

Initial Application Part I

Received: 08/13/2019

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 28, 2019

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

Subject: Vista Disposal Solutions, LLC – Kathy Federal SWD #1
Application for Authorization to Inject

To Whom It May Concern,

On behalf of Vista Disposal Solutions, LLC (Vista), ALL Consulting, LLC (ALL) is submitting the enclosed Application for Authorization to Inject for the Kathy Federal SWD #1, a proposed salt water disposal well, in Lea County, NM.

Should you have any questions regarding the enclosed application, please contact Dan Arthur at (918) 382-7581 or darthur@all-llc.com.

Sincerely,
ALL Consulting



Dan Arthur
President/Chief Engineer

RECEIVED: 08/13/2019	REVIEWER:	TYPE: SWD	APP NO: pMAM1922648391
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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: _____ OGRID Number: _____
 Well Name: _____ API: _____
 Pool: _____ Pool Code: _____

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

SWD-2241

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

- 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

<u>FOR OCD ONLY</u>	
<input type="checkbox"/>	Notice Complete
<input type="checkbox"/>	Application Content Complete

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.

 Print or Type Name



 Signature



 Date

 Phone Number

 e-mail Address

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance Disposal
_____ Storage Application qualifies for administrative approval? Yes _____ No
- II. OPERATOR: Vista Disposal Solutions, LLC
ADDRESS: 12444 NM 10th St., Building G, Suite 202-512, Yukon, OK 73099
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 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: 8/12/2019
E-MAIL ADDRESS: darthur@all-llc.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: _____

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: Kathy Federal SWD #1

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

A.

(1) General Well Information:

Operator: Vista Disposal Solutions, LLC (OGRID No. 329051)
Lease Name & Well Number: Kathy Federal SWD #1
Location Footage Calls: 2,153' FNL & 612' FWL
Legal Location: Unit Letter E, S03 T26S R34E
Ground Elevation: 3,313'
Proposed Injection Interval: 17,900' – 19,100'
County: Lea

(2) Casing Information:

Type	Hole Size	Casing Size	Casing Weight	Setting Depth	Sacks of Cement	Estimated TOC	Method Determined
Surface	24"	20"	133.0 lb/ft	865'	880	Surface	Circulation
Intermediate 1	14-3/4"	13-3/8"	68.0 lb/ft	5,300'	1,700	Surface	Circulation
Intermediate 2	12-1/4"	9-5/8"	53.5 lb/ft	14,600'	4,945	Surface	Circulation
Liner	8-1/2"	7-5/8"	39.0 lb/ft	17,900	285	14,400 (TOL)	CBL

(3) Tubing Information:

4-1/2" (composite weight string) of fiberglass-coated tubing with setting depth of 17,880'

(4) Packer Information: Lok-set or equivalent packer set at 17,880'

B.

(1) Injection Formation Name: Devonian and Silurian - Fusselman

Pool Name: SWD; DEVONIAN - SILURIAN

Pool Code: 97869

(2) Injection Interval: Open-hole injection between 17,900' – 19,100'

(3) Drilling Purpose: New Drill for Salt Water Disposal

(4) Other Perforated Intervals: No other perforated intervals exist.

(5) Overlying Oil and Gas Zones: Below are the approximate formation tops for known oil and gas producing zones in the area.

- Delaware (5,300')
- Bone Springs (10,000')
- Wolfcamp (12,200')
- Atoka (14,750')
- Morrow (15,700')

Underlying Oil and Gas Zones: No underlying oil and gas zones exist.

V – Well and Lease Maps

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

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List
- Potash Lease Map

VI – AOR Well List

There are no wells within the 1-mile AOR that penetrate the proposed injection zone.

A list of the wells within the 1-mile AOR is included in **Attachment 2**.

VII – Proposed Operation

- (1) **Proposed Maximum Injection Rate:** 30,000 bpd
Proposed Average Injection Rate: 15,000 bpd
- (2) A **closed system** will be used.
- (3) **Proposed Maximum Injection Pressure:** 3,580 psi (surface)
Proposed Average Injection Pressure: approximately 1,500 – 2,000 psi (surface)
- (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 Devonian and Silurian-Fusselman formations which is a non-productive zone known to be compatible with formation water from the Wolfcamp and Bone Springs formations. Water analyses from the Devonian-Silurian formation in the area are included in **Attachment 4**.

VIII – Geologic Description

The proposed injection interval includes the Devonian and Silurian-Fusselman formations from 17,900 – 19,100 feet. These formations consist of carbonates including light colored dolomite and chert intervals interspersed with some tight limestone intervals. Several thick sections of porous dolomite capable of taking water are present within the subject formations in the area.

The freshwater formation is the Rustler at a depth of approximately 840 feet. Water well depths in the area range from approximately 135 - 300 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

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, no groundwater wells are located within 1-mile of the proposed SWD location; therefore, no groundwater samples were collected in association with this application.

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

XII – No Hydrologic Connection Statement

No faulting is present in the area that would provide a hydrologic connection between the injection interval and overlying USDWs. Additionally, the casing program has been designed to ensure there will be no hydrologic connection between the injection interval and overlying USDWs. A letter from a knowledgeable and qualified expert stating that there is a low risk of seismic activity from the proposed injection activities is included in **Attachment 6**.

XIII – Proof of Notice

A Public Notice was filed with the Hobbs News-Sun newspaper 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-mile of the proposed SWD location. A list of the recipients, as well as delivery confirmations, are included in **Attachment 7**.

Attachments

Attachment 1: Wellbore Diagram

Attachment 2: Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List
- Potash Lease Map

Attachment 3: Source Water Analyses

Attachment 4: Injection Formation Water Analyses

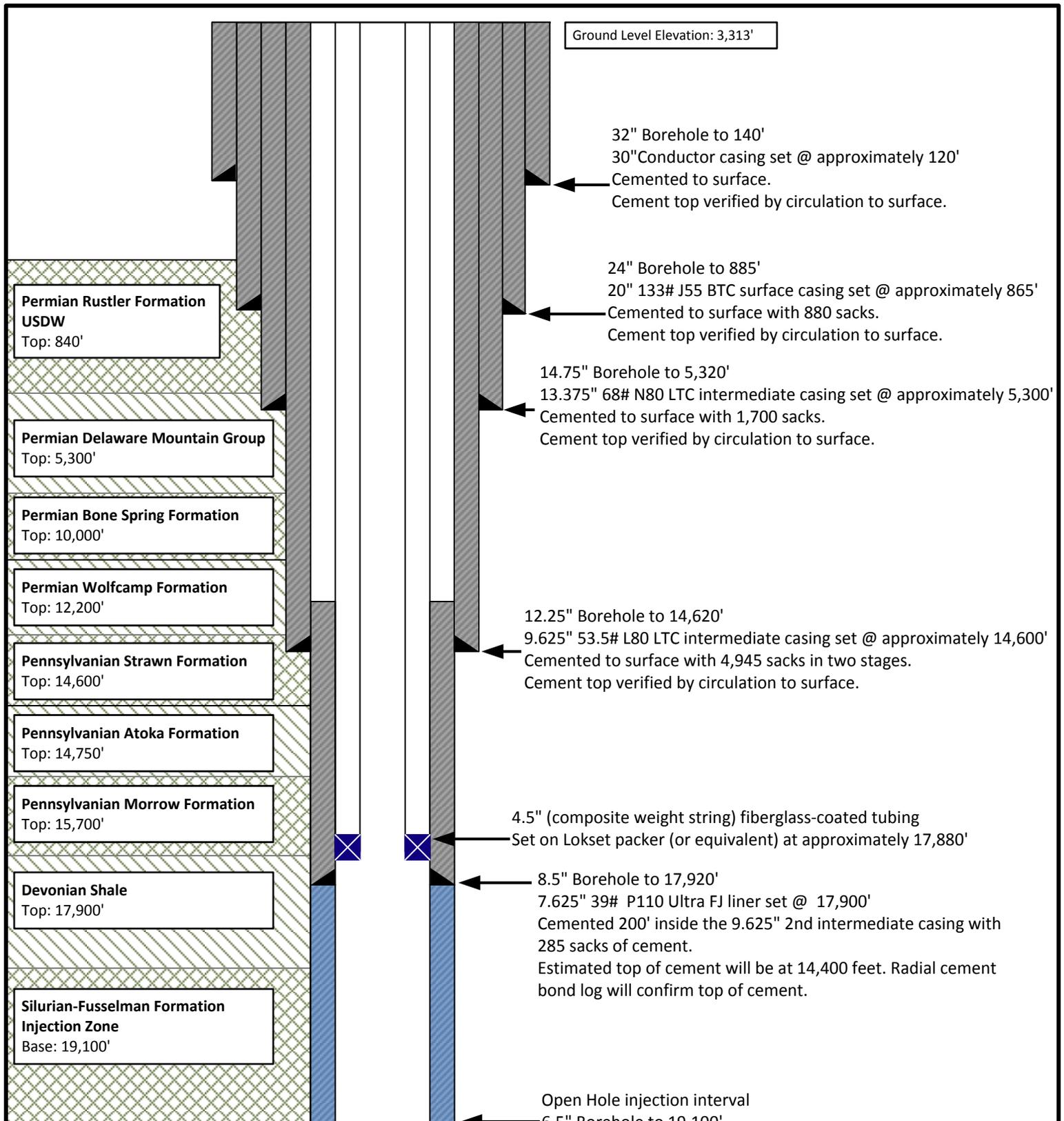
Attachment 5: Water Well Map and Well Data

Attachment 6: Induced Seismicity Assessment Letter

Attachment 7: Public Notice Affidavit and Notice of Application Confirmations

Attachment 1

Wellbore Diagram



Note: Listed depths and cement volumes are approximates based on available information. All cement calculations use yield of 1.18 cubic foot per sack and include 25% excess.

NOT TO SCALE

Prepared by:

ALLCONSULTING

Drawn by: Joshua Ticknor

Project Manager:
Dan Arthur

Date: 8/5/2019

Vista Disposal Solutions, LLC
Kathy Federal SWD #1
Section 03, Twp 26S, Rng 34E
2,153' FNL & 612' FWL
Lea County, NM

A-3 and AL-2 LOK-SET Retrievable Casing Packers

Product Family No. H64630 and H64628

APPLICATION

The A-3™ LOK-SET™ packer combines advantages of a retrievable packer with the features of a permanent packer. An ability to lock down tubing forces makes the A-3 suitable for a broad range of applications, including production, injection, zone isolation, and remedial operations. The AL-2™ LOK-SET packer is similar to the A-3, and has a larger bore.

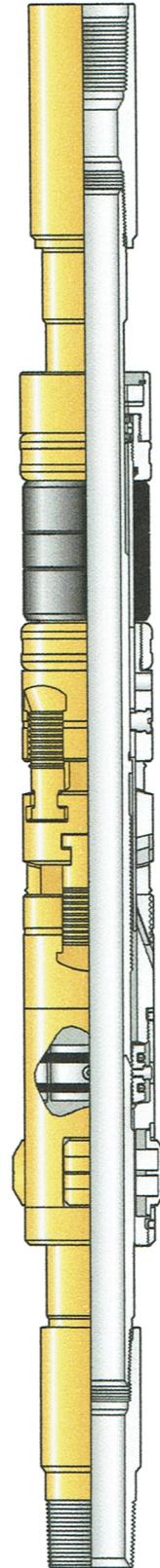
Advantages

- Holds pressure from above and below, without relying on set-down weight, tubing tension, or hydraulic hold down
- Provides tubing anchoring with tension applied, suitable for pumping wells or injection, controlling tubing forces related to change fluid temperatures
- Opposed, non-transferring, dovetail slips prevent packer movement associated with changing differential pressures, while allowing the landing of the tubing in tension, neutral or compression
- Right-hand tubing rotation controls setting and releasing
- Packing element compression locks in by ratcheting action of lock segments, which restricts rotation to one direction

Accessories

To provide a simple and reliable injection system for retrieving an injection string without having to unseat the packer:

L-10 or L-316 on-off sealing connectors, Product Family Nos. H68420 and H68422. Baker Hughes blanking plug can be used in the seating nipple profile of the on-off sealing connector to provide a means of plugging the lower zone while the tubing is being pulled.



A-3 LOK-SET
Retrievable Casing Packer
Product Family No. H64630

SPECIFICATION GUIDES

A-3™ LOK-SET Retrievable Casing Packer, Product Family No. H64630

Casing			Packer				
OD		Weight *	Size	Nom ID		Max Gage Ring OD	
in.	mm			in.	mm	in.	mm
4	101.6	9.5–12.9	41A2	1.500	38.1	3.244	82.4
4-1/2	144.3	21.6–23.6	41A2	1.500	38.1	3.244	82.4
4	101.6	9.5	41A4	1.500	38.1	3.423	112.4
4-1/2	114.3	18.8	41A4	1.500	38.1	3.423	112.4
		13.5–17.7	41B			3.578	90.9
		11.6–13.5	43A2	1.978	50.2	3.786	96.2
		9.5–10.5	43A4			3.786	96.2
5	127.0	15–18	43B	1.978	50.2	4.140	105.2
		11.5–15	43C			4.265	108.3
5-1/2	139.7	26	43C	1.978	50.2	4.265	108.3
		20–23	45A2			4.515	114.7
		15.5–20	45A4			4.656	118.3
		13–15.5	45B			4.796	121.8
6	152.4	26	45B	1.978	50.2	4.796	121.8
		20–23	45C			5.078	129.0
		15–18	45D			5.171	131.3
6-5/8	168.3	34	45E	1.978	50.2	5.421	137.7
		24–32	45F			5.499	139.7
		24	47A2			2.441	62.0
		17–24	45G	1.978	50.2	5.796	147.2
		17–20	47A4	2.441	62.0	5.827	148.0
7	177.8	38	47A2	2.441	62.0	5.671	144.0
		32–35	47A4			5.827	148.0
		26–29	47B2			5.983	152.0
		23–26	47B4			6.093	154.8
		17–20	47C2			6.281	159.5
7-5/8	193.7	33.7–39	47C4	2.441	62.0	6.468	164.3
		24–29.7	47D2			6.687	169.9
		20–24	47D4			6.827	173.4
8-5/8	219.1	44–49	49A2	3.500	88.9	7.327	186.1
		32–40	49A4			7.546	191.7
		20–28	49B			7.796	198.0
9-5/8	244.5	47–53.5	51A2	3.500	88.9	8.234	209.1
		40–47	51A4			8.452	214.7
		29.3–36	51B			8.608	218.6

AL-2™ Large Bore LOK-SET Retrievable Casing Packer Product Family No. H64628

Casing			Packer						
OD		Weight *	Size	Nom ID		Max Gage Ring OD		Max Diameter of Compressed Drag Block	
in.	mm			in.	mm	in.	mm	in.	mm
5-1/2	139.7	20	45A2 x 2-3/8	2.375	60.3	4.562	115.9	4.592	116.6
		15.5–17	45A4 x 2-3/8			4.656	118.3	4.750	120.7
		13	45B x 2-3/8			4.796	121.8	4.902	124.5
6	152.4	26	45B x 2-3/8	2.375	60.3	4.796	121.8	4.902	124.5

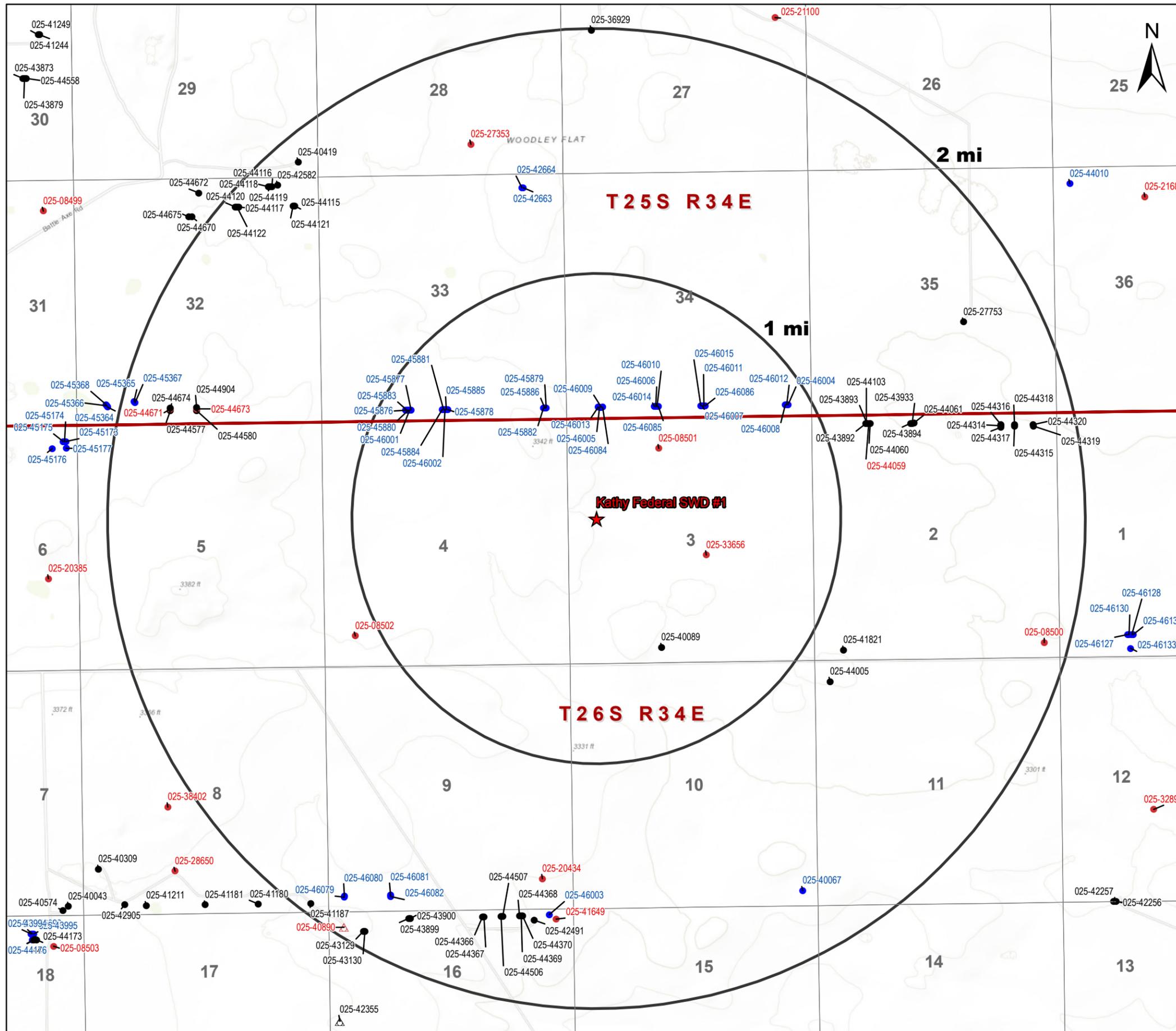
* When selecting a packer for a casing weight common to two weight ranges (same OD), choose the packer size shown for the lighter of the two weight ranges. Example: for 7-in. (177.8 mm) OD 26 lb/ft casing use packer size 47B4. Under certain circumstances the other packer size may be run, such as when running in mixed casing strings.

Repair kits, including such items as packing elements, seal rings, etc., are available for redressing Baker Retrievable Packers. Contact your Baker Hughes representative. Use only Baker Hughes repair parts.

Attachment 2

Area of Review Information:

- 2-mile Oil & Gas Well Map
- 2-mile Lease Map
- 1.5-mile Deep SWD Map (Devonian/Silurian SWDs)
- 1-mile Well Detail List
- Potash Lease Map



Legend

- ★ Proposed SWD
- NMOCD O&G Wells**
 - Oil, Active (66)
 - Oil, New (56)
 - Oil, Plugged (18)
 - △ Salt Water Injection, Active (1)
 - △ Salt Water Injection, Plugged (1)

O&G Wells Area of Review

Kathy Federal SWD #1 Lea County, New Mexico

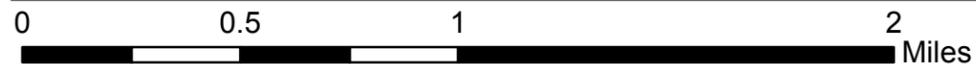
Proj Mgr:
Dan Arthur

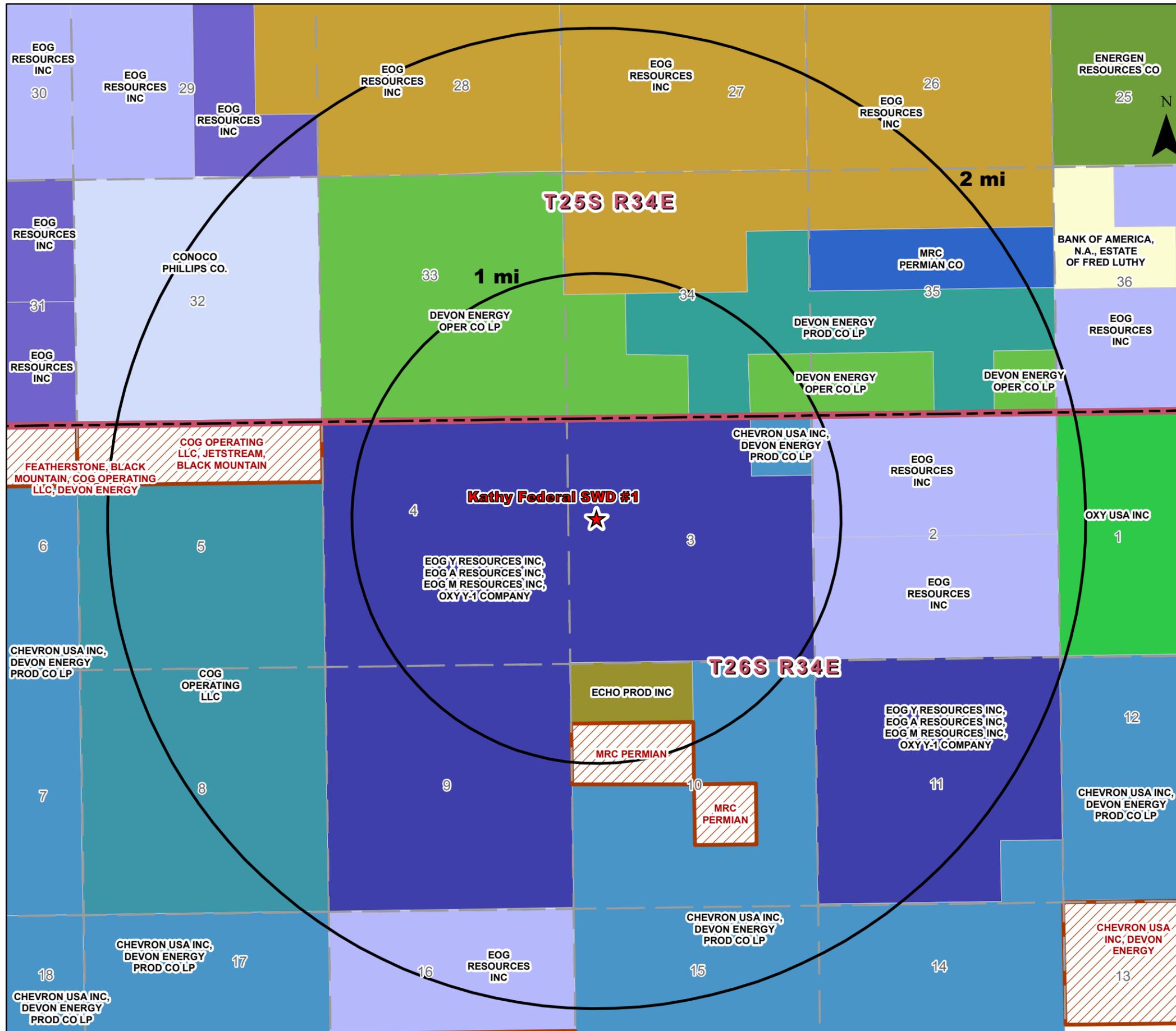
July 09, 2019

Mapped by:
Ben Bockelmann

Prepared for:
Vista Disposal Solutions, LLC

Prepared by:
ALLCONSULTING



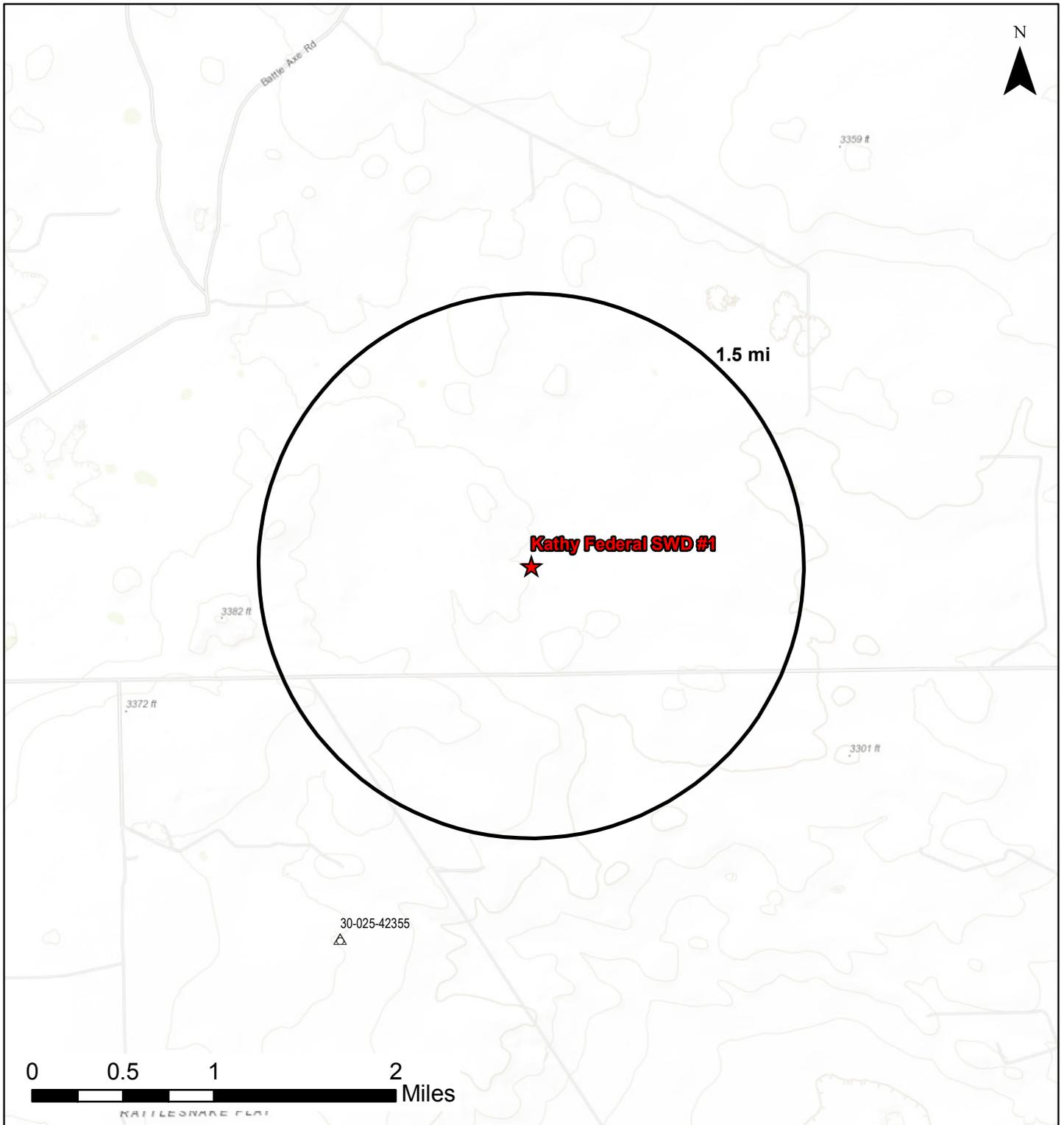


Legend

- ★ Proposed SWD
- Private Mineral Leases
- BLM Mineral Leases**
 - CHEVRON USA INC, DEVON ENERGY PROD CO LP
 - COG OPERATING LLC
 - DEVON ENERGY OPER CO LP
 - DEVON ENERGY PROD CO LP
 - ECHO PROD INC
 - ENERGEN RESOURCES CO
 - EOG RESOURCES INC
 - EOG RESOURCES INC
 - EOG Y RESOURCES INC, EOG A RESOURCES INC, EOG M RESOURCES INC, OXY Y-1 COMPANY
 - MRC PERMIAN CO
 - OXY USA INC
- NMSLO Mineral Leases**
 - BANK OF AMERICA, N.A., ESTATE OF FRED LUTHY
 - CONOCO PHILLIPS CO.
 - EOG RESOURCES INC

Mineral Lease Area of Review		
Kathy Federal SWD #1 Lea County, New Mexico		
Proj Mgr: Dan Arthur	July 15, 2019	Mapped by: Ben Bockelmann
Prepared for: Vista Disposal Solutions, LLC		Prepared by:





**Kathy Federal SWD #1
Deep SWDs AOR**

Proj Mgr: Dan Arthur	Jul 9, 2019	Mapped by: Ben Bockelmann
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Prepared for: Vista Disposal Solutions, LLC

Prepared by: **ALICONSULTING**

Legend

- ★ Proposed SWD
- △ Salt Water Injection, Active (1)

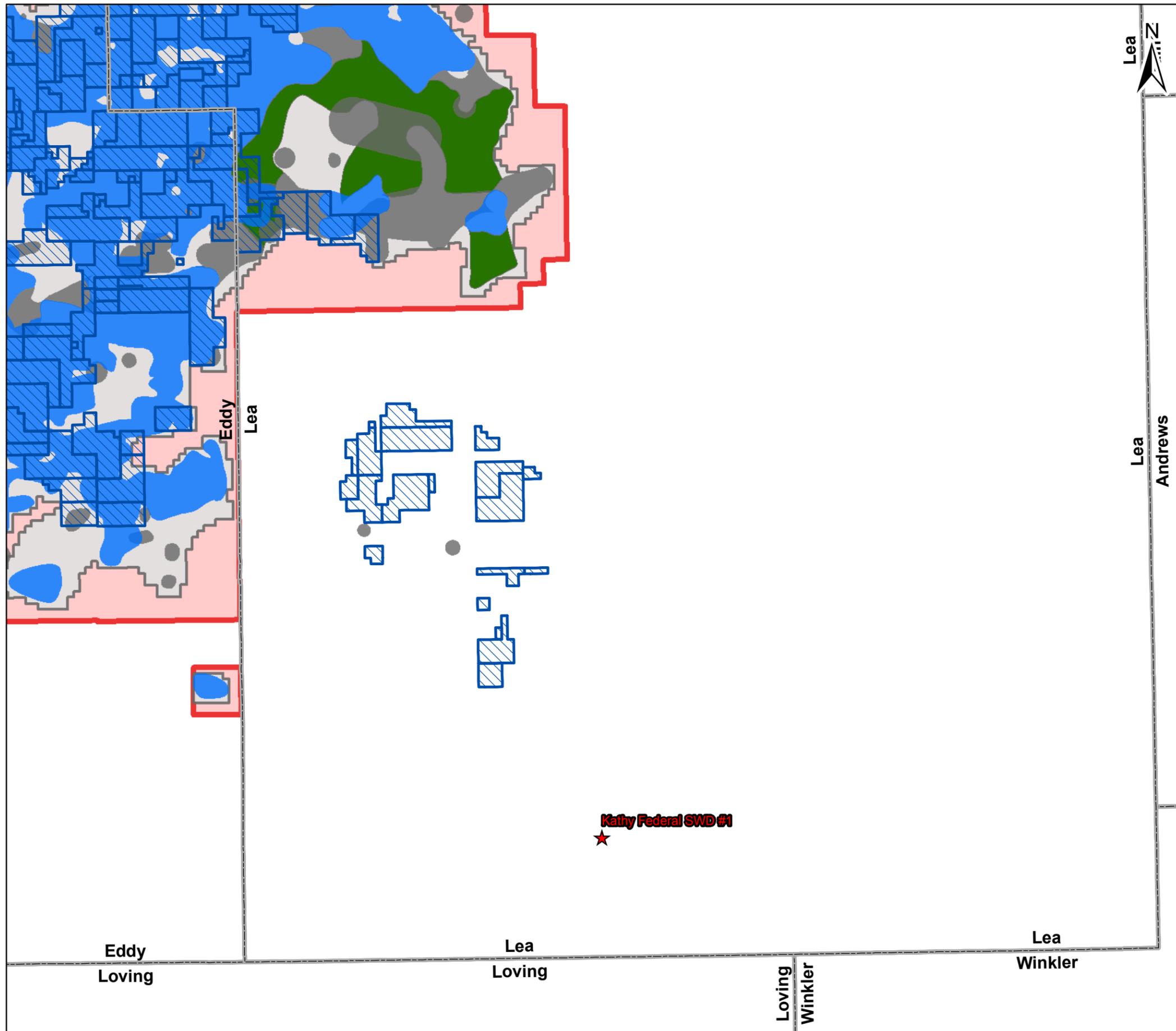
Devonian/Silurian SWDs

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

AOR Tabulation for Kathy Federal SWD #1 (Top of Injection Interval: 17,900')

Well Name	API#	Well Type	Operator	Spud Date	Location (Sec., Tn., Rng.)	Total Vertical Depth (feet)	Penetrate Inj. Zone?
STRANGER 34 FEDERAL COM #001H	30-025-46084	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	M-34-25S-34E	Proposed (12,539)	No
STRANGER 33 FEDERAL #010H	30-025-45885	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	O-33-25S-34E	Proposed (12,780)	No
STRANGER 34 FEDERAL COM #007H	30-025-46007	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	O-34-25S-34E	Proposed (12,680)	No
STRANGER 34 FEDERAL COM #010H	30-025-46010	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	N-34-25S-34E	Proposed (12,780)	No
STRANGER 34 FEDERAL COM #013H	30-025-46013	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	M-34-25S-34E	Proposed (12,890)	No
STRANGER 34 FEDERAL COM #002H	30-025-46085	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	N-34-25S-34E	Proposed (12,530)	No
STRANGER 33 FEDERAL #001H	30-025-45876	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	N-33-25S-34E	Proposed (12,550)	No
STRANGER 33 FEDERAL #004H	30-025-45879	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	P-33-25S-34E	Proposed (12,540)	No
STRANGER 33 FEDERAL #007H	30-025-45882	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	P-33-25S-34E	Proposed (12,690)	No
STRANGER 33 FEDERAL #012H	30-025-46001	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	N-33-25S-34E	Proposed (12,900)	No
STRANGER 34 FEDERAL COM #004H	30-025-46004	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	P-34-25S-34E	Proposed (12,530)	No
STRANGER 34 FEDERAL COM #015H	30-025-46015	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	O-34-25S-34E	Proposed (12,890)	No
STRANGER 33 FEDERAL #002H	30-025-45877	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	N-33-25S-34E	Proposed (12,540)	No
STRANGER 33 FEDERAL #005H	30-025-45880	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	N-33-25S-34E	Proposed (12,690)	No
STRANGER 33 FEDERAL #008H	30-025-45883	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	N-33-25S-34E	Proposed (12,790)	No
STRANGER 33 FEDERAL #011H	30-025-45886	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	P-33-25S-33E	Proposed (12,790)	No
STRANGER 33 FEDERAL #013H	30-025-46002	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	O-33-25S-34E	Proposed (12,900)	No
STRANGER 34 FEDERAL COM #005H	30-025-46005	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	M-34-25S-34E	Proposed (12,670)	No
STRANGER 34 FEDERAL COM #008H	30-025-46008	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	P-34-25S-34E	Proposed (12,680)	No
STRANGER 34 FEDERAL COM #003H	30-025-46086	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	O-34-25S-34E	Proposed (12,530)	No
STRANGER 33 FEDERAL #006H	30-025-45881	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	O-33-25S-34E	Proposed (12,690)	No
STRANGER 33 FEDERAL #009H	30-025-45884	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	N-33-25S-34E	Proposed (12,780)	No
STRANGER 34 FEDERAL COM #006H	30-025-46006	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	N-34-25S-34E	Proposed (12,680)	No
STRANGER 34 FEDERAL COM #009H	30-025-46009	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	M-34-25S-34E	Proposed (12,770)	No
STRANGER 34 FEDERAL COM #012H	30-025-46012	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	P-34-25S-34E	Proposed (12,780)	No
STRANGER 33 FEDERAL #003H	30-025-45878	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	O-33-25S-34E	Proposed (12,540)	No
STRANGER 34 FEDERAL COM #011H	30-025-46011	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	O-34-25S-34E	Proposed (12,780)	No
STRANGER 34 FEDERAL COM #014H	30-025-46014	O	DEVON ENERGY PRODUCTION COMPANY, LP	Not drilled	N-34-25S-34E	Proposed (12,890)	No
DEAN APQ FEDERAL #002H	30-025-40089	O	EOG RESOURCES INC	7/18/2011	N-03-26S-34E	9,728	No
DEAN APQ FEDERAL #001	30-025-33656	Plugged	EOG Y RESOURCES, INC.	10/29/1996	J-03-26S-34E	Plugged (12,850)	No
PRE-ONGARD WELL #001	30-025-08501	Plugged	PRE-ONGARD WELL OPERATOR (Gulf Oil Corporation)	4/26/1961	C-03-26S-34E	Plugged (5,506)	No

Notes: No wells within the 1-mile AOR penetrate the injection interval.



Legend

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

Potash Leases Area of Review		
Kathy Federal SWD #1 Lea County, New Mexico		
Proj Mgr: Dan Arthur	July 06, 2019	Mapped by: Ben Bockelmann
<i>Prepared for:</i> Vista Disposal Solutions, LLC		<i>Prepared by:</i>

0 5 10 20 Miles