

Ray Westall Operating, Inc.
Independent Oil Producer

Post Office Box 4 • Loco Hills, New Mexico 88255
Ph. 505-677-2370

Randall L. Harris/Geologist

July 7, 1998

New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Attn.: Benjamin Stone

Re: Ray Westall
Forehand #3
Water Disposal Application

Dear Mr. Stone:

It has been several weeks since we discussed the captioned C-108, but I finally found an original copy. I have also enclosed a letter agreement between the surface owner, Jim Ogden, and Ray Westall. Mr. Ogden objections were based on concerns of increased truck traffic on his ranch roads. We have no objection if the OCD would include this stipulation on the approval for possible future operators.

If any additional information is needed give me a call.

Very truly yours


Randall L. Harris

SWD 7/31/98

V-F-R-R-A-C
9-2-98
BS

719

JUL 16 1998



Ray Westall Operating, Inc.

Independent Oil Producer
Post Office Box 4
Loco Hills, New Mexico 88255
PH. 505-677-2370 • FAX 505-677-2361

May 26, 1998

Salt Water Disposal
Forehand #3
Section 15, T23S R27E
Eddy County, New Mexico

Ogden Estate Lease #100
It is agreed up between the Ogden Estate and Ray Westall Operating that the Forehand #3 will be used as a Salt Water Disposal for the use of on lease disposal of water from the Forehand Lease. (No trucks will haul into this disposal)

Ray Westall
RAY WESTALL

5-26-98
Date

Jim Ogden
JIM OGDEN

June 8, 98
Date

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: RAY WESTALL
Address: P.O. Box 4 Loxo Hills NM 88255
Contact party: RANDALL HARRIS Phone: 505-677-2370
- III. 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? ☐ yes ☒ no
If yes, give the Division order number authorizing the project _____.
- V. 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:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (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.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- 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: RANDALL HARRIS

Title: GEOLOGIST

Signature: [Signature]

Date: 6/18/87

- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

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

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

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

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

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

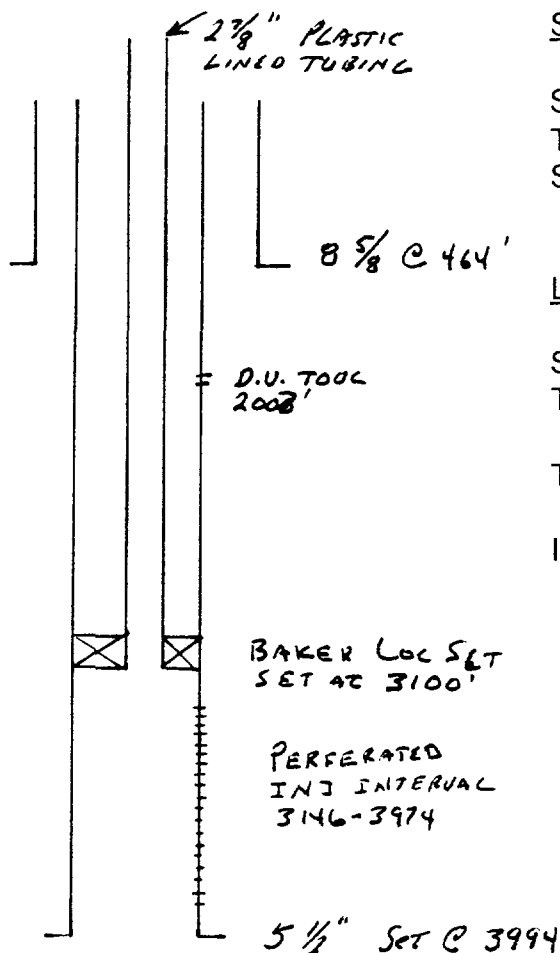
NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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

INJECTION WELL DATA SHEET

RAY WESTALL OPERATOR FOREHAND #3
1980' FSL & 1980' FEL SECTION 15, TOWNSHIP-23-SOUTH, RANGE-27-EAST

Schematic



Tabular data

Surface Casing

Size 8 5/8" Cemented with 275 sxs
TOC Circulated Hole size 12 1/4"
Set at 464'

Long string

Size 5 1/2" Cemented with 1160 SXS
Two staged with D.V. tool @ 2007'
TOC Circulated
Total depth 3994'

Injection Interval 3146-3974' perforated

Tubing size 2 7/8" lined with plastic set in a BAKER LOC-SET packer at 3100'.

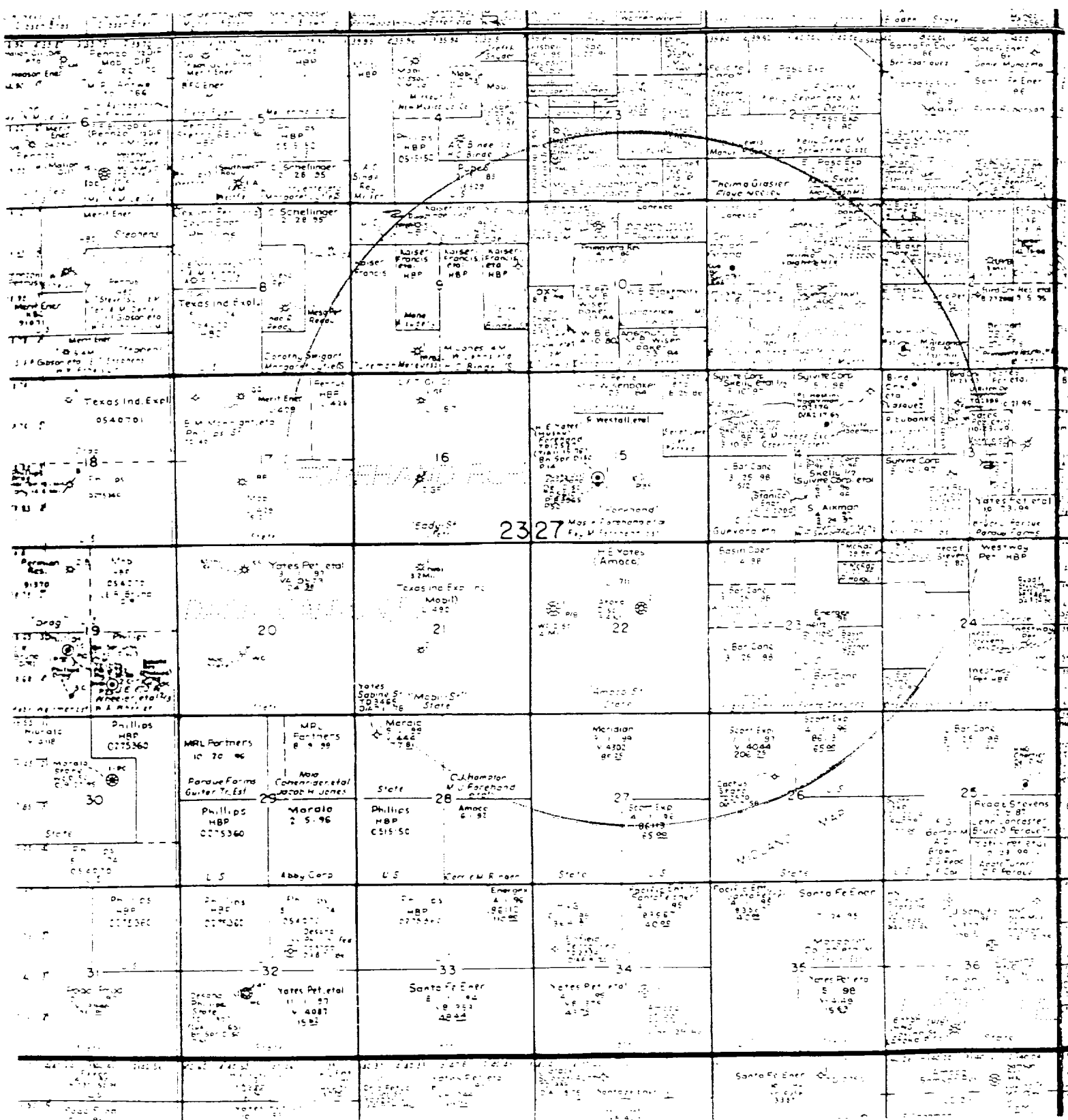
Other Data

1. Name of the injection formation: DELAWARE
2. Name of Pool: FOREHAND RANCH DELAWARE.
3. Original purpose of well: OIL & GAS PRODUCTION
4. No other perforations in this well.
5. Forehand Ranch Bone Springs underlie this area at approximately 8600'.

ATTACHMENT V

Maps that identifies all wells of public record within two miles of each proposed injection well, and the area of review one-half mile radius around each proposed injection well.

[illegible]



ATTACHMENT VI

Data on all wells of public record within the area of review.
There are no plugged wells.

Well name	Location	Spud date	Sur. Casing	Int. Casing	Prod. Casing	Completion
Ray Westall Forehand #1	NWSW Sec 15 T23S-R27E	08/13/75	13 3/8" @ 428 425 sxs Circ.	8 5/8"@ 5590 3275 sxs Circ.	5 1/2"@ 12352 1150 sxs T/	8642-8857 Forehand Ranch Bone Springs Oil
Ray Westall Forehand #2	NWSW Sec 15 T23S-R27E	07/08/76	12 3/4"@ 444 400 sxs Circ.	8 5/8"@ 1966 625 sxs Circ	5 1/2" @ 5581 1300 sxs T/above 1900'	3737-3751 Forehand Ranch Delawaree Oil

DISTRICT OFFICE
 AND AREA
 FILE
 U.S.C.S.
 AND OFFICE
 OPERATOR

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

REVISION NUMBER
 1. Date of Revision
 2. Name of Reviser
 3. Description of Revision

TYPE OF WELL
 OIL WELL ☒ GAS WELL ☐ DRY ☐ OTHER ☐
 TYPE OF COMPLETION
 NEW WELL ☒ WORK OVER ☐ DEEPEN ☐ PLUG BACK ☐ REPERFORATE ☐ OTHER ☐

1. Well Name
 2. Well Number
 3. Well Status

Name of Operator
 Husky Oil Company : *Delaware*
 Address of Operator
 600 So. Cherry St., Denver, CO 80222
 Location of Well

4. Well Type
 5. Well Depth
 6. Well Status

LETTER J LOCATED 1980 FEET FROM THE South LINE AND 1980 FEET FROM
East LINE OF SEC. 15 TWP. 23S RGE. 27E

7. Well Name
 8. Well Number
 9. Well Status

10. Date Cased	11. Date T.C. Finished	12. Date Temp. Ready to Prod.	13. Elevations (ft. RKB, RL, GR, etc.)	14. Elev. Casinhead
8/29/77	9/8/77	10/21/77	3142 KB	3129 GR
Total Depth	15. Plug back T.D.	16. If Multiple Completions, How Many	17. Intervals Drilled By	18. Intervals Drilled By
4000 KB	3994 KB	--	All	None
19. Producing Interval(s), of this completion - Top, Bottom, Name				20. Was Directional Survey Made
Delaware 3146-3974'				No
21. Type Electric and Other Logs Run				22. Was Well Cased
CNL, FDC, DLL, BHC, CBL				No

CASING RECORD (Report all strings set in well)					
CASING SIZE	WEIGHT LB. FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8"	32#	464 KB	12 1/2"	275sx Class C w/2% Cacl	--
5 1/2"	17#	3994 KB	7-7/8"	1st stg: 310sx Howco Lite w/200sx Class H. 2nd stg: 550sx Howco Lite w/100sx Class C. DV tool @ 2007'	

LINER RECORD				TUBING RECORD			
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET
--					2-7/8"	3124'	--

Perforation Record (Interval, size and number)		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
Interval	Size	Depth Interval	Amount and Kind Material Used
" csg gun, 4 SPF: 3146-48, 3180-3202, 232-40, 3332-40, 3422-30, 3726-40, 750-64, 3786-3802, 3820-30, 3840-44, 900-04, 3910-16, 3954-66, 3970-74.		3954-74	1600 gals 7 1/2% HCL
		3840-44	400 gals 7 1/2% HCL
		3788-3830	2600 gals 7 1/2% HCL
		3726-3764	2800 gals 7 1/2% HCL (over)

23. First Production
 10/23/77
 24. Production Method (blowing, gas lift, pumping - size and type pump)
 Pumping 2 X 1 1/2 X 12 X 16
 25. Well Status (Prod. or Shut-in)
 Producing
 26. Date of Test
 11/4/77
 27. Hours Tested
 24
 28. Casing Size
 --
 29. Production Flow Test Interval
 35
 30. Oil - Flow
 35
 31. Gas - MCF
 --
 32. Water - Gal.
 95
 33. Gas - Oil Ratio
 --
 34. Flow Testing Method
 --
 35. Production Flow Test Interval
 35
 36. Gas - MCF
 --
 37. Water - Gal.
 95
 38. Oil Gravity - API (corr.)
 --
 39. Description of Test fluids used for flow, control, etc.
 --
 40. Test witnessed by
 --

List of Attachments
 Logs previously submitted.
 I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.
 SIGNED A. X. Rice TITLE Senior Engineer DATE 8/17/78

ATTACHMENT VII

PROPOSED OPERATION

1. Plans are to inject 150-200 bbls of produced water per day.
2. The injection system is be a closed system.
3. The estimated injection pressure is 300 psig. Maximum pressure will be 600 psig.
4. Injection fluid will be reinjected produced water from the Forehand nos. 1 & 2.
5. A sample of produced water is attached.

FW01W124

BJ SERVICES COMPANY
WATER ANALYSIS #FW01W124
ARTESIA LAB

GENERAL INFORMATION

OPERATOR:	RAY WESTALL OPERATING	DEPTH:	
WELL:	FOREHAND #1	DATE SAMPLED:	11/11/96
FIELD:		DATE RECEIVED:	11/11/96
SUBMITTED BY:	RANDY HARRIS	COUNTY:	EDDY STATE: NM
WORKED BY:	CRAIG BAILEY	FORMATION:	DELAWARE
PHONE NUMBER:			

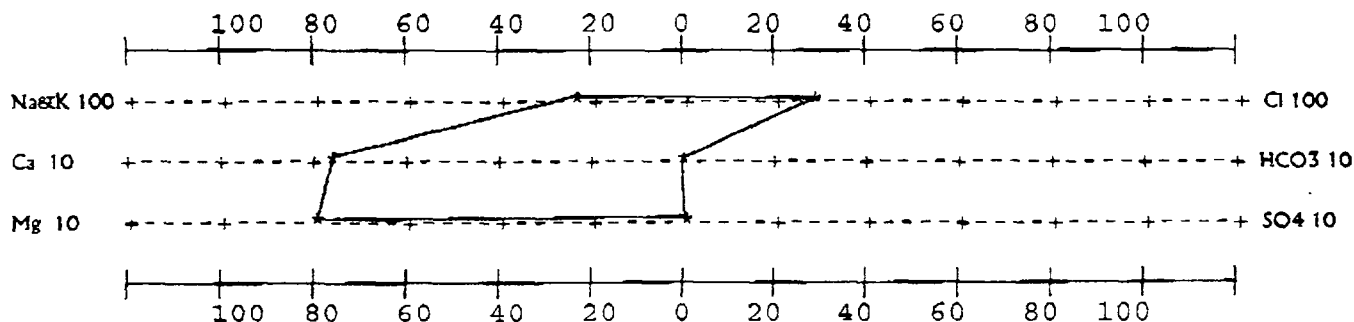
SAMPLE DESCRIPTION

PHYSICAL AND CHEMICAL DETERMINATIONS

SPECIFIC GRAVITY:	1.120	@ 68°F	PH:	7.61
RESISTIVITY (CALCULATED):	0.035	ohms @ 75°F		
IRON (FE++) :	1 ppm	SULFATE:		357 ppm
CALCIUM:	15,373 ppm	TOTAL HARDNESS		78,619 ppm
MAGNESIUM:	9,763 ppm	BICARBONATE:		240 ppm
CHLORIDE:	98,192 ppm	SODIUM CHLORIDE (Calc)		161,526 ppm
SODIUM+POTASS:	37,588 ppm	TOT. DISSOLVED SOLIDS:		214,996 ppm
IODINE:		POTASSIUM CHLORIDE:		

REMARKS

STIFF TYPE PLOT (IN MEQ/L)



ANALYST

Craig Bailey
 CRAIG BAILEY

ATTACHMENT VIII

The proposed injection zones are sands of the Delaware Formation. These sands are composed of fine-grained quartz sand with varying amounts of shales. They have varying thickness from 1-100 feet thick. There is possible drinking water overlying the injection in the surface sands at a depth of 0-350'. There is no known source underlying the injection interval.

ATTACHMENT XI

Sample of water was taken from the Forehand Ranch domestic water well analysis is attached.

FW01W187

BJ SERVICES COMPANY
WATER ANALYSIS #FW01W187
ARTESIA LAB

GENERAL INFORMATION

OPERATOR:	RAY WESTALL	DEPTH:	
WELL:	FORE HAND RANCH WATER WEL	DATE SAMPLED:	06/05/97
FIELD:		DATE RECEIVED:	06/05/97
SUBMITTED BY:	RAY WESTALL	COUNTY:	EDDY
WORKED BY:	JAIME LOPEZ	FORMATION:	STATE: NM
PHONE NUMBER:	FAX 505-677-2361		

SAMPLE DESCRIPTION

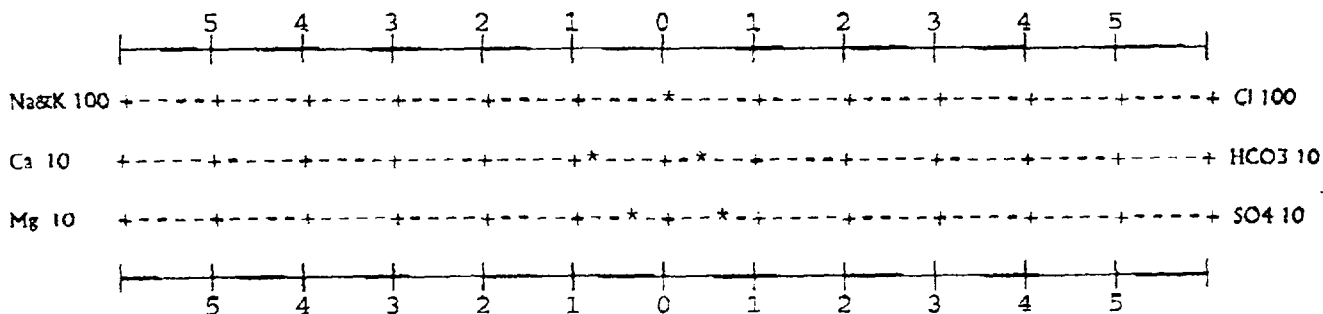
Fore Hand Ranch Water Well

PHYSICAL AND CHEMICAL DETERMINATIONS

SPECIFIC GRAVITY:	1.000	@ 78°F	PH:	7.38
RESISTIVITY (CALCULATED):	3.345	ohms @ 75°F		
IRON (FE++) :	0	ppm	SULFATE:	250 ppm
CALCIUM:	144	ppm	TOTAL HARDNESS	540 ppm
MAGNESIUM:	44	ppm	BICARBONATE:	256 ppm
CHLORIDE:	240	ppm	SODIUM CHLORIDE (Calc)	395 ppm
SODIUM+POTASS:	124	ppm	TOT. DISSOLVED SOLIDS:	1,410 ppm
IODINE:			POTASSIUM CHLORIDE:	

REMARKS

STIFF TYPE PLOT (IN MEQ/L)



ANALYST

JAIME LOPEZ

ATTACHMENT XII

All available geologic and engineering data have been examined and there is no evidence of open faults or any other hydrologic connection between the disposal zone and any source of drinking water.

ATTACHMENT XIV

PROOF OF NOTICE

The Leasehold operator within one-half mile of the well location is H. E. Yates. This operator was provided a copy of our application by certified mail. Proof of notice is enclosed. The surface owner is Masie Forehand Etal.

PROOF OF PUBLICATION

Proof of publication will be from the Artesia Daily Press and will be forwarded.

Copies of this application has been sent to:

Heyco
P.O. Box 1933
Roswell, NM. 88201

Certified Mail # P 333 336 147

Oil Conservation Division
811 S. 1st Street
Artesia, NM 88210

Oil Conservation Division
2040 So. Pacheco St.
Santa Fe, NM. 87505-5472

SURFACE OWNER

Masie Forehand etal.
c/o Sue F. Ogden
159 W. Ogden Rd.
Loving, NM. 88256

Certified Mail # P 333 336 148

CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: RAY WESTALL Well: FOREHAND #3

Contact: RANDY HARRIS Title: GEOLOGIST Phone: 505 667-2370

DATE IN 7-16-98 RELEASE DATE 7-31-98 DATE OUT 9-2-98

Proposed Injection Application is for: ☐ WATERFLOOD ☐ Expansion ☐ Initial

Original Order: R- ☐ Secondary Recovery ☐ Pressure Maintenance

~~SENSITIVE AREAS~~

☒ SALT WATER DISPOSAL ☐ Commercial Well

☐ WIPP ☐ Capitan Reef

Data is complete for proposed well(s)? YES Additional Data Req'd _____

AREA of REVIEW WELLS

2 Total # of AOR

0 # of Plugged Wells

YES Tabulation Complete

☒ Schematics of P & A's

YES Cement Tops Adequate

☒ AOR Repair Required

INJECTION FORMATION

Injection Formation(s) DELAWARE

Compatible Analysis YES

Source of Water or Injectate AREA PRODUCTION

PROOF of NOTICE

YES Copy of Legal Notice

☐ Information Printed Correctly

YES Correct Operators

☐ Copies of Certified Mail Receipts

YES Objection Received

☐ Set to Hearing _____ Date

NOTES:

LANDOWNER GOT AGREEMENT FOR NO TRUCKS TO HAUL TO TOWS SWD - ALL WATERS WILL BE PIPED IN - AGREEMENT IN FILE.

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? YES

(85)

COMMUNICATION WITH CONTACT PERSON:

1st Contact: ☒ Telephoned ☐ Letter 9-2-98 Date Nature of Discussion VERBAL APPROVAL

2nd Contact: ☐ Telephoned ☐ Letter _____ Date Nature of Discussion _____

3rd Contact: ☐ Telephoned ☐ Letter _____ Date Nature of Discussion _____