEXICO

NOTICE: To all persons having any right, title, interest or claim in the following:

Pursuant to the Rules and Regulations of the New Meixco Oil Conservation Division, APOLLO OIL COMPANY, hereby gives public notice that it has applied to the Division for an order approving its Jack Markham #2 well located 660 feet from the South and East lines of Section 11, T9S, R35E, NMPM, Lea County, New Mexico as a disposal well in the Bough C formation of the Permo-Penn Pool at a depth of 9645 feet to 9654 feet at a maximum rate of 2,500 barrels per day at a maximum injection pressure of 800 psi.

Any interested party must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe. New Mexico 8750l within fifteen (15) days of the date of publication of this notice.

KELLAHIN & KELLAHIN
Attorneys at Law
P.O. Box 1769
Santa Fe, New Mexico 87501
(505) 982-4285
Attorneys for Apollo Oil Company

- CASE 7348: Application of Apollo Oil Company for salt water disposal, Lea County, New Mexico.

 Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Abo formation in the interval from 8834 feet to 8968 feet in its Lovington State 9 Well

 No. 2 in Unit N of Section 9, Township 17 South, Range 37 East, Nidway-Abo Pool.
- CASE 7349: Application of Apollo Oil Company for salt water disposal, Lea County, New Mexico.

 Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Bough C Formation in the interval from 9645 feet to 9654 feet in its Jack Markham Mell No. 2 in Unit P of Section II. Township 9 South, Range 35 East, Bough-Permo Pennsylvanian Bool
 - CASE 7350: Application of Conoco, Inc. for selt water disposal, Eddy County, New Mexico.

 Applicant, in the above-styled cause, seeks authority to dispose of produced selt water into the Cisco formation in the interval from 8144 feet to 8160 feet in its Levers Federal Mell Mo. 2 in Unit R of Section 2, Township 20 South, Range 25 East, Springs-Upper Penn Gas Pool.
 - CASE 7351: Application of Mid-America Petroleum, Inc. for compulsory pooling and the rescission of Order No. R-6722, Lea County, New Mexico.

 Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Demonstration underlying the M/2 of Section 12, Township 23 South. Rance 34 East. to be dedicated to a well to be drilled at a standard 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, designation of applicant as operator of the well, and a charge for risk involved in drilling said well. Applicant further seeks rescission of Order No. R-6722 which approved an unorthodox location for the subject well based on dedication of the S/2 of said Section 12.
 - CASE 7352: Application of Yatas Petroleum Corporation for designation of a tight formation, Eddy County,
 New Mexico.

 Applicant, in the above-styled cause, pursuant to Section 107 of the Natural Gas Policy Act
 18 -CFR Section 271.701-705, seeks the designation as a tight formation of the Permo-Penn and
 formation underlying all of the following townships:

Township 17 South, Ranges 24 thru 26 East;

- 18 South, 24 and 25 East;
- 19 South, 23 thru 25 East;
- 20 South, 21 thru 24 East:
- 20 } South, 21 and 22 East;
- 21 South, 21 and 22 East;

Also Sections 1 thru 12 in 22 South, 21 and 22 East,

All of the above containing a total of 315,000 acres more or less.

Docket No. 28-91

DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 16, 1991

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for October, 1981, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.
 - (2) Consideration of the allowable production of gas for October, 1981, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

Dockets Nos. 29-81 and 30-81 are tentatively set for September 23 and October 7, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - SEPTEMBER 9, 1981

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Rutter, Examiner, or Richard L. Stamets, Alternate Examiner:

- CASE 7341: Application of Superior Oil Company for downhole commingling, Eddy County, New Mexico.

 Applicant, in the above-styled cause, seeks approval for the downhole commingling of South
 Carlsbad Strawn and Morrow production in the wellbore of its Collatt State Com Well No. 1
 located in Unit J of Section 1, Township 23 South, Range 26 East.
- Application of Arco Oil and Gas Company for downhole commingling, Lea County, New Mexico.

 Applicant, in the above-styled cause, seeks approval for the downhole commingling of Blinchry

 and Driminic production in the waitbore of its State 367 Well Mo. 2 located in Unit L of Section

 36 and its Roy Barton Well Mo. 2 located in Unit B of Section 23, both in Township 21 South,

 Benge 37 Bast.
- CASE 7341: Application of Caribon Four Corners, Inc. for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Cha Che Gallap Oil Pool underlying the E/2 WW/4 of Section 18, Township 29 Worth, Range 14 West, to be dedicated to a well to be drilled at a standard 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 operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7344: Application of Read & Stevens, Inc. for compulsory pooling, Eddy County, New Mexico.

 Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Morrow formation underlying the W/2 of Section 19, Township 23 South, Range 28 East, to be dedicated to a well to be drilled at a standard 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, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7345: Application of Bass Enterprises Production Company for compulsory pooling, Lea County, New Mexico.

 Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Lovington Penn Pool underlying the N/2 NE/4 of Section 13, Township 16 South, Range 36 East, to be dedicated to a well to be drilled at a standard 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, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7346: Application of Cibola Energy Corporation for compulsory pooling, Chaves County, New Mexico.

 Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp through Devonian formations underlying the W/2 of Section 19, Township 10 South, Range 29 East, to be dedicated to a well to be drilled at a standard 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, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.
- CASE 7347: Application of Tenneco Oil Company for an unorthodox gas well location, Lea County, New Mexico.

 Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to
 be drilled 660 feet from the South Line and 860 feet from the West Line of Section 20, Township
 16 South, Range 34 East, Kemnitz-Morrow Gas Pool, the W/2 of said Section 20 to be dedicated to
 the well.

Apollo Oil Company Exhibit 3

Jack Markham #2
Salt Water Disposal Well
Section 11
T95, R35E, NMPM
Lea County, New Mexico

Data on Proposed Operation

1. Proposed average and maximu daily rate and volume of fluids to be injected:

Average daily rate of 1,000 B/D Maximum daily rate of 2,500 B/D

- 2. System is closed.
- 3. Proposed average and maximum injection pressure:

Average injection pressure: 250 psi Maximum injection pressure: 800 psi

4. (a) Source of injection fluid: Producing leases in area

Bough "C" Devonian — Queen —

(b) Analysis of formation fluid:

The Bough C Formation (milligrams per liter)

chloride: 36 to 25 Calcium: 2500 magnesium: 2 to 500 sodium: 20,000

bi-carbonate: 370 to 400

sulfate: 11 to 1500 ph: 6.2 to 6.4

carbonate

hardness: 8500 to 9000

non-carbonate:

8000 to 9500

5. Zone of disposal is productive of oil and gas within one mile of the proposed disposal well.

9645

APOLLO OIL COMPANY

Jack Markham #2 Sec. 11, T9S, R35E Lea County New Mexico



Exhibit 1 - Map required by Paragraph V C-108

Exhibit 2 - Tabular Summary Reuiqred by Paragraph VI of C-108

Exhibit 3 - Data sheet required by Paragraph VII of C-108

Exhibit 4 - Geological Data - Paragraph VIII

Exhibit 5 - Log of Disposal Well

Exhibit 6 - Data Sheet on Disposal Well

Exhibit 7 - Schematic SWP well

Exhibit 8 - Schematic of P & A wells within 1 mile

Exhibit 9 - Water Quality

Exhibit 10 - Statement per Paragraph XII of C-108

Exhibit 11 - Notice Requirements

BEFORE EXAMINER NUTTER

OIL CONSERVATION DIVISION

Agollo EXHIBIT NO. 9349

CASE NO. 734 9

1-11

Ref: Para III-C-108

APOLLO OIL COMPANY

Exhibit 6

Jack Markham #2 Salt Water Disposal Well Section 11 Will Pell Section 11 T9S, R35E, NMPM Lea County, New Mexico

WELL DATA ON DISPOSAL WELL

Stimulation Program: none anticipated

Log: See attached

A(1)W. Holmes Lovejoy Lease Jack Markham #2 well Unit P 660 feet from South and East Section 11, T9S, R35E, NMPM, Lea County, New Mexico

- A(2) Casing Strings:
 - 1. 13 3/8" casing at 383 feet with 375 sacks, circulated
 - 2. 9 5/8" casing at 5000 feet with 3995 sacks, ciruclated
 - 3. top of cement 5350 feet, calculated
 - 4. 7" casing at 9668 feet with 1425 sacks.
- A(3) Tubing:

- 2 3/8" plastic tubing set at 9495 feet
- A(4) Baker Loc-set packer at 9495 feet
- B(1) Injection formation is the Bough C in the Permo-Penm Pool
- E(2) Injection interval through perforations at 9645 to 9654 feet
- B(3) Well drilled as a producing well in October 1964

perforated:

4764-68 squeezed on December 14, 1964 with

100 sacks

perforated:

4747, 4750, 4757, 4759 on December 14, 1964 and squeezed with 25 sacks

9645-9654 produced from perforated:

Bough "C"

THE CONTRACTOR OF STATE

MENT CHICK SON FORM STATE LAND CHICK SUN DING SHATE ME WEST STATE

FORM C-108 Revised 7-1-81

Case 7349

APPLICATION FOR AUTHORIZATION TO INJECT

- Purpose: // Secondary Recovery // Pressure Maintenance / Disposal // Storage Application qualifies for administrative approval? // yes // no
- 11. Operator: APOLLO OIL COMPANY P. O. Box 1737, Hobbs, New Mexico, 88240

Phone: 505-397-3554 Contact party: Alan W. Ralston

- complete the data required on the reverse side of this proposed for injection. Additional sheets may be attached to the complete of the comple iii. Weil data: Complete the data required on the reverse side of this
- In this an expansion of an existing project? f/f yes f/A/f not only in the Division order number authorizing the project /A/ no IV. Attach a map that identifies all wells and leases within two miles and proposed injection well with a one-half mile redius circle drawn around each proposed injection.

 Santa of Division
- SANTA FE 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 Escuell'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:
 - Proposed average and maximum daily rate and volume of fluids to be injected;
 - Whether the system is open or closed;
 - Proposed average and maximum injection pressure:
 - Sources end 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.).
- .IIIV. 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 (equifers 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.
- Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.) X.
- · 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. W_Thomas Kellahin Title Attorney for applicant Date: August 3, 1981 Signature:

 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.

CISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office. Exhibit A - Arder No. R-6702

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:
 - 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 perker 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 unly 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) Sive the depths or 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;
- ()) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties #Jst file objections or requests for hearing with the Dil Conservation Division, P. D. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE WAS 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.

Apollo Energy, Inc. Jack Markham No. 2 Wells Within One-Half Mile of Tabular Summary

Marks & Garner Prod., Co. Maurice L. Brown Co. Apollo Energy, Inc. Layton Enterprises, Inc. Layton Enterprises, Inc. Layton Enterprises, Inc. Hooper #1 Bettenbough #2 Jack Markham #1 Betenbough B #2 Betenbough B #3 John Allen #1 660' FSL & 660' FWL, Sec. 12, T9S, R35E Csg: 13 3/8" @ 354~w/375 sx 9 5/8" @ 6200 w/4500 sx 7" liner 4493-9641 w/775 sx 660' FSL & 1980' FEL, Sec 11, T9S, R35E Tot Csg: 10 3/4" @ 467 w/450 sx Top cat: 7 5/8" @ 4258 w/2:175 sx Top cat: 5 1/2" liner 4124-9705 w/1850 sx Top cat: 330' PSL & 2310' FWL, Sec. 11, T9S, R35E 660' FNL & 1980' FEL, Sec. 14, T9S, R35E Csg: 13 3/8" @ 410' w/400 sx To 9 5/8" @ 4260 w/2550 sx To 7" @ 9805 w/2470 sx To FNL & 2310' FWL Sec 14, T9S, R35E Total Depth 9860

13 3/8" @ 400 w/450 sx Top cmt: Surface

9 5/8" @ 4085 w/1800 sx Top cmt: 570 TS

7" 8304-9733 w/200 sx Top cmt: 8745 TS

5 1/2" liner 9688-9748 w/80 sx. (orig: TD 9757 & P&A) FNL & 330' FEL, Sec. 11, T9S, R35E 10 3/4" @ 428 w/425 sx To 7 5/8" @ 4250 w/1800 sx To 5 1/2" @ 9900 w/300 sx To 10 3/4" @ 478 w/450 sx Top cnt: 7 5/8" @ 4240 w/1059 sx Top cnt: 5 1/2" liner 4105-9747 w/1192sx Top cnt: Hole sidetracked @ 8187 5 1/2" @ 9860 w/195 sx. 4" liner 9686-9754 w/sx NA Top cut: Top cut: surface Top cmt: 6309 est Top cmt: surface Top cmt: 480 TS Top cat: Top cat: Top cat: Top cnt: Top cint: Top cmt: Total Depth 11,569, Perfs 9596-9616 Total Depth 9900, Ferfs 9793-9822, TA 5/15/81 Total Depth 9726, Total Depth 12,574, Perfs 9710-9730, TA 7/31/80 Total Depth 9860, Perfs 9750-9774, P&A 10/7/80 surface 4124 est surface surface -4965 est surface > 5290 TS Burface ~ surface surface . 4105 circ. 8735 est OH 9705-9726 Cut & pulled from 4493 Out & pulled from 8304 Cut & pulled from 5513

Run 7" w/csg bowl on re-entry

Top cut:

Cut & pulled from 4690

Tabular Summary
Apollo Energy, Inc. Jack Markham #2

Layron Enterprises, Inc.	Coquina 011 Corp.	Layton Enterprises, Inc.
Beterbough B #4	Federal 13 #1	Beterbough B #1
1874' FNL & 554" FEL, Sec. 14, T9S, R35E Csg: 12 3/4" @ 380 w/375 sx 8 5/8" @ 4055 w/300 sx 5 1/2" @ 9752 w/250 sx	660' FNL & 660' FWL, Sec. 13, T9S, R35E Csg: 13 3/8" @ 375 w/350 sx 9 5/8" @ 4433 w/1900 sx 7" @ 9615 w/1790 sx	660" FNL & 660' FEL, Sec. 14, T9S, R35E Ceg: 13 3/8" @ 372 w/350 sx 9 5/8" @ 4429 w/1500 sx 7" @ 9638 w/1987 sx
R35E Total Depth 12,088, Perfs 9601-9623, P&A 9/8/80 Top cmt: surface —— Cut & pulled from 4211 Top cmt: 8310 est Cut & pulled from 1128	R35E Total Depth 9615, Perfs 9585-9605, P&A 7/5/77 Top cmt: surface Top cmt: surface Top cmt: surface	R35E Total Depth 9659, Perfs 4757-6769 Top cmt: surface Top cmt: 2300 TS Top cmt: 300 TS

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Ref: Para VIII-C-108

Apollo Oil Company Exhibit 4

Jack Markham #2 Salt Water Disposal Well Section 11
T9S, R35E, NMPM
Lea County, New Mexico

Geological Data on Injection Zone

Pool: Bough-Permo Pennsylvanian Pool

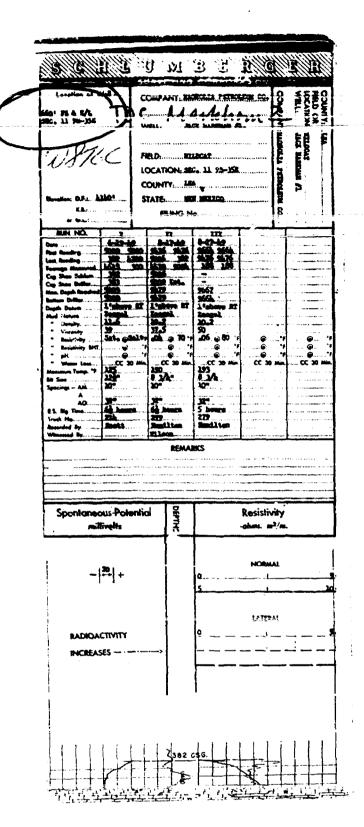
Formation: Bough C

Geological Name: Bough C

Thickness: at 44 feet

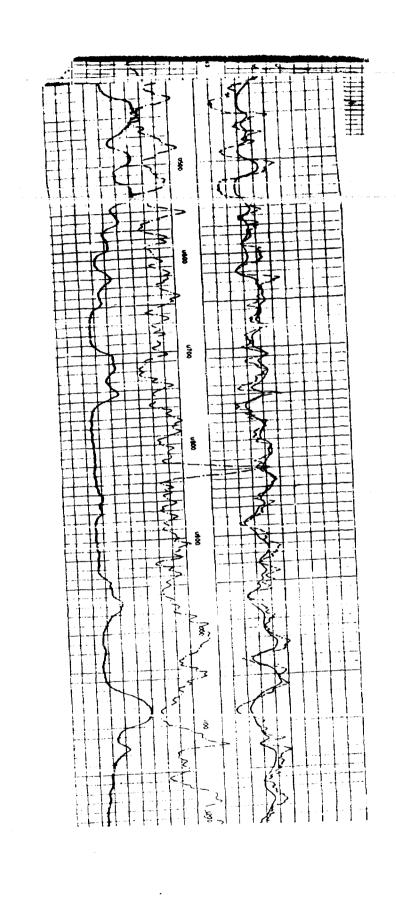
Depth: 9645

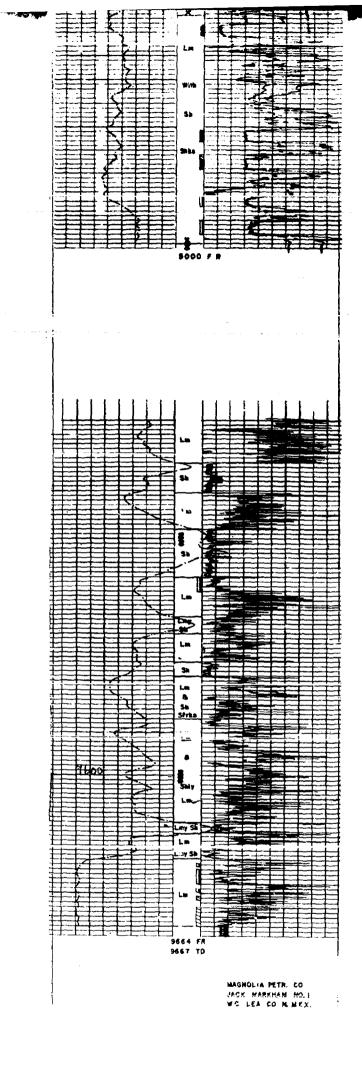
Injection Interval: 51 perforations 9645 feet to 9654 feet

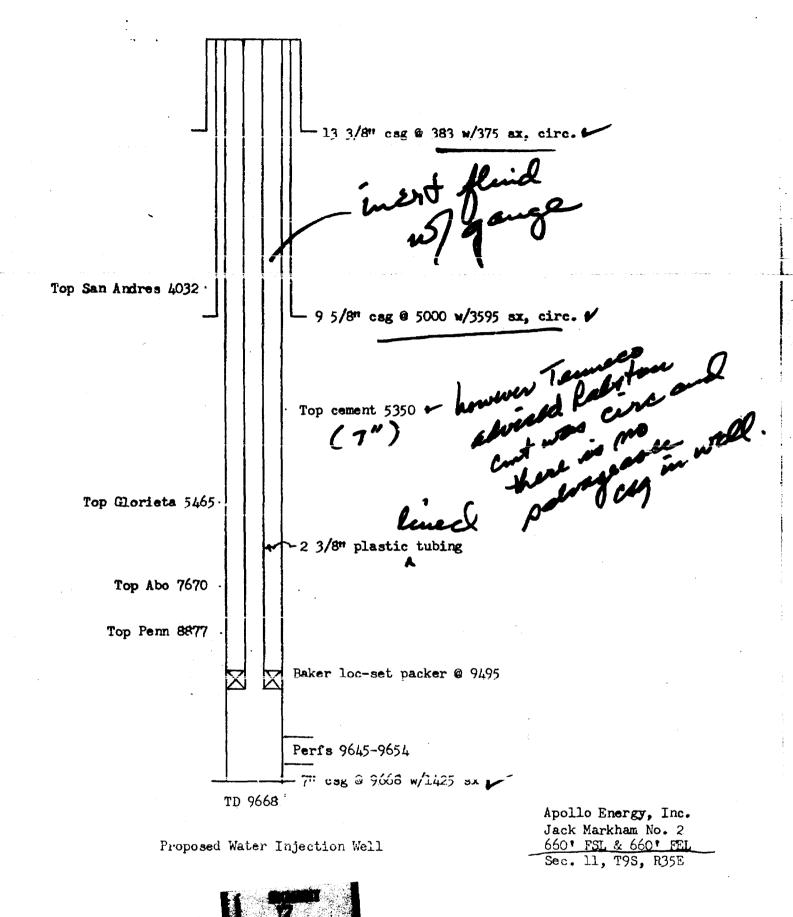


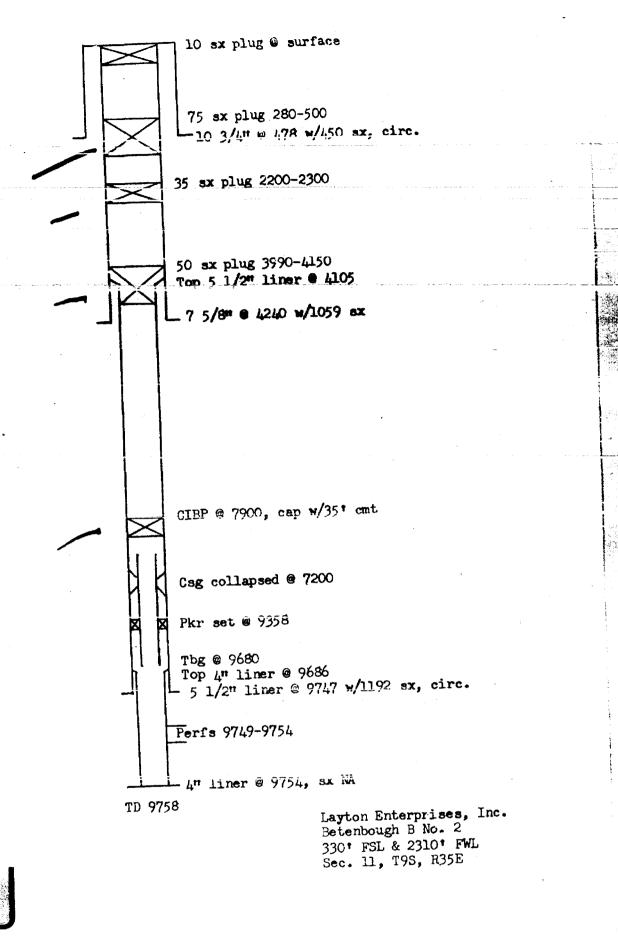
Log of disposal well

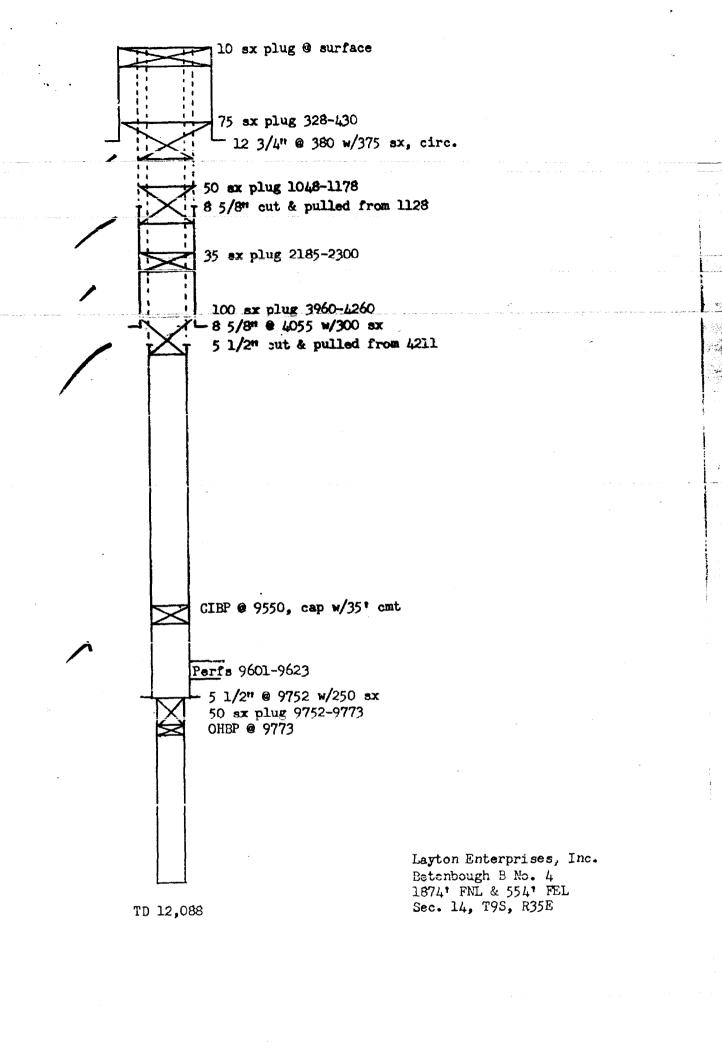


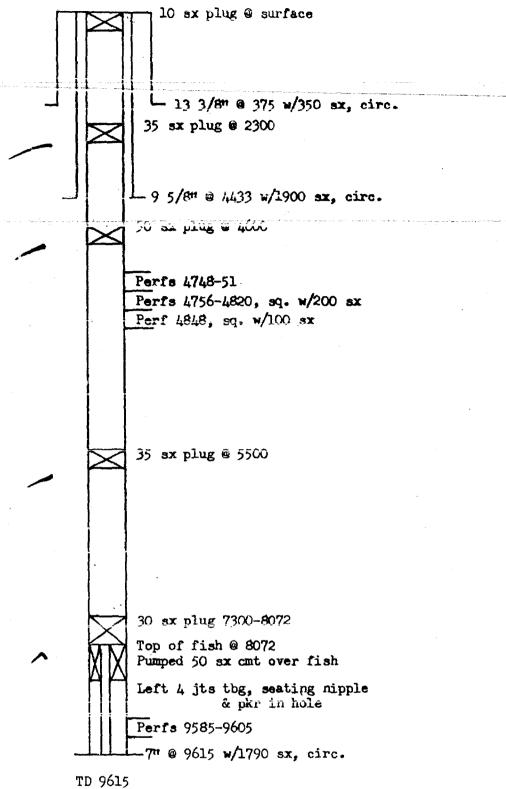




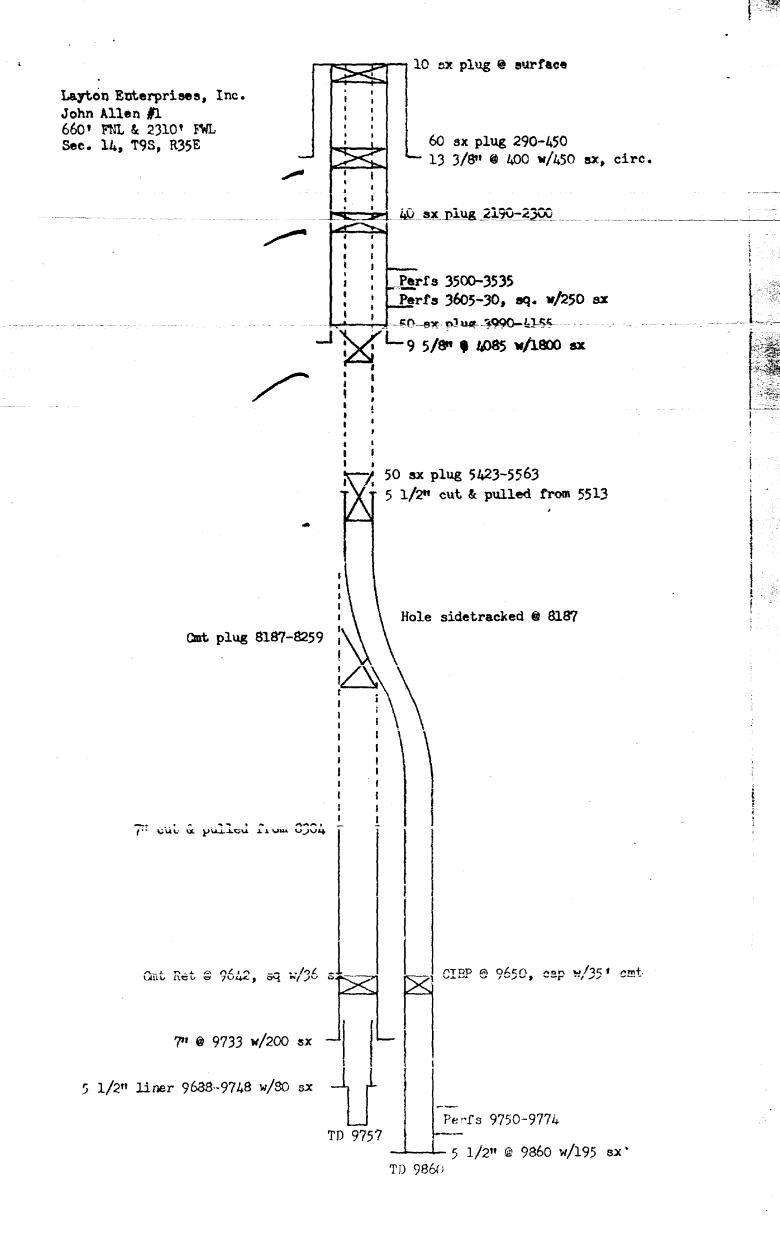








Coquina Oil Corporation Federal 13 No. 1 660' PNL & 660' FWL Sec. 13, T9S, R35E



Ref: Para XI C-108

Apollo Oil Company Exhibit 9

Jack Markham #2
Salt Water Disposal Well
Section 11
T9S, R35E, NMPM
Lea County, New Mexico

QUALITY OF WATER CONTROL IN SECTIONS NEAR SECTION 11-9S-35E

LOCATION	DATE SPLD.	CHLORIDE	SPECIFIC ELECTRIC CONDUCTANCE	TOTAL DISSOLVED SOLIDS
Section 7-9S-35E	11-09-79	104	1108	720.0
Section 10-9S-35E	11-08-79	110	1037	674.05
Sections 11, 12, 14	None			
Section 17-9S-35E	12-06-79	122	1139	740.35

NOTE: See attached map for locations.

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Ref: Para XII C-108

APOLLO OIL COMPANY Exhibit 10

Jack Markham #2
Salt Water Disposal Well
Section 11
T9S, R35E, NMPM
Lea County, New Mexico

AFFIRMATIVE STATEMENT

APOLLO OIL COMPANY has examined available geologic and engineering data and finds no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

Ref: Para XIV

APOLLO OIL COMPANY

Exhibit 11

Jack Markham #2
Salt Water Disposal Well
Section 11
T9S, R35E, NMPM
Lea County, New Mexico

NOTICE

Pursuant to Section XIV,

Applicant has mailed copies of the application to the following:

Surface owner:

W. Holmes Lovejoy General Delivery Milnesand, New Mexico 88125

Leasehold Operators within one-half mile:

Maurice L. Brown Company Box 2237 Midland, Texas 79702

Marks & Garner Production Co. Box 1175 Lovington, New Mexico 88260

Layton Enterprises, Inc. 3103-79th Street Lubbock, Texas 79423

Coquina Oil Corporation 400 North Marienfeld Drawer 2960 Midland, Texas 79702

Applicant has caused to be published in the Lovington Leader, a newspaper of general circulation in Lea County the attached notice.

NOTICE OF PUBLICATION

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION SANTA FE, NEW MEXICO

NOTICE: To all persons having any right, title, interest or claim in the following:

Persuant to the Rules and Regulations of the New Meixco Oil Conservation Division, APOLLO OIL COMPANY, hereby gives public notice that it has applied to the Division for an order approving its Jack Markham #2 well located 660 feet from the South and East lines of Section 11, T9S, R35E, NMPM, Lea County, New Mexico as a disposal well in the Bough C formation of the Permo-Penn Pool at a depth of 9645 feet to 9654 feet at a maximum rate of 2,500 barrels per day at a maximum injection pressure of 800 psi.

Any interested party must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501 within fifteen (15) days of the date of publication of this notice.

KELLAHIN & KELLAHIN Attorneys at Law P.O. Box 1769 Santa Fe, New Mexico 87501 (505) 982-4285 Attorneys for Apollo Oil Company

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO.	7349
Order No.	R- 6787

APPLICATION OF APC. LO DIL COMPANY FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

Hou

ORDER OF THE DIVISION

BY THE DIVISION:

matter thereof.

This cause came on for hearing at 9 a.m. on September 9

19 81 , at Santa Fe, New Mexico, before Examiner Daniel S. Nutter

NOW, on this _____ day of September , 19 81 , the Division

Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject
- (2) That the applicant, Apollo Oil Company
 is the owner and operator of the Jack Markham Well No. Z

 located in Unit P of Section 11, Township 9 South

 Range 35 East , NMPM, Bough-Permo Pennsylvanian Pool

 Lea County, New Mexico.
- (3) That the applicant proposes to utilize said well to dispose of produced salt water into the Bough C formation, with injection into the interval from approximately 9645 feet to 9654 feet.
- (4) That the injection should be accomplished through 2 %

 -inch plastic lined tubing installed in a packer set at approximately 9495 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order

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to determine leakage in the casing, tubing, or packer.

(6) That the Director of the Division should be authorized to administratively approve an increase in the injection pressure your a proper showing by the operator that such higher pressure will not result in migration of the injected waters from the Bough C formation.

- Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.
- (7) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.
- (9) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Apollo Oil Company,
is hereby authorized to utilize its
located in Unit P of Section 11 , Township 9 South
Range 35 East , NMPM, Bough-Permo Pennsylvanian Pool ,
Lea County, New Mexico, to dispose of produced salt
water into the Bough C formation, injection to
be accomplished throughinch tubing installed in a
packer set at approximately 9495 feet, with injection into
theinterval from approximately9645
feet tofeet;

(8) That disposal should be limited to waters
produced from the Bough C zone of the Ramay!
Vanion unless additional widewee has been
sintmitted as to the Compatibility of waters from
other formations, and the Division Director has
approved the disposal of such other waters in the subject well

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

- increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Bough t formation.
- Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.
- visor of the Division's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.
- (5) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Division Rules and Regulations.
- (7) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fo, New Mexico, on the day and year hereinabove designated.

to water produced from the Baregh Czone of the Penny Bares formation, unless the Division Director has approved the James of waters produced from other formation, upon Pederal from other formation, upon Pederal of Kaiferlal potablishing the compatibility of cultivation waters of the Baregh Czone.

KELLAHIN and KELLAHIN Attorneys at Law 500 Don Gaspar Avenue Post Office Box 1769

Jason Kellahin W. Thomas Kellahin Karen Aubrey

Santa Fe, New Mexico 87501

Telephone 982-4285 Area Code 505

August 13, 1981

Mr. Joe Ramey Oil Conservation Division P.O. Box 2088 Santa Fe. New Mexico 87501

RE: Salt Water Disposal Jack Markham #2 Section 11 T9S, R35E

Case 7349

Dear Joe:

Please set the enclosed application for the examiner hearing on September 9, 1981.

Very thuly

WTK: jm Enclosure

cc: Mr. Alan Ralston



STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSEPTATION DIVISION

POST OFFICE BOX 9089 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501

Uctober 1, 1981

Mr. Thomas Kellahin Kellahin & Kellahin Attorneys at Law Post Office Box 1769 Senta Fe, New Mexico CREE NO. 7349 ORDER NO. 7349

Applicant:

Apollo Oil Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOR D. RAMEY

Director

JDR/fd

Copy of order also sent to:

Hobbs OCD X
Artesia OCD X
Aztec OCD

Other____

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
9 September 1981

EXAMINER HEARING

IN THE MATTER OF:

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Application of Apollo Oil Company for salt water disposal, Lea County, New Mexico.

CASE 7349

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

APPEARANCES

For the Oil Conservation Division:

W. Perry Pearce, Esq. Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico 87501

an | Bow the Appli

For the Applicant:

W. Thomas Kellahin, Esq. KELLAHIN & KELLAHIN 500 Don Gaspar Santa Fe, New Mexico 87501

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MR. NUTTER: We'll call next Case Number 3 7349. MR. PEARCE: Application of Apollo Oil Company for sait water disposal, Lea County, New Mexico. MR. KELLAHIN: If the Examiner please, 7 I'm Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant. I would like the record to reflect that Mr. Ralston is still under oath and is still qualified as an 11 expert witness in this case. 12 MR. NUTTER: The record will so show. 13 MR. KELLAHIN: In addition to the exhibits 14 on file with the Division, these are the return receipts from 15 the surface and offset operators, showing that they received 16 copies of the application. 17 18 ALAN RALSTON 19 being called as a witness and being previously sworn upon his 20 oath, testified as follows, to-wit: 21 22 DIRECT EXAMINATION 23 BY MR. KELLAHIN:

Mr. Ralston, this is an application for salt water disposal in the Jake -- in the Jack Marham Well

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Number Two?		
A.	:	It's a listing of the balance of this
packet.		
Q	•	I'm sorry, Exhibit Number Two is the
tabulation.		
A.	•	Oh, okay, okay.
Ş.	· !	There you go.
A.	;	It's a tabular summary of the offset
operators wi	thìn a ha	lf mile radius of the Jack Marham No. 2.
Õ	;	All right, sir, you've caused to be
searched the	various	well records and have located the wells
on this tabu	lation th	at at one time or another penetrated
through the	disposal	formation?
A.		Yes, sir.
Q		And have you reviewed this summary to
determine wh	ether the	se wells are completed, plugged in such
a fashìon th	at they w	ill not serve as a source to allow dis-
posal fluids	to migra	te up into shallower fresh water sands?
A.		Yes, sir, I have.
ρ		All right. And you don't see any defect
in any of th	ese wells	that will cause them to be sources of
contaminatio	n?	
a.		No, these wells all have three strings

of casing in them and those that are plugged were plugged by

submit the data to show that the formation fluids are compatible?

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Yes, sir.

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All right, sir. You don't have presently with you the fluid analysis for any other formations apart from the Bough C, do you?

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I was not able to obtain these from any of the water companies for the water in that area. I will have to get samples and have a special analysis run on these

waters.

All right, sir. Ω

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In terms of the injection pressure, Mr. Ralston, tell us a little something about your well. Will it take these fluids under vacuum or will it require pressure injection?

It will take it under vacuum. We just recently purchased these wells from Tenneco and they were temporarily abandoned at the time. We tried to establish production. We gave them 1000 gallons of acid and about 75 barrels flush. We never saw the acid hit. There was no pres sure of any kind and the flush never showed any pressure. We finally got some fluid back in the hole three days later after this small acid job.

So I don't anticipate very much injection

pressure at all.

Q.

All right, sir, would a pressure limita-

1 2 tion based upon .2 of a pound per foot of depth be adequate for your purposes? 3 More than adequate. All right, sir, let's turn to Exhibit Number Four and have you confirm the information contained on that exhibit. It's true. All right, sir, Exhibit Number Five is 10 a copy of one of the logs for the disposal well? Let's to to Exhibit Number Six, then. 11 In fact it might be easier if we'll take Exhibits Number Six 12 and Seven at the same time and if you'll correlate the tabu-ĬĴ lation with the schematic and then describe generally how you 14 propose to complete this as a disposal well. 15 Well, we'll install a packer and packer 16 fluid and 2-3/8ths plastic lined steel tubing. We'll have 17 18 packer fluid, inert fluid on the annulus side, and a pressure 19 gauge. All right, sir, with regards to the 20 Q. tubing, the 2-3/8ths, this is plastic lined tubing, is it not? 21 22 Plastic lined steel tubing. 23 All right, so we should correct that Q Exhibit Number Six and Seven to indicate plastic lined. 24 If you'll look at the 9-5/8ths inch 25

2 casing, the schematic shows 3595 sacks and the tabulation shows 3995. Is the schematic correct in terms of sacks of cement? This is a typographical error, Mr. Ralston. Yeah, I'm sure with that much cement, it sure should be circulated. All right, sir, I think the correct amount is 3595, is it not? Yes, sir. All right. Where is the top of the 11 12 cement on the 9-5/8ths inch casing? 13 A. It's circulated; it's at surface. 14 All right, and will that be true of the 15 13-3/8ths? 16 Yes, sir. 17 And how about the 7-inch? Is that 18 from surface? 19 I can't say if the 7-inch circulated. 20 Sometimes in these wells when they're re-entered they have 21 such large washouts in some of the more porous zones that 22 just about any amount of cement you pump will not circulate. 23 But it should be back covering -- just a minute. 24 No, excuse me. The 7-inch is circulated 25 because that was one of the deals we got from Tenneco. It's

not indicated here but Tenneco said there's no casing salvage on these wells, so there would -- I mean if there's -- if it's not circulated. it's within 200 to 300 feet of surface. because there's not any salvagible material as far as casing in these wells.

of old perforations in this well. Apart from the Bough C perforations, Mr. Ralston, are the other perforations at shallower depth adequately sealed with cement or otherwise to insure that they'll not be conduits for contamination of

ves, sir, they were squeezed when they re-entered this well and then the 7-inch casing was circulated when they completed it.

So that's more or less double insurance.

All right, sir, let's go to Exhibit

Number Eight, which is a series of four downhole schematics.

What are these, Mr. Ralston?

A This is the offset well belonging to

Layton Enterprises, Layton Enterprises, Coquina Oil Company,

and Layton Enterprises

A Have you examined the information contained on those exhibits to satisfy yourself that they will not be sources of contamination of shallower sand?

shallower zones?

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2	A.	Yes, sir.
3	Q.	Let's go to Exhibit Number Nine and have
4	you identify that fo	r me.
5	A.	This is the water and water analysis,
6	fresh water in the a	rea.
7	Q	In your opinion, Mr. Ralston, is the
5	method of completion	of this well for disposal purposes such
•	that it will not con	taminate fresh water sources in the area?
10	A .	Yes, sir.
11	Ď.	All right, sir, let's go to Exhibit
12	Number Ten. Are you	aware of any faulting or other hydro-
13	logic connections be	tween the disposal zone and any undergroun
14	water sources?	
13	A.	To my knowledge there are no faults in
16	this area for a 20-m	ile radius.
17	Q	All right, sir, and Exhibit Eleven is
İŠ	the notice to the of	fset operators and the surface owner.
19	A.	Yes, sir.
20	Q	Were Exhibits One through Eleven com-
21	piled under your dir	ection and supervision?
22	A.	Yes, sir.
23	Q.	And in your opinion, Mr. Ralston, will
24	approval of this app	clication be in the best interests of con-
25	servation, prevention	on of waste, and the protection of corre-

Okay, fine. Are there any other questions of Mr. Ralston?

He may be excused. Do you have anything further, Mr. Kellahin? MR. KELLAHIN: No, sir. MR. NUTTER: Does anyone have anything they wish to offer in Case Number 7349? We'll take the case under advisement. (Hearing concluded.)

CERTIFICATE

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Soery W. Boyd C.S.R.

I do hereby certify that the foregoing is ni spaint paste ed the Exa. 110 11 11 150 0. 734 heard by 110 on 11981

, Examiner Oil Conservation Division

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