Initial

Application Part I

Received: 01/17/2020

This application is placed in file for record. It MAY or MAY NOT have been reviewed to be determined Administratively Complete

Received by OCD: 1/17/2020 8:13:19 AM PO#: BMBJS-200117-C-1080 *Page 1 of 56* Revised March 23, 2017

RECEIVED: 1/17/2020	REVIEWER:	TYPE: WFX-1041	APP NO: pJAG2002131584
	- Geologicc	ABOVE THIS TABLE FOR OCD DIVISION USE O OIL CONSERVATION al & Engineering Bure notis Drive, Santa Fe,	au –
		TIVE APPLICATION C	HECKIICT
THIS CHECKL	IST IS MANDATORY FOR ALL A		OR EXCEPTIONS TO DIVISION RULES AND
	RECOLATIONS WHICH REQU		
pplicant: Seely Oil Co.	1 2 2 1 2		OGRID Number: 20497
ell Name: <u>E-K Queen U</u> ool: E-K; Yates-Seven Rive			API: 30-025-29471 Pool Code: 19950
	terre al marte a series a		
SUBMIT ACCURATE A		RMATION REQUIRED TO INDICATED BELOW	O PROCESS THE TYPE OF APPLICATION
TYPE OF APPLICATION	ON: Check those wi	nich apply for [A]	
	acing Unit – Simultar		
		CT AREA)	
B. Check one or	aly for [1] or [1]		
	ling – Storage – Med	asurement	
	그는 가슴 그 가슴 그는 아이지는 것은 것이 같아. 그는 것은 귀엽을 가지 않는 것이 같아.	Increase – Enhancec	
	(\Box PMX \Box SWE	D IPI EOR	PPR
NOTIFICATION DEO	UIDED TO: Chask th		FOR OCD ONLY
	UIRED TO: Check the rators or lease holde		Notice Complete
		iers, revenue owners	
	n requires published		
	n and/or concurren		
	n and/or concurren		Complete
F. 🔳 Surface ow			
		otification or publicat	ion is attached, and/or,
H. No notice r	required		
			ed with this application for est of my knowledge. I also
understand that no		n on this application u	intil the required information and
Note: Sta	tement must be completed	l by an individual with manage	erial and/or supervisory capacity.
			16.20
5.1 M2 A		1-1 Da	16-20
Brian Wood		Da	
rint or Type Name	1	50	5 166 9100
011			5 466-8120 none Number
Kilston	Λ	En	
Farcer		br	rian@permitswest.com

STATE OF NEW MEXICO	
ENERGY, MINERALS AND NATURAL	
RESOURCES DEPARTMENT	

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

APPLICATION FOR AUTHORIZATION TO INJECT

	MTERCATION FOR ACTIONIZATION TO INJECT
I.	PURPOSE: XXX Secondary Recovery Pressure Maintenance Disposal Storage Application qualifies for administrative approval? XXX Yes No
II.	OPERATOR: SEELY OIL CO.
	ADDRESS:815 WEST 10TH ST., FT. WORTH, TX 76102
	CONTACT PARTY: BRIAN WOOD (PERMITS WEST, INC.) PHONE: 505 466-8120
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 XXX No If yes, give the Division order number authorizing the project: $R-2913 \& R-2914$
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. E-K QUEEN UNIT 212
VII.	Attach data on the proposed operation, including: <u>30-025-29471</u>
	 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.).
*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: BRIAN WOOD
	SIGNATURE:DATE: DEC. 16, 2019
*	E-MAIL ADDRESS: brian@permitswest.com 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:

FORM C-108 Revised June 10, 2003 Side 2

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:

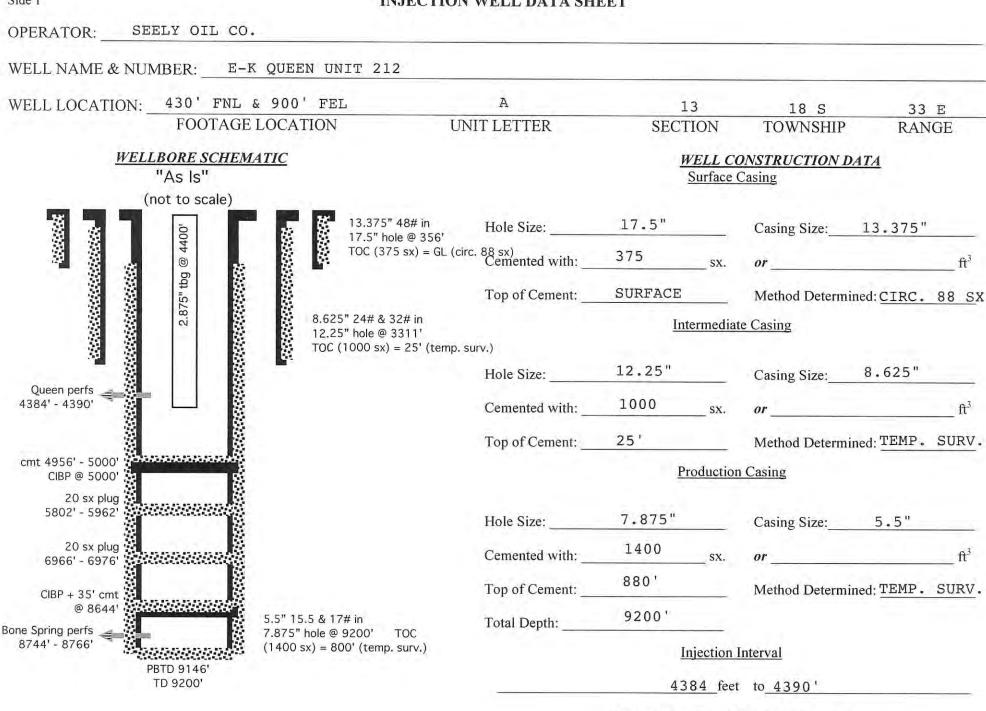
- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates 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.

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.

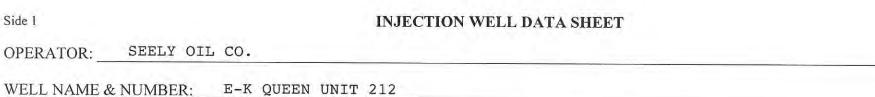
INJECTION WELL DATA SHEET

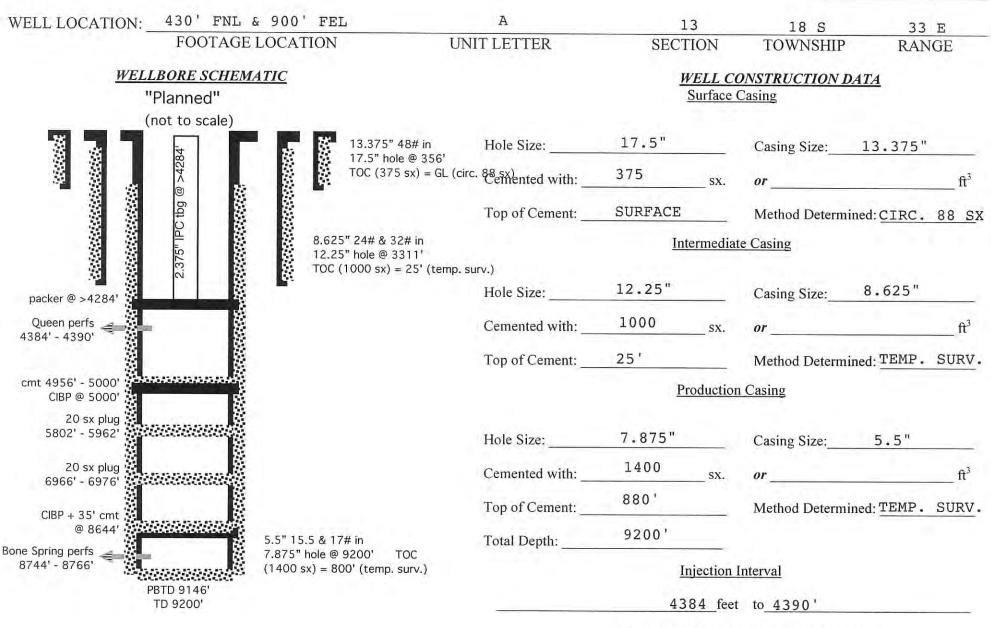


(Perforated or Open-Hole; indicate which)

Page 4 of 56

Side 1





(Perforated or Open-Hole: indicate which)

Received by OCD:

1/17/2020 8:13:19 AM

INJECTION WELL DATA SHEET

Side 2

Гvn	of Packer: PLASTIC LINED AD-I
acl	er Setting Depth: <u>≈4300</u> '
)th	r Type of Tubing/Casing Seal (if applicable):
	Additional Data
	Is this a new well drilled for injection? Yes XXX No
-	
	If no, for what purpose was the well originally drilled? BONE SPRING OIL WELL
	If no, for what purpose was the well originally drilled? BONE SPRING OIL WELL
L.	If no, for what purpose was the well originally drilled? <u>BONE SPRING OIL WELL</u> Name of the Injection Formation: <u>QUEEN</u> Name of Field or Pool (if applicable): <u>E-K; YATES-SEVEN RIVERS-QUEEN (POOL CODE</u> Has the well ever been perforated in any other zone(s)? List all such perforated
2.	If no, for what purpose was the well originally drilled? <u>BONE SPRING OIL WELL</u> Name of the Injection Formation: <u>QUEEN</u> Name of Field or Pool (if applicable): <u>E-K; YATES-SEVEN RIVERS-QUEEN (POOL CODE</u> 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.
2. 5. 4.	If no, for what purpose was the well originally drilled? <u>BONE SPRING OIL WELL</u> Name of the Injection Formation: <u>QUEEN</u> Name of Field or Pool (if applicable): <u>E-K; YATES-SEVEN RIVERS-QUEEN (POOL CODE</u> 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. <u>YES - BONE SPRING PERFS (8744' - 8766')</u>
<u>2.</u> 3. 4.	If no, for what purpose was the well originally drilled? <u>BONE SPRING OIL WELL</u> Name of the Injection Formation: <u>QUEEN</u> Name of Field or Pool (if applicable): <u>E-K; YATES-SEVEN RIVERS-QUEEN (POOL CODE</u> 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.

PAGE 1

30-025-29471

I. Plan is to convert an oil well to a water injection well to increase oil recovery. The well will inject through its existing perforations (4384' - 4390') into the Queen, which is in the E-K; Yates-Seven Rivers-Queen Pool (pool code 19950). The well and zone are in the E-K Queen Unit. Unit and waterflood were established in 1965 by Socony Mobil in 1965 via Orders R-2913 and R-2914. There have been subsequent WFX approvals (-474, -807, -900, and -988). This is an active water flood. Eight active water injectors are in the Unit.

II. Operator: Seely Oil Co. (OGRID 20497)
 Operator phone number: (817) 332-1377
 Operator address: 815 West 10th St., Ft. Worth TX 76102
 Contact for Application: Brian Wood (Permits West, Inc.)
 Phone: (505) 466-8120

III. A. (1) Lease: BLM NMLC-0063645
Lease Size: 800.00 acres (see Exhibit A for maps and C-102)
Closest Lease Line: 430'
Lease Area: E2 of Section 13, T. 18 S., R. 33 E. et al
Unit Number: 300120
Unit Size: 2,895.36 acres
Closest Unit Line: 430'
Unit Area: T. 18 S., R. 33 E.

Sections 13 & 14: all Section 23: N2 & N2SE4 Section 24: N2, N2SW4, SESW, & SE4 <u>T. 18 S., R. 34 E.</u> Section 18: NWNW, S2NW4, SW4, & W2SE4 Section 19: NW4, N2SW4, & SWSW



PAGE 2

30-025-29471

A. (2) Surface casing (13.375", 48#) was set at 356' in a 17.5" hole with 375 sacks. Circulated 88 sacks to GL.

Intermediate casing (8.625", 24# & 32#) was set at 3311' in a 12.25" hole and cemented with 1000 sacks to 25' (temperature).

Production casing (5.5", 15.5# & 17#) was set at 9200' (TD) in a 7.875" hole and cemented with 1400 sacks to 800' (temperature) in 1986. Well was completed in the Bone Spring.

Well was subsequently plugged back in 2017 and completed in Queen. A CIBP was set at 8644' with 35' of cement. Twenty sack plugs were set at 6966' – 6976' and 5802' – 5962'. A second CIBP was set at 5000' with 35' cement. Queen was perforated from 4384' to 4390'.

Mechanical integrity of the casing will be assured by hydraulically pressure testing to a minimum of 500 psi for 30 minutes or to 300 psi for 60 minutes.

- A. (3) Tubing will be 2.375" IPC. Setting depth will be ≈4300'. (Injection interval will be 4384' to 4390'.)
- A. (4) A plastic lined AD-I packer will be set at ≈4300', or no more than 100' above highest perforation (4384').
- B. (1) Injection zone will be the Queen sandstone, part of the E-K; Yates -Seven Rivers - Queen Pool. Reservoir is a stratigraphic trap. Average porosity = 13.3%. Average permeability = 30 mD. Average fracture gradient = 0.94 psi/foot. Water saturation was estimated as 40% before the waterflood started.
- B. (2) Injection interval will be 4384' to 4390'. The well is a cased hole.



PAGE 3

30-025-29471

- B. (3) Well was drilled and completed in 1986 as a 9200' deep Bone Spring oil well. Bone Spring was isolated with two CIBPs and 4 cement plugs and converted to a Queen oil well in 2017.
- B. (4) Well was perforated in 1986 from 8744' to 8766' with 2 shots per foot for a total of 45 holes in the Bone Spring. Bone Spring was isolated in 2017 and well was recompleted in the Queen. Queen is perforated from 4384' to 4390' with 12 holes. This same interval will be used for injection.
- B. (5) Next higher oil or gas zone in the area of review is the Seven Rivers. Its bottom is at 4342'. Highest Queen perforation will be 4384'.

Next lower oil or gas zone in the area of review is the San Andres. San Andres top is at 5114'. Deepest Queen perforation will be 4390'.

IV. This is not a horizontal or vertical expansion of an existing injection project (R-2913 and R-2914). There have been subsequent water flood expansions (WFX-474, -807, -900, & -988). A vertical contraction (R-2913-A) of the Unit deleted the Penrose.

V. Exhibit B shows 22 existing wells (12 oil wells + 5 P&A wells + 4 water wells + 1 injector) within a half-mile radius, regardless of depth. Exhibit C shows 245 existing wells (81 oil or gas wells + 125 P & A wells + 16 injection or disposal wells + 23 water wells) within a two-mile radius.

Exhibit D shows and details all leases (BLM and NMSLO) within a half-mile radius. Exhibit E shows all lessors (BLM, fee, and NMSLO) within a 2-mile radius.

VI. Twenty-two wells are within a half-mile radius. Eighteen of the wells penetrated the Queen. The penetrators include 12 oil wells, 5 P&A wells, and 1 injector. A table abstracting the well construction details and histories of the



PAGE 4

30-025-29471

penetrators is in Exhibit F. Diagrams of the P&A penetrators are in Exhibit G, sequenced by API number.

- VII. 1. Average injection rate will be ≈100 bwpd. Maximum injection rate will be 150 bwpd.
 - 2. System will be closed. Well will tie into the existing Unit pipeline system. The system consists of a branched injection system with Triplex injection pumps.
 - 3. Average injection pressure will be ≈800 psi. Maximum injection pressure will be 876 psi (= 0.2 psi/foot x 4384' (top perforation)).
 - 4. Water source will be produced water from Seely wells. No compatibility problems have reported from the >41,867,776 barrels that have been injected in the Unit since 1965.
 - 5. Queen produces from 8 oil wells in the Unit. Goal is to recover more oil.

VIII. The Queen in the Unit is a sandstone stratigraphic trap with an average porosity of 13.3%. Average permeability is 30 millidarcies. Four hundred thirty-six Queen injection wells are in the state. E-K Queen Unit shares its northeast border with Seely's Central EK Unit which has a similar water flood.

Formation depths are:

```
Quaternary = 0'

Rustler = 1728'

Salado = 1836'

Tansill = 3105'

Yates = 3210'

Seven Rivers = 3624'

Queen = 4343'

Proposed injection interval = 4384' - 4390'
```



Page 11 of 56

PAGE 5

30-025-29471

San Andres = 5114' Delaware = 5902' Bone Spring = 6896' PBTD = 9146' TD = 9200'

State Engineer (Exhibit H) records indicate nine water wells are within a mile. Deepest water well within a mile (1610 meter) radius is 220'. No existing underground drinking water source is below the injection interval within a mile radius. The well is 0.1 mile southwest of the Ogallala aquifer.

There will be 2615' of vertical separation and 1377' of salt and anhydrite between the bottom of the only likely underground fresh water source (red beds) and the top of the Queen.

Produced water is currently being injected (7 wells) or disposed (2 wells) into the Bone Spring, Delaware, Penrose, Queen, Seven Rivers, or Yates in T. 18 S., R. 33 E.

IX. The well will be stimulated with gelled KCL and sand.

X. Borehole volume, DLL with MSFL, Compensated Neutron Density, and BHC Sonic logs are on file with NMOCD.

XI. One active fresh water well is within a mile. Analyses from that windmill (0.32 mile NNE) and a stock tank (1.84 miles NNW) are attached (Exhibit I).

XII. Seely Oil Co. is not aware of any geologic or engineering data that may indicate the injection interval is in hydrologic connection with any underground source of water (Exhibit I). There are 398 active Queen injectors and 23 active Queen SWD wells in New Mexico. Previously approved water flood expansions in



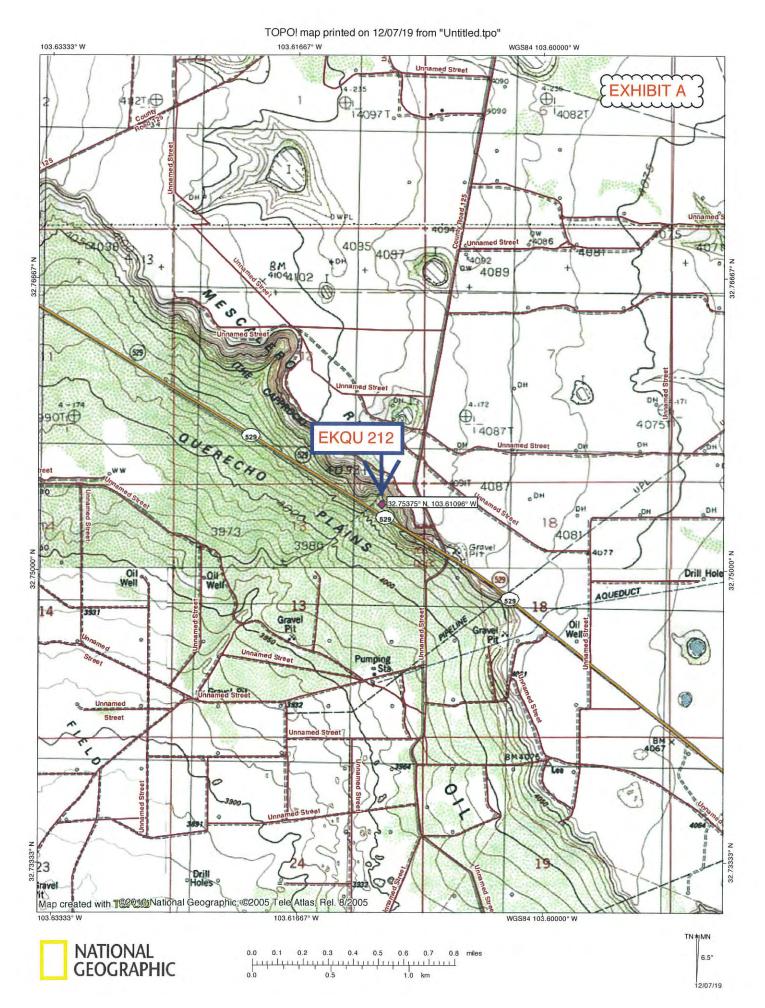
PAGE 6

30-025-29471

the Unit include WFX-474, -807, -900, and -988. Exhibit J addresses the potential for hydrologic connection.

XIII. A legal ad (see Exhibit K) was published on November 13, 2019. Notice (this application) has been sent (Exhibit L) to the surface owner (BLM), government lessors (BLM, NMSLO), offset operators (only OXY USA WTP) regardless of depth, lessees of record (BTA, ConocoPhillips, Devon, OXY USA WTP, PXP), and operating rights holders (Apache Corp., Bellwether Exploration, Black Shale Minerals, Boswell Interests, Burnett Oil, CEB Oil, Lynn Charuk, Mitchel Cheney, Chisos, COG, Concho, ConocoPhillips, Cross Border, Amy Vernae Dahlin Trust, Ruth Dahlin, Devon Energy, EAB Oil, Express Air Drilling, Kathleen & Michael Havel, David & Dawn Henderson, Houston Hill, Hill Houston Trust, Hunt Cimarron, Woody Hunt, J C Pace Oil & Gas, John P Oil, Merlyn Kahlin, Magnum Hunter, Manix Energy, Marbob, P D Boswell Trust, Petrohawk Energy, PVB Oil, PXP, Ridge Runner, Santa Fe Exploration, Santa Fe Snyder, C W & Ina Seely, SSV & H Associates, J C Thompson, Trigg Oil & Gas, Wes-Tex Drilling, Merlya Wright Family Trust, and XTO).





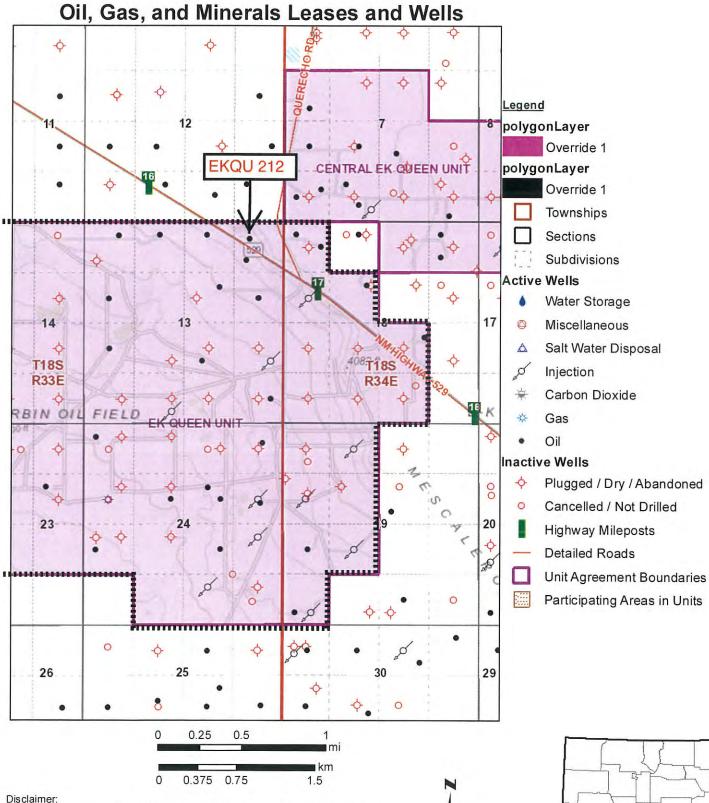
Page 14 of 56

N MEXICO OIL CONSERVATION COMMISS .

JN EXPLOR	ATION & PRODU	JCTION COMPANY	MESCALERO RIDG	E FEDERAL	Wel, 1,
Letter A	Section 13	Township 18 SOUTH	Range 13 EAST	LEA	
al Froinge Los		10 10 10 11		1.1.1	
4?0)RTH line and		t Immine EAST	.15.P
コ()う().ム!	Froducing F BONE SI		MESCALERO ESCARI	PE BONE SPRINGS	ed: Toten Arrenge: 40 Arres
. If more t		ated to the subject we			plat below.
dated by o Yes If answer this form i No allowal	No If is "no," list the f necessary.) ble will be assig	different ownership is o unitization, force-pooli answer is "yes," type o owners and tract desc ned to the well until all or until a non-standard	ng. etc? f consolidation riptions which have ac interests have been c	cually been consolidate	d (lise reverse side of nitization, unitization
				1 hereby cert tained herein best of my ku Velma R	ERTIFICATION ify that the information con- is true and complete to the nowledge and belief. MA fCYES EYES
				curt and	nting Assistant ation & Productio 5
				shawn on thi nates of act under my sup	tily that the well location s plat was plotted from field val surveys made by me or ervision, and that the some correct to the best of my d belief.
					R 1,1985 essional Engineer rveyor





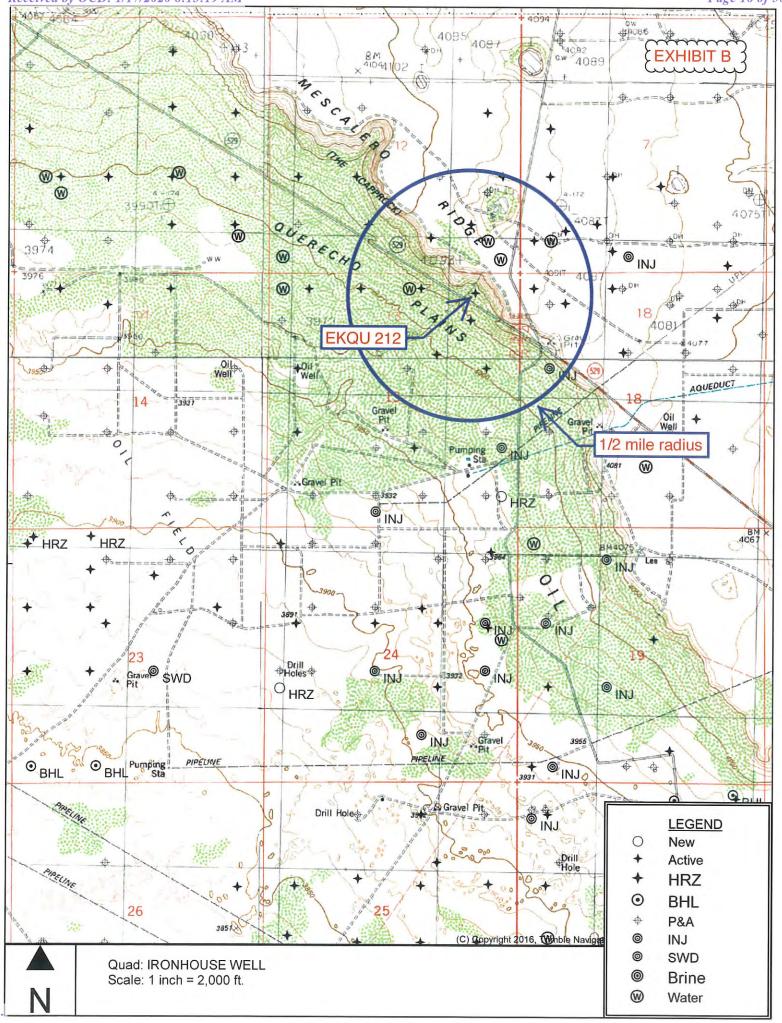


The New Mexico State Land Office assumes no responsibility or liability for, or in connection with the accuracy, reliability or use of the information provided herein with respect to State Land Office data or data from other sources.

Data pertaining to New Mexico State Trust Lands are provisional and subject to revision, and do not constitute an official record of title. Official records may be reviewed at the New Mexico State Land Office in Santa Fe, New Mexico.

Received by OCD: 1/17/2020 8:13:19 AM

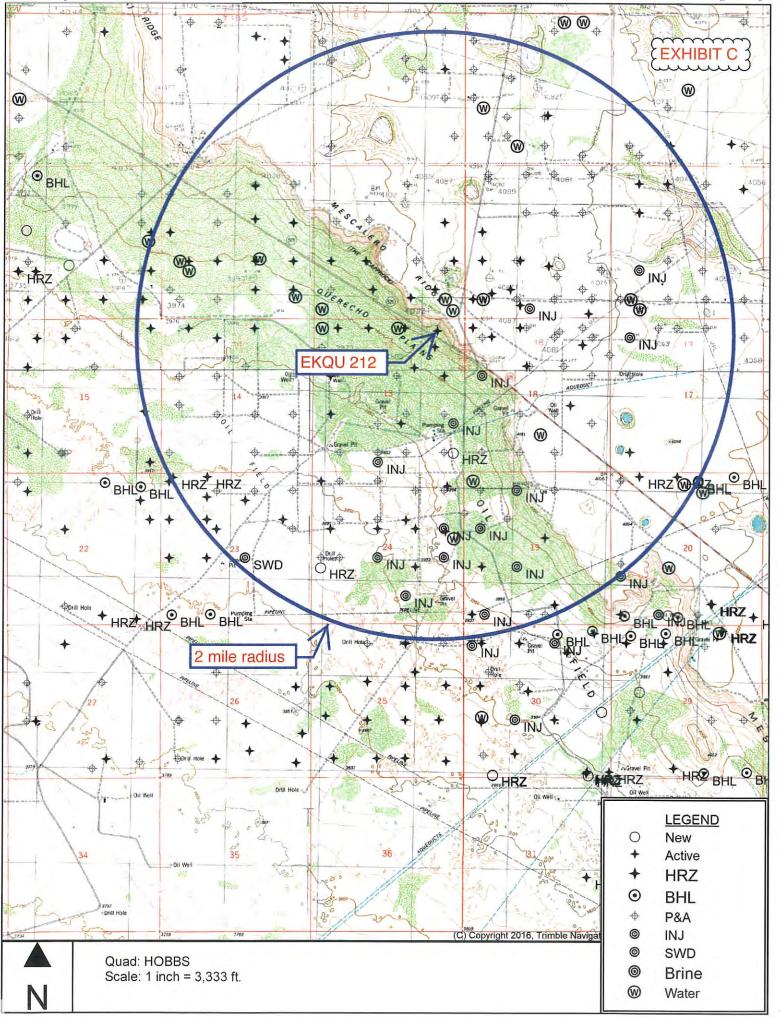
Page 16 of 56

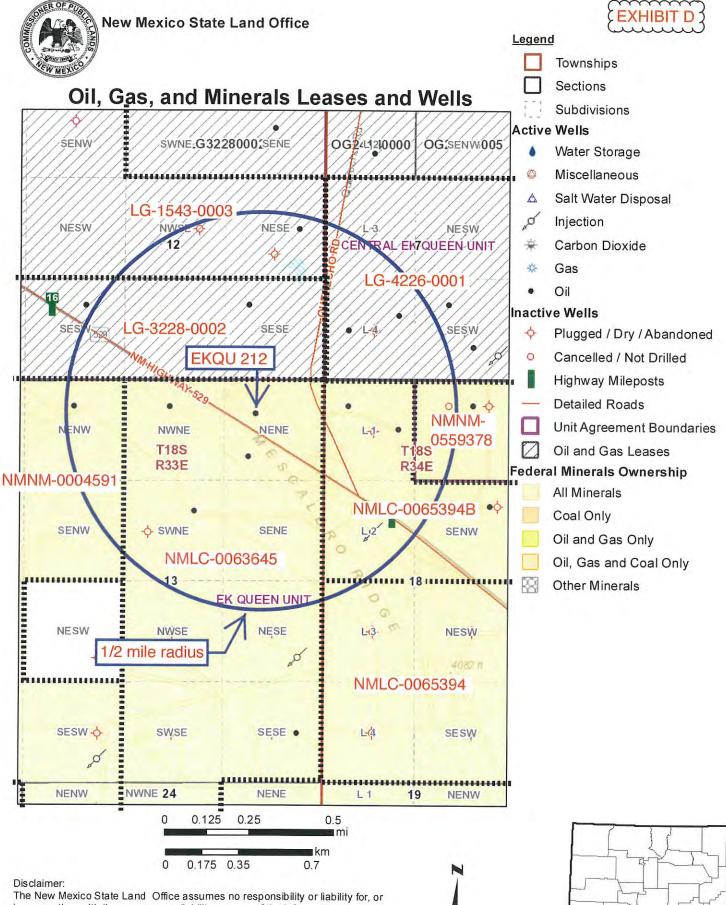


SORTED BY DISTANCE FROM EKQU 212

ΑΡΙ	OPERATOR	WELL	UNIT- SECTION	TYPE WELL	TVD	ZONE @ TD	FEET FROM EKQU 212
3002534324	Seely	EK Queen Unit 028	A-13	о	4687	Queen	566
3002529279	Seely	Mescalero Ridge Federal 001	B-13	о	9300	Bone Spring	1144
3002529305	Seely	Mescalero Ridge C Federal 001	D-18	0	9180	Bone Spring	1236
3002528800	Seely	State DW 005	P-12	0	9030	Bone Spring	1425
3002528895	Oxy USA	State DW 008	0-12	0	9080	Bone Spring	1476
3002529604	Seely	EK Queen Unit 210	G-13	0	9300	Bone Spring	1506
3002534325	Seely	EK Queen Unit 029	H-13	0	4704	Queen	1565
3002502341	T J Sively	Fox 002	D-18	P&A	4441	Queen	1579
3002528773	Devon	Lea XA State 002	M-7	0	8970	Bone Spring	1649
3002538609	Seely	Mescalero Ridge C Federal 002	D-18	0	9140	Bone Spring	1905
3002502306	Seely	Central EK Queen Unit 015	M-7	P&A 4385		Queen	1910
3002501600	Plateau	British American State 001	I-12	P&A	5513	San Andres	2097
3002501606	T J Sively	Sively 13 Federal 005	G-13	P&A	4369	Queen	2105
3002502340	Seely	EK Queen Unit 041	E-18	ţ.	4413	Queen	2196
3002534955	Seely	Central EK Queen Unit 017	M-7	0	4504	Queen	2293
3002529315	Seely	Mescalero Ridge B Federal 001	C-13	0	9220	. Bone Spring	2384
3002528838			I-12	0	8914	Bone Spring	2481
3002528575	Oxy USA	State DW 001	J-12 .	P&A	11094	Wolfcamp	2526
3002529023	Oxy USA	State DW 010	N-12	0	9097	Bone Spring	2642

Page 18 of 56





in connection with the accuracy, reliability or use of the information provided herein with respect to State Land Office data or data from other sources.

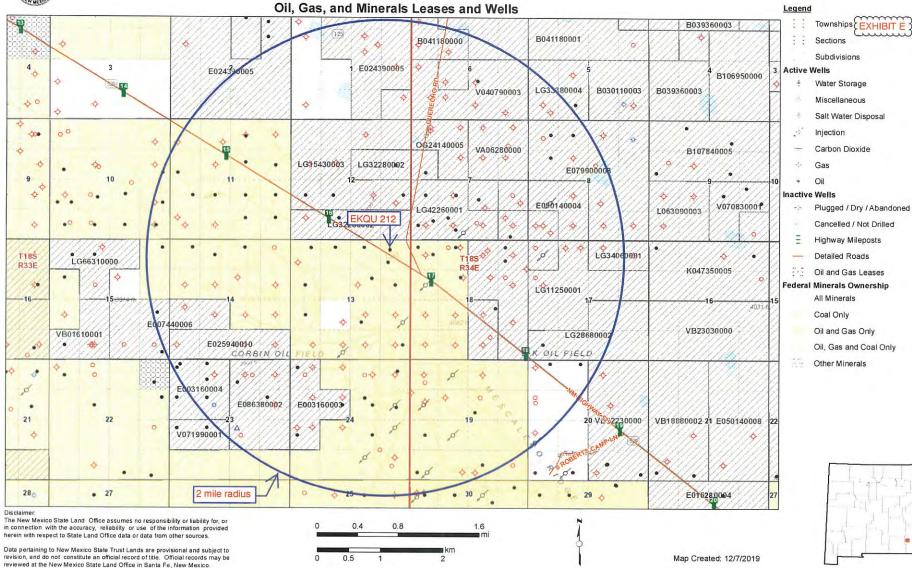
Data pertaining to New Mexico State Trust Lands are provisional and subject to revision, and do not constitute an official record of title. Official records may be reviewed at the New Mexico State Land Office in Santa Fe, New Mexico.

EKQU 212 AREA OF REVIEW LEASES OPERATORS

Page	20	0	£ 56
1 480		ЧJ	00

Aliquot Parts in Area of Review	Lessor	Lease	Lessee of Record	Well Operator
T 18 S, R 33 E				
N2SE4 & NESW Sec. 12	NMSLO	LG-1543-0003	Oxy USA WTP	Oxy USA WTP & Seely Oil
SESW & S2SE4 Sec. 12	NMSLO	LG-3228-0002	ВТА	Oxy USA WTP & Seely Oil
NE4 & N2SE4 Sec. 13	BLM	NMLC-0063645	Seely Oil	Seely Oil
E2NW4 Sec. 13	BLM	NMNM-004591	Seely Oil	Seely Oil
T 18 S, R 34 E				
W2SW4 & SESW Sec. 7	NMSLO	LG-4226-0001	Devon	Seely Oil
NENW Sec. 18	BLM	NMNM-0559378	Seely Oil	Seely Oil
W2NW4 & SENW Sec. 18	BLM	NMLC-0065394B	PXP	Seely Oil
NWSW Sec. 18	BLM	NMLC-0065394	ConocoPhillips	Seely Oil





WELL	SPUD	TVD	STATUS	ZONE @ TD	HOLE O.D.	CASING O.D.	SET @	CEMENT	тос	HOW TOC DETERMINED
EK Queen Unit 028	7/28/98	4687	0	Queen	12.25	8.625	1723	810 sx	Surface	No report
3002534324					7.875	5.5	4664	600 sx	1620	No report
A-13-18S-33E										
Mescalero Ridge Federal 001	5/31/85	9300	0	Bone Spring	17.5	13.375	360	375 sx	Surface	Circ 130 sx
3002529279				· · · · · · · · · · · · · · · · · · ·	11	8.625	3300	1300 sx	Surface	Circ 530 sx
B-13-18S-33E					7.875	5.5	9300	1600 sx	No report	No report
Mescalero Ridge C Federal 001	9/20/85	9180	0	Bone Spring	17.5	13.375	365	375 sx	Surface	Circ 135 sx
3002529305					12.25	8.625	3300	1050 sx	Surface	Circ 250 sx
D-18-185-34E					7.875	5.5	9180	1950 sx	No report	No report
										1

EXHIBIT F

WELL	SPUD	TVD	STATUS	ZONE @ TD	HOLE O.D.	CASING O.D.	SET @	CEMENT	тос	HOW TOC DETERMINED
State DW 005	7/24/84	9030	0	Bone Spring	17.5	13.375	348	500 sx	Surface	Circ 50 sx
3002528800					11	8.625	3300	1300 sx	Surface	Circ 150 sx
P-12-18S-33E					7.875	5.5	9030	1335 sx	3300	Temp survey
State DW 008	9/11/84	9080	0	Bone Spring	17.5	13.375	350	500 sx	Surface	Circ
3002528895					11	8.625	3140	1300 sx	Surface	Circ 150 sx
O-12-185-33E					7.875	5.5	9072	2550 sx	3100	Temp survey
EK Queen Unit 210	4/20/02	9300	0	Bone Spring	17.25	13.375	364	375 sx	Surface	Circ 105 sx
3002529604					12.25	8.625	3264	900 sx	Surface	Circ 100 sx
G-13-185-33E					7.875	5.5	9300	1450 sx	500	Temp survey

Page 23 of 56

EXHIBIT F

WELL	SPUD	TVD	STATUS	ZONE @ TD	HOLE O.D.	CASING O.D.	SET @	CEMENT	тос	HOW TOC DETERMINED
EK Queen Unit 029	3/21/98	4704	0	Queen	11	8.625	1764	505 sx	No report	No report
3002534325					7.875	5.5	4703	1545 sx	No report	No report
H-13-18S-33E										
Fox 002	9/12/55	4441	P&A	Queen	No report	8.625	299	175 sx	No report	No report
3002502341										
D-18-18S-34E										
Lea XA State 002	6/19/84	8970	0	Bone Spring	17.5	13.375	565	500 sx	Surface	Circ 125 sx
3002528773					11	8.625	4466	1600 sx	Surface	Circ 343 sx
M-7-18S-34E					7.875	5.5	8970	2050 sx	3910	Temp survey
						_				

EXHIBIT F

WELL	SPUD	TVD	STATUS	ZONE @ TD	HOLE O.D.	CASING O.D.	SET @	CEMENT	тос	HOW TOC DETERMINED
Mescalero Ridge C Federal 002	12/29/07	9140	0	Bone Spring	17.5	13.375	1800	1460 sx	Surface	Circ 175 sx
3002538609					11	8.625	3150	1000 sx	Surface	Circ 234 sx
D-18-18S-34E					7.875	5.5	9139	1220 sx	3270	CBL
Central EK Queen Unit 015	5/13/55	4385	P&A	Queen	17.25	13.375	262	275 sx	No report	No report
3002502306					11	8.625	1778	None	N/A	N/A
M-7-18S-34E					8	5.5	4344	200 sx	No report	No report
British American State 001	6/1/55	5513	P&A	San Andres	10.75	8.625	300	250 sx	Surface	Circ
3002501600					8.25	7	4364	500 sx	3705	Temp survey
I-12-18S-33E					7.875	5.5	5465	300 sx	No report	No report

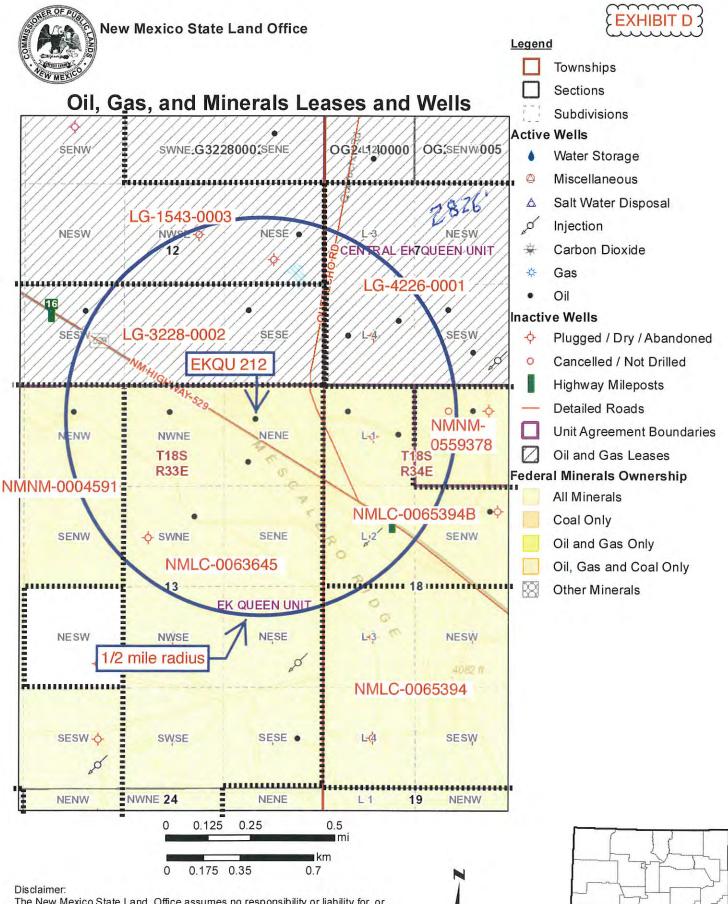
WELL	SPUD	TVD	STATUS	ZONE @ TD	HOLE O.D.	CASING O.D.	SET @	CEMENT	тос	HOW TOC DETERMINED
Sively 13 Federal 005	11/25/57	4369	P&A	Queen	ОН	8.625	335	175 sx	Surface	Circ
3002501606						1				
G-13-18S-33E										
EK Queen Unit 041	12/20/54	4413	1	Queen	No report	8.625	1760	50 sx	Surface	Circ
3002502340					No report	5.5	4373	100 sx	3700	CBL
E-18-18S-34E										
Central EK Queen Unit 017	4/5/00	4504	0	Queen	11	8.625	1723	540 sx	Surface	Circ 10 sx
3002534955					7.875	5.5	4504	710 sx	2200	CBL
M-7-18S-34E				1 1 1						

EXHIBIT F

WELL	SPUD	TVD	STATUS	ZONE @ TD	HOLE O.D.	CASING O.D.	SET @	CEMENT	тос	HOW TOC DETERMINED
Mescalero Ridge B Federal 001	8/18/85	9220	0	Bone Spring	17.5	13.375	355	375 sx	Surface	Circ 130 sx
3002529315					12.25	8.625	3300	1100 sx	2100	No report
C-13-18S-33E					7.875	5.5	9220	1400 sx	2300	Temp survey
State DW 006	8/17/84	8914	0	Bone Spring	17.5	13.375	349	500 sx	Surface	Circ 50 sx
3002528838					11	8.625	3300	1300 sx	Surface	Circ 150 sx
I-12-18S-33E					7.875	5.5	8914	1265 sx	3310	Temp survey
State DW 001	1/31/84	11094	P&A	Wolfcamp	17.5	13.375	500	600 sx	Surface	Circ 100 sx
3002528575					11	8.625	5283	4105 sx	Surface	Circ
J-12-18S-33E					7.875	5.5	10866	950 sx	6490	Temp survey

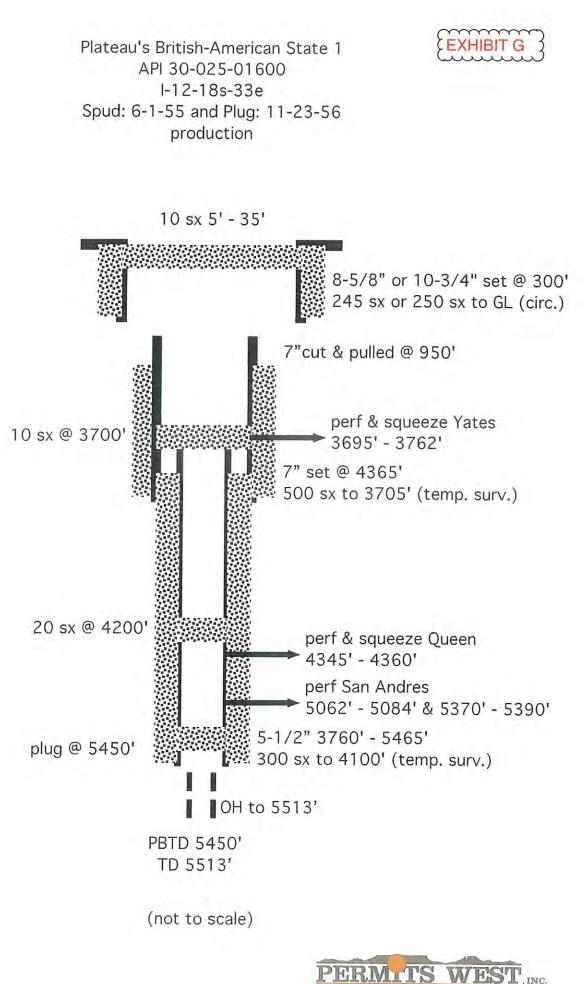
Page 27 of 56

WELL	SPUD	TVD	STATUS	ZONE @ TD	HOLE O.D.	CASING O.D.	SET @	CEMENT	тос	HOW TOC DETERMINED
State DW 010	11/12/84	9097	0	Bone Spring	17.5	13.375	350	500 sx	Surface	Circ 50 sx
3002529023					11	8.625	3150	1300 sx	Surface	Circ 300 sx
N-12-18S-33E					7.875	5.5	9097	1245 sx	3450	Temp survey



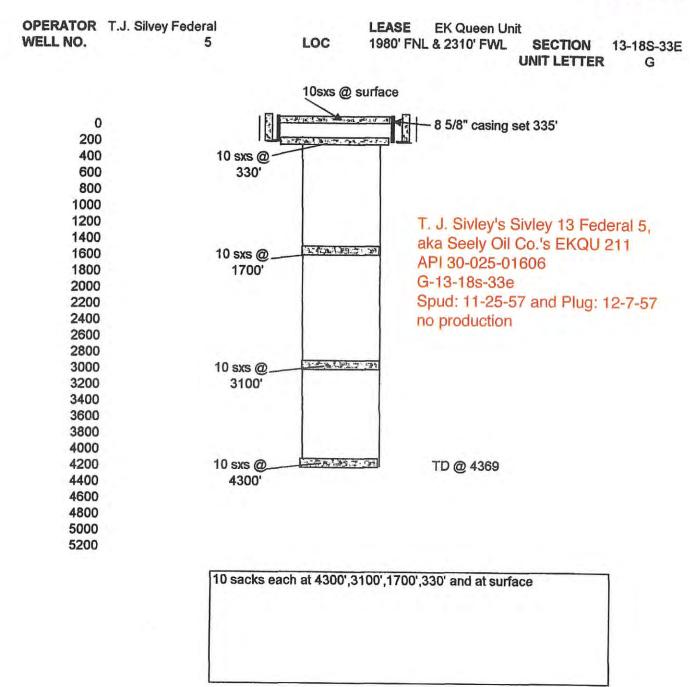
The New Mexico State Land Office assumes no responsibility or liability for, or in connection with the accuracy, reliability or use of the information provided herein with respect to State Land Office data or data from other sources.

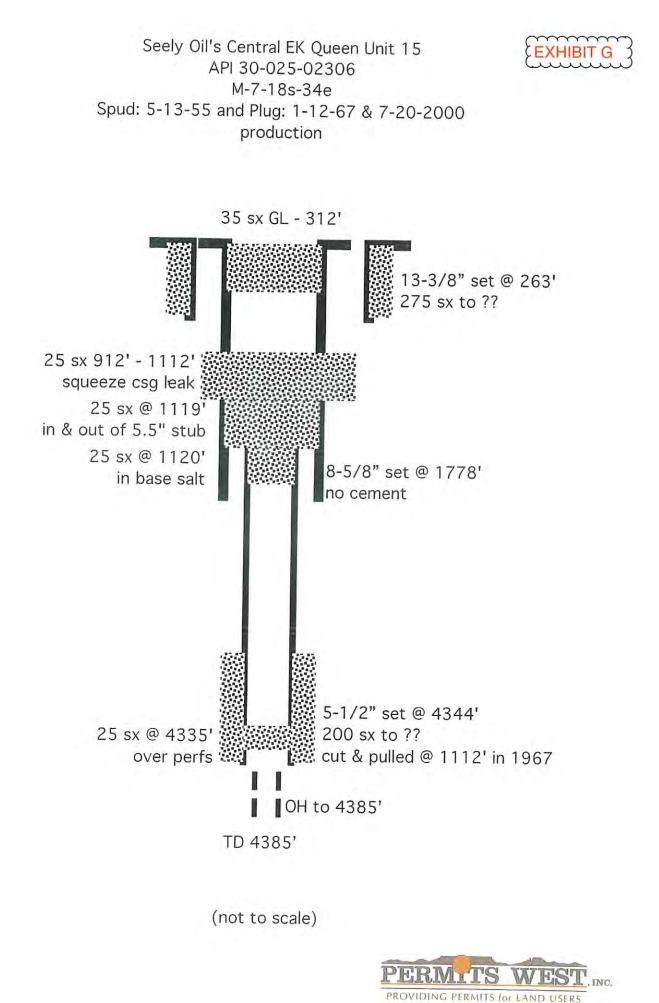
Data pertaining to New Mexico State Trust Lands are provisional and subject to revision, and do not constitute an official record of title. Official records may be reviewed at the New Mexico State Land Office in Santa Fe, New Mexico.

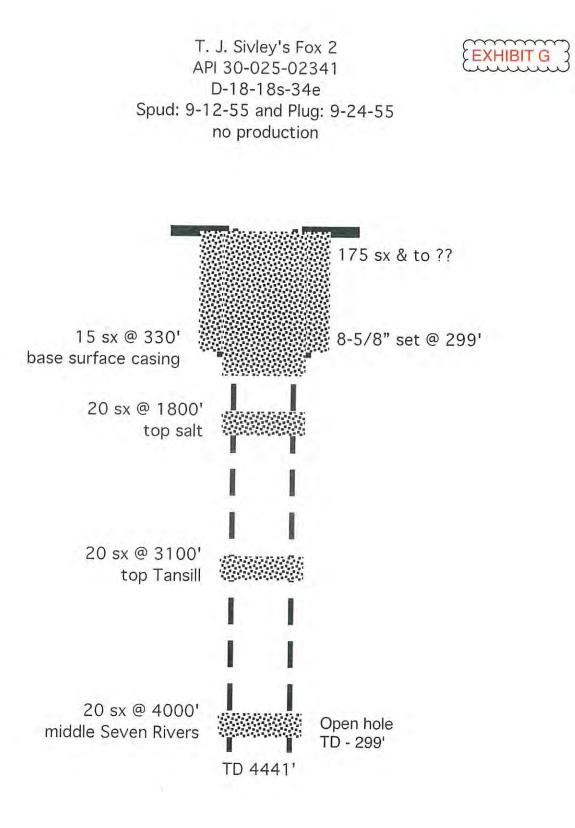


PROVIDING PERMITS for LAND USERS









(not to scale)



perf @ 550'

200 sx GL -550'

perf @ 1819'

1565' - 1819'

perf @ 3253' squeeze 50 sx 3044' - 3253'

perf @4428' squeeze 50 sx 4210' - 4428'

35 sx 5050' - 5380'

squeeze 400 sx @ 6107'

PB-9863'

25 sx 5698' - 5981'

squeeze 50 sx

OXY USA WTP LP State DW #1 API No. 30-025-28575 Page 34 of 56



17-1/2" hole @ 500' 13-3/8" csg @ 500' w/ 600sx-TOC-Surf-Circ

Oxy USA WTP's State DW 1 API 30-025-28575 J-12-18s-33e Spud: 1-31-84 and Plug: 8-10-12 production

> 11" hole @ 5283' 8-5/8" csg @ 5283' w/ 4105sx-TOC-Surf-Circ

Csg Parted @ 6400'

Perfs @ 8661-8883'

7-7/8" hole @ 11094' 5-1/2" csg @ 10866' w/ 950sx-TOC-6490'-TS

Perfs @ 10007-10023'

Perfs @ 10741-10747'

OH @ 10866-11094'

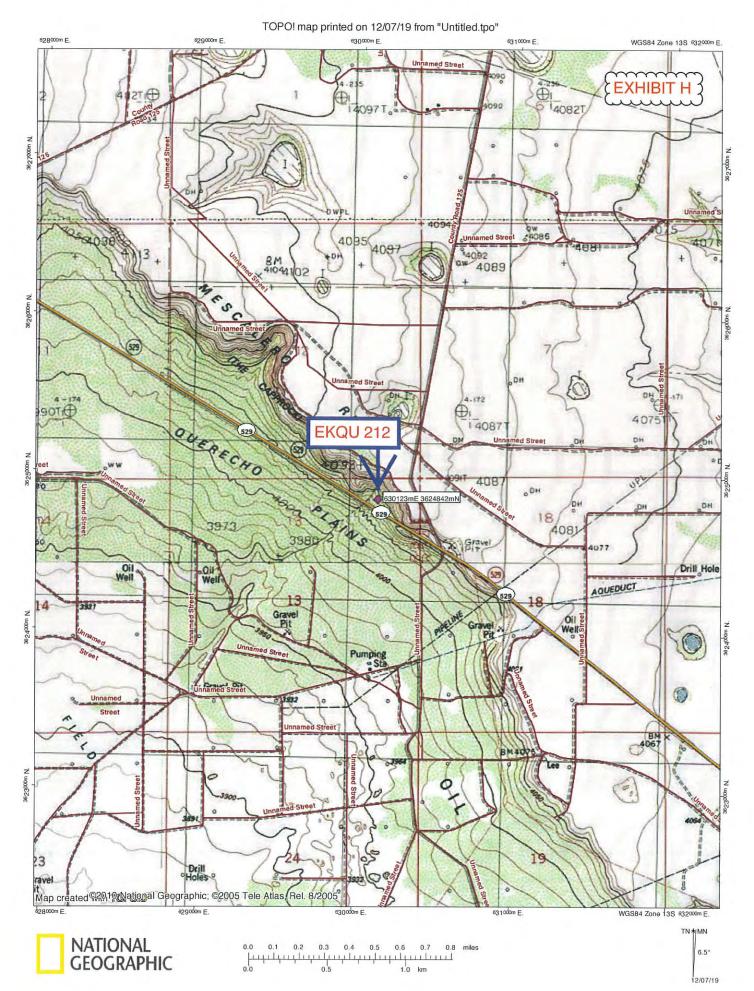
CIBP @ 9890' w/ 3sx

TOF @ 6404' to 9034' consisting of 2-7/8" tbg @ 9034' & TAC @ 8536' 1" st rods & 1-3/4" X 34' Rod pump

CIBP @ 10650' w/ 3sx

rom 30-025-28575

TD-11094'



Page 35 of 56



New Mexico Office of the State Engineer

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a	(R=POD replaced, O=orpha		n												
water right file.)	C=the fil closed)	e is			- C -				V 2=NE est to lar	3=SW 4=SI		antoine)	<i>a</i>	6 (A)	
	closed)	POD			(qu	arte	rs are	e sman	est to fai	igest) (P	AD83 UTM in n	ieters)	(In)	feet)	
		Sub-		Q	Q	Q	6.1							w	ater
POD Number L 13406 POD1	Code	basin L	County LE			5 4 4		Tws 18S	Rng 33E	X 630279	Y 3625061 🌍	DistanceDe 268	pthWellDep 220		
<u>L 02878 POD2</u>		L	LE		4	4	12	18S	33E	630196	3625175 🌍	340	220	220	0
<u>L 06347</u>		L	LE		4	4	12	185	33E	630196	3625175* 🌍	340	170	130	40
<u>CP 00769 POD1</u>		СР	LE	ī	1	2	13	185	33E	629699	3624866* 🌍	424	115	70	45
<u>L 02898</u>		L	LE		3	3	07	185	34E	630598	3625182*	584	204	150	54
CP 00623 POD2		CP	LE	1	2	1	13	18S	33E	629243	3624542	929	100		
CP 00623 POD1		СР	LE	1	1	1	13	18S	33E	628895	3624852*	1228	82	60	22
L 08288		L	LE	3	3	3	12	18S	33E	628890	3625054* 🌍	1251	79	60	19
<u>L 03436</u>		L	LE		1	4	18	18S	34E	631230	3623771 🌍	1539	170	125	45
CP 00072 POD6 161	0 m	CP	LE	2	4	4	11	18S	33E	628603	3625179	1557	100	61	39
<u>L 07429</u> = 1	mile	L	LE	1	1	1	19	185	34E	630523	3623272* 🌍	1620	149	105	44
CP 00072 POD2		СР	LE			4	11	18S	33E	628386	3625344	1808	90		
CP 00072 POD1		СР	LE	2	3	4	11	185	33E	628284	3625242* 🌍	1881	85		
CP 00072 POD5		СР	LE	2	1	4	11	18S	33E	628219	3625573	2039	100	64	36
L 10040		L	LE		3	3	08	18S	34E	632170	3625205* 🌍	2078	215	145	70
<u>L 04898</u>		L	LE		4	3	06	18S	34E	630937	3626796* 🌍	2116	185	150	35
<u>L 04953</u>		L	LE	4	3	3	08	18S	34E	632269	3625104* 🌍	2161	200	150	50
<u>CP 00691</u>		СР	LE	4	4	2	24	18S	33E	630327	3622662* 🌍	2189	215	195	20
L 06997		L	LE		1	3	06	18S	34E	630571	3627192* 🌍	2392	225	140	85
CP 00701 POD2		СР	LE	4	1	3	11	18S	33E	627472	3625433* 🌍	2716	100		
<u>CP 00701</u>		СР	LE		1	3	11	18S	33E	627373	3625534* 🌍	2835	100		
<u>CP 00072 POD3</u>		CP	LE	2	4	4	10	18S	33E	627076	3625223* 🌍	3070	70		
L 13526 POD1		L	LE	2	2	1	20	18S	34E	632769	3623271 🌍	3076	196	106	90
CP 01417 POD1		СР	LE				11	18S	33E	627036	3625738	3214	120	.54	66
											Averag	ge Depth to Wa	ter:	116 feet	
												Minimum De		54 feet	
												Maximum De	pth:	220 feet	

Record Count: 24

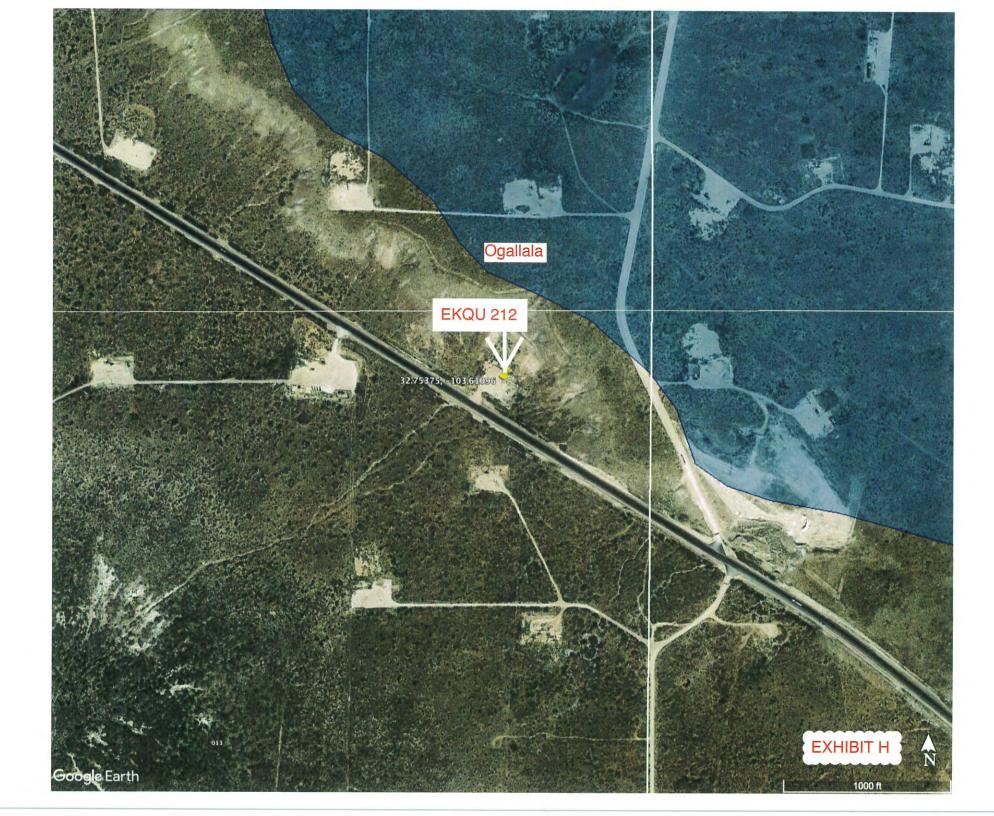
UTMNAD83 Radius Search (in meters):

Northing (Y): 3624842

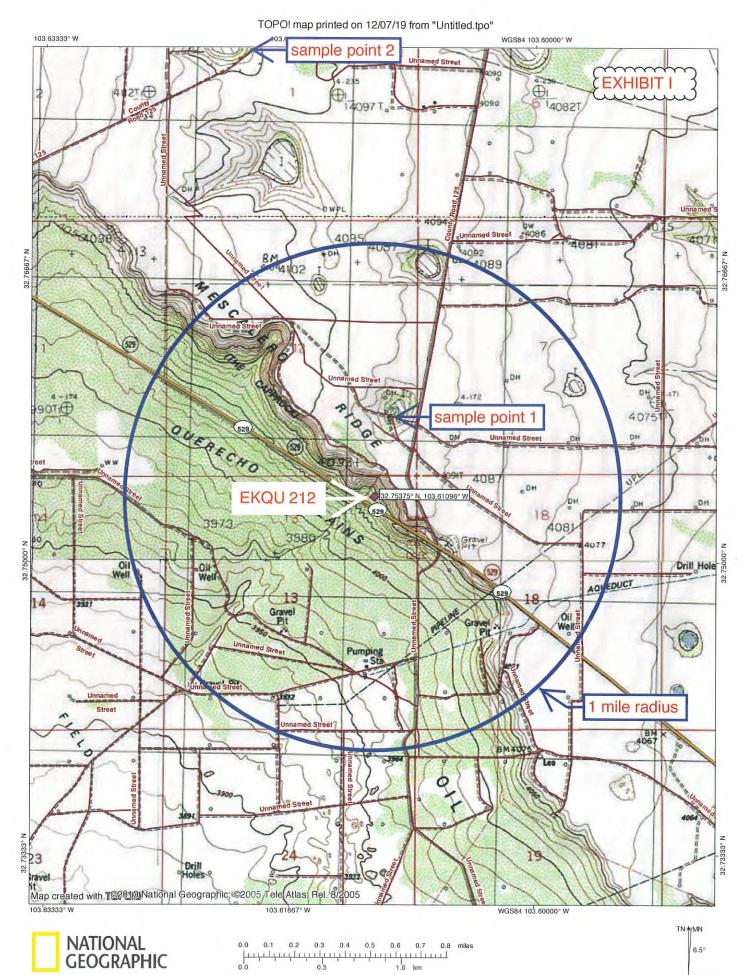
Radius: 3220

*UTM location was derived from PLSS - see Help

Easting (X): 630123







12/07/19

Hall Enviro	onmental Analysis	Laboratory, In	c.			Analytical Report Lab Order 1806979 Date Reported: 7/5/	18 au
	its West / Ek Queen H2O Wells 979-001	Matrix: AQUEOUS	Collec	tion Dat	e: 6/1	Ily-EkQ-1 4/2018 2:30:00 PN 5/2018 8:36:00 A1	
Analyses		Result	PQL Qua	Units	DF	Date Analyzed	Batch
EPA METHOD		ND	0.00				alyst: dbf
EPA METHOD		ND	9.60	mg/L	1	6/18/2018 4:00:00 I Ana	PM 38719 alyst: MRA
Chloride		64	5.0	mg/L	10	6/28/2018 4:49:30	PM R5236
SM2540C MOD	: TOTAL DISSOLVED SOL	IDS				Ana	alyst: KS
Total Dissolved	Solids	295	20.0	mg/L	1	6/21/2018 5:03:00 1	PM 38785

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 5 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Ei	nvironmental Analysis	Laboratory, I	nc.			Analytical Report Lab Order 1806979 Date Reported: 7/5/2011	3
CLIENT: Project: Lab ID:	Permits West Seely Ek Queen H2O Wells 1806979-002	Matrix: AQUEOU	Co	ollection	Date: 6/	EXI- 14/2018 2:50:00 PM 15/2018 8:36:00 AM	IIBIT I
Analyses		Result	PQL (Qual Un	nits DF	Date Analyzed	Batch
N-Hexan	HOD 1664B e Extractable Material HOD 300.0: ANIONS	ND	9.58	mg	g/L 1	Analyst 6/18/2018 4:00:00 PM Analyst	38719
Chloride		120	5.0	mg	g/L 10		R52361
SM2540C	MOD: TOTAL DISSOLVED SOL	IDS				Analyst	KS
Total Dis	solved Solids	396	20.0	mo	1/L 1	6/21/2018 5:03:00 PM	38785

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 5
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Permits West

Client:

Project:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Seely Ek Queen H2O Wells

- Sample ID MB-38719 SampType: MBLK TestCode: EPA Method 1664B Client ID: PBW Batch ID: 38719 RunNo: 52053 Prep Date: 6/18/2018 Analysis Date: 6/18/2018 SeqNo: 1702801
- Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual N-Hexane Extractable Material ND 10.0 Sample ID LCS-38719 SampType: LCS TestCode: EPA Method 1664B Client ID: LCSW Batch ID: 38719 RunNo: 52053 Prep Date: 6/18/2018 Analysis Date: 6/18/2018 SeqNo: 1702802 Units: mg/L %REC Analyte Result SPK value SPK Ref Val PQL LowLimit HighLimit %RPD **RPDLimit** Qual N-Hexane Extractable Material 33.4 10.0 40.00 83.5 0 78 114

Units: mg/L

Oualifiers:

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- Practical Quanitative Limit POL
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р
- W Sample container temperature is out of limit as specified

Page 3 of 5

- Sample pH Not In Range
- RL Reporting Detection Limit

Page 41 of 56

05-Jul-18



Permits West

Client:

Project:

Sample ID MB

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Seely Ek Queen H2O Wells

SampType: MBLK

	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLim
	110	5.0	50.00	64.29	96.0	85.9	109		
D	SampT	ype: MS	SD	Tes	tCode: El	PA Method	300.0: Anion	s	
	Batch	n ID: R5	2361	F	RunNo: 5	2361			
1	Analysis D)ate: 6/	28/2018	S	SeqNo: 1	716033	Units: mg/L		
	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimi
	110	5.0	50.00	64.29	93.8	85.9	109	0.989	20

Oualifiers:

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded Η
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

au	u
WO#:	18

Page 4 of 5

Client ID:	PBW	Batch	D: R	52361	, F	RunNo: 5	2361				
Prep Date:		Analysis D	Date: 6	/28/2018	\$	SeqNo: 1	716012	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	0.50								
Sample ID	LCS-b	SampT	ype: LC	cs	Tes	tCode: E	PA Method	300.0: Anions	5		
Client ID:	LCSW	Batch	D: R	52361	F	RunNo: 5	2361				
Prep Date:		Analysis D	ate: 6	/28/2018	5	SeqNo: 1	716021	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		4.9	0.50	5.000	0	98.9	90	110			
Sample ID	1806979-001BMS	SampT	ype: M	S	Tes	tCode: E	PA Method	300.0: Anions	5		
Client ID:	Selly-EkQ-1	Batch	D: R	52361	F	RunNo: 5	2361				
Prep Date:		Analysis D	ate: 6	/28/2018	S	SeqNo: 1	716032	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		110	5.0	50.00	64.29	96.0	85.9	109			
Sample ID	1806979-001BMSE) SampT	ype: MS	SD	Tes	tCode: E	PA Method	300.0: Anions			
Client ID:	Selly-EkQ-1	Batch	ID: R5	52361	F	RunNo: 5	2361				
Prep Date:		Analysis D	ate: 6/	28/2018	S	SeqNo: 1	716033	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		110	5.0	50.00	64.29	93.8	85.9	109	0.989	20	

TestCode: EPA Method 300.0: Anions

Page 42 of 56

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#: 1806979

EXHIBIT

05-Jul-18

Client:Permits WestProject:Seely Ek Queen H2O Wells

Sample ID MB-38785	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids
Client ID: PBW	Batch ID: 38785	RunNo: 52144
Prep Date: 6/20/2018	Analysis Date: 6/21/2018	SeqNo: 1707681 Units: mg/L
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids	ND 00.0	
Total Dissolved Solids	ND 20.0	
	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids
Sample ID LCS-38785		TestCode: SM2540C MOD: Total Dissolved Solids RunNo: 52144
Sample ID LCS-38785 Client ID: LCSW	SampType: LCS	
Sample ID LCS-38785 Client ID: LCSW	SampType: LCS Batch ID: 38785 Analysis Date: 6/21/2018	RunNo: 52144

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 5 of 5

Page 43 of 56

Received by OCD: 1/17/2020 8:13:19 AM



Geologic Assessment

Seely Oil Company

E-K Queen Unit No. 212

Section 13, Township 18 South, Range 33 East

Lea County, New Mexico

Cory Walk

B.S., M.S.

Geologist

Permits West Inc.

November 15, 2019



General Information

Seely Oil Company proposes to convert the E-K Queen Unit #212 oil well to a water injection well (WIW). This well is located in the NE 1/4, section 13, T18S, R33E, about 20 miles southwest of Lovington, NM in the Permian Basin. Seely has indicated one bed within the Queen formation as the proposed injection zone (4,384'-4,390' below ground surface). This report assesses any potential concerns relating to the connection between the injection zone and known underground potable water sources.

Groundwater Sources

Three principal aquifers are used for potable groundwater in Lea County; these geologic units include the Triassic Santa Rosa formation, Tertiary Ogallala formation, and Quaternary alluvium. Nicholson and Clebsch (1961) state, "Potable ground water is not available below the Permian and Triassic unconformity but, because this boundary is not easily defined, the top of the Rustler anhydrite formation is regarded as the effective lower limit of 'potable' ground water." The well completion report for the E-K Queen Unit #212 well indicates that the Rustler formation lies at a depth of ~1728 feet bgs.

Faults and Fractures

The Geologic Map of New Mexico (2003) shows the nearest fault to the SWD location is found 45 miles to the northwest (Figure 1). A large accumulation of northwest trending Basin and Range style normal faults lie ~80 miles from the proposed water injection well. This fault zone is interpreted to be a southeastern extension of the Rio Grande Rift zone (Muehlberger et al., 1978) and is the only area in which deeply penetrating faults exist throughout the region.

A structure contour map of the Precambrian Basement shows the E-K Queen Unit #212 water injection well is close to several Precambrian basement faults (Figure 1; Modified from Ruppel et al., 2009). However, Montgomery (1997) shows that these faults remain deep below the surface and do not penetrate the Delaware Mountain group, which includes the Permian Queen formation (Figure 2). Therefore, these deep faults will not be affected by this injection nor can they act as a conduit to the aquifers near the surface.

Stratigraphy

Well logs from the E-K Queen Unit #212 well (API# 30-025-29471) show low permeability (limestone/dolomite/anhydrite) units both above and below the proposed injection zone (Figure 3); while the injection zone is characterized by a very high porosity zone. Well data indicates ~2,615 ft of rock separating the top of the Queen formation from the previously stated lower limit of potable water at the top of the Rustler anhydrite formation. Within the separating ~2,615 feet of strata include several horizons of impermeable formations including the Rustler anhydrite and Salado halite formations.

Concluding Statement

After examination of publically available geologic and engineering data, there is no evidence of open faults or any other hydrologic connection between the proposed injection zone and any underground sources of drinking water.



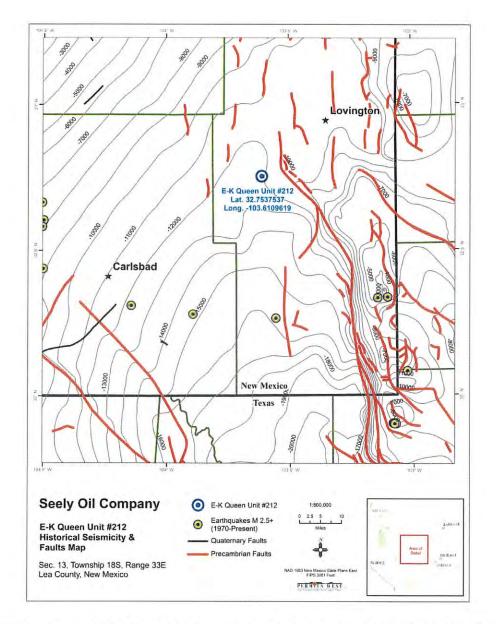


Figure 1. Structural contour map of the Precambrian Basement. Thick red lines represent the locations of deep Precambrian basement faults and black lines represent Quaternary surface faults. Precambrian faults are close to the proposed water injection well, however, these faults are too deep to be affected.

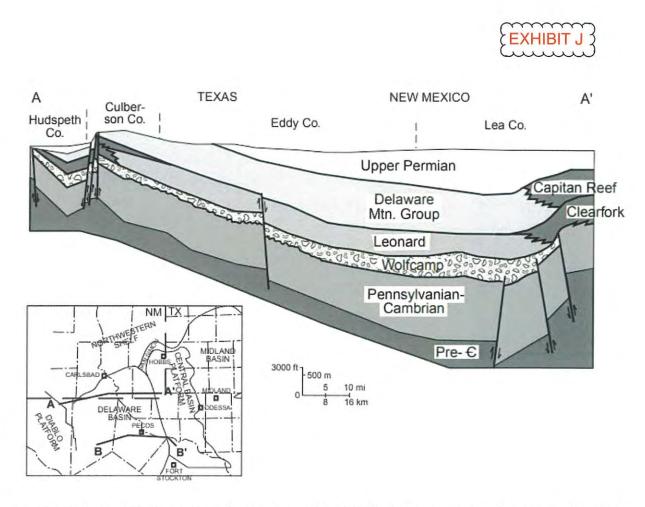


Figure 2. Cross section of the Permian Basin from Montomery (1997). Notice the basement faults only penetrating through the Leonardian and deeper formations and not through the proposed injection zone within the Delaware Mtn. Group.

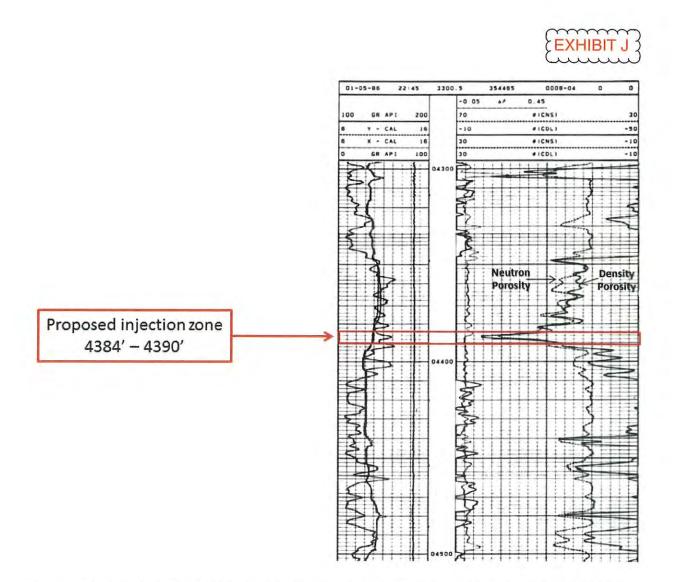


Figure 3. Well log taken from the E-K Queen Unit #212 well illustrating the proposed injection zone in a red box. The injection zone is characterized by an extremely high porosity bed and is confined on either side by about 100' of low porosity beds of limestone, dolomite, anhydrite, etc.



References Cited

- Geologic Map of New Mexico, New Mexico Bureau of Geology and Mineral Resources, 2003, Scale 1:500,000.
- Montgomery, S. L., 1997, Permian Bone Spring Formation: Sandstone play in the Delaware basin: Part I. Slope: AAPG Bulletin, v. 81, p. 1239–1258.
- Muehlberger, W.R., Belcher, R.C., and Goetz, L.K., 1978, Quaternary faulting in Trans-Pecos Texas: Geology, v. 6, p. 337–340.
- Nicholson, A., Jr., and Clebsch, A., Jr., 1961, Geology and ground-water conditions in southern Lea County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Ground-Water Report 6, 123 pp., 2 plates.
- Ruppel, S.C., 2009, Integrated synthesis of the Permian basin: data and models for recovering existing and undiscovered oil resources from the largest oil-bearing basin: U.S. Oil & Natural Gas Technology, Bureau Economic Geology, The University of Texas at Austin, p. 1-959.

Affidavit of Publication

STATE OF NEW MEXICO COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

> Beginning with the issue dated November 13, 2019 and ending with the issue dated November 13, 2019.

use Of

Publisher

Sworn and subscribed to before me this 13th day of November 2019.

Business Manager



This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said 02108485

BRIAN WOOD PERMITS WEST 37 VERANO LOOP SANTA FE, NM 87508



LEGALS

LEGAL NOTICE NOVEMBER 13, 2019

Seely Oil Co. is applying to convert the E-K Queen Unit 212 oil well to a water injection well. The well is at 430' FNL & 900' FEL, Sec. 13, T. 18 S. R. 33 E., Lea County, NM. This is 7 miles southwest of Buckeye, NM. It will inject water into the Queen (maximum injection pressure = 876 psi) from 4.384' to 4.390' Injection will be at a maximum rate of 1.50 bwpd. Interested parties must file objections or requests for hearing with the NM Oil Conservation Division, 1220 South Saint Francis Dr. Santa Fe, NM 87505 within 15 days. Additional information can be obtained by contacting Brian Wood, Permits West, Inc. 37 Verano Loop, Santa Fe, NM 87508, Phone number is (505) 466-8120. #34848

00236019



EXHIBIT L

December 16, 2019

BLM 620 E. Greene Carlsbad NM 88220

Seely Oil Co. is applying (see attached application) to convert its E-K Queen Unit 212 oil well to a water injection well. As required by NM Oil Conservation Division (NMOCD) Rules, I am notifying you of the following proposed water injection well. No action is needed unless you have questions or objections.

TYPICAL NOTICE

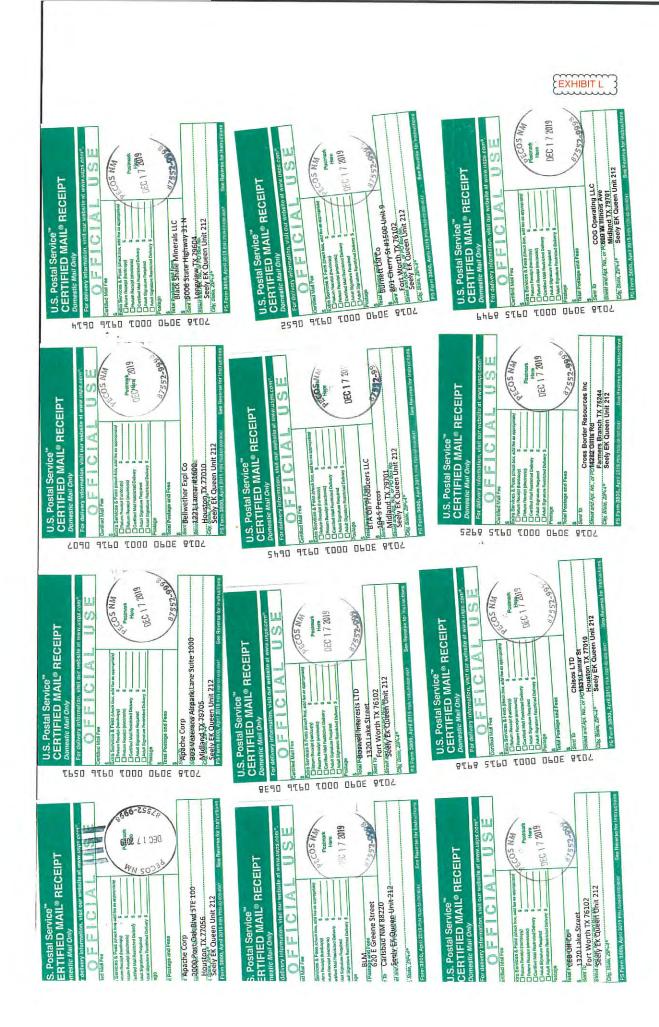
Well Name:E-K Queen Unit 212 (BLM lease)TD = 9200'Proposed Injection Zone:Queen from 4384' to 4390'Where:430' FNL & 900' FEL Sec. 13, T. 18 S., R. 33 E., Lea County, NMApproximate Location:7 air miles southwest of Buckeye, NMApplicant Name:Seely Oil Co.Applicant's Address:815 West 10th St., Ft. Worth, TX 76102

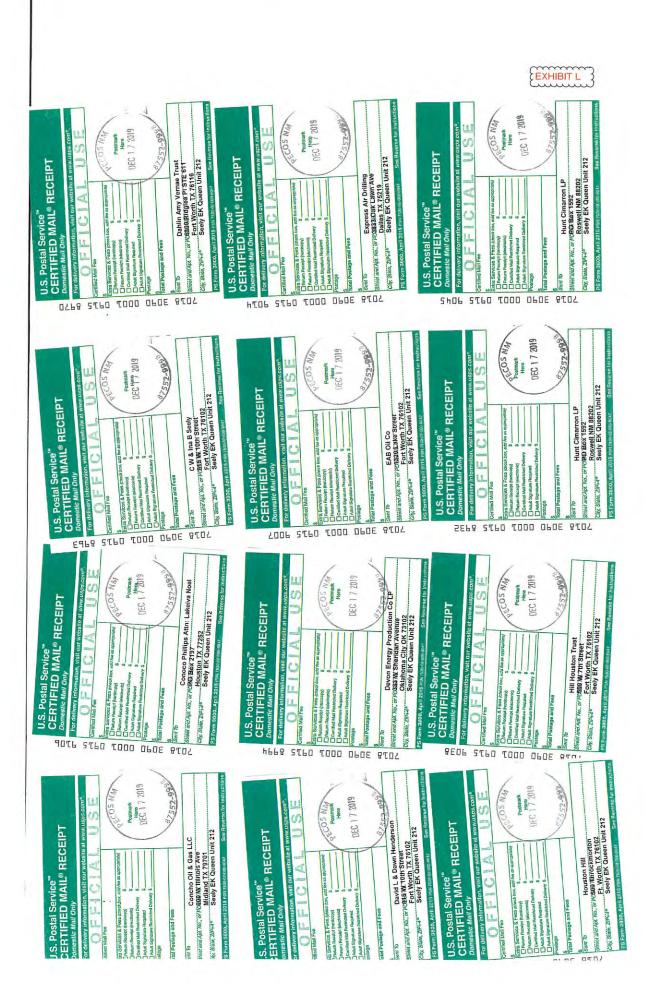
<u>Submittal Information</u>: Application for a water injection well will be filed with the NMOCD. If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

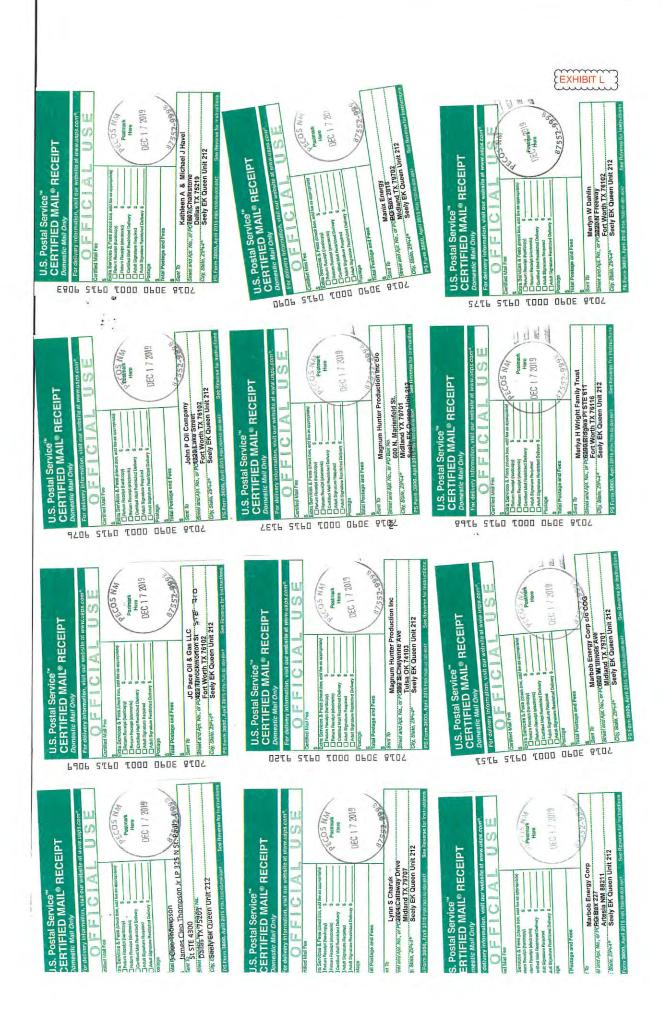
Please call me if you have any questions.

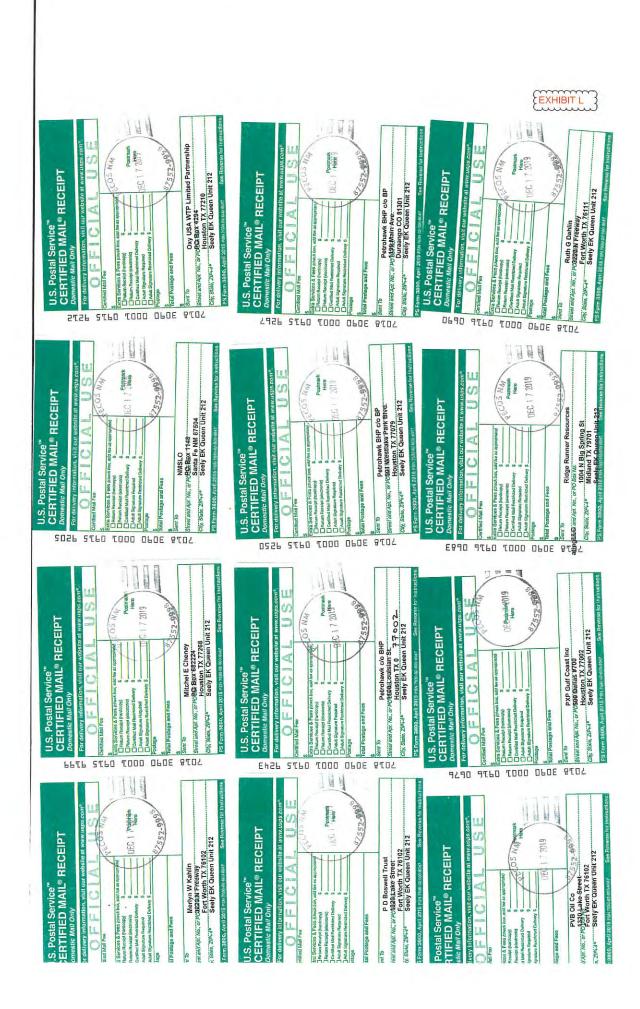
Sincerely,

Brian Wood









.

EXHIBIT L

Y

