Initial Application Part I

Received on 6/18/20

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

ALL CONSULTING
GOVERNMENT RELATIONS · ENERGY · PLANNING · TECHNOLOGY
ENGINEERING · ENVIRONMENTAL

June 18, 2020

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

Subject: Anthem Water Solutions, LLC – KW Farms SWD #1
Application for Authorization to Inject

To whom it may concern:

On behalf of Anthem Water Solutions, LLC, ALL Consulting (ALL) has prepared and is submitting an application for the KW Farms SWD #1, formerly OXY Pogo State #1, to convert an existing plugged and abandoned well for the purpose of saltwater disposal into the Bell Canyon and upper Cherry Canyon formations.

This re-open and re-completion is for API No. 30-015-34549, which was drilled and completed by OXY USA WTP Limited Partnership (OXY) in 2006. All casing strings (surface, intermediate, and production) were cemented to the surface with an original total depth of 11,807 feet. This well was properly plugged and abandoned by OXY in August of 2007 and a copy of the Sundry Notice plugging report C-103 is included with this application package along with the proposal to re-open and re-complete this well for the purpose of saltwater disposal into the Bell Canyon and upper Cherry Canyon formations.

If you have any questions regarding this application, please contact me at (918) 382-7581 or e-mail me at darthur@all-llc.com.

Sincerely,
ALL Consulting

Dan Arthur, P.E., SPEC
President/Chief Engineer

Attachment

Revised March 23, 2017

63I61-200618-C-1080

RECEIVED:	REVIEWER:	TYPE:	APP NO:
6/18/20	BLL	SWD	pBL2017436876

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Geological & Engineering Bureau –
1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: Anthem Water Solutions, LLC **OGRID Number:** 330069
Well Name: KW Farms SWD #1 **API:** 3001534549
Pool: SWD; BELL CANYON - CHERRY CANYON **Pool Code:** 96802

SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW

1) **TYPE OF APPLICATION:** Check those which apply for [A]
A. Location – Spacing Unit – Simultaneous Dedication
☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD

SWD-2384

B. Check one only for [I] or [II]
[I] Commingling – Storage – Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
[II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

2) **NOTIFICATION REQUIRED TO:** Check those which apply.
A. ☒ Offset operators or lease holders
B. ☐ Royalty, overriding royalty owners, revenue owners
C. ☒ Application requires published notice
D. ☒ Notification and/or concurrent approval by SLO
E. ☒ Notification and/or concurrent approval by BLM
F. ☒ Surface owner
G. ☒ For all of the above, proof of notification or publication is attached, and/or,
H. ☐ No notice required

3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Dan Arthur
Print or Type Name

JAMES DANIEL ARTHUR NEW MEXICO 06/18/20 PROFESSIONAL ENGINEER

Signature

6/18/2020
Date

918-382-7581
Phone Number

darthur@all-llc.com
e-mail Address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____Secondary Recovery _____Pressure Maintenance ____X____Disposal
_____Storage Application qualifies for administrative approval? ____X____Yes _____No

II. OPERATOR: _Anthem Water Solutions, LLC_____

ADDRESS: _5914 W. Courtyard Dr, STE 320, Austin, TX, 78730

CONTACT PARTY Nate Alleman PHONE: 918-382-7581

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 ____X____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: _Dan Arthur, P.E., SPEC_____ TITLE: President/Chief Engineer

SIGNATURE: _____ DATE: _____

JAMES DANIEL ARTHUR NEW MEXICO 21638 PROFESSIONAL ENGINEER 06/18/2020

E-MAIL ADDRESS: darthur@all-llc.com

XV. If the information required under Sections VI, V ove has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

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.

Application for Authorization to Inject
Well Name: KW Farms SWD #1

III – Well Data (*The Wellbore Diagram is included as **Attachment 1***)

A.

(1) General Well Information:

Operator: Anthem Water Solutions, LLC (OGRID No. 330069)
Lease Name & Well Number: KW Farms SWD #1
Location Footage Calls: 1,980' FSL & 990' FEL
Legal Location: Unit Letter I, S36 T22S R27E
Ground Elevation: 3,070'
Proposed Injection Interval: 2,825' – 3,600'
County: Eddy

(2) Existing Casing Information:

Type	Hole Size	Casing Size	Casing Weight	Setting Depth	Sacks of Cement	Estimated TOC	Method Determined
Surface	17.5"	13.375"	48.0 lb./ft	438'	700	Surface	Circulation
Intermediate 1	12.25"	9.625"	36.0 lb./ft	2,528'	760	Surface	Circulation
Production	8.75"	7"	26.0 lb./ft	9,509'	1,280	Surface	Circulation

(3) Tubing Information:

4.5" (11.6# N-80) of fiberglass-coated injection tubing with setting depth of 2,800'

(4) Packer Information: Baker Hornet or equivalent packer set at 2,800'

B.

(1) Injection Formation Name: Bell Canyon and upper Cherry Canyon
Pool Name: SWD; BELL CANYON – CHERRY CANYON
Pool Code: 96802

(2) Injection Interval: Perforated injection between 2,825' – 3,600'

(3) Drilling Purpose: Re-completion for Salt Water Disposal

(4) Other Perforated Intervals: All other perforations are separated from the injection zone by both CIBP and multiple cements plugs:

- 11,146' – 11,234'
- 11,946'– 12,080'
- 12,101'– 12,282'

(5) Overlying Oil and Gas Zones: No overlying oil and gas zones exist.
Underlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Brushy Canyon (4,525')
- Bone Springs (5,842')
- Wolfcamp (9,246)

V – Well and Lease Maps

The following maps are included in ***Attachment 2***:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1/2-mile Well Detail List with Casing Information for Penetrating Wells
- Potash Lease Map

VI – AOR Well List

There are three (3) wells within the ½-mile AOR that penetrate the injection zone; one (1) of the wells is a proposed well that will penetrate the injection zone, and, based on application information, it will be properly cased and cemented to isolate the injection zone. Additionally, there are two (2) active wells that penetrates the injection zone and based on their completion reports, they have been properly cased and cemented to isolate the injection zone.

A list of the wells within the ½-mile AOR is included in ***Attachment 2***.

VII – Proposed Operation

(1) Proposed Maximum Injection Rate: 10,000 bpd
Proposed Average Injection Rate: 8,000 bpd

(2) A **closed system** will be used.

(3) Proposed Maximum Surface Injection Pressure: 565 psi (based on 0.2 psi per foot)
Proposed Average Surface Injection Pressure: approximately 300 psi

(4) Source Water Analysis: It is expected that the injectate will consist of produced water from production wells completed in the Wolfcamp and Bone Springs formations. Analysis of water from these formations is included in ***Attachment 3***.

(5) Injection Formation Water Analysis: The proposed SWD will be injecting water into the Bell Canyon and upper Cherry Canyon formation which is a non-productive zone known to be compatible with formation water from the Wolfcamp and Bone Springs formations. Water analyses results were selected from intervals comparable to that of the injection zone in the Bell Canyon and upper Cherry Canyon Formations - Delaware Mountain Group. Water analysis from in the area are included in ***Attachment 4*.**

VIII – Geologic Description

The proposed injection interval includes the Bell Canyon and the upper Cherry Canyon formations from 2,825 – 3,600 feet. This formation consists of interbedded sandstones with interbedded siltstones and shales members. Several thick sections of porous and permeable intervals capable of taking water are present within the subject formation in the area.

The base of the deepest Underground Source of Drinking Water (USDW) is at a depth of approximately 400 feet. Surface casing was set at a depth of 438 feet, which is 38 feet below the top of the Rustler formation, which isolates the USDW. Geophysical log assessment was conducted to accurately determine the top of the Rustler formation, and the top and the base of the Salado formation in this area. Water well depths in the area range from approximately 72 - 210 feet below ground surface.

IX – Proposed Stimulation Program

A small cleanup acid job may be used to remove mud and drill cuttings from the formation. However, no other formation stimulation is currently planned.

X – Logging and Test Data

Geophysical logs will be submitted to the Division upon completion of the well.

XI – Fresh Groundwater Samples

Based on a review of data from the New Mexico Office of the State Engineer, there are 30 groundwater wells located within 1-mile of the proposed SWD location; Two (2) water samples were collected on April 29th, 2020 and sampling results are included in ***Attachment 5***.

A water well map of the area is included in ***Attachment 5***.

XII – Proposed Re-Open and Re-Completion Plan

The following documents are included in ***Attachment 6***:

- Sundry Notice plugging report C-103
- Proposed Re-open & Re-Completion Plan

XIII – Proof of Notice

A Public Notice was filed with the Carlsbad Current Argus and an affidavit is included in ***Attachment 7***.

A copy of the application was mailed to the OCD District Office, landowner, and leasehold operators within 1/2-mile of the proposed SWD location. A list of the recipients, as well as delivery confirmations, are included in ***Attachment 7***.

Attachments

Attachment 1:

- C-102
- Wellbore Diagram

Attachment 2: Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1/2-mile Well Detail List with Casing Information for Penetrating Wells
- Potash Lease Map

Attachment 3: Source Water Analyses

Attachment 4: Injection Formation Water Analyses

Attachment 5: Water Well Map and Well Data

Attachment 6: Proposed Re-Open & Re-Completion Plan

Attachment 7: Public Notice Affidavit and Notice of Application Confirmations

Attachment 1

- C-102
- Wellbore Diagram

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised JUNE 10, 2003
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-015-	82360	Undesignated Otis Morrow

Property Code	Property Name	Well Number
	OXY POGO STATE	1

OGRID No.	Operator Name	Elevation
192463	OXY U.S.A. W.T.P., LP	3070'

Surface Location

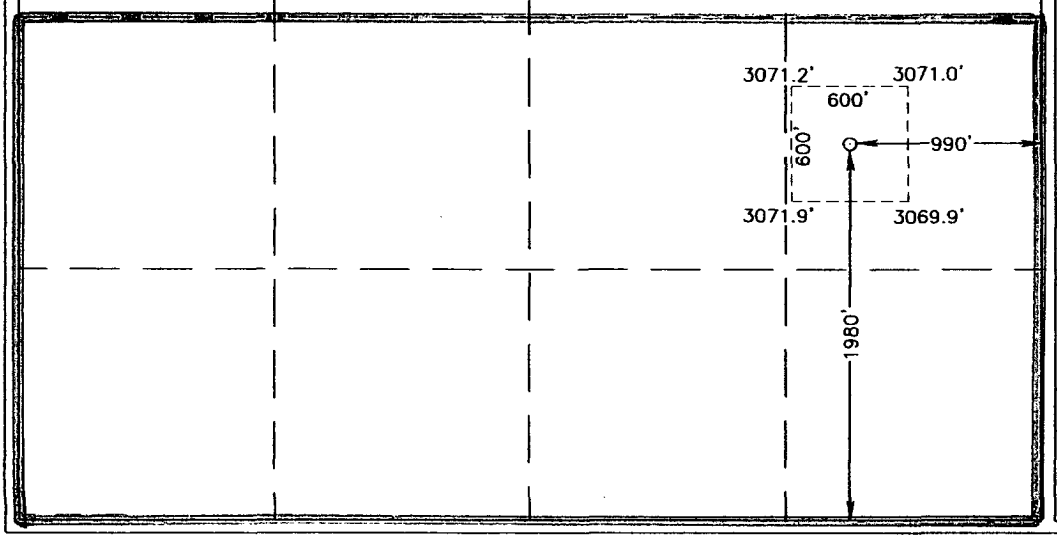
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	36	22-S	27-E		1980	SOUTH	990	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320	N		

NO ALLOWABLE WILL BE 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 the the information contained herein is true and complete to the best of my knowledge and belief.

Signature

David Stewart
Printed Name

Sr. Regulatory Analyst
Title

11/7/06
Date

SURVEYOR CERTIFICATION

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

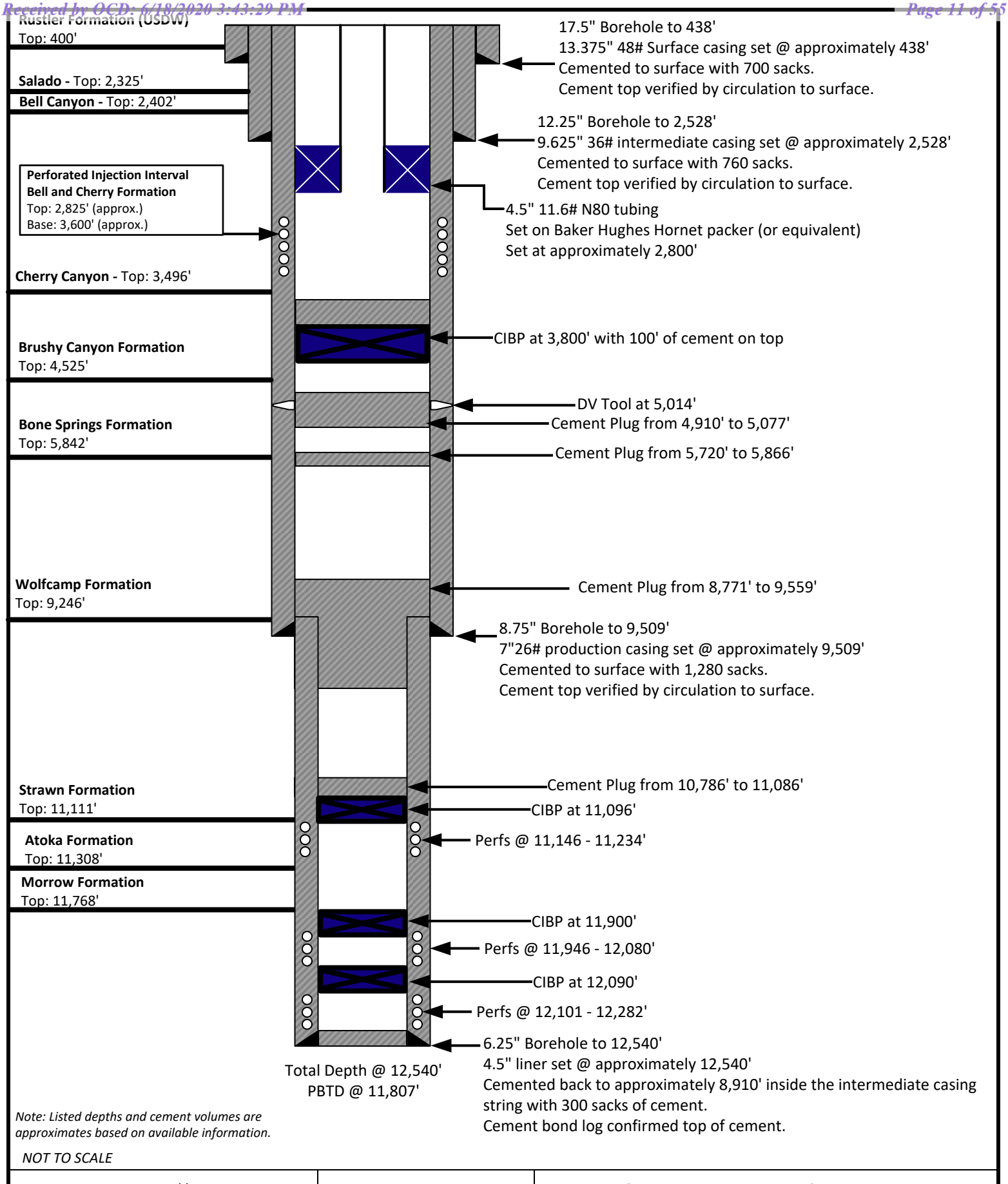
JANUARY 14, 2006
Date Surveyed JR

Signature & Seal of Professional Surveyor

Gary L. Eidson 1/16/06

06.11.0113

Certificate No. GARY EIDSON 12641



Note: Listed depths and cement volumes are approximates based on available information.

NOT TO SCALE

Prepared by: ALL CONSULTING	Drawn by: Joshua Ticknor	**Anthem Water Solutions, LLC** KW Farms SWD #1
	Project Manager: Dan Arthur	
	Date: 3/27/2020	

HORNET Packer

Product Family No. H64682

HORNET EL Packer

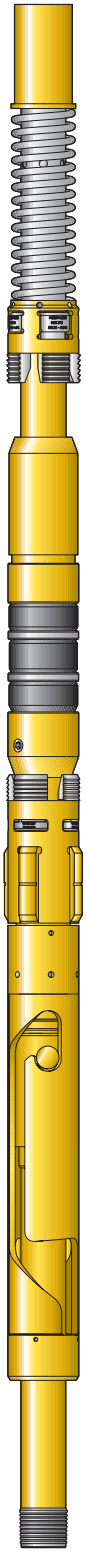
Product Family No. H64683

The mechanically set HORNET™ packer offers ease of operation with quarter-turn right to set and release. Converting it for wireline-setting applications is simple and inexpensive. The HORNET packer provides for landing in compression, tension, or neutral positions. Every component from the jay track, to the internal bypass, to the packing-element system and the upper slip assembly has been developed to ensure the HORNET's setting and releasing reliability.

The HORNET EL packer is run and set on electric line using an E-4™ (Product Family No. H43702) with a slow-set power charge or a J™ setting tool (Product Family No. H41371) and a special wireline adapter kit. An L-10™ type on/off seal nipple is run on top of the packer to connect the tubing to the packer and to house a blanking plug when the packer is used as a temporary bridge plug.

Features and Benefits

- Upper Slip Assembly:
  - Thoroughly tested across API minimum to maximum casing ID tolerances for each specified casing weight, for setting and releasing reliability
  - Slip-wicker configuration providing bidirectional-load support with solid upper cone to support highest tensile loads
  - Staged-release action eliminates high-overpull requirement
  - Minimal set-down weight required to anchor slips
- Internal Bypass Seal:
  - Durable bypass seal design provides sealing after unloading, under differential pressures
  - No O-ring sealing system
- Packing Element System:
  - Fully tested to combined ratings at the API's maximum ID tolerance
  - Patented enhancements to control overboost
  - High-performance, three-piece element system
- Lower Slip and Jay Assembly:
  - Slips and drag blocks tested to maximum API tolerance ID for positive set and ease of release
  - One-quarter-turn right setting and releasing action
  - Packoff of packing elements with applied tension or compression
  - Spacing in jay ensures opening of internal bypass, before slip releasing action begins–important to both ease of release and safety
  - Automatically returns to running position



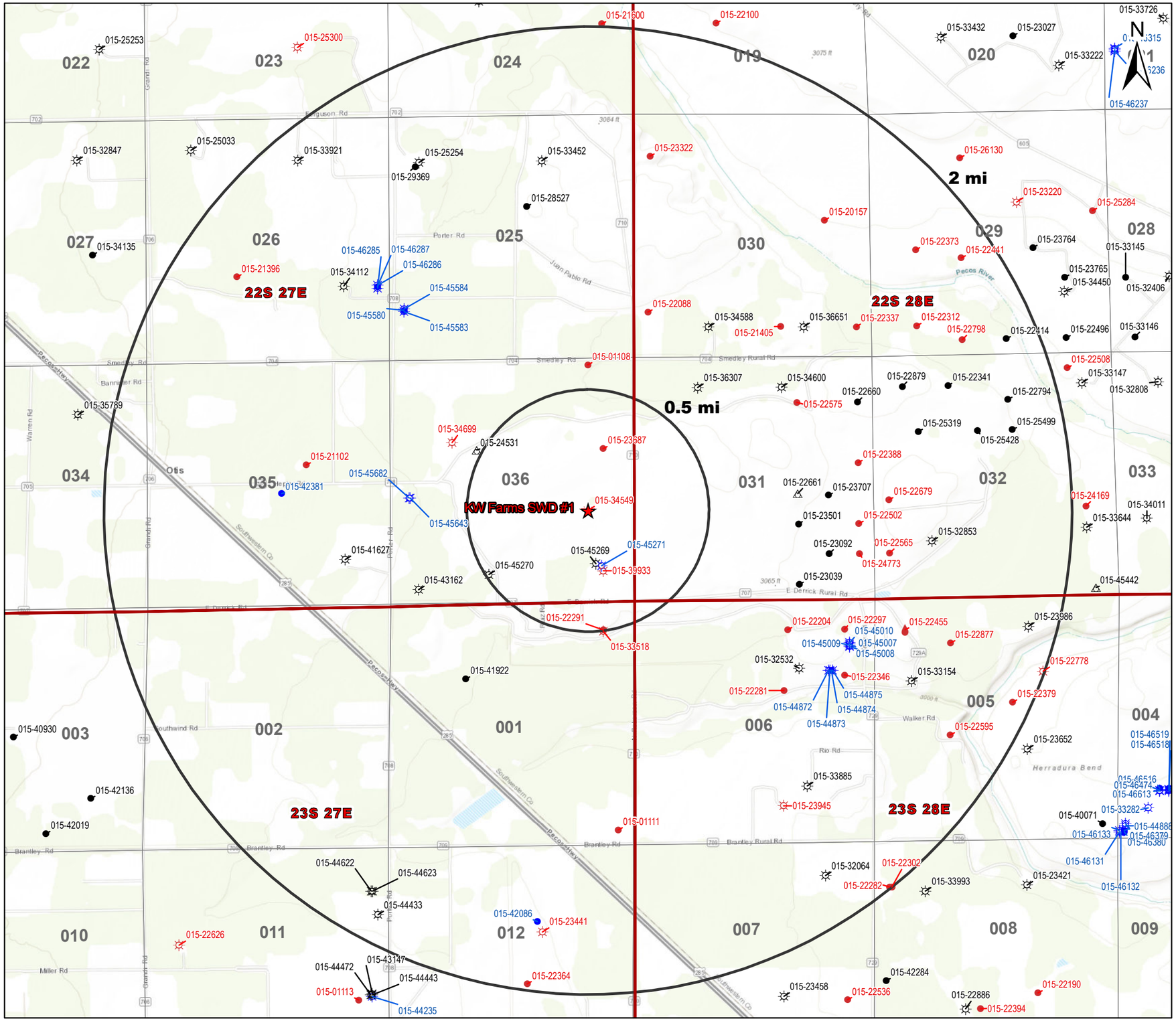
HORNET Packer Product Family No. H64682

HORNET EL Packer Product Family No. H64683

Attachment 2

Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 2-mile Mineral Ownership Map
- 2-mile Surface Ownership Map
- 1/2-mile Well Detail List with Casing Information for Penetrating Wells
- Potash Lease Map



Legend

- Proposed SWD
- Gas, Active
- Gas, New
- Gas, Plugged
- Oil, Active
- Oil, New
- Oil, Plugged
- Salt Water Injection, Active
- Water, Plugged

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Source Info: NMOCD O&G Wells updated 3/11/2020 (http://www.emnrd.state.nm.us/OCD/ocdgis.html)

O&G Wells Area of Review

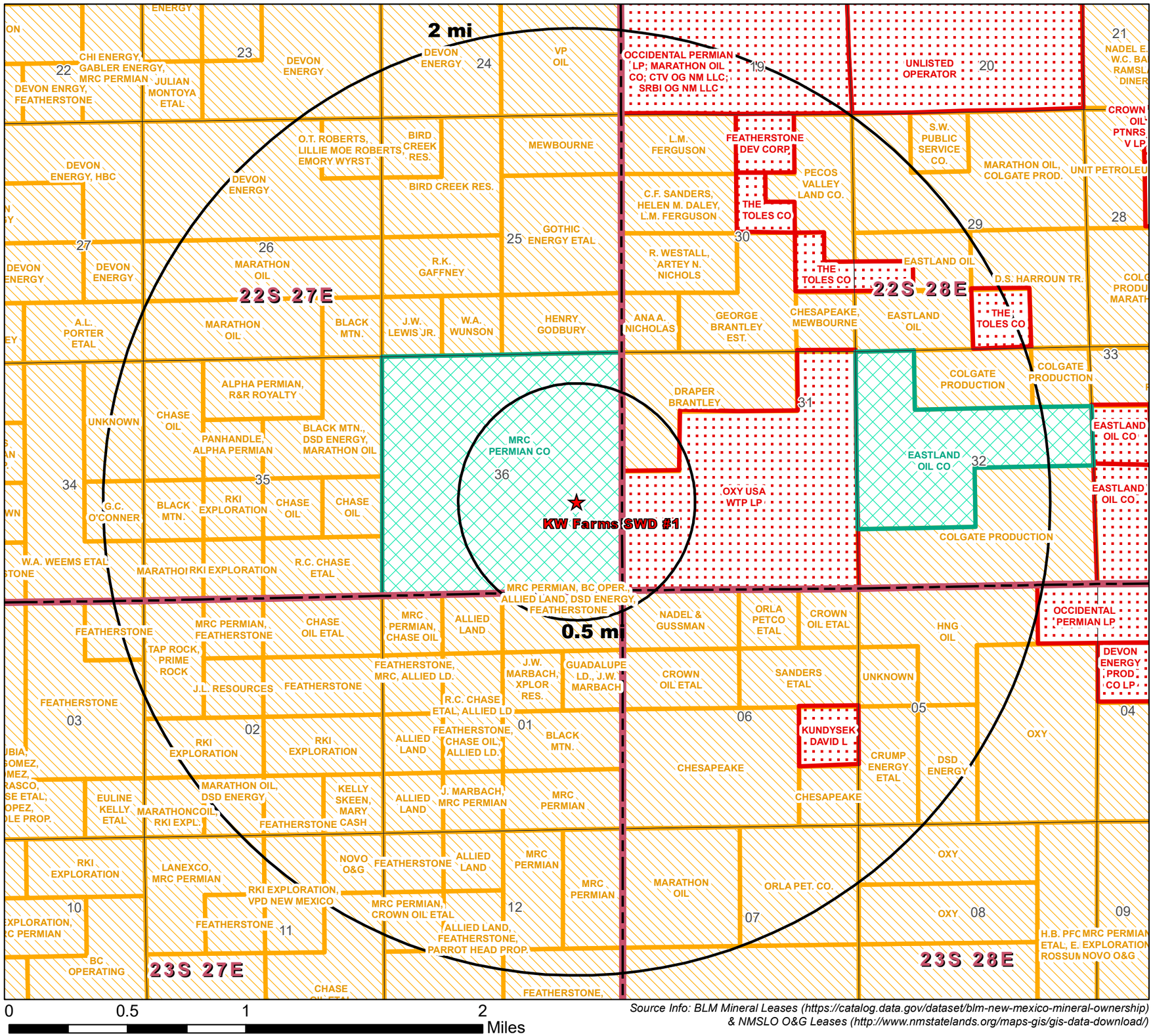
KW Farms SWD #1

Eddy County, New Mexico

Proj Mgr: Dan Arthur	April 01, 2020	Mapped by: Ben Bockelmann

Prepared by:

ALL CONSULTING



Source Info: BLM Mineral Leases (https://catalog.data.gov/dataset/blm-new-mexico-mineral-ownership) & NMSLO O&G Leases (http://www.nmstatelands.org/maps-gis/gis-data-download/)

N

Legend

- Proposed SWD
- NMSLO Mineral Leases
- BLM Mineral Leases
- Private Mineral Leases
- Unleased Minerals - Private Owned

Mineral Lease Area of Review

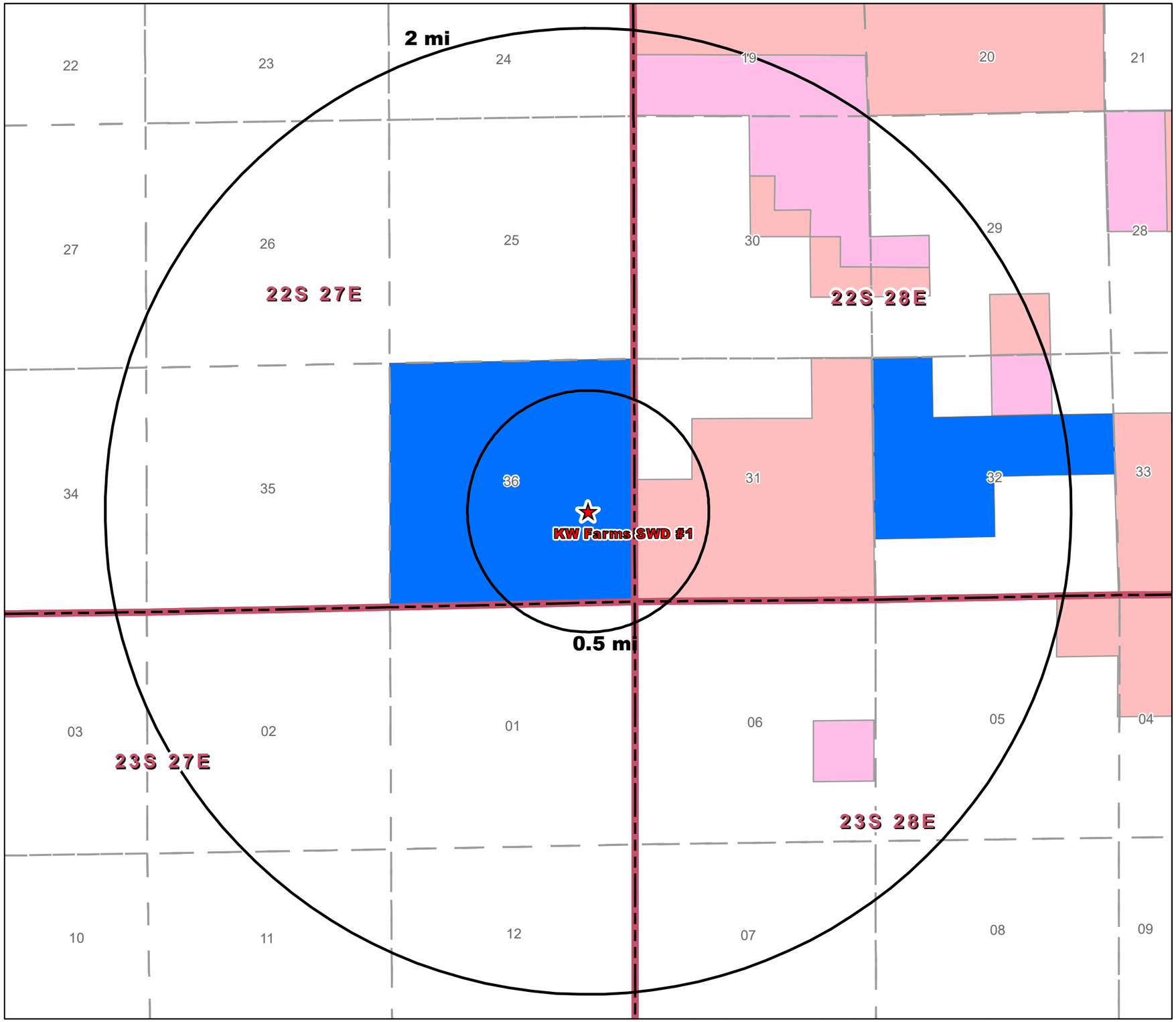
KW Farms SWD #1

Eddy County, New Mexico

Proj Mgr: Dan Arthur	April 03, 2020	Mapped by: Ben Bockelmann

Prepared by:

[redacted]



N

Legend

- Proposed SWD

Mineral Ownership

- All minerals are owned by U.S. (BLM)
- Other minerals are owned by the U.S. (BLM)
- Subsurface minerals (NMSLO)
- Private minerals

Source Info: BLM Mineral Ownership (https://catalog.data.gov/dataset/blm-new-mexico-mineral-ownership) & NMSLO Ownership (http://www.nmstatelands.org/maps-gis/gis-data-download/)

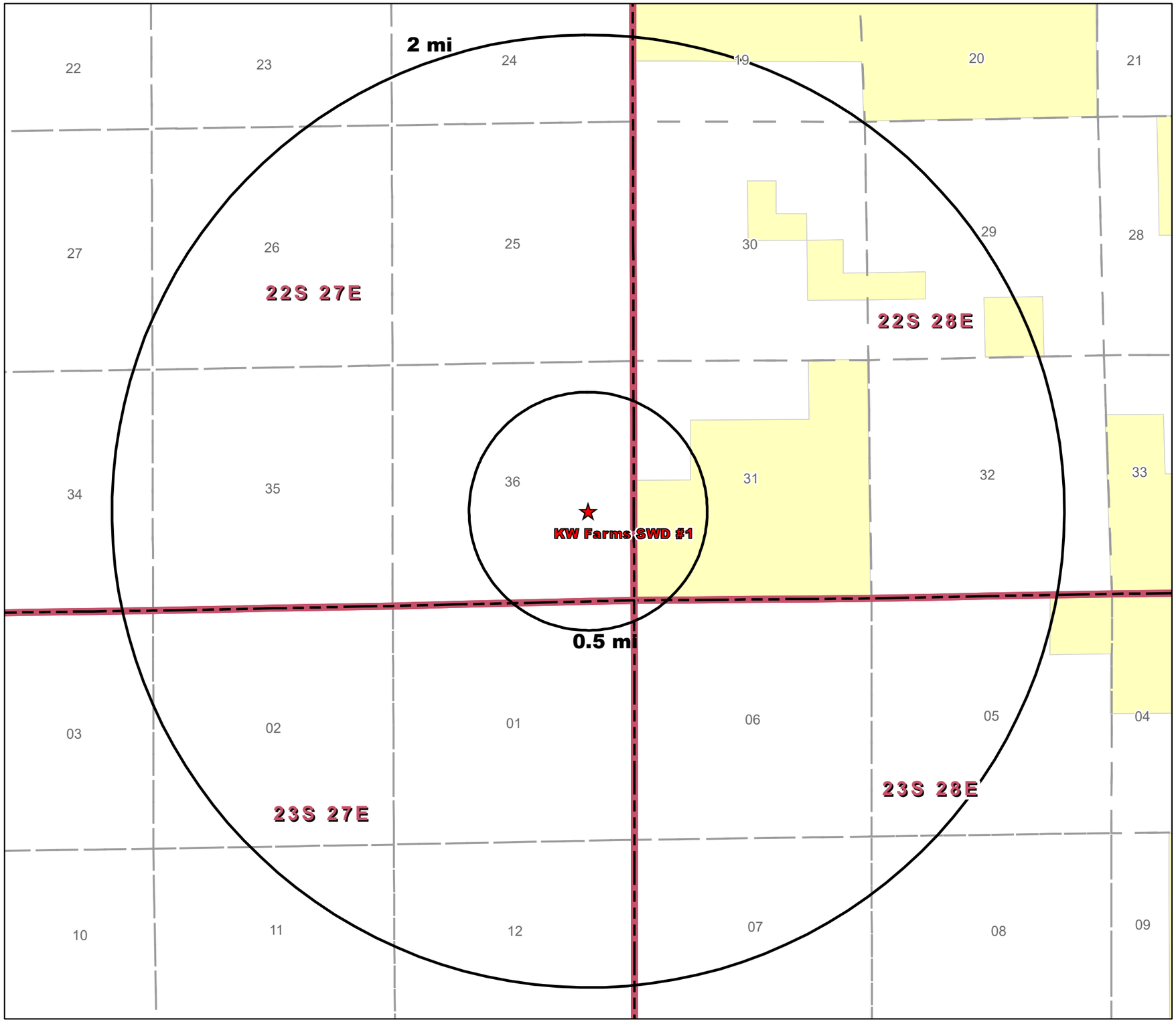
Mineral Ownership
Area of Review

KW Farms SWD #1
Eddy County, New Mexico

Proj Mgr: Dan Arthur	March 24, 2020	Mapped by: Ben Bockelmann

Prepared by:

[redacted]



N

Legend

- Proposed SWD

Surface Ownership

- BLM
- Private

Source Info: BLM Surface Ownership (https://catalog.data.gov/dataset/blm-new-mexico-surface-ownership)

Surface Ownership
Area of Review

KW Farms SWD #1
Eddy County, New Mexico

Proj Mgr:		Mapped by:
Dan Arthur	March 24, 2020	Ben Bockelmann

Prepared by:

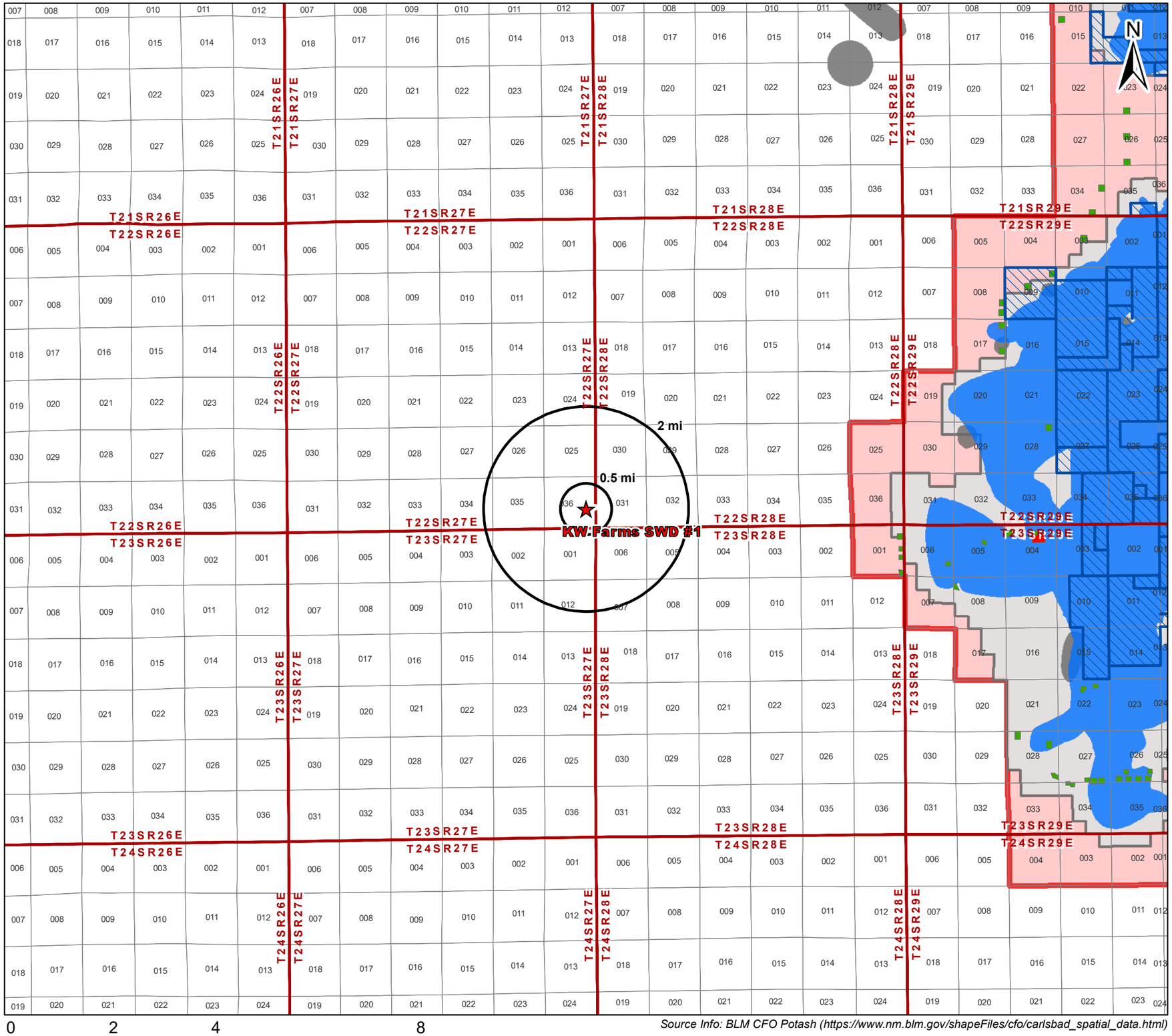
ALL CONSULTING

AOR Tabulation for KW Farms SWD #1 (Bell and Cherry Canyon Injection Interval, 2,825-3,600')							
Well Name	API#	Well Type	Operator	Spud Date	Location (Sec., Tn., Rng.)	Total Vertical Depth (feet)	Penetrate Inj. Zone?
STATE "DR" #001	30-015-23687	Plugged (09/02/1981)	CITIES SERVICE COMPANY	3/29/1981	H-36-22S-27E	2605'	No
LARRY WOLFISH 01 23S 27E RB #224H	30-015-45271	G	MATADOR PRODUCTION COMPANY	Not Drilled	P-36-22S-27E	Proposed (9400)	Yes
LARRY WOLFISH 01 23S 27E RB #206	30-015-45270	G	MATADOR PRODUCTION COMPANY	11/9/2018	N-36-22S-27E	9291	Yes
RIVERSAND STATE COMM #001H	30-015-39933	Plugged	DEVON ENERGY PRODUCTION COMPANY, LP	2/28/2012	P-36-22S-27E	58	No
LARRY WOLFISH 01 23S 27E RB #204	30-015-45269	G	MATADOR PRODUCTION COMPANY	2/15/2019	P-36-22S-27E	9327	Yes
MUNOZ #001 *	30-015-33518	Plugged (03/24/2008)	CHI OPERATING INC	9/4/2004	1-01-23S-27E	12540	Yes
MUNOZ #001	30-015-22291	Plugged (09/22/1977)	ORLA PETCO, INC.	9/13/1977	L1-1-23S-27E	2700'	No
NEW MEXICO STATE "DU" #001 *	30-015-24531	SALT WATER DISPOSAL	BUCKEYE DISPOSAL, LLC	10/14/1983	F-36-22S-27E	5890	Yes

Casing Information for Wells Penetrating the KW Farms SWD #1 Injection Zone												
Well Name	Surface Casing						Intermediate Casing					
	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole size	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole Size
LARRY WOLFISH 01 23S 27E RB #206 30-015-45270	400	13 3/8	Surface	Circulation	525	17 1/2	2340	9 5/8	Surface	Circulation	815	12 1/4
LARRY WOLFISH 01 23S 27E RB #224H 30-015-45271	400	13 3/8	Surface	Circulation	500	17 1/2	2350	9 5/8	Surface	Circulation	700	12 1/4
LARRY WOLFISH 01 23S 27E RB #204 30-015-45269	406	13 3/8	Surface	Circulation	768	17 1/2	2415	9 5/8	Surface	Circulation	819	12 1/4
MUNOZ #001 30-015-33518	313	13 3/8	Surface	Circulation	400	17 1/2	5842 DVT @ 2289	9 5/8	Yes No	DVT circ to G.S Shoe TOC unknown	770 @ DVT 500 @ shoe	12 1/4
NEW MEXICO STATE "DU" #001 30-015-24531	612	13 3/8	Surface	Circulation	800	17 1/2	2411	8 5/8	Surface 900	1" pipe top off Circ. Calculation	500 1300	12 1/4

Casing Information for Wells Penetrating the KW Farms SWD #1 Injection Zone												
Well Name	Intermidiate II Casing						Production Casing					
	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole Size	Set Depth	Casing Size	TOC	TOC Method Determined	Sks of Cement	Hole Size
LARRY WOLFISH 01 23S 27E RB #206 30-015-45270	9500	7 5/8	1498	Calculation	880	8 3/4	G.S-8483 8483-14353	5 1/2 4 1/2	8249	Calculation		6 1/8
LARRY WOLFISH 01 23S 27E RB #224H 30-015-45271	G.S.-9500 9500-10400	7 5/8 7	1300	Calculation	800	8 3/4	G.S-9400 9400-14900	5 1/2 4 1/2	9400	Calculation	520	6 1/8
LARRY WOLFISH 01 23S 27E RB #204 30-015-45269	G.S.-1972 1972-8682 8682-9572	7.625 7.625 7	1300	Calculation	810	8 3/4	G.S.-8504 8504-14481	5 1/2 4 1/2	7548	Calculation	552	6 1/8
MUNOZ #001 30-015-33518	-	-	-	-	-	-	12540	5 1/2	8300	Calculation	925	8 3/4
NEW MEXICO STATE "DU" #001 30-015-24531	5889	5 1/2	114	Calculation	1250	7 7/8	G.S.-8504 8504-14481	5 1/2 4 1/2	7548	Calculation	552	6 1/8

Note: * indicated that the well is outside of the 1/2-mile radius, therefore, the wells operator is not considered an affected party.



Legend

- Proposed SWD
- Potash Leases
- Ore Type - Measured
- Ore Type - Indicated
- KPLA
- SOPA

Drill Islands

Status

- Approved
- Denied

Source Info: BLM CFO Potash (https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html)

Potash Leases
Area of Review

KW Farms SWD #1
Eddy County, New Mexico

Proj Mgr: Dan Arthur	March 25, 2020	Mapped by: Ben Bockelmann

Prepared by:

ALL CONSULTING

Attachment 3

Source Water Analyses

Wolfcamp

BAKER HUGHES

Water Analysis

Date: 23-Aug-11

2708 West County Road, Hobbs NM 88240
Phone (575) 392-5556 Fax (575) 392-7307

Analyzed For Brushy Draw 1 #1

Company	Well Name	County	State
	BD	~~Lea~~ Eddy	New Mexico 1-26S-29E

Sample Source Swab Sample **Sample #** 1

Formation **Depth**

Specific Gravity	1.170	SG @ 60 °F	1.172
pH	6.30	Sulfides	Absent
Temperature (°F)	70	Reducing Agents	

Cations

Sodium (Calc)	in Mg/L	77,962	in PPM	66,520
Calcium	in Mg/L	4,000	in PPM	3,413
Magnesium	in Mg/L	1,200	in PPM	1,024
Soluable Iron (FE2)	in Mg/L	10.0	in PPM	9

Anions

Chlorides	in Mg/L	130,000	in PPM	110,922
Sulfates	in Mg/L	250	in PPM	213
Bicarbonates	in Mg/L	127	in PPM	108

Total Hardness (as CaCO3)	in Mg/L	15,000	in PPM	12,799
Total Dissolved Solids (Calc)	in Mg/L	213,549	in PPM	182,209
Equivalent NaCl Concentration	in Mg/L	182,868	in PPM	156,031

Scaling Tendencies

*Calcium Carbonate Index 507,520

Below 500,000 Remote / 500,000 - 1,000,000 Possible / Above 1,000,000 Probable

*Calcium Sulfate (Gyp) Index 1,000,000

Below 500,000 Remote / 500,000 - 10,000,00 Possible / Above 10,000,000 Probable

*This Calculation is only an approximation and is only valid before treatment of a well or several weeks after treatment.

Remarks RW=.048@70F

Report # 3188

Sec 22, T25S, R28E

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(432) 495-7240

Bone Spring

Water Analysis Report by Baker Petrolite

Company:		Sales RDT:	33514.1
Region:	PERMIAN BASIN	Account Manager:	TONY HERNANDEZ (575) 910-7135
Area:	ARTESIA, NM	Sample #:	534665
Lease/Platform:	PINOCHLE 'BPN' STATE COM	Analysis ID #:	106795
Entity (or well #):	2 H	Analysis Cost:	$90.00
Formation:	UNKNOWN		
Sample Point:	WELLHEAD		

Summary	
Sampling Date:	03/10/11
Analysis Date:	03/18/11
Analyst:	SANDRA GOMEZ
TDS (mg/l or g/m3):	184911.1
Density (g/cm3, tonne/m3):	1.113
Anion/Cation Ratio:	1
Carbon Dioxide:	0 50 PPM
Oxygen:	
Comments:	

Analysis of Sample 534665 @ 75 °F

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	109618.0	3091.92	Sodium:	70275.7	3056.82
Bicarbonate:	2135.0	34.99	Magnesium:	195.0	16.04
Carbonate:	0.0	0.	Calcium:	844.0	42.12
Sulfate:	747.0	15.55	Strontium:	220.0	5.02
Phosphate:			Barium:	0.8	0.01
Borate:			Iron:	6.5	0.23
Silicate:			Potassium:	869.0	22.22
			Aluminum:		
Hydrogen Sulfide:		0 PPM	Chromium:		
pH at time of sampling:		7	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		7	Manganese:	0.100	0.
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4 \cdot 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.08	188.52	-1.20	0.00	-1.18	0.00	-0.11	0.00	0.58	0.29	1.72
100	0	1.10	206.05	-1.29	0.00	-1.20	0.00	-0.15	0.00	0.35	0.29	2.35
120	0	1.12	224.17	-1.36	0.00	-1.19	0.00	-0.17	0.00	0.16	0.00	3.17
140	0	1.13	243.17	-1.42	0.00	-1.18	0.00	-0.18	0.00	0.00	0.00	4.21

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

Attachment 4

Injection Formation Water Analyses

Injection Formation Analysis

Anthem Water Solutions, LLC - Delaware Mountain Group Formation

wellname	API	Latitude	Longitude	Section	Township	Range	Unit	tgns	ftgew	County	State	Company	Field	Formation	Depth	Tds_mgL	Chloride_mgL	Bicarbonate_mgL	Sulfate_mgL
GOMEZ #001	3001522595	32.3335838	-104.1125488	5	23S	28E	K	2310S	1650W	EDDY	NM		HERRADURA BEND	DELAWARE		133,440	80,500	303.00	2,100.00
PARDUE #001	3001501114	32.3143272	-104.1502228	12	23S	27E	M	660S	660W	EDDY	NM		CASS DRAW	DELAWARE		129,765	79,570	101.00	175.00
KIM #001	3001524589	32.297123	-104.0955887	21	23S	28E	C	330N	1650W	EDDY	NM	DAKOTA		DELAWARE		202,807	143,136	38.62	213.57
OLD INDIAN DRAW UNIT #003	3001521504	32.3836327	-104.1248856	19	22S	28E	B	660N	1980E	EDDY	NM		INDIAN DRAW	DELAWARE		127,652	76,200	415.00	2,600.00
OLD INDIAN DRAW UNIT #005	3001521618	32.3946304	-104.1249771	18	22S	28E	G	1980N	1980E	EDDY	NM		INDIAN DRAW	DELAWARE		129,878	77,300	439.00	2,600.00
OLD INDIAN DRAW UNIT #006	3001521619	32.3910103	-104.1290131	18	22S	28E	K	2002S	1721W	EDDY	NM		INDIAN DRAW	DELAWARE		126,911	74,800	525.00	3,300.00
OLD INDIAN DRAW UNIT #008	3001521766	32.3882904	-104.1282043	18	22S	28E	N	1017S	1973W	EDDY	NM		INDIAN DRAW	DELAWARE		123,893	74,100	671.00	2,000.00
OLD INDIAN DRAW UNIT #007	3001521765	32.3937187	-104.1281815	18	22S	28E	F	2323N	1974W	EDDY	NM		INDIAN DRAW	DELAWARE		124,756	74,500	342.00	2,200.00
OLD INDIAN DRAW UNIT #001	3001520918	32.390892	-104.1249695	18	22S	28E	J	1980S	1980E	EDDY	NM		INDIAN DRAW	DELAWARE		128,431	76,200	98.00	3,200.00
OLD INDIAN DRAW UNIT #003	3001521504	32.3836327	-104.1248856	19	22S	28E	B	660N	1980E	EDDY	NM		INDIAN DRAW	DELAWARE		122,782	73,800	120.00	2,100.00
OLD INDIAN DRAW UNIT #011	3001521844	32.3844833	-104.1206665	19	22S	28E	A	330N	668E	EDDY	NM		INDIAN DRAW	DELAWARE		130,991	78,000	586.00	1,800.00
OLD INDIAN DRAW UNIT #016	3001521959	32.4010544	-104.1319809	7	22S	28E	M	330S	794W	EDDY	NM		INDIAN DRAW	DELAWARE		118,293	69,100	134.00	3,800.00
OLD INDIAN DRAW UNIT #016	3001521959	32.4010544	-104.1319809	7	22S	28E	M	330S	794W	EDDY	NM		INDIAN DRAW	DELAWARE		124,945	73,100	139.00	3,900.00
BASS 10 FEDERAL #003	3001524933	32.4028931	-104.0732117	10	22S	28E	O	990S	1980E	EDDY	NM	BASS ENTERPRISES	INDIAN DRAW EAST	DELAWARE		164,679	112,250	271.08	1,106.56
BASS 10 FEDERAL #005	3001525303	32.4056282	-104.0700073	10	22S	28E	I	1980S	990E	EDDY	NM	BASS ENTERPRISES	INDIAN DRAW EAST	DELAWARE		116,788	74,967	394.55	1,622.39
BASS 3 FEDERAL #002	3001527528	32.4199486	-104.0732498	3	22S	28E	J	1880S	2080E	EDDY	NM	BASS ENTERPRISES	INDIAN DRAW EAST	DELAWARE		162,875	109,783	416.56	1,671.73
BASS 3 FEDERAL #004	3001528736	32.4202232	-104.0675583	3	22S	28E	I	1980S	330E	EDDY	NM	BASS ENTERPRISES	INDIAN DRAW EAST	DELAWARE		158,759	107,057	269.62	1,465.23
TRACY #001	3001520204	32.412735	-104.1798248	10	22S	27E	C	660N	1980W	EDDY	NM		ESPERANZA	DELAWARE		158,000	96,200	572.00	1,400.00
TRACY #001	3001520204	32.412735	-104.1798248	10	22S	27E	C	660N	1980W	EDDY	NM		ESPERANZA	DELAWARE		157,000	95,000	574.00	1,400.00
INDIAN FLATS BASS FEDERAL #002	3001521715	32.438549	-104.0594788	35	21S	28E	F	1980N	1980W	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		149,252	99,299	267.18	2,081.59
INDIAN FLATS BASS FEDERAL #003	3001521853	32.4340134	-104.0648575	35	21S	28E	L	1650S	330W	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		146,197	96,177	400.40	1,763.53
INDIAN FLATS BASS FEDERAL #004	3001522229	32.435833	-104.0605698	35	21S	28E	K	2310S	1650W	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		148,805	99,247	335.20	1,728.73
INDIAN FLATS BASS FEDERAL #005	3001522671	32.4303894	-104.0584564	35	21S	28E	N	330S	2310W	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		144,959	95,968	200.20	1,882.77
INDIAN FLATS BASS FEDERAL #006	3001522673	32.4303932	-104.0561905	35	21S	28E	O	330S	2310E	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		163,756	110,195	134.57	1,662.22
INDIAN FLATS BASS FEDERAL #001	3001524968	32.438549	-104.0637589	35	21S	28E	E	1980N	660W	EDDY	NM	BASS ENTERPRISES	INDIAN FLATS	DELAWARE		136,419	89,021	397.84	1,681.59
BIG EDDY FEDERAL #098	3001524707	32.4960899	-104.1280518	7	21S	28E	F	2180N	1980W	EDDY	NM	DAKOTA	FENTON NORTHWEST	DELAWARE		153,408	103,522	718.90	247.74

Attachment 5

Water Well Map and Well Data

0 0.25 0.5 1 Miles

SourceInfo: ttps://gis.ose.state.nm.us/arcgis/rest/services/WatersPod/OSE_PODs/MapServer/0

Legend

★ Proposed SWD

NMOSE PODs

Status

- Active (31)
- Pending (14)
- Change Location of Well (0)
- Capped (0)
- Plugged (0)
- Incomplete (0)
- Unknown (13)

Water Wells Area of Review

KW Farms SWD #1

Eddy County, New Mexico

Proj Mgr: Dan Arthur	March 25, 2020	Mapped by: Ben Bockelmann

Prepared by:

ALL CONSULTING

Water Well Sampling Rationale					
Anthem Water Solutions - KW Farms SWD #1					
Water Wells	**Owner**	**Available Contact Information**	**Use**	**Sampling Required**	**Notes**
C 00171 POD3	John W. Bain	Unavailable	Irrigation	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00958	Jeffery Ballard	P.O. Box: RT. 1 Box 1516, Carlsbad NM	Domestic One Household	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 03331	Brantley Brothers	John Draper Brantley Jr. Phone: 575-706-3169 Address: 510 N. Halagueno, Carlsbad NM 88220	Live Stock Watering	No	Through conversations with the Brantley brothers it was determined that this water well is not currently considered to be active.
C 02840	Brantley Brothers	John Draper Brantley Jr. Phone: 575-706-3169 Address: 510 N. Halagueno, Carlsbad NM 88220	Exploration	No	Through conversations with the Brantley brothers it was determined that this water well is not currently considered to be active.
C 04081 POD1	Brantley Brothers	John Draper Brantley Jr. Phone: 575-706-3169 Address: 510 N. Halagueno, Carlsbad NM 88220	Domestic and Livestock	No	Through conversations with the Brantley brothers it was determined that this water well is not currently considered to be active.
C 03040	Brantley Farms	George Brantley Address: Brantley Farms 1304 W. Riverside, Carlsbad, NM 88220	Domestic and Livestock	No	Through conversations with the Brantley brothers it was determined that this water well is not currently considered to be active.
C 04190 POD1	April Hallman	April Hallman Address: R 693 E. Derrick Rd. Carlsbad, NM 88220 Phone: 903-975-4415	Domestic One Household	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 02511	Daniel Hernandez	Daniel Hernandez Address: P.O. Box 5036 Carlsbad, NM 88221-5036	Domestic One Household	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 01286	K&W Farms	Owner: David Faulk (K&W Farms) 575-361-6317 Well Operator: John Boyde	Live Stock Watering	Yes	Permission to sample obtained. Once sampling is complete, water sampling results will be provided to NM OCD.
C 00770	Juan Lopez	Owners: Juan Lopez Pablo Rodrigues Federal Land Bank of Wichita	Irrigation	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00870	Wesley Nichols	Owners: Wesley Nichols Phone: 575-361-8454 Email: wesleynichols@msn.com	Irrigation	Yes	Permission to sample obtained. Once sampling is complete, water sampling results will be provided to NM OCD.
C 00770 S	Juan Lopez	Owners: Juan Lopez Pablo Rodrigues Federal Land Bank of Wichita	Irrigation	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00496 POD2	John Methola	Owner: Austine Munoz John Methola Address: Route 1. Box 188 Carlsbad, NM	Irrigation	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00496 POD3	John Methola	Owner: Austine Munoz John Methola Address: Route 1. Box 188 Carlsbad, NM	Irrigation	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00496 POD4	Augustine Munoz	Unavailable	Irrigation	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00286	Augustine Munoz	Owner: Austine Munoz John Methola Address: Route 1. Box 188 Carlsbad, NM	Closed File	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 02895	Boe Norton	Work Phone: 505-706-2675 Home phone: 505-236-6444	Expired Domestic and Livestock Watering	No	According to the Abstractors note "No well record on file with the office of the state engineer for this permit." Per letter dated 08-09-2006, this permit is expired. Additionally we are already sampling two water wells within the AOR.
C 03270	Oxy Partners	Contact: Scott Gregory Phone: 505-885-4195	Prospecting or Development of Natural Resources	No	Condition 3 of the water permit states, "Appropriation and use of water under this permits shall not exceed a period of one year from the date of approval". The Application was approved in 2006 and expired in 2007. Additionally, we are already sampling two water wells within the AOR.
C 03216	Judy Parker	Home Phone: 575-236-6529 Work Phone: 575-302-9257	Expired Domestic and Livestock Watering	No	Permit Expired
C 02943	William J. Redfearn	Work Phone: 575-887-0551	Domestic One Household	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 02735	Julius Roberson	Address: P.O. Box 416 Carlsbad, NM 88220	Domestic and Livestock	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00144	Julius Roberson	Unavailable	Irrigation	No	Water usage reported from 2001 - 2009. No water withdrawal has been reported since 2009.
C 00144 POD2	Julius Roberson	Unavailable	Irrigation	No	This water well is not currently considered to be an active well (Pump and Electric removed in 2017).
C 00171 POD2	Julius Roberson	Unavailable	Irrigation	No	This water well is not currently considered to be an active well.
C 00192	Ben Rodriguez	Applicant (2003 most recent application): Lino M Rodrigues	Irrigation	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00209	Senon Roscon	Unavailable	Domestic One Household	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00921	Louis Sarabia	1404 W. Stevens, Carlsbad NM	Domestic One Household	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00093 S	Jack H. White Sr.	Unavailable	Irrigation	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00093 AS	Jack H. White Sr.	Unavailable	Irrigation	No	Water samples are already being obtained from two (2) water wells within the AOR.
C 00093 A-S	Jack H. White Sr.	Unavailable	Irrigation	No	Water samples are already being obtained from two (2) water wells within the AOR.
Notes:					

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: FAULK C-01286 Project Number: 32.347064-104.145573 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:44

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WATER SAMPLE	H001204-01	Water	28-Apr-20 00:00	28-Apr-20 16:45

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: FAULK C-01286 Project Number: 32.347064-104.145573 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:44

WATER SAMPLE
H001204-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Alkalinity, Bicarbonate	**249**		5.00	mg/L	1	0022609	AC	29-Apr-20	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	0022609	AC	29-Apr-20	310.1	
Chloride*	**2030**		4.00	mg/L	1	0041507	AC	29-Apr-20	4500-Cl-B	
Conductivity*	**6840**		1.00	uS/cm	1	0042904	GM	29-Apr-20	120.1	
pH*	**6.94**		0.100	pH Units	1	0042904	GM	29-Apr-20	150.1	
Resistivity	**1.46**			Ohms/m	1	0042904	GM	29-Apr-20	120.1	
Sulfate*	**2210**		500	mg/L	50	0043004	AC	30-Apr-20	375.4	QM-07
TDS*	**6460**		5.00	mg/L	1	0041411	GM	01-May-20	160.1	
Alkalinity, Total*	**204**		4.00	mg/L	1	0022609	AC	29-Apr-20	310.1	
TSS*	**10.0**		2.00	mg/L	1	0042905	GM	01-May-20	160.2	
Green Analytical Laboratories										
Total Recoverable Metals by ICP (E200.7)										
Barium*	<0.500		0.500	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Calcium*	**664**		1.00	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Hardness as CaCO3	**2850**		6.62	mg/L	10	[CALC]	AES	05-May-20	2340 B	
Iron*	**6.17**		0.500	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Magnesium*	**289**		1.00	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Potassium*	**6.77**	1.52	10.0	mg/L	10	B200724	AES	05-May-20	EPA200.7	J
Sodium*	**856**		10.0	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Strontium*	**9.90**		1.00	mg/L	10	B200724	AES	05-May-20	EPA200.7	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: FAULK C-01286 Project Number: 32.347064-104.145573 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:44

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0022609 - General Prep - Wet Chem										
Blank (0022609-BLK1)				Prepared & Analyzed: 26-Feb-20						
Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	5.00	5.00	mg/L							
Alkalinity, Total	4.00	4.00	mg/L							
LCS (0022609-BS1)				Prepared & Analyzed: 26-Feb-20						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	292	12.5	mg/L				80-120			
Alkalinity, Total	240	10.0	mg/L	250		96.0	80-120			
LCS Dup (0022609-BSD1)				Prepared & Analyzed: 26-Feb-20						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	280	12.5	mg/L				80-120	4.37	20	
Alkalinity, Total	230	10.0	mg/L	250		92.0	80-120	4.26	20	
Batch 0041411 - Filtration										
Blank (0041411-BLK1)				Prepared: 14-Apr-20 Analyzed: 17-Apr-20						
TDS	ND	5.00	mg/L							
LCS (0041411-BS1)				Prepared: 14-Apr-20 Analyzed: 17-Apr-20						
TDS	531		mg/L	500		106	80-120			
Duplicate (0041411-DUP1)	**Source: H001076-01**			Prepared: 14-Apr-20 Analyzed: 17-Apr-20						
TDS	59.0	5.00	mg/L		49.0			18.5	20	
Batch 0041507 - General Prep - Wet Chem										
Blank (0041507-BLK1)				Prepared & Analyzed: 15-Apr-20						
Chloride	ND	4.00	mg/L							

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: FAULK C-01286 Project Number: 32.347064-104.145573 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:44

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0041507 - General Prep - Wet Chem										
LCS (0041507-BS1)				Prepared & Analyzed: 15-Apr-20						
Chloride	104	4.00	mg/L	100		104	80-120			
LCS Dup (0041507-BSD1)				Prepared & Analyzed: 15-Apr-20						
Chloride	104	4.00	mg/L	100		104	80-120	0.00	20	
Batch 0042904 - General Prep - Wet Chem										
LCS (0042904-BS1)				Prepared & Analyzed: 29-Apr-20						
Conductivity	518		uS/cm	500		104	80-120			
pH	7.11		pH Units	7.00		102	90-110			
Duplicate (0042904-DUP1)		**Source: H001204-01**		Prepared & Analyzed: 29-Apr-20						
pH	6.95	0.100	pH Units		6.94			0.144	20	
Conductivity	6960	1.00	uS/cm		6840			1.74	20	
Resistivity	1.44		Ohms/m		1.46			1.74	20	
Batch 0042905 - Filtration										
Blank (0042905-BLK1)				Prepared: 29-Apr-20 Analyzed: 01-May-20						
TSS	ND	2.00	mg/L							
Duplicate (0042905-DUP1)		**Source: H001204-01**		Prepared: 29-Apr-20 Analyzed: 01-May-20						
TSS	15.0	2.00	mg/L		10.0			40.0	52.7	
Batch 0043004 - General Prep - Wet Chem										
Blank (0043004-BLK1)				Prepared & Analyzed: 30-Apr-20						
Sulfate	ND	10.0	mg/L							

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Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: FAULK C-01286 Project Number: 32.347064-104.145573 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:44

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0043004 - General Prep - Wet Chem										
LCS (0043004-BS1)				Prepared & Analyzed: 30-Apr-20						
Sulfate	17.7	10.0	mg/L	20.0		88.4	80-120			
LCS Dup (0043004-BSD1)				Prepared & Analyzed: 30-Apr-20						
Sulfate	20.8	10.0	mg/L	20.0		104	80-120	16.3	20	

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Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: FAULK C-01286 Project Number: 32.347064-104.145573 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:44

Total Recoverable Metals by ICP (E200.7) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200724 - Total Rec. 200.7/200.8/200.2										
Blank (B200724-BLK1)				Prepared: 01-May-20 Analyzed: 05-May-20						
Magnesium	ND	0.100	mg/L							
Barium	ND	0.050	mg/L							
Strontium	ND	0.100	mg/L							
Calcium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							
Iron	ND	0.050	mg/L							
Potassium	0.174	1.00	mg/L							J
LCS (B200724-BS1)				Prepared: 01-May-20 Analyzed: 05-May-20						
Strontium	4.12	0.100	mg/L	4.00		103	85-115			
Sodium	3.67	1.00	mg/L	3.24		113	85-115			
Potassium	8.51	1.00	mg/L	8.00		106	85-115			
Magnesium	20.4	0.100	mg/L	20.0		102	85-115			
Iron	3.85	0.050	mg/L	4.00		96.2	85-115			
Calcium	3.98	0.100	mg/L	4.00		99.6	85-115			
Barium	1.94	0.050	mg/L	2.00		97.1	85-115			
LCS Dup (B200724-BSD1)				Prepared: 01-May-20 Analyzed: 05-May-20						
Magnesium	20.3	0.100	mg/L	20.0		101	85-115	0.669	20	
Strontium	4.09	0.100	mg/L	4.00		102	85-115	0.553	20	
Potassium	8.49	1.00	mg/L	8.00		106	85-115	0.262	20	
Calcium	3.95	0.100	mg/L	4.00		98.8	85-115	0.843	20	
Sodium	3.52	1.00	mg/L	3.24		109	85-115	4.09	20	
Barium	1.90	0.050	mg/L	2.00		94.8	85-115	2.32	20	
Iron	3.79	0.050	mg/L	4.00		94.9	85-115	1.35	20	

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Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: NICHOLS - C00870 Project Number: 32.349771-104.150957 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:53

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WATER SAMPLE	H001205-01	Water	28-Apr-20 00:00	28-Apr-20 16:45

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Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: NICHOLS - C00870 Project Number: 32.349771-104.150957 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:53

WATER SAMPLE
H001205-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Alkalinity, Bicarbonate	**210**		5.00	mg/L	1	0022609	AC	29-Apr-20	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	0022609	AC	29-Apr-20	310.1	
Chloride*	**296**		4.00	mg/L	1	0041507	AC	29-Apr-20	4500-Cl-B	
Conductivity*	**1940**		1.00	uS/cm	1	0042904	GM	29-Apr-20	120.1	
pH*	**7.24**		0.100	pH Units	1	0042904	GM	29-Apr-20	150.1	
Resistivity	**5.17**			Ohms/m	1	0042904	GM	29-Apr-20	120.1	
Sulfate*	**672**		125	mg/L	12.5	0043004	AC	30-Apr-20	375.4	
TDS*	**1620**		5.00	mg/L	1	0041411	GM	04-May-20	160.1	
Alkalinity, Total*	**172**		4.00	mg/L	1	0022609	AC	29-Apr-20	310.1	
TSS*	<2.00		2.00	mg/L	1	0042905	GM	01-May-20	160.2	
Green Analytical Laboratories										
Total Recoverable Metals by ICP (E200.7)										
Barium*	<0.500		0.500	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Calcium*	**294**		1.00	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Hardness as CaCO3	**1070**		6.62	mg/L	10	[CALC]	AES	05-May-20	2340 B	
Iron*	<0.500		0.500	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Magnesium*	**80.6**		1.00	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Potassium*	**3.76**	1.52	10.0	mg/L	10	B200724	AES	05-May-20	EPA200.7	J
Sodium*	**109**		10.0	mg/L	10	B200724	AES	05-May-20	EPA200.7	
Strontium*	**3.54**		1.00	mg/L	10	B200724	AES	05-May-20	EPA200.7	

Cardinal Laboratories *=Accredited Analyte

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CARDINAL Laboratories

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Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: NICHOLS - C00870 Project Number: 32.349771-104.150957 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:53

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0022609 - General Prep - Wet Chem										
Blank (0022609-BLK1)				Prepared & Analyzed: 26-Feb-20						
Alkalinity, Carbonate	ND	1.00	mg/L							
Alkalinity, Bicarbonate	5.00	5.00	mg/L							
Alkalinity, Total	4.00	4.00	mg/L							
LCS (0022609-BS1)				Prepared & Analyzed: 26-Feb-20						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120			
Alkalinity, Bicarbonate	292	12.5	mg/L				80-120			
Alkalinity, Total	240	10.0	mg/L	250		96.0	80-120			
LCS Dup (0022609-BSD1)				Prepared & Analyzed: 26-Feb-20						
Alkalinity, Carbonate	ND	2.50	mg/L				80-120		20	
Alkalinity, Bicarbonate	280	12.5	mg/L				80-120	4.37	20	
Alkalinity, Total	230	10.0	mg/L	250		92.0	80-120	4.26	20	
Batch 0041411 - Filtration										
Blank (0041411-BLK1)				Prepared: 14-Apr-20 Analyzed: 17-Apr-20						
TDS	ND	5.00	mg/L							
LCS (0041411-BS1)				Prepared: 14-Apr-20 Analyzed: 17-Apr-20						
TDS	531		mg/L	500		106	80-120			
Duplicate (0041411-DUP1)	**Source: H001076-01**			Prepared: 14-Apr-20 Analyzed: 17-Apr-20						
TDS	59.0	5.00	mg/L		49.0			18.5	20	
Batch 0041507 - General Prep - Wet Chem										
Blank (0041507-BLK1)				Prepared & Analyzed: 15-Apr-20						
Chloride	ND	4.00	mg/L							

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Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: NICHOLS - C00870 Project Number: 32.349771-104.150957 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:53

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0041507 - General Prep - Wet Chem										
LCS (0041507-BS1)				Prepared & Analyzed: 15-Apr-20						
Chloride	104	4.00	mg/L	100		104	80-120			
LCS Dup (0041507-BSD1)				Prepared & Analyzed: 15-Apr-20						
Chloride	104	4.00	mg/L	100		104	80-120	0.00	20	
Batch 0042904 - General Prep - Wet Chem										
LCS (0042904-BS1)				Prepared & Analyzed: 29-Apr-20						
Conductivity	518		uS/cm	500		104	80-120			
pH	7.11		pH Units	7.00		102	90-110			
Duplicate (0042904-DUP1)		**Source: H001204-01**		Prepared & Analyzed: 29-Apr-20						
Conductivity	6960	1.00	uS/cm		6840			1.74	20	
pH	6.95	0.100	pH Units		6.94			0.144	20	
Resistivity	1.44		Ohms/m		1.46			1.74	20	
Batch 0042905 - Filtration										
Blank (0042905-BLK1)				Prepared: 29-Apr-20 Analyzed: 01-May-20						
TSS	ND	2.00	mg/L							
Duplicate (0042905-DUP1)		**Source: H001204-01**		Prepared: 29-Apr-20 Analyzed: 01-May-20						
TSS	15.0	2.00	mg/L		10.0			40.0	52.7	
Batch 0043004 - General Prep - Wet Chem										
Blank (0043004-BLK1)				Prepared & Analyzed: 30-Apr-20						
Sulfate	ND	10.0	mg/L							

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ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: NICHOLS - C00870 Project Number: 32.349771-104.150957 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:53

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0043004 - General Prep - Wet Chem										
LCS (0043004-BS1)				Prepared & Analyzed: 30-Apr-20						
Sulfate	17.7	10.0	mg/L	20.0		88.4	80-120			
LCS Dup (0043004-BSD1)				Prepared & Analyzed: 30-Apr-20						
Sulfate	20.8	10.0	mg/L	20.0		104	80-120	16.3	20	

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Analytical Results For:

ALL CONSULTING, LLC 1718 S. CHEYENNE AVE. TULSA OK, 74119	Project: NICHOLS - C00870 Project Number: 32.349771-104.150957 Project Manager: OLIVER SEEKINS Fax To: NA	Reported: 07-May-20 13:53

Total Recoverable Metals by ICP (E200.7) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B200724 - Total Rec. 200.7/200.8/200.2										
Blank (B200724-BLK1)				Prepared: 01-May-20 Analyzed: 05-May-20						
Magnesium	ND	0.100	mg/L							
Barium	ND	0.050	mg/L							
Strontium	ND	0.100	mg/L							
Calcium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							
Iron	ND	0.050	mg/L							
Potassium	0.174	1.00	mg/L							J
LCS (B200724-BS1)				Prepared: 01-May-20 Analyzed: 05-May-20						
Strontium	4.12	0.100	mg/L	4.00		103	85-115			
Sodium	3.67	1.00	mg/L	3.24		113	85-115			
Potassium	8.51	1.00	mg/L	8.00		106	85-115			
Magnesium	20.4	0.100	mg/L	20.0		102	85-115			
Iron	3.85	0.050	mg/L	4.00		96.2	85-115			
Calcium	3.98	0.100	mg/L	4.00		99.6	85-115			
Barium	1.94	0.050	mg/L	2.00		97.1	85-115			
LCS Dup (B200724-BSD1)				Prepared: 01-May-20 Analyzed: 05-May-20						
Magnesium	20.3	0.100	mg/L	20.0		101	85-115	0.669	20	
Strontium	4.09	0.100	mg/L	4.00		102	85-115	0.553	20	
Potassium	8.49	1.00	mg/L	8.00		106	85-115	0.262	20	
Calcium	3.95	0.100	mg/L	4.00		98.8	85-115	0.843	20	
Sodium	3.52	1.00	mg/L	3.24		109	85-115	4.09	20	
Barium	1.90	0.050	mg/L	2.00		94.8	85-115	2.32	20	
Iron	3.79	0.050	mg/L	4.00		94.9	85-115	1.35	20	

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Celey D. Keene, Lab Director/Quality Manager

Attachment 6

Proposed Re-Open & Re-Completion Plan

Anthem Water Solutions, LLC

KW FARMS SWD # 1
API No. 30-015-34549
1,980' FSL & 990' FEL
Section 36, Twp. 22S, Range 27E
Eddy County, New Mexico

Proposed Re-Open and Re-Complete SWD Plan

1. **Geologic Information:** Permian geologic formations

The Middle Permian Bell Canyon and upper Cherry Canyon formations consist of interbedded sandstones with interbedded siltstones and shales. Several thick sections of porous and permeable intervals are present within these formations in the area. Geologic information and depths of formation tops were obtained from geophysical logs taken during the drilling and completion of the KW Farms SWD #1 (formerly Oxy Pogo State #1). The estimated top of the Rustler Formation is at approximately 400 feet plus 25 feet equals 425 feet and the bottom of the surface casing was set at 438 feet and cemented to the surface to protect the deepest underground sources of drinking water (USDWs). The base of the Salado Formation was at 2,325 feet and the intermediate casing string was set through the base of the Salado Formation and cemented to the surface.

Previous Formation Top or Base Depths From Geophysical Log and Well Completion:

Estimated Top of Rustler	400'
Base of the Salado	2,325'
Bell Canyon	2,402'
Cherry Canyon	3,496'
Brushy Canyon	4,525'
Bone Spring	5,842'
Wolfcamp	9,246'
Strawn	11,111'
Atoka	11,308'
Morrow	11,768'

Proposed Injection Interval – Bell Canyon – upper Cherry Canyon formations from 2,825 to 3,600 feet.

2. **Proposed Re-Open and Re-Completion SWD Plan:**

   a. Notify Oil Conservation Division and the Hobbs Regional Office of the move in to drill out and re-complete and convert well to saltwater disposal.
   b. Excavate around plugged well and weld on new casing head and install wellhead and tree.
   c. Set up steel pits or frac tanks within secondary containment, rig mats, and prepare to drill out cement plugs.
   d. Mobilize service rig and rig up associated drill out equipment, workstring

and 6-1/2” drill bit onsite. Install BOP and perform BOP test. Set up H_2S wind direction indicators and monitors; brief all personnel on Emergency Evacuation Routes and ALL Consulting Site Health and Safety Plan.

e. Everyone onsite will have stop work authority.

Perform Job Safety Analysis (JSA) meetings before each shift change and prior to any subcontractor performing any task on the location. All equipment should be inspected daily and repaired or replaced as required.

Commence drill out operations and drill out surface cemnt plug with 6-1/2” bit.

Continue down hole with workstring and drill bit and drill out 2nd cement plug from 322 to 504 feet.

Continue down the wellbore with workstring and drill bit and drill out third cement plug from 2,420 to 2,586 feet.

Continue down the wellbore with workstring and drill bit and drill out fourth cement plug from 4,910 to 5,077 feet.

Continue down wellbore with workstring and tag cement plug at 5,720 feet.

Withdraw workstring from well. Pressure test bottom cement plug to 600 psig for 15 minutes with no more than a 5% pressure decline.

Bring in wireline unit and run into well with cast iron bridge plug (CIBP) and set CIBP at a depth of approximately 3,800 feet. Run in with dump bailer and emplace enough cement on top of the CIBP to plug back to a depth of 3,700 feet.

f. Withdrawal bailer and shut down to allow cement to cure for at least 24 hours to reach sufficient compressive strength.
g. Pressure test cement plug to 600 psig for 15 minutes with no more that a 5% decline.
h. If plug is holding, then rig up wireline unit to run into the well with cased hole gamma ray-neutron-collar locator log to correlate with original open hole log.
i. After correlating the logs, select perforation intervals to shoot 4 shots per foot.
j. Perforate all intervals selected on the logs.
k. A sundry notice will document such events as a C-105 well completion report filed within 60 days.
l. Proper secondary containment needs to be in place. Spills need to be cleaned up immediately. Repair or otherwise correct the situation within 48 hours before resuming operations. Notify Oil Conservation Division (OCD) within 24 hours. Remediation started as soon as possible if required. Operator shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.
m. Sundry notices need to be completed and filed as required by OCD.

3. **Existing Casing Program:** Casing designed as follows:

STRING	HOLE SZ	DEPTH	CSG SZ	COND	WT/GRD	CLLPS/BR	TNSN
						(Minimum Safety Factors)	
Surface	17.5”	0-438’	13.375	New	48# H40	1.125/1.1	1.8
Interm.	12.25”	0-2,528’	9.625”	New	36# J55	1.125/1.1	1.8
Production	8.75”	0-9,509’	7.0”	New	26# HCP110	1.125/1.1	1.8
InjTubing	NA	NA	NA	NA	NA	NA	NA

4. **Prior Cementing Program:**

Surface Casing: Cemented with approximately 700 sacks of cement and circulated

to the surface.

Intermediate Casing: Cemented with approximately 760 sacks of cement and circulated to the surface.

Production Casing: Cement with approximately 1,280 sacks of cement and circulated back to surface inside the 9-5/8" intermediate casing string.

5. **Pressure Control:** All Blowout Preventers (BOP) and related equipment will comply with well control requirements as described OCD Rules and Regulations and API RP 53, Section 17. The BOP will be either a Hydril, Cameron or equivalent. Minimum working pressure of the BOP and related equipment required for the operation shall be 500 psi. The maximum working pressure is anticipated at 3,000 psig and the test pressure will be 3,000 psig. The OCD Hobbs district office shall be notified a minimum of 4 hours in advance for a representative to witness all BOP pressure tests. The test shall be performed by an independent service company utilizing a test plug (no cup of J-packer). The results of the test shall be recorded on a calibrated test chart submitted to the OCD district office. BOP testing shall be conducted at:
   a. Installation;
   b. After equipment or configuration changes;
   c. At 30 days from any previous test, and;
   d. Any time operations warrant, such as well conditions.

A diagram showing the representative BOP setup is included as Attachment 1.

6. **H_2S Safety:** This well and related facilities are not expected to have H_2S releases. However, there may be H_2S in the area. There are no private residences or public facilities in the area but a contingency plan has been developed. Anthem Water Solutions, LLC will have a company representative available to personnel throughout all operations. If H_2S levels greater than 10ppm are detected or suspected, the H_2S Contingency Plan will be implemented at the appropriate level.

H_2S Safety – There is a low risk of H_2S in this area. The operator will comply with the provisions of New Mexico Administrative Code (NMAC) 19.15.11.

a. Monitoring – all personnel will wear monitoring devices.
b. Warning Sign – a highly visible H_2S warning sign will be placed for obvious viewing at the vehicular entrance point onto location.
c. Wind Detection – two (2) wind direction socks will be placed on location.
d. Communications – will be via cellular phones and/or radios located available to the rig hands, and located on the rig floor and in the safety trailer when applicable.
e. Alarms – will be located at the rig floor
f. Metallurgy – all tubulars, pressure control equipment, flowlines, valves,

manifolds and related equipment will be rated for H_2S service if required.

The Anthem Water Solutions, LLC H_2S Contingency Plan will be implemented if levels greater than 10ppm H_2S are detected.

7. **Potential Hazards:** H2S is a potential hazard. No abnormal pressure or temperatures are anticipated, but operations will be prepared in the event that those conditions occur.

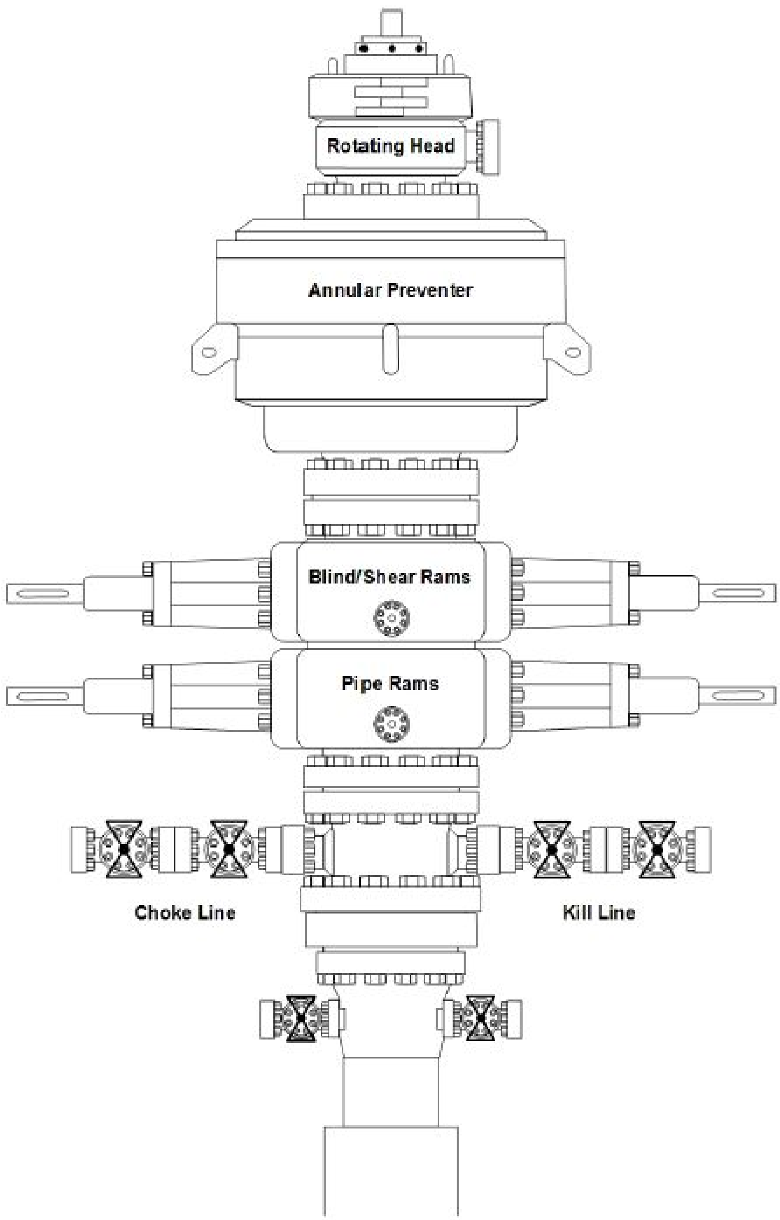
All onsite personnel will be familiar with the safe operation of the equipment being used. The maximum anticipated bottom-hole pressure is 2500 psig and the maximum anticipated bottom-hole temperature is 210°F.

8. **Waste Disposal Management:** All fluids, and other solid wastes associated with operations will be transported to a solid waste facility and commercial Class IID injection operation that has been approved and permitted by the Environmental Bureau of the OCD.

12. **Anticipated Commencement Date:** Upon approval of the permit to convert to saltwater disposal, operations would begin within 30 days based on rig availability..

13. **Completion for Salt Water Disposal:** Subsequent to SWD permit issuance from OCD and prior to commencing any work, a Notice of Intent (NOI) sundry will be submitted to complete the well for SWD and will detail the completion workover including all work otherwise described above, any change to the procedure noted herein and to perform mechanical integrity pressure testing per OCD test procedures (including appropriate OCD notification).The tubing and packer will be set at a depth of approximately 2,800 feet and the casing/tubing annulus will be filled with freshwater and corrosion inhibitor and pressure tested to the required test pressure using the standard annulus pressure test. Anticipated daily maximum volume is 10,000 barrels of water per day (bpd) and average of 8,000 bpd at a maximum surface injection pressure of 565 psig (0.2 psi/ft to the top of the injection interval).

Attachment 1 – Representative BOP Setup



Submit 3 Copies To Appropriate District Office
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1625 N. French Dr., Hobbs, NM 88240
District II
1301 W Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd , Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
May 27, 2004

WELL API NO. 30-015-34549
5. Indicate Type of Lease STATE [X] FEE [ ]
6. State Oil & Gas Lease No. VO-6154-1

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: OXY Pogo State
8. Well Number 1
1. Type of Well: Oil Well [ ] Gas Well [X] Other
2. Name of Operator OXY USA WTP Limited Partnership
SEP 05 2007
OCD-ARTESIA
9. OGRID Number 192463
3. Address of Operator P.O. Box 50250 Midland, TX 79710-0250
10. Pool name or Wildcat Undsg. Otis Morrow
4. Well Location
Unit Letter I : 1980 feet from the south line and 990 feet from the east line
Section 36 Township 22S Range 27E NMPM County Eddy
11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 3070'

Pit or Below-grade Tank Application [ ] or Closure [ ]
Pit type _____ Depth to Groundwater _____ Distance from nearest fresh water well _____ Distance from nearest surface water _____
Pit Liner Thickness: _____ mil Below-Grade Tank: Volume _____ bbls; Construction Material _____

12. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	[ ]	PLUG AND ABANDON	[ ]	REMEDIAL WORK	[ ]	ALTERING CASING	[ ]
TEMPORARILY ABANDON	[ ]	CHANGE PLANS	[ ]	COMMENCE DRILLING OPNS.	[ ]	PLUG AND ABANDONMENT	[X]
PULL OR ALTER CASING	[ ]	MULTIPLE COMPLETION	[ ]	CASING TEST AND CEMENT JOB	[ ]		
OTHER:	[ ]			OTHER:			[ ]

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

See Attachment
Back

Plugging of the well bore. Liability under bond is retained until surface restoration, environmental remediation and final inspection is completed.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines [ ], a general permit [ ] or an (attached) alternative OCD-approved plan [ ]

SIGNATURE _____ TITLE Sr. Regulatory Analyst DATE 8/31/07
E-mail address: david_stewart@oxy.com
Type or print name David Stewart Telephone No. 432-685-5717

For State Use Only
APPROVED BY _____ TITLE Compliance Officer DATE 9/5/07
Conditions of Approval, if any:

OXY Pogo State #1

08/28/07
Contacted NMOCD, Phil Hawkins. Set steel pit and rig mat. MIRU Triple N rig #22 and plugging equipment. ND tree & wellhead, NU BOP. POOH w/ 268 jts production tubing. RIH w/ two 4' perf subs and 268 jts 2⅜" TN workstring. SDFN.

08/29/07
Notified NMOCD, Phil Hawkins. Continued in hole w/ tubing, tagged cmt @ 11,086'. RU cementer, circulated hole w/ 200 bbls mud and pumped 25 sx H cmt 11,086 – 10,786'. PUH w/ tubing to 9,559'. Loaded hole w/ mud and pumped 70 sx H cmt w/ 2% $CaCl_2$ @ 9,559'. PUH w/ tubing and WOC 3 hrs. RIH w/ tubing, tagged cmt @ 8,771'. PUH to 5,866' and pumped 30 sx H cmt 5,866 – 5,720'. PUH w/ tubing to 5,077' and pumped 30 sx H cmt @ 5,077'. PUH w/ tubing to 2,586'. SDFN, will tag w/ wireline on 08/30/07.

08/30/07
RU wireline. RIH and tagged cmt @ 4,910'. POOH w/ wireline. RU cementer and pumped 30 sx H cmt w/ 2% $CaCl_2$ @ 2,586'. POOH w/ tubing, WOC 2½ hrs. RIH w/ wireline and tagged cmt @ 2,420', POOH w/ wireline. RIH w/ tubing to 504' and pump 30 sx H cmt w/ 2% $CaCl_2$ @ 504'. POOH w/ tubing and WOC 2½ hrs. RIH w/ wireline and tagged cmt @ 322', POOH w/ wireline. RIH w/ tubing to @ 60' and circulated 25 sx H cmt 322' to surface. POOH w/ tubing. ND BOP. RDMO to Merland "C" Com #1.

Attachment 7

Public Notice Affidavit and Notice of Application Confirmations

APPLICATION FOR AUTHORIZATION TO INJECT

NOTICE IS HEREBY GIVEN: That Anthem Water Solutions, LLC, 5914 W. Courtyard Dr, STE 200, Austin, TX, 78730, is requesting that the New Mexico Oil Conservation Division administratively approve the APPLICATION FOR AUTHORIZATION TO INJECT as follows:

PURPOSE: The intended purpose of the injection well is to dispose of salt water produced from permitted oil and gas wells.

WELL NAME AND LOCATION: KW Farms SWD #1
Located 7.3 miles southeast of Carlsbad, NM
NE ¼ SE ¼, Section 36, Township 22S, Range 27E
1,980' FSL & 990' FEL
Eddy County, NM

NAME AND DEPTH OF DISPOSAL ZONE: Bell Canyon – Upper Cherry Canyon (2,825' – 3,600')

EXPECTED MAXIMUM INJECTION RATE: 10,000 Bbls/day

EXPECTED MAXIMUM INJECTION PRESSURE: 565 psi (surface)

Objections or requests for hearing must be filed with the New Mexico Oil Conservation Division within fifteen (15) days. Any objection or request for hearing should be mailed to the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505.

Additional information may be obtained by contacting Nate Alleman at 918-382-7581.

Carlsbad Current Argus.
PART OF THE USA TODAY NETWORK

Affidavit of Publication

Ad # 0004134829

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TULSA, OK 74119

I, a legal clerk of the **Carlsbad Current Argus**, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

04/01/2020

Legal Clerk

Subscribed and sworn before me this April 1, 2020:

State of WI, County of Brown
NOTARY PUBLIC

8-25-23
My commission expires

SHELLY HORA
Notary Public
State of Wisconsin

Ad # 0004134829
PO #:
# of Affidavits 1

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APPLICATION FOR AUTHORIZATION TO INJECT

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Objections or requests for hearing must be filed with the New Mexico Oil Conser sion within fifteen (15) days. Any objection or request for hearing should be m Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505.
Additional information may be obtained by contacting Nate Alleman at 918-382-7
#4134829, Current Argus, April 1, 2020

KW Farms SWD #1 - Notice of Application Recipients				
Entity	**Address**	**City**	**State**	**Zip Code**
Landowner & Mineral Owner				
David and Vickey Faulk (Landowner)	R782 E. Derrick Road	Carlsbad	NM	88220
Commission of Public Lands - State Land Office (Mineral Owner)	310 Old Santa Fe Trail	Santa Fe	NM	87501
OCD District				
NMOCD District 2	811 S. 1st St.	Artesia	NM	88210
Leasehold Operators				
Allied Land Services, LLC (ALLIED LAND)	119 South Roselawn, Suite 304	Artesia	NM	88210
BC Operating, Inc. (BC OPER.)	4000 N. Big Spring St. #310	Midland	TX	79705
Devon Energy Production Company, LP	6488 Seven Rivers Hwy.	Artesia	NM	88210
John Draper Brantly Jr. (Draper Brantley)	510 N. Halagueno	Carlsbad	NM	88220
DSD Energy Resources, LLC (DSD ENERGY)	P.O. Box 229	Fort Worth	TX	76101
Featherstone Development Corporation (Featherstone)	P.O. Box 429	Roswell	NM	88202
Matador Resources Company (Matador Production Company)	5400 LBJ Freeway, Suite 1500	Dallas	TX	75240
MRC Permian Company (MRC PERMIAN) (MRC PERMIAN CO)	5400 LBJ Freeway, Suite 1500	Dallas	TX	75240
Nadel And Gussman Generations of Energy (NADEL & GUSSMAN)	First National Bank Building, 15 E. 5th St., #3300	Tulsa	OK	74103
New Mexico BLM	620 E Greene St.	Carlsbad	NM	88220
Oxy USA Inc. (OXY USA WTP LP)	P.O. Box 27570	Houston	TX	77252

Notes: The table above shows the Entities who were identified as parties of interest requiring notification on either the 1/2-mile well detail list (Attachment 2) or on the 2-mile Mineral Lease Map (Attachment 2). The names listed above in parenthesis, are the abbreviated entity names used on either the 1/2-mile well detail list (Attachment 2) or on the 2-mile Mineral Lease Map (Attachment 2).

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