CASE 5701: ARAHO, INC. FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO

CASE NO.

570/

APPlication,
Transcripts,
Small Exhibits,

ETC.



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO P. O. BOX 2088 - SANTA FE 87501

6/301

STATE GEOLOGIST EMERY C. ARNOLD

DIRECTOR
JOE D. RAMEY

LAND COMMISSIONER
PHIL R. LUCERO

Re: Mr. Ken Bateman	CASE NO. 5701 ORDER NO. R-5251
White, Koch, Kelly & McCarthy Attorneys at Law	
Post Office Box 787 Santa Fe, New Mexico	Applicant:
	Araho, Inc.
Dear Sir:	
Enclosed herewith are two co Commission order recently en	•

JOE D. RAMEY
Director

Yours very truly,

JDR/fd		
Copy of order also sent to:	•	
Hobbs OCC x Artesia OCC Aztec OCC		`
Other Anton Feterson		

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING:

> CASE NO. 5701 Order No. R-5251

APPLICATION OF ARAHO, INC. FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on June 23, 1976, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 3rd day of August, 1976, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Araho, Inc., is the owner and operator of the State SWD Well No. 2, located in Unit F of Section 2, Township 17 South, Range 36 East, NMPM, Lovington Field, Lea County, New Mexico.
- (3) That the applicant proposes to utilize said well to dispose of produced salt water into the Abo formation, with injection into the open-hole interval from approximately 8528 feet to 8900 feet.
- (4) That the injection should be accomplished through 2 7/8-inch plastic lined tubing installed in a packer set at approximately 8500 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure/vacuum gauge should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.
- (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 100 psi.
- (6) That the operator should notify the supervisor of the Hobbs district office of the Commission of the date and time of

-2-Case No. 5701 Order No. R-5251

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.
- (8) 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, Araho. Inc., is hereby authorized to utilize its State SWD Well No. 2, located in Unit F of Section 2, Township 17 South, Range 36 East, NMPM, Lovington Field, Lea County, New Mexico, to dispose of produced salt water into the Abo formation, injection to be accomplished through 2 7/8-inch tubing installed in a packer set at approximately 8500 feet, with injection into the open-hole interval from approximately 8528 feet to 8900 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/vacuum 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 100 psi.
- (3) That the operator shall notify the supervisor of the Hobbs district office of the Commission 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 Commission'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 Commission Rules and Regulations.
- (6) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

-3-Case No. 5701 Order No. R-5251

SEAL

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

STATE OF NEW MEXICO OIL CONSERVATION COMMISSION

PHIL R. LUCERO, Chairman

EMERY C. ARNOLD Member

FOE D. RAMEY, Hember & Secretary

TRETOLITE DIVISION

JUL 3 0 1976

DIL CONSERVATION COMM

Santa Fe

July 28, 1976

Mr. Richard L. Stamets New Mexico Oil Conservation Commission Box 2088 Santa Fe, New Mexico 87501

Re: Case No. 5701
Salt Water Disposal
Lovington Field
Lee County, New Mexico

Dear Sir:

As per your request, and from the instructions of Mr. Harold Bruno of Araho Inc., please find enclosed the water analysis report from the Fermiss Plant of Lovington field.

We trust the enclosure meets with your approval, we remain,

Sincerely yours,

TRETOLITE DIVISION

Ray 6. Shefful

Ray Shaffner Analyst

RS/1p

c/c: Mr. Harold Bruno
Box 5456
Midland, Texas 79701



TRETOLITE DIVISIO 363 Marshall Avenue / Saint Louis, Missouri 63119 (314) WO 1-3500/IWX 910-760-1660/Talex 44-2417

WATER ANALYSIS REPORTE CONSERVATION COMM

COMPANY	Araho Inc.	na katalaganga angalang dangan dapa (n.), a manahanga salahili (1888) (n.), a sasana (n.), i.), a	ADDRESS_ !!o	bbs, N.	2[_	DATE:	7/28/76
SOURCE _	LC St. S.W.D. Far	rmiss Plant	DATE SAMPLED	7/26	/76	ANALYSIS	11851
	Analysis			Mg/L		*Meq/L	
1	. PH	9.5					
2	P. HyS (Qualitative)	43.0 ppm			•		
3	3. Specific Gravity	1.000					
4	I. Dissolved Solids		_1	,454			
5	5. Suspended Solids						
ć	5. Pherolphthalein Alkali	inity (CaCO ₃)					
7	Methyl Orange Alkalin	פא (ניינט")		67 0			
8	3. Bicarbonate (HCO ₃)		HCO,	817	<u> </u>	13.4	HCO3
9	P. Chlorides (CI)		CI	180	÷35.5	<u>5.1</u>	CI
10	D. Sulfates (SO ₄)		\$0,	30	÷ 48	0.6	\$0,
1	1. Calcium (Ca)		Ca	76	÷20	3.8	Ca
12	2. Magnesium (Mg)		Mg	2	÷12.2	0.2	Mg
13	3. Total Hardness (CaC	(O ₁)		200			
1,	4. Total Iron (Fe)		•	0			
,	S. Barium (Ounlitation)	•					

*Milli equivalents per liter

16.

PROBABLE MINERAL COMPOSITION

Saturation Values Disca CO ₃ Ca SO ₄ • 2H ₂ O Mg CO ₃	HCO ₃ 30.4 0.6 5.1 stilled Water 20°C 13 Mg/L 2,090 Mg/L 103 Mg/L	Compound Ca (HCO ₃) ₂ Ca SO ₄ Ca Cl ₂ Mg (HCO ₃) ₂ Mg SO ₄ Mg Cl ₂ Na MCO ₃ Na ₂ SO ₄	81.04 68.07 55.50 73.17 60.19 47.62 84.00 71.03	Meq/L == 3.8 0.2 9.4 0.6 5.1	Mg/L
Stamets - Bru		Na CI	58.46		
c/c: Raybon - Rol	berts - Nix - File			Holly submitted	
			Ray_	Shaffner	· · · · · · · · · · · · · · · · · · ·



STABILITY INDEX CALCULATIONS (Stiff-Davis Method) CaCO₃ Scaling Tendency

SAMPLE	Sample Test No. #11851
Company Araho Inc.	Sample Date
Address	Submitted by
Sample	Field
S. I. = $pH - pCa - pAlk - F$	K
pAlk = negative logar	red on fresh sample rithm of calcium concentration rithm of total alkalinity ends upon temperature and salt content
pH = 9.5	pCa = 2.20 pAlk = 1.85
CALCULATION OF IONIC STRENG	GTH AND K VALUE
Na (<u>347</u>) X (2.2 X	$(10^{-5}) = 0.008$
Ca (<u>76</u>) X (5.0 X	$(10^{-5}) = 0.004$
Mg () X (8.2 X	$(10^{-5}) = 0.000$
C1 (<u>180</u>) X (1.4 X	$(10^{-5}) = 0.003$
HCO ₃ (<u>817</u>) X (0.8 X	$(10^{-5}) = 0.007$
SO ₄ (30) X (2.1 3	$(10^{-5}) = 0.001$
TOTAL IONIC STRE	ENGTH = 0,023
$\mathbf{K} = \underline{\qquad \qquad 2.15 \qquad \qquad @ \qquad }$	60 °F.
K =@	100 °F.
SI at $(\underline{60})^{\circ} = (\underline{9.50}) - (\underline{2.20})$	0 - (1.85) - (2.15) or + 3.30
SI at $(100)^{\circ} = (9.50) - (2.20)$	$0) - (1.85) - (1.80) \text{ or } \div 3.65$
SI = O or water is relatively sta	able atOF.
Remarks: Severe scaling tendencia	es at both 60°F and 100°F

TRETOLITE DIVISION

369 Marshall Avenue / Saint Louis, Missouri 63:19 (314) 961 3500 1 WX 910 760 1660 / Terex 44 2417

PLEASE REPLY TO

P. O. Box 6365, Terminal Station Midland, Texas 79701

Stiff-Davis

The Stiff-Davis calculations which are attached to this water analysis are designed to predict corrosion or scaling tendencies, only in relation to carbon dioxide or calcium carbonate. These calculations do not take into consideration the possible corrossive effects of other dissolved gases such as hydrogen sulfide or dissolved oxygen. Since this water also contains hydrogen sulfide, it may be corrosive due to the effects of this gas, even though the Stiff-Davis calculations do not predict it.

1;			
1	Cement Circulated &		1336'cs, 0 349'
	Coment Circubled		94,"co, @ 3318"
	Present lep 25 1/2" U	9.	Tie-in existing 5/2" (19. at 4141) and coment w/2005ke.
	27/3" Tubing on Packer C 5800'	-	- 5845 Perfora tions - 5968 Perfora tions
			- 6265 Rertora trons
	51/2"cq.		Present TO 8528
1	RE EXAMINER STAMETS VSERVATION COMMISSION	}	{
Submitte	5701 Applicant Dune 23, 1976	1	Deepen to 8900' - 43/4" hole
	DIAG RAMMA	TC 5	SKUTCH OF WELL
	Πο		ENC. STATE SOUD #2.

	•••				Asset Same		36	· · · · · · · · · · · · · · · · · · ·		• /
	17 37	, , , , , , , , , , , , , , , , , , ,	To have the second of the seco	David State Contracts State St	Series Al TITAL Series Al TITAL Series A T School Series A To The Series A T School Series A To The		Section 1	State Mil Derekhij F. Scherber per Francis Francis Contra	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
			Story Story	Trace Co. S. Cay Solby M. S. C	Constitution of the consti			50 S S S S S S S S S S S S S S S S S S S		
•			Constitution of the second of	C. E. Stackman D. F. Angelman	And Constant of the Street of	Social Section of the Control of the	Committy Committee in Committee	Control of		
476	20 De June 23, 15	Technique	Barrier Carro	Carrier Carrier	Comments of the Comments of th	10 mm		9	INGTON UNIT	LEYAU TO
-	5101		Conf. Statement of a	Toyle might the		Cores Servi	5 and			
NON NON	EXAMINER STAN	OIL CONS				0	100			
						1	Company (Company)			
• •			32 12 2			A130 (230)	LOVINGTON (PADDOCK) UNIT-	र ाज्यस्य पु		
1. 2.7 * * * * * * * * * * * * * * * * * * *			O(R) WIT OF	LOJINGTON(S.A.		The state of the s	SKELLY (OPER)			
				Tennero Gray on to	234	# 100 A				
				Control of the contro	Boro Live and Control		A STATE OF THE STA		2 () 1 ()	
		(provided to the control of the cont	A State of the sta	COST CONTROL CONTROL OF THE PROPERTY OF THE PR	Stang H:	The state of the s	Anarado H.B.P. A. 1469	, , , , , , , , , , , , , , , , , , , ,	CVP	

•	· Allahara danama	:				36	7		÷ .
37	7 7	135 Server 1	Can Salaran	Open a Little Survey (N). Graff Command Comma	Constant of the Constant of th		33		
		The state of the s	E Brockman DE Allicania	The state of the s	Arenna Comment	Committee of the commit	Seed M. Seed M		
		10 10 10 10 10 10 10 10 10 10 10 10 10 1	Carly Oil Carly Service Control Contro	Control of the contro	The state of the s	5		O (OPER)	WEST TO
		Constitution of the Consti	Secretary Control of the Secretary Control of		Chestary H.B.D. Bull 9		•		
30x23,14710	Hearing Date								
\$70.1	028 ZO.	32				A American	1		
BEFORE EXAMINER STAMETS	BEFORE EX	Services Services			10.11 (C. 11.11)	NOT DNIVOCAU	### ##################################		
		DUNIT CO	LOYINGTON (S.A.)		To the second of	SKELLY			
	200		Toneron The Control of the Control o	A STATE OF THE STA	A CANADA	(ar.)	100 to 10		
		200		Salar		ATTENDED TO THE PARTY OF THE PA	23	A A A A A A A A A A A A A A A A A A A	

<u>.</u>									
Cer	ment Circule	the		- -		137/8	j'cs, Q	349'	
				1					
0.						-14.			
	ment Circubi	id A	•		9	Ty"lage	<u> </u>	18	
	Present top z	51/2" lage	+	-	TIC-1	n CXIS Cermen	ting 5	'h''ug	at 4141
	27/3" Tubing Packer @ 5	on		2					
	Packer @ 5	·800'	-		5945 <u>5968</u>	Pertera	170175	}	W. J.
				11-	6185	Ker tora i	tons	> 21	50
,				- 1	9378 2480 F	erfora tr	ons		
	<u>ə</u> ັ/,	"Caj.			-	ret TO			,
	AMINER STAME			{					
		·	-{	<u> </u>					
CASE NO. 576				D∈	zepen.	to 8900	1'- 43/	ly" hole.	
Hearing Date of			- 						
									
	DIAG RAM	MATT	.C 5	ihe	TCH	01-	WEL	, <i>C</i>	

Dockets Nos. 19-76 and 20-76 are tentatively set for hearing on July 7 and July 21, 1976. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESPAY - JUNE 23, 1976

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

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

CASE 5689: (Continued from June 9, 1976 Examiner Hearing)

Application of Dalport Oil Corporation for an unorthodox oil well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Jones Federal Well No. 4 to be drilled 990 feet from the South line and 1477 feet from the West line of Section 22, Township 15 South, Range 29 Fast, South Lucky Lake-Queen Pool, Chaves County, New Mexico.

CASE 4843: (Reopened) (Continued from June 9, 1976 Examiner Hearing)

In the matter of Case 4843 being reopened pursuant to the provisions of Order No. R-4435-A, which order extended the special pool rules for the Southeast Chaves Queen Gas Area, Chaves County, New Mexico, including a provision for 320-acre spacing and proration units for gas wells. All interested parties may appear and show cause why said Order No. R-4435 should not be rescinded.

- CASE 5695: Application of Yates Petroleum Corporation for an unorthodox oil well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its J Lazy J Well No. 13, to be drilled as the 5th well on the 40-acre tract, in the center of Unit G, of Section 22, Township 17 South, Range 25 East, Eagle Creek-San Andres Pool, Eddy County, New Mexico.
- CASE 5696: Application of Yates Petroleum Corporation for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Eagle Creek-San Andres Fool by the injection of water into the San Andres formation through its J Lazy J Wells Nos. 3, 6, 9, and 11, all located in Unit G of Section 22, Township 17 South, Range 25 East, Eddy County, New Mexico.
- CASE 5697: Application of Elk Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Northeast Kemmito Unit Area comprising 3520 acres, more or less, of State land in Township 16 South, Range 34 East, Lea County, New Mexico.
- Application of El Paso Natural Gas Company for downhole commingling, Rio Arriba County, New Mexico.

 Applicant, in the above-styled cause, seeks authority to commingle South Blanco-Pictured Cliffs and
 Blanco Mesaverde gas production in the wellbore of its San Juan 29-7 Unit Well No. 82 located in
 Unit A of Section 4, Township 27 North, Range 7 West, Rio Arriba County, New Mexico.
- CASE 5699: Application of Dalport Cil Corporation for an exception to the provisions of Crder No. R-3221, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks, as an exception to the provisions of Commission Order No. R-3221, permission to dispose of, into earthen pits, produced salt water from its Jones-Federal Well No. 3 located in Unit K of Section 22, Township 15 Stuth, Range 29 Hast, South Lucky Lake-Queen Pool, Chaves County, New Mexico.
- CASE 9700: Application of Morris R. Antwell for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Penncylvanian formations underlying the S/2 of Section 24, Township 20 South, Range 27 East, Eddy County, New Mexico, to be dedicated to a proposed gas well to be drilled at an enchadox location in the S/2 of said Section 24. Also to be considered will be the cost of drilling and completing said well and the allocation of the costs thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5701: Application of Araho, Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Sun Andres, Ato and Paddock formations through the perferated interval from approximately 5745 feet to 5490 feet and the open-hole interval from approximately 8528 feet to 8900 feet in its State SVD Well No. 2, located in Unit F of Section 2, Township 17 South, Hange 36 East, Levington Field, Lea County, New Mexico.

CASE 5702: Application of Cities Service Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Tubb Gas Pool and Drinkard Oil Fool production in the wellbore of its Brunson "B" Well No. 7 located in Unit N of Section 3, Township 22 South, Range 37 Past, Lea County, New Mexico.

Araho, Inc.

684-8488

July 6, 1976

Hands Eramino

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501

Re: Case No. 5701 Examiners Hearing, June 23, 1976.

Gentlemen:

Attached is the water analysis you requested on a sample of the effluent water from the Famariss Refinery located near Lovington, New Mexico. This sample was taken in October, 1973. Although, the water should not have changed, we are having another sample analised and will mail you the results as soon as they are received.

Please advise if additional information is required.

Very truly yours,

ARAHO, INC.

Earl R. Bruno Vice-President

ERB/kf

cc: Mr. Ken Bateman,

Santa Fe, New Mexico

Enc.

TRETOLITE DIVISION 369 Marshall Avenue / Saint Louis, Missouri 63119 (314) WO 1-3500/TWX 910-760-1660/Telex 44-2417

WATER ANALYSIS REPORT

COMPANY_	Earl Bruno		ADDRESS	Midland,	exas	DATĒ:	10-15-73
SOURCE	Farmariss		DATE SAA	APLED 10-11	-73	ANALYSIS	7321
	Analysis	•		Mg/L		*Meq/L	
1.	РН	8.7		•			
2.	H ₂ S (Qualitative)	Neg.					
3.	Specific Gravity	1,000	•				
4.	Dissolved Solids			3,190			
5.	Suspended Solids						
6.	Phenolphthalein Alkal	inity (CaCO ₃)		110	_		
7.	Methyl Orange Alkalin	ity (CaCO _s)		580			
8.	Bicarbonate (HCO3)	•	HCO ₁	708 ————	_ ÷61	11.6	HCO,
9.	Chlorides (CI)		CI	104	_ ÷35.5	2.9 .	Ci
10.	Sulfates (SO ₄)		SO ₄	1,393	_ ÷48	29	so,
11.	Calcium (Ca)		Ca	40	÷20	2.0	Co
12.	Magnesium (Mg)		Мд .	10	_÷12.2	8,0	Mg
13.	Total Hardness (Ca	20')		130			
14.	Total Iron (Fe)	-		3.0 ppm	_		
15.	Barium (Qualitative))		Pos.			
16.							
*Mil	lli equivalents per liter		INSERAL COM	DOCITION			

PROBABLE MINERAL COMPOSITION

Compound Equiv. Wt. X Meq/L = Mg/L Compound Equiv. Wt. Sold							
EMARKS No. 16 So.46	0.8 Mg - Na - Saturation Ca Ca	N Values Dis CO ₃ SO ₄ • 2H ₂ O	stilled Water 20°C 13 Mg/L 2,090 Mg/L	Ca (HCO ₃) ₂ Ca SO ₄ Ca Cl ₂ Mg (HCO ₃) ₂ Mg SO ₄ Mg Cl ₂ Na MCO ₃ Na ₂ SO ₄	81.04 68.07 55.50 73.17 60.19 4/.62 84.00 71.03	2.0 0.8 8.8 29.0	59 739 2,060
On Montain The condition of the conditio			n/Livingston/ file				

D	ו	
Page		

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION Santa Fe, New Mexico June 23, 1976

EXAMINER HEARING

IN THE MATTER OF:

Application of Araho, Inc. for salt

water disposal, Lea County, New Mexico.)

5701

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

APPEARANCES

For the New Mexico Oil William F. Carr, Esq. Conservation Commission: Legal Counsel for the Commission State Land Office Building Santa Fe, New Mexico Ken Bateman, Esq.
WHITE, KOCH, KELLY & McCARTHY For the Applicant: Attorneys at Law 220 Otero Street Santa Fe, New Mexico For Amoco Production: Antone L. Peterson, III, Esq. Legal Counsel Amoco Production Company P. O. Box 3092 Houston, Texas ATWOOD, MALONE, MANN & COOTER Attorneys at Law P. O. Drawer 700

Roswell, New Mexico

sid morrish reporting service

General Cour: Reporting Service
325 Calle Mejia, No. 122, Santa Fe, New Mexico 87501

3

5

6

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

INDEX

	'	I N D E X	
	2		Page
	3	EARL BRUNO	
	4	Direct Examination by Mr. Bateman	3
	5	Cross Examination by Mr. Stamets	10
	6	Cross Examination by Mr. Peterson	12
	7		
	8		
8 87501	9		
ng service Ig Service , New Mexico 87501	10		
10 86 18 Servit 19 New N	11	EXHIBIT INDEX	
reporting rr Reporting Se Sunta Fe, Ne	12		Page
Sh 122 122	13	Applicant's Exhibit One, Plat	10
morrish General Co Mejia, No. 12 Phone	14	Applicant's Exhibit Two, Diagrammatic Sketch	10
sid morri General 825 Calle Mejia, No. Ph	15	Applicant's Exhibit Three, Log	10
825	16		
	17		
	18		
	19		
	20		
÷	21		
	22		
	23		
	24		
	25		

2

6

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

MR. STAMETS: We will call the next Case 5701.

MR. CAR: Case 5701, application of Araho, Inc. for salt water disposal, Lea County, New Mexico.

MR. STAMETS: I would call for appearances in this case.

MR. PETERSON: Mr. Examiner, Antone Peterson representing Amoco Production Company. The file should reflect a
letter from local counsel, Atwood, Malone, Mann and Cooter.

If it doesn't I have a copy of that letter.

MR. STAMETS: Yes, it does.

MR. PETERSON: Amoco may wish to ask a few questions and perhaps make a short statement.

MR. BATEMAN: Mr. Examiner, I'm Ken Bateman of White, Koch, Kelly and McCarthy representing the applicant. I have one witness and I ask that he be sworn.

(THEREUPON, the witness was duly sworn.)

EARL BRUNO

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BATEMAN:

- Q Would you state your full name and occupation, please?
- A. Earl Bruno, Petroleum Engineer.

1 :

2

3

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Q.	Βv	whom	are	vou	employed:	?
¥4.	Dγ	WIIOM	u i, c	you	emproyed.	٠

- A. Araho, Incorporated.
- Q What is your address?
- A. Post Office Box 5456, Midland, Texas.
- Q In what capacity are you employed by the applicant?
- A. Vice President and I operate the disposal system.
- Q Have you previously testified before the Commission?
- A. Yes, sir.
- Q Did you at that time make your qualifications a matter of record?
 - A. Yes, sir.

MR. BATEMAN: Is the witness acceptable?

MR. STAMETS: Yes, he is.

Q (Mr. Bateman continuing.) Mr. Bruno, would you state briefly what Araho seeks in their application?

A. We would like to reenter the old Marathon State No.
Well located at Section 2, Township 17 South, Range 36 East
and complete it as a water disposal well.

Q. What is the source of the water that you are seeking to dispose?

- A. It is effluent water from the Famariss Refinery.
- \hat{u} Is that water necessarily salt water?
- A. No, sir, not all of it. Some of it is just water they flush and it has a little caustic in it and some of it has salt and a lot of fresh water and then a lot of it I'm

. .

2

6

8

9

10

11

13

14

15

16

17

18

19

20

21

22

23

24

25

sure is contaminated with refined products.

MR. BATEMAN: Mr. Examiner, I would like to point out a discrepancy in the publication of it indicating that we are seeking permission to dispose of produced salt water.

MR. STAMETS: Go ahead.

- Q. (Mr. Bateman continuing.) Mr. Bruno, would you refer to what has been marked as Exhibit Number One and locate the well in question?
- A. The well is located sixteen hundred and fifty feet from the north line and twenty-three hundred and ten feet from the west line of Section 2, Township 17 South, Range 36 East, Lea County, New Mexico.
- Q. That is marked in green I believe on Exhibit Number One, is it not?
 - A. Correct.
 - Q Is there another disposal well in the area?
- A. Yes, sir, the offset well to the north is a Rice Engineering disposal well, disposing of approximately six thousand barrels of produced salt water a day from the production to the east.
- Q. In what interval is the Rice Engineering disposing of water?
 - A. From eighty-four, forty to eighty-eight, fifty-eight
 - Q. Is that the Abo formation?
 - A. Yes, sir.

Pane	6	

Q. Do you presently have a water disposal well in the area?

A. We have a disposal well in Section 1, same township and range and we are disposing in the Fusselman.

- Q. That is indicated on Exhibit One then?
- A. Yes, sir.
- Q In the penciled circle, is that correct?
- A. Yes, sir.

Q What is the status of the well which is the subject of your application?

- A. It is presently plugged and abandoned.
- Q. What is its production history?

A. It was completed in the Abo and the records show that it produced maybe thirty to sixty days and went to water and the records show that they attempted to squeeze it and weren't able to and plugged back to the Paddock and were not successful there and the well was plugged and abandoned and later reentered and a water disposal well was attempted to be made in the San Andres and they were unsuccessful and the well was replugged.

Q. Are you having any difficulty with disposal of water in the other well at the moment?

- A. No, sir.
- Q. Then would you proceed with Exhibit Number Two which is a diagrammatic sketch of the well and tell the Commission

Page	7	
raue		

Tá

2

3

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

25

how you propose to complete the well?

A. We propose to clean out the cement plugs down to a depth of forty-one, forty one which is the top of the five-and-a-half casing and tie back into the five-and-a-half-inch casing and bring it to the surface; clean out the plugs and packers down to a total depth of eighty-five, twenty-eight, drill a four-and-three-quarter-inch hole from eighty-five, twenty-eight to eighty-nine hundred feet and equip the well with two-and-seven-eighths-inch plastic coated tubing and dispose of water in the Lower Abo.

- Q Will that be taken on a vacuum?
- A. The offset well is on a vacuum so we expect this to be a vacuum.
- Q. What volume of water will you attempt to dispose of in this well?
 - A Six to eight thousand barrels a day.
- Q. I believe you testified that the Rice Engineering well was taking six thousand a day, is that correct?
 - A. Yes, sir.
- Q. Now, the five-and-a-half-inch casing that you are going to replace into the well will be cemented, is that correct?
 - A. Yes, sir.
- Q. And at what point do you anticipate placing a packer?

1 2

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

- A. We will set a packer at eighty-five hundred feet.
- Q. And how will you determine whether or not there is any communication of fluids up the hole?
- A. We will test the five-and-a-half-inch casing seat at eighty-five, twenty-eight and pressure test to determine if there is any water coming around the shoe.
 - Q What about in the tubing annulus?
- A Well, if there is communications around the shoe we will get circulation out the annulus between the tubing and the five-and-a-half.
- Q. Will you also load the tubing annulus with inert fluid?
 - A. Yes.
 - Q. And will there be a pressure gauge on that?
 - A. Yes.
 - Q How often will that be checked?
 - A. We can check it daily.
 - Q Is there any other fresh water in the area?
- A. Yes, sir, the Ogallala produces, I don't know at what depth but I guess approximately two hundred feet and it is protected in this well by two strings of casing cemented to the surface.
- Q. All right, now, you have also prepared and we have presented to the Commission as Exhibit Number Three, a log of the well, is that correct?

_		
A.	Yes,	sir
n.	1001	

Q. And what does that log disclose concerning the existing perforations?

A. It shows the porosity in the perforations in the Abo from eighty-three, seventy-eight to eighty-four, eighty but it doesn't show any porosity in the Paddock and the porosity log was not run on the San Andres.

- Q Now, if the water is being taken by the well on a vacuum, where do you believe the water is going to go?
- A. In the open-hole section in the Lower Abo from eighty-five, twenty-eight to eighty-nine hundred feet.
- O Do you expect any of the water to go into the Abo, Paddock or San Andres perforations?
- A. No, mechanically it won't be able to because we will have that sealed off with a packer.
- Q. That is at eighty-five hundred feet, is that correct?
 - A. Yes.
- Q. In your opinion if the Commission approves your application will the completion of the well as you have testified protect correlative rights and prevent waste?
 - A. Yes, sir.
- Q. Were Exhibits One through Three prepared by you or under your direction?
 - A. Yes, sir.

2

3

5

6

7

8

9

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

and that completes our testimony.

MR. STAMETS: These exhibits will be admitted.

(THEREUPON, Applicant's Exhibits One through

MR. BATEMAN: We offer Exhibits One through Three

Three were admitted into evidence.)

CROSS EXAMINATION

BY MR. STAMETS:

Mr. Bruno, I would like to get to the perforations here now that are shown on Exhibit Two, from fifty-eight, forty-five to eighty-four, eighty. It is my understanding that you will either squeeze these perforations or insure that they are otherwise adequately sealed before starting to inject into this well?

- Yes, sir.
- And that the packer will be placed below the lowermost perforations?
 - Yes, sir.
- Now, as far as the perforations are concerned, would it be agreeable to abide by the decision of the District Supervisor in this matter whether or not these must be squeezed by cement or some other acceptable manner of sealing them off?
 - Yes, sir. A.
 - Q. The tubing that is to be used in this well, is it to

be plastic coated or internally coated?

- A. Plastic coated.
- And then the annular space between the tubing and the
 five-and-a-half-inch casing will be loaded and gauged with a
 gauge which would show either positive or negative pressure?
 - A. Yes, sir.
- 0. Do you have a water analysis on the water to be disposed of?
- A. I don't have it with me. I have one available, though.
- Q. Is it a complete analysis that shows the hydrocarbons as well as the normal water analyses?
- A. No, sir, it would just be one that I had run for corrosion purposes by Tretolite.
- Q. Under the circumstances I believe a complete water analyses, including hydrocarbons and organics, would be called for in this case and the Examiner requests that the same be submitted at some date before an order will be issued.
- A. By that do you mean the percentage of hydrocarbons in the water?
- Q. What is in the water in the nature of hydrocarbons, organics, anything that would not be a normal water constituent in the area of magnesium, salts, calcium carbonate this type of thing.

MR. STAMETS: We will take a short recess.

3

5

6

7

8

9

10

11

12

13

14

15 16

17

18

19

20

21

22 23

24

25

morrish reporting service

ķá

(THEREUPON, the hearing was in recess.)

MR. STAMETS: The hearing will come back to order.

Mr. Bateman, the application for salt water disposal appears to be broad enough and we don't propose to readvertise this case.

MR. BATEMAN: Thank you.

MR. STAMETS: Are there any other questions of the witness?

MR. PETERSON: Yes, Mr. Examiner, I might ask a short question.

CROSS EXAMINATION

BY MR. PETERSON:

Mr. Bruno, you have testified that you would anticipate a zero surface pressure since the Rice well to the north is injecting on a zero surface pressure?

A. Yes.

And you would be amenable if the Commission order reflects a zero surface pressure, that would fall in line with your expectation and that would be all right with you?

A. Eventually we would expect the well -- the well wouldn't stay on vacuum forever, you don't know how many millions of barrels or how long a time but eventually you would have to dispose of water under pressure. I don't know when that would be.

Ìř

Q At that time would you come back to the Commission, assuming the Commission order reflects a zero surface pressure, come back to the Commission and alter the order?

A. Would we do that, sir. Yes, we will.

MR. PETERSON: Amoco has no further questions. I would like to say that Amoco does not object to this injection well, assuming that the surface pressure is zero, the injection pressure, and that adequate assurances, which I think they have been given, there will be no communication between these perforations in this well in the Upper Abo and Amoco's offsetting Abo production.

MR. STAMETS: Along these lines, let me ask a question to the representative of Amoco and the applicant in this case.

Recent orders on injection wells have limited
the pressure at the surface to such a degree that the pressure
at the bottom hole will be no more than seven-tenths of a
pound per foot of depth. Would there be any objection to an
order issued in this case which would limit the surface
pressures to that point?

MR. PETERSON: Could I have a moment for consultation, please?

MR. STAMETS: Certainly,

MR. BRUNO: Seven-tenths of a pound per foot?

MR. STAMETS: Yes, we are off the record.

2

3

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

(THEREUPON, a discussion was held

off the record.)

MR. STAMETS: Back on the record.

If Amoco has any information that they could submit to the Commission which we could utilize in determining an appropriate surface pressure limitation or any recommendation which Amoco might have, we will allow ten days.

MR. PETERSON: Amoco will be glad to furnish fracture data.

MR. STAMETS: And, of course, the same would apply to the applicant in this case.

Is there anything further?

MR. BATEMAN: Nothing further.

MR. STAMETS: The witness may be excused.

(THEREUPON, the witness was excused.)

MR. STAMETS: If there is nothing further the case will be taken under advisement and the hearing will be adjourned.

(THEREUPON, the hearing was adjourned.)

22

23

24

Page	1.5
raye	

REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a Cortified Shorthand Reporter,
do hereby certify that the foregoing and attached Transcript
of Hearing before the New Mexico Oil Conservation Commission
was reported by me, and the same is a true and correct record
of the said proceedings to the best of my knowledge, skill and
ability.

Sidney F. Morrish, C.S.R.

sid morrish reporting service

General Court Reporting Service
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501
Phone (505) 982-9212

I do hereby certify that the foregoing 1° a complete record of the proceedings the Examiner hearing of Case No. 5700 hear by my or 19

New Mexico Oil Conservation Commission



Amoco Production Company

500 Jefferson Building P.O. Box 3002 Houston, Texas 77001

T. Don Stacy
Diversity Engineering
Manager

July 1, 1976

File: DRC-986.51NM-2687

Re: Case 5701

Salt Water Disposal Well

Lovington Field

Lea County, New Mexico

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501

Attention: Richard L. Stamets

Gentlemen:

The amended application of Araho, Inc. for approval to dispose of produced water in its State SWD Well No. 2, located in Unit F of Section 2, Township 17 South, Range 36 East, Lovington Field, Lea County, New Mexico, was heard before Examiner Richard L. Stamets on June 23, 1976. Amoco Production Company had no objection to the application as amended provided that the resultant order limit surface injection pressure to 0 psig. Inasmuch as the Commission ordinarily allows a bottom-hole injection pressure having a 0.7 psi/ft gradient, Amoco was given the opportunity to supply the Commission with parting pressure data for off-setting Lovington-Abo Pool producing wells.

The attached tabulation reflects all well stimulations performed on Amoco's Lovington-Abo Pool completions in which the instantaneous shut-in pressures (ISIP) were recorded in our files. All of the stimulations were acid treatments. It is apparent that in most of the stimulations performed, the formation parted due to the fluid column weight alone.

On the basis of evidence discussed above, we respectfully urge the Commission to limit the surface injection pressure

New Mexico Oil Conservation Commission July 1, 1976 Page 2

in Case 5701 to 0 psig. This would prevent interference with Amoco's offsetting Abo production that could shorten well lives and reduce oil recovery.

Yours very truly,

Attachment

ce: Araho, Inc. w/attachment P. O. Box 5456

Midland, TX 79701

JCH:as

WELL STIMULATIONS AMOCO'S STATE "E" TRACT 18 LOVINGTON-ABO POOL LEA COUNTY, NEW MEXICO

Well No.	Date	Interval		ISIP
15	5/70 2/74 4/7 5	8290-8297' 8384-8438' 8231-8244' 8107-8188'	Acidize with 500 gal 15% LSTNE Acidize with 5000 gal 20% LSTNE Acidize with 2000 gal 20% LSTNE Acidize with 2000 gal 15% clean flow acid	Vacuum Vacuum Vacuum Vacuum
16	1/64 7/64	8291-8301' 8346-8356' 8230-40', 50-57'	Acidize with 500 gal LSTNE Acidize with 500 gal LSTNE Acidize with 500 gal 15% regular acid	Vacuum Vacuum 450 psi
	6/70	8230-40', 50-57'	Acidize with 500 gal 15% LSTNE	400 psi
	4/72	8230-40' 50-57'	Acidize with 1500 gal 15% acid	2350 psi
	9/72 10/72	8291-8302' 8370-8380'	Acidize with 1000 gal 15% NE Acidize with 500 gal NE	Vacuum Vacuum
17	1/74	8375-8432'	Acidize with 5000 gal 20% chemically retarded acid	Vacuum
18	3/64 8/73	8241-8262' 8241-8392'	Acidize with 500 gal 15% LSTNE Acidize with 5000 gal 15% SRA-1 x 1000 gal SAF Mark II	2100 psi 2000 psi
19	8/72	8340-8350'	Acidize with 750 gal 15% NE	Vacuum
20	4/64 5/68 9/71	8272~8288' 8384-8400' 8338-8348' 8230-34',	Acidize with 500 gal 15% LSTNE	1000 psi Vacuum Vacuum Vacuum
	5/73	40-44', 56-62' 8274-82',	Acidize with 2000 gal 20% HCl-NE	Vacuum
	8/74	92-99' 8338-8348'	Acidize with 500 gal 20% HCl	Vacuum
22	10/71	8292-8316'	Acidize with 1000 gal 15% CRA x 500 gal diverter	2600 psi
23	4/73	8234-8268'	Acidize with 1500 gal 15% LSTNE	Vacuum

Marathon Oil Company

June 7, 1976

Houston Division Production Operations US & Canada

PO 80x 552 Midland Texas 79701 Telephone 915/682 1626

New Mexico Oil Conservation Commission P. O. Box 2088

Santa Fe, New Mexico 87501

Attention: Mr. Joe D. Ramey, Secretary-Director

Gentlemen:

Enclosed herewith is Notice of Transfer of Well whereby Marathon Oil Company has transferred all of its interest in the Marathon State B-4286-A Well No. 2 to Araho, Inc., effective June 7, 1976.

Yours very truly,

MARATHON OIL COMPANY

A. W. Hanley District Landman

xc: Araho, Inc.

Case 5701

Araho application to utilize this well for SWD

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501

Attention: Secretary-Director

Re: Notice of Transfer of Well

Gentlemen:

You are hereby notified that, effective June 7, 1976 1976, Marathon Oil Company (Transferor), has transferred all of their interest in the following well in the State of New Mexico to Araho, Inc. (Transferee):

Well Name

Location

Marathon State B-4286A

Approximately 2310 feet from the west line and 1,650 feet from the north line of Section 2, Township 17 South, Range 36 East, Lea County, New Mexico

Pursuant to Rule 101(c) of the Commission's General Rules, please approve this transfer and release Transferor of the plugging responsibility for the well listed above.

MARATHON OIL COMPANY

C. L. Roberts

Onshore Division Operations Manager

PPROVED A

Pursuant to Rule 101(b) of the Commission's General Rules, the undersigned Transferee hereby accepts the above described transfer and accepts all responsibility for the transferred well under Transferee's blanket bond (No. A-E-71198-76) on file with the Commission or submitted herewith.

ARAHO, INC.

Earl R. Bruno

Vice President

CORRECTED FORM

Form C-108 Revise 1 3-1-68

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR			ADDRESS	A Proposition of the Contract	
Araho	. Inc.		P. O. Box	5456. Midla	nd, Texas 79701
LEASE NAME	L	WELL NO.	FIELD		COUNTY
State SWD		2	Dry Hole		Lea
LOCATION			Amount through a single of the		
UNIT LETTER	<u>F</u> : v	NELL IS LOCATED2	310 FEET FROM TH	West the	AND 1650 FEET FROM THE
North LINE, SECTION	2 <u>r</u>	OWNSHIP 175	RANGE 36E	чирм,	
		CASING	AND TUBING DATA		
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING					
NTERMEDIATE	13 3/8	349'	450	Circulated	Visual
MIERWEDIATE	0.5/0	12101	1750	G-1	
ONG STRING	9 5/8	3318'	1750	Circulated	Visual
	5 1/0	05001	1400	2000	
TUBING	5 1/2	8528'	1400	3000	Temp. Survey
	2 7/0	E000:	·		
AME OF PROPOSED INJECTION FORM	2 7/8	5800'	TOP OF FORMATION	le1 "V" 5800	OTTOM OF FORMATION
San Andres, A	BO. Paddo	ch	8300'		89001
S INJECTION THRO GH TUBING, CAS	•		S OR OPEN HOLE! PROPOSE	D INTERVAL(S) OF INJECTI	
Tubing		Dot	h Domf	E045. 0400.	0500 0000 0
S THIS A NEW WELL, DRILLED SON	IF ANSWER	IS NO, FOR WHAT PURPO	SE WAS WELL ORIGINALLY	. 3043; 6460;	8528: 8900 Openho
deepened from	85281	ARO produce	r-deenen from	1 -	ION ZONE?
IST ALL SUCH PERFORATED INTERV	ALS AND SACKS OF	CEMENT USED TO SEAL O	OFF OR SQUEEZE EACH	(0520-0500)	Yes
EPTH OF BOTTOM OF DEEPEST		DEPTH OF BOTTOM OF OIL OR GAS ZONE IN	T NEST HIGHER	DEPTH OF TOP OF	F NEXT LOWER
THESH WATER ZONE IN THIS AREA		None		ì	None
NTICIPITED DAILY MINIMUM	MAXIMUM		SED TYPE SYSTEM IS !	NJECTION TO BE BY GRAVIT	Y OR APPROX. PRESSURE (FSI)
7000 5000	9000	Close	d i	Gravity	20" Vac.
NSWER YES OR NO WHETHER THE FERALIZED TO SUCH A DEGREE AS TO	OLLOWING WATERS A	ARE MIN- WATER	TO BE DISPOSED OF NATE	Yes	RE WAYER ANALYSES ATTACHED?
TOCK, IRRIGATION, OR OTHER GENE	RAL USE =	!	i i	Yes	Yes
AME AND ADDRESS OF SURFACE OW		STATE OR FEDERAL LAN	(0)		
City of Lovin	_				
IST NAMES AND ADDRESSES OF AL	OPERATORS WITHIS	ONE-WALE () SAME OF	THIS HUSSTION WELL		
Note: The 51/2	" casing :	liner or ti	e in string a	and the 2 7/8	" tubing to be
					_
run after app	roval of	this applic	ation.		
Skelly Oil Co	mnanu 2n	d Place Wa	11 Toward Was	+ Midland	Morra
Skelly Oll Co	mpany, zm	u F1001, wa	TI TOWELS WES	st, Mitalana,	1exas
				e north of t	his well, disposir
in approximat	ely the sa	ame interva	1.		
LAVE CODIES OF THE ADDITION	BEEN SURFACE OF	ANEO	FACH COMPATION WE	THIN ONE-HALF MILE	
HAVE COPIES OF THIS APPLICATION SENT TO EACH OF THE FOLLOWING?	I SORFACE OF		OF THIS WELL	VIII-IINEE MICE	
ARE THE FOLLOWING ITEMS ATTACH	ED TO PLAT OF AR	Yes	Yes		AGRAMMATIC SKETCH OF WELL
HIS APPLICATION (SEE RULE 701-	3) 1		1	1	
	i	Yes	'Yes	i_	Yes
Q I hereby	certify that the is $ olimits$	nformation above is	true and complete to the	he best of my knowled	ge and belief.
Conse R K	64,00	₹7 : ~ =	Drogidont	-	funo 7 1076
yur /1. 1	runiu_		-President (Tide)		fune 7, 1976
IDECEMBER 1			1111111		i coute i

	L		i		
0	I hereby certify that the is	nformation above is	s true and complete to the best	t of my knowledge and	belief.
-0011	2 BL.	***	n '1 '	_	B 1056
Jure,	1. Willio	Vice	e-President	<u>June</u>	1, 1975
•	(Signature)		(Title)		(Date)

NOTE: Should valvers from the surface owner and all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15 day waiting period no protest has been received by the Sunta Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

CORRECTED FORM

Form C-108 Revised 3-1-68

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
					14.
Inc.	Twell no	P. O.	Box 5456	, Midlan	
		Dry Ho	110		Lea
		I DLY IK	716		
F	2	210	Wo	ct	1650
<u>+</u>	ELL IS LOCATED	JIO FEET P	ROM THE TYC	LINE AN	D TOOU FEET FROM T
2 10	WHEHIP 175	RANGE 36	5E NMPM.		
	CASING	S AND TUBING DA	TA		
SIZE	SETTING DEPTH	SACKS CEME	NT TOP	OF CEMENT	TOP DETERMINED BY
22.270	2401	450	١	• . •	
13 3/8	349	450	Circ	ulated	Visual
9.5/8	33181	1750	Circ	nlated	Visual
1 3 3/ 0	3310	1750	-	uraceu	VISUAL
5 1/2	85281	1400	3000) 	Temp. Survey
/					1 1cmp. Durvey
2 7/8	5800'	Baker	Model "V	7" 5800	
		1	MATION	8071	OM OF FORMATION
-		1			8900'
-	1				
I F ANSWER	S NO. FOR WHAT PURP	h]	Perf 5845	; 8480;	8528; 8900 Openh
05 201	Apo a a Out	acacch an	from OF 20	POOLITION	
LIS AND SACKS OF	EMENT USED TO SEAL	OFF OR SQUEEZE EAC	LIOIII 8528	-8900]	<u>Yes</u>
	DEPTH OF BOTTOM C	OF NEXT HIGHER	0	EPTH OF TOP OF N	EXT LOWER
	None				None
I MAXIMUM	OPEN OR CLO	SED TYPE SYSTEM	IS INJECTION T	D BE BY GRAVITY	OR APPROX. PRESSURE (PSI)
; 9000				rity	20" Vac.
ILLOWING WATERS A Be unfit for dome Ral USE —	RE MIN- WATE Stic, !		F NATURAL WATES	IN DISPO- ARE	Yes
	STATE OR FEDERAL LA		103		103
•		•			
•	ONE-HALF () MILE O	F THIS INJECTION WE	ii.		
" casing '	liner or ti	e in stri	ng and th	o 2 7/8"	tubing to be
custing	IIIICI OI CI	te in seri	ing and cr	ie 2 776	cubing to be
coval of	this applic	cation.			
			**	33 3 5	
npany, 2nd	Floor, Wa	all Towers	west, Mi	.alana, T	exas
			mile nor	th of th	<u>is well, disposi</u>
ely the sa	ame interva	al.			
BEEN SURFACE OF	VNER			ALF MILE	
t 1		OF THIS WE			
ED TO PLAT OF AR			. LOG	DIAG	RAMMATIC SKETCH OF WELL
i i	Yes	Yes		i i	Yes
certify that the in			re to the best o		
				,ge	
	SIZE 13 3/8 9 5/8 5 1/2 2 7/8 ATION 30, Paddoc 15 ANSWER 6 8528 1 2 16 ANSWER 6 16 ANS	TOWNSHIP 17S CASING SIZE SETTING DEPTH 13 3/8 349' 9 5/8 3318' 5 1/2 8528' 2 7/8 5800' ATION 30, Paddoch If ANSWER IS NO. FOR WHAT PURP 8528' ABO produce ILLS AND SACKS OF CEMENT USED TO SEAL DEPTH OF BOTTOM: NONE MAXIMUM OPEN OR CLC DEPTH OF BOTTOM: NONE MAXIMUM OPEN OR CLC SELLOWING WATERS ARE MIN. WATER ALL USE- ICER (OR LESSEE, IF STATE OR FEDERAL LIST GOVAL OF THIS APPLICATION COVAL OF THIS APPLICATION OPERATORS WITHIN ONE-HALF (1) MILE OF COVAL OF THIS APPLICATION I CASING liner or time of the country of the countr	TOP OF FOR SOUTH THIS AREA NO. PERFORATION OF ACRYS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH OF THE STATE OR FEDERAL LAND) I MAXIMUM OPERATOR OF THE STATE OR FEDERAL LAND) I MAXIMUM OPERATOR OR UNIT TOP STATE OR SQUEEZE EACH OF THE STATE OR S	TINC. P. O. Box 5456 2 Dry Hole	Inc. P. O. Box 5456, Midlan Pictor Pictor

Carl R. Bruno Vice-President June 7, 1976
(Signature) (Title) (Date)

NOTE: Should valvers from the surface owner and all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. See Rule 701.

CORRECTED FORM

Form C-108 Revised 3-1-68

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR			ADDRESS			
Araho,	Inc.	WELL NO.	P. O.	Box 5456	6, Midlan	d, Texas 79701
State SWD		2	Dry He	വില		13/3 Lea
LOCATION			1227 22		- + + 2 - 1	1.3 Dea
UNIT LETTER	P ; we	LL IS LOCATED	2310	ROM THE	CST LINE A	ID FEET FROM THE
North Line, section	2 точ	VNSHIP 17S	RANGE 36	б Е ммрм.	•	1
			NG AND TUBING DA			
NAME OF STRING	SIZE	SETTING DEPT	H SACKS CEME	NT TO	POFCEMENT	TOP DETERMINED BY
SURFACE CASING	13 3/8	349'	450	Circ	culated	Visual
INTERMEDIATE						
	9 5/8	3318'	1750	Cir	culated	Visual
LONG STRING	5 1/2	8528'	1400	3000		Temp. Survey
TUBING			NAME, MODEL AND	DEPTH OF TUBING	PACKER	
	2 7/8	5800'		Model "		
NAME OF PROPOSED INJECTION FORM		Ĩm.	TOP OF FOR	MATION	eot:	TOM OF FORMATION
San Andres, AF			8300 1	BOOKED INTERV	L (\$) 05 (\$)50 TO	8900'
		_				į.
Tubing IS THIS A NEW WELL, ORILLED FOR OIL WELL OIL WELL	IF ANSWER IS	BO NO. FOR WHAT PUR	th	Pert 584.	5; 8480;	8528: 8900 Openhol Well ever been perforated in any e other than the proposed injec-
deepened from	1		er-deepen			¿ZONE?
LIST ALL SUCH PERFORATED INTERVA	LE AND SACKS OF CI	EMENT USED TO SEA	LOFF OR SQUEEZE EAR	H 6520	8=87001	Yes
DEPTH OF BOTTOM OF DEEPEST		DEPTH OF BOTTOM	OF NEXT HIGHER		DEPTH OF TOP OF N	REXT LOWER
FRESH WATER ZONE IN THIS AREA 200 1		None	IN THIS AREA	ľ	OIL OR GAS ZONE I	None
ANTICIPATED DAILY MINIMUM	MAXIMUM		LOSED TYPE SYSTEM	IS INJECTION T	TO BE BY GRAVITY	
7000 5000	9000	Clos	ed	1	vity	20" Vac.
ANSWER YES OR NO WHETHER THE FO ERALIZED TO SUCH A DEGREE AS TO	LLOWING WATERS AR	E MIN- WAT			ER IN DISPO- ARE	WATER ANALYSES ATTACHED?
STOCK, IRRIGATION, OR OTHER GENER	RAL USE -	!	Yes	Yes		Yes
NAME AND ADDRESS OF SURFACE OWN		STATE OR FEDERAL	LAND)			
City of Loving						
LIST NAMES AND ADDRESSES OF ALL		•	-			
Note: The 5½'	'casing l	iner or t	<u>ie in stri</u>	<u>ng and t</u> i	<u>he 2 7/8"</u>	tubing to be
- 51		1				
run after appı	roval of t	nis appii	cation.			
Skelly Oil Cor	npany, 2nd	Floor, W	Wall Towers	West, M	idland. T	exas
Note: Rico Ex	ngineering	has a SW	D well 1/4	mile no	rth of th	is well, disposin
in approximate						
THE OPPLOATING	-ry cire sa	THE THEFT	ar.			
HAVE COPIES OF THIS APPLICATION SENT TO EACH OF THE FOLLOWING?	BEEN SURFACE OW	NER	EACH OPERA	LTOR WITHIN CHE-	HALF MILE	
	i i	Yes	Yes		, E	
ARE THE FOLLOWING ITEMS ATTACHS THIS APPLICATION (SEE RULE 701-B	O TO PLAT OF ARE	A	ELECTRICAL	LOG	DIA	GRAMMATIC SKETCH OF WELL
	1	Yes	Yes		1	Yes
I hereby o	ertify that the in	formation above	is true and comple	te to the best of	of my knowledge	and belief.
2 . 02			·			
Carl K. Dr	uno	Vic	e-Presiden	<u>t</u>	Ju	ine 7, 1976
(Signature)			(Title)			(Date)

NOTE: Should waivers from the surface owner and all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15 day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

ATWOOD, MALONE, MANN & COOTER LAWYERS

JEFF D. ATWOOD [1883-1960] ROSS L.MALONE [1910-1974] CHARLES F. MALONE RUSSELL G. MANN PAUL A. COOTER BOB F. TURNER ROBERT A. JOHNSON JOHN W. BASSETT ROBERT E. SABIN RUFUS E. THON TSON

RALPH D. SHAMAS

P.O. DRAWER 700
SECURITY NATIONAL BANK BUILDING
ROSWELL, NEW MEXICO 88201
[505] 622-6221

June 18, 1976

Mr. Joe Ramey Director Oil Conservation Commission State Land Office Building Santa Fe, New Mexico 87501

Re: Examination hearing June 23, 1976

Dear Mr. Ramey:

Please find our enclosed Entry of Appearance in case No. 5701. Thank you and with regards, I am,

Very truly yours,

Charles F. Malone

CFM:skw enclosure

cc/w encl.: Mr. Guy Buell

BEFORE THE OIL CONSERVATION COMMISSION STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION	}
OF ARAHO, INC. FOR SALT WATER)
DISPOSAL, STATE SWB WELL NO. 2,	No. 5701
LOVINGTON FIELD, LEA COUNTY,	\
NEW MEXICO) }

ENTRY OF APPEARANCE

The undersigned hereby enter their appearance in this matter with Antone Peterson of Houston, Texas on behalf of Amoco Production Company.

ATWOOD, MALONE, MANN & COOTER

Post Office Drawer 700

Roswell, New Mexico 88201

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROL'S FORMATION

OPERATOR			ADD	RESS		
Araho, Inc.		WELL NO.			x 5456, Midl.	and, Texas 79701
State SWD		2	1	Dry Hole		Lea
UNIT LETTER	F	ELL IS LOCATED	2310	_FEET FROM THE	West	AND 1650 FEET FROM THE
North Line, Section	2 10	wnship 17	S RANGE	36E	NMPM,	
		CAS	ING AND TUB	ING DATA		
NAME OF STRING	SIZE	SETTING DEP	TH SACK	SCEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	13 3/8	349'	450		Circulated	Visual
INTERMEDIATE	9 5/8	3318'	1750		Circulated	Visual
LONG STRING	5 1/2	8528'	3.400	, , , , , , , , , , , , , , , , , , ,	3000	Temp. Survey
TUBING			NAME, MOD	EL AND DEPTH OF	TUBING PACKER	
NAME OF PROPOSED INJECTION FORMA	2 7/8	6300'			<u>"V" 5800 </u>	
San Andres, ABO, 1	Paddoch			OF FORMATION	8300'	8900 1
is injection through tubing, casing Tubing	IG, OR ANNULUS!	PERFORAT	Tions of open to Both		SRAS RARO	, 8528,8900 Openhol
IS THIS A NEW WELL DRILLED FOR DISPOSAL! OID WELL	IF ANSWER IS	S NO, FOR WHAT PU				AS WELL EVER BEEN PERFORATED IN ANY ONE OTHER THAN THE PROPOSED INJEC-
deepened from 852	B 1 SACKS OF C	ABO pro	ducer -	<u> Deepen</u>		900 Yes
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 200 I		DEPTH OF BOTTO OIL OR GAS ZONE NONE	IN THIS AREA		DEPIH OF TOP O	None
ANTICIPATED DAILY MINIMUM INJECTION VOLUME [BBLS.] 7000 500	9000 9000	i	sed		Gravity	20" Vac.
ANSWER YES OR NO WHETHER THE FO ERALIZED TO SUCH A DEGREE AS TO I STOCK, IRRIGATION, OR OTHER GENER	LE UNFIT FOR DOME! AL USE	STIC,	Yes	POSED OF NATU	Yes	RE WATER ANALYSES ATTACHED? Yes
NAME AND ADDRESS OF SURFACE OWN City of Lovington LIST NAMES AND ADDRESSES OF ALL			·			
					he 2 7/8" t	ubing to be run
after appro	oval of th	nis appli	cation.			
Skelly Oil Company	y, 2nd Flo	oor, Wall	Towers	West, M	lidland, Tex	as
Note: Rice Engin	eering ha	s a SWD w	ell 1/4	mile no	orth of this	well, disposing
in approximately						
HAVE CUPIES OF THIS APPLICATION I SENT TO EACH OF THE FOLLOWING?	SEEN SURFACE OW		EAC	THIS WELL	HIN ONE-HALF MILE	
ARE THE FOLLOWING ITEMS ATTACHE	D TO PLAT OF ARE		ELE	CTRICAL LOG	es	IAGRAMMATIC SKETCH OF WELL
THIS APPLICATION (SEE RULE 701-B	Ye	5			Yes	Yes
1 hereby c	ertify that the in	formation above	e is true and	complete to th	e best of my knowled	lge and belief.

Earl R. Bruno	Vice President	May 11, 1976
(Signature)	(Title)	(Date)

NOTE: Should waivers from the surface owner and all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR					DOMESS						
Araho, Inc.			WELL NO.		P. (O. Bo	x 5456	Midla	nd, I	exas	79701
State SWD		····	2		Dry	Hole				Lea	
UNIT LETTER	<u>F</u> ; w	ELL IS	LOCATED2	310	FCET	FROM THE	West	LINE A	1	L650	FEET FROM THE
North Line, SECTION	2 ,,	WNSHIP	178	RANC	361	Ε	NMPM.				
			CASING	IT GHA	UBING D	ATA					
NAME OF STRING	SIZE	SET	TING DEPTH	\$ A	CK5 CEM	ENT	10P OF	CEMENT		OP DETER	MINED BY
INTERMEDIATE	13 3/8	34	191	450)		Circu	lated		Vis	ual
	9 5/8	33	318'	17 5	0		Circu	Lated		Vis	ual
LONG STRING	5 1/2	85	28'	140			3000		Τe	emp. Si	ırvey
TUBING	2 7/8	63	300'	Bak	er Mo	odel	TUBING PACK	300			
NAME OF PROPOSED INJECTION FORM				1	OP OF FO	RMATION	00001	BOT	TOM OF F	ORMATION	. •
San Andres, ABO,	Paddoch		PERFORATIONS	S OR OPE	N HOLET	PROPOSEO	8300'	OF INJECTION		8900)'
Fubing				Bot						8 8900	Openhol
IS THIS A NEW THE DRILLED FOR DISPOSAL! OID WEIT	IF ANSWER I	5 NO, F	OR WHAT PURPO					HAS	WELL EV	ER BEEN PER	FORATED IN ANY
deepened from 85.2	ALS AND SACKS OF C		O produ			epen .				Yes	
RESH WATER ZONE IN THIS AREA 200 ANTICIPATED DAILY MINIMUM	MAXIMUM	OILO	OR GAS ZONE IN ONE	THIS ARE	i A	·	011 0	P GAS ZONE I	N THIS AR	None	
7000 500	0000		Close	d			Gravity	7		20"	Vac.
ANSWER YES OR NO WHETHER THE F ERALIZED TO SUCH A DEGREE AS TO STOCK, IRRIGATION, OR OTHER GENE	RAL USE -	stic.	Y	es	OISPOSED (OF 'NATUR 'SAL Z I	Yes	DISPO- ARE	WATER A	Yes	
NAME AND ADDRESS OF SURFACE OW City of Lovington LIST NAMES AND ADDRESSES OF ALI	1				JECTION W	/ELL					
Note: The $5\frac{1}{2}$ " ca	sing line	r or	tie in	str	ing a	and t	he 2 7	/8" tu	oing	to be	run
after appr	oval of the	his	applica	tion	l •						
Skelly Oil Compan	ny, 2nd Flo	oor,	Wall T	ower	s We	st, M	idland	, Texa	S		<u>:</u>
Note: Rice Engin	eering ha	s_a	SWD wel	1 1/	<u>'4 mi</u>	<u>le no</u>	rth of	this	well,	disp	osing
in approximately	the same	int∈	erval.								
HAVE COPIES OF THIS APPLICATION SENT TO EACH OF THE FOLLOWING?				1	EACH OPER OF THIS W	ELL	HIN ONE-HALF	MILE	_		
ARE THE FOLLOWING ITEMS ATTACH	Yes		· · · · · · · · · · · · · · · · · · ·		¿LECTPICA		es	- IDIA	GRAMMAT	IC SKETCH O	F WELL
THIS APPLICATION (SEE RULE 701-	Ye			1			Yes	!		Yes	
1 hereby	certify that the in				_	ete to the		_		lief.	
- 6426 /1.	OMMon		V1	ce F	resi	uent			мау	<u>ll, 19</u>	/ b

(Signature) (Title) (Date)

NOTE: Should valvers from the surface owner and all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received,

the application will be set for hearing, if the applicant so requests. SEE RULE 701.

OPERATOR	ATUS TO DE	a chi	ACORESS	disp my remmssion pr TION POROU	IS FORMATION Case 5
raho, Inc.			P. 0	. Box 5456, Mid	land, Texas 79701
State SWD		2	Dry	Hole	Lea
LOCATION	The Wall		2310	West	1650
Onth Line, section	12 18 6	WASHIP 175	RANGE 36E	ROM THEC	NE AND FEET FROM TO
LINE, SECTION		MNSKIP	G AND TUBING DA	MPM.	
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEME	NT TOP OF CEME	NT TOP DETERMINED BY
SURFACE CASING	13 3/8	349'	450	Circulate	d Visual
INTERMEDIATE	i	†			
LONG STRING	9 5/8	3318'	1750	Circulate	d Visual
	5 1/2	8528'	1400	3000	Temp. Survey
TUBING	<u> </u>		NAME, MODEL AND	DEPTH OF TUBING PACKER	
NAME OF PROPOSED IN ECTION FOR	2 7/8	6300'	Baker Mo		BOTTOM OF FORMATION
San Andres, ABO,	Paddoch			8300'	8900'
IS INJECTION THROUGH TUBING, CA		PERFORATIO	-	ROPOSED INTERVAL(S) OF INJE	
Cubing	LE ANSWER 1	S NO, FOR WHAT PURP		Peri 5845, 848	0, 8528,8900 Openho
is this A reward well for	281	_		non from 0530	TION ZONE?
deepened from 85	TALS AND SACKS OF C	ENERY USED TO SEAL	OFF OR SQUEEZE EAG	pen_from_8528-	. 8900' Yes
DEPTH OF BOTTOM OF DEEPEST		DEPTH OF BOTTOM	OF NEXT HIGHER	DUPTH OF TO	P OF NEXT LOWER
200'		None			None
ANTICIPATED DAILY MINIMUM INJECTION VOLUME 1 (89LS.) 7000 1 50	T MAKIMUM		DSED TYPE SYSTEM	IS INJECTION TO BE BY GRA	1
ANSWER YES OR NO WHETHER THE	FOLLOWING WATERS A	Clos		Gravity NATUPAL WATER IN DISPO-	20" Vac.
ERALIZED TO SUCH A DEGREE AS T STOCK, IRRIGATION, OR OTHER GEN	O BE UNFIT FOR DOME	STIC.	Yes	Yes	Yes
NAME AND ADDRESS OF SURFACE O		STATE OR FEDERAL L	AND)		<u> </u>
City of Lovingto	N LL OPERATORS WITHIN	ONE-HALF () MILE	OF THIS INJECTION WE	all.	
					tubing to be run
C 1	roval of the	nıs applic	ation.		
after app	ny, 2nd Flo	oor, Wall	Towers Wes	t, Midland, Te	xas
Skelly Oil Compa		a a CTATO and	11 1/4 mil	e north of thi	s well, disposing
kelly Oil Compa Tote: Rice Engi	neering ha				
Skelly Oil Compa Note: Rice Engi	neering ha				
Skelly Oil Compa Note: Rice Engi in approximately	neering hathe same	interval.	EACH OPERA OF THIS WE	TOR WITHIN ONE-HALF MILE	
Skelly Oil Compa Note: Rice Engi in approximately	neering hathe same	interval.	OF THIS WE	Yes	DIAGRAMMATIC SKETCH OF WELL
Skelly Oil Compa	the same	interval. S S	ELECTPICAL	Yes	DIAGRAMMATIC SKETCH OF WELL Yes

NOTE: Should valvers from the surface owner and all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests, SEE RULE 701.

		• •
Ceman + Circulated		1336'csg@349'
Comen't circulated		99," (og@ 3318"
Present lop 351/2" Log.		TIE-in existing 51/2 cog. at 4141 grand coment objects
27/11 Tohing on		
27/10 Tobing on facker & 5000		- 5968 Pertora trons
		- 5968 Perforations Parfs 5845 to
		- 6185 - 6265 Rertora trovis
		- 8378 Perforations blacker 8480 Perforations 6 8528 to
51/2"cag.	, , ,	Present TO 8528 8520
	} {	3 70 -
	{	
	} }	
	}	Deepen to 8900' - 43/4" hole
DIAGRAMATIC	C Si	LETCH OF WELL
HRAG	C., J.	ENC STATE SUD #2

	K - Sh 34 j4 23	e more than the Commence	ante ⊗	n income deposits	10 (Class)	Tray store ter ability	C 36-3 \	12634 50-74	3 · 12 · 11 1
-	J.M.Huber Mobil 10:1 8: Mobil 10:1 8: H.P.	Cor s Sylan Morsonto	Codes Ringhes Codes	13	Stote RAMA 3 Pennzoni Atapaz E Pennzoni Atapaz E Pennzoni Atapaz E Pennzoni	TAY Store TO NO LTD TOURS TO TO HETO' DAY 24 69	16 Abs 858.	6.27	Lone Stor 72 - 8-10 74 7 72 74-14 7-15 74 7 11 74 8-18-14 8-21-74 9-26-74 9-18-74
Tr Co.	Stete, MJ 16	36 Store W. Roberts Store W. S. P. P. C. Store W. S. P. C. S. P. P. P. C. S. P.	Actional Tenneco Stall	Shet Del Leo eku Prinskri 1-13 78 TO 185 C 8118 DALLY Segre 12 33 W. M. P.	Gerry 42fec 31	Cto16 • 2:	Pernasoli 16	8 152? Lone Star 12:36 24 513:28	12:20:14 9-3-78 5:21-35 Lane Star 13:78 3:27-78 Lutner George
R.C. Honks, etal 9-15-60	Surface Divided	6 8 Hot? 2 21 77 K 6730	Sfegore	Vst H.8.P. 8-1527	Cinton O.I Getty Oilatel Getty	Getty 3/1 Pennzait	1. R.I.Hissam	Store MHM23 n 3.7 Pennzoil Lone Stor 7 22 74 7 16 74 6 6 6 78 7 48 74 74 74 74 74 74 74 74 74 74 74 74 74	Lone Star 7-19-74 7-15-74 S 8-16-74 8-16-74 12-20-74-12-18-74
282	Le Roy Powellist	Amerada H.B.P. A-1669	American H.U.F. 2-15-55-14		Great Cit es Cit Sery (101400) Great Cit Sery (101400) FEZE N 3030 N 5517 N 701400	Monte the Jasana State Monte the Jasana Monte the J. P. Coudill(S)	State Tolling Control of the State State	21 98 12 18 24 S 10 THE L. Cooper, etc. Cynthia Med-State State	\$18 74 5-27-75
	21 R B Ho! t 2-21-77 R 6729	TennecoMIST R B Holf 21-77 TennecoMIST R 8729 LeRey Summuld	Meggo P go 2 3 1444 144 144 144 144 144 144 144 144	Somest Proof 4 of 428 Clinton Loungton Unit Bas 10 50 11 Tenneco Mi 4.7 Morhieth A 3029	Cintan Dil Service Dela Kisasa Pana la 3361 Kisasa Mantreth St	LEB White Prompt Letol 25 76 1	Washaco 1 9 75 1 21 74 L.E.B.White, Jr.	Pennzeil etal Magnolia 12 26 73 S TO 77 72540 12 25 73 UM 10 16 53	Continental 2 · 20 · 78
	Styles T.M. Bigchange State	Champlist - 1: 1861 R 9 Hert 19 Sher 1 TO 115 St 19 Here 1 DAA 4 25 465 State houses	F352 State 134 12 53	2 - 1 - 61 6-10-73 Service 2 - 1 - 61 15-18 Mention 19-14 15-18 Mention 19-14 18-5343 Shoke	Cit Serv. Cit. HT. Medicine. HBP 11-15- Temportieth 1 G- K 3030 14 4517 Stove (S)	Mins. divided 70 14412 Mins. divided 70 14412 M.T. Montleth Gar 6155 H.T. Montleth San 519	12 2 74 Tem Brown Dry 11 20 74 Tem Brown Dry Mannern Tolless H. T. Mantreth Tom Brown Dry	Geo Moberly Maude E. B.E. Shipp, etcl Medlin	E.T. Ru
B. P. 2894 5 Drlg.	Humble H.B.P. A-1320 El 35K ID 5814	R B Ho's R B Ho's 2: 21: 77 2: 21: 77 K 6731	H B P. T	14.8. P. 12-1-16. HBP E-1618 E	Tenneco Getty Oil Oil Gilles Serv 3 15-75 1 15-85 112 25 113-75 1 115-75	Cities Ci	Pennani Woinoco 1-9:75 7 1-29:75 3 1 73 3 4 73 2-29 73 4 9 73 1-22-74 2 12 73 4 22 73 2-3-74 2 9 72 7-31-73	Cose Stor Cose	Continents 2 - 20 78
melt.	The state of the s	483 27 U.M.Huber Carp	Pubco 26 MacFarions 10-15-78 17-15	H.B.F. B-1565 M-3-5ort Those 1 seems M-3 1	A3 + H.T. Montieth(S)	1 3330 ABD K 36330	H.T. Montieth etal Va	R.L. Garscock	Elmar 7. A
HBC	Hanagan 11979 K4677	3-1-81 SKELLY 1139 (OPER)	falter E-Rest) Velmo	Skelly Skelly	LOUINGTON (S. A.	NUNIT ®	Shell 1 2 12 13 2 15 15 15 She'don Momentatoke 1 12 13 12 13 1 17 73 10 12 15 15 15 15 15 15 15 15 15 15 15 15 15		12-19-76 1-15-16 12-29-75 12-22-15 12-76
*	Soque U Militaber Corp	Read E. Stevens Humble 4-18-77 H.B. P. KIELE A-1320	Shell-S: State Laungton G. Manable Getty Oil Shelly H.B.P. Your	Cityof Compton (S)	Ter Outstan Shelly 26	TISM State Efferon Shipp	Bucton E.Shipp J.L.Cox Texaca	BBRuins Bu र विका (Burton E Shiso etal CE.K Pet)	3:5 7 Burton E.
)	30 20 	LOVINGTON (PADDOCK) UNIT -	A-1320 8-2230 E-2724	19 120 Matrix	Sterly 24 9 Ga 25	Getty Oil Getty Oil, etcl	Pro Control Property Co	4- 4-77 L.H. Wents, Est., etal, Mi	6 · 18 · 7/ 2 · 330 16 ⁶ 7
roundrig. Signa Tosona DAE 22-64	38 Banadaill CareyM. Grokom. etal. 13553	E L. Skelly Amerodo Lathers HBP H.B.P. L. L. H.B.P. L. L. L. L. L. L. L.	170 And - 35	36 Gerry Oil	28 31 (12) 2 2 3 34 (12) 2 35 (12) 3 36 (12) 3	32 70 4611	Gerry 33 - 25hipp	C.E.K. Fet. 1, 24-71 5.6-77 6.21-77 6.	35 Pubce CE K: 5-22-77 Pet: 3-27-77
WES!	Mobil Shelly g' HBP E-2934 B-2994	Humble K Elys I IS °P State	Slate and some	Cityot coington(3) page	23 4 35 22 2	31 (T04809 to 0 6-P3 (-P3 (-P3 Pine (-P3 Pine Pine Pine Pine Pine Pine Pine Pine	Mind Divised Burton E. Shipp, Sur	Rawntree Co. M.I. all Sec Luro Floragon, etal, MI Burton E. Shipp	Stote B.E.Ships
2 3053 & 7 a F Turner		Fred Turner, Jr. 1 10811 H.B. P. 1.8 P. 1.8 P. 1.8 P.	Marathon 18, 12 23 Amoco 45	32 48 17 3 48 4me odd 43 23 14	Sun Ashland States	Shelly of Cantil.	(Tide Worker) R.G. Barton Jr. Fill Getty 485	1: 21-74 Hopers Par	H.B.P. 8-243
TE ST	Humble Pan Amer 12 13 July Pan Crossby TD8712 (Exxon Trumes DAGGGER ATTENTION Tread 0: 1 1919	Exxon Fan Amer Exxon Exxon Exxon Exxon Exxon Expon Expon Expon Expon Exxon Exx	D4286:4 22 4.5 PonAmer 165	13 00 inthis of 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Caylor Caylor Acecca J. Caylor Rice	F. L. Batton Est. Lovington South	R.H. 8.9184	F.W.Kingulr. Burton E.Shipp State	H.L.Brown, dr. 1 5 · 1 · 82 1 · 107 12780
R* ⊕21	Philips Turner Witomis	Trebal) Cities Million	Cition Sorv.	American prantitional Marinage Language State San Control of the C	Shing Sketly constant of the state of the sketly of the sk	104361 J	6 40 17 4 10 77	Tumble Pubco 3-11-72 \$ \$ 77 Tex Int Pet Corp 3-11-72 \$ \$ 75 77 4 \$ \$ \$ \$ \$ \$ \$ \$ \$	Confl. MBP E-8636
2 3.3	34 35 36 37 48 Srate	See See	Steps Crys / Laungton	53 72 22 53 54 55 56 57 57 57 57 57 57	Mary E Caylor Tray E Wright, 3ut 57424: 11 Wag1	Con Miexander, etal Grt. Westhorig Congo! C&G	7-20-15 Bish Mins Divided × 5/25 State Burton E Shipp	L Cook J. Taylor James Botton (S)	State Harding Pubco Hart
IIT "	Humble Syche Street Str	Chieston 7:19:76 RMD7 Exxon 16 16 16 16 16 16 16 16 16 16 16 16 16	OFW Coulons of the co	Union 12 A Americal Street 12 American Street 12 Am	Getty Oil Name 15675 15675 16775	Consg 086 1 - 1 - 82 1 - 1 - 82 1 - 2 - 82 15 - 2 - 82 Mine. divide	(So.Union) E1 378; 70 6500 1 Wes 3175	L: 2514 Handing U:	Frances Francisco
ings Serv.	blad at cas	K(1.42)	VO FW COME.	Midway St. (a) Dev Dive.	ED Ship)	Consol C EG, etal H. B. P. 12 5550	3A 4853 8kx 6336 9-64-102453	Pubcol (Pennzoil), Tolisco 9-20-741 (Pennzoil), Pigosog	CU COLIS TON
eace Bouer Purham	H.B.P. 4-18-77 B-9042 F-6872 Store, MI Derethy T. Scharbouer Freedon Tumper Durham	Stote MI Dorothy T. Scharbouer I: Fredda T. Durham Vals	GC-19 Shafe, MI wrothynT.Scharbourr etal Kreddy Jugar Purham	Alsobrook recess 37.9 JC Road Holder 704.09 Poss DAY 128-56 State, Mi. 129-300 Dorothy Schar bouer Co. Altro Se Fredda Turner Outhorn	8 · 22 · 72 Breen at R & Goodrich M / Betly M Dreeson 6.4 Schwab etal.	E: 8563 8-2117 4	Latington-St " (Gulff) 1355	Pubco ses Nicholson"	Harding (10)
	Getty Oil JMXelly H.B.P. 1 97-18-77	Yates Pet Humbles	Meron ReadLStevens Pet Cit Sery St Ha? 19:1 87 LG-600	Cinche Stevens H&F 5.85946.com military	Texoco _e 3 Att. Pich. Sinctoir, 2	Consel Osc Guif	(So. Union)	Fortson "A" Gerding Fillipso Corp. etal of 8 2 7 74	W.F 3rodshow(S) Pubco 1 27 78 9-1
OUE	J. N. Bigir etal.		or Sunrayox	Aztec 1(9 cm 5 5 pm m m m m m m m m m m m m m m m m	Section 1 5 D.Shipp	Store A F764	ADD DISCUS (III.		J.Schwartzberg R.L. Devi s, S
inclair I.B. P. 4704	6 Green 86 Spr. 3776 Over 14 CS	Cetty ty 0.	C Livers v. 14 Reside (no) 1/2 (Amerada) 187 188	11 52 6	Reductions to the second state of the second state of the second	U.S. Smelt CHIOR Serv. Mil. 1 - 20 - 80 E.D. Stipp #2 212 Inchises	• 26 17	37 Pubca 6 19 77 8 27 77 8 27 77	Pubca Mes 4-24-77 9-11 8-7-77 5-5-77 11-15-77
n Tex Gulf State T3 9316 harbover		Same 1 Pile Aul	K 5385 K 5385 Read Stepens Fred Stepens Fred Stepens TD4381 Fred Stepens Fred Stepens (S)	Darathy T.Scharboser Sent Fredda Turner Durham	Sun Lages - Mastric 105150	Pan Amer. Grent Western H.G.P. 182 A-1573 State 25	"Consol-St" State	Cities Service Oil, etal, MI E.D.Shipp	Lattie L.H. York Frances M.H.
TDD688 A to DDS2." FSAS	2:1 33 g g 10'A7 23'67 L3 133 1 13-733 Whes more	TOSHIS OF STATES	Aztec Aztec 3-16-75 3-673 121-27 121-2		Differentiation of the second	County) LearShipp T0 5200		A A Circo Souther	Meso Pet 9 - 13 - 76
(12/6 es Serv.)	40.86 2 200 20 20 20 20 20 20 20 20 20 20 20	36 ^{10 st}	23 23 Company 1	1035	Mestin States 1 Solds State State (Rebel Oil)	E0.86:22 20 Hantad Oil Gulf	21	E 0. 50 pp	23
en Vex St.	15-1240 FATTER 15-12-12-13-13-13-13-13-13-13-13-13-13-13-13-13-	State, MI Oscathy T. Scharbauer	TO 5525 DAT 1 54 Stole, MI Corathy I Scharbover	72/4 0 200 70/354	9: 19 1 - 28 75	75 - 79	н.в.Р. 8-1505	(133) (B)	Lee Ann Richards E. W. Lart e Yark etal M. E
0urham	Siere M. 29 19 Dorottepsher bouer & Frede Durham Getty 3 17 19	Fredda Turner Ourham	Freddo Turper Durham Son 1 3:15 T51	2 Williamson Williamson	Toco First Civilian Service Mil. 125228 E.C. Shipp Millian February Field Oil	Seare	EDShipp Store Circinora Abil Nichi 7 10 74 1156	Yates Pat	Francis Crowetol S.
	6 - 37 45 - 37 45 - 57 45	3 (6)75 945)3 (5 <u>15</u>	7-15-79 0/A 5-42-57 L-3120 (0.67	A Service Pagardisc. A Service Pagardisc. A Service Pagardisc. Service Pagardisc. 10 22 3 20 10 22 70 50 29 10 22	A SECTION AND ADDRESS OF THE PARTY OF THE PA	E.D. Condict. C.M. Salky Fet	7 7. 74 1.316 8.4265 23163 3539 578476 3539 578476	11 33 Citier Serv. M. E D.Shipp	Burnat France JL Read 92 Chap Service us
	28	483 27	26	703569 25 Penntoi 25 -13-80 Pubca 2 Shell L-4525 8-15-80 Pubca 2 Shell L-4525 8-15-80 Philips 32 50 14-4521 Philips 35 Philips 3750 Philips 3750 Philips	30.504.7 30	R.D. Goodrigh C.M Selby, Est 29 Aztec 7-21-80 4-4699	V dwest Francisk	Stone 27 Mrs 27 Demos Ton Monte Maria and Mari	26
) r 2 0 k	E. Sales 19 19 19 19 19 19 19 19 19 19 19 19 19 1	State, MI Bereity J. Scharbauer Fredda Twiner Durham	State, MI 34 3 54 State, MI 34 3 54 Darethy I. Scharbever Fredda Tücner Durham	State Mi Philips State Mi Philips State Mi Philips State My Scharbover State Preddo Turner Durhom	Sazew d C.M. Salby, MI Sigta Crowford Culo	•	11.4	beenline P.	D. B. Willholigh: Dennis Eubanh()
	Mobil Coquino H.B.P. 12-1-63 0-2735 4760	Sun M.F. H.B.P. Lowiess B-2287 14-21-80	9 *17 - 78 ' L+147S	жинов So'West III 8 1861 5-18-77 7-6883	120°40	1	0el.140 Tenneco Getty Oil 9to 1791 MB2 H.B.P. 13555 (05-5121) B-1651 3024 1	HUN	ABLE CI
	Philips H.B.P. B-1608	10 95	1825 3.5	Pubco 1015 78	5 M 4 7	Clara Elvan "MI etal, MI crawląrd Cu.n.	State -33	David B. Willhoit, etal, MI C.G. Goodwir	Cal-Mon 1-12 Cal-Mon 1-12 St Gee 34
					_ ** * *	· · · · · · · · · · · · · · · · · · ·			

	Cement Circulated	133/2"csy @ 349"	
	Clonent Circubled	94,"cog@ 3318"	-
	Present top 251/2" log.	TIE-in existing 5:/2"ceg. at 4141 ft.	
	27/3" Tubing on Packer @ 5800'	- 5845 Perfora trons - 5968 Perfora trons	
		- 6185 - 6265 Rertora tions	
	51/2"caj. A	- 8378 8480 Perforations Present TO 8528	
		}	y y en
		Deepen to 8900'- 43/4" hole	
1			-
:	DIAG RAMMINTIC	SKETCH OF WELL	
	ARACTO,	INC. SIMTE SUD #2.	
			- -
1 .			ئى ئ

	Cerment Circulated 133/2'cs, @ 349'	-
		JA-ME NO.
	Coment Circulated 998 "Cong@ 3318"	-
	Present top 25/2" (ag. at 4141 ft. and cement il) 2005 kb.	
	27/3" Tubing on - 5345 Perfora tions - 5968 Perfora tions	-
:	- 6185 - 6265 Rertorations	
	- 8378 8480 Perfora trains 5'/2"(a), A Present TO 8528	
	5'/2'(aj. 1 Present TO 8528	
	\{\begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	
	Deepen to 8900' - 43/4" hole	-
	DIAGRAMMATIC SHETCH OF WELL	
	ARAHO, INC. STATE SWD #2.	
		ار سام راسومطار اس

OIL	CONSERVATION	COMMISSION
	Hobbs	DISTRICT

BOX	2088	VATION CO		N			•	Proposed Proposed	MC	
Gent	lemen:									
	Lhan	va avamina	d the a	nnliaat	ion dot	~ d				
	I llav	e examine	id the a	phricae	Ton dat	eu				
for	the	Araho, I	inc.	State	SWD	#2-F		2-	-17-36	
		Operato				and Wel	1 No.	U	nit, S-	-T-R
and	-	ommendati J.S.								
									· · · · · · · · · · · · · · · · · · ·	
				 						
										
							,			
							Your	s very tr	uly,	

Jerry Seiter

THE RAY 2 LIBYS ALL COMMAND TO THE RAY 2 LIBYS ALL COMMAND TO THE RAY 2 LIBYS ALL COMMAND TO THE RAY OF THE RA

dr/

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO



IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING:

CASE NO	5701	
---------	------	--

APPLICATION OF ARAHO, INC. FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

Order No. R-5251 525

ORDER OF THE COMMISSION

De

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on June 23, at Santa Fe, New Mexico, before Examiner Richard L. Stamets

NOW, on this day of day, 1976, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Araho, Inc., is the owner and operator of the State SWD Well No. 2, located in Unit F of Section 2, Township 17 South, Range 36 East, NMPM, Lovington Field, Lea County New Mexico.

All All

-2-Case No. 5701 Order No. R-

- (3) That the applicant proposes to utilize said well to dispose of produced salt water into the San Andres, Abo and.

 Paddock formations, with injection into the perforated interval from approximately 5845 feet to 8480 feet and the open-hole interval from approximately 8528 feet to 8900 feet.
 - -inch plastic lined tubing installed in a packer set at approximately 8500 feet; that the casing-tubing annulus should be pressure vacuum 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.
 - with a pop-off valve or acceptable substitute which will limit the wellhead pressure on the injection well to no more than experi.
 - (6) That the operator should notify the supervisor of the Hobbs district office of the Commission 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.
 - (8) 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, Araho, Inc., is hereby authorized to utilize its State SWD Well No. 2, located in Unit F of Section 2, Township 17 South, Range 36 Bast, NMPM, Lovington Field, Lea County, New Mexico, to dispose of produced salt water into the San Andres, Abo and Paddock formations, injection to be accomplished through 2 //s —inch tubing installed in a packer set at approximately 8500 — feet, with injection through the //v operiorated interval from approximately 5345 feet to 8480 feet and

POK WAY

the open-hole interval from approximately 3528 feet to 8900 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.

Wimps:

(2) That the injection well or system shall be equipped with papare or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 700 psi

- (3) That the operator shall notify the supervisor of the Hobbs district office of the Commission 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 Commission'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 Commission Rules and Regulations.
- (6) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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