## STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

FORM C-108

ENERG	Y AND MINERA	LES DEPARTMENT	POST OFFICE BOX INIHI STATE LAND OFFICE INMILING SANTA FE, NEW MEXICU U7001	EXHIBIT NO	1	sed 7-1-81
<b>APPL</b> ICA	TION FOR AUT	HORIZATION TO INJECT				•
I.	Purpose: Applicat	Secondary Recovery	Pressure Hainte	yes [		Storage
II.	Operator:	MEWBOURNE OI	L COMPANY			
	Address: _	3901 S. BROA	DWAY, TYLER, TEXA	s 75701	·	
	Contact par	ty: K. MAYES/K.C.	ALVERT	_ Phone:	(903) 56	1-2900
111.	Well data:	Complete the data reproposed for injecti	equired on the reverse on. Additional sheet	side of a may be	this form fo attached if	or each well necessary.
IV.	Is this an If yes, giv	expansion of an exist ve the Division order	ing project? 🔀 ye number authorizing th	s 🔲 e project	R-97	37
٧.	injection w	ell with a one-half m	wells and leases with tile radius circle dra ne well's area of revi	wn around	niles of any deach propos	proposed sed injection
VI.	penetrate t	the proposed injection construction, date	all wells of public re a zone. Such data sha drilled, location, de illustrating all plug	ll includ pth, reco	de a descript ord of comple	ion of each
VII.	Attach data	on the proposed oper	ation, including:			
	2. Whe 3. Pro 4. Sou t 5. If	ether the system is op sposed average and max srces and an appropria the receiving formation injection is for disp at or within one mile	timum injection pressurte analysis of inject on if other than reinj losal purposes into a of the proposed well, nation water (may be m	re; ion fluid ected pro zone not attach a	i and compati duced water; productive of a chemical ar	bility with and of oil or gas
VIII.	detail, ged bottom of a total disso	plogical name, thickns all underground source plyed solids concentra cone as well as any su	eta on the injection z ess, and depth. Give es of drinking water ( ations of 10,000 mg/l ach source known to be	the geolo aquifers or less)	ogic name, ar containing w overlying th	nd depth to vaters with ne proposed and the
IX.	Describe th	ne proposed stimulation	on program, if any.	OIL CO	DNSERVATIO	ON DIVISION
х.		ropriate logging and t ivision they need not	est data on the well. be resubmitted.)	(If wel	ll logs have EXHIBI	/ /
XI.	Attach a chewailable a location of	nemical analysis of fr and producing) within f wells and dates samp	resh water from two or one mile of any injec oles were taken.	more fre CASENO	esh water wellisposai mel	Consulta 76 2
	WAS TO	ailable geologic and hydrologic connecti Oikking water.	ust make an affirmativengineering data and ton between the dispos	find no e al zone a	evidence of a and any under	open faults ograund
XIII. < □ ,	Certificati	must complete the "Pr	roof of Notice" sectio	n on the	reverse side	e of this form.
EGIST	115/6 hereby co	entity that the inform	nation submitted with belief.	this appl	lication is t	rue and correct
\%\ \\\	Name:	Kevin Mayes		tleI	Project En	gineer
No.	S PHERS FALON L	/ Kwin N	rugh	Date:	5/28/43	5
* If th	tted, it ned	on required under Sect and not be duplicated a	ions VI, VIII, X, and and resubmitted. Plea	XI above se show t	/ / has been pr the date and	eviously circumstance

of the earlier submittal.

### ITEM III OF NEW MEXICO OCD FORM C-108

INJECTION WILL DATA SHILL SANTA FE ENERGY SHINNERY 14 FEDERAL MEWBOURNE OIL CO. \* LEASE DPERATOR 32E 185 1980 FSL, 660 FEL 14-4 TOWNSHIP RANCE Tobular Outa Schematic Surface Casing Size \_\_\_ 13 3/8 500 ... Cemented with toc Surface feet determined by Circ. Hole size \_\_\_\_\_17\_1/2" Intermediate Casing Size 8 5/8 Cemented with \_\_\_\_\_1500 Inc Surface root determined by . Circ. 12 1/4" Hale size 2723' Long string Size \_\_\_\_\_ 5 1/2 Cemented with 1325 1.08 cuft/sx \_ feet determined by <u>Calcn.</u> No collars SFE interp. of C 7 7/8" 25% excess Hole eize Total depth 87501 Injection interval 8490 8412 Free feet feet to 87401 TD = 8750'Tubing size 2 7/8" lined with Bare Steel packer at \_\_\_\_\_8312 Otis Permalatch (brand and model) (or describe any other casing-tubing seal). Other Date 1. Name of the injection formation \_\_\_ 1st Bone Spring Sand Querecho Plains 2. Name of field or Pool (if applicable) \_ 3. Is this a new well deliled for injection? TT Yes 17 No If no, for what purpose was the well originally drilled? Oil Production 4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sucks of cement or bridge plug(s) used) No 5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pouls) in Overlying - San Andres Top at - 4800'

Underlying - Lower Bone Spring at ± 8650'

\* After Unitization

# ITEM III OF NEW MEXICO OCD FORM C-108

	1980		1980	FEL 14		18 <b>S</b>	32E
WELL NO.	TOOTAGE			SECTION		TOWNSHIP	RANGE
Sche	matic			1	labutnı	· Duta	
				Surface Casing			500
	)			Size 13 3/8	_		
	444,			Note size 17 1/2	-	determined by _	Circ.
				Intersediate Casing			
	•			Size 8 5/8"		Cemented with	1550
				Toc Surface	_		
				Hale eize 12 1			
	2727'			Lang string			
81117				512e <u>5 1/2</u>	_		
				10c <u>2112</u>			
3117				Hole eize 7 7		CMT	OK 6 27
				Total depth 950	10.		
ALIA				Injection interval		8504	
<b>%</b>				thestorated test	<u>.:</u>	8304	_ feet
TD = 95	9489' )0'						•
Tubing size	2 7/8	H	lined	withBard	e Ste	el	•el In
Otis	Permala	tch		(ma packer	teriul at		feat
(6:	rend and mod be any other	(41)					<del></del>
Other Date	, <b></b>						
	f the inject	ion for	etion	1st Bone S	princ	Sand	
2. Name o	f field or f	ool (if	applic	Quereci	ho P	lains	
				njection? <u>/</u> / Yes			
lf no,	for what pu	ithose m	s the	well originally drill	led?	Oil Produ	ction
4. Hee the	ve plugging	deteil	(secks	d in any other zone(s of cement or bridge p	ilug( = )	used)	forsted inte
	•					<del></del>	
5 6142 4	he depth to	and nam	e of an	iy overlying end/or un	ndoriyi	ng oil or gas ze	ones (popla)
this e	rea					-	
this e	rea			res top at + 48	300'		

\* After Unitization

# ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WELL DATA SHELL

OPERATOR  5 WELL NO.	JRNE OIL CO.  660 FNL, 660 FOOTAGE LOCATION			18S	32E
				· · · · · · · · · · · · · · · · · · ·	
Schen	etic		Yebu	ilor Dota	
		Surface (	Casing		
MITTIA		Size	3 3/8 -	Cemented wi	ith <u>400</u>
阳日日的	4.001	10c _St	urface r	eat determined t	y Circ.
	460'	Hole size	17 1/	/2"	
H			iate Casing		
				Canantad	ith <u>1575</u> **
					or <u>Circ.</u>
阳日的			12 1/4		···
	4330'				
XIII IX		<u>Long str</u>		_	1275
MIIK					1275 ••
		10C	7 7 10	set determined ( nu	ov <u>Calen.</u> CBI 8600'-477
		11016 6121	nth <u>8650'</u>	) · · · · · · · · · · · · · · · · · · ·	CBL 8600'-477 CMT OK @ 47
A110		total de	oth <u>8030</u>		
		•	n interval		
)]]]][		8430	feet to	<u>8574</u>	feet
		.,			
11111					
11 1					
	8650'				
TD = 865					
			D 0:		
lubing elze	<u>2 7/8"</u>	lined with	Bare Stee		eet in a
	Permalatch		packer st	8330	feat
••	end and model; e any other casing-t	ubing sesi).			
Other Date					
1. Name of	the injection forms	Lion 1st	Bone Spring	Sand	
2. Name of	Field or fool (if a	pplicable)	Querecho P	lains	
3. In this	a new well drilled	for injection?		<b>☆</b> №	
If no,	for what purpose was	the well arig	inaliy drilled?	Oil Produ	uction
4. Hes the end giv	well ever licen perf e plugging dotail (s	orated in any sucks of cemoni	other zone(s)? . or bridge plug	list all such	perforated interval
	•				
5. Give th	e depth to and name	of any overly!	ng and/or under	lying oil or ga	e tones (pouls) in
_Ove	rlying - San A	Andres top	at <sup>+</sup> 4800'		
Unc	lerlying - Low	er Bone S	pring top a	t + 8650'	

# ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WELL DATA SHEET

10	CCO ENI 1CEO	FEDERAL L		225
ILL NO.	660 FNL, 1650	FEL 23	18S	32E
			<u></u>	
Scho	matic	Ţc	sbular Data	
	<del></del>	Surface Casing		
di ma	K	Size 13 3/8	" Cemented wi	th 400
<i>}</i> {	· · · · ·	10c Surface		
<u> </u>	438'	Hole size 17 1/2		
		Intermediate Casing		
) <u> </u>	<b>)</b>	Size 8 5/8	* Committed wi	us 1600
		TOC Surface		
		Hote size 12		
	4318¹	Lang string		
		Size 5 1/2	* Committee wi	1325
		10c 2642		
		Hole size 77	/8" CB	L 8683 -430
61111		Total depth 876	0'	11 UK @ 465
		Injection interval		
MILE		8431 feet	9506	
ALIB		(perforated		feet
MIII				
X 11 13				
51113				_
11 1	<u>.</u>			
N F	:			
				•
FD ~ 97	8760'			•
TD = 870	30			
Tubing size	2 7/8" 11	ned withBare S	teel	set in
Otis I	Permalatch	(molpacker	eriul) et 8331	feet
-	rend and model)			
•	be any other casing-tub	ing seel).		
Other Data		n 1st Bone Sprin	ng Sand	
	<u> </u>	licable) Querecho	<del></del>	
-		r injection? /7 Yes		
		he well originally drille	<b>–</b>	ction
	<u></u>			
4. Hes th	e well ever been perfor	ated in any other zone(a) ka of cement or bridge pi	? List all such	perforated inter
Nọ No				
	•			<del></del>
5. Give t	he depth to and nome of	any everlying and/or und	Inclying oil or ga	toues (bonff)
this e	ree		- <del></del>	
Ων4	erlying - San An	dres top at $\frac{+}{4800}$	31	

# ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WELL DATA SHEET

MEWBOURNE OIL CO.	FEDERAL L		
7 2310 FSL, 990 F	FI 23	18S	32E
WELL NO. COURSE LUCKTION	SCETTON	<u> </u>	RANGE
<u>Schonatic</u>	Tab Surface Casing	ular Duta	
Cla i i iaw	Size 8 5/8 "	Comment and sub-	250
<b>EB</b> 11 [3]3			
₹ <b>[</b> ]	10c Surface r	eet determined b	y <u>CITC.</u>
<i>X</i> (11   1)?	Hole size 11"	<del></del>	
);	Intermediate Casing		
CH H	Size	Cemented wi	thau,
	100 (	reet determined b	Υ
	Hole size		
<u> </u>	<u>Long</u> etring		
Pd 1113	Size 5 1/2 *	Cemented wi	4630
D.V. Tool @ 3035'			
51115	Hole size 7 7/8	" CBL	86231-66001
	Total depth 8670	CMT	OK @ 6640'
(H)	10cm; gehen		
M 1 1 K	Injection interval		
511113	8485 feet to	8552	feet
(3) 1 1 14			
Y4 1 1 1/2			
S3 1 1 ES			- <b>Ε</b> ξ 1.25φ
(411 8)			
&			
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
(/ <b>/* /</b> *\)_			
			•
8670'			•
TD = 8670'			
	<b>—</b> —.		
Tubing size 2 7/8" line	d with Bare Stee	- (-1)	eet in e
Otis Permalatch			feet
(lebom and model)			
(or describe any other casing-tubing	g scell.		
Other Data  1. Name of the injection formation	1st Bone Sprin	ng Sand	
2. Name of Field or Pool (if appli			
3. Is this a new well deilled for	<del>-</del>		ection
If no, for what purpose was the	well originally drilled	1 On Produ	iction
4. Hee the well ever been perforst and give plugging detail (sucks	ed in any other zone(s)? of cement or bridge plu	tist all such p	perforated intervals
No			
•		· · · · · · · · · · · · · · · · · · ·	
5. Give the depth to end nome of a this eres.	ny overlying end/or unde	riying oil or ge	zones (paula) in
Overlying - San Andr	es top at $\frac{+}{4800}$		-
Underlying - Lower B		t <sup>+</sup> 8650'	

# ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WILL DATA SHEET

	JRNE OIL CO.			· · · · · · · · · · · · · · · · · · ·
orerator 2	2130 FSL, 2030	FEL 23	185	32E
WELL NO.	POOTAGE LOCATION	SCETTON	TOWNSTITE	RANGE
Schen	netic	<u>1</u>	abular Pota	
		Surface Casing		
## 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Size 13 3/8	" Cemented wi	en450==.
	441'	roc <u>Surface</u>	feet determined b	, <u>Circ.</u>
	771	Hole size	2"	
411118		Intermediate Casing		
		Size 8 5/8	" Cemented vi	th 1800 1
		toc Surface		
		Hote size 12	-	
\$11117	4293'	Long string		
		Size 5 1/2	" Cemented wi	th 925 .
			-	
		Hole size 7.7	feet determined to CBL	8652'-3000' OK @ 3538'
		latel depth 87501		01/ 6 2220
		Injection interval	<del></del>	
		8458 (eet	. 8531	•
<i>X</i> 1 1 1 <i>X</i> 1		(perforated		reet
		,	· • •	
<b>411</b> 15				
<b> </b>   <b> </b>   <b> </b>				
N F	•			
II IT				•
	8750'			
TD = 875	i01			
Tubica siza	2 7/8 line	d with Bare St	reel	set in a
-	Permalatch	(mail	teriul)	
	and and model)	packer	at0330	feet
(or describe	e any other casing-tubin	ng scel).		
Other Onto		1st Dama Carri	: Cand	
	the injection formation			<del></del>
	Field or Pool (if appli			
	a new well drilled for	•	<del></del>	
If no,	for what purpose was the	well originally drill	ed? Oll Prod	uction
4. Hee the and giv	well ever been perform e plugging detail (sack	ted in any other zone(a a of cemont or bridge p	)? List all such lug(s) used)	perforated interv
	•			
5. Give th	e depth to and name of a	any overlying and/or un	derlying oil or ga	e zones (poula) in
_Ove	erlying - San And	dres top at $^{\pm}$ 480	001	
Unc	derlying - Lower	Bone Spring top	at <sup>+</sup> 8650'	

# ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WILL DATA SHIEL

MEW	BOURNE OIL CO.	GOVERNMEN	T K	
OPERA	TOR	FEYZE		205
		980 FWL 23		
MEFF.	NO. FOOTAGE LOCATION	ZECITON	tonuzuti.	KANIL
2 Control of the second	Schoolic 700'		feet determined to 7 1/2"  " Cemented w feet determined to 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1th 700 se.  Oy Circ.  1th 3100 se.  Oy Circ.
X X	8900'	Note: Already of in August 1992 R-9737.		injection
nidul	g eize 2 7/8"	lined with Bare Stee	eriul)	eet in e
_0	tis Permalatch		at 8365'	feet
1a= 4	(brand and model)	tubino sesi).		
•	Data	- : - · · · · · · · · · · · · · · · · ·		
		etion Ist Bone Sprin	ng Sand	
		applicable) Querecho		
•				
		I for injection? The year of the well originally drifted	<u>∕</u> X № da Oil Produc	ction
4. 1	ınd give piugging detell (	forated in any other zone(a) sucks of cement or bridge pi	ug(s) used)	
5. (	live the depth to and name	of any overlying and/or und	Inriving all or ga	e rones (pools) in
	_	Andres top at $\frac{+}{4800}$	0'	
		er Bone Spring to a	<u> </u>	
•				

# ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WELL DATA SHEET

	JRNE OIL CO.	FEDERA	L F	
	1980 FSL, 990		18S	32E
WELL NO.	POOTAGE LUCATION	SCETTON.		RANGE
Sche	1980 FSL, 990 rootace Location  matte  480'	Surface Casing Size 13 3 TOC Surface Hole size Intermediate ( Size 8 5 TOC Surface Hole size Lang string	Township   Township	d with
TD = 85	8570' 70' - 2 7/8" 110	ed with	Bare Steel	set in a
	ermalatch	<del></del>	(material) packer st 8262	feel
<del>(6</del> 1	rend and model)			, , , ,
•	e any other cosing-lubi	ng sesi).		
Other Date	f the injection formatio	n 1st Bone	Spring Sand	
	r the injection formation f field or Pool (if appl			
	r rieto of root (it appi s a new wall drilled for			
	for what purpose was th			oduction
4. Hee thend gl	<ul> <li>well ever been perform</li> <li>plugging detail (seck</li> </ul>	tod in any other m of coment or t	zone(s)? List eli su ridge plug(s) used) _	ich perforated interval
this s	· <del></del>			yse zonem (pouls) in
. —	erlying - San An			
Un	derlying - Lower	Bone Sprin	ig top at $\pm$ 8650	l .

# ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WILL DATA SHEET

	JRNE OIL CO.	FEDERAL P	<del></del>	· · · · · · · · · · · · · · · · · · ·
OPERATOR 1	660 FNL. 660	FWL 24	18S	32 <b>E</b>
WELL NO.	PODTAGE LOCATION	SCETTON	TOWNSHIP	RANGE
Sche	matic	Ţal	bular Outo	
		Surface Casing		
	\$	size 13 3/8 "		
	4521	10c Surface		, <u>Circ.</u>
		Hole size	/2"	
3411 H)		Intermediate Casing		
组目版	•	Size 8 5/8 -	Cemented wi	th 1600 -
		nc <u>Surface</u>	feet determined h	Circ.
<b>\$61   13</b>		Hale size 12 1/4	ł <sup>11</sup>	
	4347'	Lang string		
8 1 1 13		Size 5 1/2 "	Cemented wi	th 1425
		inc 2100		
$A \cap K$		Hole size7	7 / 8 <b>"</b>	
		Total depth 8680	0'	•
		Injection interval		
$M \cap M$		8473 feet t	8545	feet
		(perfurated		
- 84 H 194				
				•
81118				
YI E	•	•		
( <u> </u>	8680¹			•
TD = 86				•
15 - 30				
Tubing eiz	2 7/8"	lined with Bare S	Steel	et in e
Otis	Permalatch	(meto	8373	feet
(6	rend and model)			
• -	be any other casing-	Luhing scoi).		
Other Data		1st Pana Savi	an Sand	
	<del>-</del>	1st Bone Sprin		
•		opplicable) Querecho		<u> </u>
		for injection? <u>/</u> 7 Yes	—	dustion
If no,	for what purpose we	s the well originally drille	di <u>Uli Pro</u>	auction
end gi	ve plugging detail (	forsted in any other zone(s) sacks of cement or bridge pl	ug(s) used)	
N				
5. Give t		of any overlying and/or und	erlying oil or ge	e zones (pouta) j
		Andres top at + 480	00'	
		wer Bone Spring top		· · · · · · · · · · · · · · · · · · ·

# ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WELL DATA SHILL

MEWBOURNE OIL CO. BURLESON FEDERAL	
2 660 FNL, 660 FEL 26 18S 32E WELL NO. FOOTAGE LIBERTION SCOTION TOWNSHIP RANGE	_
Schematic Tabular Data	_
Surface Casing  Size 11 3/4 " Cemented with 485  100 Surface Feet determined by Circ.  Hole size 15"	
Size 8 5/8 " Cemented with 2100  100 Surface Feet determined by Circ.  Hole size 11"	_^*
28061    Cang string   Size 4 1/2	_•*•
Injection interval  8515 feet to 8584 feet (perforuted	
TD = 8700'	
Tubing size 2 3/8" lined with Bare Steel set in	
Otis Permalatch packer at 8415 real	-
(brand and model)	
(or describe any other casing-tubing seal).	
Other Date  1. Name of the Injection formation 1st Bone Spring Sand	
2. Name of field or Pool (if applicable) Querecho Plains	_
3. In this a new wall driffed for injection? /7 Yes /  No	_
If no, for what purpose was the well originally drilled? Oil Production	<del>,</del>
4. Hem the well ever been perforated in any other zone(s)? List all such perforated into and give plugging detail (secks of cement or bridge plug(s) used)  NO	rvali
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) this area.	in
Overlying - San Andres top at - 4800'	

# ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WELL DATA SHITE!

	IRNE OIL CO				225
T WELL NO.	660 FNL, 23	310 FEL	26 SCCYTON	18S Townsille	32E
· · · · · · · · · · · · · · · · · · ·		<del></del>			
Sehe	matic		<u>T                                    </u>	abular Data	
		Surfa	ce Casing		
<b>#11</b> 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$	Size	11 3/4	" Cemented wi	ith <u>485</u> .
	}	100	Surface	feet determined t	y Circ.
	350'	Hole	size 151		
8111111		•-•	and the Control		
411111	•		ediate Casing 8 5/8	* Cemented u	2250
				feet determined i	
		·	eize 11		<u> </u>
QHHHY	<b>2800'</b>	11018	11		
<b>)      </b>			<u>etring</u>		
<b>\  \  \  \  \  \ </b>				* Cemented w	
<i>\$</i>           <i> </i>		_		feet determined (	y <u>Calcn.</u>
			•ize <u>7.7</u>		_
		Total	denth <u>8700</u>	<u>'</u>	•
		Injec	tion interval		
3111			12 reet	8572	feet
$\mathbf{M} \cap \mathbf{M}$		(1284)	prated Comments		-
<i>[</i> 4111)					
11111					
- YI I I I I I					-
- 51   N					
<i>k</i> 1 1 <del>2</del>	_				
<i>\$</i>    }	<u>-</u>				
	8700'				•
ΓD = 870	•				,
10 - 670	<b>30</b>				
Tubing siz	2 3/8"	lined with	Bare St	teel	set in
	Permalatch		packet		feet
•-	rend and model) be any other casin	n-tuling sent	<b>.</b>		
Other Date	•	ig-turing seer	, <b>.</b>		
	I the injection fo	rmation 1st	Bone Sprin	ng Sand	
	f Field or Pool (i				
•	e a new well drill				
	for what purpose	•	_		ction
	<del></del>				
4. Hes th	e well ever heen ( ve plugging doteil	erforated in (	any other zone(a) ment or bridge pi	)? List all such lug(s) used)	perforated inter
No				· · · · · · · · · · · · · · · · · · ·	
	•	· · · · · · · · · · · · · · · · · · ·			
5. Give t	the depth to end no	me of any ove	rlying and/or und	ierlying all ar ge	s zones (pouls)
	erlying - San	Andres t	op at + 4800	)'	
	derlying - Lo				

# ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WELL DATA SHEET

MEWBOURNE OIL CO.	SPRINKLE FED	ERAL	
2 660 FNL, 1980 FVLL NO. FOOTAGE LUCATION		18S	32E
WELL NO. FORTAGE LUCATION	SCCTTON	TOWNSHIP	RANGE
Schonetic  Schonetic  Schonetic  8711'  TD = 8711'		Cemented wi feet determined be 11 <sup>11</sup> Cemented wi feet determined in  Cemented wi feet determined in 2 nc	th 400 st. y Circ.  thththts.
Tubing size 2 7/8" lin	ed with Bare S	teel	set in a
Otis Permalatch	packer i	8442	feet
(or describe any other ceaing-tubi	ng scel).		
Other Data	4		
1. Name of the injection formatio			
2. Name of field or Pool (if appl			
3. Is this a new woll drilled for If no, for what purpose was th	<del></del>		uction
4. Her the well ever been perfore and give plugging detail (seck	ted in any other zone(a) a of cement or bridge pl	ug(e) used)	perforated interval
5. Give the depth to and nome of this area.	any overlying end/or und	eriying oli ar ga	e zones (pauls) (n
Overlying - San And	res top at + 4800	f	
Underlying - Lower			

# ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WELL DATA SHELT

MEWBOL	JRNE OIL CO.	SPR	INKLE FEDE	RAL	
				18 <b>S</b>	32E
WELL NO.	FOOTAGE LUCATION	9	ECTION	TOUNSHIT	RANGE
Scher	660 FNL, 660 FORTACE LOCATION  ***********************************	Surface Size Toc Hole size Toc Size Toc Size Toc Size Toc Internet	Tobula  Casing  13 3/8  Surface fee  17 1/2  State Casing  8 5/8	Cemented with the determined by	735 Calcn.
Y TITLE	10635'				•
TD = 13:	350'				
Tubing size	2 3/8" 1	ined with	Rare Steel		•et In a
	ermalatch		pecker st		feet
*	end and model) a any other casing-tu	bing seal).	_		
Other Date	•	-			
	the injection format				
	field or Pool (if ep				
	o a new wall drilled for what purpose was				ction
and giv	well ever been perfore plugging detail (se 6 <sup>1,</sup> —10350' CIBP	cks of cessi	t or bridge plug(	s) used)	erforated intervals
	'-8478' squeeze				
this or				ying oil or ges	zonem (pamia) in
	rlying - San Ar				
Und	erlying - Lower	Bone S	oring top at	<del>-</del> 8650'	

## ITEM III OF NEW MEXICO OCD FORM C-108

MEWBOURNE OIL CO. FEDERAL E OPERATOR **18S** 32E 660 FNL, 530 FEL 11 TOOTACE LUCATION SCCTION TOWNSHIP WELL NO. RANGE Tobular Data Schemetic Surface Casing Size 13 3/8 " Cemented with 1120 sx. tor \_\_Surface\_ feet determined by \_\_Circ. 1125'-shoe Hole size \_\_\_ 17 1/2" Intermediate Casing Size 8 5/8 roc Surface \_ feet determined by \_ Circ.\_ 11" Hole size 44801-shoe Long string size 5 1/2 1625 Cemented with 89721 Total depth Injection interval 8388 8360 \_ feet to (perforated e and 8450 feet to 8486 feet. E Perfs 8360'-8486' CIBP @ 8800' Note: Already converted to injection Perfs 8826'-8870' in August 1992 per Division Order 8972'-shoe R-9737. TD = 8972'Tubing size 2 7/8<sup>41</sup> lined with Bare Steel (mutariul) packer at <u>8270</u> Otis Permalatch (brand and model) (or describe any other casing-tubing seal). Other Date 1. Name of the injection formation \_\_\_ 1st Bone Spring Sand 2. Name of field or fool (if applicable) \_\_Querecho Plains 3. In this a new well delited for injection? 177 Yes X No If no, for what purpose was the well originally drilled? Oil Production 4. Has the well ever been perforated in any other zone(s)? List all such perforated interand give plugging detail (eacks of cement or bridge plug(s) used) Bone Spring Carbonate 8826'-70' (non-productive). Isolated from above perfs by CIBP at 8800'. 5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pouls) in Overlying - San Andres top at 48361 Underlying - Lower Bone Spring top at 8660'

ITEM III OF NEW MEXICO OCD FORM C-108 INJECTION WELL DATA SHELT MEWBOURNE OIL CO. FEDERAL E DPERATOR **18S** 32E 10 2310 FNL, 2310 FEL TOWNSHIP FOOTAGE LUCATION SCETTON WELL NO. Schonet I c Tabular Pota Surface Casing Cemented with 475 Size 13 3/8 \_\_= TOC Surface reet determined by Circ. 4561 17 1/2" Intermediate Casing Cemented with \_\_\_\_2600 sk. Size 8 5/8 Inc Surface feet determined by Circ. 12 1/4" Hale size \_\_\_\_ 4542 Long string Size \_\_\_\_\_ 5 1/2 Cemented with 1400 10C \_\_\_\_2038 7/8" CBL 8922'-2600' 7 7/8" Hole mize \_\_ 90201 Total depth Injection interval 8530 8501 feet to -90201 TD = 9020'Tubing size 2 7/8" lined with Bare Steel Otis Permalatch packer at \_\_\_\_8401 (brand and model) (or describe any other casing-tubing seal). Other Data 1. Name of the injection formation 1st Bone Spring Sand 2. Name of field or Pool (if applicable) \_ Querecho Plains 3. In this a new well drilled for injection? /7 Yes If no, for what purpose was the well originally drilled? Oil Production 4. How the well ever been perforated in any other zone(a)? List all such perforated inter and give plugging detail (sacks of cement or bridge plug(s) used) No

5. Give the depth to and nome of any overlying and/or underlying oil or gas zones (pauls) in

Overlying - San Andres top at - 4800'

Underlying - Lower Bone Spring top at ± 8650'

# ITEM V OF NEW MEXICO OCD FORM C-108 MAP OF ALL WELLS WITHIN 2 MILES OF INJECTORS QUERECHO PLAINS BONE SPRING SAND UNIT

ı	The second of the second	Arteloff City and Arteloff the and	1 Transaction to the second transaction to	1 6/10 to Charles V 127/08 mans	follows the ten to find the Chairm	Roomstand Control of the Control
	The Shirt of the Said	The state of the s	19 ADV AT AT AT AT AT	Transfer Street	\$ 1500 L 1700 L 1700 L 1700 L 1700 L	17
	13050 A F RODE	frank in a bi alla ge	LARIN - MUNCY LOPERY	The state of the s	The second second	Transfer Ber wege
1	Ann of the truster	Colors Character Street	To introduce U. S. tromphospins	1 Store	Sairy of the Contract of the C	Similar to more foreign manager
	hitra colonia	off francistic Chrosocitit fishes and the	The state of the s	Amoro (1)11	tipe to the time to the second	THE
	Mary case to the state of the s	Chousealth fisher and first formers of the first fo	THE PARTY OF THE P	acides from the second	cia . Speane     Car	1 19 3 Care 1
	Tion Programme Street As Programme	Cheveny of the control of the contro		\$4000 25077 1000	at suite !	(Amissa) 10 (Canoco) D
	(a)	(n) I fundad of horrs . (n) II	Chesses nor 12642 Amocs (Chesses 12642 100	American Indiana Indiana	Santa di Vates 12 Christian of Mr.	So Harring
		The state of the s	u.t.	40451 (10)	Ameron (a. Vaniale Emil	************
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		other denty S Add	**************************************	Yole; Anava	The first state of the state of
I T	where the contract of the cont	The state of the s	Maridian (J 5. Sprinkeletal)	Santate Santote thereful	Selection O.S. 7253	771
	Part of the same o	Lanes (r)	0 40452	nor Surje 181	Sam-year	the top of the top
		m. # 1010 No antichelli in	INCOMEDITE CONTROL	125 Aug 16 65 on 120 150 150 150 150 150 150 150 150 150 15	Allerday on the Ener.	··· ( O \ ) A \ \ \ \
\{\cdot\}:	Sylve Tomania Series	and States or Justice	MIESPET (OPER)	G Sen Cuttle Co.	The state of the s	- 110
	mydir o Const Carry No.	(Flag Regient)	1200 ag	Market Property		of How Saling
	IN H CO	11 January E 1196	read the same of t	Japan Herrichaill Shinnery, Fade	The contraction of	10347
4		31016	man sharped offices	plan adding the state of the st	See No way	west Corbinsed.
	Colors fied extent	Tules hapaths if mine it is in a series in	Inchurae 75 Aury Gro Sa (Mr.(M)	Are modell Arestoner Merchaurne	Grand Committee	HIII.
	OIA R. CO WHI	7082 Pille 1000 11	32	Herion Charles (Maries and mail)		Hudson Hedson   Amore   He   He   He   He   He   He   He
7	Ser des	(//////////////////////////////////////	32	Louise,	BIA	Hudson's Hudson's name of the half of the hudson of the hu
1	How works and		22/04/	Country bonner 2 2 Caperina 19	Cincular Adology 1004705	A Paris Services
	711 9011.	Sere estat	Charman (St. 1998)	יייי שיייי בייייי ביייייי ביייייייייייי	Antiger State of the Recent of	riudian nuator Amara etal
l:},	noza raza raza	An est see	TIA OF THE PARTY O	Marten is the state of the stat	The state of the s	OCTOR  OC
+	mente fingen bei eine faterbet.	28 27 10 Chingson and			L. Tri.	H G Hammyroust , a is the state to the U.S.
]	William Co. Trans.	de la serie		Maintenant Statement Suffering	Antone Kuly	Hill Controls Hudson minister
ľ	the state of the s	Total System Common 11	History of the same	ibentule pour	# ( 183 /88 + 2 345 ) I H	Grand (miles to the second of the second of the second (miles to the second of the sec
		Charles (1994) 1 Con	A. m. Lad., m Dede fint	Anada ta	1 065110 / 1 1 10	Iriudsant, Hueseni er Resina
	The state of the s	I'm Bourseams muse	1 to Anomina to Class	Charles No.	Sweeney or 25 and or an	Willer It - 30 Minister !
	MA/A/NS	State Black - The			Grade Com	to store and the
#		Million LINK, MI	on one Charles Harding	The second second	"ten te fames" U.S.	The state of the s
	Secretic 6 a 3 core	Chygren is the property of the control of the contr	Salvey in (Sal West III)	the teneral hold wanger, at 10 H therey, Val	H f. Yules	ANTE TE O Haragan us
-	Lis-1655 ent-He-bing	18734 US56014 / Burleton 6 Hulf Superior Fru	Devento Above sage in U.S.	25 519 (west of the second of	He wites La French de nomine 3/	MAP
Į ij	Had in its ris Atom-SA	1 Lili #4	An in the property of the state	(interest) (interests) (interest) (interests) (interests) (interests) (interests)	1472 No. 4 2-12	A.V.
	32 I mil	Could be seen the seen to the	Pet they 3.4 (Formatis) Corp etab Devan Enge, sp. shore,	ine curj. /	36	nne f 31 55
1,	CS NAS	medicare galle fri Der	24161 nhuopibelit' 5/8	Sign Persy	Sol West III 3: 1: 91 Strata Fred. VII: 10: 8: 10: 10: 10: 10: 10: 10: 10: 10: 10: 10	"" A MANANA
lli	11-31 11-316 31070	Gulf town v, bull for the 256 See Control for the 256	of Sunga, and International pages 6-son for all consumers of street and a street are supply and sup	Chief Connection	VIII-10 Paleme-SI.	7.
*		Final I	Francisco Sant Streets Street	Valor Die U.S.	State O	14.
H	Pet Amore instant	Chryson fee 3 200000 100000 1000000 1000000 1000000 1000000	determed time to a fair 5.55	7 1 34 VB 324 366 21	Miteney 3 Engr   Diceidion Uil 0 6 1, 40 1 12868	Il Man d'MHI. Halda Harda La (Carrer a) Amneo
"	NGS Trunces I'm a	Shell test of	Shell-Feu Bulle Antan	1 5el	110#	"HE CTION 1 150
. **		Takes	September 1   Se	West W   2   2   2     1   1   2   2   2     1   1   2   2   2   2   2   2   2   2	48	iins (Otron) + 4
H۳	Million Asset Street Street	The Market of the Committee of the Commi	Lief beeb fin   ( ) ( ) ( ) ( ) ( )	Shere 2 isol 1 i westellig	(Seema) 1 (Superior)	Amount of the state of the stat
F/)	osinessing out a na	MY Tares (1.013 Amore	Chair Check And Section 199		Bandurant Fed 140	nos. I Nottie - fed America
	1,7,0	U.S	8.298 V.S 105	i Cartus opsuirrionsse Liggosos Stoto	i n . Handuran f. Fed;" (F. S	Fig. 10 - Maring 100
	Culturation 12 min	Christon (IF L. Mc Mary)	MARBOB (OPER.)	Margi An eld 23014 271140   Sun	(Upland Fred) thirty (1) 56261 (11) (41)	11 B 11 11 11 11 11 11 11 11 11 11 11 11
H	103500 103500 1	Pel Ore Curp.	LUSKI SEV RIV'S LUNITI	7) jed ; 5un nis 118P 	1004 31 (4)	The Charles will be seen
;	Att Ang	NI TANGATA	(1, 1) and 1 and 1 billy (1, most	Harrison Coner Living mit for the backup foliation to blancing	(6) (711) (73	ATT.
113		LLANOINC LOPERI E LUSK (STR DR) UNIT	10 tet the comp	11		ann i Standard Constant
	i ( - )	As autoruma nati	1	: 1	6336) (ditres	P. 18.

COMPLETION & COMMENTS	CMT PLUGS 8450'-8650' 6550'-6650' 6550 W/ 70 SX 5460 W/ 30 SX OPEN PERFS 4990'-5017	PERF & PROD 11200*-11204' CIBP @ 11140' PERF & TEST 9710*-9752' RET @ 8840' PERF & REST 5012*-5076' RET @ 4944' PERF & PROD 4006*-4552' SOZ 4006*-4552', 5012*-5076', 9710*-9752' OPEN PERFS 10882*-11426'	OPEN PERFS 8424'-8514'	PERF & TEST 13226*13317 CIBP @ 13115' PERF & TEST 12334*12354' PERF & TEST 10598*10606' PERF & TEST 4962*4980' P&A	PERF & TEST 8660'-8694' CIBP @ 8550 OPEN PERFS 4990'-6790'	OPEN PERFS 8412'-8490'	OPEN PERFS 8478-8504'	PERF & TEST 10816'-10860' BRPG 10800' PERF & TEST 10216'-1024' BRPG 10200' PERF & TEST 10008'-1029' BRPG 8000' PERF & TEST 10008-1029'
Ð	8975	12500	B670°	13430'	8782	8750	9500	11243'
DATE	06/2/9	36.088 ,	2/18/89	4/11/82	10/31/89	622/89	405/89	8/24/88
TOP OF CEMENT	SURFACE 2178 2807	SURFACE SURFACE SURFACE	SURFACE(V) SURFACE(V) SURFACE(V)	(SEE ATTACH) 4/11/82	SURFACE(V) SURFACE(V) 2555'(CBL)	SURFACE(V) SURFACE(V) 2760'(CBL)	SURFACE(V) SURFACE(V) 2746'(CBL)	SURFACE SURFACE 1718
CONSTRUCTION	13.3/8 @ 400' CMT W/ 600SX 8.5/8 @ 3140' CMT W/ 375 SX 5.1/2 @ 5350' CMT W/ 510 SX	13.38 <b>6</b> 383' CMT W/ 350 SX 8 58 <b>6</b> 2804' CMT W 1655 SX 5 1/2 <b>6</b> 12496' CMT W 2965 SX	13.38 @ 450' CMT W/ 200 SX 8 58 @ 4332 CMT W/ 1320 SX 5 1/2 @ 8670' CMT W/ 1425 SX	13.38 @ 674' CMT W/ 700 SX 9 58 @ 4900' CMT W/ 2950 SX 5 1/2 @ 13430' CMT W/ 3270 SX	13 38 @ 410' CMT W/ 500 SX 8 58 @ 2744 CMT W/ 1300 SX 5 1/2 @ 8781' CMT W/ 1376 SX	13 38 @ 415' CMT W/ 500 SX 8 58 @ 2723' CMT W/ 1500 SX 5 1/2 @ 8740' CMT W/ 1325 SX	13.38 @ 444' CMT W/ 500 SX 8.58 @ 2727 CMT W/ 1550 SX 5.12 @ 9489' CMT W/ 1600 SX	13 3/8 @ 423' CMT W/ 395 SX 8 5/8 @ 3001' CMT W/ 1225 SX 5 1/2 @ 11243' CMT W/ 1910 SX
TYPE	9	텅	정	D8A	SWD	ole	OIF	OIF
LOCATION	T18S, R32E, SEC 13 800 FNL, 660 FM.	718S, R32E, SEC 13 1980 FSL, 1980 FWL	T18S, R32E, SEC 13 330 FSL, 330 FWL	716S, R32E, SEC 14 660 FNL, 1980 FEL	T18S, R32E, SEC 14 2310 FNL, 660 FEL	T18S, R32E, SEC 14 1980 FSL, 660FEL	T18S, R32E, SEC 14 1980 FSL, 1980 FEL	T18S, R32E, SEC 14 330 FSL, 2310 FWL
LEASEMEL	ERIE FED #1	SHINNERY FED #1	FED M#1	FED BY #1	SANTA FE ENERGY OPRTN SHINNERY FED 14#5	SANTA FE ENERGY OPRTN SHINNERY FED 14 #4	SANTA FE ENERGY OPRTN SHINNERY FED 14#3	QUANAH FED#1
OPERATOR	SIETE 0&G	MERIDIAN OIL CO	MEWBOURNE OIL CO.	AMOCO	SANTA FE ENERGY OPI	SANTA FE ENERGY OPI	SANTA FE ENERGY OP!	SIETE O&G

COMPLETION & COMMENTS	BRPG 9110' PERF & TEST 8681'-9014' BRPG 8665' PERF & PROD 8448'-8516' CLEAN OUT TO 9900' CIBP @ 9420' PERF & TEST 9252'-9400' RETR BP @ 5970' OPEN PERFS 4850'-5871'	PERF & TEST 9776'-9790' RET @ 9770', SOZ WI 42 SX PERF & TEST 9734'-9757 RET @ 9600', SOZ WI 50 SX REPERF & TEST 9735'-9745' BRPG 9642' OPEN PERFS 8481'-8510'	PERF & TEST 9726'-9732' BRPG 9615' OPEN PERFS 8496'-8526'	OPEN PERFS 8396'-8460'	OPEN PERFS 8430'-8574'	OPEN PERFS 8431*8506'	PERF & TEST 10848-10726 PERF & TEST 10172-10223 PERF & TEST 9619-9670 SOZ PERFS 9619-9670 W/ 1150 TOC CALC @ 3935' PERF & TEST 9726-9743' PERF & TEST 9192-9210' CIBP @ 9560' OPEN PERFS 8283-8426' RETR & @ 9506'	OPEN PERFS 8435'-8501'
P		10241'	9931	19860,	8650'	8760′	11780'	8700
DATE		11/19/88	3/10/89	2/18/86	4/17/88	11/3/87	6/25/87	11/10/86
TOP OF CEMENT	ŧ	SURFACE SURFACE 1267	SURFACE SURFACE 3305	SURFACE(V) SURFACE(V) SURFACE(V)	SURFACE(V) SURFACE(V) 2763	SURFACE(V) SURFACE(V) 2642	SURFACE(V) SURFACE(V) 7559	SURFACE(V) SURFACE(V)
CONSTRUCTION		13 3/8 @ 423' CMT W/ 500 SX 8 5/8 @ 2745' CMT W/ 1400 SX 5 1/2 @ 10241' CMT W/ 1800 SX	13 3/8 @ 435' CMT W/ 500 SX 8 5/8 @ 2750' CMT W/ 2875 SX 5 1/2 @ 9910' CMT W/ 1325 SX	13.38 @ 440' CMT W/ 400 SX 8 5/8 @ 4472' CMT W/ 2100 SX 5 1/2 @ 8960' CMT W/ 1700 SX	13 3/8 @ 460' CMT W/ 400 SX 8 5/8 @ 4330' CMT W/ 1575 SX 5 1/2 @ 8650' CMT W/ 1275 SX	13 3/8 @ 438' CMT W/ 400 SX 8 5/8 @ 4318' CMT W/ 1600 SX 5 1/2 @ 8760' CMT W/ 1325 SX	13 3/8 @ 350' CMT W/ 350 SX 8 5/8 @ 2777' CMT W/ 1200 SX 5 1/2 @ 10800' CMT W/ 650 SX	13 3/8 @ 478' CMT W/ 500 SX 8 5/8 @ 4286' CMT W/ 1400 SX
TYPE		ਰ	Ы	ਲ	ਰ	OIF	ਰੋ	OF
LOCATION		T18S, R32E, SEC 14 330 FSL, 1650 FEL	T18S, R22E, SEC 14 330 FSL, 660 FEL	718S, R32E, SEC 22 330 FSL, 330 FEL	718S, R32E, SEC 23 660 FNL, 660 FEL	T18S, R32E, SEC 23 660 FNL, 1650 FEL	T185, R32E, SEC 23 1850 FNL, 990 FWL	T18S, R32E, SEC 23 1980 FNL, 1980 FWL
LEASEMELL		SANTA FE ENERGY OPRTN SHINNERY FED 14#1	SANTA FE ENERGY OPRTN SHINNERY FED 14 #2	FED H #2	FEDL#5	FED L #4	MURJO FED #1	CEDAR LAKE FED #2
OPERATOR		SANTA FE ENERGY OPR	SANTA FE ENERGY OPF	MEWBOURNE OIL CO.	MEWBOURNE OIL CO.	MEWBOURNE OIL CO.	MANZANO OIL CO.	MEWBOURNE OIL CO.

		QUEHECHO PLAI	INS BONE SE	QUEHECHO PLAINS BONE SPRINGS SAND UNIT				
OPERATOR	LEASEMELL	LOCATION	TYPE	CONSTRUCTION	TOP OF CEMENT	DATE	6	COMPLETION & COMMENTS
				5 1/2 @ 8708' CMT W/ 1075 SX	3347			
MEWBOURNE OIL CO.	FED L#3	T18S, R32E, SEC 23 1980 FNL, 1650 FEL	늄	13.38 @ 450' CMT W/ 416 SX 8 5/8 @ 4315' CMT W/ 1700 SX 5 1/2 @ 8698' CMT W/ 1475 SX	SURFACE(V) SURFACE(V) 1342	6/19/87	,9696	PERF & TEST 6598'-8610' CIBP ● 8585' OPEN PERFS 8446'-8530'
MEWBOURNE OIL CO.	FED L#6	T18S, R32E, SEC 23 1880 FNL, 660 FEL	븅	13.3/8 @ 448' CMT W/ 475 SX 8 5/8 @ 4330' CMT W/ 1575 SX 5 1/2 @ 8650' CMT W/ 1400 SX	SURFACE(V) SURFACE(V) SURFACE(V)	7/24/88	8650	OPEN PERFS 8436'-8520'
MEWBOURNE OIL CO.	FED L#7 old(EDITH FED #1)	T18S, R32E, SEC 23 2310 FSL, 990 FEL	귱	5 1/2 @ 8670' CMT W/ 250 SX 5 1/2 @ 8670' CMT W/ 4630 SX	SURFACE(V) SURFACE(V)	5/14/88	0.029	DEEPEN FROM OTD @ 4281' (1 OPEN PERFS 8485'-8552'
MEWBOURNE OIL CO.	FED L#2	T18S, R32E, SEC 23 2310 FSL, 2030 FEL	OIL.	13 3/8 @ 441' CMT W/ 450 SX 8 5/8 @ 4283' CMT W/ 1800 SX 5 1/2 @ 8750' CMT W/ 825 SX	SURFACE(V) SURFACE(V) 3538'(CBL)	10/14/86	8750	OPEN PERFS 8458'-8531'
MEWBOURNE OIL CO.	GOVERNIMENT K #2	T18S, R32E, SEC 23 1950 FSL, 1980 FWL	2	13 3/8 @ 700' CMT W/ 700 SX 8 5/8 @ 4800' CMT W/ 3100 SX 5 1/2 ½ 4408*-8900' CMT W/ 900 SX	SURFACE(V) SURFACE(V) 4408'	9/19/96	,0068	PERF & PROD 8343-8515' CIBP © 5069' PERF & TEST 4859' SQZ 4859' W/ 225 SX CLEAN OUT OPEN PERFS 8343-8515'
MEWBOURNE OIL CO.	FED F#3	T18S, R32E, SEC 23 1980 FSL, 990 FWL	OIF	13.38 @ 480' CMT W/ 275 SX 8 5/8 @ 4285' CMT W/ 1700 SX 5 1/2 @ 8570' CMT W/ 1375 SX	SURFACE(V) SURFACE(V) 1713'	12/31/86	8570	OPEN PERFS 8362'-8448'
MEWBOURNE OIL CO.	QUERECHO FED #1	T18S, R32E, SEC 23 610 FSL, 760 FWL	OIF	13 3/8 @ 354' CMT W/ 385 SX 8 5/8 @ 3047 CMT W/ 1475 SX 5 1/2 @ 8565' CMT W/ 1250 SX	SURFACE SURFACE 2331'	12/31/85	9580	OPEN PERFS 8414'-8447
MEWBOURNE OIL CO.	QUERECHO FED #2	T18S, R32E, SEC 23 760 FSL, 2310 FWL	ol.	13 3/8 @ 374° CMT W/ 385 SX 8 5/8 @ 3010° CMT W/ 1300 SX 5 1/2 @ 8703° CMT W/ 1100 SX	SURFACE SURFACE 3217	98/9/5	9100,	OPEN PERFS 8459*8526"
MEWBOURNE OIL CO.	FED L#1	T16S, R32E, SEC 23 660 FSL, 1980 FEL	Ы	13 3/8 @ 459' CMT W/ 400 SX 8 5/8 @ 4345' CMT W/ 1700 SX 5 1/2 @ 9050' CMT W/ 1050 SX	SURFACE(V) SURFACE(V) 3814'	4722/86	9050	OPEN PERFS 8474-8538'
ВТА	CINCO DE MAYO FED#1	T18S, R32E, SEC 24 660 FNL, 1980 FWL	P.8.4	13.3/8 @ 757 CMT W/ 1050 SX 9.5/8 @ 4657 CMT W/ 1500 SX 5.1/2 @ 14700' CMT W/4000 SX	SURFACE(V) SURFACE(V) SURFACE(V)	329/61	14905'	PB 4400' PERF & PROD 4014'-4090' P&A
MEWBOURNE OIL CO.	FED P#1	T18S, R32E, SEC 24 660 FNL, 660 FM.	96	13 3/8 <b>0</b> 45/2° CMT W/ 450 SX 8 5/8 <b>0</b> 4347° CMT W/ 1600 SX	SURFACE(V) SURFACE(V)	3/31/89	8680	OPEN PERFS 8473-8545

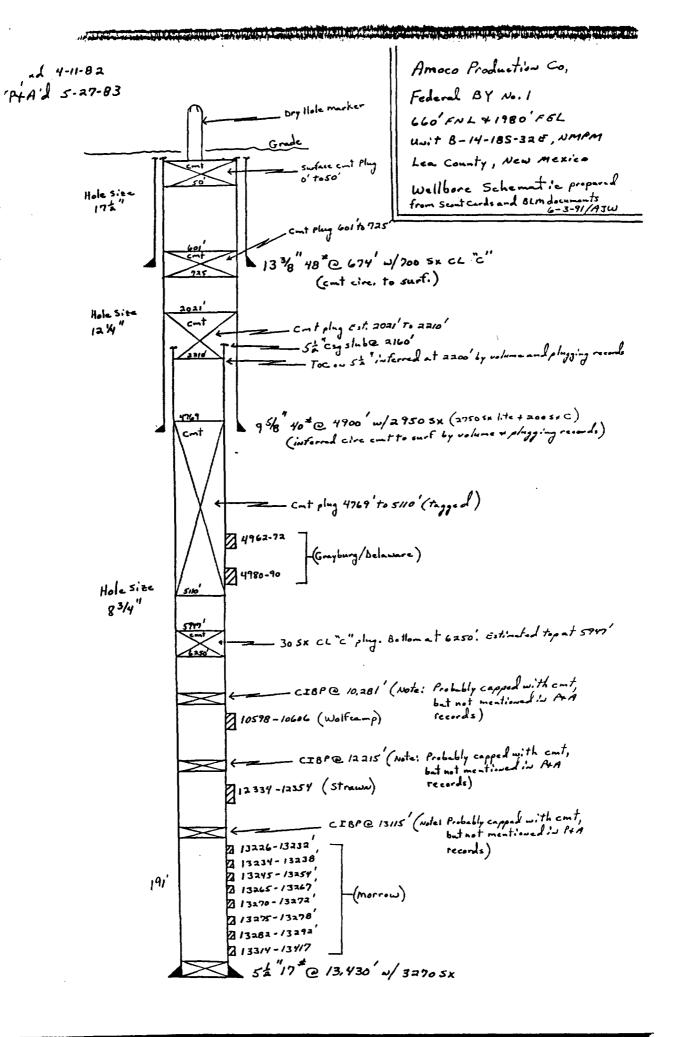
OPERATOR	LEASEMEL	LOCATION	TYPE	CONSTRUCTION	TOP OF CEMENT	DATE	£	COMPLETION & COMMENTS
				5 1/2 @ 8680' CMT W/ 1425 SX	2100			
MEWBOURNE OIL CO.	FED P#2	T18S, R32E, SEC 24 1980 FNL, 330 FWL.	ਰ	13 3/8 @ 430' CMT W/ 450 SX 8 5/8 @ 4330' CMT W/ 1950 SX 5 1/2 @ 8725' CMT W/ 1425 SX	SURFACE SURFACE 1618	8/05/89	8725	OPEN PERFS 8468-8524'
HANLEY PETRO.	HANLEY '24" FED #1	T18S, R32E, SEC 24 2310 FSL, 330 FWL	P&A	13 3/8 @ 410' CMT W/ 400 SX 8 5/8 @ 3015' CMT W/ 1125 SX 4 1/2 @ 8700' CMT W/ 1830 SX	SURFACE SURFACE 1380	12/30/90	8700	PERF & PROD 8492'8567' P&A
MEWBOURNE OIL CO.	FRENCH FED #1	T18S, R32E, SEC 24 660 FSL, 660 FWL	Ы	11 3/4 @ 350' CMT W/ 725 SX 8 5/8 @ 2800' CMT W/ 2000 SX 4 1/2 @ 8700' CMT W/ 780 SX	SURFACE SURFACE 5742	2/15/86	8700	PEHF & PROD 8534'-8568' CIBP © 8440' OPEN PERFS 6650'-6670' SQZ 6650'-6670' W/ 2195X CLEAN OLT TO 8654' OPEN PERFS 8534'-8568'
НАУСО	SWEENY FED #1	T18S, R32E, SEC 25 660 FNL, 1980 FML	io	13 5/8 @ 1533' CMT W/ 100 SX 8 5/8 @ 1534' CMT W/ 150 SX 7 @ 2747' CMT W/ 100 SX 4 1/2 @ 8890' CMT W/ 265 SX	1381' 1150' 997' 6658'	1/25/58	9593	PERF & TEST 8651-8655 SQZ 8651-8655' W/ 505X PERF & TEST 8612'-8620' SQZ 8612'-9620' W/ 755X OPEN PERFS 8860'-6875'
ENFON	U.S. 25 FED COM #1	T18S, R32E, SEC 25 1980 FSL, 660 FWL	io	13 3/8 @ 492' CMT W/ 550 SX 8 5/8 @ 4539' CMT W/ 1220 SX 5 1/2 @ 13747 CMT W/ 500 SX	SURFACE(V) SURFACE(V) 11253'	12/3/83	13750	PERF & TEST 13186'-13530' SQZ HOLES & 9850 W/200 SX RET & 8820', PB 8777 TOC @ 7853' OPEN PERFS 8604'-8644'
MEWBOURNE OIL CO.	BURLESON FED #2	T18S, R32E, SEC 26 660 FNL, 660 FEL	Ħ	11 34 @ 349' CMT W/ 485 SX 8 5/8 @ 2806' CMT W/ 2100 SX 4 1/2 @ 8700' CMT W/ 1200 SX	SURFACE SURFACE 4149	1/2/86	8700'	OPEN PERFS 8515'-8554'
MEWBOURNE OIL CO.	BURLESON FED #1	T18S, R32E, SEC 26 660 FNL, 2310 FEL	성	11 3/4 @ 350' CMT W/ 485 SX 8 5/8 @ 2800' CMT W/ 2250 SX 4 1/2 @ 8700' CMT W/ 1205 SX	SURFACE(N) SURFACE(N) 4130	11/2/85	8700'	OPEN PERFS 8512'-8572'
MEWBOURNE OIL CO.	SPRINKLE FED #2 old(WALKER FED #1)	T16S, R32E, SEC 26 660 FNL, 1980 FWL	ᆼ	8 5/8 @ 547 CMT W/ 400 SX 5 1/2 @ 8711' CMT W/ 1950 SX	SURFACE(V) SURFACE(V)	10/3/85	8711,	RE-ENTRY OF D&A WELL OPEN PERFS 8542'-8574'
MEWBOURNE OIL CO.	SPRINKLE FED#1	718S, R32E, SEC 26 660 FNL, 660 FWL	OIL	13 3/8 @ 536' CMT W/ 500 SX 8 5/8 @ 4814' CMT W/ 2925 SX 4 1/2 @ 10635' CMT W/ 735 SX	SURFACE(V) SURFACE(V) 7847	5/11/85	13350'	PERF & TEST 10196°-10350' PB 10175' PERF & TEST 8439'-8532' SOZ 8439'-8478' OPEN PERFS 8507-8532'
MEWBOURNE OIL CO.	SPRINKLE FED #3	T18S, R32E, SEC 26	OIF	11 3/4 @ 350' CMT W/ 485 SX	SURFACE	3/9/86	8710	OPEN PERFS 8502'-8568'

# ITEM VI OF NEW MEXICO FORM C-108

	TS				<b>.</b> 4		<del>-</del>				<u>.4</u>
	COMPLETION & COMMENTS		PERF & PROD 8823'-8836' CIBP © 8805' OPEN PERFS 8541'-8587' RBP W/20'SAND © 8500' OPEN PERFS 5626'-5638'	PERF & TEST 8547-8616' RET @ 8566 PROD 8547-8557 PB TO 8475' OPEN PERFS 5652:5667	PEHF & TEST 10471'-10584' BP @ 10455' PEHF & TEST 9876'-9952' BP @ 8905' PEHF & TEST 836'-8606' SQZ 8536'-8606' PEHF & PROD 9374'-9567' CIBP @ 9308' OPEN PEHFS 5620'-5632'	OPEN PERFS 8360'-8486' PERF & TEST 8826'-8470' CIBP @ 8800'	OPEN PERFS 12625-12791'	OPEN PERFS 8504-8534	OPEN PERFS 8501"-8530"	OPEN PERFS 8470'-8532'	PERF & PROD 12693-12814' PERF & TEST 9910'-9978'
	₽		9000	8730	11150	8971'	12898'	9020	,0206	9050,	13061
	DATE		1/28/87	1/26/86	2/25/86	11/30/85	10/31/76	8/12/87	5/14/85	3/16/86	6/23/78
G SAND	TOP OF CEMENT	SURFACE §218	SURFACE SURFACE 5212	SURFACE SURFACE 2281'	SURFACE(V) SURFACE(V) 7122	SURFACE SURFACE 868'	SURFACE(V) SURFACE(V) 10327	SURFACE(V) SURFACE(V) 2911'	SURFACE(V) SURFACE(V) 3118(CBL)	SURFACE(V) SURFACE(V) 4888	SURFACE SURFACE
ITEM VIOF NEW MEXICO FORM C-108 WELLS WITHIN REVIEW AREA WHICH PENETRATE THE 1ST BONE SPRING SAND QUERECHO PLAINS BONE SPRINGS SAND UNIT	CONSTRUCTION	8 5/8 @ 2767 CMT W/ 1700 SX 5 1/2 @ 8710' CMT W/ 700 SX	13 3/8 @ 353' CMT W/ 370 SX 8 5/8 @ 2810' CMT W/ 1050 SX 5 1/2 @ 9700' CMT W/ 900 SX	11 3/4 @ 350' CMT W/ 485 SX 8 5/8 @ 2804' CMT W/ 2000 SX 4 1/2 @ 8729' CMT W/ 1700 SX	13 3/8 @ 35/2° CMT W/ 350 SX 8 5/8 @ 3008° CMT W/ 1500 SX 5 1/2 @ 10779° CMT W/ 600 SX	13 38 @ 1125' CMT W/ 1120 SX 8 58 @ 4480' CMT W/ 2400 SX 5 1/2 @ 8972' CMT W/ 1625 SX	13 38 @ 650' CMT W/ 650 SX 9 5/8 @ 4540' CMT W/ 2975 SX 5 1/2 @ 12898' CMT W/ 550 SX	13 3/8 @ 460' CMT W/ 485 SX 8 5/8 @ 4248' CMT W/ 1500 SX 5 1/2 @ 9020' CMT W/ 1225 SX	13.38 @ 456' CMT W/ 475 SX 8.58 @ 4542' CMT W/ 2600 SX 5.1/2 @ 9020' CMT W/ 1400 SX	13 38 @ 440' CMT W/ 450 SX 8 58 @ 4310' CMT W/ 1800 SX 5 1/2 @ 9052' CMT W/ 835 SX	13 38 @ 441' CMT W/ 550 SX 8 58 @ 4505' CMT W/ 1500 SX
ITEM VI OF NEW MEXICO FORM C-108 ITHIN REVIEW AREA WHICH PENETRAT DUERECHO PLAINS BONE SPRINGS SA	TYPE		8	OF	8	<u> 2</u>	Ю	ಕ	퓜	텀	ఠ
MELLS WITHIN REVIEV QUERECHO P	LOCATION	2310 FNL, 330 FWL	T18S, R32E, SEC 26 2310 FNL, 1650 FML	T18S, R32E, SEC 26 2310 FNL, 2310 FEL	T18S, R32E, SEC 26 1980 FSL, 1980 FWL	T18S, R32E, SEC 27 660 FNL, 530 FEL	T18S, R32E, SEC 27 660 FNL, 1980 FEL	T18S, R22E, SEC 27 1980 FNL, 1980 FWL	T18S, R32E, SEC 27 2310 FNL, 2310 FEL	T18S, R32E, SEC 27 1980 FNL, 330 FEL	T18S, R32E, SEC 27 1980 FSL, 1980 FWL
	LEASEMELL		SPRINKLE FED#4	P. BURLESON FED#3	PEJE-AN#1	FED E#11	FED E#1	FED E#13	FED E#10	FED E#12	FED G#1
	OPERATOR		SANTA FE ENERGY	ANADARKO PETRO. CORP. BURLESON FED#3	ANADARKO PETRO. CORP. PEJE:AN#1	MEWBOURNE OIL CO.	MEWBOURNE OIL CO.	MEWBOURNE OIL CO.	MEWBOURNE OIL CO.	MEWBOURNE OIL CO.	MEWBOURNE OIL CO.

# ITEM VIOF NEW MEXICO FORM C-108

	COMPLETION & COMMENTS	RET @ 9950' CIBP @ 9850' W/ 105X PERF & PHOD 9750'-9778' CIBP @ 9700' PERF & PHOD 8962'-8924' CIBP @ 8800' W/ 15' CMT OPEN PERFS 8506'-8538'	PERF & TEST 12723*12838' PERF & TEST 11922*11935' CUT 5 1/2 & RESET @ 8700' PERF & PROD 8538*8560' CIBP @ 6400' PERF & TEST 6254*6277' CIBP 4200' PERF & PROD 3910*4035' P&A
	₽		14330
	DATE		27758
4G SAND	TOP OF CEMENT	6831	SURFACE SURFACE 7284' 6419'
W CTION ENETRATE THE 1ST BONE SPRING SINGS SAND UNIT	CONSTRUCTION	5 1/2 @ 13061' CMT W/ 1395 SX	13 3/8 <b>©</b> 753° CMT W/ 750 SX 9 5/8 <b>©</b> 4548° CMT W/ 1300 SX 5 1/2 <b>©</b> 8700° CMT W/ 600 SX 5 1/2 <b>©</b> 8700° CMT W/ 600 SX
WELLS WITHIN REVIEW AREA WHICH PENETRATE THE 1ST BONE SPRING SAND QUERECHO PLAINS BONE SPRINGS SAND UNIT	TYPE	•	P.8.8
	LOCATION		T16S, R22E, SEC 27 660 FSL, 1880 FML
	LEASEMELL		ANADARDO #1 od(Q. P. UNIT #2)
	OPERATOR		MEWBOURNE OIL CO.



## ITEM VI OF NEW MEXICO OCD FORM C-108

Plugged Well Detail

BTA	Cinco De	e Mayo Federal		
1	660' FNL & 1980'		185	32E
WELL NO.	FOOTAGE LOCATION	SECTION	TOUNSHIP	RANCE
Sche	matic		Tabular Dota	
		Surface Casing		
The state of the s	15 sx. @ 50'	Size 13-3/8		
1	)	for Surface	feat determined by	, <u>circ.</u>
1	<sup>3</sup> 757 <sup>1</sup>	Hole size 16"		
11 1	50 sx. @ 810'	Intermediate Casing		
12242	· 50 sx. @ 2000'	512e 9-5/8	" Cemented vi	ւհ 1500 🔒
		TOC Surface		
	CIBP @ 3900'	Hole elze 10-3/4	<del>-</del>	
U	4014'-4290' sqz.			
	w/30 sx.	tong string Size N.A.		
	Shoe @ 4657'			th•
	Cement 4667'-476'	71	feet determined b	у
	Coment 1007 170	11016 8716	1 9051	
) (		Total depth 12	1,303	
1 1		Injection interval		
) }		(perforated or open-	to	feet
\ \ \frac{1}{2}		(periorated or open-	-nora, indicate unic	ft J
(				
( )				
) [				
1 1	i			
( /				
) 1	<u> </u>			
ليبيا				
TD 14,	.905			
Tubing size	line	d with	ntar(nt)	eet in a
	rand and model)	pecker	r at	fest
•	be any other casing-tubin	, <b>300</b> 17.		
Other Date	f the injection formation			
	f Field or Pool (if appli e a new well drilled for			
		<del>-</del>	_	
	for what purpose wee the			
A. Hoe th	e well ever been perforat ve plugging datail (sucks	ed in any other zone(	a)? list all such o	perforated interv
<u> </u>	•			
5. Give t	he depth to and name of a	ny overlying and/or u	nderlying oil or man	rones (ngula) i
this s	ree		,	.,
	······································			

## ITEM VI OF NEW MEXICO OCD FORM C-108 PLUGGED WELL DETAIL

HANLEY	PETRO. INC.	HANLEY 24 F	EDERAL				
1	2310 FSL, 330 f	FWL 24	18S Townsure	32E			
WELL NO.	LOOLAGE FOCKLINA	acciton	10042111	KUNIT			
Sche	natic	Tab	ulor Outa				
	20 sxs @ 55'	Size 13 3/8					
	410' 35 sxs @ 460'	Hole size 17 1					
	CMT 1981'-1825'	Size 8 5/8 -					
	25 sxs @ 3000' 3015'	Hole size 11111	——————	Calciii			
	3013	tang string  Size 4 1/2 = 100138010					
	25 sxs @ 4900'	Note size 7	7/8"	•			
		Injection interval					
		feet to open-ho	e, indicate which	feet			
CIBP @ 8375' with 20 sxs cement Perfs 8492'-8567'							
				•			
	8700'			·			
NOTE:	Cut and pulled 1	1932' of 4 1/2"					
Tubing eize	1 inc	ed with	riul)	eet in a			
	end end model) se any other casing-lubic						
Other Data	July	•					
1. Name of	T the injection formation	n					
		icuble)					
3. In this	s a new wall drilled for	Injection? 💯 Yes	/_7 No	- <del></del>			
If no,		o well originally drilled		<del></del>			
4. Has the	e well ever been perform ve plugging doteil (sack	ted in eny other zone(a)? a of cement or bridge plu	tist all such po g(s) used)				
	•			<u> </u>			
5. Give ti	he depth to and name of	any overlying and/or unde	rlying oil or ges	zones (pouls) in			

# ITEM VI OF NEW MEXICO OCD FORM C-108 PLUGGED WELL DETAIL

	MEWBO	URNE OIL CO.	ANADARKO F	EDERAL	· · · · · · · · · · · · · · · · · · ·
	OPERATOR		FFYPF	105	225
	WELL NO.	660 FSL, 1980 F	VL 27 SECTION	185 Township	RANGE
			•	sbular Dula	
	<u>5c</u>	:hematic	-	100111 1/010	
ш/	1111-22-	ւլ20 sxs plug 64¹	Surface Casing		. 750
MEWBOURNE	<b>///~</b>	to surf	Size 13 3/8		
2/	<b>///~</b>	//753'-shoe	roc <u>Surface</u>		<u>Caicn.</u>
8/	J. C. 12.7	45 sxs cement	Hole sire 16'		
<b>3</b>		2 plug @ 650'	Intermediate Casing		
岁		(BP @ 3650' with	Size 9 5/8	" Cemented wit	h 1300 ax.
-1		1) 15 sxs on top	oc Surface		
	<b>=</b> ()	Perf 3910'-4035'	Hote size 10		
(	(Q)	BP @ 4200'			
Z\	\	25. 6 4200 24589'-shoe	Long string (See	Schematic)	
BURLESON	) (4 )	<b>)</b>	Size		
<b>当</b> 《		$5\frac{1}{2}$ " stub, depth?, plugging info?	100	feet determined by	
æ	)	blugging into:	Hole size		
ā		3	Total depth		•
	从	生Perf 6254'-77'	Injection interval		
		(BP @ 6400'	feet	to	feet
	\ \\[ \\[ \]	<del>para.</del>	feet (performled or open-h	ole, indicate which	<del>न</del>
	\	Perf 8538'-60'	TOC 1	0 50471	
OIL	A A STATE OF THE	5½" @ 8700' cement	10C calcn.	. @ 5947	
	/ (	with 600			•
SHELL	) (	5½" stub, depth?	nlug information	? (Shell Oil C	Co. 4/59)
半	1 IA 1	Perf 11922'-35'	plag illioniation	. (22	
S	<i>[ ]</i>	萨Perf 12723-12838'			
		F			
	1 8	5}" @ 13004' ceme	nt with 1750 sys		
	1 2013	17 32 6 13004 ccinc.	16 11101 1730 323		
	1				
	/ <u>(</u>	<i>)</i>			
		143371			
	Tubing s	izeline	muth	eriul)	
		(brend and model)	packer	ot	feet
		ribe any other casing-tubing			
	Other De		•		
		of the injection formation			
		of field or Pool (if appli			
	•	his a new well drilled for	· · · · · · · · · · · · · · · · · · ·		
			- <b>-</b>	<del></del>	
	Ir n	o, for what purpose was the			
	A Han	the well ever been perforat	ed in any other zone(a)		
	and	give plugging detail (sucks	of cement or bridge p	lug(s) used)	
		·		<u>-</u> -	
	<del></del>	•		++ · · · · · · · · · · · · · · · · · ·	
		the depth to and name of a			
	thia	stee,		<u></u>	
	,				<del></del>

# ITEM VII OF NEW MEXICO OCD FORM C-108 DATA ON PROPOSED OPERATIONS OUERECHO PLAINS BONE SPRING SAND UNIT

- ITEM VII (1) Anticipated average injection rate is 650 bwpd/injector.

  Proposed maximum injection rate is 10000 bwpd for the unit.
- ITEM VII (2) The injection system will be operated as a closed system.
- As a result of no detrimental results from injecting a heavy (.50 psi/ft) Delaware water in test injection wells Federal E#11 and Government K#2, Mewbourne requests a maximum injection pressure of 2000 psi. A less heavy (.45 psi/ft) mixture of Double Eagle, Bone Spring and Delaware water is planned for the full flood. Anticipated average injection pressure is 1800 psi.
- The source of injection water for the subject unit will be fresh water supplied by the City of Carlsbad's Double Eagle system, Delaware produced water and Bone Spring produced water. Agreement has been secured with the City of Carlsbad for the rights of up to 12000 BWPD. A copy of this water rights agreement, as well as a copy of the water analysis and core test results using this water is attached.
- ITEM VII (5) Not applicable.

# ITEM VIII OF NEW MEXICO OCD FORM C-108 GEOLOGIC DATA ON THE INJECTION ZONE & UNDERGROUND DRINKING WATER QUERECHO PLAINS BONE SPRINGS SAND UNIT

The zone being targeted for water injection at Querecho Plains is the First Bone Spring sand at depths from 8328'-8620' in the well Federal L NO. 4, Section 23, T18S, R32E. The First Bone Spring sands are a sequence of well consolidated sandstone, siltstone, and shale strata, with localized carbonate deposition, of Permian age cemented with calcareous material. An eight percent porosity cut off is used to determine net pay as porosity less than eight percent is considered impermeable at the existing and proposed reservoir pressure and reservoir fluid regimes. Net pay isopach maps contained in the engineering report portion of the unit plan show the areal extent of the targeted sands. Impermeable carbonate deposits exist above and below the targeted sands thus defining the permeable limits of the reservoir. All injected fluids should remain in the reservoir with the exception of cycling to the surface though wellbores.

Based on communications with the New Mexico State Engineer's Roswell office (Ken Fresquez) and OCD files at Hobbs there appears to be only one fresh water well within T18S & R32E. This well's total depth was 270' and is located in the NW, NW, SE, SE, NW of section 20 (3 miles away from the nearest proposed injector). The source strata tapped by this well is the Triassic "Red Beds" and the only other strata Mr. Fresquez referred to as potentially fresh was the Alluvium which is shallower than the "Red Beds". There are no known fresh water strata underlying the Bone Spring.

## ITEMS IX THROUGH XII OF NEW MEXICO OCD FORM C-108 OUERECHO PLAINS BONE SPRING SAND UNIT

- ITEM IX. All wells of the proposed unit have an existing fracture stimulation. It is anticipated that all wells will be treated with acid at least once during the life of the unit.
- ITEM X. All logging and test data for the existing wellbores exist on file with the state of New Mexico Oil Conservation Division (OCD) and will not be resubmitted with this application.
- ITEM XI. As stated in ITEM VIII, it appears the only strata within one mile of our proposed unit which contains water of possible drinking quality is confined to 270' and shallower. No contamination of this drinking water should occur as all existing wellbores which penetrate the Bone Spring have surface casing set at a minimum depth of 350' with cement completely circulated behind this casing from setting depth to surface. In addition and to the best of my knowledge there are no fresh water wells within one mile of our proposed injectors.
- ITEM XII. After reviewing the geology of the Bone Spring Sand strata in a one and one-half mile radius around the proposed unit area, no evidence appears of fractures or any hydrologic connection between the target sands and any overlying or underlying strata.

### CAPROCK LABORATORIES, INC. 3312 BANKHEAD HIGHWAY MIDLAND, TEXAS 79701 (915) 689 - 7252

May 21, 1992

Mewburne Oil Company P. O. Box 7698 Tyler, Texas 75711

Attention: Kevin Mays

Subject: Water Compatibility Study

Gentlemen:

Presented in this report are the final results of a water compatibility study performed on 5 samples of produced water provided to this laboratory by Core Laboratory on behalf of Mewburne Oil Company. API Water Analysis was performed on each of the samples to determine their ionic characteristics. Based on these analyses, the scaling tendency with respect to cacium carbonate and calcium sufate were calculated and reported on May 19, 1992 (our Job Number 9205032). The samples were physically mixed to determine if precipitates would form. Turbidity was measured as percent transmittance on each of the combinations at 420 nanometers wavelength on a Milton Roy Model 601 Spectrophotometer.

The turbidity data are presented in this report and indicated that that the water from the Federal "E" #5 tank battery (Queen Formation) and the water from the Cedardrake Federal #4 well formed precipitates whe combined in the ratios tested (very slight decreaces in transmittance were observed). Additional analyses were performed on the waters to determine their barium concentrations and are also presented in this report. Based on calculations from theoretical combinations, all of the waters have a tendency to form both calcium carbonate and calcium sulfate scale on their own and these tendencies do not increase when mixed. The fresh water from Double Eagle and the Delaware produced water from the Cedardrake Federal #4 well both have barium and therefore presents the possibility of barium sulfate scale formation when combined with waters high in sulfate.

In conclusion, based on all of the analyses and physical combinations of these waters, the Delaware produced water from the Jewitt Feed #1 appears to be the most compatible water to the Bone Springs water from the Federal "L" lease.

Respectfully yours,

Xames L. Pritchard, Lab Manager

Caprock Laboratories, Inc.



Well No.:

Job No.:

## CAPROCK ABORATORIES,

3312 Bankhead Hwy. Midland, Texas 79701 (915) 689-7252 FAX # (915) 689-0130

WATER ANALYSIS REPORT

AMPLE

Oil Co. : MANZANO OIL Lease :

JEWITT FEED

9205032

Sample Loc. Date Sampled: Attention

2 Analysis No. :

COMPOUND

ANALYSIS

EQ. WT. \*MEQ/L MG/L

DELAWARE PROD.

pH Specific Gravity 60/60 F. CaCO<sub>3</sub> Saturation Index @ 6.550 1.165 80 F. +1.052 @ 140 F. +2.812

### Dissolved\_Gasses

4.	Hydrogen Sulfide		0.0
si.	Carbon Dioxide		Determined
6.	Dissolved Oxygen	Not	Determined

### Cations

-	Calcium Magnesium	(Ca**) (Mg**)		24,529 2,772	/ 20.1 = / 12.2 =	1,220.35
9.	Sodium	(Na')	(Calculated)	52,982 0.0	/ 23.0 =	2,303.57

### Anions

12. 13. 14.	Hydroxyl Carbonate Bicarbonate Sulfate Chloride	(HCO <sub>3</sub> - ) (SO <sub>4</sub> - )	0 0 61 750 132,594	/ 17.0 = / 30.0 = / 61.1 = / 48.8 = / 35.5 =	0.00 0.00 1.00 15.37 3,735.04
	Total Dissol		213,688 15	/ 18.2 =	0.84

Total Hardness As CaCO<sub>3</sub>
Resistivity @ 75 F. (Calculated) 72,665 0.001 /cm. 18. 19.

### LOGARITHMIC WATER PATTERN \*meg/L.

Na	<del>(11111)   11111   11111   11111   11111   11111   11111   11111   11111   11111   11111   11111   11111   11111   1</del>	l
Ca	miil - miil - miil - miil - ceinii - miil	203
Mg	BOTTO SECTION	<b>)</b> 4
Fe 100	00 1000 100 10 1 10 100 1000 1000	)3 00
	*Milli Equivalents per Liter	

Calculated Calcium Sulfate solubility in this brine is 590 mg/L. at 90 F.

1.t		
	Le	_a_
Malyst.		

Ca(HCO<sub>3</sub>)<sub>2</sub> 81.04 1,00 81 CaSO. 68.07 15.37 1,046 CaCl<sub>2</sub> 55.50 1,203.98 66,821 Mg (HCO<sub>3</sub>)<sub>2</sub> 73.17 0.00 0 0.00 MgSO. 60.19 0 MgCL<sub>2</sub> 47.62 227.21 10,820 Na HCD, 84.00 0.00 0 NaSO. 71.03 0.00 NaC1 58.46 2,303.85 134,683

PROBABLE MINERAL COMPOSITION COUND EQ. WT. X \*meq/L = mg/L.

Remarks and Comments:



### CAPROCK LABORATORIES, INC.

3312 Bankhead Hev. Midland, Texas 79701 (915) 689-7252 FAX 1 (915) 689-0130

WATER ANALYSIS REPORT

### AMPLE

Oil Co. : Sample Loc. Lease : DOUBLE EAGLE-Well No.: FRESH WATER Job No.: 9205032 Date Sampled: Attention Analysis No. :

### ANALYSIS

EQ. WT. \*MEQ/L MG/L 9.100 pH Specific Gravity 60/60 F. CaCO<sub>3</sub> Saturation Index @ -0.996

@ 140 F.

80 F. +1.548

+2.388

Dissolved Gasses

Hydrogen Sulfide Not Determined Not Determined Carbon Dioxide Dissolved Oxygen

### Cations

Calcium	(Ca**)		200 304	/ 20.1 = / 12.2 =	9.95 24.92
Magnesium Sodium Barium	(Mg**) (Na*) (Ba**)	(Calculated)	2,507 6	/ 23.0 = / 68.7 =	109.00

### Anions

_				
12. 13.	Hydroxyl (OH <sup>-</sup> ) Carbonate (CO <sub>3</sub> ·) Bicarbonate (HCO <sub>3</sub> ·) Sulfate (SO <sub>4</sub> ·) Chloride (Cl <sup>-</sup> )	0 0 183 50 4,963	/ 17.0 = / 30.0 = / 61.1 = / 48.8 = / 35.5 =	0.00 0.00 3.00 1.02 139.80
17.	Total Dissolved Solids Total Iron (Fe) Total Hardness As CaCO	8,213 1 1,752	/ 18.2 =	0.05

i9. Resistivity @ 75 F. (Calculated) 0.685 /cm.

### LOGARITHMIC WATER PATTERN Xmeq/L.

Na	<del>Jillii I - i -</del>	<del>                                      </del>	<del>WULLI -</del>	<del> </del>	<del>                                     </del>	<del>-                                      </del>	<del></del>	<del>- 1 i 1 i i i</del> i	Cl
Ca	<del>                                     </del>	<del> </del>	·····	( 	111111	<del>-1-111111</del>	<del>~i+!  </del>	<del>-+++</del>	нсоз
Mg	) <del>   ::+++</del>	<del> </del>	HIH &	! \$!!!!!!	Zi i i i i i i i i i i i i i i i i i i	<del>-++++;;;</del>	<del>-::::::::::::::::::::::::::::::::::::</del>	<del>- ; ; ; ; ; ; ;</del>	S04
Fe 100	000 1	 	100 i Eq	IIIII 10 uiva	i illilli i illilli lents	per	00 10 Lite	- - -        000   1 	C03

Calculated Calcium Sulfate solubility in this brine is 2,814 mg/L. at 90 F.

. —	•
$\mathcal{F}$	
Analyst	

PROBABLE MINERAL COMPOSITION COUND EQ. WT. X \*meq/L = mg/L. COMPOUND Ca(HCO<sub>3</sub>)<sub>2</sub> 81.04 3.00 243 CaSO<sub>4</sub> 68.07 0.94 64 CaCla 55.50 6.02 334 Mg (HCO<sub>3</sub>)<sub>2</sub> 73.17 0.00 0 MgSO. 60.19 0.00 0 MgCL<sub>2</sub> 47.62 24.92 1,187 Na HCO<sub>3</sub> 84.00 0.00 0 Na.SO. 71.03 0.00 0 NaC1 58,46 108.87 6,364

Remarks and Comments:



ell No.:

Job No.:

### CAPROCK LABORATORIES, INC.

3312 Bankhead Hwy. Midland, Texas 79701 (915) 689-7252 FAX # (915) 689-0130

WATER ANALYSIS REPORT

### MPLE

il Co. : MEWBOURNE OIL CO. Lease :

FEDERAL L LEASE

9205032

Sample Loc. :

BONE SPRINGS PROD. WATER

\*MEQ/L

EQ. WT.

Date Sampled:

Attention

Analysis No. : MG/L

### NALYSIS

7.550 ~ pH 7.550 / Specific Gravity 60/60 F. 1.110 CaCO<sub>3</sub> Saturation Index @ 80 F. +0.842

@ 140 F. +1.722

### Dissolved Gasses

0.0 Hydrogen Sulfide Carbon Dioxide Not Determined Dissolved Oxygen Not Determined

### Cations

7.	Calcium	(Ca'')		3,527	1	20.1 =	175.47
8.	Magnesium	(Mg**)		1,556		12.2 =	127.54
9.	Sod i um	(Mg**) (Na*)	(Calculated)	52,547	/	23.0 =	2,284.65
10.	Barium	(Ba'')	Not	Determined			

### Anions

12. 13. 14.	Carbonate Bicarbonate Sulfate	(HCO <sub>3</sub> - ) (SO <sub>4</sub> - )	159 1,300	/ 17.0 = / 30.0 = / 61.1 = / 48.8 = / 35.5 =	0.00 0.00 2.60 26.64 2,556.62
	Total Dissol	(Fe)	149,849 28	/ 18.2 =	1.51

18. Total Hardness As CaCO<sub>3</sub> Resistivity @ 75 F. (Calculated) 15,214 0.037 /cm. 19.

LOGARITHMIC	WATER	PATTERN				
*meq/L.						

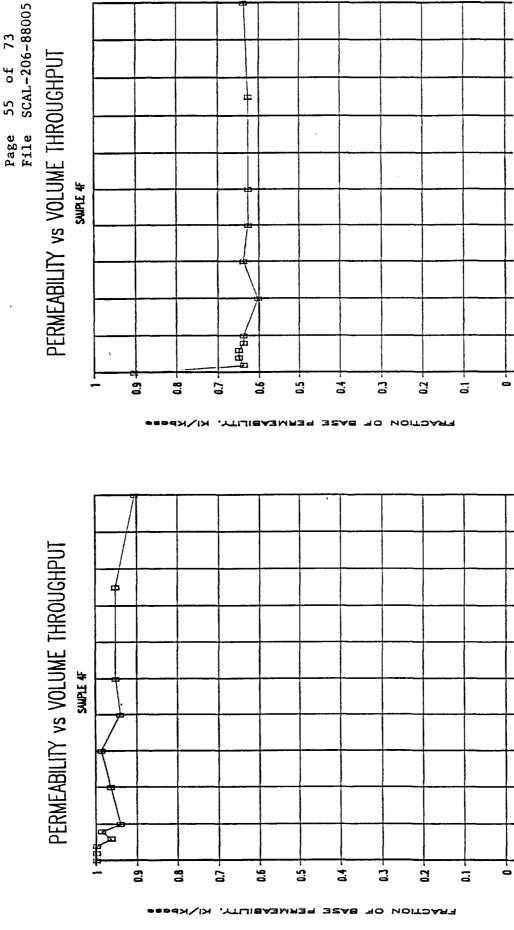
Įa	<del>                                     </del>	<del>        </del>	<del>                                     </del>	<del>                                     </del>	-1-111111	1 1 1 1 1 1 1 1 1 1		<b></b>	Cl
la:	111111	- A-Lilling	111111-1	<del>                                     </del>	<del>- 1 kt[[]]</del>	<del>                                      </del>	1-1111111		HCO3
1g	1111111-1-1-	<del> </del>	HITT-1-	1111111	-1-1111	<del>       </del>		++++	S04
i ÕO	00 1	 	00 i Eq	10 uiva	l 1 l ents	السندين	00 10 Lite	000 i	C03 0000

Calculated Calcium Sulfate solubility in this brine is 4,032 mg/L. at 90 F.

nalyst

PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT.  $X \times meq/L = mg/L$ .  $Ca(HCO_3)_2$ 81.04 2:60 211 CaSO<sub>4</sub> 68.07 26.64 1,813 CaCl<sub>2</sub> 55.50 146.23 8,116 Mg (HCO; )2 73.17 0.00 0 Mg.SO. 60.19 0.00 0 MgCL: 47.62 127.54 6,074 NaHCO<sub>2</sub> 84.00 0.00 0 NaSO. 71.03 0.00 0 NaC1 2,282.85 133,455 58.46

Remarks and Comments:



VOLIME THROUGHPUT, Pare Volumes

D SIM. CAPROCK WATER

2

8

2

\$

2

50

8

8

2

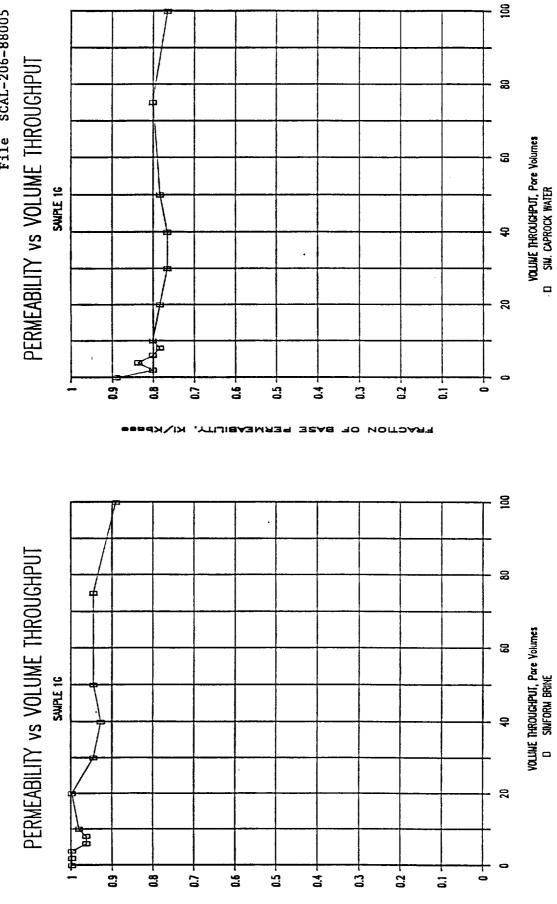
VOLLINE THROUGHPUT, Pore Volumes

SINFORM BRINE

0

The analyses, opinors or interpretations contained in this report are based upon observations and material supplied by the client for whose exclusive and confidential use thus report has been made. The interpretations or opinors are reported in the best judgement of Core Laboratories. Core Laboratories assumes no responsibility and makes no warrantly or representations, express or implied, as to the productivity, proper operations, or profitableness however of any efficiency well in contraction with which is not any or any

Page 54 of 73 File SCAL-206-88005



FRACTION OF BASE PERMEABILITY, KI/Kbese

### WATER CONTRACT

This agreement made and entered into as of the <u>1st</u> day of <u>January</u>,1993, by and between the City of Carlsbad, New Mexico hereinafter referred to as "Seller," and Mewbourne Oil Company, P. O. Box 7698, Tyler, TX 75711, hereinafter referred to as "Buyer,"

### WITNESSETH:

WHEREAS. Buyer is the owner and/or operator of certain oil and gas leases covering lands situated in Lea County, New Mexico, and being more particularly described in Exhibit "A" attached hereto and made a part hereof for all purposes, and hereinafter referred to as "the property;" and desires to purchase water from Seller for use in waterflood operations on "the property" upon and subject to the terms and conditions hereinafter set forth, to-wit:

### ARTICLE I

### Initial Term

Section 1. Buyer agrees that for a period of three (3) years from date of first delivery of water hereunder, herein referred to as "initial term," Buyer will purchase from Seller all water required by Buyer (up to the "maximum daily requirement" of 20,000 bbls ) in Buyer's waterflood operations of "the property." Seller agrees to sell and deliver to Buyer such water as Buyer's waterflood operations require, said water to be supplied from Seller's water leases and water rights situated in Lea and Eddy Counties, New Mexico.

Section 2. Buyer is aware of the costs and expenses incurred and to be incurred by Seller in securing a sufficient supply of water for Buyer's needs and transporting the same to the delivery point, and in consideration of such costs and expense Buyer agrees to purchase exclusively from Seller all water, up to the maximum daily quantity, required by Buyer for the waterflood operations of "the property" during the initial term of this contract, provided Seller is not in default of the terms of this contract.

### ARTICLE II

### Price

During the initial term of this contract Buyer agrees to pay to Seller for all water delivered to Buyer under the terms of this agreement the sum of \$0.15 (15¢) per barrel of water delivered (a barrel being defined as 42 U.S. gallons), such payments to be made on a monthly basis. The price shall be adjusted on the same percentage basis as the rate per 1,000 gallons is adjusted for the citizens of the City of Carlsbad, New Mexico. A minimum billing of \$150/month will be required during the initial term of this contract.

### ARTICLE III

### Delivery Point

Delivery of water to Buyer by Seller shall be at the following location:

Section 20, Township 18 South, Range 32 East

Title to such water shall pass from Seller to Buyer at the delivery point.

The above mentioned delivery point shall be changed only by the mutual agreement of Seller and Buyer.

### ARTICLE IV

### Delivery Obligations

Buyer agrees to notify Seller immediately if sufficient water to meet its requirements (but not in excess of the maximum daily quantity) is not being supplied and Seller agrees that upon receipt of such notice it will promptly take measures to remedy such condition. Buyer agrees to give Seller thirty (30) days written notice if Buyer intends to increase the amount of water which it will require by more than 20% of the average amount required during the previous calendar month. Upon receipt of such notice by Seller, Seller will within thirty (30) days from such receipt have available for Buyer an amount of water sufficient to meet Buyer's requirements up to the maximum daily quantity per day.

### ARTICLE V

### Option to Purchase Additional Water

At such time as Buyer shall have purchased water for the initial term provided in Article I and shall not be otherwise in default hereunder, Buyer shall have the option to continue to purchase water from Seller on a consecutive year to year basis for a period not to exceed fifteen (15) years from the date of this agreement for waterflood purposes in connection with "the property." Such additional purchases shall not exceed (unless otherwise mutually agreed to by Buyer and Seller) the maximum daily quantity per day. The buyer shall have the option to terminate this agreement during this option period with thirty (30) days notice. However, as long as a meter connection is maintained a minimum billing of \$150/month will be required.

### ARTICLE VI

### Metering

Seller shall install at its sole cost and expense a valve and totalizing meter at the delivery point to measure the water so delivered. Buyer may, at

its option and expense, install and maintain a check meter or meters downstream from Seller's meter. Buyer shall have the right to inspect Seller's meter in the presence of Seller's representatives. If the accuracy of Seller's meter is questioned, the metering instruments shall be tested and properly adjusted upon the demand of Buyer or Seller, but the measurement shall not be considered inaccurate for accounting purposes unless it is in error by more than five percent (5%). Should any test show an error in excess of 5%, correction shall be made for volumes delivered for one-half of the period elapsed since the last test; but in no event shall the correction be applied for a period in excess of thirty (30) days. In the event any test demanded by Buyer shows an error of more than 5%, the cost of such test shall be borne by the Seller; however, if any error is less than 5%, such cost shall be borne by the Buyer.

### ARTICLE VII

### Law, Regulations and Force Majeure

Section 1. This agreement shall be subject to all valid and applicable laws, orders, rules and regulations of any duly constituted governmental authority.

Except for Buyer's obligations to make payments for water Section 2. delivered hereunder, neither party hereto shall be liable for any failure to perform the terms of this agreement when such failure is due to "force majeure" as hereinafter defined, provided that the party claiming "force majeure" which results in a substantial failure of performance shall give the other prompt written notice thereof. The term "force majeure" as employed in this agreement shall mean acts of God, strikes, lockouts, or industrial disturbances, civil disturbances, arrests and restraints from rules and people, interruptions by government or court orders, present and future valid orders of any regulatory body having proper jurisdiction, acts of the public enemy, wars, riots, blockades, insurrections, inability to secure labor or materials, including inability to secure materials as a result of allocations promulgated by authorized governmental agencies, epidemics. landslides, lightning, earthquakes, fires, storms, floods, washouts, explosions, breakage or accident to machinery or lines of pipe, freezing of wells or pipe lines, partial or entire failure of water supply, or any other cause, whether of the kind herein enumerated or otherwise, not reasonably within the control of the party Nothing herein contained; however, shall be claiming "force majeure." construed to require either party to settle a labor dispute against its will.

### ARTICLE VIII

### Use of Water

The water furnished by Seller to Buyer is to be used only for waterflooding and repressuring on "the property." In this connection, the Buyer shall have the exclusive right to transport water sold under this agreement from the delivery point to any portion of "the property" for the uses specified herein.

### ARTICLE IX

### Notices

All notices permitted or required to be given under the provisions hereof shall be sent by certified or registered mail, or by Western Union Telegram prepaid, addressed to the parties hereto as follows:

City of Carlsbad, New Mexico P. O. Box 1569 Carlsbad, New Mexico 88221

> Mewbourne Oil Company P. O. Box 7698 Tyler, TX 75711

### ARTICLE X

### **Miscellaneous**

.

Section 1. Buyer agrees to maintain storage facilities adequate to hold s:x (G) hour supply of water for the properties to be waterflooded.

Section 2. Buyer agrees to pay to Seller all sums due for water delivered under this contract to Buyer within twenty (20) days after receipt of Seller's invoice. If payment is not made within thirty (30) days after receipt of Seller's invoice the unpaid balance shall bear interest at the rate of eight percent (8%) per annum from due date until paid and Seller shall have the right to suspend the delivery of any further water to Buyer until payment in full without liability of any kind. Seller is hereby granted a lien upon all equipment and property of Buyer on "the property" and upon the working interest and leasehold estate of Buyer therein to secure the payment of all sums due under the terms of this contract.

- Section 3. The Buyer agrees to pay the Seller a \$200.00 connection fee.
- Section 4. The Buyer agrees to install an air gap at its point of intake and allow representatives of the Seller to inspect to assure compliance.
- Section 5. Seller reserves the right to suspend service temporarily to make necessary repairs or improvements to its water system, provided, however,

Seller shall notify Buyer of any such interruptions and shall prosecute the work with due diligence and with the least possible delay in service.

Section 6. This agreement may be assigned by either party hereto, provided, however, that no assignment or transfer shall relieve either party of its obligations hereunder unless the prior consent of the party is first obtained in writing.

Section 7. This contract will not be considered legal and binding on Mewbourne Oil Company unless or until they obtain a legal right-of-way access to the delivery point on the Carlsbad City System.

IN WITNESS WHEREOF, this instrument is executed as of the day and year first above written.

ATTEST:

CITY OF CARLSBAD, NEW MEXICO

Thems & Brutter

melme

By: Sob fourt

SELLER

ATTEST:

- 5 -