

123346240 SWD



RICHARDSON OPERATING COMPANY

1700 Lincoln, Suite 1700  
Denver, Colorado 80203 (303) 830-8000  
FAX (303) 830-8009

August 17, 2001

New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Re: Application for Authorization to Inject  
San Juan County, New Mexico

Gentlemen:

Richardson Operating Company is requesting administrative approval for salt water disposal into the Salty Dog No. 2 well. This well is not yet drilled, but is scheduled to spud near the end of August. The well will be completed in the Blanco Mesaverde field, and will be located in the NW/4SE/4 of Section 5, Township 29 North, Range 14 West, San Juan County, New Mexico. Richardson owns the surface and 100% leasehold interest, surface to base of Pictured Cliffs formation. Conoco Inc. owns 100% leasehold interest below the base of the Pictured Cliffs formation.

Enclosed are two copies of Application for Authorization to Inject (Form C-108). An additional copy has been forwarded to the District Office in Aztec.

There is only one well which penetrates the proposed injection zone within one half mile of the Salty Dog No. 2 location. The plugged and abandoned Pubco-Carr Russell Federal No. 1 well is located in the NE/4NE/4 of Section 8, T29N, R14W. Pertinent well records are attached as Exhibit 2.

Information from the State Engineer's Office in Aztec indicates there are no shallow fresh water wells within one mile of the Salty Dog No. 2 location.

If you have any questions or if you need additional information, please call John Durham, Operations Manager, (505) 564-3100.

Sincerely,

RICHARDSON OPERATING COMPANY

*Cathleen Colby*  
Cathleen Colby  
Land Manager

cc: Oil Conservation Division  
1000 Rio Brazos Road  
Aztec, NM 87410

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NEW MEXICO  
OIL CONSERVATION DIVISION

New Mexico Oil Conservation Division  
August 17, 2001  
Page 2

List of Exhibits to Application for Authorization to Inject C-108:

Exhibit 1	Well and Lease Plat - 2 mile radius
Exhibit 2	Well Records - Pubco-Carr Russell Federal No. 1
Exhibit 3	Operations Plan
Exhibit 4	BOP Diagram
Exhibit 5	Injection Well Data Sheet
Exhibit 6	Wellbore Diagram
Exhibit 7	Survey Plat and Well Pad
Exhibit 8	Water Analysis: Mesaverde
Exhibit 9	Water Analysis: Fruitland Coal and Pictured Cliffs
Exhibit 10	Affidavit of Publication
Exhibit 11	Proof of Notice

### 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 the 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:

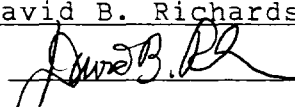
- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

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

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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.

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance ☒ Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval? \_\_\_\_\_ Yes \_\_\_\_\_ No
- II. OPERATOR: Richardson Operating Company  
ADDRESS: 1700 Lincoln, Suite 1700, Denver, CO 80203  
CONTACT PARTY: John Durham PHONE: (505) 564-3100
- 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 geologic data on the injection zone including appropriate lithologic detail, geologic 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 sources 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 sources 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 B. Richardson TITLE: President  
SIGNATURE:  DATE: August 17, 2001
- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: \_\_\_\_\_

### III. WELL DATA

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- (3) A description of the tubing to be used including its size, lining material, and setting depth.
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- (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 the name of the next higher and next lower oil or gas zone in the area of the well, if any.

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- (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, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

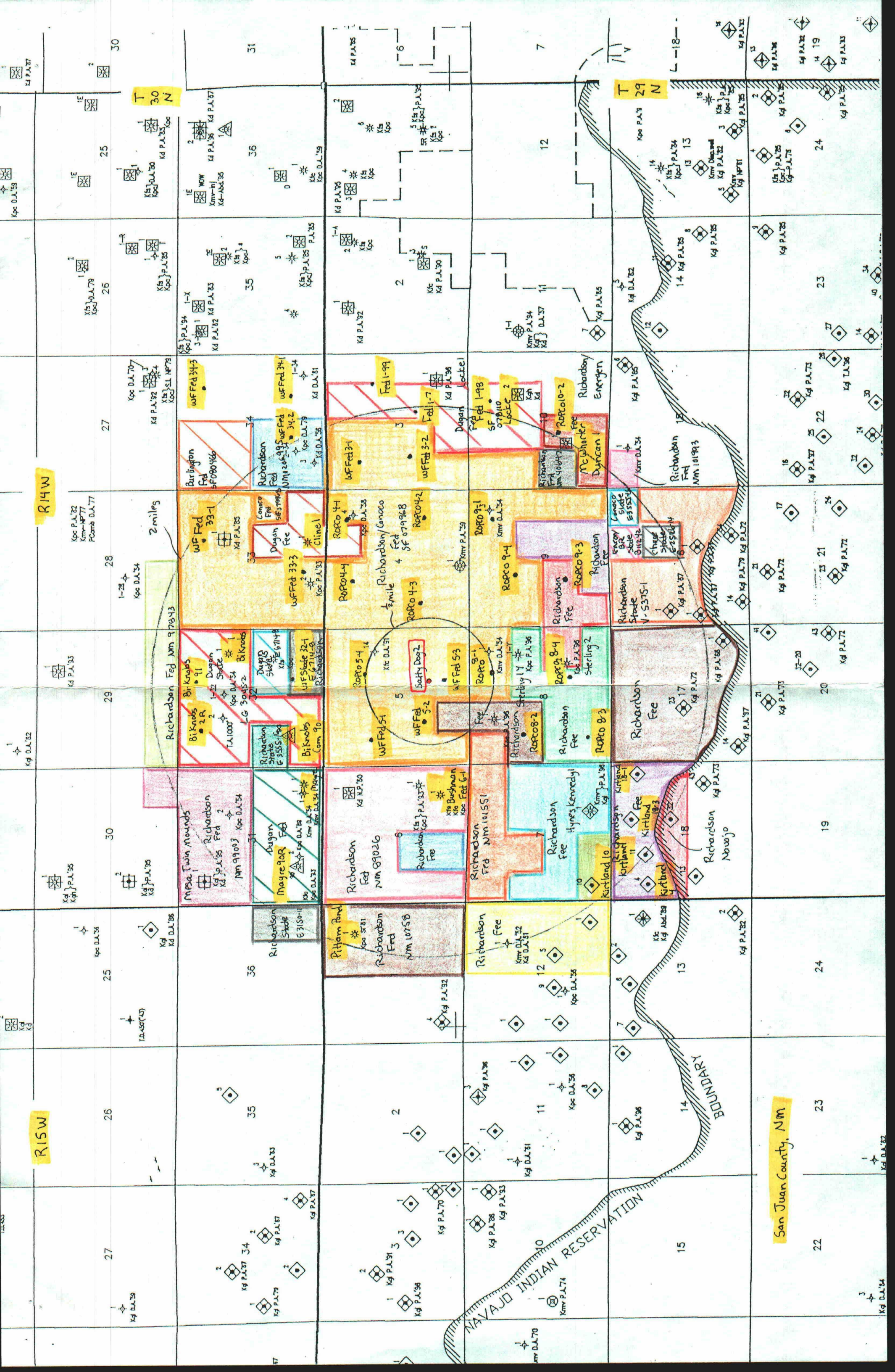
**NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.**

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**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.

B14W

San Juan County, NM



Unit

RECEIVED  
JUL 27 1954  
LIS  
DIZING

NOTICE OF INTENTION TO DRILL	X	SUBSEQUENT REPORT OF WATER SHUT-OFF
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY
NOTICE OF INTENTION TO ABANDON WELL		

(INDICATE SOURCE BY SOURCE NAME, NATURE OF REPORT, DATE, OR OTHER DATA)

July 24

19:4.

Well No. 1 is located 100 ft. from  $\begin{Bmatrix} N \\ S \end{Bmatrix}$  line and 200 ft. from  $\begin{Bmatrix} E \\ W \end{Bmatrix}$  line of sec. 1.

**R.F.M.**  
(Meridian)

State of Tennessee

The elevation of the ~~desire~~ <sup>ground level</sup> floor above sea level is 5332.4 ft.

RECEIVED

## DETAILS OF WORK

(State names of and expected depths to objective sands, show class, weights, and lengths of proposed sections, indicate existing and proposed boring points, and all other important proposed work)

JUL 23 1954

It is proposed to drill with rotary tools to the top of the ~~Carboniferous~~ <sup>Permian</sup> shale, estimated to be at a depth of 3800 feet. It is proposed to core and drill stop just the Pictured Cliff formation and several possible zones in the Mesozoic formation. Tentative drilling program as follows:

10-3/4" surface casing      2 1/2" tool  
Production string

Drilling Unit: NG-1 of Section 8 - ~~Elberta~~ Monaca Lease.

A Blanket Drilling Bond has heretofore been filed and approved by the Commission.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company ---Pilon Development---Inc.

Address ..... Post 415 Lee Hwy 134

.....Albuquerque, New Mexico.....

By Charles E. Gilman

Title *Frank D. Gordon, Jr.*  
*Vice-President*

Company PUBCO DEVELOPMENT CO.

Tract PUBCO-CARR-RUSSELL FEDERAL. Well No. 1

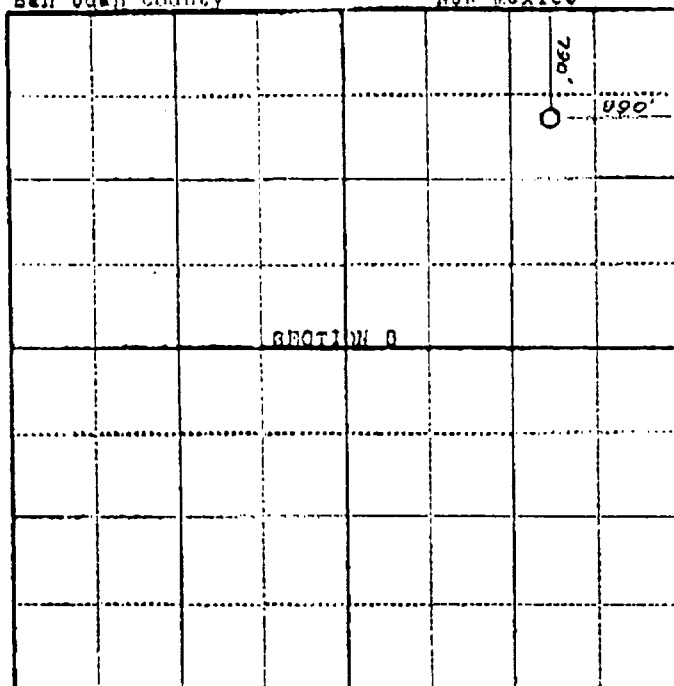
Sec. 8 T. 29 N R. 14 W N.M.P.M.

LOCATION 700 feet from north line; 890 feet from east line.

Elevation: 5832.4 OL

San Juan County

New Mexico



Scale—4 inches equal 1 mile.

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

*Stephen H. Kinney*  
STEPHEN H. KINNEY  
Registered Professional  
Engineer and Land Surveyor

Surveyed July 19, 1954.

Seal:

RECEIVED

JUL 23 1954

U. S. GEOLOGICAL SURVEY  
FARMINGTON, N. M.

Budget Bureau No. 42-R-846.2.  
Appropriation expires 12-31-60.

Form 8-850

U. S. LAND OFFICE

SERIAL NUMBER.

LEADS ON PROJECT 47 PROJECT

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SLI 1 1955

# LOG OF OIL OR GAS WELL

LOCATE WELL CORRECTLY

Company ..... Address .....

Company Pulban-Carr Field Box 844, Aztec, New Mexico

Well No. Russell-Federal Meridian Twin Mounds County New Mexico

Location 1 ft. 8 of 29N 14W line and 16 ft. 15 of N.M.P.M. San Elevation 1100

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed

Bill A. Street

Date \_\_\_\_\_

14 AUGUST 30 1955

The summary on this page is for the condition of the well at above date. District Geologist.

Commenced drilling near \_\_\_\_\_, 19\_\_\_\_ Finished drilling \_\_\_\_\_, 19\_\_\_\_

OIL OR GAS SANDS OR ZONES

(Denote gas by  $\odot$ )

No. 1, from \_\_\_\_\_ to \_\_\_\_\_ No. 4, from \_\_\_\_\_ to \_\_\_\_\_

No. 2, from June to            No. 5, from            to           

No. 3. from \_\_\_\_\_ to \_\_\_\_\_ No. 6. from \_\_\_\_\_ to \_\_\_\_\_

## IMPORTANT WATER SANDS

No. 1, from ..... to ..... No. 3, from ..... to .....

No. 2, from \_\_\_\_\_ to \_\_\_\_\_ No. 4, from \_\_\_\_\_ to \_\_\_\_\_

## CASINO RECORD

Size coding	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From—	To—	
10-34-32-75	8	8	3	216	100	100			

### MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Mortar used	Mud gravity	Amount of mud used
3 1/4	216.90	200	Howee		

**MARK 1**

FOLD

## PLUGS AND ADAPTERS

Heaving plug Material ..... Length ..... Depth set .....  
 Adapter Material ..... Size .....

## SHOOTING RECORD

Size	Shot used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

## TOOLS USED

Rotary tools were used from ..... feet to ..... feet, and from ..... feet to ..... feet  
 Cable tools were used from ..... feet to ..... feet, and from ..... feet to ..... feet

## DATES

....., 1900 ..... put to producing ..... 19.....  
 3386

The production for the first 24 hours was ..... barrels of fluid of which ..... % was oil; ..... %  
 emulsion; 8-26 % water; and ..... % sediment.

If gas well, cu. ft. per 24 hours ..... Gravity, 0.86 & A 2-26 54

Rock pressure, lbs. per sq. in. .... Gallons gasoline per 1,000 cu. ft. of gas .....

## EMPLOYEES

....., Driller .....  
 ..... Driller .....  
 ..... Driller .....

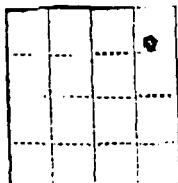
Banner Drilling Co

J. L. Copeland

R. W. Copeland

## FORMATION RECORD

FROM	TO	TOTAL FEET	FORMATION
0	714	714	Kirtland-Fruitland
714	845	131	Pictured Cliffs
845	2275	1430	Lewis
2275	2352	77	Mesaville-Cliffhouse
2352	3184	832	Menefee
3184	3325	141	Point Lookout
3325	3386 TD	61	Mancos

Budget Bureau No. 42 10864  
Approved August 12-60Form 9-581a  
(Feb. 1961)

(SUBMIT IN TRIPLICATE)

 UNITED STATES  
 DEPARTMENT OF THE INTERIOR  
 GEOLOGICAL SURVEY
Land Office Santa FeLease No. SP 079945Unit                     
 RECEIVED  
 SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....
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NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....
NOTICE OF INTENTION TO ABANDON WELL.....	

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Antero, New Mexico January 28, 1960

Pudco Carr-Russell Federal

Well No. 1 is located 50 ft. from N line and 230 ft. from E line of sec. 1
 Section 6 (Twp. and Sec. No.) 34N (Twp.) 34N (Range) 24E (Meridian)

 Twp. 34N (Field) 34N (County or Subdivision) New Mexico (State or Territory)
The elevation of the drill hole above sea level is 5125 ft.

## DETAILS OF WORK

(State names of soil expected depths to objective sands; show steps, weights, and lengths of proposed casing; indicate mudlogging points, and all other important proposed work)

It is proposed to plug Pudco Carr-Russell #1 to 3300, below to 400 and 400 information indicate a dry hole to 400.

WELL #1: 100-110 Plugged 1120 to 1130, 1130-1140, 1140-1150, 1150-1160, 1160-1170, 1170-1180, 1180-1190, 1190-1200, 1200-1210, 1210-1220, 1220-1230, 1230-1240, 1240-1250, 1250-1260, 1260-1270, 1270-1280, 1280-1290, 1290-1300, 1300-1310, 1310-1320, 1320-1330, 1330-1340, 1340-1350, 1350-1360, 1360-1370, 1370-1380, 1380-1390, 1390-1400, 1400-1410, 1410-1420, 1420-1430, 1430-1440, 1440-1450, 1450-1460, 1460-1470, 1470-1480, 1480-1490, 1490-1500, 1500-1510, 1510-1520, 1520-1530, 1530-1540, 1540-1550, 1550-1560, 1560-1570, 1570-1580, 1580-1590, 1590-1600, 1600-1610, 1610-1620, 1620-1630, 1630-1640, 1640-1650, 1650-1660, 1660-1670, 1670-1680, 1680-1690, 1690-1700, 1700-1710, 1710-1720, 1720-1730, 1730-1740, 1740-1750, 1750-1760, 1760-1770, 1770-1780, 1780-1790, 1790-1800, 1800-1810, 1810-1820, 1820-1830, 1830-1840, 1840-1850, 1850-1860, 1860-1870, 1870-1880, 1880-1890, 1890-1900, 1900-1910, 1910-1920, 1920-1930, 1930-1940, 1940-1950, 1950-1960, 1960-1970, 1970-1980, 1980-1990, 1990-2000, 2000-2010, 2010-2020, 2020-2030, 2030-2040, 2040-2050, 2050-2060, 2060-2070, 2070-2080, 2080-2090, 2090-2100, 2100-2110, 2110-2120, 2120-2130, 2130-2140, 2140-2150, 2150-2160, 2160-2170, 2170-2180, 2180-2190, 2190-2200, 2200-2210, 2210-2220, 2220-2230, 2230-2240, 2240-2250, 2250-2260, 2260-2270, 2270-2280, 2280-2290, 2290-2300, 2300-2310, 2310-2320, 2320-2330, 2330-2340, 2340-2350, 2350-2360, 2360-2370, 2370-2380, 2380-2390, 2390-2400, 2400-2410, 2410-2420, 2420-2430, 2430-2440, 2440-2450, 2450-2460, 2460-2470, 2470-2480, 2480-2490, 2490-2500, 2500-2510, 2510-2520, 2520-2530, 2530-2540, 2540-2550, 2550-2560, 2560-2570, 2570-2580, 2580-2590, 2590-2600, 2600-2610, 2610-2620, 2620-2630, 2630-2640, 2640-2650, 2650-2660, 2660-2670, 2670-2680, 2680-2690, 2690-2700, 2700-2710, 2710-2720, 2720-2730, 2730-2740, 2740-2750, 2750-2760, 2760-2770, 2770-2780, 2780-2790, 2790-2800, 2800-2810, 2810-2820, 2820-2830, 2830-2840, 2840-2850, 2850-2860, 2860-2870, 2870-2880, 2880-2890, 2890-2900, 2900-2910, 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Form 4-881A  
(Feb. 1961)


(SUBMIT IN TRIPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Land Office... Santa Fe

Lease No. 079968

Unit...

RECEIVED

JAN 27 1960

SUNDRY NOTICES AND REPORTS ON WELLS

U. S. GEOLOGICAL SURVEY  
WASHINGTON, NEW MEXICO

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....
NOTICE OF INTENTION TO ABANDON WELL.....	

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Artes, New Mexico January 26, 1960

PERCO Carr Russell Federal  
Well No. 1 is located 790 ft. from [N] line and 990 ft. from [E] line of sec. 1

Section 8  
(Of Sec. and Sec. No.)  
Twin Mounds Area  
(Field)  
SPN  
(Twp.)  
San Juan  
(County or Subdivision)  
I.W.  
(Range)  
S.M.P.M.  
(Meridian)  
New Mexico  
(State or Territory)

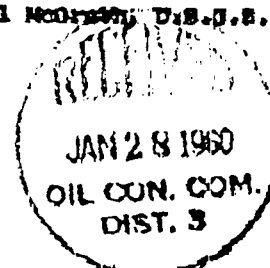
The elevation of the derrick floor above sea level is 5112.4 ft.

DETAILS OF WORK

(State nature of and suggested depths to objection cables, show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Flugging has been accomplished as verbally approved by Mr. Phil McOran, D.S.G.S., on August 26, 1954.

Rings left:  
3187-3100  
2900-2800  
2150-1000  
860-890  
610-350  
Surface



Total, 300 sec, spotted by Howco; installed 8' of 4" 60 steel pipe for abandonment marker; pits filled and location cleaned up.

I understand that this plan of work must receive approval by writing by the Geological Survey before operations may be commenced

Company PERCO PETROLEUM CORPORATION

Address 108 West Chuska

Artes, New Mexico

By R. E. Maxwell, Jr.  
Title Mgr. Prod. Dept.

GPO 9-10507

### Exhibit 3

## RICHARDSON OPERATING COMPANY OPERATIONS PLAN

SALTY DOG No. 2

August 17, 2001

- I. Location: Section 5, Township 29 North, Range 14 West, NMPM  
1495' FSL and 1477' FEL  
San Juan County, New Mexico

Field: Blanco Mesaverde Elevation: 5297'  
Surface: Fee - Richardson Production Company  
Minerals: Federal SF-079968

II. Geology:	<u>Formation Tops</u>	<u>Depths</u>
	Fruitland Coal	600 feet
	Basal Coal	790 feet
	Pictured Cliffs	800 feet
	Lewis	930 feet
	Cliff House	2200 feet
	Menefee	2440 feet
	Point Lookout	3310 feet
	Total Depth	3700 feet

Estimated depths of anticipated water, oil, gas and other mineral bearing formations which are expected to be encountered:

Water and gas:	600 feet	Fruitland Coal
	790 feet	Basal Coal
	800 feet	Pictured Cliffs
Water:	2200 feet	Cliff House
	3310 feet	Point Lookout

- A. Logging Program: Induction /GR and Density Logs at TD
- B. The maximum expected bottom hole pressure is 400 psi. This pressure will be contained as specified in III B. and C. below. No overpressured zones are expected in this well. No H<sub>2</sub>S zones are anticipated in this well.

III. Drilling:

- A. Contractor: To be determined
- B. Mud Program: The surface hole will be drilled with a fresh water mud. The production hole will be drilled with a fresh water polymer mud. The weighting material will be drill solids, or if conditions dictate, barite. The maximum mud weight expected is 8.7 ppg.
- C. Minimum Blowout Control Specifications:

The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. A typical 2,000 psi model (see attached Exhibit 4) or comparable model will be used. Double ram type or annular system with a rotating head will be used. All ram preventers and related equipment will be hydraulically tested at nipple-up and after any use under pressure to 1000 psi.

The blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. The BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi.

IV. Materials:

- A. Casing Program:

Hole Size	Depth	Casing Size	Wt. & Grade
9 7/8"	200'	8 5/8"	24# J-55
6 3/4"	3700'	5 1/2"	15.5# K-55

- B. Float Equipment:

- a) Surface Casing: None
- b) Production Casing: 5 1/2" cement guide shoe and self fill insert float collar. Place float one joint above shoe. Five centralizers spaced every other joint above shoe and five turbolizers every other joint from the top of the well.

V. Cementing:

Surface casing: 8 5/8", use 43 sx (50 cu ft) of C1 "B" with 2% CaCl<sub>2</sub> (Yield = 1.18 cu ft/sx; slurry weight = 15.6 ppg). 100% excess to circulate cement to surface. WOC 12 hrs. Pressure test surface casing to 600 psi for 30 min.

Production casing: 5 1/2", before cementing circulate hole with at least 1 1/2 hole volumes of mud. Precede cement with 30 bbls of fresh water. Lead with 185 sx (382 cu ft) of C1 "B" with 2% metasilicate (Yield = 2.06 cu ft/sx; slurry weight = 12.5 ppg). Tail with 130 sx (160 cu ft) of C1 "B" with 2% CaCl<sub>2</sub> (Yield = 1.18 cu ft/sx slurry weight = 15.6 ppg). Total cement volume is 542 cu ft. (75% excess to circulate cement to surface).

VI. Stimulation: If stimulation is required, 4000 gal 15% HCl acid will be pumped into Mesaverde perforations.

VII. Operations: Average Daily Rate: 1000 bwpd  
Maximum Daily Rate: 1000 bwpd  
System is closed.  
Average Injection Pressure: 600 psi  
Maximum Injection Pressure: 740 psi

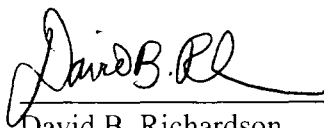
Source of water to be injected is from Fruitland Coal and Pictured Cliffs wells in the area. Representative samples of this water are included in this report.

A water sample from the Mesaverde taken from the Stella Needs A Com #1E well, located in the NE/4SW/4 of Section 36, Township 30 North, Range 14 West, is also included in this report.

Geological data for the disposal zone is presented in Administrative Order SWD-595.

There are no fresh water wells within one mile of this location.

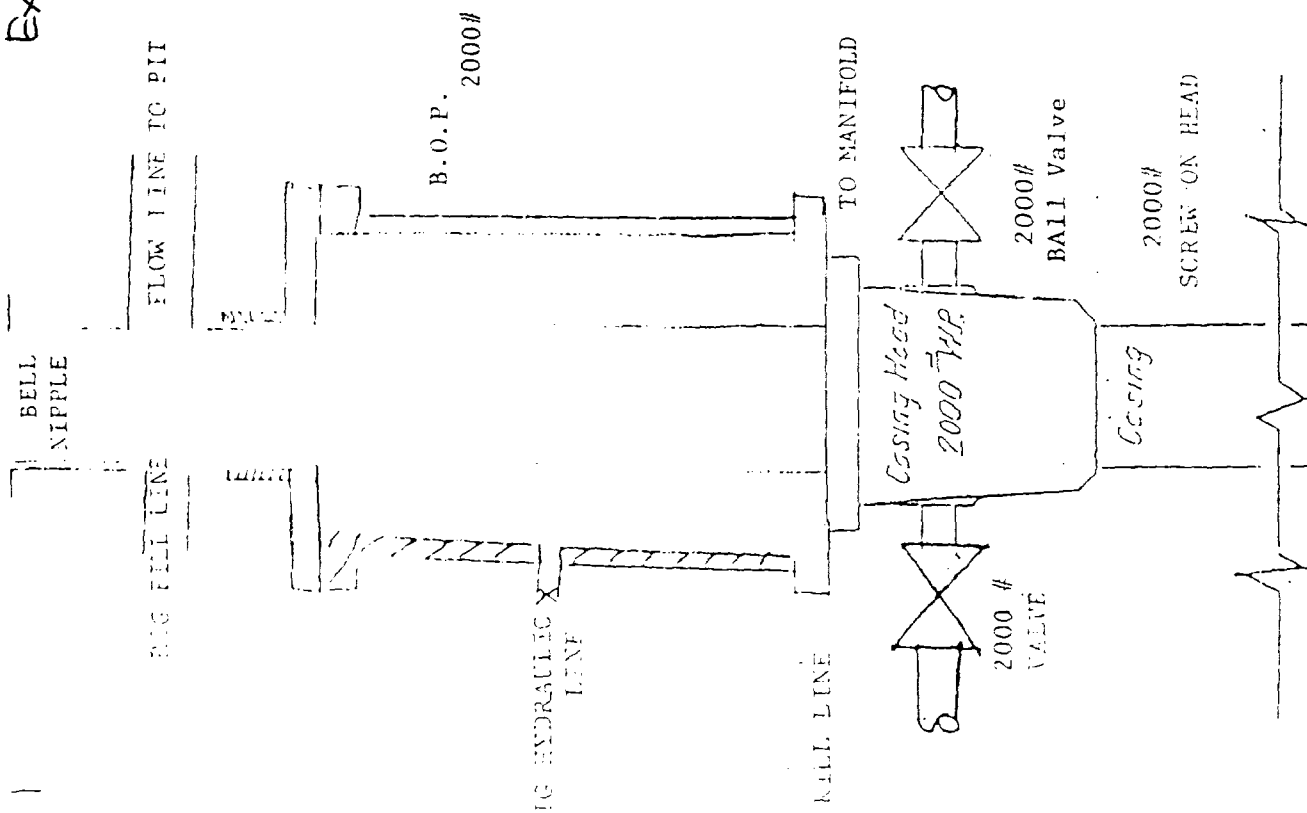
I have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.



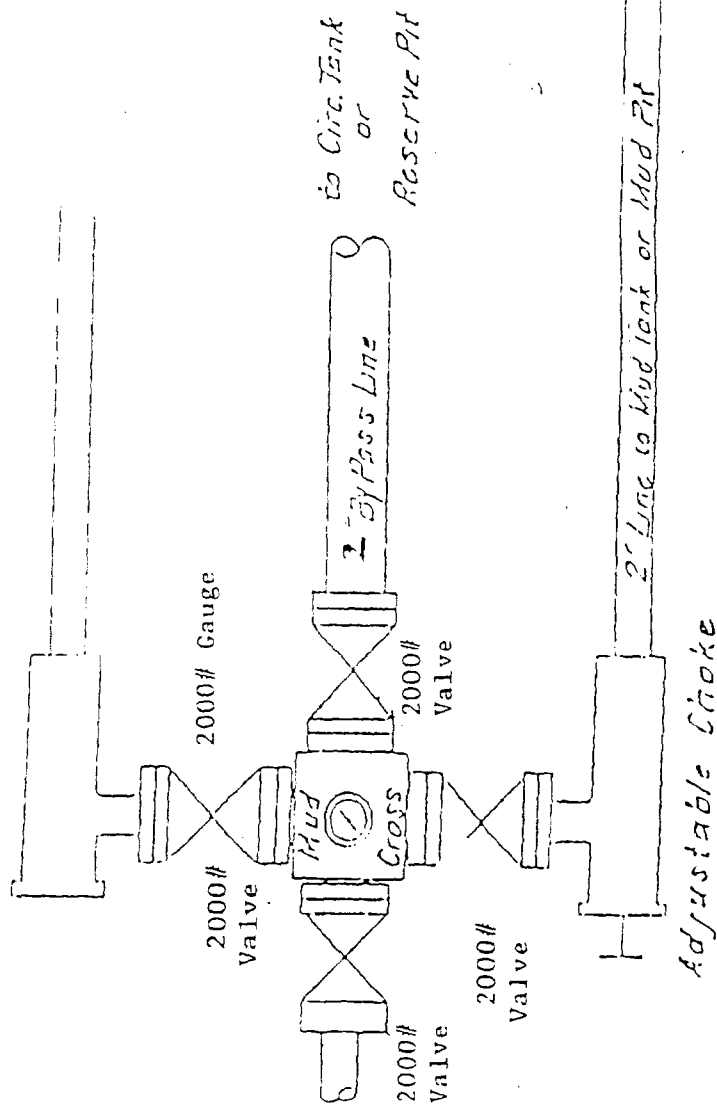
David B. Richardson  
President

# Exhibit 4

- Notes:
1. Length of Kelly does not allow enough room for a Kelly Cock.
  2. All Fittings will be screw on fitting types. (Valves, Nipples and T's)
  3. All Fittings, B.O.P. & Surface Casing will be pressure tested to 500 pds. prior to drilling from surface pipe.



Adjustable Choke 2" Line



\*\* 2000# Rubber hose will be used from Well Head to Manifold & from Well Head to Kill Line.

## INJECTION WELL DATA SHEET

OPERATOR: Richardson Operating CompanyWELL NAME & NUMBER: Salty Dog No. 2WELL LOCATION: 1495' FSL, 1477' FEL  
FOOTAGE LOCATIONUNIT LETTER JSECTION 5TOWNSHIP 29NRANGE 14WWELLBORE SCHEMATICWELL CONSTRUCTION DATASurface CasingHole Size: 9 7/8 Casing Size: 8 5/8, 24#Cemented with: 43 sx. or 50 ft<sup>3</sup>Top of Cement: Surface Method Determined: \_\_\_\_\_Intermediate Casing

Hole Size: \_\_\_\_\_ Casing Size: \_\_\_\_\_

Cemented with: \_\_\_\_\_ sx. or \_\_\_\_\_ ft<sup>3</sup>

Top of Cement: \_\_\_\_\_ Method Determined: \_\_\_\_\_

Production CasingHole Size: 6 3/4 Casing Size: 5 1/2, 15.5#Cemented with: 185 + 130 sx. or 542 ft<sup>3</sup>Top of Cement: Surface Method Determined: \_\_\_\_\_Total Depth: 3700'Injection IntervalMV perfs: 2200' - 3580' to perforated

(Perforated or Open Hole; indicate which)

Other Type of Tubing/Casing Seal (if applicable): N/A

If no, for what purpose was the well originally drilled?

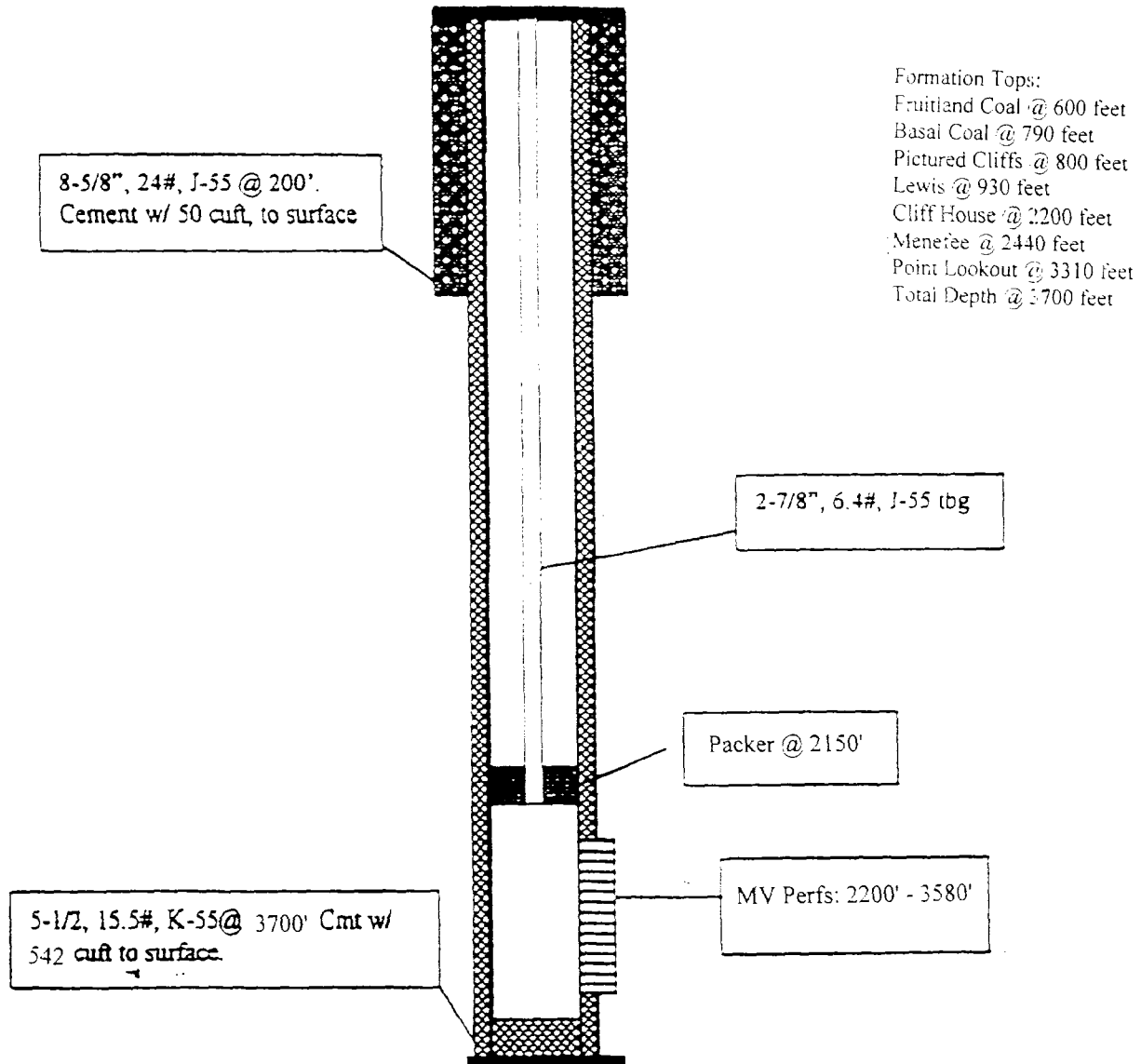
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used.                      No

- |        |       |
|--------|-------|
| Gallup | 5000' |
|--------|-------|

# Exhibit 6

Salty Dog SWD #2  
1495' FSL and 1477' FEL  
Sec. 5-T29N-R14W  
San Juan County, NM  
Blanco Mesaverde

Elev: 5297' GR



# Exhibit 7

State of New Mexico  
Energy, Minerals & Mining Resources Department  
OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

Form C - 102

☐ AMENDED REPORT

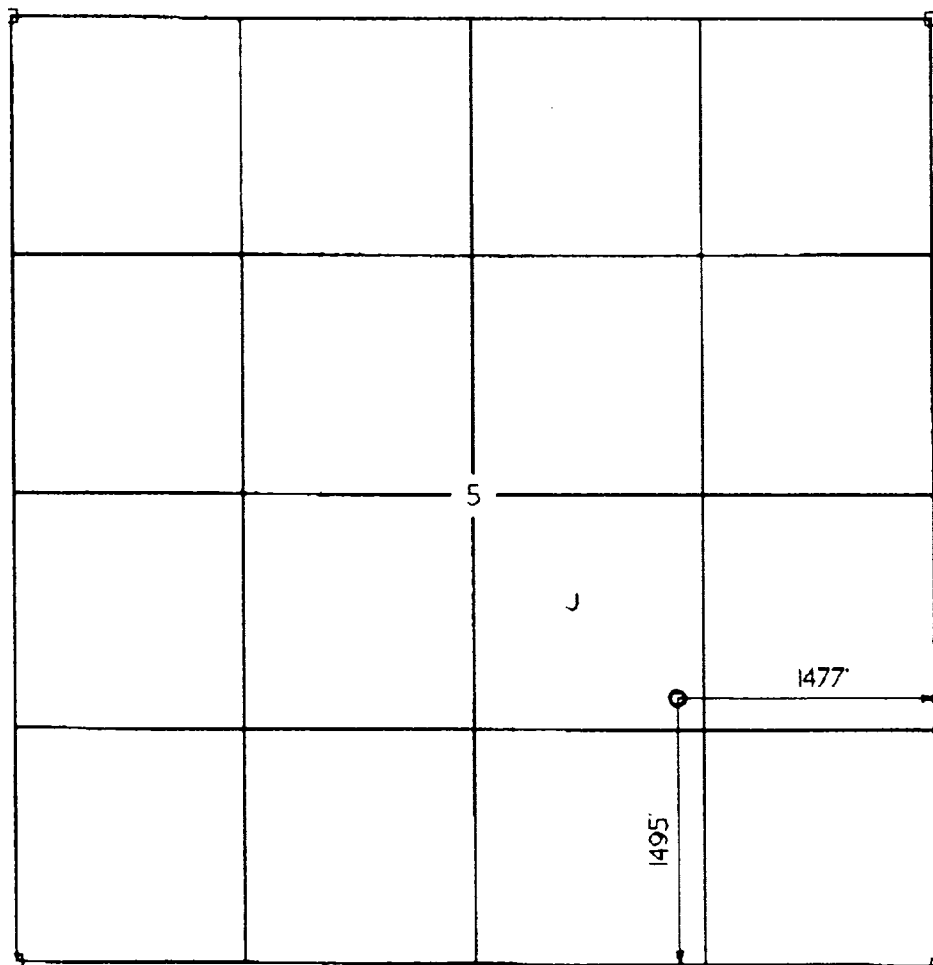
## WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number	Pool Code	Pool Name
Property Code	Property Name SALTY DOG	Well Number 2
OCRD No.	Operator Name RICHARDSON OPERATING COMPANY	Elevation 5297'

Surface Location									
UL or Lot	Sec.	Twp.	Rge.	Lot Id.	Feet From	North/South	Feet From	East/West	County
J	5	29 N.	14 W.		1495	SOUTH	1477'	EAST	SAN JUAN

Bottom Hole Location if Different From Surface									
UL or Lot	Sec.	Twp.	Rge.	Lot Id.	Feet From	North/South	Feet From	East/West	County
Dedication	Joint ?	Consolidation	Order No.						

NO ALLOWABLE WILL ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



### OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Printed Name

Title

Date

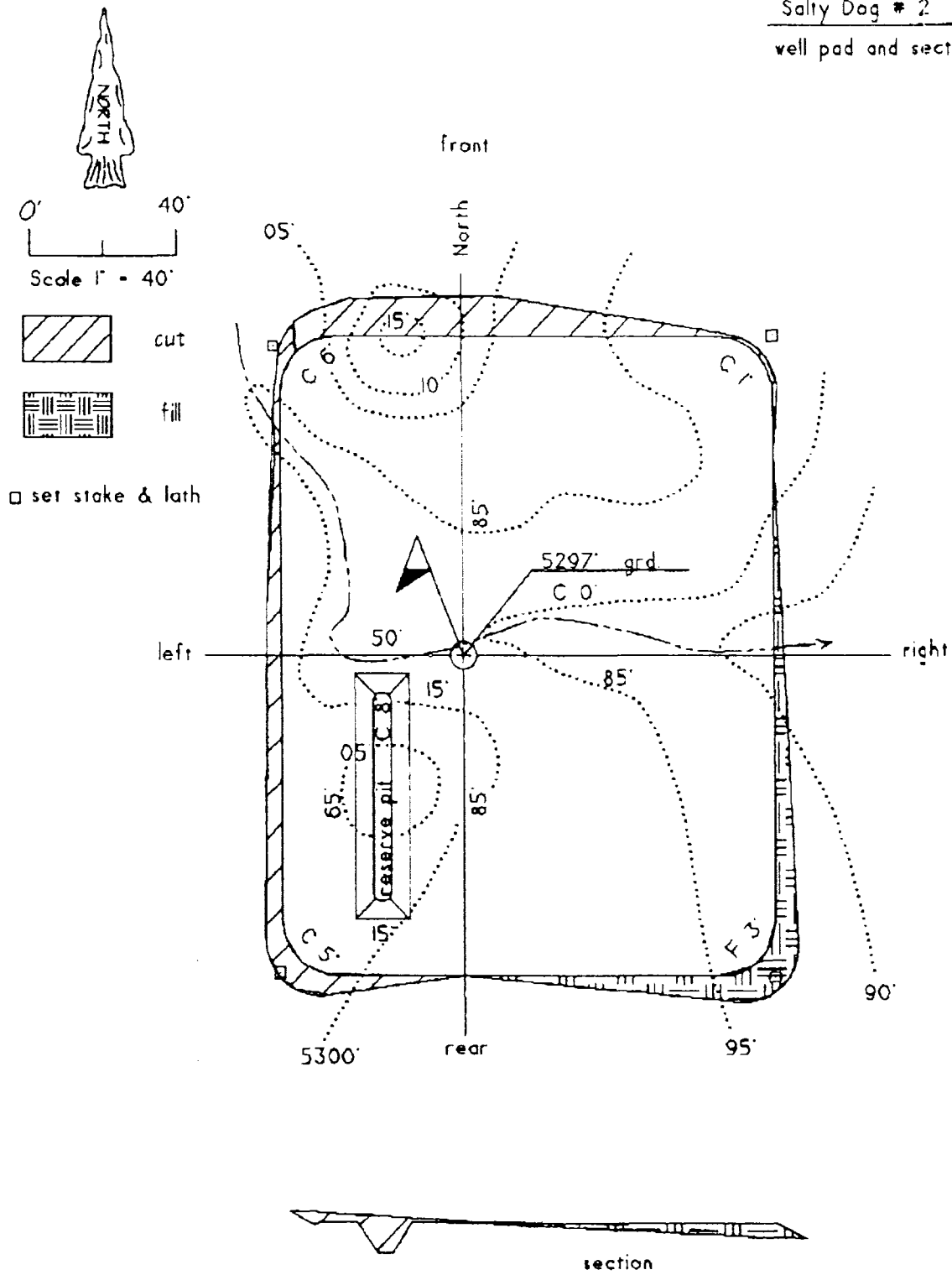
### SURVEYOR CERTIFICATION

I hereby certify that the well location on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

Signature and Seal of Professional Surveyor

Salty Dog # 2  
well pad and section



Dugan Production Corp.

COMPANY OF NORTH AMERICA

Stella Needs A Com No. 1 - Conversion to SWD

Exhibit 8

API WATER ANALYSIS

Company: DUGAN PROD.

W.C.N.A. Sample No.: S106695

Field:

Legal Description:

Well: STELLA NEEDS A COM #1E

Lease or Unit:

Depth:

Water.B/D:

Formation: POINT LOOKOUT/MESA VERDE

Sampling Point: SWAB

State: N.M.

Sampled By: J. ALEXANDER

County:

Date Sampled: 04/24/95

Type of Water(Produced,Supply, ect.):

PROPERTIES

pH: 6.30  
Specific Gravity: 1.050  
Resistivity (ohm-meter): .13  
Temperature: 78F

Iron, Fe(total): 250  
Sulfide as H<sub>2</sub>S: 0  
Total Hardness:  
(see below)

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na:	20470	: 890
Calcium, Ca:	2084	: 104
Magnesium, Mg:	170	: 14
Barium, Ba:	N/A	: N/A
Potassium, K:		:

Sample(ml): 1.0 ml of EDTA: 5.20  
Sample(ml): 1.0 ml of EDTA: .70

ANIONS	mg/l	me/l
Chloride, Cl:	31905	: 900
Sulfate, SO <sub>4</sub> :	3750	: 78
Carbonate, CO <sub>3</sub> :		:
Bicarbonate, HCO <sub>3</sub> :	1830	: 30

Sample(ml): 1.0 ml of AgNO<sub>3</sub>: 1.80  
Sample(ml): 1.0 ml of H<sub>2</sub>SO<sub>4</sub>:  
Sample(ml): 1.0 ml of H<sub>2</sub>SO<sub>4</sub>: .30

Total Dissolved

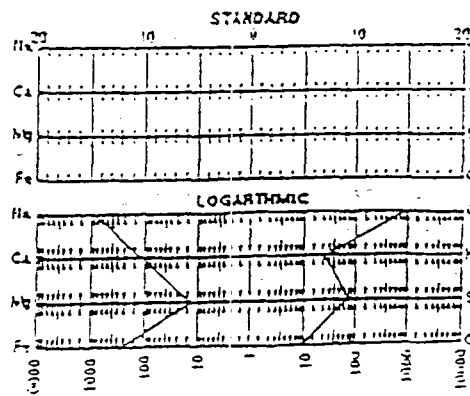
Solids (calculated): 60209

Total Hardness: 5900

Sample(ml): 1.0 ml of EDTA:

REMARKS AND RECOMMENDATIONS:

WATER PATTERNS-me/l



Analyst: DC  
Date Analyzed: 4/24/95

BJ SERVICES COMPANY

WATER ANALYSIS #FW01W266

FARMINGTON LAB

## GENERAL INFORMATION

OPERATOR:	RICHARDSON OPERATING	DEPTH:	
WELL:	BUSHMAN FEDERAL 6-1	DATE SAMPLED:	10/19/98
FIELD:	SEC06/T29N/R14W	DATE RECEIVED:	10/20/98
SUBMITTED BY:	BRAD SALZMAN	COUNTY:	SAN JUAN
WORKED BY	:D. SHEPHERD	FORMATION:	FC/PC
PHONE NUMBER:		STATE:	NM

## SAMPLE DESCRIPTION

SAMPLE FOR ANALYSIS

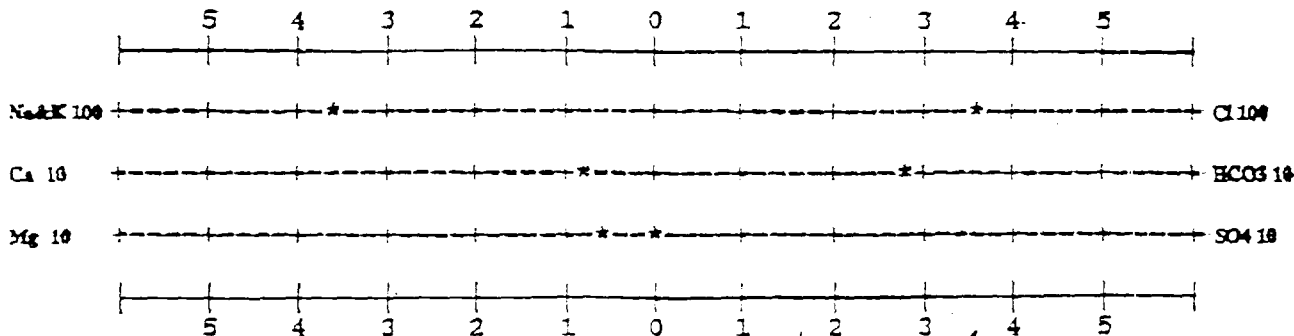
## PHYSICAL AND CHEMICAL DETERMINATIONS

SPECIFIC GRAVITY:	1.015	@ 74°F	PH:	7.49
RESISTIVITY (MEASURED ):	0.280	ohms @ 76°F		
IRON (FE++) :	0 ppm	SULFATE:		39 ppm
CALCIUM:	158 ppm	TOTAL HARDNESS		710 ppm
MAGNESIUM:	77 ppm	BICARBONATE:		1,719 ppm
CHLORIDE:	12,574 ppm	SODIUM CHLORIDE (Calc)		20,685 ppm
SODIUM+POTASS:	8,493 ppm	TOT. DISSOLVED SOLIDS:		23,536 ppm
H2S: NO TRACE		POTASSIUM (PPM):		110 PPM

## REMARKS

SAMPLED FROM SEPERATOR

## STIFF TYPE PLOT (IN MEQ/L)



ANALYST

D. SHEPHERD

**AFFIDAVIT OF PUBLICATION****Ad No. 44869****STATE OF NEW MEXICO  
County of San Juan:**

**CONNIE PRUITT**, being duly sworn says:  
That she is the Classified Manager of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meeting of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication on the following day(s):

Wednesday, August 15, 2001.

And the cost of the publication is \$20.56.

Connie Pruitt

ON 8/17/01 CONNIE PRUITT appeared before me, whom I know personally to be the person who signed the above document.

Dennis Beck  
My Commission Expires April 02, 2004

**COPY OF PUBLICATION****LEGAL NOTICE**

Richardson Operating Company will file an application on August 17, 2001, for approval to inject water, produced from oil and gas wells, into the Mecaverte formation in the Salty Dog No. 2, located in the NW/4SE/4 of Section 5, Township 29 North, Range 14 West, San Juan County, New Mexico, at a depth from 2000 to 3700 feet with surface injection pressure up to 600 pounds per square inch.

Surface owners and offset operators must file any objections or request for public hearing with the New Mexico Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, New Mexico 87504, within 15 days of the date of this notice. The Richardson Operating Company contact person is John Durham, 2100 La Plata Hwy, Farmington, NM 87401, telephone (505) 584-3100.

Legal No. 44869, published in The Daily Times, Farmington, New Mexico, Wednesday, August 15, 2001.



RICHARDSON OPERATING COMPANY

---

1700 Lincoln, Suite 1700  
Denver, Colorado 80203 (303) 830-8000  
FAX (303) 830-8009

August 17, 2001

Mr. William W. Franklin  
Conoco Inc.  
Mail Code DU 3092  
600 North Dairy Ashford  
Houston, TX 77079

Certified Mail Return Receipt  
7000 1670 0006 8579 3524

Re: Application for Authorization to Inject  
Salty Dog No. 2  
NW/4SE/4-Section 5-T29N-R14W  
San Juan County, New Mexico

Gentlemen:

As a leasehold owner within one-half mile of the proposed Salty Dog No. 2 disposal well, you are being notified of our Application for Authorization to Inject. Richardson Operating Company seeks to dispose of water produced from the Fruitland Coal and Pictured Cliffs formations into the Mesaverde formation. Objections, or a request for hearing, must be filed within 15 days with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505,

Enclosed is a copy of our Form C-108 and associated Exhibits. If you need additional information, please do not hesitate to call.

Sincerely,

RICHARDSON OPERATING COMPANY

Cathleen Colby  
Land Manager

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Conoco Inc. - Attn: Bill Franklin  
Mail Code DU 3092  
600 North Dairy Ashford  
Houston, TX 77079

**COMPLETE THIS SECTION ON DELIVERY**

A. Received by (Please Print Clearly) B. Date of Delivery

C. Signature

X

☐ Agent☐ AddresseeD. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

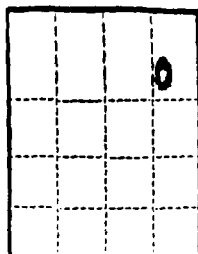
2. Article Number (Copy from service label)

7000 1670 0006 8579 3524

PS Form 3811, July 1999

Domestic Return Receipt

102595-00-M-0952



(SUBMIT IN TRIPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Land Office Santa Fe

Lease No. SW 079968

Unit \_\_\_\_\_

RECEIVED

JAN 27 1960

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE	SUBSEQUENT REPORT OF ABANDONMENT	XX
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL		

U. S. GEOLOGICAL SURVEY  
FARMINGTON, NEW MEXICO

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Astec, New Mexico January 26, 1960

Pubco Carr-Russell Federal  
Well No. 1 is located 790 ft. from [N] line and 990 ft. from [E] line of sec. \_\_\_\_\_  
NE 1/4, Section 8 29N 14W N.M.P.M.  
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)  
Twin Mounds Area San Juan New Mexico  
(Field) (County or Subdivision) (State or Territory)

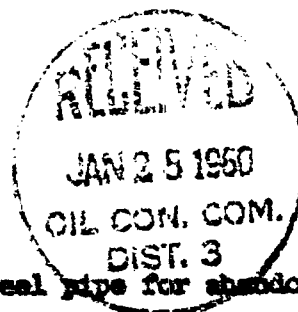
The elevation of the Ground corner above sea level is 5332.4 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Plugging has been accomplished as verbally approved by Mr. Phil McGrath, U.S.G.S. on August 26, 1954.

Plugs left: 3327-3100  
2400-2200  
1150-1000  
860-650  
410-350  
Surface



Total, 300 sax, spotted by Howco; installed 8' of 4" OD steel pipe for abandonment marker; pits filled and location cleaned up.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company PUBCO PETROLEUM CORPORATION

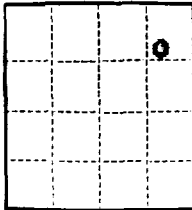
Address 106 West Chuska

Astec, New Mexico

By J. E. Maxwell, Jr.  
Title Mgr. Prod. Dept.

As per Steve Hayden, No  
objection to this application

8/27/01



(SUBMIT IN TRIPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Land Office Santa Fe

Lease No. 77 079968

Unit \_\_\_\_\_

SUNDRY NOTICES AND REPORTS ON WELLS

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NOTICE OF INTENTION TO ABANDON WELL	<b>XX</b>		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Astec, New Mexico January 26, 1960

Pubco Carr-Russell Federal  
Well No. 1 is located 790 ft. from (N) line and 990 ft. from (E) line of sec. 8

NE 1/4 Sec. 8 29N 14W T.M.P.M.  
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)

Twin Mounds Area San Juan New Mexico  
(Field) (County or Subdivision) (State or Territory)

The elevation of the Ground above sea level is 2332.4 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

It is proposed to plug Pubco Carr-Russell #1; TD 3396; E-log to TD and DET information indicate a dry hole to TD.

DET #1: 727-773 Pictured Cliffs If 15%, FF 60%, Paip 215, rec. 150' all, Gcm. No gts.

DET #2: 2932-2963 Menafee If 30%, FF 180, Paip 1170, rec. 365' wcm, no gas or oil.

CORE ANALYSIS: 724-772 water productive, Pictured Cliff; 3223-3227 water productive Menafee.

Plugs to be run as designated by Mr. Phil McGrath, U.S.G.S., 8-26-54; 3327-3100, 2400-2200, 1150-1000, 860-650, 410-350, 300 sec.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

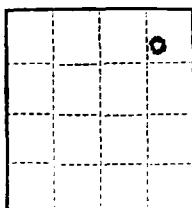
Company PUBCO PETROLEUM CORPORATION

Address 108 West Chuska

Astec, New Mexico

By H. E. Maxwell, Jr.

Title Mgr. Prod. Dept.



(SUBMIT IN TRIPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Land Office Santa Fe

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NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Artec, New Mexico January 26, 1960

Pubco Carr-Russell Federal  
Well No. 1 is located 790 ft. from (N) line and 990 ft. from (E) line of sec. \_\_\_\_\_

NE-NE-1, Section 8 29N 14W N.M.P.M.  
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)  
Twin Mounds Area San Juan New Mexico  
(Field) (County or Subdivision) (State or Territory)

The elevation of the ~~surface~~ <sup>Ground</sup> above sea level is 5332.4 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Plugging has been accomplished as verbally approved by Mr. Phil McGrath, U.S.G.S. on August 26, 1954.

Plugs Left: 3327-3100  
2400-2200  
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Company PUBCO PETROLEUM CORPORATION

Address 108 West Chuska

Artec, New Mexico

By F. E. Maxwell, Jr.  
Title Mgr. Prod. Dept.

***New Mexico Oil Conservation Division---Engineering Bureau***  
***Administrative Application Process Documentation***

**Date Application Received:**

Feb

**Date of Preliminary Review:**

(Note: Must be within 10-days of received date)

Feb

**Results:**

X

Application Complete

Application Incomplete

**Date Incomplete Letter Sent:**

\_\_\_\_\_

**Deadline to Submit Requested Information:**

\_\_\_\_\_

**Phone Call Date:**

(Note: Only applies if requested data is not submitted within the 7-day deadline)

\_\_\_\_\_

**Phone Log Completed?**

\_\_\_\_\_ Yes

\_\_\_\_\_ No

**Date Application Processed:**

\_\_\_\_\_

**Date Application Returned:**

(Note: Only as a last resort & only after repeated attempts by the Division to obtain the necessary information to process the application)

\_\_\_\_\_