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Case 9902 OIL CONSERVATION DIVISION

March 23, 1990

HAND-DELIVERED

RECEIVED

MAR 23 1990

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

Application of Hanson Operating Company, Inc. for Salt Water Disposal,

Dear Mr. LeMay:

Pursuant to the provisions of Oil Conservation Division Rule 701(B) and Form C-108, I am enclosing herewith the original and one copy of the completed Form C-108 in the above-referenced matter. By copy of this letter, this form is also being provided to the Division's District Office in Artesia.

Your attention to this matter is appreciated.

Chaves County, New Mexico

Very truly yours,

WILLIAM F. CARR

WFC:mlh Enclosures

cc w/enc.: Oil Conservation Division

District II Office

Post Office Drawer DD Artesia, New Mexico 88210

POST OFFICE BUX 2018 STATE LAND OFFICE BUILDING SANTA FE NEW MEXICO (1750)

APPLICATION FOR AUTHORIZATION TO INJECT X Di-socit ☐ Storage Pressure Haintenance Secondary Recovery Application qualifies for administrative approval? ∙es Operator: Hanson Operating Company, Inc. II. P. O. Box 1515, Roswell, New Mexico 88202-1515 Contact party: David Sweeney 505-622-7330 Phone: Well data: Complete the data required on the reverse side of this form for each well III. proposed for injection. Additional sheets may be attached if necessary. Is this an expansion of an existing project? yes IV. If yes, give the Division order number authorizing the project Attach a map that identifies all wells and leases within two miles of any proposed ٧. injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review. Attach a tabulation of data on all wells of public record within the area of review which VI. penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail. Attach data on the proposed operation, including: VII. Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; 2. Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with 4. the receiving formation if other than reinjected produced water; and 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from exicting literature, studies, nearby wells, etc.). Attach appropriate geological data on the injection zone including appropriate lithologic *VIII. detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval. Describe the proposed stimulation program, if any. IX. Attach appropriate logging and test data on the well. (If well logs have been filed Χ. with the Division they need not be resubmitted.) Attach a chemical analysis of fresh water from two or more fresh water wells (if XI. available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken. CONSERVATION DIVISION Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water. Applicants must complete the "Proof of Notice" section on the reverse side of this form. Certification I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief. Title Drilling & Production Supt. David Sweeney Meller 03/21/90 Signature: Date:

* If the information required under Sections \\I, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. Compensated Neutron Density Log sent to OCD, Artesia, upon completion of the well.

III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
 - (1) Lease name: Well No.: location by Section, Township, and Range: and Footage location within the section.
 - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
 - (3) A description of the tubing to be used including its size, lining material, and setting depth.
 - (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
 - (1) The name of the injection formation and, if applicable, the field or pool name.
 - (2) The injection interval and whether it is perforated or open-hole.
 - (3 State if the well was drilled for injection or, if not, the original purpose of the well.
 - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
 - (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells:
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

•••												\	Schematic	1 1650'FSL & 330'FEL WELL NO. FOOTAGE LOCATION	HANSON OPERATING COMPANY, INC.
Injection interval 2034 Feet to (perforated or open-hol	Total depth 2132'	Hole size 8"	e 5½	Long string	Hole size	301	Size	Intermediate Casing	Hole size 12½	10C surface	Size 8-5/8	Surface Casing	\	28 SECTION	HANLAD "A" STATE
to 2082 (cet		leet determined by circulating				feet determined by	" Cemented with			feet determined by circulating	" Cemented with 400		Tabular Data	10 South 27 East TOWNSHIP RANGE	

2-3/8 lined with and model) y other casing-tubing seal). y injection formation San A ld or Pool (if applicable)	2-3/8 lined with Plastic pack and model) y other casing-tubing seal). injection formation San Andres ld or Pool (if applicable) Diablo San A	DCOT Model D1 (brand or describe an other Data	Other Data Name of the	. Name of Fi	. Is this a	If no, for		llas the we and give p	. Has the we and give p
lined withtubing seal). tubing seal). ationSan Anapplicable)l	pacl	2-3/8 and mod y other	e injection form	Field or Pool (if	Par wall drillad	HEM METT GITTEG	no, for what purpose was the well originally drilled?	no, for what purpose was the well originally the well ever been perforated in any other give plugging detail (sacks of cement or b)	what purpose wa
	pacl pack	lined with			d for injection?		as the well orig	as the well originally drilled? <u>ir</u> rforated in any other zone(s)? Lis (sacks of cement or bridge plug(s)	as the well orig
(material) <er 2000="" at="" ndres<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>producing well</td><td>producing well such perforated interva</td><td>producing well such perfora</td></er>							producing well	producing well such perforated interva	producing well such perfora
erial)		set in a feet						ted inte	ted inte

HANSON OPERATING COMPANY, INC. P. O. Box 1515
Roswell, New Mexico 88202-1515

FORM C-108

III. Well Data

- B (1) The name of the injection formation and, if applicable, the field or pool name Diablo San Andres
- B (2) The injection interval and whether it is perforated or open-hole 2034 2082' Perforated
- B (3) State if the well was drilled for injection or, if not, the original purpose of the well Drilled as a producing oil well.
- B (4) Give the depths of any other perforated intervals N/A.
- B (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well -

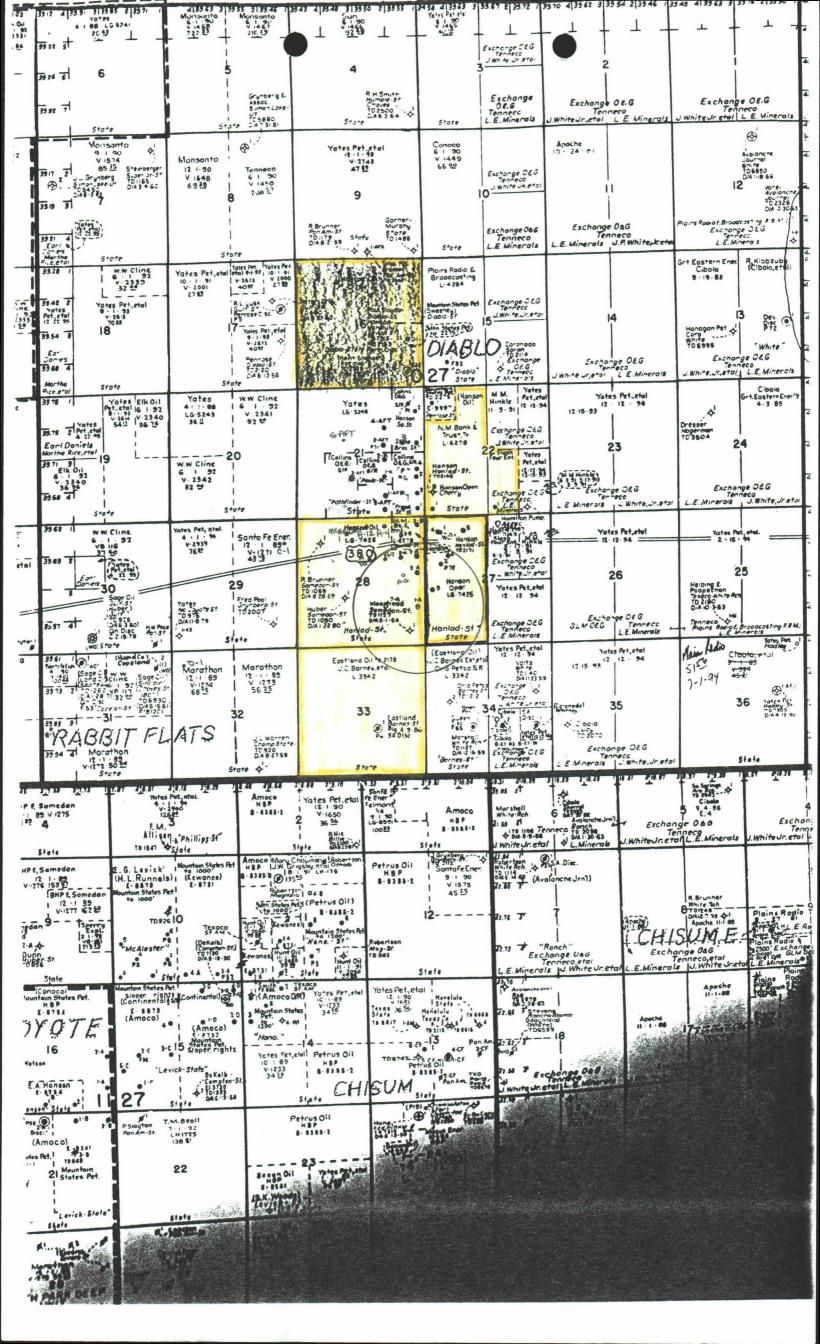
Queen @ 915'

San Andres Pl @ 1930'

San Andres P2 @ 2050'

San Andres P3 @ 2390'

Fusselman @ 6200'



FORM C-108, Sec. VI

United Bank Plaza, Suite 1200 Post Office Box 1515 Roswell, New Mexico 88202-1515

Phone: (505) 622-7330

T.	JUATION NE-45E	名 Section 28	3, 10s-27E, Chaves County 1650'FSL & 330' FEL
FIELD	/POOLDiab	10	/ San Andres
PLUG	BACK DEPTH _	2123	KB 3836GR ELEVATION 3836GR 25-86 COMPLETED & PUT ON PUMP 12-24-86
975I		3FUDDED 9-2	.5-66 COMPLETED & PUT ON PUMP 12-24-86
劉			101.
製			12^{1} 4
			_SURFACE CASING:
			Size 8-5/8" Weight 24# Grade J-55 Set at 500 with 400 Sacks Cen
			Set at 500 with 400 Sacks Cen Circulate 50 Sacks to Sur
			Remarks:
3			
23/69			
S'HAD'S	de la companya de la		
3	**************************************	Hole Size	8
100	<u> </u>		- PRODUCTION CASING:
X.			Size 5½ Weight 17# Grade J-55 Set at 2132 with 350 Sacks Center
			Cement Top: Calculated Temperature Survey
			Remarks: circulated 48 sacks to surface
	No.		·
15.00	in the second		
CI/V-	3		
	44		
Krack			
44 E		•	
			TUBING: Size 2-3/8" Weight 4.6# Grade J-55
100	3	•	Number of Joints 66 Set at 2100
50.5	2		Packer Set at
			Bottom Arrangement: mud anchor (10'), perf sub (3'), S.N. (110), 66 jts 2-3/8" (2087), 2-3/8" subs (14')
Salasy	3		
	E A		<u> </u>
71.72			
3			
[일]일	18		RODS:
70.00			Size 3/4" Number 83 Gas Anchor Set at 2100'
10225			Pump Set at 2100'
Table 1	Pomfonst.		Arrangement: $2X1^{1}/2X12^{1}$ pump, $83-3/4$ rods (2075), $2-3/4$ subs (11)
3	Perforat (2034-20		2-3/4 Subs (11)
200			
ST. ST.	Tubing a		
	TD - 213		
23.72	A S		12-23-86 - Acidize perforations 2072-82' w/5000 gal 20% NEFE
	101		ZU/o NEFE

1-3

United Bank Plaza, Suite 1200 Post Office Box 1515 Roswell, New Mexico 88202-1515

Phone: (505) 622-7330

IELD/POC	OLDiablo	/ San Andres
		KB 3822GR ELEVATION 3822
esart Sia	SPUDDED 3-19	-88 COMPLETED & PUT ON PUMP 6-24-88
	Hole Size	e <u>12¹4</u>
		SURFACE CASING: Size8-5/8"Weight24#GradeJ-55
		Set at with 400 Sacks Cer
		Circulate 55 Sacks to Sur
		Remarks:
NA. CO		
Harris Harris	Hala Ola	. 8"
	Hole Size	e
		PRODUCTION CASING:
No. 7		Size 5½" Weight 14# Grade J-55
	•	Set at with 400 Sacks Cen Cement Top: Calculated Temperature Survey
		Remarks: Circulated 10 sacks to surface
SI(SG)		
	•	
The state of the s		TUBING: Size 2-3/8" Weight 4.6# Grade J-55
		Size 2-3/8" Weight 4.6# Grade J-55. Number of Joints 66 Set at 2070
	•	Packer Set at
		Bottom Arrangement: Perforated mud anchor (4'), S.N.
		(1.10), 66 jts. 2-3/8" tubing (2068)
		RODS:
		Size Number 82
		Gas Anchor Set at
		Arrangement: 2X1 ¹ ₂ X12' pump, 82 3/4" rods (2050)
Territoria de la constanta de	Perforations (2007-2049) 16 hole	
	(2007-2049) 10 NOIE	
	Tubing at 2070	
	DDDD 0004	
树 閉	PBTD 2094	6-2-88 - Acidized perforation (2007-2049) w/2000

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Phone: (505) 622-7330

ELD/DOOL T	iablo	/ San Andres
		KB
LUG BACK DEPTH	SPUDDED 12-18	-87 COMPLETED & PUT ON PUMP 3-19-88
	Uala Cina	1.21.
	Hole Size	$12\frac{1}{4}$
		SURFACE CASING:
		Size 8-5/8 Weight 24# Grade J-55
		Set at501 with400 Sacks Ce Circulate20 Sacks to Su
		Remarks:
DI D	•	
	Hole Size	8"
	Tiole dize	
-		PRODUCTION CASING: Size 5½" Weight 14# Grade J-55
		Size 5%" Weight 14" Grade 593 Set at 2106 with 400 Sacks Ce
		Cement Top: Calculated Temperature Survey
		Remarks: Circulated 20 sacks to surface
4		
É	•	
		TUBING:
		Size 2-3/8" Weight 4.6# Grade J-55
		Number of Joints 64 Set at 2085 Packer Set at
		Bottom Arrangement: Perforated mud anchor (6').
		S.N. (1.10), 64 jts. 2-3/8" tubing (2085), 2
		2-3/8 subs (10')
P. Control		
ğ		
위 (원) 1 1원		RODS:
		Size 3/4" Number 83
i G		Gas Anchor Set at
3		Pump Set at 2085'
		Arrangement: $2X1\frac{1}{2}X12$ pump, 83 3/4" rods (2075), 3 3/4" subs (22')
Perforat	ions	5 5,1 5655 (22 /
(2008-20	90) 20 holes	
	- 0005	
Tubing a		
TD 2106	-	2-10-00
1		3-18-88 - Acidized perforations (2008-2090) w/5000 gal 20% NEFE acid
1 (6)		
		8-31-88 - Acidized perforations (2008-2090) $w/10000$

FORM C-108, Sec. VI

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Phone: (505) 622-7330

	-10S-27E, Chaves County 1650'FNL & 990'FEL
	/ San Andres
LUG BACK DEPTH 2083	KB <u>3819GR</u> ELEVATION <u>3819GR</u>
Hole Size	
	Size 5½ Weight 17# Grade J-55
Perforations (1992-2064) 22 holes Tubing at 2072 PBTD 2083 TD 2100	RODS: Size3/4"

FORM C-108, Sec. VI

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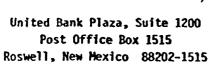
Phone: (505) 622-7330

FIELD/POOLDiablo	
	KB 3816GR ELEVATION 3816GR 9 COMPLETED & PUT ON PUMP 5-13-89
Hole Size	12½ SURFACE CASING:
	Size 8-5/8" Weight 24# Grade J-55 Set at 520 with 400 Sacks Cemer Circulate 50 Sacks to Surface Remarks:
Hole Size	8
	Set at
	Packer Set at Bottom Arrangement: Perforated mud anchor (6'), S.N. (1.10), 66 jts. 2-3/8" (2047), 2 2-3/8" subs (10')
Perforations	RODS: Size3/4"
(1982-2052) 24 holes Tubing at 2057	
PBTD 2070 TD 2091	5-11-89 - Acidized perforations (1982-2052) w/2500 gal 20%. NEFE acid 5-12-89 - Acidized perforations (1982-2052) w/14000

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Phone: (505) 622-7330

		7-10S-27E, Chaves County 1980'FEL & 660' FWL
ELD/POOL	Diablo	/ San Andres
LUG BACK	DEPTH2126	KB 3854GR ELEVATION 3854G
nei Briti	SPUDDED 5-23	-85 COMPLETED & PUT ON PUMP 8-5-85
	器Hole Size	$12\frac{1}{6}$
3 3		010000000000000000000000000000000000000
	ă	_SURFACE CASING: Size8-5/8Weight24#GradeJ-55
		Set at 500 with 300 Sacks Cen
		Circulate Sacks to Sur
		Remarks:
Trees.		
1	N. I. Oine	8"
100 H	Hole Size	
2		PRODUCTION CASING:
		Size 5½ Weight 15# Grade J-55
	•	Set at 2135 with 500 Sacks Cen Cement Top: Calculated Temperature Survey
		Remarks: Circulated 84 sacks to surface
ALCON AND		
1		
	,	
		TUBING: Size 2-3/8 Weight 4.6# Grade J-55
		Number of Joints 68 Set at 2098.
		Packer Set at
		Bottom Arrangement: Perf mud anchor (9'), tubing barre
\$ 15 m		(12') 68 jts. 2-7/8" tubing (2098)
		. •
		RODS:
		Size Number 84
		Gas Anchor Set at
80 32		Pump Set at 2110 Arrangement: 1-25/32 plunger & 84 3/4" rods (2100)
24 Dist "	erforations	
	2086-2114) 16 holes	
₹ ¥ Т	Subing at 2098'	
31 1.71	'BTD 2126'	
I	CD 2134'	0_2_0E _ Acidinal non-Four-time (2016 2114) -/2002
		8-3-85 - Acidized perforations (2016-2114) w/2000 gal NEFE acid
		1-25-89- Acidized perforations (2016-2114) w/10000
57 678		gal Mod-202 acid



Phone: (505) 622-7330

	SK DEPTH 2117 SPUDDED 5-31	
PLUG BAC	SPUDDED 5-31	-86 COMPLETED & PUT ON PUMP 9-25-86
	Hole Size	SURFACE CASING: Size8-5/8" Weight24# GradeJ-55 Set at469 with350 Sacks Ceme Circulate20 Sacks to Surface Remarks:
	Hole Size	SURFACE CASING: Size8-5/8" Weight24# GradeJ-55 Set at469 with350 Sacks Ceme Circulate20 Sacks to Surface Remarks:
		Size 8-5/8" Weight 24# Grade J-55 Set at 469 with 350 Sacks Ceme Circulate 20 Sacks to Surface Remarks:
		Set at 469 with 350 Sacks Ceme Circulate 20 Sacks to Surfa Remarks:
		Remarks:
		Remarks:
A CONTRACTOR OF THE SECOND	FF 21	
्रार्थभक्ष्यकृत्यः इस्सम्बद्धस्य		
THE STATES		
131 (2)	Hole Size	8"
7) Cru		PRODUCTION CASING:
\$ 100 mg		Size $5\frac{1}{2}$ " Weight 15.5% Grade J-55
1 1 1 1 1 1 1 1 1 1		Set at 2120 with 500 Sacks Ceme
		Cement Top: Calculated Temperature Survey Remarks: Circulated 50 sacks to surface
		Hemarks:
To and	•	
IIIV		
1000		
7 P		
		TUBING:
	•	Size 2-3/8" Weight 4.6# Grade J-55. Number of Joints 67 Set at 2042
		Packer Set at
		Bottom Arrangement: Mud anchor (6'), perf sub (3'),
		pump barrel (12'), 67 jts. 2-3/8" (2030)
E 2		
		RODS:
		Size Number 81
		Gas Anchor Set at Pump Set at
30 E		Arrangement: 1-25/32 plunger, 81-3/4 rods (2025),
	-	5-3/4 subs (22')
	Perforations (2106-2056) 16 holes	
	(2100-2030) 10 noies	
	Tubing at 2042	
	PBTD 2117	
	TD 2120	9-23-86 - Acidized perforations (2106-2056) w/3000
		gal 20% acid
		10-12-89- Acidized perforations (2106-2056) w/10000



United Bank Plaza, Suite 1200 Post Office Box 1515 Roswell, New Mexico 88202-1515

Phone: (505) 622-7330

		7, 10S-27E, Chaves County 650'FNL & 330'FWL
PLUG BAC	CK DEPTH 2136 SPUDDED 7-2	KB 3854GR ELEVATION 3854GF 3-87 COMPLETED & PUT ON PUMP 10-29-87
	Hole Size	e
	noic oiz	
		SURFACE CASING: Size 8-5/8" Weight 24# Grade J-55
		Set at 500 with 400 Sacks Cem
		Circulate Sacks to Surf
		Remarks:
State		
THE STATES		gu .
Section 1	Hole Size	e
		PRODUCTION CASING:
(A)		Size 5½" Weight 17# Grade J-55 Set at 2142 with 450 Sacks Cem
		Cement Top: Calculated Temperature Survey
		Remarks: Circulated 45 sacks to surface
221		
Sylvania Sylvania	·	
NAME OF THE PERSON OF THE PERS	,	
		TUBING:
		Size 2-3/8" Weight 4.6# Grade J-55
		Number of Joints 65 Set at 21:29
		Packer Set at Bottom Arrangement: Perforated mud anchor (5'), S.N.
		(110), 65 jts. 2-3/8" tubing (2130)
E SA		
		. •
T. V. See		RODS: Size84Number84
		Gas Anchor Set at
		Pump Set at 2129' Arrangement: 2X1 ¹ ₂ X12' pump, 84 - 3/4 rods (2100)
	Perforations	Arrangementpump, or o/ 12000 (2100)
		es
	Tubina at 01201	
	Tubing at 2130' PBTD - 2136'	
	TD - 2140'	
		10-27-87 - Acidized perforations (2095-2137) w/3000 gal 20% NEFE acid
		5-17-89 - Acidized perforations (2095-2137) w/12000
图 图		gal Mod-202 acid

HANSON OPERATING COMPANY, INC. P. O. Box 1515
Roswell, New Mexico 88202-1515

FORM C-108

VII. Data on the proposed operation:

- Proposed average and maximum daily rate and volume of fluids to be injected -350 BBLS a day average 700 BBLS a day maximum.
- 2. Whether the system is open or closed Open.
- Proposed average and maximum injection pressure -1200# average 1800# maximum.
- 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water Source McBride State #1

600' FNL & 1980' FWL Sec. 28, T.10S, R.27E Chaves County, New Mexico Fusselman formation

Attached is an analysis of the injection fluid f/McBride State #1 and Cibola Plains #22-2 San Andres formation water analysis, which were used for the compatibility study and found to be compatible.**

5. If injection is for disposal purposes into a zone not productive of oil and gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water
The injected zone is capable of producing oil and gas in limited quantities.

** The Hanlad lease does not make enough water for compatibility studies, so we used The Cibola Plains #22-2 for this study.

Unichem International

707 North Leech P.O.Box 1499

Sample 1

Hobbs, New Mexico 88240

Company : STEVENS OPERATING

Date : 03-02-1990

Sample 1: McBride #1 - Fusselman H2O Tank (on 3-1-90) Sample 2: Cibola Plains 29-9 - San Andres Water Tank (on 3-1-90)

Specific Gravi Total Dissolve pH: IONIC STRENGTH	d Solids:		1.034 47833 7.30 0.975	1.143 200387 7.56 3.617		
CATIONS: Calcium Magnesium Sodium Iron (total) Barium	(Ca ^{+ 2}) (Mg ^{+ 2}) (Na ^{+ 1}) (Fe ^{+ 2}) (Ba ^{+ 2})	me/liter 124 124 587 0.473 0.003	mg/liter 2480 1510 13500 13.2 0.200	me/liter 164 116 3160 1.50 0.003	mg/liter 3280 1410 72600 42.0 0.200	
ANIONS: Bicarbonate Carbonate Hydroxide Sulfate Chloride	(HCO ₃ - 1) (CO ₃ - 2) (OH-1) (SO ₄ - 2) (Cl-1)	14.4 0 0 30.7 790	878 0 0 1480 28000	15.6 0 0 65.6 3360	952 0 0 3150 119000	

	SCALING	INDEX	(positive v	alue indicat	<u>es scale)</u>	
			Calcium	Calcium	Calcium	Calcium
Temp	erature		Carbonate	Sulfate	Carbonate	Sulfate
86°F	30°C		0.88	-19	2.0	-5.5

FORM (-108, Sec. VII- #4

WATER COMPATIBILITY CALCULATIONS

FIELD NAME: Stevens Operating

WATER A :McBride #1	WATER B : Cibola Plains
SAMPLE NO:1	SAMPLE NO:2

ION(mg/L)	100%A	90%A	75%A	50%A	25%A	10%A	100%B
Na	13500	19410	28275	43050	57825	66690	72600
Ca	2480	2560	2680	2880	3080	3200	3280
Mg	1510	1500	1485	1460	1435	1420	1410
Ba	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Sr	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cl	28000	37100	50750	73500	96250	109900	119000
504	1480	1647	1898	2315	2733	2983	3150
CO3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
нсоз	878.0	885.4	896.5	915.0	933.5	944.6	952.0
TDS	47848	63103	85984	124120	162256	185138	200392
pН	7.30	7.30	7.40	7.40	7.50	7.50	7.60
SG	1.034	1.045	1.061	1.089	1.116	1.132	1.143
I(molar)	0.98	1.24	1.64	2.30	2.96	3.35	3.62

WATER INJECTION SYSTEM

CALCIUM CARBONATE SCALING CALCULATIONS

	•		Upst	ream of	Pump		é	•	-Downs	tream	of Pur	фé
%A	TF	Psia	XCO2	рНс	SI	PTB	Is	TF	Psia	pHd	SId	PTB Is
100	100	15	0	***	1.13	456.1	***	100	15	7.3	1.13	456.1 ****
	100	15	0	***	1.12	459.7	***	100	15	7.32	1.12	459.7 *****
75	100	15	0	***	1.18	472.1	***	100	15	7.35	1.18	472.1 *****
50	100	15	0	***	1.43	500.6	***	100	15	7.41	1.43	500.6 ****
25	100	15	0	***	1.77	524.2	***	100	15	7.48	1.77	524.2 *****
	100	15	0	***	2	535.3	***	100	15	7.53	2	535.3 ****
	100	1.5	Ō	****	****	*****	***	100	15	7 56	****	*****

SULFATE SCALE CALCULATIONS

			•	aso4é	•Ba	aSO4é	·sr	·SO4é
%A	TF	Psia	SR	PTB	SR	PTB	SR	PTB
100	100	15	. 5	-537.5	1.9	.1	0	-58.6
90	100	15	.5	-593	1.8	.1	0	-60.3
75	100	15	.5	-628.5	1.7	0	0	-60.7
50	100	15	.6	-577.9	1.6	0	0	-57.2
25	100	15	.7	-415.8	1.7	0	0	-51
10	100	15	. 8	-275.3	1.7	0	****	*****
0	100	15	. 9	-166.5	1.7	0	****	*****

NOTE: Values of SI & PTB for CaCO3, and SR & PTB for CaSO4 and BaSO4 are calculated at 14.7 psia.

HANSON OPERATING COMPANY, INC. P. O. Box 1515
Roswell, New Mexico 88202-1515

FORM C-108

VIII. Attach appropriate geological data on the injection zone:

Lithology - slightly calcic dolomite

Geologic name - San Andres (P1)

Thickness - Top San Andres to base of porosity - 630' Porosity thickness - 48'

Depth - Top San Andres - 1450' Top San Andres Porosity - 2034'

Potable water - No known fresh water aquifers.

- IX. Describe the proposed stimulation program, if any No stimulation is planned at this time.
- X. Attach appropriate logging and test data on the well -Logs and test data were sent to the NMOCD, Artesia, on 12/29/86 and 12/31/86, upon completion of the well.
- XI. Attach a chemical analysis of fresh water from two or more fresh water wells within one mile of any injection or disposal well -

No known fresh water wells are within 1 mile of the area.

HANSON OPERATING COMPANY, INC. P. O. Box 1515
Roswell, New Mexico

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XII. To date, we have not identified any fresh water zones in the area. Our wells have been drilled by cable tool and all water zones drilled have contained salt water. On March 16, 1990, Ken Fresquez, of the New Mexico State Engineering Office, confirmed that there are no known fresh water zones in the area. In addition, no faults have been identified in the San Andres formation, or shallower, and it is my opinion no faulting occurs in San Andres, and younger, rock in this area.

Therefore, there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

I hereby certify that the information submitted in this statement is true and correct to the best of my knowledge and belief.

Name:	Gary Fitzsimmons/	Title:	Geologist
Signat	ure: //// 1/20-	Date:	03/21/90
_	77077		

CAMPBELL & BLACK, P.A.

LAWYERS

JACK M. CAMPBELL
BRUCE D. BLACK
MICHAEL B. CAMPBELL
WILLIAM F. CARR
BRADFORD C. BERGE
MARK F. SHERIDAN
WILLIAM P. SLATTERY
PATRICIA A. MATTHEWS

JEFFERSON PLACE
SUITE 1 - 110 NORTH GUADALUPE
POST OFFICE BOX 2208

SANTA FE. NEW MEXICO 87504-2208

TELECOPIER: (505) 988-4421
TELECOPIER: (505) 983-6043

Case 9902

March 15, 1990

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Commissioner of Public Lands New Mexico State Land Office Post Office Box 1148 Santa Fe, New Mexico 87504

Re: Application of Hanson Operating Company, Inc. for Approval of Salt Water

Disposal, Chaves County, New Mexico

Gentlemen:

This letter is to advise you that Hanson Operating Company, Inc. has filed an application with the New Mexico Oil Conservation Division seeking authority to dispose of produced salt water by injection into the San Andres formation (Diablo San Andres Pool) in its Hanlad A State No. 1 Well located 1650 feet from the South line and 330 feet from the East line (Unit I), Section 28, Township 10 South, Range 27 East, N.M.P.M., Chaves County, New Mexico.

This application has been set for hearing before an Examiner of the Oil Conservation Division on April 4, 1990. You do not need to be present at the hearing, but failure to appear at the hearing or otherwise become a party of record in this case will preclude you from challenging the matter at a later date.

Very truly yours,

WILLIAM F. CARR

ATTORNEY FOR HANSON OPERATING COMPANY, INC.

WFC:mlh

CAMPBELL & BLACK, P.A.

LAWYERS

JACK M. CAMPBELL
BRUCE D. BLACK
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SANTA FE, NEW MEXICO 87504-2208

TELEPHONE: (505) 988-4421
TELECOPIER: (505) 983-6043

Case 9902

March 15, 1990

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Yates Petroleum Corporation 105 South Fourth Street Artesia, New Mexico 88210

Application of Hanson Operating Company, Inc. for Approval of Salt Water

Disposal, Chaves County, New Mexico

Gentlemen:

Re:

This letter is to advise you that Hanson Operating Company, Inc. has filed an application with the New Mexico Oil Conservation Division seeking authority to dispose of produced salt water by injection into the San Andres formation (Diablo San Andres Pool) in its Hanlad A State No. 1 Well located 1650 feet from the South line and 330 feet from the East line (Unit I), Section 28, Township 10 South, Range 27 East, N.M.P.M., Chaves County, New Mexico.

This application has been set for hearing before an Examiner of the Oil Conservation Division on April 4, 1990. You do not need to be present at the hearing, but failure to appear at the hearing or otherwise become a party of record in this case will preclude you from challenging the matter at a later date.

Very truly yours,

WILLIAM F. CARR

ATTORNEY FOR HANSON OPERATING COMPANY, INC.

WFC:mlh

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SANTA FE NEW MERCOUPEDS

PPLICA	TION FOR AUTHORIZATION TO INJECT
ι.	Purpose: Secondary Recovery Pressure Maintenance Distant Storage Application qualifies for administrative approval?
II.	Operator: Hanson Operating Company, Inc.
	Address: P. O. Box 1515, Roswell, New Mexico 88202-1515
	Contact party: David Sweeney Phone: 505-622-7330
111.	Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
IV.	Is this an expansion of an existing project? \square yes \square no If yes, give the Division order number authorizing the project \square .
٧.	Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
VI.	Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
VII.	Attach data on the proposed operation, including:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
TIII.	Attach appropriate geological data on the injection zone including appropriate lithologic detail, qeological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
IX.	Describe the proposed stimulation program, if any.
х.	Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
ХΙ.	Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
XII.	Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
xIII.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
XIV.	Certification
	I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
	Name: David Sweeney Title Drilling & Production Supt.
	Signature: Date: 03/21/90
subm	he information required under Sections II, VIII, X, and XI above has been previously itted, it need not be duplicated and resubmitted. Please show the date and circumstance he earlier submittal. Compensated Neutron Density Log sent to OCD, Artesia, 12/29/86 upon completion of the well.
	RIBUTION: Original and one copy to Santa fe with one copy to the appropriate Division rict office.

III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
 - Lease name: Well No.: location by Section, Township, and Range: and Euotage location within the section.
 - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
 - (3) A description of the tubing to be used including its size, lining material, and setting depth.
 - (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
 - (1) The name of the injection formation and, if applicable, the field or pool name.
 - (2) The injection interval and whether it is perforated or open-hole.
 - (3 State if the well was drilled for injection or, if not, the original purpose of the well.
 - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
 - (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells:
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

HANSON OPERATING COMPANY, INC.	HANLAD "A" STATE		
1 1650'FSL & 330'FEL	1.t. 4.5 t. 28	10 South	27 East
- [-]	SECTION		
Schematic		Tabular Data	
)	Surface Casing		
	Size 8-5/8	" Cemented with	h 400 sx.
	TOC surface	feet determined by	circulating
	Hole size 12½		
	Intermediate Casing		·
	Size	" Cemented with	hsx.
	001	feet determined by	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Hole size		
	long string		
	Size 5½	" Cemented with	11 350 gx.
	IOC surface	feet determined by circulating	circulating
<b>N</b> -	Hule size 8"		
•	Total depth 2132	2'	
•••	Injection interval		
	(perforated or open-hote,	t to 2082 -hale, indicate which)	Teet

٠ د ا		· Is	Z	ther Data  Name o	or describe	DC	ubing size
Give the de	llas th		Name of	r Data Name of	escri	DCOT Model Dl	7 Siz
che c	ve p	, for	)f Fi			del I	œ.
enth	the well ever give plugging	new	eld	the injection	(brand and model ribe any other ca		2-3/8
	ver	well t pu	or P	ject	mod		8/8
	been deta:	dri]	ool (	ion	el) casi		
	perf	lled e was	field or Pool (if applicable)	formation	nd and model) any other casing-tubing seal).		
of a	orat	for the	ppli	tion	ubin		line
ny o	ed in	injec wel:	cabl		g sea		lined with
	n any cemer	etior Lori	;) 	San A	al).		<del>'</del>
ing	oth t or	a new well drilled for injection? //	Diablo	San Andres			P1
and/a	the well ever been perforated in any other zone(s)? Lis give plugging detail (sacks of cement or bridge plug(s)	this a new well drilled for injection? // Yes /	o San			p:	Plastic
	zone(s)? idge plu	Yes y drill	San Andres			(mater	
the depth to and name of any overlying and/or underlying oil or	)? lug(	ed? _	es			material er at	
ying a 23c	List s) u	7 No					
oi1	t all used)	111				2000	
or g	such	produ					
gas z	such perforated interval	producing well					
pth to and name of any overlying and/or underlying oil or gas zones (pools) Queen at 915'; San Andres P1 @ 1930', P2 @ 2050', P3 @ 2390'; Fusselman @ 6200'	foral	we 11					
(poo	Led i					'	set
	nter					feet	D.
ı i	val		l				బ

HANSON OPERATING COMPANY, INC. P. O. Box 1515
Roswell, New Mexico 88202-1515

FORM C-108

#### III. Well Data

- B (1) The name of the injection formation and, if applicable, the field or pool name Diablo San Andres
- B (2) The injection interval and whether it is perforated or open-hole 
  2034 2082' Perforated
- B (3) State if the well was drilled for injection or, if not, the original purpose of the well -Drilled as a producing oil well.
- B (4) Give the depths of any other perforated intervals N/A.
- B (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well -

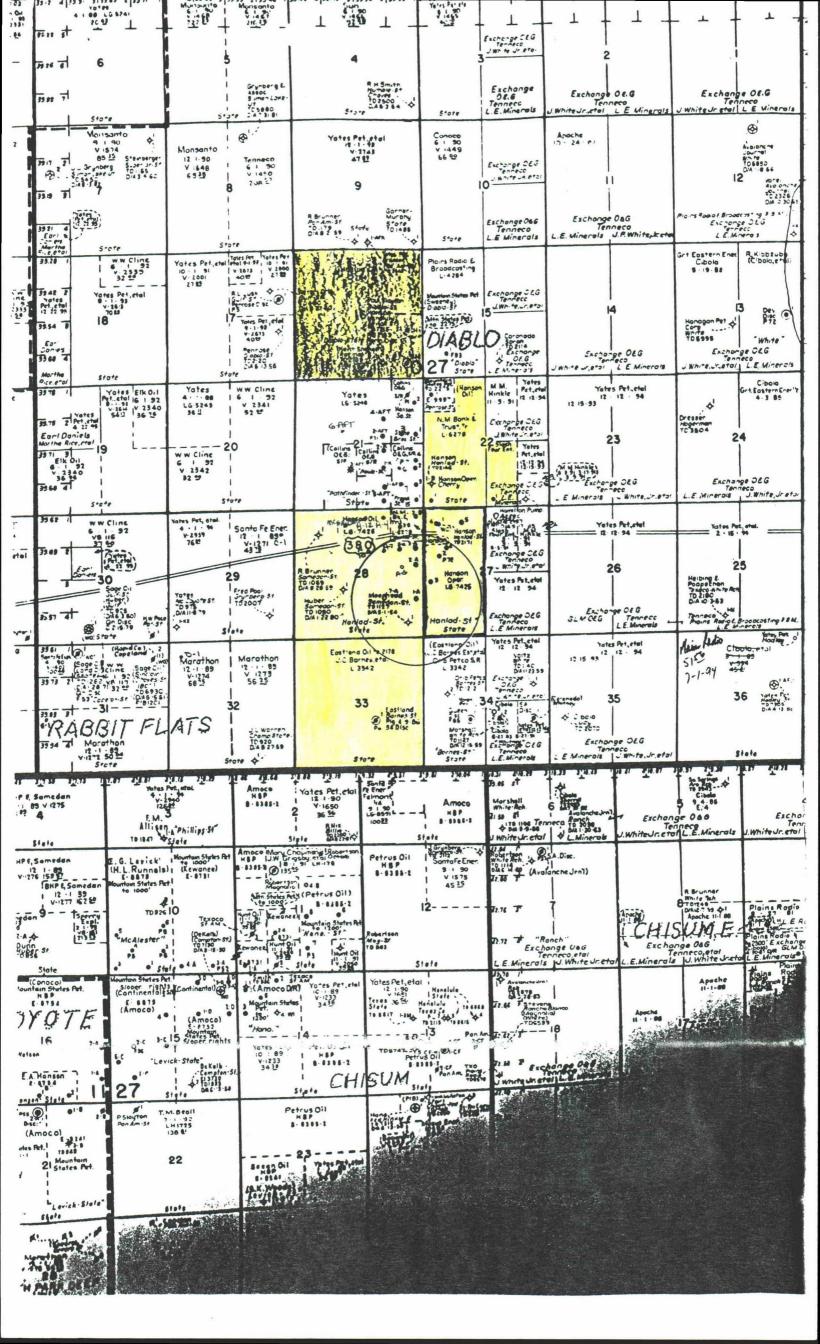
Oueen @ 915'

San Andres Pl @ 1930'

San Andres P2 @ 2050'

San Andres P3 @ 2390'

Fusselman @ 6200'

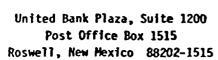




United Bank Plaza, Suite 1200 Post Office Box 1515 Roswell, New Mexico 88202-1515

Phone: (505) 622-7330

LOGE	TITON -	CCCCION 20	, 10S-27E, Chaves County 1650'FSL & 330' FEL
IELD/P	OOLDiabl	0	
LUG BA	ACK DEPTH	2123	KB 3836GR ELEVATION 3836G 5-86 COMPLETED & PUT ON PUMP 12-24-86
entl	ti <del>nitie m</del>	SPUDDED 9-2	.5-86 COMPLETED & PUT ON PUMP 12-24-86
		Hole Size	$\frac{12^{1}}{4}$
3			SURFACE CASING:
			Size 8-5/8" Weight 24# Grade J-55
			Set at
2			Remarks:Sacks to Sui
3			ricinarks.
<b>\$</b>			
3	1		
15.6	i i		
	ALDER!	·	•
		Hole Size	8
A STATE OF THE STA			- PRODUCTION CASING:
347			Size $5\frac{1}{2}$ Weight $17\#$ Grade J-55 Set at $2132$ with $350$ Sacks Cer
\$2 1			Set at 2132 with 350 Sacks Cer
\$			Cement Top: Calculated Temperature Survey Remarks:circulated. 48 sacks to surface
) 			nemarks.
	<b>§</b>		
3			
CARSON C	and it		
1			
a sala			
100			TURINA
			TUBING: Size 2-3/8" Weight 4.6# Grade J-55
G. C.		•	Number of Joints 66 Set at 2100
			Packer Set at
500 P			Bottom Arrangement: mud anchor (10'), perf sub (3'), S.N. (110), 66 jts 2-3/8" (2087), 2-3/8" subs (14')
New York			
2			
3			· · · · · · · · · · · · · · · · · · ·
) H	~; F#I		RODS:
[3] [3]		÷	Siz Number 83
300			Gas Anchor Set at 2100'
1	37		Pump Set at 2100'  Arrangement: 2X1½X12' pump, 83-3/4 rods (2075),
1207	Perforati		2-3/4 subs (11')
	(2034-208	32)	
3	Tubing at	2100'	
SAC 4	PBTD - 21	L23'	
	TD - 2132	2 '	
1			12-23-86 - Acidize perforations 2072-82' w/5000 gal 20% NEFE
K/I *			Z 3 Z /0 - 1 Y C (* C )



Phone: (505) 622-7330

_		OPERATING COMPANY, INC HANLAD "A" STATE \$2 8-10S-27E, Chaves County 2310'FNL & 330'FEL
<del></del> -		/ San Andres
		KB 3822GR ELEVATION 3822GR 38 COMPLETED & PUT ON PUMP 6-24-88
	Hole Size	12½
		Set at 502 with 400 Sacks Cement Circulate 65 Sacks to Surface Remarks:
Assettle Lines		PRODUCTION CASING:
		Size 5½" Weight 14# Grade J-55  Set at 2099 with 400 Sacks Cement Cement Top: Calculated Temperature Survey Remarks: Circulated 10 sacks to surface  TUBING: Size 2-3/8" Weight 4.6# Grade J-55  Number of Joints 66 Set at 2070  Packer Set at  Bottom Arrangement: Perforated mud anchor (4'), S.N.  (1.10), 66 jts. 2-3/8" tubing (2068)
(2007		RODS:    Number   82

FORM C-108, Sec. VI

United Bank Plaza, Suite 1200 Post Office Box 1515 Roswell, New Mexico 88202-1515

Phone: (505) 622-7330

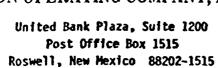
	San Andres
JG BACK DEPTH 2103	KB 3823GR ELEVATION 3823GR
SPUDDED 12-18	3-87 COMPLETED & PUT ON PUMP 3-19-88
Hole Size	$\frac{12^{1}}{6}$
	SURFACE CASING:
	Size         8-5/8         Weight         24#         Grade         J-55           Set at         501         with         400         Sacks Cem           Circulate         20         Sacks to Surf
	Circulate 20 Sacks to Surf
	Remarks:
<b>S</b>	
	8"
Hole Size	
[8]	- PRODUCTION CASING:
	Size         5½"         Weight         14#         Grade         J-55           Set at         2106         with         400         Sacks Cem
	Cement Top: Calculated Temperature Survey
. 1	Remarks: Circulated 20 sacks to surface
- -	
STATE OF THE PROPERTY OF THE P	TUBING:
<b>7</b>	Size 2-3/8" Weight 4.6# Grade J-55  Number of Joints 64 Set at 2085
	Packer Set at
	Bottom Arrangement: Perforated mud anchor (6').
7	S.N. (1.10), 64 jts. 2-3/8" tubing (2085), 2 2-3/8 subs (10')
티 : ::	none.
	RODS: Size 3,191 Number 83
ğ	Gas Anchor Set at
23	Pump Set at 2085'  Arrangement: 2X1 ¹ / ₂ X12' pump, 83 3/4" rods (2075).
	3 3/4" subs (22')
Perforations	
(2008-2090) 20 holes	
Tubing at 2085	
PBTD 2105	
TD 2106	3-18-88 - Acidized perforations (2008-2090) w/5000 gal 20% NEFE acid

FORM C-108, Sec. VI

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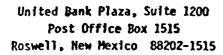
Phone: (505) 622-7330

ELD/POOL	Diablo	
		KB
LUG BACK DEPT	1	,
	Hole Size	SURFACE CASING:
		Size         8-5/8"         Weight         24#         Grade         J-55           Set at         505         with         400         Sacks Cem
		Circulate 50 Sacks to Sur
The distinct of	Hole Size	8"
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		-PRODUCTION CASING:
Philosophia Philosophia		Size 5½" Weight 17# Grade J-55  Set at 2100 with 350 Sacks Cem  Cement Top: Calculated Temperature Survey
		Remarks: Circulated 15 sacks to surface
Manual Indian		
A CONTRACTOR OF THE PROPERTY O		
And the second second		TUBING: Size 2-3/8" Weight 4.6# Grade J-55
	•	Number of Joints 65 Set at 2072
A STANSON OF THE STAN		Packer Set at  Bottom Arrangement: Perforated mud anchor (7'), S.N.  (1.10), 65 jts. 2-3/8" tubing (2064), 2 2-3/8" subs
The state of the s	-	_
THE PARTY OF THE P		RODS: Olico Set at82
Perfora		Pump Set at 2064  Arrangement: 2X1½X12' pump, 82 3/4" rods (2050)
	2064) 22 holes	3
39 J	at 2072	



Phone: (505) 622-7330

LD/POOLDiablo	
UG BACK DEPTH 2070	KB         3816GR         ELEVATION         3816GR           89         COMPLETED & PUT ON PUMP 5-13-89         ELEVATION         3816GR
SPUDDED 4-1-	89 COMPLETED & PUT ON PUMP 5-13-89
Hala Sina	12 ¹ 4
Hole Size	
	SURFACE CASING: Size8-5/8"Weight24#GradeJ-55
	Set at 520 with 400 Sacks Ceme Circulate 50 Sacks to Surfa
	Circulate Sacks to Surfa
	Remarks:
Hole Size	8
	PRODUCTION CASING:
	Size 5½" Weight 17# Grade J-55
1	Set at 2090 with 350 Sacks Ceme Cement Top: Calculated Temperature Survey
	Remarks: Circulated 42 sacks to surface
4771	
-	
88	
ž.	
	TUBING:
	Size 2-3/8" Weight 4.6# Grade J-55
	Number of Joints 66 Set at 2057 .  Packer Set at
	Bottom Arrangement: Perforated mud anchor (6'), S.N.
8	(1.10), 66 jts. 2-3/8" (2047), 2 2-3/8" subs (10')
	RODS:
	Size Number 81  Gas Anchor Set at
120	Pump Set at 2057
72.5	Arrangement: $2X1\frac{1}{2}X12$ ' pump, 81 3/4" rods (2025), 2 3/4" subs (4')
Perforations	57. 5655 ()
(1982-2052) 24 holes	
Tubing at 2057'	
PBTD 2070	
TD 2091	5-11-89 - Acidized perforations (1982-2052) w/2500 gal
	20%. NEFE acid 5-12-89 - Acidized perforations (1982-2052) w/14000
	gal Mod-202 acid



Phone: (505) 622-7330

							<del></del>
IELD/POOL	Diablo	/_	San Andr	es			
LUG BACK DEP	TH 2126 SPUDDED 5-23		кв	3854GR	<del></del>	ELEVATION	<u>3854GI</u>
	SPUDDED 5-23	-85 CO	MPLETED &	PUT ON PUME	8-5-85		
	Hole Size	12½					
	<u> </u>		CE CASING				
		Size	8-5/8 500	Weight	24# 300	Grade S	J-55
		Circulal	te			Sacl	ks to Surf
	·						
	•						
		·					
200							
NAMP!	·				•		
	Hole Size	8	H				
		- PRODU	ICTION CAS			٠	
) Here		Size	51/3	Weight	15#	Grade	J-55
Sense Sens						srature Survey	
S						rface	
N. N.				<del></del>			
							-
at Sales		<del></del>			<del> </del>	· · · · · · · · · · · · · · · · · · ·	
				· · · · · · · · · · · · · · · · · · ·			
					<del></del>		
SK.							
	·	TUBING	<b>.</b> .				
Const.				Weight	4.6#	Grade	r <b>-</b> 55.
	•	Number	r of Joints _		Set		
		Packer Bottom		t: Perf mu	d anchor	(9'), tubir	g barre
				-7/8" tubii			
25 September 1985					·		
					······································		
	-	- 0000					. •
[편 (집 : [품]		RODS: ∹3îz€			Number	84	
			chor Set at				
33 33 33 33 33 33 33 33 33 33 33 33 33		Pump S Arrange	Set at	/32 plunge	r & 84 3/	4" rods (21	.00)
1.1.2	orations 5-2114) 16 holes						
(2000)	)-2114) 16 notes	······································	<del></del>	<del></del>			
Tubir	ng at 2098'						
PRTD	2126'						
FALL DATE TOTAL							
TD	2134'			_			
31 139	2134'	8-3-85	o - Acidize gal NEF	-	ions (201	.6-2114) w/2	2000

FORM C-108, Sec. VI

United Bank Plaza, Suite 1200 Post Office Box 1515 Roswell, New Mexico 88202-1515

Phone: (505) 622-7330

ELD/PO	OL Diat	10	/ San Andres
UG BAC	K DEPTH _	2117	KB 3852GR ELEVATION 3852G
Ni	و موجود	SPUDDED 5-3	1-86 COMPLETED & PUT ON PUMP 9-25-86
		Hole Size	124
			SURFACE CASING: Size 8-5/8" Weight 24# Grade J-55
			Size         8-5/8"         Weight         24#         Grade         J-55           Set at         469         with         350         Sacks Cer           Circulate         20         Sacks to Sur
			CirculateSacks to Sur
			Remarks:
Stone Stone		•	
D			011
3	<b>4</b>	Hole Size	8"
			PRODUCTION CASING:
			Size $5\frac{1}{2}$ Weight $15.5\#$ Grade J-55 Set at $2120$ with $500$ Sacks Cer
			Set at 2120 with 500 Sacks Cer
			Cement Top: CalculatedTemperature Survey Remarks: Circulated,50 sacks to surface
			neliisiks.
To a	٠		
			TUBING:
			Size 2-3/8" Weight 4.6# Grade J-55.
			Number of Joints 67 Set at 2042
			Packer Set at  Bottom Arrangement: Mud anchor (6'), perf sub (3'),
			pump barrel (12'), 67 jts. 2-3/8" (2030)
3			
		•	
	•		
月 月			
			RODS: Size
			Gas Anchor Set at
			Pump Set at 2042
			Arrangement: 1-25/32 plunger, 81-3/4 rods (2025),
	Perforat	ione	5-3/4 subs (22')
<b>S</b>		56) 16 hole:	s
	·		
	Tubing at		
	PBTD 211		
प दिन	10 2120	U	9-23-86 - Acidized perforations (2106-2056) w/3000
			9-23-00 - Acidized Deriorations (2100-2030) W/3000
47842			gal 20% acid 10-12-89- Acidized perforations (2106-2056) w/10000



United Bank Plaza, Suite 1200 Post Office Box 1515 Roswell, New Mexico 88202-1515

Phone: (505) 622-7330

			, 10S-27E, Chaves County 650'FNL & 330'FWL
ELD/POC	L <u>Diabl</u>	0	San Andres
LUG BAC	K DEPTH	2136	KB
**	SP	UDDED 7-23	-87 COMPLETED & PUT ON PUMP 10-29-87
	<b>2</b>		
		Hole Size	12½
		<del></del>	
	<b>2</b>	· · · · · · · · · · · · · · · · · · ·	_SURFACE CASING: Size8-5/8" Weight24# GradeJ-55
			Set at 500 with 400 Sacks Cen
			Set at 500 with 400 Sacks Center Sacks to Sur
翻網			Remarks:
	हे <b>र</b> ी		
			,
M'aug			
		Uala Sira	8"
	<del></del>	Hole Size	8"
			PRODUCTION CASING:
100			Size         5½"         Weight         17#         Grade         J-55           Set at         2142         with         450         Sacks Center
3			Set at 2142 with 450 Sacks Cen
			Cement Top: Calculated Temperature Survey Remarks: Circulated 45 sacks to surface
			nenano.
	•		
Service Servic			
			- ·
			TUBING: Size 2-3/8" Weight 4.6# Grade J-55
		-	Number of Joints 65 Set at 2129
	•		Packer Set at
			Bottom Arrangement: Perforated mud anchor (5'), S.N.
			(110), 65 jts. 2-3/8" tubing (2130)
			<del>-</del>
3			
			RODS: Size Numbe,84
			Gas Anchor Set at
			Pump Set at 2129'
			Arrangement: 2X1 ² 2X12' pump, 84 - 3/4 rods (2100)
	Perforati		
			8
	Tubing at		
	PBTD - 21 TD - 21		
	ID - 21	70	10-27-87 - Acidized perforations (2095-2137) w/3000
			gal 20% NEFE acid
(1)			

HANSON OPERATING COMPANY, INC. P. O. Box 1515
Roswell, New Mexico 88202-1515

FORM C-108

#### VII. Data on the proposed operation:

- Proposed average and maximum daily rate and volume of fluids to be injected -350 BBLS a day average 700 BBLS a day maximum.
- 2. Whether the system is open or closed Open.
- Proposed average and maximum injection pressure -1200# average 1800# maximum.
- 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water Source McBride State #1

600' FNL & 1980' FWL Sec. 28, T.10S, R.27E Chaves County, New Mexico Fusselman formation

Attached is an analysis of the injection fluid f/McBride State #1 and Cibola Plains #22-2 San Andres formation water analysis, which were used for the compatibility study and found to be compatible.**

- 5. If injection is for disposal purposes into a zone not productive of oil and gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water —

  The injected zone is capable of producing oil and gas in limited quantities.
- ** The Hanlad lease does not make enough water for compatibility studies, so we used The Cibola Plains #22-2 for this study.

### Unichem International

707 North Leech · P.O.Box 1499

Sample 1

### Hobbs, New Mexico 88240

Company : STEVENS OPERATING

Date : 03-02-1990

Sample 1: McBride #1 - Fusselman H2O Tank (on 3-1-90)
Sample 2: Cibola Plains 29-9 - San Andres Water Tank (on 3-1-90)

Specific Gravi Total Dissolve pH: IONIC STRENGTH	d Solids:		1.034 47833 7.30 0.975	1.143 200387 7.56 3.617		
CATIONS: Calcium Magnesium Sodium Iron (total) Barium	(Ca ^{+ 2} ) (Mg ^{+ 2} ) (Na ^{+ 1} ) (Fe ^{+ 2} ) (Ba ^{+ 2} )	me/liter 124 124 587 0.473 0.003	mg/liter 2480 1510 13500 13.2 0.200	me/liter 164 116 3160 1.50 0.003	mg/liter 3280 1410 72600 42.0 0.200	
ANIONS: Bicarbonate Carbonate Hydroxide Sulfate Chloride	(HCO ₃ - 1) (CO ₃ - 2) (OH-1) (SO ₄ - 2) (Cl-1)	14.4 0 0 30.7 790	878 0 0 1480 28000	15.6 0 0 65.6 3360	952 0 0 3150 119000	

	SCALING	INDEX (positive	value indicat	tes scale)	
		Calcium	Calcium	Calcium	Calcium
Temp	erature	Carbonat	<u>e Sulfate</u>	Carbonate	Sulfate
86°F	30°C	0.88	-19	2.0	-5.5

FORM C-108, Sec. VII- #4

#### WATER COMPATIBILITY CALCULATIONS

### FIELD NAME: Stevens Operating

		NATER A :			WATER SAMPLE		Plains
ION (mg/L)	100%A	90%A	75%A	50%A	25%A	10%A	100%B
Na	13500	19410	28275	43050	57825	66690	72600
Ca	2480	2560	2680	2880	3080	3200	3280
Mg	1510	1500	1485	1460	1435	1420	1410
Ba	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Sr	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cl	28000	37100	50750	73500	96250	109900	119000
SO4	1480	1647	1898	2315	2733	2983	3150
CO3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
нсоз	878.0	885.4	896.5	915.0	933.5	944.6	952.0
TDS	47848	63103	85984	124120	162256	185138	200392
pН	7.30	7.30	7.40	7.40	7.50	7.50	7.60
SG	1.034	1.045	1.061	1.089	1.116	1.132	1.143
I(molar)	0.98	1.24	1.64	2.30	2.96	3.35	3.62

#### WATER INJECTION SYSTEM

#### CALCIUM CARBONATE SCALING CALCULATIONS

			_		_							-	
%A	TF	Psia	XCO2	pHc	SI	PTB	Is	TF	Psia	pHd	SId	PTB	Is
100	100	15	0	***	1.13	456.1	***	100	15	7.3	1.13	456.1 *	***
90	100	15	0	***	1.12	459.7	***	100	15	7.32	1.12	459.7 *	***
75	100	15	0	***	1.18	472.1	***	100	15	7.35	1.18	472.1 *	***
50	100	15	0	***	1.43	500.6	***	100	15	7.41	1.43	500.6 *	***
25	100	15	0	***	1.77	524.2	***	100	15	7.48	1.77	524.2 *	***
10	100	15	0	***	2	535.3	***	100	15	7.53	2	535.3 *	***
0	100	15	0	***	****	*****	***	100	15	7.56	****	*****	***

### SULFATE SCALE CALCULATIONS

			•	aso4é	·Ba	aSO4é	·sr	:SO4é
%A	TF	Psia	SR	PTB	SR	PTB	SR	PTB
100	100	15	. 5	-537.5	1.9	.1	0	-58.6
90	100	15	.5	-593	1.8	.1	0	-60.3
75	100.	15	. 5	-628.5	1.7	0	0	-60.7
50	100	15	.6	-577.9	1.6	0	0	-57.2
25	100	15	.7	-415.8	1.7	0	0	-51
10	100	15	. 8	-275.3	1.7	0	****	****
0	100	15	. 9	-166.5	1.7	n	****	****

NOTE: Values of SI & PTB for CaCO3, and SR & PTB for CaSO4 and BaSO4 are calculated at 14.7 psia.

HANSON OPERATING COMPANY, INC. P. O. Box 1515
Roswell, New Mexico 88202-1515

FORM C-108

VIII. Attach appropriate geological data on the injection zone:

Lithology - slightly calcic dolomite Geologic name - San Andres (P₁)

Thickness - Top San Andres to base of porosity - 630' Porosity thickness - 48'

Depth - Top San Andres - 1450'
Top San Andres Porosity - 2034'

Potable water - No known fresh water aquifers.

- IX. Describe the proposed stimulation program, if any No stimulation is planned at this time.
- X. Attach appropriate logging and test data on the well -Logs and test data were sent to the NMOCD, Artesia, on 12/29/86 and 12/31/86, upon completion of the well.
- XI. Attach a chemical analysis of fresh water from two or more fresh water wells within one mile of any injection or disposal well -

No known fresh water wells are within 1 mile of the area.

HANSON OPERATING COMPANY, INC. P. O. Box 1515
Roswell, New Mexico

FORM C-108

XII. To date, we have not identified any fresh water zones in the area. Our wells have been drilled by cable tool and all water zones drilled have contained salt water. On March 16, 1990, Ken Fresquez, of the New Mexico State Engineering Office, confirmed that there are no known fresh water zones in the area. In addition, no faults have been identified in the San Andres formation, or shallower, and it is my opinion no faulting occurs in San Andres, and younger, rock in this area.

Therefore, there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

I hereby certify that the information submitted in this statement is true and correct to the best of my knowledge and belief.

Name: Gary Fitzsimmons/	Title:	Geologist
Signature: ///	Date:	03/21/90
7077		

# CAMPBELL & BLACK, P.A.

JACK M. CAMPBELL
BRUCE D. BLACK
MICHAEL B. CAMPBELL
WILLIAM F. CARR
BRADFORD C. BERGE
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JEFFERSON PLACE
SUITE + - 110 NORTH GUADALUPE
POST OFFICE BOX 2208

SANTA FE, NEW MEXICO 87504-2208
TELEPHONE: (505) 988-4421

TELECOPIER: (505) 983-6043

March 15, 1990

# CERTIFIED MAIL RETURN RECEIPT REQUESTED

Commissioner of Public Lands New Mexico State Land Office Post Office Box 1148 Santa Fe, New Mexico 87504

Re: Application of Hanson Operating Company, Inc. for Approval of Salt Water

Disposal, Chaves County, New Mexico

#### Gentlemen:

This letter is to advise you that Hanson Operating Company, Inc. has filed an application with the New Mexico Oil Conservation Division seeking authority to dispose of produced salt water by injection into the San Andres formation (Diablo San Andres Pool) in its Hanlad A State No. 1 Well located 1650 feet from the South line and 330 feet from the East line (Unit I), Section 28, Township 10 South, Range 27 East, N.M.P.M., Chaves County, New Mexico.

This application has been set for hearing before an Examiner of the Oil Conservation Division on April 4, 1990. You do not need to be present at the hearing, but failure to appear at the hearing or otherwise become a party of record in this case will preclude you from challenging the matter at a later date.

Very truly yours,

WILLIAM F. CARR

ATTORNEY FOR HANSON OPERATING COMPANY, INC.

WFC:mlh

10141 C-108, Sec. XIII

# CAMPBELL & BLACK, P.A.

JACK M. CAMPBELL
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SANTA FE, NEW MEXICO 87504-2208

TELEPHONE: (505) 988-4421

TELECOPIER: (505) 983-6043

March 15, 1990

# CERTIFIED MAIL RETURN RECEIPT REQUESTED

Yates Petroleum Corporation 105 South Fourth Street Artesia, New Mexico 88210

Re: Application of Hanson Operating Company, Inc. for Approval of Salt Water

Disposal, Chaves County, New Mexico

### Gentlemen:

This letter is to advise you that Hanson Operating Company, Inc. has filed an application with the New Mexico Oil Conservation Division seeking authority to dispose of produced salt water by injection into the San Andres formation (Diablo San Andres Pool) in its Hanlad A State No. 1 Well located 1650 feet from the South line and 330 feet from the East line (Unit I), Section 28, Township 10 South, Range 27 East, N.M.P.M., Chaves County, New Mexico.

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Very truly yours,

WILLIAM F. CARR

ATTORNEY FOR HANSON OPERATING COMPANY, INC.

WFC:mlh