Initial

Application Part I

Received 3/11/20

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





PROPOSED 3BEAR LOMBARD SWD #1 APPLICATION FOR ADMINISTRATIVE AUTHORIZATION TO INJECT

LOMBARD SWD #1

Surface Location: 259' FWL, 3,882' FNL, Section 6, T21S, R33E Coordinates (NAD83): Latitude: 32.511680, Longitude: -103.61900

Lea County, New Mexico



February 21, 2020

Prepared for:

3Bear Field Services, LLC 500 Don Gaspar Avenue Santa Fe, NM 87505

Prepared by:

Geolex[®], Inc. 500 Marquette Ave, Suite 1350 Alubuquerque, NM 87102 (505) 842-8000

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3EO6Y-200311-C-1080

Revised March 23, 2017

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RECEIVED: 3/	11/20 REVIEWER: BLL	TYPE: SWD	APP NO:	pBL2007231368
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-		VE APPLICATION		
IF	IIS CHECKLIST IS MANDATORY FOR ALL ADA REGULATIONS WHICH REQUIRI			
Applicant:	3BEAR FIELD SERVIC	ES, LLC	OGR	RID Number: 372603
Well Name:	LOMBARD SWD	#1		NEW WELL
Pool: <u>N/A</u>			Pool	Code: <u>N/A</u>
SUBMIT ACCU	JRATE AND COMPLETE INFOR	MATION REQUIRED	TO PROCESS	THE TYPE OF APPLICATION
A. Locatio	PLICATION: Check those white on – Spacing Unit – Simultane NSL INSP (PROJECT cone only for [1] or [1]	ous Dedication		ISD SWD-2378
[] Cc	mmingling – Storage – Meas DHC CTB PLC ection – Disposal – Pressure I WFX PMX SWD	PC OLS	OLM ed Oil Recov	
A. Offs B. Roy C. App D. Not E. Not F. Surf	ON REQUIRED TO: Check those set operators or lease holders valty, overriding royalty owner olication requires published r tification and/or concurrent face owner	s notice approval by SLO approval by BLM		FOR OCD ONLY Notice Complete Application Content Complete
	all of the above, proof of no notice required	tification or public	cation is attac	ched, and/or,
administrati understand	ON: I hereby certify that the ve approval is accurate and that no action will be taken s are submitted to the Divisio	complete to the on this applicatio	best of my kn	owledge. I also
	Note: Statement must be completed b	y an individual with ma	nagerial and/or su	pervisory capacity.
Alberto A. Guti	érrez, R.G. (Consultant to 3Bea	r)	February 21, Date	2020
Print or Type Nam	ne		505-842-800	0
	NA		Phone Numbe	r
Signatura			aag@geolex.	
Signature			e-mail Address	

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ENE	ATE OF NEW MI ERGY, MINERA SOURCES DEPA	LS AND NATURAL 12	il Conservation Division 20 South St. Francis Dr. Ita Fe, New Mexico 87505		Revised	FORM C-108 June 10, 2003
		APPLICATION	FOR AUTHORIZATION TO INJ	ECT		
I.	PURPOSE:	Secondary Recovery alifies for administrative approval?	Pressure Maintenance	X	Disposal	Storage
II.	OPERATOR:	3Bear Field Services, LLC				
	ADDRESS:	500 Don Gaspar Avenue; S	Santa Fe, New Mexico 87505			
	CONTACT PA	RTY: Alberto A. Gutiérrez, R.C	5 Geolex, Inc.		PHONE: (50	5) 842-8000
	0011110111					

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	Х	No		
	If yes, give the Division order number authorizing t	the project:			N/A	

- 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. **SECTIONS 5 AND 6; APPENDIX A**
- 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. **SECTION 5; APPENDIX A**
- VII. Attach data on the proposed operation, including:
 - 1. Proposed average and maximum daily rate and volume of fluids to be injected; SECTIONS 1, 2, AND 3
 - 2. Whether the system is open or closed; SECTIONS 1, 2, 4, AND 7
 - 3. Proposed average and maximum injection pressure; **SECTIONS 1 AND 3**
 - 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, **SECTIONS 3 AND 4**
 - 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.). **SECTIONS 3 AND 4**
- *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. **SECTIONS 4 & 5**
- IX. Describe the proposed stimulation program, if any. N/A
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted). WELLS ARE NOT YET DRILLED
- *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. **SECTION 4.4**
- 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. <u>SECTION 7</u>
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form. APPENDIX B
- 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: Alberto A. Gutiérrez	TITLE: President - Consultant to 3Bear
SIGNATURE:	DATE: 2 21 20 20
E-MAIL ADDRESS: aag@geolex.com	1 1

* 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:

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.

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1.0 EXECUTIVE SUMMARY

On behalf of 3Bear Field Services, LLC (3Bear), Geolex, Inc.[®] (Geolex) has prepared and is hereby submitting a complete C-108 application for administrative approval to drill, complete, and operate a saltwater disposal well (Lombard SWD #1) in Section 6, T21, R33E (32.51168, -103.61900 NAD83), approximately 31 miles southwest of Hobbs in Lea County, New Mexico (Figure 1).

Surface facilities will be constructed by 3Bear at this location, and the new disposal well is proposed in order to properly dispose of produced water from 3Bear activities servicing local producers in the area (Figure 2). 3Bear intends to inject a maximum of 25,000 barrels per day (bpd) with an anticipated average of 20,000 bpd through the proposed well.

Lombard SWD #1 will be drilled as a vertical well with an approximate surface location of 3,882 feet from the north line (FNL) and 259 feet from the west line (FWL) of Section 6 (Figure 2). The well will be constructed utilizing a four-string casing design. The surface, first intermediate, and second intermediate casing strings will be cemented to the surface. A 7-5/8" production liner will be utilized from approximately 11,330 feet to 15,535 feet, overlapping approximately 200 feet with the 9-5/8" second intermediate casing interval. The integrity of cementing operations will be verified via visual inspection, as well as, collection of cement bond logs for all casing strings.

The proposed injection zone will target the Devonian and Upper Silurian Wristen and Fusselman formations, as well as, the upper Ordovician Montoya Formation at depths of approximately 15,535 feet to 17,000 feet. Analysis of these geologic units confirms that they act as excellent closed-system reservoirs that will accommodate 3Bear's produced water disposal needs.

In the area of Lombard SWD #1, the proposed injection interval is overlain by a thick interval of dense Woodford Shale (approx. 190 feet) and an additional 580 feet of low-porosity, low-permeability Mississippian carbonates of the Osage and Barnett formations. These formations will contain the produced water injectate and prevent upward migration into overlying potential and active pay zones.

In total, there are 39 wells within a one-mile radius of the proposed Lombard SWD #1. Specific well data is summarized in Appendix A along with relevant plugging documents. Of these wells, 7 are active and 6 are plugged. Additionally, there are 26 locations permitted, but have not yet been drilled or completed. Within one-half mile of the proposed disposal well, the targeted injection zone is penetrated by one plugged well, the ETZ Federal #1, which was drilled to a total depth of 16,396 feet. Available NMOCD documents (included in Appendix A) record that plugging operations for this well were completed on July 5, 1956. The well is reported to be plugged back to 8,766 feet, which will provide sufficient isolation from the targeted Siluro-Devonian injection zone and the plugged well should not be negatively affected by the operation of Lombard SWD #1.

The area surrounding the proposed injection site is arid and there are no natural bodies of water within several miles of the location. A search of the New Mexico State Engineer's files shows three water wells within two miles of the proposed SWD. The closest water well is located approximately 0.52 miles away and has a total depth of 1,000 feet. This and all additional wells within the two-mile radius area of interest are shallow and will be protected via the proposed Lombard SWD #1 casing design, which includes a surface casing set at 1,600 feet that will isolate and protect shallow groundwater resources.

In preparing this C-108 application, Geolex conducted a detailed examination of all the elements required to be evaluated in order to prepare and obtain approval for this application for injection. The elements of this evaluation include:

- Identification and characterization of all hydrocarbon-producing zones of wells that surround and are present on the plant site
- The depths of perforated pay intervals in those wells relative to the depth of the target injection zone (Devonian, Wristen, Fusselman, and Montoya formations)
- The past and current uses of the proposed injection interval
- The stratigraphic and structural setting of the targeted zones relative to any nearby active or plugged wells, and other wells penetrating the interval
- The identification of all surface owners within a one-mile radius of the proposed injection well and copies of notification letters they were provided
- Identification and characterization of all plugged and operating wells penetrating the proposed injection zone within a one-half mile radius of the proposed injection well
- The details of the proposed injection operation, including general well design and average and maximum daily rates of injection and injection pressures
- Sources of injection fluid and compatibility with the formation fluid of the injection zone
- Location and identification of any freshwater-bearing zones in the area; the depth and quality of available groundwater in the vicinity of the proposed well, including a determination that there are no structures which could possibly communicate the disposal zone with any known sources of drinking water

Based upon this detailed evaluation, Geolex and 3Bear have determined that the proposed Lombard SWD #1 is a safe and environmentally-sound project for the disposal of produced water.

2.0 INTRODUCTION AND ORGANIZATION OF C-108 APPLICATION

The completed NMOCD Form C-108 is included before the Table of Contents of this document and references appropriate sections where data required to be submitted are included.

This application organizes and details all of the information required by NMOCD and NMOCC to evaluate and approve the submitted Form C-108 – Application for Authorization to Inject. This information is presented in the following categories:

- A detailed description of the location, construction, and operation of the proposed disposal well (Section 3.0)
- A summary of the regional and local geology, the hydrogeology, and the location of drinking water wells within the ½-mile area of review (Section 4.0)
- The identification, location, status, producing zones, and other relevant information on oil and gas wells within the ¹/₂-mile area of review (Section 5.0)
- The identification and required notification for operators and surface land owners that are located within the ½-mile area of review (Section 6.0)
- An affirmative statement, based on analysis of geologic conditions at the site, that there is no hydraulic connection between the proposed injection zone and any known sources of drinking water (Section 7.0)

In addition, this application includes the following supporting information:

- Appendix A: Data tables showing all active, temporarily abandoned, abandoned and plugged oil and gas wells included within a one-mile radius of the proposed Lombard SWD #1
- Appendix B: Tables summarizing the operators, lessees, surface owners, and other interested parties within one-half mile of the proposed SWD well, copies of notice letters and certified mail receipts, and affidavit of publication of newspaper notice

3.0 PROPOSED CONSTRUCTION, TESTING, AND OPERATION OF LOMBARD SWD #1

The 3Bear Lombard SWD #1 will be drilled at approximately 3,882 feet from the north line (FNL) and 259 feet from the west line (FWL) of Section 6 (Figure 2). 3Bear will construct surface facilities at this location, and Lombard SWD #1 is proposed in order to properly dispose of produced water from 3Bear's activities servicing producers in the area. 3Bear anticipates an average injection rate of 20,000 barrels per day (bpd) and a maximum injection rate of 25,000 bpd.

3.1 DESIGN OF LOMBARD SWD #1

The location of the proposed SWD well, and other nearby wells, are shown in Figure 2, and a schematic of the injection well is shown in Figure 3. The 3Bear Lombard SWD #1 will be drilled as a vertical well to an anticipated total depth of 17,000 feet within the Devonian Thirty-one and upper Silurian Wristen and Fusselman formations. The injection zone (approximately 15,535 feet to 17,000 feet) will be will be completed as an open-hole interval.

The SWD facilities and well will be integrated components of the 3Bear surface facilities. The preliminary well design for the new injection well, Lombard SWD #1, is shown in Figure 3. The well is designed to accommodate injection of up to 25,000 bpd for a design life of at least 30 years.

The proposed well utilizes a four string casing design (Figure 3). Surface casing (20-inch) will be set in competent strata above the Salado salt at approximately 1,600 feet. The first intermediate casing (13.375-inch) will be set through the salt to approximately 5,650 feet within the Cherry Canyon Formation. The second intermediate 9.625-inch casing will be advanced to approximately 11,530 feet , protecting the 1st and 2nd sands of the Bone Springs Formation. A 7.625-inch production liner will be utilized from 11,330 feet to 15,535 feet with an overlap of approximately 200 feet. The final completion will be constructed as a 6.125-inch open-hole interval to a total depth of approximately 17,000 feet.

Design considerations for Lombard SWD #1 include: 1) Installation of adequate casing strings to isolate and protect groundwater resources and producible hydrocarbon intervals; 2) characterization of the injection zone and overlying cap-rock strata; and 3) a total depth (TD) ensuring accurate identification of the target reservoir.

A suitable drilling rig will be chosen for the job that will include appropriate blowout preventer and choke-manifold system for any unforeseen pressures encountered. Visual inspections of cement returns to the surface will be noted in the conductor, surface, 1st intermediate, and 2nd intermediate casing operations. Casing and cement integrity will be demonstrated by pressure testing and 360-degree cement bond logs recorded for each cement operation.

The four casing strings shown in Figure 3 are summarized in the following Table 1.

Casing	Hole	Tubular	Pounds	Grade	Thread	Top (ft.)	Bottom	Length	
	Size (in.)	Size (in.)	per foot				(ft.)	(ft.)	
Proposed Casing									
Surface	26	20	94	J55	BTC	0	1600	1600	
1 st	17-1/2	13-3/8	68	J55	BTC	0	5650	5650	
Intermediate									
2 nd	12-1/4	9-5/8	40	HCL-80	BTC	0	11530	11530	
Intermediate									
Production	8-3/4	7-5/8	39	P-110	TSH	11330	15535	4205	
Liner									
Injection Tubin	Injection Tubing								
Tubing	-	5-1/2		L80	BTC	0	15535	15535	

The conductor, surface, 1st intermediate, and 2nd intermediate casing will be cemented to the surface utilizing appropriate conventional cement and methods. These cement jobs will be pressure tested and 360-degree cement bond logs will be recorded after the required amount of time has passed for the cement to set.

Once the integrity of cementing operations has been verified, the production-casing borehole will be advanced to an approximately depth of 15,535 feet within the top of the Devonian Thirty-one Formation. A 7.625-inch production liner will be set from approximately 11,330 feet and 15,535 feet, overlapping approximately 200 feet with the 2nd intermediate casing interval. The production liner will be cemented in place utilizing conventional cement and methods.

After the required time interval has passed for the production liner cement to set, the success of the operation will be confirmed via pressure testing and 360-degree cement bond logging. Subsequently, the borehole will be advanced to the anticipated total depth of 17,000 feet within the Fusselman Formation and will be completed with a permanent injection packer and 15,535 feet of 5-1/2" injection tubing set at a depth of 15,535 feet.

Details of the proposed cementing operations for Lombard SWD #1 are summarized in Table 2 below.

Casing String	Stage #	Cement Type	Yield (ft3/sk)	Coverage Interval
Conductor	1	RediMix	-	0' - 75'
Surface	1	Lead: Econocem HLC Tail: HalCem C	Lead: 1.892 Tail: 1.343	0' - 1600'
1 st Intermediate	1	Lead: Econocem HLC	Lead: 1.892	0'-6700'
		Tail: HalCem C	Tail: 1.35	
2 nd Intermediate	1	Lead: NeoCem	Lead: 2.731	5650' - 11530'
		Tail: NeoCem	Tail: 1.439	
2 nd Intermediate	2	Lead: NeoCem	Lead: 2.806	0' - 5650'
		Tail: HalCem C	Tail: 1.35	
Production Liner	1	Lead: NeoCem	Lead: 2.733	11505' – 15535'
		Tail: VersaCem	Tail: 1.223	

 Table 2. Lombard SWD #1 Proposed Cementing Program

3.2 GEOPHYSICAL LOGGING AND RESERVOIR TESTING

Open-hole geophysical logging will be performed for the interval underlying the 2nd intermediate casing (approximately 11,530 feet to 17,000 feet). The proposed open-hole logging suite will consist of the following: Gamma ray, formation density, resistivity, neutron porosity, and 360-degree caliper measurements with integrated borehole volume. Fullbore Formation MicroImager (FMI) logs will be recorded along the proposed injection interval, as well as, the overlying caprock to verify the integrity and confirm the capability of the overlying material to contain the injection fluids.

Upon completion of geophysical logging operations for Lombard SWD #1, reservoir testing operations will be completed. A temporary string of removable packer and tubing will be run to conduct an injection test (step-rate test) to determine the final injection pressure and volumes to ensure the formation parting pressure (fracture pressure) is not reached during injection operations. Once the reservoir has been tested and safe operational conditions have been identified, the final 5-1/2" tubing string and permanent injection packer will be run in and set at a depth of approximately 15,535 feet.

3.2 CALCULATED MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP)

The total maximum volume and average volume of produced water to be injected under this scenario will be approximately 25,000 barrels per day (bpd) and 20,000 bpd, respectively. Pressure reduction valves will be incorporated to ensure that the maximum allowable operating pressure approved by the NMOCD will not be exceeded.

The calculated maximum allowable surface injection pressure (known as MAOP – maximum allowable operating pressure) would be approximately 3,107 psi. To determine this limit, we utilize the following method approved by the NMOCD to calculate the proposed MAOP:

 $IP_{Max} = PG(D_{Top})$

Where:	IP _{Max} = Maximum Surface Injection Pressure (psi)
	PG = Pressure Gradient of Injection Fluid (psi/ft.)
	D_{Top} = Depth at top of injection zone (ft.)

And

 $PG = 0.2 + 0.433 (1.04 - SG_{Sw})$

Where: $SG_{Sw} = Specific gravity of the disposed produced water$

Based on our review of the targeted injection reservoir and the anticipated produced water composition, the specific gravity of the injectate and top of the targeted injection reservoir are as follows:

$$SG_{Sw} = 1.04$$

 $D_{Top} = 15,535$ feet

Therefore:

$$PG = 0.2 + 0.433 (1.04 - 1.04)$$
$$PG = 0.2$$

And

$$IP_{Max} = 0.2 \frac{psi}{ft} x DEPTH$$
$$IP_{Max} = 3,107 psi$$

For this reason, 3Bear Field Services requests approval for a surface injection MAOP of 3,107 psig for the proposed Lombard SWD #1.

4.0 REGIONAL AND LOCAL GEOLOGY AND HYDROGEOLOGY

4.1 GENERAL GEOLOGIC SETTING AND SURFACE GEOLOGY

The proposed Lombard SWD #1 site is located in Section 6, T21S, R33E in Lea County, New Mexico, approximately 31 miles west-southwest of Hobbs (Figure 1). The well location lies within a portion of the Pecos River basin referred to as the Querecho Plains Reach (Nicholson & Clebsch, 1961). This area is relatively flat and largely covered by sand dunes underlain by a hard caliche surface. The dune sands are locally stabilized with shin oak, mesquite, and some burr grass. There are no observed surface bodies of water or groundwater discharge sites within one mile of the proposed well location. Where drainages exist in interdunal areas, they are ephemeral, discontinuous, dry washes. The proposed well site is underlain by Quaternary alluvium overlying the Triassic redbeds of the Santa Rosa Formation (Dockum Group), both of which are local sources of groundwater. The thick sequences of Permian strata that underlie these deposits are described generally below.

4.2 BEDROCK GEOLOGY

The 3Bear facility and proposed well are located in the northern portion of the Delaware Basin, a subbasin of the larger, encompassing Permian Basin (Figure 4), which covers a large area of southeastern New Mexico and west Texas. The Permian Basin as we know it today began to take form during the Middle to Late Mississippian, with various segments (Delaware Basin, Midland Basin, Central Basin Platform, and North Platform) arising from the ancestral Tabosa Basin. The Delaware Basin was subsequently deepened by periodic deformation during the Hercynian Orogeny of the Pennsylvanian through Early Permian. Following the orogeny, the Delaware Basin was structurally stable and gradually was filled by large quantities of clastic sediments while carbonates were deposited on the surrounding shelves and was further deepened via basin subsidence.

Figure 5 illustrates a generalized Permian Basin stratigraphic column showing the anticipated formations and lithologies that underlie the proposed well site. The entire Lower Paleozoic interval (Ellenburger through Devonian) was periodically subjected to subaerial exposure and prolonged periods of karsting, most especially in the Fusselman and Devonian intervals. The result of this exposure was development of systems of karst-related secondary porosity, which included solution-enlargement of fractures and vugs, and the development of small cavities and caves. Particularly in the Fusselman, solution features from temporally-distinct karst events became interconnected with each successive episode of subaerial exposure, so there is the potential for vertical continuity in parts of the Fusselman that could lead to enhanced vertical and horizontal permeability.

In this area of the Permian Basin, major tectonic activity was primarily confined to the lower Paleozoic section, where seismic data show major faulting and ancillary fracturing affecting only as high as the lower Woodford Shale. Faulting high in the section that is related to the Hercynian orogeny is more prevalent closer to the Central Basin Platform margins and the northern margins of the Northwest Shelf.

The sub-Woodford Paleozoic rocks extend down to the Ordovician Ellenburger Formation, which is separated from underlying basement rock by a limited interval of Early Ordovician sandstones and granite wash. The Ellenburger is comprised of dolomites and limestones and is up to several hundred feet in thickness. It is overlain by approximately 330 feet of Ordovician Simpson Formation sandstones and tight limestones, as well as approximately 180 feet of basal Montoya cherty carbonates.

The Silurian Fusselman and Wristen, and Devonian Thirty-one formations overlie the Montoya Formation, and are comprised of interbedded dolomites and dolomitic limestones that are capped by the Woodford Shale. The Woodford Shale is overlain by several hundred feet of tight Osagean limestone and several hundred feet of shale and basinal limestones of the Upper Mississippian Chester Formation. The overlying Pennsylvanian Morrow, Atoka, and Strawn formations complete the pre-Permian section. Within this entire sequence, the Morrow is a gas-producing zone, with smaller contributions from the Atoka and Strawn. The proposed Silurian-Devonian injection zone does not produce economic hydrocarbons in the area of the proposed Lombard SWD #1.

4.3 LITHOLOGIC AND RESERVOIR CHARACTERISTICS OF THE SILURO-DEVONIAN FORMATIONS

The proposed injection interval includes the Devonian Thirty-one and Silurian Wristen and Fusselman formations, collectively referred to as the Siluro-Devonian. These strata include numerous intervals of dolomites and dolomitic limestones with moderate to high primary porosity. Additionally, the proposed injection interval includes significant regions of secondary, solution-enlarged porosity produced during periods where strata were subaerially exposed and significant karst features developed. These karst features most frequently developed in the Fusselman Formation and include solution cavities and enlarged fracture and fracture networks throughout the Siluro-Devonian section, which can be substantial enough to provide additional permeability that is not readily apparent on geophysical well logs. The porous zones of the Siluro-Devonian are separated by tight limestones and dolomites.

Based on the geologic evaluation of the subsurface, produced water injection is recommended between depths of 15,535 to 17,000 feet. Figure 6 includes a type log of the proposed injection zone that includes the anticipated formation tops for Lombard SWD #1 and illustrates the sufficient low-porosity intervals overlying the injection zone.

Units overlying the proposed injection interval provide excellent caprock to prevent the upward migration of injected fluids out of the target reservoir. This caprock includes 190 feet of dense Woodford shale overlain by at least 800 feet of tight Mississippian limestone (Figures 6 and 7). These units will provide an excellent geologic seal above the porous carbonates of the injection zone providing protection to shallow groundwater resources and overlying pay zones.

There are no producing zones within or below the Siluro-Devonian in the area of the proposed well and the proposed injection zone is isolated from the nearest overlying producing zone (Morrow Formation) by approximately 190 feet of Woodford Shale, 580 feet of tight Mississippian limestones (Osage; Meramec), and approximately 250 feet of tight Chesterian and Barnett formation shale and deep-water limestone. It lies a minimum of 830 feet above the Precambrian basement rock.

Figure 7 includes an approximate east-west structural cross section in the area of the proposed Lombard SWD #1 and highlights the lateral extent of available porosity and the regional coverage of overlying caprock in the area. Shown in Figure 7 are two faults identified during a review of licensed 3D seismic survey data in the area of the proposed well. These structures are located greater than three miles from the proposed well location and are discussed further in Section 4.6.

4.4 CHEMISTRY OF THE RESERVOIR FLUIDS

A review of formation waters from the U.S. Geological Survey National Produced Waters Geochemical Database, v. 2.3 (retrieved on December 22, 2019) identified five wells with analyses of fluid samples collected from the Siluro-Devonian interval. These samples were collected from wells within approximately 15 miles of the proposed Lombard SWD #1 (Section 6, Township 21 South, Range 33 East). Table 3 below summarizes the observed formation fluid characteristics.

API		CONCENTRATION (parts per million)								
	TDS	Sp.	Ca	Cl	Mg	Na	SO ₄			
		Gravity								
3002508483	74490	1.048								
3001505819	24702	1.016				SED IN				
3002502432	47197	1.031		NO	T ANALYS THESE WI					
3002520377	46170	1.03		r	THESE W					
3002502431	34149	1.022								

 Table 3. Summary of produced water analyses from nearby wells (U.S. Geological Survey National Produced Water Geochemical Database v. 2.3)

These analyses show Total Dissolved Solids (TDS) in the area of the proposed SWD well ranging from 24,702 to 74,490 parts per million (ppm) with an average of 45,341 ppm. The USGS produced water database does not include laboratory results identifying major chemical constituents of the samples, however, chloride ions are typically the primary constituent of produced water samples in this region of the Permian Basin.

An attempt will be made to sample formation fluids during drilling and completion of the proposed Lombard SWD #1 to provide more site-specific fluid properties.

Based on these data, the Siluro-Devonian reservoir fluids are compatible with produced waters from wells in the area of Lombard SWD #1.

4.5 GROUNDWATER HYDROLOGY IN THE VICINITY OF THE PROPOSED INJECTION WELL

Based on the New Mexico Water Rights Database from the New Mexico Office of the State Engineer, there are three water wells located within a two-mile radius of the proposed Lombard SWD #1 well, and only one water well within a one-mile radius. Of these wells, the closest is located approximately 0.52 miles away and has a total depth of 1,000 feet (Figure 8; Table 4). The remaining wells within the two-mile radius are shallow, collecting water from approximately 160 to 170 feet deep, in Alluvium and the Triassic redbeds. The shallow freshwater aquifer will be protected as the proposed well design isolates the shallow zones via a 4-string casing design including a surface casing interval that extends to 1,600 feet within the Rustler Formation, effectively isolating shallow groundwater resources (Figure 3).

The area surrounding the proposed injection well is arid and there are no bodies of surface water within a two-mile radius.

Table 4.	Water wells within one mile of the proposed 3Bear Lombard SWD #1 (retrieved from
the New	Mexico Office of the State Engineer's Files on 02/19/2020)

POD #	Source	Sec.	Twn.	Rng.	Lat.	Long.	Distance	Depth
				_	(NAD83)	(NAD83)	(miles)	(feet)
CP 00793 POD 1	СР	1	21S	32E	32.514259	-103.627334	0.52	1000
CP 00794 POD 1	СР	18	21S	33E	32.483429	-103.616692	1.95	160
CP 00795 POD 1	СР	18	21S	33E	32.483429	-103.616692	1.95	170

Our analysis confirms that the proposed well poses no risk of contaminating groundwater in the area as 1) the proposed well design includes material considerations to protect shallow groundwater resources, and 2) there are no identified conduits that would facilitate migration of injected fluids to fresh-water bearing strata.

4.6 POTENTIAL FOR INDUCED SEISMICITY IN THE AREA OF LOMBARD SWD #1

To evaluate the potential for seismic events in response to injected fluids, Geolex conducted an inducedseismicity risk assessment in the area of the proposed Lombard SWD #1. This estimate 1) models the impact of eight waste disposal wells over a 30-year injection period and 2) estimates the fault-slip probability associated with the simulated injection scenario. This analysis was completed utilizing the Stanford Center for Induced and Triggered Seismicity's (SCITS) Fault Slip Potential (FSP) model developed by Walsh and Zoback, 2016.

To identify subsurface structures in the area of the proposed SWD well, Geolex evaluated and interpreted licensed seismic survey (Fairfield – Red Tank Survey) data covering the Lea County area of interest. Based on this review, Geolex identified three subsurface faults in the area of the proposed Lombard SWD #1. Two faults are located greater than three miles west of the proposed well and the remaining feature lies greater than six miles east of the well location (Figure 9). All observed faults in the area strike approximately north to south. Due to the location of faults relative to other active and proposed injection wells in the area, it is anticipated that these features will not pose any elevated risk to injection-induced slip as they are separated from active areas of injection by several miles. To verify these structures would not be affected by approval of the proposed Lombard SWD #1, a model simulation was performed to quantify the risk associated with injection operations in the area of the proposed well.

To calculate the fault-slip probability for this injection scenario, input parameters characterizing the local stress field, reservoir characteristics, subsurface features, and injected fluids are required. Parameters utilized and their sources for this study area included in Table 5 below. Additionally, Table 6 details the injection volume characteristics and locations of the disposal wells modeled in this scenario. For wells in which the maximum anticipated injection volumes were not available through review of NMOCD documentation, a value of 25,000 barrels injected per day was assumed.

For all modeled scenarios, injection wells were simulated utilizing their maximum anticipated daily injection volumes for a period of at least 30 years. These values range from 20,000 to 30,000 bpd (Table 6). Additionally, the simulation period was increased to 35 years in order to include the reservoir effects of disposal wells that are currently and have been in operation since 2015. This approach yields a more conservative model prediction that ensures the operation of the proposed Lombard SWD #1 will not produce induced-seismic events.

Generally, faults considered in this assessment are predicted by the Stanford FSP model to have no potential for injection-induced slip and the proposed Lombard SWD #1 is not predicted by the model to contribute significantly to the probability of slip. All features included in the model simulation show no increase in slip potential throughout the total modeled injection period (Figure 10). Table 7 summarizes the predicted pressure change along each fault and includes the model-derived pressure increase necessary to induce slip for each feature. Additionally, radial solutions that characterize the pressure effects imparted on the reservoir by each injection well show that the Lombard SWD #1 is located at a great enough distance that it contributes only minimally to reservoir pressure conditions along the fault.

In summary, no structures included in the modeled simulations experience any increase in slip potential and modeled pressure increases along faults after at least 30 years fall significantly short of the required pressure increase to induce slip. Furthermore, radial pressure solutions calculated for each modeled injection well illustrate that the operation of the proposed Lombard SWD #1 will have little impact on conditions near the identified faults in the area.

Modeled Parameter	Input Value	Variability (+/-)	UOM	Source
Stress				
Vertical Stress Gradient	1.05	0.105	psi ft ⁻¹	Nearby well estimate
Max Horizontal Stress Direction	N75E	5	Deg.	Lund Snee & Zoback, 2018
Reference Depth	15,550		ft	Nearby well evaluation
Initial Res. Pressure Gradient	0.43	0.043	psi ft ⁻¹	Lund Snee & Zoback, 2018
A_{Φ} Parameter	0.6	0.06	-	Lund Snee & Zoback, 2018
Reference Friction Coefficient (μ)	0.6	0.06	-	Standard Value
Hydrologic				
Aquifer Thickness	1200	100	ft	Nearby well evaluation
Porosity	4	1	%	Nearby well evaluation
Permeability	10	5	mD	Nearby well evaluation
Material properties				
Density (Water)	1040	50	kg m ⁻³	Standard Value
Dynamic Viscosity (Water)	0.0008	0.0001	Pa.s	Standard Value
Fluid Compressibility (water)	3.6 x 10 ⁻¹⁰	0	Pa ⁻¹	Standard Value
Rock Compressibility	1.08 x 10 ⁻⁹	0	Pa ⁻¹	Standard Value

Table 5. Input parameters and source material for FSP model simulations

Table 6. Location and characteristics of injection wells modeled in the FSP assessment

#	API	Well Name	Latitude	atitude Longitude		Start	End
					(bbls/day)	(year)	(year)
1	TBD	Lombard SWD #1	32.511680	-103.619000	25000	2020	2050
2	3002542527	Corazon 4 State SWD #2	32.512685	-103.577069	25000	2015	2050
3	3002545324	Athena 28 #1	32.545348	-103.572712	25000	2020	2050
4	3002545815	Dagger State #1	32.449928	-103.60744	25000	2020	2050
5	3002543474	Lightning 1 State #2	32.510828	-103.52677	25000	2017	2050
6	3002543535	Okerlund SWD #1	32.489948	-103.710492	20000	2020	2050
7	3002544189	Okeanos SWD #1	32.524504	-103.520697	25000	2020	2050
8	3002544273	Zeus SWD #1	32.428628	-103.638033	30000	2018	2050

Table 7. Summary of model-simulation results showing the required pressure change to induce fault slip, actual change in pressure as predicted by the FSP model, probability of fault slip at the end of the 30-year injection scenario, and fault slip probability when the proposed SWD is excluded

Fault Segment #	ΔPressure necessary to induce fault slip	Actual ΔPressure at fault midpoint at 2050	Fault Slip Potential at 2050
1	3455 psi	26 psi	0.00
2	4783 psi	73 psi	0.00
3	5745 psi	164 psi	0.00
4	5034 psi	598 psi	0.00
5	5634 psi	579 psi	0.00

5.0 OIL AND GAS WELLS IN THE LOMBARD SWD #1 AREA OF REVIEW AND VICINITY

Appendix A summarizes in detail all NMOCD recorded wells within a one-half and one-mile radius of the proposed Lombard SWD #1. These wells are shown in figures A-0 and A-1 and include active, plugged, and permitted well locations. Table A-1 summarizes all wells within one mile of the proposed SWD well location and wells located within one-half mile area included in Table 8 below.

In total, there are 39 wells within a one-mile radius of the proposed Lombard SWD #1 (Appendix A, Figure A-1, Table A-1). Of these wells, there are 7 active, 6 plugged, and 26 permitted. Active and planned wells primarily target Bone Springs and Wolfcamp pools, however, three gas wells were identified producing the Morrow Formation.

Within one-half mile of the proposed SWD there are 24 wells, of which, 2 are active and 2 are plugged (Figure A-0, Figure A-1, Table 8). Additionally, there are 20 locations permitted, but have not yet been drilled or completed.

API	Well Name	Pool	Status	LAT	LONG	Total	Miles from
				(NAD83)	(NAD83)	Depth (ft)	SWD
3002502607	Shepard Federal	-	Plugged	32.509724	-103.621956	3496	0.22
3002536596	Straw Hat State #1	Morrow	Active	32.511143	-103.614952	14504	0.24
3002544776	Toque State COM #201H	B. Spring	New	32.507488	-103.618807	-	0.29
3002544779	Toque State COM #301H	B. Spring	New	32.507487	-103.618710	-	0.29
3002544811	Minis 1 FED COM 3BS #6H	B. Spring	New	32.512579	-103.623871	11530	0.29
3002544783	Toque State COM #401H	B. Spring	New	32.507032	-103.618741	-	0.32
3002544786	Toque State COM #503H	B. Spring	New	32.507684	-103.615775	-	0.33
3002544790	Toque State COM #702H	Wolfcamp	New	32.507684	-103.615872	-	0.33
3002544778	Toque State COM #202H	B. Spring	New	32.507560	-103.615774	-	0.34
3002544780	Toque State COM #302H	B. Spring	New	32.507561	-103.615872	-	0.34
3002544781	Toque State COM #303H	B. Spring	New	32.507560	-103.615677	-	0.34
3002527659	Minis Federal COM #1	Morrow	Active	32.513233	-103.625160	14000	0.38
3002544785	Toque State COM #502H	B. Spring	New	32.507592	-103.614428	-	0.39
3002544788	Toque State COM #602H	B. Spring	New	32.507591	-103.614331	-	0.39
3002544148	Toque State COM #501H	B. Spring	New	32.507590	-103.614136	-	0.40
3002544787	Toque State COM #601H	B. Spring	New	32.507590	-103.614039	-	0.40
3002544789	Toque State COM #701H	Wolfcamp	New	32.507590	-103.614234	-	0.40
3002544784	Toque State COM #402H	B. Spring	New	32.507676	-103.613293	-	0.43
3002544791	Toque State COM #703H	Wolfcamp	New	32.507676	-103.613391	-	0.43
3002536957	Imperial 6 Federal #1	-	New	32.517765	-103.616592	-	0.44
3002544777	Toque State COM #203H	B. Spring	New	32.507552	-103.613196	-	0.44
3002544782	Toque State COM #304H	B. Spring	New	32.507552	-103.613293	-	0.44
3002544792	Toque State COM #704H	Wolfcamp	New	32.507678	-103.613196	-	0.44
3002502608	ETZ Federal #1	-	Plugged	32.513348	-103.626236	16396	0.44

Table 8. Wells located within one-half mile of the proposed Lombard SWD #1

There is one well within the one-half mile radius of the proposed SWD that penetrates the anticipated injection interval (Table 9). The ETZ Federal #1 well was drilled to a total depth of 16,396 feet in October 1955 by Phillips Petroleum. Available NMOCD documentation for this well (Appendix A) show that plugging operations began on June 20, 1956 and were completed on July 5, 1956.

inter var							
API	Well Name	Pool	Status	Lat.	Long.	Total	Miles
				(NAD83)	(NAD83)	Depth	from
						(ft.)	SWD
3002502608	ETZ Federal #1	-	Plugged	32.513348	-103.62636	16396	0.44

Table 9. Wells located within one mile of Lombard SWD #1 that penetrate the targeted injection interval

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6.0 IDENTIFICATION AND REQUIRED NOTIFICATION OF OPERATORS, SUBSURFACE LESSEES, AND SURFACE OWNERS WITHIN THE AREA OF REVIEW

Geolex and 3Bear Field Services contracted Lonquist & Co. LLC to research land records in Lea County, New Mexico to obtain a listing of all operators, oil and gas mineral leases, and surface owners within a one-mile radius of the proposed SWD well. Appendix B includes the results of those inquiries.

Table B-1 summarizes the operators, lessees, and surface owners in the one-mile area of interest. Table B-2 includes a compiled list of all persons who were provided notice of 3Bears intent to submit this C-108 application. Figures B-1 and B-2 illustrate areas held by operators and lessees/surface owners, respectively.

Copies of all individual notice letters, certified mail receipts, and copies of the newspaper notice and affidavit of publication are also included in Appendix B.

7.0 AFFIRMATIVE STATEMENT OF LACK OF HYDRAULIC CONNECTION BETWEEN THE PROPOSED INJECTION ZONE AND KNOWN SOURCES OF DRINKING WATER

As part of the work performed to support this application, a detailed investigation of the structure, stratigraphy, and hydrogeology of the area surrounding the proposed Lombard SWD #1 well has been performed. The investigation included the analysis of available geologic data and hydrogeologic data from wells and literature identified in sections 3.0, 4.0, and 5.0 above including related appendices. Base on this investigation and the analysis of these data, it is clear that there are no open fractures, faults, or other structures which could potentially result in the communication of fluids between the proposed injection zone and any known sources of drinking water or oil/gas production in the vicinity, as described above in sections 4.0 and 5.0 of this application.

I have reviewed this information and affirm that it is correct to the best of my knowledge.

Alberto A. Gutiérrez, R.G. President Geolex, Inc.[®]

Signature:	MAR	Date:	2/21	2020
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Figure 1. General location map for proposed well in Section 6 (T21S, R33E) located approximately 31 miles southwest of Hobbs, New Mexico



Figure 2. Detailed location map showing the anticipated Lombard SWD #1 location and 3Bear Energy surface facilities











Figure 4. Structural setting (panel A) and general lithologies (panel B) of the Permian Basin

Generalized stratigraphic correlation chart for the Permian Basin region

SYSTEM	SERIES/ STAGE	NORTHWEST SHELF	CENTRAL BASIN PLATFORM	MIDLAND BASIN & EASTERN SHELF	DELAWARE BASIN	VAL VERDE BASIN		
	OCHOAN	DEWEY LAKE RUSTLER SALADO	DEWEY LAKE RUSTLER SALADO	DEWEY LAKE RUSTLER SALADO	DEWEY LAKE RUSTLER SALADO CASTILE	RUSTLER SALADO		
PERMIAN	GUADALUPIAN	TANSILL YATES SEVEN RIVERS QUEEN GRAYBURG SAN ANDRES GLORIETA	TANSILL YATES SEVEN RIVERS QUEEN GRAYBURG SAN ANDRES GLORIETA	TANSILL YATES SEVEN RIVERS QUEEN GRAYBURG SAN ANDRES SAN ANDRES	DELAWARE MT. GROUP BELL CANYON CHERRY CANYON BRUSHY CANYON	TANSILL YATES SEVEN RIVERS QUEEN GRAYBURG SAN ANDRES		
	LEONARDIAN	CLEARFORK YESO WICHITA ABO	CLEARFORK WICHITA	LEONARD SPRABERRY, DEAN	BONE SPRING	LEONARD		
	WOLFCAMPIAN	WOLFCAMP	WOLFCAMP	WOLFCAMP		WOLFCAMP		
	VIRGILIAN	CISCO	CISCO	CISCO	CISCO	CISCO		
	MISSOURIAN	CANYON	CANYON	CANYON	CANYON	CANYON		
PENNSYLVANIAN	DESMOINESIAN	STRAWN	STRAWN	STRAWN	🔶 STRAWN	STRAWN		
	ATOKAN	ATOKA BEND	ATOKA BEND	ATOKA BEND	ATOKA BEND	(ABSENT)		
	MORROWAN	MORROW	(ABSENT)	(ABSENT ?)	MORROW	(ABSENT)		
MISSISSIPPIAN	CHESTERIAN MERAMECIAN OSAGEAN	CHESTER MERAMEC OSAGE	CHESTER MERAMEC OSAGE	CHESTER MERAMEC OSAGE	CHESTER MERAMEC OSAGE	MERAMEC BARNETT		
	KINDERHOOKIAN	KINDERHOOK	KINDERHOOK	KINDERHOOK	KINDERHOOK	KINDERHOOK		
DEVONIAN		WOODFORD DEVONIAN	WOODFORD	WOODFORD		WOODFORD DEVONIAN		
SILURIAN		SILURIAN (UNDIFFERENTIATED)	SILURIAN SHALE FUSSELMAN	SILURIAN SHALE FUSSELMAN	MIDDLE SILURIAN FUSSELMAN	MIDDLE SILURIAN FUSSELMAN		
	UPPER	MONTOYA	MONTOYA	SYLVAN MONTOYA	SYLVAN MONTOYA	SYLVAN MONTOYA		
ORDOVICIAN	MIDDLE	SIMPSON	SIMPSON	SIMPSON	SIMPSON	SIMPSON		
	LOWER	ELLENBURGER	ELLENBURGER	ELLENBURGER	ELLENBURGER	ELLENBURGER		
CAMBRIAN	UPPER	CAMBRIAN	CAMBRIAN	CAMBRIAN	CAMBRIAN	CAMBRIAN		
PRECAMBRIAN								

Figure 5. General stratigraphy and producing zones (red stars) in the immediate area of Lombard SWD #1 (Yang and Dorobek, 1995)









Figure 6. Type log illustrating the anticipated formation tops in the area of the proposed Lombard SWD #1. The targeted Siluro-Devonian injection zone is overlain by adequate caprock comprised of low-porosity, low-permeability Woodford Shale and overlying Mississippian (Osagean) carbonates.

Type log included here represents the ETZ Federal #1 well (details included below).

API: 30-025-02608 Well Name: ETZ Federal #1 Original Operator: Phillips Petro. Total Depth: 16396'

TARGETED INJECTION ZONE

FROM 15535 TO 17000 FEET INCLUDING THE DEVONIAN THIRTY-ONE FORMATION AND SILURIAN WRISTEN AND FUS-SELMAN FORMATIONS (BLUE BAR)



Dockum - 268' Ochoa-Dewey - 792' Rustler - 1505' Salado - 1852' Tansill - 3088' Yates - 3245' Cherry Cnyn. - 5640' Brushy Cnyn. - 6675' Bone Springs - 8581'

Wolfcamp - 11504'

Strawn - 12882' Atoka - 13076'

Morrow - 13812'

Osage - 14947'

Woodford - 15349' Devonian - 15535' Wristen - 15771'

Fusselman - 16358'







Figure 7. Structural cross section L1-L1' showing porosity profile within the proposed injection interval and regional extent of overlying caprock material. Two faults were identified in the area of the proposed Lombard SWD #1 and are discussed in greater detail in Section 4.6.





Figure 8. Water wells in the vicinity of the proposed Lombard SWD #1

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		5	4	3 2	Aero	grid, ign	l, and the G	IS User Co	ommunity	2	1 4 2 2	0	3	the Street

Figure 9. Injection wells and Devonian subsurface features in the vicinity of Lombard SWD #1







Figure 10. Summary of model-simulation results showing no anticipated potential for fault slip in response to the proposed injection scenario (panel A). Despite the density of injection wells northeast of the proposed Lombard SWD (panel B), faults in the area are oriented such that they are not at elevated risk for injection-induced slip. As shown in panel C, faults segments 4 and 5 show the greatest pressure increase, however these conditions at the termination of the 30-year injection period are still less than 10% of the required pressure increase to induce fault slip as determined by the FSP model.

APPENDIX A

INFORMATION ON OIL AND GAS WELLS WITHIN ONE MILE OF THE PROPOSED LOMBARD SWD #1

Figure A-0	All wells located within a two-mile radius of the Proposed Lombard SWD #1
Figure A-1:	All wells located within a one-mile radius of the proposed Lombard SWD #1
Table A-0:	All wells located within 2-miles of the proposed Lombard SWD #1
Table A-1:	Wells located within one mile of the proposed Lombard SWD #1
Well Files:	NMOCD documents for plugged ETZ Federal #1

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Figure A-0. All wells located within a two-mile radius of the proposed Lombard SWD #1. Wells labels reflect last five numbers of API 30-025-XXXXX.
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Figure A-1. All wells located within a one-mile radius of the proposed Lombard SWD #1. Well labels reflect last five numbers of API 30-0250-XXXXX and are summarized in Table A-1 of Appendix A.

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TABLE A-0. ALL WELLS LOCATED WITHIN 2-MILES OF THE PROPOSED LOMBARD SWD #1

API	LEASE NAME	Sec	Т	R	OPERATOR	SPUD	DIR	POOL	TYPE	STATUS			TD	DISTANCE
											(NAD83)	(NAD83)		(TO SWD)
30-025-02607	SHEPHERD FED	1	21S	32E	CULBERTSON & IRWIN	1942	-	No Data	Oil	Plugged	32.509724	-103.621956	3496	0.22
30-025-36596	STRAW HAT 6 STATE #001	6	21S	33E	EOG RESOURCES INC	2004	v	MORROW	Gas	Active	32.511143	-103.614952	14504	0.24
30-025-44776	TOQUE STATE COM #201H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507488	-103.618807	0	0.29
30-025-44779	TOQUE STATE COM #301H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507487	-103.61871	0	0.29
30-025-44811	MINIS 1 FED COM 3BS #006H	1	21S	32E	CHISHOLM ENERGY	-	н	BONE SPRINGS	Oil	New	32.512579	-103.623871	11530	0.29
30-025-44783	TOQUE STATE COM #401H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507032	-103.618741	0	0.32
30-025-44786	TOQUE STATE COM #503H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507684	-103.615775	0	0.33
30-025-44790	TOQUE STATE COM #702H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	WOLFCAMP	Oil	New	32.507684	-103.615872	0	0.33
30-025-44778	TOQUE STATE COM #202H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.50756	-103.615774	0	0.34
30-025-44780	TOQUE STATE COM #302H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507561	-103.615872	0	0.34
30-025-44781	TOQUE STATE COM #303H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.50756	-103.615677	0	0.34
30-025-27659	MINIS FED COM #001	1	21S	32E	CHISHOLM ENERGY	9999	v	MORROW	Gas	Active	32.513233	-103.62516	14000	0.38
30-025-44785	TOQUE STATE COM #502H	6	21S	33E	ASCENT ENERGY, LLC.	2019	D	BONE SPRINGS	Oil	New	32.507592	-103.614428	0	0.39
30-025-44788	TOQUE STATE COM #602H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507591	-103.614331	0	0.39
30-025-44148	TOQUE STATE COM #501H	7	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.50759	-103.614136	0	0.4
30-025-44787	TOQUE STATE COM #601H	6	21S	33E	ASCENT ENERGY, LLC.	-	D	BONE SPRINGS	Oil	New	32.50759	-103.614039	0	0.4
30-025-44789	TOQUE STATE COM #701H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	WOLFCAMP	Oil	New	32.50759	-103.614234	0	0.4
30-025-44784	TOQUE STATE COM #402H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507676	-103.613293	0	0.43
30-025-44791	TOQUE STATE COM #703H	6	21S	33E	ASCENT ENERGY, LLC.	-	D	WOLFCAMP	Oil	New	32.507676	-103.613391	0	0.43
30-025-02608	ETZ FED	1	21S	32E	PHILLIPS PETRO.	1956	-	No Data	Oil	Plugged	32.513348	-103.626236	16396	0.44
30-025-36957	IMPERIAL 6 FED #001	6	21S	33E	CORKRAN ENERGY LP	-	v	No Data	Oil	New	32.517765	-103.616592	0	0.44
30-025-44777	TOQUE STATE COM #203H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507552	-103.613196	0	0.44
30-025-44782	TOQUE STATE COM #304H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507552	-103.613293	0	0.44
30-025-44792	TOQUE STATE COM #704H	6	21S	33E	ASCENT ENERGY, LLC.	-	D	WOLFCAMP	Oil	New	32.507678	-103.613196	0	0.44
30-025-40308	ADAMS STATE COM #003H	6	21S	33E	CIMAREX ENERGY CO.	2011	н	BONE SPRINGS	Oil	Active	32.506985	-103.609566	11682	0.64
30-025-44851	MINIS 1 FED COM 2BS #010H	1	21S	32E	CHISHOLM ENERGY	-	н	BONE SPRINGS	Oil	New	32.521579	-103.623968	11626	0.74
30-025-44853	MINIS 1 FED COM WCA #016H	1	21S	32E	CHISHOLM ENERGY	-	н	WOLFCAMP	Oil	New	32.521579	-103.623774	11593	0.74
30-025-44856	MINIS 1 FED COM 3BS #007H	1	21S	32E	CHISHOLM ENERGY	2018	н	BONE SPRINGS	Oil	Active	32.521936	-103.624001	11505	0.76
30-025-44857	MINIS 1 FED COM 2BS #011H	1	21S	32E	CHISHOLM ENERGY	2018	н	BONE SPRINGS	Oil	Active	32.521936	-103.624195	10720	0.77
30-025-02609	SHEPERD FED	1	21S	32E	SOUTHERN CALIFORNIA	1953	-	No Data	Oil	Plugged	32.521401	-103.626221	3508	0.79
30-025-33506	MINIS 1 FED COM #003	1	21S	32E	CHISHOLM ENERGY	1997	v	MORROW	Gas	Active	32.512459	-103.632645	14550	0.8
30-025-45794	ADAMS STATE COM #015H	6	21S	33E	CIMAREX ENERGY CO.	-	н	BONE SPRINGS	Oil	New	32.50615	-103.606537	0	0.82
30-025-44854	MINIS 1 FED COM WCA #014H	1	21S	32E	CHISHOLM ENERGY	-	н	WOLFCAMP	Oil	New	32.521941	-103.628348	0	0.89
30-025-44855	MINIS 1 FED COM WCA #015H	1	21S	32E	CHISHOLM ENERGY	-	н	WOLFCAMP	Oil	New	32.52194	-103.628153	0	0.89

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TABLE A-0 (CONTINUED)

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API	LEASE NAME	Sec	т	R	OPERATOR	SPUD	DIR	POOL	TYPE	STATUS	LAT	LONG	TD	DISTANCE
											(NAD83)	(NAD83)		(TO SWD)
30-025-02615	ETZ #1	12	21S	32E	GETTY OIL CO	-	-	No Data	Oil	Plugged	32.498836	-103.621979	3517	0.9
30-025-45130	MINIS 1 FED COM WCA #013H	1	21S	32E	CHISHOLM ENERGY	-	н	WOLFCAMP	Oil	New	32.521941	-103.628543	0	0.9
30-025-24398	FEDERAL ONE #1	1	21S	32E	KIMBALL PRODUCTION	1973	-	MORROW	Gas	Plugged	32.502457	-103.630485	14495	0.92
30-025-02606	SHEPARD B FED	1	21S	32E	CULBERTSON & IRWIN	-	-	No Data	Oil	Plugged	32.501549	-103.629417	3445	0.93
30-025-33227	MINIS 1 FED #002	1	21S	32E	CHISHOLM ENERGY	1995	v	MORROW	Gas	Active	32.506081	-103.634766	14520	1
30-025-36956	MINIS 1 FED #004	1	21S	32E	COG OPERATING LLC	2004	v	DELAWARE	Oil	Active	32.515961	-103.635818	8780	1.03
30-025-43856	BECKNELL STATE COM #004H	5	21S	33E	COG OPERATING LLC	2017	н	BONE SPRING	Oil	Active	32.507368	-103.60212	11683	1.03
30-025-44850	MINIS 1 FED COM 2BS #009H	1	21S	32E	CHISHOLM ENERGY	-	н	BONE SPRING	Oil	New	32.521944	-103.632111	0	1.04
30-025-44848	MINIS 1 FED COM 3BS #005H	1	21S	32E	CHISHOLM ENERGY	-	н	BONE SPRING	Oil	New	32.521944	-103.632305	0	1.05
30-025-44849	MINIS 1 FED COM 2BS #008H	1	21S	32E	CHISHOLM ENERGY	-	н	BONE SPRING	Oil	New	32.521944	-103.6325	0	1.06
30-025-44847	MINIS 1 FED COM 3BS #004H	1	21S	32E	CHISHOLM ENERGY	-	н	BONE SPRING	Oil	New	32.521944	-103.632695	0	1.07
30-025-44852	MINIS 1 FED COM WCA #012H	1	21S	32E	CHISHOLM ENERGY	-	н	WOLFCAMP	Oil	New	32.521944	-103.632889	0	1.07
30-025-36779	SOMBRERO 5 STATE #001	5	21S	33E	EOG RESOURCES INC	2005	v	MORROW	Gas	Active	32.512585	-103.600227	14340	1.1
30-025-46549	BIG MOOSE FED COM #707H	1	21S	32E	ASCENT ENERGY, LLC.	-	н	WOLFCAMP	Oil	New	32.5015187	-103.6340084	0	1.12
30-025-46498	BIG MOOSE FED COM #505H	1	21S	32E	ASCENT ENERGY, LLC.	-	н	BONE SPRING	Oil	New	32.5015185	-103.6341055	0	1.13
30-025-46544	BIG MOOSE FED COM #204H	1	21S	32E	ASCENT ENERGY, LLC.	-	н	BONE SPRING	Oil	New	32.501395	-103.6340084	0	1.13
30-025-46545	BIG MOOSE FED COM #307H	1	21S	32E	ASCENT ENERGY, LLC.	-	н	BONE SPRING	Oil	New	32.5013948	-103.6341056	0	1.13
30-025-46547	BIG MOOSE FED COM #506H	1	21S	32E	ASCENT ENERGY, LLC.	-	н	BONE SPRING	Oil	New	32.5015181	-103.6343002	0	1.13
30-025-46548	BIG MOOSE FED COM #604H	1	21S	32E	ASCENT ENERGY, LLC.	-	н	BONE SPRING	Oil	New	32.5015182	-103.6342029	0	1.13
30-025-46546	BIG MOOSE FED COM #404H	1	21S	32E	ASCENT ENERGY, LLC.	-	н	BONE SPRING	Oil	New	32.5013944	-103.6343001	0	1.14
30-025-46550	BIG MOOSE FED COM #708H	1	21S	32E	ASCENT ENERGY, LLC.	-	н	WOLFCAMP	Oil	New	32.501518	-103.6343976	0	1.14
30-025-46738	BIG MOOSE FED COM #308H	1	21S	32E	ASCENT ENERGY, LLC.	-	н	BONE SPRING	Oil	New	32.5013945	-103.6342029	0	1.14
30-025-02610	BOESCHE #1	2	21S	32E	CULBERTSON & IRWIN	1937	-	No Data	Oil	Plugged	32.513241	-103.639038	3500	1.17
30-025-27407	EAST HAT MESA UNIT #001	7	21S	33E	PENROC OIL CORP	1981	v	MORROW	Gas	Plugged	32.495197	-103.613419	14529	1.18
30-025-36290	MINIS 2 FED COM #004	2	21S	32E	COG OPERATING LLC	2003	v	MORROW	Gas	Active	32.516972	-103.639031	14400	1.22
30-025-01779	STATE	5	21S	33E	FELMONT OIL CORP	1942	-	No Data	Oil	Plugged	32.513229	-103.59671	3717	1.31
30-025-41299	BECKNELL STATE COM #003H	5	21S	33E	COG OPERATING LLC	2013	н	BONE SPRING	Oil	Active	32.50708	-103.596718	11648	1.34
30-025-34449	MINIS 2 FED #001	2	21S	32E	COG OPERATING LLC	1998	v	DELAWARE	Gas	Active	32.501621	-103.639053	14443	1.36
30-025-36059	MINIS 2 FED COM #002	2	21S	32E	COG OPERATING LLC	2002	v	MORROW	Gas	Active	32.510799	-103.643325	14404	1.42
30-025-02614	ALVA NYE ETZ #1	12	21S	32E	JEFFERS OIL CO	1935	-	No Data	Oil	Plugged	32.491581	-103.630501	3581	1.54
30-025-24690	HAT MESA A #001	2	21S	32E	CONOCO PHILLIPS	9999	v	MORROW	Gas	Active	32.502441	-103.643333	14500	1.56
30-025-46717	SOMBRERO FED COM #202H	7	21S	33E	CENTENNIAL RESOURCE	-	н	WOLFCAMP	Oil	New	32.489332	-103.615028	0	1.56
30-025-46719	SOMBRERO FED COM #302H	7	21S	33E	CENTENNIAL RESOURCE	-	н	WOLFCAMP	Oil	New	32.489331	-103.614931	0	1.56
30-025-46721	SOMBRERO FED COM #501H	7	21S	33E	CENTENNIAL RESOURCE	-	н	WOLFCAMP	Oil	New	32.489331	-103.61412	0	1.57

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TABLE A-0 (CONTINUED)

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API	LEASE NAME	Sec	т	R	OPERATOR	SPUD	DIR	POOL	TYPE	STATUS			TD	DISTANCE
											(NAD83)	(NAD83)		(TO SWD)
30-025-46722	SOMBRERO FED COM #601H	7	21S	33E	CENTENNIAL RESOURCE	-	н	WOLFCAMP	Oil	New	32.489331	-103.614023	0	1.57
30-025-41323	BECKNELL STATE COM #002H	5	21S	33E	COG OPERATING LLC	2014	н	BONE SPRING	Oil	Active	32.507355	-103.592468	11634	1.58
30-025-01775	MAGNOLIA STATE	36	20S	33E	RESLER & SHELDON	1951	-	No Data	Oil	Plugged	32.535007	-103.618888	3509	1.61
30-025-46716	SOMBRERO FED COM #201H	7	21S	33E	CENTENNIAL RESOURCE	-	н	BONE SPRING	Oil	New	32.488092	-103.615028	0	1.64
30-025-46718	SOMBRERO FED COM #301H	7	21S	33E	CENTENNIAL RESOURCE	-	н	BONE SPRING	Oil	New	32.488092	-103.614834	0	1.64
30-025-46723	SOMBRERO FED COM #702H	7	21S	33E	CENTENNIAL RESOURCE	-	н	WOLFCAMP	Oil	New	32.488092	-103.614931	0	1.64
30-025-46720	SOMBRERO FED COM #401H	7	21S	33E	CENTENNIAL RESOURCE	-	н	BONE SPRING	Oil	New	32.488092	-103.613936	0	1.65
30-025-46727	SOMBRERO FED COM #703H	7	21S	33E	CENTENNIAL RESOURCE	-	н	WOLFCAMP	Oil	New	32.488092	-103.614023	0	1.65
30-025-25410	FEDERAL HM 12 #1	12	21S	32E	BELCO PETROLEUM	1976	-	MORROW	Gas	Plugged	32.491573	-103.634781	14370	1.66
30-025-36505	PUBCO FED COM #002	2	21S	32E	COG OPERATING LLC	2003	v	MORROW	Oil	Active	32.516979	-103.647606	14385	1.71
30-025-27911	CALEDO FED #1	35	20S	33E	BETTIS BOYLE & STOV	1982	-	No Data	Oil	Plugged	32.532299	-103.636063	5225	1.73
30-025-45851	DELICIOUS LIME ST #601H	8	21S	33E	COG OPERATING LLC	-	н	BONE SPRING	Oil	New	32.495658	-103.595893	0	1.74
30-025-01774	SHELL FEDERAL	35	20S	33E	HELBING & PODPECHAN	1980	-	No Data	Oil	Plugged	32.535019	-103.631744	310	1.77
30-025-41562	TANGO BTP STATE #004H	36	20S	33E	EOG RESOURCES INC	2013	н	BONE SPRING	Oil	Active	32.53627	-103.610291	11342	1.77
30-025-43075	BIG WYATT 25 FED #002H	25	20S	33E	DIAMONDBACK RES.	-	н	BONE SPRING	Oil	New	32.537406	-103.616842	0	1.78
30-025-22131	HAT MESA COM #001	11	21S	32E	CONOCO PHILLIPS	9999	v	MORROW	Gas	Active	32.495186	-103.643333	15721	1.82
30-025-41298	BECKNELL STATE #001H	5	21S	33E	COG OPERATING LLC	2014	н	BONE SPRING	Oil	Active	32.507351	-103.588188	11623	1.82
30-025-01772	C&E FEDERAL	35	20S	33E	FRED M. ALLISON	1960	-	No Data	Oil	Plugged	32.532303	-103.639282	3428	1.85
30-025-01773	SHELL	35	20S	33E	EL CINCO PROD.	1960	-	No Data	Oil	Plugged	32.535023	-103.63607	3423	1.89
30-025-24404	PUBCO FED COM #001	2	21S	32E	COG OPERATING LLC	9999	v	MOR/STRAWN	Gas	Active	32.513252	-103.651894	14407	1.92
30-025-26357	TREAT LI FED #1	25	20S	33E	YATES PETROLEUM CO	1979	-	No Data	Oil	Plugged	32.539547	-103.619972	3616	1.92
30-025-42874	TOPAZ 30 FED COM #005H	31	20S	34E	MARATHON OIL	-	н	BONE SPRING	Oil	New	32.536818	-103.604962	0	1.92
30-025-46224	SEVERUS 31 5 FED #012H	30	20S	34E	XTO ENERGY, INC	-	н	BONE SPRING	Oil	New	32.537381	-103.605271	0	1.94
30-025-24416	FEDERAL 34 #1	34	20S	33E	KIMBALL PRODUCTION	1973		YATES	Oil	Plugged	32.5241356	-103.648903	3500	1.95
30-025-43418	SEVERUS 31 FED COM #004H	30	20S	34E	XTO ENERGY, INC	2018	н	BONE SPRING	Oil	Active	32.537518	-103.605271	11360	1.95
30-025-40952	CORAZON STATE UNIT #010H	4	21S	33E	COG OPERATING LLC	2014	н	BONE SPRING	Oil	Active	32.516857	-103.585876	11523	1.97
30-025-42625	TOPAZ 30 FED COM #002H	31	20S	34E	MARATHON OIL	-	н	BONE SPRING	Oil	New	32.536172	-103.601694	0	1.97

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TABLE A-1. WELLS LOCATED WITHIN ONE MILE OF THE PROPOSED LOMBARD SWD #1

API	LEASE NAME	Sec	Т	R	OPERATOR	SPUD	DIR	POOL	TYPE	STATUS			TD	DISTANCE
											(NAD83)	(NAD83)		(TO SWD)
30-025-02607	SHEPHERD FED		21S	32E	CULBERTSON & IRWIN	1942	-	No Data		Plugged	32.509724	-103.621956	3496	-
30-025-36596	STRAW HAT 6 STATE #001	6	21S	33E	EOG RESOURCES INC	2004	V	MORROW	Gas	Active	32.511143	-103.614952	14504	
30-025-44776	TOQUE STATE COM #201H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507488	-103.618807	0	0.29
30-025-44779	TOQUE STATE COM #301H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507487	-103.61871	0	0.29
30-025-44811	MINIS 1 FED COM 3BS #006H	1	21S	32E	CHISHOLM ENERGY	-	н	BONE SPRINGS	Oil	New	32.512579	-103.623871	11530	0.29
30-025-44783	TOQUE STATE COM #401H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507032	-103.618741	0	0.32
30-025-44786	TOQUE STATE COM #503H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507684	-103.615775	0	0.33
30-025-44790	TOQUE STATE COM #702H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	WOLFCAMP	Oil	New	32.507684	-103.615872	0	0.33
30-025-44778	TOQUE STATE COM #202H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.50756	-103.615774	0	0.34
30-025-44780	TOQUE STATE COM #302H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507561	-103.615872	0	0.34
30-025-44781	TOQUE STATE COM #303H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.50756	-103.615677	0	0.34
30-025-27659	MINIS FED COM #001	1	21S	32E	CHISHOLM ENERGY	9999	v	MORROW	Gas	Active	32.513233	-103.62516	14000	0.38
30-025-44785	TOQUE STATE COM #502H	6	21S	33E	ASCENT ENERGY, LLC.	2019	D	BONE SPRINGS	Oil	New	32.507592	-103.614428	0	0.39
30-025-44788	TOQUE STATE COM #602H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507591	-103.614331	0	0.39
30-025-44148	TOQUE STATE COM #501H	7	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.50759	-103.614136	0	0.4
30-025-44787	TOQUE STATE COM #601H	6	21S	33E	ASCENT ENERGY, LLC.	-	D	BONE SPRINGS	Oil	New	32.50759	-103.614039	0	0.4
30-025-44789	TOQUE STATE COM #701H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	WOLFCAMP	Oil	New	32.50759	-103.614234	0	0.4
30-025-44784	TOQUE STATE COM #402H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507676	-103.613293	0	0.43
30-025-44791	TOQUE STATE COM #703H	6	21S	33E	ASCENT ENERGY, LLC.	-	D	WOLFCAMP	Oil	New	32.507676	-103.613391	0	0.43
30-025-02608	ETZ FED	1	21S	32E	PHILLIPS PETRO.	1956	-	No Data	Oil	Plugged	32.513348	-103.626236	16396	0.44
30-025-36957	IMPERIAL 6 FED #001	6	21S	33E	CORKRAN ENERGY LP	-	v	No Data	Oil	New	32.517765	-103.616592	0	0.44
30-025-44777	TOQUE STATE COM #203H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507552	-103.613196	0	0.44
30-025-44782	TOQUE STATE COM #304H	6	21S	33E	ASCENT ENERGY, LLC.	-	н	BONE SPRINGS	Oil	New	32.507552	-103.613293	0	0.44
30-025-44792	TOQUE STATE COM #704H	6	21S	33E	ASCENT ENERGY, LLC.	-	D	WOLFCAMP	Oil	New	32.507678	-103.613196	0	0.44
30-025-40308	ADAMS STATE COM #003H	6	21S	33E	CIMAREX ENERGY CO.	2011	н	BONE SPRINGS	Oil	Active	32.506985	-103.609566	11682	0.64
30-025-44851	MINIS 1 FED COM 2BS #010H	1	21S	32E	CHISHOLM ENERGY	-	н	BONE SPRINGS	Oil	New	32.521579	-103.623968	11626	0.74
30-025-44853	MINIS 1 FED COM WCA #016H	1	21S	32E	CHISHOLM ENERGY	-	н	WOLFCAMP	Oil	New	32.521579	-103.623774	11593	0.74
30-025-44856	MINIS 1 FED COM 3BS #007H	1	21S	32E	CHISHOLM ENERGY	2018	н	BONE SPRINGS	Oil	Active	32.521936	-103.624001	11505	0.76
30-025-44857	MINIS 1 FED COM 2BS #011H	1	21S	32E	CHISHOLM ENERGY	2018	н	BONE SPRINGS	Oil	Active	32.521936	-103.624195	10720	0.77
30-025-02609	SHEPERD FED	1	21S	32E	SOUTHERN CALIFORNIA	1953	-	No Data	Oil	Plugged	32.521401	-103.626221	3508	0.79
30-025-33506	MINIS 1 FED COM #003	1	21S	32E	CHISHOLM ENERGY	1997	v	MORROW	Gas	Active	32.512459	-103.632645	14550	0.8
30-025-45794	ADAMS STATE COM #015H	6	21S	33E	CIMAREX ENERGY CO.	-	н	BONE SPRINGS	Oil	New	32.50615	-103.606537	0	0.82
30-025-44854	MINIS 1 FED COM WCA #014H	1	21S	32E	CHISHOLM ENERGY	-	н	WOLFCAMP	Oil	New	32.521941	-103.628348	0	0.89
30-025-44855	MINIS 1 FED COM WCA #015H	1	21S	32E	CHISHOLM ENERGY	-	н	WOLFCAMP	Oil	New	32.52194	-103.628153	0	0.89

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TABLE A-1 (CONTINUED)

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ΑΡΙ	LEASE NAME	Sec	Т	R	OPERATOR	SPUD	DIR	POOL	TYPE	STATUS	LAT	LONG	TD	DISTANCE
											(NAD83)	(NAD83)		(TO SWD)
30-025-02615	ETZ #1	12	21S	32E	GETTY OIL CO	-	-	No Data	Oil	Plugged	32.498836	-103.621979	3517	0.9
30-025-45130	MINIS 1 FED COM WCA #013H	1	21S	32E	CHISHOLM ENERGY	-	Н	WOLFCAMP	Oil	New	32.521941	-103.628543	0	0.9
30-025-24398	FEDERAL ONE #1	1	21S	32E	KIMBALL PRODUCTION	1973	-	MORROW	Gas	Plugged	32.502457	-103.630485	14495	0.92
30-025-02606	SHEPARD B FED	1	21S	32E	CULBERTSON & IRWIN	-	-	No Data	Oil	Plugged	32.501549	-103.629417	3445	0.93
30-025-33227	MINIS 1 FED #002	1	21S	32E	CHISHOLM ENERGY	1995	v	MORROW	Gas	Active	32.506081	-103.634766	14520	1

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Hudget Bureau No. 42-R-355.3. Approval expires 12-31-55.

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20 ^H -3/8 -5/8 -5/8 - Size casing 201		sed. Pictor t	Solution Solution Solution Sector States of ce Solution States of ce Solution States of ce Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution Solution So	3240 8854 DING A	HONGO HONGO ND CEME! Method us B+J	NTINC sed	7890 : RECORD Mud gravity		nount of m	Salt strin
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y OCD: 3/11/2020 11:1/:20 AM	Budget Bureau 42–1335.3. Approval expires 12–31–55.
rm 9-321a Feb. 1931) (SUBMIT IN TRIPLICATE)	Land Office Las Cruces
	Lease No. 063466
UNITED STATES	Unit
DEPARTMENT OF THE INTERIC	DR
GEOLOGICAL SURVEY	
SUNDRY NOTICES AND REPORTS	ON WELLS
NOTICE OF INTENTION TO DRILL	WATER SHUT-OFF
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NOTICE OF INTENTION TO SHOOT OR ACIDIZE	ABANDONMENT
NOTICE OF INTENTION TO PULL OR ALTER CASING	ISTORY
NOTICE OF INTENTION TO ABANDON WELL	
(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OF	R OTHER DATA)
Septembe	r 21
Vell No. 1 is located 4620 ft. from $\begin{bmatrix} 1 \\ S \end{bmatrix}$ line and 1980.	
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SCALE: |" = 2000'

Date Submitted ____

APPENDIX B

IDENTIFICATION OF OPERATORS, LESSEES, SURFACE OWNERS, AND OTHER INTERESTED PARTIES WITHIN ONE-HALF MILE OF THE PROPOSED LOMBARD SWD #1; COPIES OF NOTICE LETTERS, CERTIFIED MAIL RECEIPTS, AND AFFIDAVIT OF PUBLICATION OF NEWSPAPER NOTICE

Figure B-1:	Operators within one-half mile of proposed Lombard SWD #1
Figure B-2:	Lessees and surface owners within one-half mile of proposed Lombard SWD #1
Table B-1:	Owners, lessees, and surface owners within one-half mile of the proposed Lombard SWD #1
Table B-2:	Summary list of all persons notified of the Lombard SWD #1 C-108 application
	Copies of all notice letters distributed to interest parties Certified Mail proof of delivery (green cards) Affidavit of Publication



Figure B-1. Operators within one mile of the proposed Lombard SWD #1



Figure B-2. Lessees within one mile of the proposed Lombard SWD #1. Surface ownership within one mile of the proposed Lombard SWD #1 lies with the Bureau of Land Managment and the State of New Mexico and notices of the application have been distributed to each.

TABLE B-1. OPERATORS, LESSEES, AND SURFACE OWNERS WITHIN ONE MILE OF PROPOSED LOMBARD SWD #1

				MINERAL	SURFACE		
S/T/R	QQ UNIT LETTER(S)	OPERATOR	MINERAL LESSEE	OWNER	OWNER	ADDRESS 1	ADDRESS 2
35/T20S/R33E	O,P	-	Asher Enterprises LTD CO P	-	-	PO Box 423	Artesia NM 88211-0423
	O,P	-	Marathon Oil Permian LLC	-	-	5555 San Felipe St.	Houston, TX 77056-2701
	O,P	-	PGP Holdings I LLC	-	-	104 Townpark Dr. NW	Kennesaw, GA 30144-5508
	O,P	-	COG Operating LLC	-	-	600 W. Illinois Ave.	Midland, TX 79701-4882
	O, P	-	Legacy Reserves Operating LP (Operating Rights)	-	-	303 W. Wall St., Ste. 1800	Midland, TX 79701-5106
	O,P	-	PGP Holdings I LLC (Operating Rights)	-	-	104 Townpark Dr. NW	Kennesaw, GA 30144-5508
	О,Р	-	Devon Energy Prod. Co. LP (Operating Rights)	-	-	333 W. Sheridan Ave.	Oklahoma City, OK 73102-5010
	O,P	-	Sundown Energy LP (Operating Rights)	-	-	16400 Dallas Pkwy., Ste. 100	Dallas, TX 75248-2609
	О,Р	-	Advance Energy Partners Hat Mesa LLC (Operating Rights)	-	-	11490 Westheimer Rd., Ste. 950	Houston, TX 77077-6841
	O,P	-	Concho Oil & Gas LLC (Operating Rights)	-	-	600 W. Illinois Ave.	Midland, TX 79701-4882
	O,P	-	Highland Texas Energy Co. (Operating Rights)	-	-	7557 Rambler Rd., Ste. 918	Dallas, TX 75231-2306
	О,Р	-	COG Operating LLC (Operating Rights)	-	-	600 W. Illinois Ave.	Midland, TX 79701-4882
	О,Р	-	Marathon Oil Permian LLC (Operating Rights)	-	-	5555 San Felipe St.	Houston, TX 77056-2701
36/T20S/R33E	Ρ	EOG Resources INC	-	-	-	PO Box 2267	Midland, TX 79702
	J,K,L,M,N,O	-	EOG Resources INC	-	-	PO Box 2267	Midland, TX 79702
31/T20S/R34E	M	XTO Energy INC	-	-	-	6401 Holiday Hill Road Building #5	Midland, TX 79707
1/T21S/R32E	ENTIRE SECTION	Chisholm Energy Operating, LLC	-	-	-	801 Cherry Street	Fort Worth, TX 76102
	D(5)	COG Operating LLC	-	-	-	600 W. Illinois Ave.	Midland, TX 79701
2/T21S/R32E	A	-	Conoco Phillips Co.	-	-	PO Box 7500	Bartlesville, OK 74005-7500
	B,C	-	Ascent Energy LLC	-	-	1621 18th St, Ste. 200	Denver, CO 80202-1267
	B,C	-	Hanley Petroleum INC	-	-	415 W. Wall St., Ste. 1500	Midland, TX 79701-4473
05/T21S/R33E	L,M	COG Operating LLC	-	-	-	600 W. Illinois Ave.	Midland, TX 79701
	D(12),E(13)	EOG Resources INC	-	-	-	PO Box 2267	Midland, TX 79702
	D(5)	XTO Energy INC	-	-	-	6401 Holiday Hill Road Building #5	Midland, TX 79707
06/T21S/R33E	L(17),M(18),K,N	Ascent Energy, LLC	-	-	-	1125 17th St, Suite 410	Denver, CO 80202
	J,O,I,P	Cimarex Energy Co. of Colorado		-	-	600 N. Marienfeld Street, Suite 600	Midland, TX 79701
	A(9),B(10),C(11),D(12),E(13),F(14),G(15),H(16)	EOG Resources INC	-	-	-	PO Box 2267	Midland, TX 79702
	L1,L2,L3,L4,L5,L6,L7,L8	-	EOG Resources INC	-	-	PO Box 2267	Midland, TX 79702
07/T21S/R33E	C,D(1)	Ascent Energy, LLC	-	-	-	1125 17th St, Suite 410	Denver, CO 80202
	A,B,H,G,I,J,P,O	Cimarex Energy Co. of Colorado	-	-	-	600 N. Marienfeld Street, Suite 600	Midland, TX 79701

*NOTE: Surface lands within 1 mile of the proposed Lombard SWD #1 are owned by the Bureau of Land Management and the State of New Mexico. Notifications and copies of the C-108 application have been sent to these parties at the following addresses: Bureau of Land Management; 301 Dinosaur Trail; Santa Fe, NM 87508 and State of New Mexico; PO Box 1148; Santa Fe, NM 87501-1148.

Table B-2. Summary list of all operators, lessees, and surface owners provided notice of 3Bear's C-108 application submittal

Asher Enterprises LTD CO 11063-D So Memorial Dr, PMB 525 Tulsa, OK 74133

Marathon Oil Permian LLC 5555 San Felipe Street Houston, TX 77056-2701

PGP Holdings I LLC 104 Townpark Drive NW Kennesaw, GA 30144-5508

COG Operating LLC 600 W. Illinois Avenue Midland, TX 79701-4882

Legacy Reserves Operating LP 303 West Wall Street, Suite 1800 Midland, TX 79701-5106

PGP Holdings I LLC 104 Townpark Drive NW Kennesaw, GA 30144-5508

Devon Energy Prod. Co. LP 333 W. Sheridan Avenue Oklahoma City, OK 73102-5010

Sundown Energy LP 16400 Dallas Pkwy., Suite 100 Dallas, TX 75248-2609

Advance Energy Partners Hat Mesa LLC 11490 Westheimer Road, Suite 950 Houston, TX 77077-6841

Concho Oil & Gas LLC 600 W. Illinois Avenue Midland, TX 79701-4882

Highland Texas Energy Co. 7557 Rambler Road, Suite 918 Dallas, TX 75231-2306

EOG Resources, Inc. P.O. Box 2267 Midland, TX 79702 Conoco Phillips Co. P.O. Box 7500 Bartlesville, OK 74005-7500

Ascent Energy, LLC 1621 18th Street, Suite 200 Denver, CO 80202-1267

Ascent Energy, LLC 1125 17th Street, Suite 410 Denver, CO 80202

Hanley Petroleum, Inc. 415 West Wall Street, Suite 1500 Midland, TX 79701-4473

XTO Energy, Inc. 6401 Holiday Hill Road, Building #5 Midland, TX 79707

Chisholm Energy Operating, LLC 801 Cherry Street Fort Worth, TX 76102

Cimarex Energy Co. of Colorado 600 North Marienfeld Street, Suite 600 Midland, TX 79701

Bureau of Land Management 301 Dinosaur Trail Santa Fe, NM 87508

State of New Mexico P.O. Box 1148 Santa Fe, NM 87504-1148

.

ATTACHMENT A

COPIES OF ALL NOTICE LETTERS DISTRIBUTED TO INTERESTED PARTIES



February 21, 2020

Advance Energy Partners Hat Mesa, LLC 11490 Westheimer Road, Suite 950 Houston, TX 77077-6841

VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

Attached for your review is a complete Form C-108 Application for Authorization to Inject and its supplemental documentation prepared on behalf of 3Bear Field Services, LLC for their proposed Lombard SWD #1 well. Section XIV of Form C-108 requires that the surface landowner and each leasehold operator within a one-half mile radius of the proposed well location be furnished with a copy of the application.

According to the New Mexico Oil Conservation Division, surface owners and offset operators must file any objections or requests for hearing of administrative applications within fifteen (15) days from the date in which this application was mailed to them.

If you have any questions concerning this application, you may contact Mr. Alberto A. Gutiérrez or Mr. David White at (505) 842-8000 at Geolex, Inc.®; 500 Marquette Avenue NW, Suite 1350; Albuquerque, New Mexico 87102.

Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Advance Energy Partners.docx



February 21, 2020

Ascent Energy, LLC 1125 17th Street, Suite 410 Denver, CO 80202 VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

Attached for your review is a complete Form C-108 Application for Authorization to Inject and its supplemental documentation prepared on behalf of 3Bear Field Services, LLC for their proposed Lombard SWD #1 well. Section XIV of Form C-108 requires that the surface landowner and each leasehold operator within a one-half mile radius of the proposed well location be furnished with a copy of the application.

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Ascent Energy (second address).docx



February 21, 2020

Ascent Energy, LLC 1621 18th Street, Suite 200 Denver, CO 80202-1267 VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

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February 21, 2020

Asher Enterprises, LTD CO P 11063-D So Memorial Drive PMB 525 Tulsa, OK 74133 VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

Attached for your review is a complete Form C-108 Application for Authorization to Inject and its supplemental documentation prepared on behalf of 3Bear Field Services, LLC for their proposed Lombard SWD #1 well. Section XIV of Form C-108 requires that the surface landowner and each leasehold operator within a one-half mile radius of the proposed well location be furnished with a copy of the application.

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Asher Enterprises.docx



Alberto A. Gutiérrez, C.P.G.

February 21, 2020

Bureau of Land Management 301 Dinosaur Trail Santa Fe, NM 87508 VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

Attached for your review is a complete Form C-108 Application for Authorization to Inject and its supplemental documentation prepared on behalf of 3Bear Field Services, LLC for their proposed Lombard SWD #1 well. Section XIV of Form C-108 requires that the surface landowner and each leasehold operator within a one-half mile radius of the proposed well location be furnished with a copy of the application.

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If you have any questions concerning this application, you may contact Mr. Alberto A. Gutiérrez or Mr. David White at (505) 842-8000 at Geolex, Inc.®; 500 Marquette Avenue NW, Suite 1350; Albuquerque, New Mexico 87102.

Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

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Alberto A. Gutiérrez, C.P.G.

February 21, 2020

Chisholm Energy Operating, LLC 801 Cherry Street Fort Worth, TX 76102

VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

Attached for your review is a complete Form C-108 Application for Authorization to Inject and its supplemental documentation prepared on behalf of 3Bear Field Services, LLC for their proposed Lombard SWD #1 well. Section XIV of Form C-108 requires that the surface landowner and each leasehold operator within a one-half mile radius of the proposed well location be furnished with a copy of the application.

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Chisholm Energy.docx



February 21, 2020

Cimarex Energy Co. of Colorado 600 North Marienfeld Street, Suite 600 Midland, TX 79701 VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

Attached for your review is a complete Form C-108 Application for Authorization to Inject and its supplemental documentation prepared on behalf of 3Bear Field Services, LLC for their proposed Lombard SWD #1 well. Section XIV of Form C-108 requires that the surface landowner and each leasehold operator within a one-half mile radius of the proposed well location be furnished with a copy of the application.

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Cimarex Energy.docx



February 21, 2020

COG Operating, LLC 600 W. Illinois Avenue Midland, TX 79701-4882

VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

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Sincerely, Geolex[®], Inc.

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Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\COG Operating.docx

Alberto A. Gutiérrez, C.P.G.

February 21, 2020

Concho Oil & Gas, LLC 600 W. Illinois Avenue Midland, TX 79701-4882 VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.R.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Concho.docx



Alberto A. Gutiérrez, C.P.G.

February 21, 2020

Conoco Phillips Co. P.O. Box 7500 Bartlesville, OK 74005-7500

VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Conoco Phillips.docx



Alberto A. Gutiérrez, C.P.G.

February 21, 2020

Devon Energy Production Co., LP 333 W. Sheridan Avenue Oklahoma City, OK 73102-5010

VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Devon Energy.docx



Alberto A. Gutiérrez, C.P.G.

February 21, 2020

EOG Resources P.O. Box 2267 Midland, TX 79702 VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.R.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\EOG Resources.docx



Alberto A. Gutiérrez, C.P.G.

February 21, 2020

Hanley Petroleum, Inc. 415 West Wall Street, Suite 1500 Midland, TX 79701-4473

VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Hanley Petroleum.docx



February 21, 2020

Highland Texas Energy Co. 7557 Rambler Road, Suite 918 Dallas, TX 75231-2306

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RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.O. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

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February 21, 2020

Legacy Reserves Operating, LP 303 West Wall Street, Suite 1800 Midland, TX 79701-5106

VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

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P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Legacy Reserves.docx



Alberto A. Gutiérrez, C.P.G.

February 21, 2020

Marathon Oil Permian, LLC 5555 San Felipe Street Houston, TX 77056-2701

VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

Attached for your review is a complete Form C-108 Application for Authorization to Inject and its supplemental documentation prepared on behalf of 3Bear Field Services, LLC for their proposed Lombard SWD #1 well. Section XIV of Form C-108 requires that the surface landowner and each leasehold operator within a one-half mile radius of the proposed well location be furnished with a copy of the application.

According to the New Mexico Oil Conservation Division, surface owners and offset operators must file any objections or requests for hearing of administrative applications within fifteen (15) days from the date in which this application was mailed to them.

If you have any questions concerning this application, you may contact Mr. Alberto A. Gutiérrez or Mr. David White at (505) 842-8000 at Geolex, Inc.®; 500 Marquette Avenue NW, Suite 1350; Albuquerque, New Mexico 87102.

Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Marathon Oil.docx



February 21, 2020

PGP Holdings I, LLC 104 Townpark Drive NW Kennesaw, GA 30144-5508

VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

Attached for your review is a complete Form C-108 Application for Authorization to Inject and its supplemental documentation prepared on behalf of 3Bear Field Services, LLC for their proposed Lombard SWD #1 well. Section XIV of Form C-108 requires that the surface landowner and each leasehold operator within a one-half mile radius of the proposed well location be furnished with a copy of the application.

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Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\PGP Holdings.docx



Alberto A. Gutiérrez, C.P.G.

February 21, 2020

State of New Mexico P.O. Box 1148 Santa Fe, NM 87504-1148

VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\State of New Mexico.docx



February 21, 2020

Sundown Energy, LP 16400 Dallas Pkwy., Suite 100 Dallas, TX 75248-2609

VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

Attached for your review is a complete Form C-108 Application for Authorization to Inject and its supplemental documentation prepared on behalf of 3Bear Field Services, LLC for their proposed Lombard SWD #1 well. Section XIV of Form C-108 requires that the surface landowner and each leasehold operator within a one-half mile radius of the proposed well location be furnished with a copy of the application.

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Sincerely, Geolex[®], Inc.

Alberto A. Gutiérrez, C.P.G. President Consultant to 3Bear Field Services

Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\Sundown Energy.docx


Alberto A. Gutiérrez, C.P.G.

February 21, 2020

XTO Energy, Inc. 6401 Holiday Hill Road, Building #5 Midland, TX 79707 VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

RE: 3BEAR FIELD SERVICES, LLC PROPOSED LOMBARD SWD #1

To Whom It May Concern:

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Enclosure: Complete C-108 Application for Authority to Inject

P:\18-025 (3 Bear AGIs)\Reports - Lombard SWD 1\Notice Letters & Publication\REVISED LOCATION NOTIFICATIONS\XTO Energy.docx

ATTACHMENT B

CERTIFIED MAIL PROOF OF DELIVERY (USPS WHITE & GREEN CARDS, USPS TRACKING RESULTS)



















U.S. Postal Service[™] **CERTIFIED MAIL® RECEIPT** m Domestic Mail Only пu m For delivery information, visit our website at www.usps.com® T MIDLAND: TX 79701 **HD** Certified Mail Fee \$3.55 0101 -0 \$7 80 09 xtra Services & Fees (check box, add fee \$0.00 Return Receipt (hardcopy) -F Return Receipt (electronic) \$0.00 Postmark Certified Mail Restricted Dolivery \$0.00 Here Adult Signature Required \$0.99 Adult Signature Restricted D r \$1.80 \$ Total Postage and Fees \$8 . 20 02/24/2020 (18-025 LOMBARD) -0 COG C OPERATING LLC W. ILLINOIS 600 AVENUE 79701-4882 MIDLAND, TX m 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instruction



















3 Bear (Lombard) 18-025



 SENDER: COMPLETE THIS SECTION Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. Article Addressed to: (18-025 LOMBARD) CIMAREX ENERGY Co. OF CONDRADO 	A. Signature Agent A. Signature Agent B. Received by (Printed Name) C. Date of Delivery D. Is delivery address different from item 1? Yes If YES, enter delivery address below: No	SENDER: COMPLETE THIS SECTION Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. Article Addressed to: (18-025 LOMBARD) HANLEY PETROLEOM INC. HIS W. WALL STREET, SUITE ISOO	COMPLETE THIS SECTION ON DELIVERY A. Signature X Agent B. Received by (Printed Name) C. Date of Delive B. Received by (Printed Name) C. Date of Delive D. Is delivery address different from item 1? Yes If YES, enter delivery address below: No
600 NORTH MARIENFELD ST., SUTTE 600 MIDLAND, TX 79701		MIDLAND, TX 79701-4473	3. Service Type □ Priority Mail Express®
	3. Service Type ☐ Adult Signature Adult Signature Restricted Delivery ☐ Certified Mail® ☐ Certified Mail® ☐ Certified Mail® ☐ Certified Mail® ☐ Certified of Collect on Delivery ☐ Collect on Delivery	2. Article Number (Transfer from service label)	3. Service Type □ Priority Mail Express [®] □ Adult Signature Restricted Delivery □ Registered Mail [™] □ Adult Signature Restricted Delivery □ Registered Mail [™] □ Certified Mail Restricted Delivery □ Return Receipt for Merchandise □ Collect on Delivery □ Signature Confirmatio □ Insured Mail □ Insured Mail □ Insured Mail Bestricted Delivery
PS Form 3811, July 2015 PSN 7530-02-000-9053	Insured Mail Insured Mail Restricted Delivery (over \$500) Domestic Return Receipt	PS Form 3811, July 2015 PSN 7530-02-000-9053	(over \$500) Domestic Return Rece



SENDER: COMPLETE THIS SECTION COMPLETE THIS SECTION ON DELIVERY			
	COMPLETE THIS SECTION ON DELIVERY	SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
 Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. Article Addressed to: (18-025 LOMBRD) CONOCC PHILLIPS CO. P.O. Box 7500 	A. Signature X B. Received by (Printed'Name) C. Date of Delivery D. Is delivery address different from bein 1? Yes If YES, enter delivery address below: No	 Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. 	A. Signature The UPS Store #40 Agent Addressee B. Received by (Printed Name) C. Date of Delivery C. Date of Delivery D. Is delivery address different from item 1? If YES, enter delivery address below: No
BARTLESVILLE, OK 74005-7500		PHB 525 Tulsa, OK 74133	
9590 9402 5056 9092 0036 63	3. Service Type □ Priority Mail Express® □ Adult Signature □ Registered Mail™ □ Adult Signature Restricted Delivery □ Registered Mail Restricted Delivery □ Cerlified Mail Restricted Delivery □ Receipt for	9590 9402 5056 9092 0037 86	3. Service Type □ Priority Mail Express® □ Adult Signature □ Registered Mail™ □ Adult Signature Restricted Delivery □ Registered Mail Restricted Delivery □ Certified Mail® □ Delivery □ Certified Mail □ Restricted Delivery
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2015 PSN 7530-02-000-9053	Domestic Return Receipt	PS Form 3811, July 2015 PSN 7530-02-000-9053	Domestic Return Receipt

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SENDER: COMPLETE THIS SECTION COMPLETE THIS SECTION ON DELIVERY SENDER: COMPLETE THIS SECTION COMPLETE THIS SECTION ON DELIVERY Complete items 1, 2, and 3. A. Signature Complete items 1, 2, and 3. A. Signature Print your name and address on the reverse D Agent Print your name and address on the reverse Х Agent so that we can return the card to you. Addressee X so that we can return the card to you. Addressee Attach this card to the back of the mailpiece, B. Received by (Printed Name) C. Date of Delivery Attach this card to the back of the mailpiece, B. Received by (Printed Name) C. Date of Delivery or on the front if space permits. 7 20 or on the front if space permits. 1. Article Addressed to: (18-025 LOMBARD) 1. Article Addressed to: (18-025 LOMBARD) D. Is delivery address different from item 1 1 Nes D. Is delivery address different from item 1? Yes If YES, enter delivery address below: D No If YES, enter delivery address below: DEVON ENERGY PROD. CO. LP D No ASCENT ENERGY LLC 333 W. SHERIDAN AVENUE 1125 17th STREET, SUITE 410 OKLAHOMA CITY, OK 73102-5010 DENVER, CO 80202 3. Service Type Priority Mail Express® 3. Service Type Adult Signature Priority Mail Express® □ Registered Mail[™] Adult Signature Adult Signature Restricted Delivery □ Registered Mail™ Registered Mail Restricted Adult Signature Restricted Delivery Certified Mail® Registered Mail Restricted Delivery 9590 9402 5056 9092 0037 24 Deliverv Certified Mail® Certified Mail Restricted Delivery 9590 9402 5056 9092 0036 49 Return Receipt for Certified Mail Restricted Delivery Return Receipt for Collect on Delivery Merchandise 2. Article Number (Transfer from service label) Collect on Delivery Merchandise Collect on Delivery Restricted Delivery □ Signature Confirmation™ 2. Article Number (Transfer from service label) Collect on Delivery Restricted Delivery □ Signature Confirmation™ Signature Confirmation 7018 3090 0001 0880 9361 Insured Mail Signature Confirmation 7018 3090 0001 0880 9453 Insured Mail Insured Mail Restricted Delivery Restricted Delivery Insured Mail Restricted Delivery Restricted Delivery (over \$500) PS Form 3811, July 2015 PSN 7530-02-000-9053 (over \$500) PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt Domestic Return Receipt SENDER: COMPLETE THIS SECTION COMPLETE THIS SECTION ON DELIVERY COMPLETE THIS SECTION ON DELIVERY **SENDER: COMPLETE THIS SECTION** Complete items 1, 2, and 3. A. Signature A. Signature Complete items 1, 2, and 3. Print your name and address on the reverse □ Agent Agent Marin Print your name and address on the reverse X "so that we can return the card to you. Addressee Addressee so that we can return the card to you. Feceived Py Printed Name) Attach this card to the back of the mailpiece. C. Date of Delivery B. Received by (Printed Name) C. Date of D livery Attach this card to the back of the mailpiece, 9 17/20 or on the front if space permits. 2 71/2020 or on the front if space permits. 1. Article Addressed to: (18-025 LOMBARD) □ Yés D. Is delivery address different from item 1? 1. Article Addressed to: (18-025 LOABARD) D. Is delivery address different from item 1? 1 Yes If YES, enter delivery address below: If YES, enter delivery address below: 🗋 No □ No ADVANCE ENERGY PARTNERS MARATHON OIL PERMIAN LLC HAT MESA LLC 5555 SAN FELIPE STREET 11490 WESTHEIMER Rd., SUITE 950 HOUSTON, TX 77056-2701 HOUSTON, TX 77077-6841 3. Service Type 3. Service Type Priority Mail Express® Priority Mail Express® Adult Signature Adult Signature □ Registered Mail™ □ Registered Mail[™] Adult Signature Restricted Delivery □ Adult Signature Restricted Delivery Registered Mail Restricted Registered Mail Restricted Certified Mail® X Certified Mail® Delivery 9590 9402 5056 9092 0035 71 Deliverv 9590 9402 5056 9092 0037 79 C Return Receipt for Certified Mail Restricted Delivery Certified Mail Restricted Delivery Return Receipt for Collect on Delivery Collect on Delivery Merchandise Merchandise 2. Article Number (Transfer from service label) □ Signature Confirmation™ Collect on Delivery Restricted Delivery Collect on Delivery Restricted Delivery □ Signature Confirmation™ 2. Article Number (Transfer from service label) Signature Confirmation Insured Mail Signature Confirmation Insured Mail 7018 3090 0001 0880 9385 7018 3090 0001 0880 9316 Insured Mail Restricted Delivery **Restricted Delivery** Insured Mail Restricted Delivery Restricted Delivery (over \$500) (over \$500) PS Form 3811, July 2015 PSN 7530-02-000-9053 PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt Domestic Return Receipt



Page 81 of 92

USPS Tracking[®]

Track Another Package +

Tracking Number: 70183090000108809484

Your item was delivered to the front desk, reception area, or mail room at 1:30 pm on February 28, 2020 in FORT WORTH, TX 76102.

⊘ Delivered

February 28, 2020 at 1:30 pm Delivered, Front Desk/Reception/Mail Room FORT WORTH, TX 76102

Get Updates 🗸

Text & Email Updates

Tracking History

February 28, 2020, 1:30 pm Delivered, Front Desk/Reception/Mail Room FORT WORTH, TX 76102 Your item was delivered to the front desk, reception area, or mail room at 1:30 pm on February 28, 2020 in FORT WORTH, TX 76102.

February 28, 2020, 4:33 am Departed USPS Regional Destination Facility FORT WORTH TX DISTRIBUTION CENTER

February 27, 2020, 7:38 am

Arrived at USPS Regional Destination Facility FORT WORTH TX DISTRIBUTION CENTER



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Page 83 of 92

Feedback

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February 26, 2020, 3:35 pm Arrived at USPS Regional Destination Facility COPPELL TX DISTRIBUTION CENTER

February 26, 2020 In Transit to Next Facility

February 25, 2020, 8:29 am Departed USPS Facility ALBUQUERQUE, NM 87101

February 24, 2020, 10:43 pm Arrived at USPS Origin Facility ALBUQUERQUE, NM 87101

February 24, 2020, 3:27 pm Departed Post Office ALBUQUERQUE, NM 87101

February 24, 2020, 2:55 pm USPS in possession of item ALBUQUERQUE, NM 87101

Product Information

See Less ∧

Can't find what you're looking for?

Go to our FAQs section to find answers to your tracking questions.

FAQs

Remove X

Feedback

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USPS Tracking[®]

Track Another Package +

Tracking Number: 70183090000108809415

Your item was picked up at a postal facility at 7:38 am on March 2, 2020 in MIDLAND, TX 79702.

Oracle Contract Delivered

March 2, 2020 at 7:38 am Delivered, Individual Picked Up at Postal Facility MIDLAND, TX 79702

Get Updates 🗸

Text & Email Updates

Tracking History

March 2, 2020, 7:38 am Delivered, Individual Picked Up at Postal Facility MIDLAND, TX 79702 Your item was picked up at a postal facility at 7:38 am on March 2, 2020 in MIDLAND, TX 79702.

March 1, 2020 In Transit to Next Facility

February 28, 2020, 3:41 am Departed USPS Regional Destination Facility MIDLAND TX DISTRIBUTION CENTER

February 27, 2020, 10:01 pm Arrived at USPS Regional Destination Facility MIDLAND TX DISTRIBUTION CENTER

Feedback

February 27, 2020, 12:01 pm Arrived at USPS Facility ODESSA, TX 79761

February 27, 2020, 11:41 am Departed USPS Regional Facility MIDLAND TX DISTRIBUTION CENTER

February 27, 2020, 8:22 am Arrived at Unit ODESSA, TX 79761

February 27, 2020, 12:25 am Arrived at USPS Regional Destination Facility MIDLAND TX DISTRIBUTION CENTER

February 25, 2020, 8:29 am Departed USPS Facility ALBUQUERQUE, NM 87101

February 24, 2020, 10:43 pm Arrived at USPS Origin Facility ALBUQUERQUE, NM 87101

February 24, 2020, 3:27 pm Departed Post Office ALBUQUERQUE, NM 87101

February 24, 2020, 2:55 pm USPS in possession of item ALBUQUERQUE, NM 87101

Product Information

See Less 🔨

Can't find what you're looking for?

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Go to our FAQs section to find answers to your tracking questions.

FAQs

Feedback

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USPS Tracking[®]

Track Another Package +

Tracking Number: 70183090000108809408

Your item was delivered to an individual at the address at 2:50 pm on March 9, 2020 in DALLAS, TX 75243.

Oracle Contract Delivered

March 9, 2020 at 2:50 pm Delivered, Left with Individual DALLAS, TX 75243

Get Updates 🗸

Text & Email Updates

Tracking History

March 9, 2020, 2:50 pm Delivered, Left with Individual DALLAS, TX 75243 Your item was delivered to an individual at the address at 2:50 pm on March 9, 2020 in DALLAS, TX 75243.

March 9, 2020 In Transit to Next Facility

March 6, 2020, 8:52 pm Departed USPS Regional Facility OKLAHOMA CITY OK DISTRIBUTION CENTER

March 6, 2020, 1:42 pm Arrived at USPS Regional Facility OKLAHOMA CITY OK DISTRIBUTION CENTER Remove X

Feedback

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Feedback

February 27, 2020, 4:56 am Departed USPS Regional Facility DALLAS TX DISTRIBUTION CENTER

February 26, 2020, 3:53 pm Arrived at USPS Regional Destination Facility DALLAS TX DISTRIBUTION CENTER

February 25, 2020, 8:29 am Departed USPS Facility ALBUQUERQUE, NM 87101

February 24, 2020, 10:43 pm Arrived at USPS Origin Facility ALBUQUERQUE, NM 87101

February 24, 2020, 3:27 pm Departed Post Office ALBUQUERQUE, NM 87101

February 24, 2020, 2:55 pm USPS in possession of item ALBUQUERQUE, NM 87101

Product Information

See Less ∧

Can't find what you're looking for?

Go to our FAQs section to find answers to your tracking questions.

FAQs

USPS Tracking[®]

Track Another Package +

Tracking Number: 70183090000108809347

Your item was delivered to an individual at the address at 12:17 pm on February 27, 2020 in MIDLAND, TX 79701.

⊘ Delivered

February 27, 2020 at 12:17 pm Delivered, Left with Individual MIDLAND, TX 79701

Get Updates 🗸

Text & Email Updates

Tracking History

February 27, 2020, 12:17 pm Delivered, Left with Individual MIDLAND, TX 79701 Your item was delivered to an individual at the address at 12:17 pm on February 27, 2020 in MIDLAND, TX 79701.

February 27, 2020, 12:57 am Departed USPS Regional Destination Facility MIDLAND TX DISTRIBUTION CENTER

February 26, 2020, 10:16 pm Arrived at USPS Regional Destination Facility MIDLAND TX DISTRIBUTION CENTER

February 26, 2020 In Transit to Next Facility

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Feedback

February 25, 2020, 8:29 am Departed USPS Facility ALBUQUERQUE, NM 87101

February 24, 2020, 10:43 pm Arrived at USPS Origin Facility ALBUQUERQUE, NM 87101

February 24, 2020, 3:27 pm Departed Post Office ALBUQUERQUE, NM 87101

February 24, 2020, 2:55 pm USPS in possession of item ALBUQUERQUE, NM 87101

Product Information

See Less 🔨

Can't find what you're looking for?

Go to our FAQs section to find answers to your tracking questions.

FAQs

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ATTACHMENT C

AFFIDAVIT OF PUBLICATION

Affidavit of Publication

STATE OF NEW MEXICO COUNTY OF LEA

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

> Beginning with the issue dated February 25, 2020 and ending with the issue dated February 25, 2020.

Publisher

Sworn and subscribed to before me this 25th day of February 2020.

Carle

Business Manager



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

LEGALS LEGAL NOTICE **FEBRUARY 25, 2020** 3Bear Field Services, LLC; 415 W. Wall St., Suite 1212; Midland, Texas 79701, is filing Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division for administrative approval. for its saltwater disposal well Lombard SWD #1. The proposed well will be located at approximately 259 feet FWL & 3882 feet FNL in Section 6, Township 21S, Range 33F in Lea County, New 33E in Lea County, New Mexico. Disposal water will be sourced from area production and will be injected into the Devonian to Fusselman formations through an open hole completion between approximately 15,535 feet and a total depth of approximately 17,000 feet. The maximum allowable surface pressure will not exceed 3,107 psig with a maximum rate of 25,000 BWPD. Interested parties opposing the action must file objections or requests for hearing with the Oil Conservation Division; 1220 South St. Francis Drive; Santa Fe, New Mexico 87505 within 15 days. Additional information can be obtained from the applicant's agent, Geolex, Inc.®; 500 Marquette Avenue NW, Suite 1350; Albuquerque, New Mexico 87102; (505)842-8000. #35242

67101169

00239785

ALBERTO A. GUTIERREZ GEOLEX, INC. 500 MARQUETTE AVE. NW, SUITE 1350 ALBUQUERQUE, NM 87102