

Pogo Producing Company
State 2 Well No. 5

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☒ no
- II. Operator: Pogo Producing Company
Address: P.O. Box 10340, Midland, TX 79702
Contact party: Mark V. Kelley Phone: (915) 685-8100
- 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.
- Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- 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.
- X. 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: Thomas E. Gentry, P.E. Title: Petroleum Engineer
Signature: Thomas E. Gentry Date: 2/7/03
- * 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.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the district office.

OIL CONSERVATION DIVISION

CASE NUMBER

EXHIBIT

7

EXHIBIT

B

Blumberg No. 5208

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.

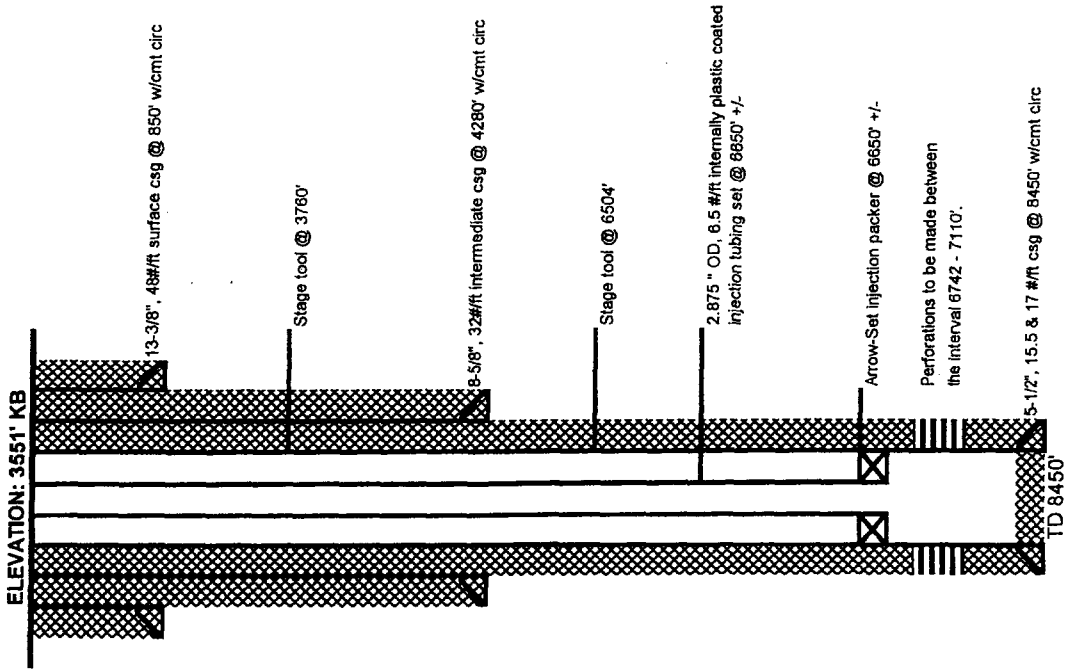
NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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

APPLICATION WELL: State 2 #5
OPERATOR: POGO PRODUCING COMPANY

WELLBORE SCHEMATIC



TABULAR INJECTION WELL DATA

LEASE:	State 2
WELL NUMBER:	5
LOCATION:	1300' FSL & 1300' FEL
Sec, Twp, Rge	2, T-22-S, R-31E
County	Eddy
TOTAL DEPTH, FT:	8450
CASING DATA:	Surface
Intermediate	13-3/8" @ 850' cmt w/ 700sx 35:65 Poz + 200sx CI "C" circ to surf; 17-1/2" dia hole size.
Long String	8-5/8" @ 4280' cmt w/ 1180sx "C" Life + 200sx "C" circ to surf; 11" dia hole size.
INJECTION TUBING:	5-1/2" @ 8450' with DV tools @ 6504' and 3760' cmt in 3 stgs w/ 1st: 500sx "C", 2nd: 1160sx "C" & 3rd: 350sx 35:65 Poz + 100sx "C" circ to surf; 7-7/8" dia hole size.
INJECTION PACKER:	2.875" OD, 6.5 #/ft internally plastic coated and set at 6650' +/-.
INJECTION	5-7/2" Arrow Arrow-Set set at 6650' +/-.
FORMATION:	Delaware
POOL (NUMBER):	Lost Tank; Delaware (40299)
INJECTION INTERVAL:	6742 - 7110' OA
ORIGINAL PURPOSE	Delaware production
WELL DRILLED:	None
OTHER PERFORATED INTERVALS:	NONE other than those within the Delaware interval
NEXT HIGHER OIL OR GAS PRODUCTIVE ZONE:	Atoka @ 13,646' approx 1.1 mi SE
NEXT LOWER OIL OR GAS PRODUCTIVE ZONE:	

WELL DATA - AREA OF REVIEW

APPLICATION WELL: State 2 #5
OPERATOR: POGO PRODUCING COMPANY

LEASE:	State 2	State 2	State 2	State 2
WELL NUMBER:	1	2	3	4
LOCATION: Lease Line Sec, Twp, Rge County	330' FSL & 330' FEL 2, T-22-S, R-31E Eddy	660' FSL & 2310' FEL 2, T-22-S, R-31E Eddy	2310' FSL & 330' FEL 2, T-22-S, R-31E Eddy	1780' FSL & 2310' FEL 2, T-22-S, R-31E Eddy
OPERATOR	Pogo Producing Company	Pogo Producing Company	Pogo Producing Company	Pogo Producing Company
WELL TYPE: (Oil, Gas, or D&A)	Oil	Oil	Oil	Oil
TOTAL DEPTH, FT:	8440	8354	8415	8350
SPUD DATE:	12/15/1991	3/31/1995	11/28/1991	4/18/1995
DATE COMPLETED:	1/22/1992	6/3/1995	1/11/1992	6/5/1995
CASING DATA:	13-3/8" @ 819' w/1025 sx cmt, cmt circ; 8-5/8" @ 4265' w/2600 sx cmt, cmt circ; 5-1/2" @ 8440' w/1730 sx cmt (DV tool @ 5796'); TL TOC @ 4480'; CBL TOC @ 1795'; Perf 5-1/2" csg 1730-31'; cmt w/250 sx, cmt circ.	13-3/8" @ 801' w/1000 sx cmt, cmt circ; 8-5/8" @ 4135' w/1668 sx cmt, (DV tool @ 2955'), cmt circ; 5-1/2" @ 8354' w/1510 sx cmt (DV tools @ 6185' & 3811'), CBL TOC @ 300'.	13-3/8" @ 808' w/1100 sx cmt, cmt circ; 8-5/8" @ 4235' w/2650 sx cmt, cmt circ; 5-1/2" @ 8415' w/1690 sx cmt (DV tool @ 6186'); Perf 5-1/2" csg @ 700' w/2 holes and cmt w/190 sx, cmt circ.	13-3/8" @ 856' w/950 sx cmt, cmt circ; 8-5/8" @ 4135' w/1670 sx cmt, cmt circ; 5-1/2" @ 8350' w/1860 sx cmt (DV tool @ 6208' and 3506'), cmt circ.
COMPLETION DATA:	Perfs 6992-7016'; A/1.5 Mgal; SWF/25 Mgal + 46.4 M# sd; IPP/156 BO, 145 BW, 89 Mcf; 5/93 Perf 8073- 8120'; A/1.5 Mgal; SWF/40 Mgal + 42 M# sd; P/44 BO, 274 BW, 33 Mcf; 5/95 Perf 6764-6800'; A/1 Mgal; SWF/43 Mgal + 40 M# sd; P/8 BO, 125 BW, 2 Mcf.	Perfs 8150-90'; A/1000 gal; SWF/50 Mgal + 105 M# sd; Set CIBP @ 8000'; perf 6946-6976'; A/1.2 Mgal; SWF/42 Mgal + 34 M# sd; Perf 6728- 6752'; A/1 Mgal; SWF/42 Mgal+33 M# sd; IPP/173 BO, 102 BW, 27 Mcf.	Perfs 8223-8277'; A/2500 gal; SWF/50 Mgal + 103 M# sd; IPP/68 BO, 266 BW, 96 Mcf; 4/92 Set RBP @ 8200'; perf 7002-34'; A/1.5 Mgal; SWF/33 Mgal + 56 M# sd; IPP/156 BO, 60 BW, 69 Mcf. 1/93 Pull RBP @ 8200'.	Perfs 6947-80'; A/1 Mgal; SWF/43 Mgal + 38 M# sd; Perf 6752-88'; A/1 Mgal; SWF/42 Mgal + 36 M# sd; IPP/64 BO, 160 BW, 76 Mcf.
DATE PLUGGED: (Attach schematic)	Active	Active	Active	Active

WELL DATA - AREA OF REVIEW

APPLICATION WELL: State 2 #5
OPERATOR: POGO PRODUCING COMPANY

LEASE: WELL NUMBER:	Graham 'AKB' State 2	Graham 'AKB' State 4	Flora 'AKF' State 1	Flora 'AKF' State 2
LOCATION: Lease Line Sec, Twp, Rge County	1980' FNL & 330' FEL 2, T-22-S, R-31E Eddy	1980' FNL & 1650' FEL 2, T-22-S, R-31E Eddy	660' FSL & 2310' FWL 2, T-22-S, R-31E Eddy	1980' FSL & 2310' FWL 2, T-22-S, R-31E Eddy
OPERATOR	Yates Petroleum Corp	Yates Petroleum Corp	Yates Petroleum Corp	Yates Petroleum Corp
WELL TYPE: (Oil, Gas, or D&A)	Oil	Oil	Oil	Oil
TOTAL DEPTH, FT:	8400	8370	8325	8322
SPUD DATE:	3/24/1992	2/26/2001	3/31/1992	3/7/1995
DATE COMPLETED:	4/28/1992	8/3/2001	11/13/1994	4/11/1995
CASING DATA:	20" @ 40'; 13-3/8" @ 855' w/850 sx cmt; 8-5/8" @ 4206' w/1750 sx cmt; 5- 1/2" @ 8400' w/1525 sx cmt	20" @ 40'; 13-3/8" @ 850' w/775 sx cmt; 8-5/8" @ 4200' w/1400 sx cmt; 5- 1/2" @ 8370' w/700 sx cmt	20" @ 40'; 13-3/8" @ 861' w/800 sx cmt; 8-5/8" @ 4185' w/1425 sx cmt; 5- 1/2" @ 8325' w/1005 sx cmt	20" @ 40'; 13-3/8" @ 845' w/750 sx cmt; 8-5/8" @ 4120' w/1300 sx cmt; 5- 1/2" @ 8322' w/850 sx cmt
COMPLETION DATA:	Perfs 6751-8259' OA; A/3250 gal; SWF/56.25 Mgal + 116 M# sd; IPP/187 BO, 283 BW, 130 Mcf	Perfs 6970-80'; SWF/60 M# sd; Perfs 8036-74'; SWF/98.38 M# sd; IPP/37 BO, 3 BW, 81 Mcf	Perfs 8151-8191' OA; A/750 gal; Perfs 8007-8058' OA; A/750 gal; SWF8007-8191' w/89 Mgal + 249 M# sd; IPP/63 BO, 525 BW, 41 Mcf	Perfs 6955-6984' OA; A/1000 gal; SWF/17 Mgal + 54 M# sd; IPP/243 BO, 123 BW, 118 Mcf
DATE PLUGGED: (Attach schematic)	Active	Active	Active	Active

WELL DATA - AREA OF REVIEW

APPLICATION WELL: State 2 #5
OPERATOR: POGO PRODUCING COMPANY

LEASE:	Martha 'AIK' Federal	Molly State	Federal 1	Federal 1
WELL NUMBER:	6	4	4	5
LOCATION: Lease Line Sec, Twp, Rge County	660' FNL & 330' FEL 11, T-22-S, R-31E Eddy	1980' FNL & 535' FWL 1, T-22-S, R-31E Eddy	2310' FSL & 660' FWL 1, T-22-S, R-31E Eddy	990' FSL & 990' FWL 1, T-22-S, R-31E Eddy
OPERATOR	Yates Petroleum Corp	Penroc Oil Corporation	Pogo Producing Company	Pogo Producing Company
WELL TYPE:				
(Oil, Gas, or D&A)	Oil	Oil	Oil	Oil
TOTAL DEPTH, FT:	8410	8409	8450	8485
SPUD DATE:	3/10/1992	10/16/1991	2/12/1992	1/28/1992
DATE COMPLETED:	4/15/1992	12/27/1991	3/8/1992	2/29/1992
CASING DATA:	20" @ 40'; 13-3/8" @ 875' w/875 sx cmt; 8-5/8" @ 4300' w/1600 sx cmt; 5- 1/2" @ 8410' w/1400 sx cmt.	13-3/8" @ 868' w/700 sx cmt; 8-5/8" @ 4355' w/1890 sx cmt; 5-1/2" @ 8409' w/1425 sx cmt.	13-3/8" @ 818' w/1125 sx cmt, cmt cmt; 8-5/8" @ 4258' w/1775 sx cmt, cmt cmt; 5-1/2" @ 8450' w/1405 sx cmt (DV tool @ 6182'), TOC @ 2738' CBL.	13-3/8" @ 838' w/1025 sx cmt, cmt cmt; 8-5/8" @ 4269' w/1825 sx cmt, cmt cmt; 5-1/2" @ 8485' w/1365 sx cmt (DV tool @ 6177'), TOC @ 2120' CBL.
COMPLETION DATA:	Perfs 6522-8278' OA; A/4500 gal; SWF/69 Mgal + 125 M# sd; IPP/165 BO, 449 BW, 101 Mcf.	Perfs 7366-7398' OA; A/800 gal; SWF/23.5 Mgal + 56.25 M# sd; IPP/24 BO, 164 BW, 13 Mcf.	Perfs 7031-51'; A/1 Mgal; SWF/28.5 Mgal + 41.25M# sd; IPP/404 BO, 169 BW, 138 Mcf. Perf 8152-92'; A/1 Mgal; SWF/51.3 Mgal + 45 M# sd.	Perfs 7042-84'; A/2 Mgal; SWF/30 Mgal + 86.56 M# sd; IPP/303 BO, 99 BW, 155 Mcf.
DATE PLUGGED: (Attach schematic)	Active	Active	Active	Active

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WELL DATA - AREA OF REVIEW

APPLICATION WELL: State 2 #5
OPERATOR: POGO PRODUCING COMPANY

LEASE:	Federal 12	SCL Federal	
WELL NUMBER:	5	1	
LOCATION: Lease Line Sec, Twp, Rge County	660' FNL & 330' FWL 12, T-22-S, R-31E Eddy	530' FSL & 330' FWL 1, T-22-S, R-31-E Eddy	
OPERATOR	Pogo Producing Company	Pogo Producing Company	
WELL TYPE: (Oil, Gas, or D&A)	Oil	D&A	
TOTAL DEPTH, FT:	8460	4562	
SPUD DATE:	2/12/1991	1/30/1981	
DATE COMPLETED:	1/18/1992	NA	
CASING DATA:	13-3/8" @ 810' w/950 sx cmt, cmt circ; 8-5/8" @ 4403' w/1675 sx cmt, cmt circ; 5-1/2" @ 8460' w/1280 sx cmt (DV tool @ 6198'), TOC @ 2156' CBL	8-5/8" @ 523 w/150 sx, cmt circ.	
COMPLETION DATA:	Perfs 7022-77'; A/1.5 Mgal; SWF/30 Mgal + 87 M# sd; IPF/227 BO, 186 BW, 150 Mcf.	P&A: Spot 375 sx CI C 4522-3059', spot 255 sx CI C 3626-2361', spot 50 sx CI C 2820-2625', spot 225 sx CI C 2036-1158', spot 455 sx CI C 1132' to surface, set 20 sx top plug.	
DATE PLUGGED: (Attach schematic)	Active	4/7/1981	

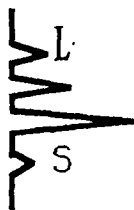
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REQUIRED INFORMATION	SUBMITTED DATA
ITEM VII - OPERATIONAL DATA:	
Average expected injection rate, BWPD:	2000
Maximum anticipated injection rate, BWPD:	6000
System type (Open or closed):	Closed
Estimated average injection pressure, psi:	1000
Estimated maximum pressure, psi:	1348
Source of injection water:	Delaware produced water from this and surrounding Pogo operated leases
Source water analysis attached:	See Exhibit A
Injection zone water analysis attached	NA
ITEM VIII - GEOLOGICAL DATA:	
INJECTION ZONE:	
Lithological description:	Sandstone: clear, frosted, lt grey, subnd, md, subang, vf gm, f gm, uncon, well sorted.
Geological name:	Brushy Canyon Delaware
Zone thickness, feet:	368
Zone depth, feet:	Top @ 6742
FRESH WATER SOURCES:	
Geological name:	Santa Rosa
Depth to bottom of zone, feet:	+/- 650 feet

REQUIRED INFORMATION		SUBMITTED DATA
ITEM IX - STIMULATION PROGRAM:		
ACIDIZE:		
Volume, gallons:	4000	
Acid type:	7.5% HCl	
Rate, BPM:	5	
Miscellaneous	Using ball sealers	
FRACTURE:		
NONE PROPOSED		
Volume, gallons:		
Fluid type:		
Proppant type:		
Proppant amount, pounds:		
Fracture Rate, BPM:		
Miscellaneous:		
ITEM X - LOGGING PROGRAM:		
Logs run:	Schl Array Induction Imager-GR, Litho-Density Compensated Neutron-GR, BHC Sonic-GR	
Log copy(s) attached:	Schl Array Induction Imager-GR, Litho-Density Compensated Neutron-GR	

REQUIRED INFORMATION		SUBMITTED DATA
ITEM XI - FRESH WATER ANALYSIS:		
Is there a fresh water well within 1-mile radius?	No	
Location of area water wells:	Sec 14, T 22-S, R 31-E	
Date sampled:	5/24/1978	
Fresh water analysis attached:	See Exhibit B	
ITEM XII - HYDROLOGY:		
Affirmative statement:	Available geologic and engineering data reveal no evidence that hydrologic connection exists between the disposal zone and any underground source of drinking water.	

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Laboratory Services
1331 Tasker Drive
Hobbs, New Mexico 88240
(505) 397-3713

WATER ANALYSIS

COMPANY. Pogo Producing Co.

SAMPLE State 2 #3

SAMPLED BY Rolland Perry

DATE TAKEN 1/11/92 11:30AM

REMARKS

Barium as Ba 15.0

Carbonate alkalinity PPM 0

Bicarbonate alkalinity PPM 240

pH At Lab 5.77

Specific Gravity @ 60 F 1.107

Magnesium as Mg 43384

Total Hardness as CaCO₃ 74800

Chlorides as CL 123197

Sulfate as SO₄ 205.0

Iron as Fe 55.25

Potassium 23.50

Hydrogen Sulfide 0

Resistance Mmhoes 371053

Total Dissolved Solids 159250

Carbonate as CO₃ G/L 28.42

Calcium as CA 31416

Results reported as Parts Per Million Unless Stated.

Langelier Saturation Index +0.42

Analysis By Rolland Perry

Date: 1/11/92

POGO PRODUCING COMPANY

NMOCD Form C-108, Item VII
Application Well: State 2 Well No. 5
Sec 2, T-22-S, R-31-E
Eddy County, New Mexico

EXHIBIT A

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ANALYSIS - SANTA ROSA WATER

Chemical and radiochemical analyses of water from test hole H-5

Water produced from the Santa Rosa Sandstone, sample taken 5/24/78

Alkalinity Field (mg/l as HCO ₃)	200
Bicarbonate FET-FLD (mg/l as HCO ₃)	240
Nitrogen, NO ₂ + NO ₃ Dissolved (mg/l as N)	0.36
Hardness (mg/l as CaCO ₃)	150
Hardness, noncarbonate(mg/l as CaCO ₃)	150
Calcium Dissolved (mg/l as Ca)	56
Magnesium, Dissolved (mg/l as MG)	51
Sodium, Dissolved (mg/l as NA)	280
Potassium, Dissolved (mg/l as K)	25
Chloride, Dissolved (mg/s as CL)	120
Sulfate, Dissolved (mg/l as SO ₄)	530
Fluoride, Dissolved (mg/l as F)	1.2
Silica, Dissolved (mg/l as SiO ₂)	11.0
Boron, Dissolved (ug/l as B)	890
Solids Residue at 105 Deg C, Dissolved (mg/l)	1200

POGO PRODUCING COMPANY

NMOCD Form C-108, Item XI
Application Well: State 2 Well No. 5
Sec 2, T-22-S, R-31-E
Eddy County, New Mexico

EXHIBIT B

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