

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised July 18, 2013

☐ AMENDED REPORT

F/P

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address 3BEAR FIELD SERVICES, LLC 415 W. WALL ST., STE 1212 MIDLAND, TEXAS 79701		² OGRID Number 372603
⁴ Property Code <i>322938</i>	³ Property Name KODIAK <i>SWD</i>	⁵ API Number 20-013-TBD <i>70-021-4531</i>
		⁶ Well No. 1

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
M	8	19S	33E		736	S	771	W	LEA

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
-	-	-	-	-	-	-	-	-	-

9. Pool Information

Pool Name	Pool Code
SWD; Silurian-Devonian	97869

Additional Well Information

¹¹ Work Type N	¹² Well Type SWD	¹³ Cable/Rotary R	¹⁴ Lease Type Private	¹⁵ Ground Level Elevation 3,655.32
¹⁶ Multiple N	¹⁷ Proposed Depth 16,500'	¹⁸ Formation Devonian, Fusselman, Montoya	¹⁹ Contractor TBD	²⁰ Spud Date ASAP
Depth to Ground water 110'		Distance from nearest fresh water well 154'		Distance to nearest surface water > 1 mile

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Conductor	26"	20"	94 lb/ft	120'	328	Surface
Surface	17-1/2"	13-3/8"	54.5 lb/ft	1,580'	1,374	Surface
Production	12-1/4"	9-5/8"	40 lb/ft	7,740'	2,079	Surface
Liner	8-1/2"	7-5/8"	39 lb/ft	7,440'-14,751'	703	7,440'
Tubing	6-1/2"	5.5"	17 lb/ft	14,650'		

Casing/Cement Program: Additional Comments

See attached schematic.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Hydraulic/Blinds, Pipe	10,000 psi	8,000 psi	TBD - Schaffer/Cameron

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☒, if applicable.
Signature: *[Signature]*

Printed name: Tyler Moehlman

Title: Consulting Engineer

E-mail Address: tyler.moehlman@lonquist.com

Date: November 12, 2018

Phone: 713-987-4144

OIL CONSERVATION DIVISION

Approved By:

Title: **Petroleum Engineer**

Approved Date: *12/04/18* Expiration Date: *12/04/20*

Conditions of Approval Attached

**See Attached
Conditions of Approval**

CONDITIONS OF APPROVAL

API #	Operator	Well name & Number
30-025-45391	3BEAR FIELD SERVICES LLC	KODAK SWD # 001

Applicable conditions of approval marked with XXXXXX

Administrative Orders Required

XXXXXXX	Review administrative order when approved for additional conditions of approval

Other wells

Casing

XXXXXXX	1) SURFACE CASING - Cement must circulate to surface -- 2) PRODUCTION CASING - Cement must circulate to surface -- 3) Liner – Cement must tie back into production casing
XXXXXXX	Surface casing must be set 25' below top of Rustler Anhydrite in order to seal off protectable water

Lost Circulation

XXXXXXX	Must notify OCD Hobbs Office if lost circulation is encountered at 575-370-3186

Water flows

XXXXXXX	Must notify OCD Hobbs Office of any water flow in the Salado formation at 575-370-3186. Report depth and flow rate.

Stage Tool

XXXXXXX	Must notify OCD Hobbs Office prior to running Stage Tool at 575-370-3186
XXXXXXX	If using Stage Tool on Surface casing, Stage Tool must be greater than 350' and a minimum 200 feet above surface shoe.
XXXXXXX	When using a Stage Tool on Intermediate or Production Casing Stage must be a minimum of 50 feet below previous casing shoe.

Completion & Production

XXXXXXX	Will require a deviational survey with the C-105
XXXXXXX	Must notify Hobbs OCD office prior to conducting MIT (575) 393-6161 ext. 114
XXXXXXX	May not inject prior to SWD order approval
XXXXXXX	Must conduct & pass MIT prior to any injection



3Bear Field Services, LLC

Kodiak SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Kodiak SWD
Well No.	1
Location	S-8 T-19S R-33E
Footage Location	736' FSL & 771' FWL

2.

a. Wellbore Description

Casing Information				
Type	Conductor	Intermediate	Intermediate 2	Production Liner
OD	20"	13-3/8"	9-5/8"	7-5/8"
WT	0.876"	0.76"	0.79"	0.5"
ID	19.124"	12.615"	8.835"	6.625"
Drift ID	18.936"	12.459"	8.679"	6.5"
COD	21"	14.375"	10.625"	7.625"
Weight	94 lb/ft	54.5 lb/ft	40 lb/ft	39 lb/ft
Grade	H-40 STC	J-55 BTC	HCL-80 BTC	P-110 UFJ
Hole Size	26"	17.5"	12.25"	8.5"
Depth Set	120'	1,580'	7,740'	7,440'-14,751'

b. Cementing Program

Cement Information				
Casing String	Conductor	Intermediate 1	Intermediate 2	Liner
Lead Cement	Class H	HalCem	Stage 1: NeoCem Stage 2: NeoCem Stage 3: ExtendaCem	VERSACEM w/ gas migration control additives
Lead Cement Volume	328 sks	1,017 sks	Stage 1: 375 sks Stage 2: 782 sks Stage 3: 375 sks	703 sks
Tail Cement	-	HalCem	Stage 1: HalCem Stage 2: HalCem	Halcem
Tail Cement Volume	-	357 sks	Stage 1: 500 sks Stage 2: 47 sks	
Cement Excess	100%	100%	100%	50%
TOC	Surface	Surface	Surface	7,340'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

OD	5.5"
WT	0.304"
ID	4.892"
Drift ID	4.767"
Weight	17 lb/ft
Grade	HCL-80 BTC
Depth Set	0'-14,650'

Tubing will be lined with Duoline.

4. Packer Description

7-5/8" x 5-1/2" TCPK Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

B. Completion Information

1. Injection Formation: Devonian, Fusselman, Montoya (Top 100')

2. Gross Injection Interval: 14,751' – 16,500'

Completion Type: Open Hole

3. Drilled for injection.
4. See the attached wellbore schematic.
5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Yates-Seven Rivers	3,487'
Delaware	5,714'
Bone Spring	7,723'
Wolfcamp	10,771'
Strawn	12,093'
Atoka	12,470'

VI. Area of Review

No wells within the area of review penetrate the proposed injection zone.

VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injection:

Average Volume: 20,000 BPD
Maximum Volume: 25,000 BPD

2. Closed System
3. Anticipated Injection Pressure:

Average Injection Pressure: 2,213 PSI (surface pressure)
Maximum Injection Pressure: 2,950 PSI (surface pressure)

4. The injection fluid is to be locally produced water. It is expected that the source water will predominantly be from the Bone Spring and Wolfcamp formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Delaware, Bone Spring, Wolfcamp, and Strawn formations.
5. The disposal interval is non-productive. No water samples are available from the surrounding area.

VIII. Geological Data

Devonian Formation Lithology:

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation include two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a tremendous Salt Water Disposal horizon.

Fusselman Formation Lithology:

The Silurian/Ordovician Fusselman Formation is stratigraphically below the Wristen Group and is above and separated from the Montoya Formation by the Sylvan Shale. The Sylvan Shale is the lower confining layer for the proposed Kodiak SWD No. 1 well. Fusselman facies include a laminated skeletal wackestone in the upper part and a buildup complex in the lower part composed of ooid and bryozoan grainstones. These grainstones can also be potentially prolific zones for disposal.

Montoya Formation Lithology:

The Montoya Group of Late Ordovician age unconformably overlies the Simpson Group. The Montoya is composed of light gray to medium-dark gray, fine- to medium-crystalline, calcareous dolomite, some units of which are interbedded with shale or dark-gray limestone and some units of which contain white to very light-gray chert. The Montoya carbonate limestone dolomite sequence is dense, impermeable, and non-porous.

A. Injection Zone: Siluro-Devonian Formation

Formation	Depth
Rustler	1,369'
Salado	1,570
Yates	3,107'
Seven Rivers	3,487'
Delaware	5,714'
Bone Spring	7,723'
Wolfcamp	10,771'
Strawn	12,093'
Atoka	12,470'
Morrow	13,409'
Mississippian Lime	14,028'
Woodford	14,607'
Devonian	14,751'

B. Underground Sources of Drinking Water

Within 1-mile of the proposed Kodiak SWD No. 1 location, there is one water well. The water well has been reported of having a depth of 110 ft. Water wells in the surrounding area have an average depth of 265 ft and an average water depth of 182 ft.

IX. Proposed Stimulation Program

No stimulation program planned.

X. Logging and Test Data on the Well

There are no logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

XI. Chemical Analysis of Fresh Water Wells

Attached is a map of all water wells that exist within one mile of the well location. One water well lies within a 1-mile radius of the Kodiak SWD No. 1. A Water Right Summary from the New Mexico Office of the State Engineer is attached for water well CP-00810-POD1. Water samples for the CP-00810-POD1 were attempted to be retrieved but the sample test was a dry run.

Kodiak SWD No. 1
1 Mile Area of Review List

API (#0-025-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	DATE DRILLED	FIELD
01654	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	3551	32.6729507000	-103.691658000	1/7/1900	
01665	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	3610	32.6693077000	-103.674514800	1/7/1900	
01669	FEDERAL 18 #002	O	P	MACK ENERGY CORP	3275	32.6620750000	-103.704544100	12/31/9999	[59490] TONTO, YATES-SEVEN RIVERS, WEST
01670	PRE-ONGARD WELL #003	O	P	PRE-ONGARD WELL OPERATOR	3283	32.6620712000	-103.700271600	1/1/1900	[59490] TONTO, YATES-SEVEN RIVERS, WEST
01671	FEDERAL 18 #004	S	A	COG OPERATING LLC	3450	32.6620674000	-103.695983900	5/4/1995	[59490] TONTO, YATES-SEVEN RIVERS, WEST; [96131] SWD, SEVEN RIVERS
01673	PRE-ONGARD WELL #006	O	P	PRE-ONGARD WELL OPERATOR	3330	32.6647949000	-103.704528800	1/1/1900	
20699	PRE-ONGARD WELL #008	O	P	PRE-ONGARD WELL OPERATOR	3330	32.6647911000	-103.697044400	1/1/1900	
23668	PRE-ONGARD WELL #001	O	C	PRE-ONGARD WELL OPERATOR	0	32.6584462018	-103.700310356	12/31/9999	
24624	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	3500	32.6584473000	-103.692771900	1/1/1900	
25470	INEXCO ANY FEDERAL #003	G	A	EOG Y RESOURCES, INC.	13649	32.6765785000	-103.695945700	12/31/9999	[73000] BUFFALO, PENN (GAS)
25912	PRE-ONGARD WELL #004	O	P	PRE-ONGARD WELL OPERATOR	13700	32.6765747000	-103.691650400	1/1/1900	[59475] TONTO, BONE SPRING
26469	PRE-ONGARD WELL #001	G	P	PRE-ONGARD WELL OPERATOR	13670	32.6656990000	-103.700264000	1/1/1900	[73000] BUFFALO, PENN (GAS)
26799	NELLIS C FEDERAL GAS COM #001	G	A	LEGACY RESERVES OPERATING, LP	13701	32.6765671000	-103.678779600	4/28/1980	[73000] BUFFALO, PENN (GAS)
29880	PRE-ONGARD WELL #001	O	C	PRE-ONGARD WELL OPERATOR	0	32.6620510707	-103.679911038	12/31/9999	
30546	HUDSON FEDERAL #001	O	P	YATES ENERGY CORP	13720	32.6620560000	-103.683113100	12/31/9999	[77210] GEM, WOLF CAMP, NORTH
32973	FEDERAL 7 #004	O	C	RAY WESTALL	0	32.6768552258	-103.704718888	12/31/9999	
34707	KUDU 9 FEDERAL COM #001	G	A	CHISHOLM ENERGY OPERATING, LLC	13770	32.6693077000	-103.674514800	11/3/1999	[73000] BUFFALO, PENN (GAS); [77370] GEM, MORROW (GAS)
39870	SPYGLASS 17 FEDERAL COM #001H	O	A	MEWBOURNE OIL CO	9966	32.6616384000	-103.692764300	1/1/2011	[59475] TONTO, BONE SPRING
40185	SPYGLASS 17 FEDERAL #002H	O	A	MEWBOURNE OIL CO	9973	32.6656914000	-103.692749000	8/2/2011	[59475] TONTO, BONE SPRING
40589	NORTIS 18 FEDERAL #001C	O	C	MEWBOURNE OIL CO	0	32.6626854000	-103.709951300	12/31/9999	[59475] TONTO, BONE SPRING
41701	EXCALIBUR 17 U FEDERAL COM #001H	O	A	MEWBOURNE OIL CO	9967	32.6576767000	-103.693168600	7/2/2014	[59475] TONTO, BONE SPRING