



November 07, 2022

EMNRD/OCD  
Attn: Victoria Venegas  
South St. Francis Dr.  
Santa Fe, NM 87505

Re: Centennial Resource Development, Inc.  
Merchant North Containment and Recycle Facility

Dear Mrs. Venegas,

Cold Peak Environmental, LLC, on behalf of Centennial Resource Development, Inc., submits the attached C-147 registration.

Thank you for allowing Centennial to promote water reuse in the State of New Mexico. Please find attached the C-147 form with accompanying documentation for the Merchant North Containment and Recycle Facility.

The package follows the order of Form C-147 for easier review by OCD.

Please do not hesitate to contact me with any questions, comments, or concerns.

Sincerely,

Galan Kelley  
Cold Peak Environmental, LLC  
Chief Executive Officer

# **C-147 Registration Package for Merchant North Containment and Recycle Facility**

**Section 09, Township 22-S, Range 35-E, Lea County**

**Prepared for:  
Centennial Resource Development, Inc.  
500 W. Illinois Avenue, Suite 500  
Midland, TX 79701**

Prepared by:  
Cold Peak Environmental, LLC  
15 Smith Road, Suite 2008  
Midland, TX 79705

Galan Kelley  
[gkelley@coldpeakenviro.com](mailto:gkelley@coldpeakenviro.com)  
361.701.8465

# Form C-147

State of New Mexico
Energy Minerals and Natural Resources
Department Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505
https://www.emnrd.nm.gov/ocd/ocd-e-permitting/

Recycling Facility and/or Recycling Containment

Type of Facility: [X] Recycling Facility [X] Recycling Containment\*
Type of action: [X] Permit [X] Registration
[ ] Modification [ ] Extension
[ ] Closure [ ] Other (explain)

\* At the time C-147 is submitted to the division for a Recycling Containment, a copy shall be provided to the surface owner.

Be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1. Operator: Centennial Resource Development, Inc. (For multiple operators attach page with information) OGRID #: 372165
Address: 500 W. Illinois Avenue, Suite 500, Midland, TX 79701
Facility or well name (include API# if associated with a well): Merchant North Containment and Recycle Facility
OCD Permit Number: 1RF-495 (For new facilities the permit number will be assigned by the district office)
U/L or Qtr/Qtr NE / NE Section 09 Township 22-S Range 35-E County: Lea County
Surface Owner: [ ] Federal [ ] State [X] Private [ ] Tribal Trust or Indian Allotment

2. [X] Recycling Facility:
Location of recycling facility (if applicable): Latitude 32.410680 Longitude -103.364708 NAD83
Proposed Use: [ ] Drilling\* [X] Completion\* [ ] Production\* [ ] Plugging \*
\*The re-use of produced water may NOT be used until fresh water zones are cased and cemented
[ ] Other, requires permit for other uses. Describe use, process, testing, volume of produced water and ensure there will be no adverse impact on groundwater or surface water.
[X] Fluid Storage
[X] Above ground tanks [X] Recycling containment [ ] Activity permitted under 19.15.17 NMAC explain type
[ ] Activity permitted under 19.15.36 NMAC explain type: [ ] Other explain
[ ] For multiple or additional recycling containments, attach design and location information of each containment
[ ] Closure Report (required within 60 days of closure completion): [ ] Recycling Facility Closure Completion Date:

3. [X] Recycling Containment:
[ ] Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)
Center of Recycling Containment (if applicable): Latitude 32.411198 Longitude -103.366119 NAD83
[ ] For multiple or additional recycling containments, attach design and location information of each containment
[X] Lined [X] Liner type: Thickness 60 Primary mil [ ] LLDPE [X] HDPE [ ] PVC [ ] Other
40 Secondary
[ ] String-Reinforced
Liner Seams: [X] Welded [ ] Factory [ ] Other Volume: 679,626 bbl Dimensions: L 665' x W 530' x D 16'
[ ] Recycling Containment Closure Completion Date: Two containments with common wall - volume & dimensions above is each
Total containment capacity for both 1,359,252 bbls (L=665' x W=1060' x D=16')

4.

**Bonding:**

Covered under bonding pursuant to 19.15.8 NMAC per 19.15.34.15(A)(2) NMAC (These containments are limited to only the wells owned or operated by the owners of the containment.)

Bonding in accordance with 19.15.34.15(A)(1). Amount of bond \$ \_\_\_\_\_ (work on these facilities cannot commence until bonding amounts are approved)

Attach closure cost estimate and documentation on how the closure cost was calculated.

5.

**Fencing:**

Four foot height, four strands of barbed wire evenly spaced between one and four feet

Alternate. Please specify 6-foot tall chainlink fence w/ 3-strand barbwire on 45-degree toppers

6.

**Signs:**

12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

Signed in compliance with 19.15.16.8 NMAC

7.

**Variations:**

Justifications and/or demonstrations that the proposed variance will afford reasonable protection against contamination of fresh water, human health, and the environment.

**Check the below box only if a variance is requested:**

Variance(s): Requests must be submitted to the appropriate division district for consideration of approval. If a Variance is requested, include the variance information on a separate page and attach it to the C-147 as part of the application.

**If a Variance is requested, it must be approved prior to implementation.**

**ALL CONSTRUCTION AND OPERATION VARIANCES HAVE BEEN PREVIOUSLY APPROVED BY NMOCD.**

8.

**Siting Criteria for Recycling Containment**

*Instructions: The applicant must provide attachments that demonstrate compliance for each siting criteria below as part of the application. Potential examples of the siting attachment source material are provided below under each criteria.*

<b><u>General siting</u></b>	
<b><u>Ground water is less than 50 feet below the bottom of the Recycling Containment.</u></b> NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; written approval obtained from the municipality	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. FEMA map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; aerial photo; satellite image	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

9.

**Recycling Facility and/or Containment Checklist:**

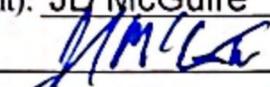
*Instructions: Each of the following items must be attached to the application. Indicate, by a check mark in the box, that the documents are attached.*

- Design Plan - based upon the appropriate requirements.
- Operating and Maintenance Plan - based upon the appropriate requirements.
- Closure Plan - based upon the appropriate requirements.
- Site Specific Groundwater Data -
- Siting Criteria Compliance Demonstrations –
- Certify that notice of the C-147 (only) has been sent to the surface owner(s)

10.

**Operator Application Certification:**

I hereby certify that the information and attachments submitted with this application are true, accurate and complete to the best of my knowledge and belief.

Name (Print): JD McGuire Title: Water Resource Manager  
 Signature:  Date: 11/07/2022  
 e-mail address: JD.McGuire@cdevinc.com Telephone: 432-315-0136

11.

OCD Representative Signature: Victoria Venegas Approval Date: 11/22/2022

Title: Environmental Specialist OCD Permit Number: 1RF-495

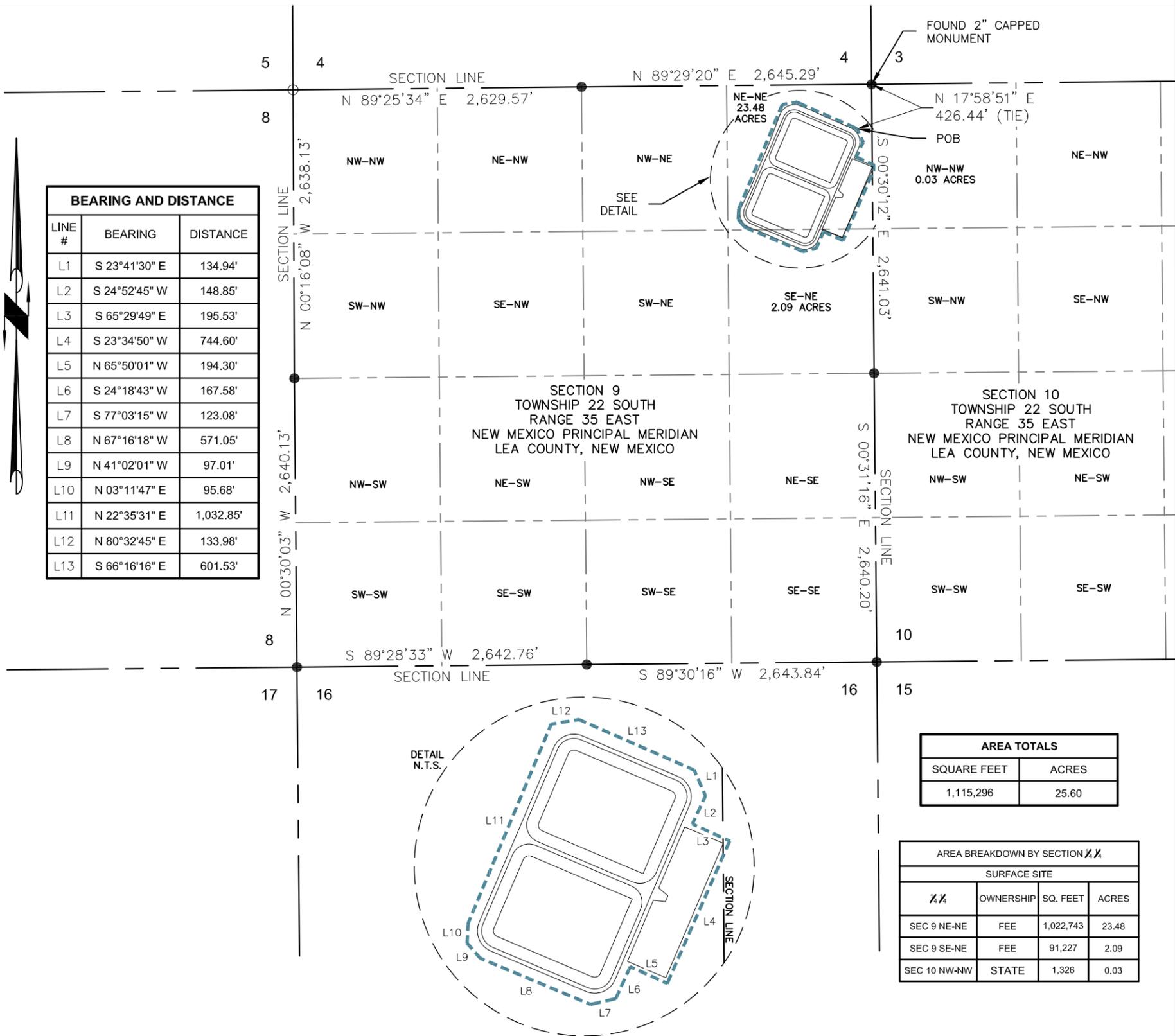
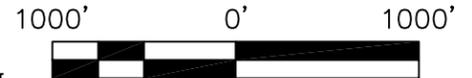
- OCD Conditions \_\_\_\_\_
- Additional OCD Conditions on Attachment \_\_\_\_\_

# Survey Plats



PROPOSED SURFACE SITE  
MERCHANT NORTH REUSE PIT

SECTION 9, TOWNSHIP 22 SOUTH, RANGE 35 EAST, NEW MEXICO PRINCIPAL MERIDIAN  
SECTION 10, TOWNSHIP 22 SOUTH, RANGE 35 EAST, NEW MEXICO PRINCIPAL MERIDIAN  
LEA COUNTY, NEW MEXICO



BEARING AND DISTANCE		
LINE #	BEARING	DISTANCE
L1	S 23°41'30" E	134.94'
L2	S 24°52'45" W	148.85'
L3	S 65°29'49" E	195.53'
L4	S 23°34'50" W	744.60'
L5	N 65°50'01" W	194.30'
L6	S 24°18'43" W	167.58'
L7	S 77°03'15" W	123.08'
L8	N 67°16'18" W	571.05'
L9	N 41°02'01" W	97.01'
L10	N 03°11'47" E	95.68'
L11	N 22°35'31" E	1,032.85'
L12	N 80°32'45" E	133.98'
L13	S 66°16'16" E	601.53'

AREA TOTALS	
SQUARE FEET	ACRES
1,115,296	25.60

AREA BREAKDOWN BY SECTION			
SURFACE SITE			
SECTION	OWNERSHIP	SQ. FEET	ACRES
SEC 9 NE-NE	FEE	1,022,743	23.48
SEC 9 SE-NE	FEE	91,227	2.09
SEC 10 NW-NW	STATE	1,326	0.03

METES AND BOUNDS DESCRIPTION

BEING, A SURFACE SITE, SITUATED SECTION 9, TOWNSHIP 22 SOUTH, RANGE 35 EAST, NEW MEXICO PRINCIPAL MERIDIAN AND SECTION 10, TOWNSHIP 22 SOUTH, RANGE 35 EAST, NEW MEXICO PRINCIPAL MERIDIAN, LEA COUNTY, NEW MEXICO;

BEGINNING AT A POINT HAVING COORDINATES OF N: 515,123.00', E: 840,348.65' / LAT: 32.412415, LONG: -103.364402, POINT OF BEGINNING (P.O.B.), IN SAID SECTION 9, FROM WHICH A FOUND 2-INCH CAPPED MONUMENT FOR THE NORTHEAST CORNER OF SAID SECTION 9, BEARS N 17°58'51" E A DISTANCE OF 426.44 FEET;

THENCE S 23°41'30" E, A DISTANCE OF 134.94 FEET TO A POINT;  
 THENCE S 24°52'45" W, A DISTANCE OF 148.85 FEET TO A POINT;  
 THENCE S 65°29'49" E, A DISTANCE OF 195.53 FEET TO A POINT;  
 THENCE S 23°34'50" W, A DISTANCE OF 744.60 FEET TO A POINT;  
 THENCE N 65°50'01" W, A DISTANCE OF 194.30 FEET TO A POINT;  
 THENCE S 24°18'43" W, A DISTANCE OF 167.58 FEET TO A POINT;  
 THENCE S 77°03'15" W, A DISTANCE OF 123.08 FEET TO A POINT;  
 THENCE N 67°16'18" W, A DISTANCE OF 571.05 FEET TO A POINT;  
 THENCE N 41°02'01" W, A DISTANCE OF 97.01 FEET TO A POINT;  
 THENCE N 03°11'47" E, A DISTANCE OF 95.68 FEET TO A POINT;  
 THENCE N 22°35'31" E, A DISTANCE OF 1,032.85 FEET TO A POINT;  
 THENCE N 80°32'45" E, A DISTANCE OF 133.98 FEET TO A POINT;

THENCE S 66°16'16" E, A DISTANCE OF 601.53 FEET TO THE POINT OF BEGINNING.

SAID SURFACE SITE CONTAINING 1,113,970 SQUARE FEET OR 25.57 ACRES IN SECTION 9, AND 1,326 SQUARE FEET OR 0.03 ACRES IN SECTION 10, MORE OR LESS.

Date: 11/7/22

MARK J. MURRAY  
NEW MEXICO  
12177  
REGISTERED PROFESSIONAL SURVEYOR

MARK J. MURRAY P.L.S. NO. 12177

LEGEND	
---	SURVEY LINES
---	PROPOSED SURFACE SITE
●	FOUND MONUMENT
○	CALCULATED CORNER

NOTES:  
 1.) ANY REFERENCED OWNERSHIP INFORMATION PROVIDED BY CLIENT.  
 2.) BEARINGS AND COORDINATES ARE GRID AS DERIVED FROM GPS OBSERVATION AND ARE BASED ON THE STATE PLANE COORDINATES FOR THE NEW MEXICO EAST ZONE 3001-NAD 83  
 3.) CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT. IN RELATION TO THE EVIDENCE DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY THE CLIENT. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES KNOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.

Date: 10/19/22	DATE: 10/19/22	Scale: 1"=1000'	DWG: 22-100171_Merchant North Reuse Pit_Surface Site.dwg
Drawn: BD	Checked: ESH	Job: 22-100171	REVISION NO. 0

# C-147 Detail



# C-147 DETAIL

## Merchant North Containment Pit

### OPERATOR AND FACILITY / LOCATION DETAIL

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The proposed reuse water containment facility & containment pit referred to as the Merchant North Containment and Recycle Facility, will be owned and operated by Centennial Resource Development, Inc. (Centennial) and located in Township 22 South, Range 35 East, and Section 09 in southcentral Lea County.

### RECYCLING FACILITY DETAIL

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The proposed containment pit will be located adjacent to the Merchant North Water Recycling Facility and will hold treated water for use in Centennial hydraulic fracturing operations. The adjacent recycling facility will utilize advanced water treatment technologies to produce a clean brine effluent prior to storage and subsequent reuse. An oxidation and solids removal/filtering system will treat the incoming influent stream to internal standards sufficient for hydraulic fracturing reuse applications.

### RECYCLING CONTAINMENT DETAIL

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Centennial is proposing to construct a multi-liner dual containment pit utilizing leak detection systems to ensure an intact leak-free barrier system. As depicted in the attached design plan and schematics, *Merchant North Reuse Pit*, the proposed pits will incorporate standards that meet or exceed the required standards per 19.15.34.12 NMAC. The proposed recycle containment will be approximately 561 x 427 inside floor dimensions each with 4:1 inside and outside berm grades. The approximate wall height will average 10ft from outside ground level to ensure no surface water run-on will occur. The top of the levee shall be approximately 20ft wide 2% outside sloping grade to ensure no surface water run-on will occur. The containment pit floor and wall preparation will include laser-finished grade free of rocks, debris, and sharp edges,

compacted to a density to ensure an unyielding base. At the onset of pit construction, all vegetative material and topsoil will be removed and stockpiled at the outside toe of the levee slopes. The interior liner system of the containment pit will consist of a 10-ounce geotextile felt base layer to protect the secondary geomembrane liner from any protruding floor irregularities. The secondary geomembrane liner will be composed of 40 mil HDPE. Between the secondary and primary liners will consist of 200 mil geonet sloping to the leak detection trough. The primary liner consists of a 60 mil HDPE liner. All liners will meet or exceed EPA SW-846 method 9090A. All seams will be oriented vertically with 4–6-inch liner overlap and all seam testing shall exceed all guidelines. As depicted in the attached design plan, *Merchant North Reuse Pit*, the proposed containment pit will include a center-aligned leak detection trough and collection sump completed with perforated pipe and pump casing allowing for the installation of a leak detection pump system. Both inlet and discharge manifold systems, depicted in *Merchant North Reuse Pit*, will be installed to prevent any liner damage from water entrance velocity or hose installation. Two audible bird deterrents will be utilized to deter any native birds and wildlife from the containment pit area.

## BONDING

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Centennial will source and distribute reuse water for the Merchant North Containment and Recycle Facility from wells solely operated by Centennial. Therefore, attached are the details of Bond Number LPM9260153 – State of New Mexico Land Office Oil and Gas Minerals Division.

## FENCING

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Please see the Variance detail.

## SIGNAGE

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As shown in the attached example sign, Centennial shall place the appropriate signage along the water recycling facility and containment pit perimeter that meets all guidelines established in 19.15.34.12 C NMAC.

## VARIANCES

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Included are three variances as indicated in Section 7 of the C-147 registration form. All construction and operation variances have previously been approved

by NMOCD.

1. Install two audible Mega Blaster Pro bird deterrents capable of covering up to 30 acres each.
2. Enclose the perimeter with a 6-foot galvanized chain link fence with 3 strands 45-degree barbed wire arm toppers.
3. Utilize 40-mil HDPE liner, in lieu of the 30-mil string reinforced liner.

## SITING CRITERIA FOR RECYCLING CONTAINMENT

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Enclosed within this submittal are comprehensive third-party reports detailing conformity to siting criteria described in Section 8 of the C-147 registration form; a detailed list and description of these attachments can be found in the subsequent section.

## RECYCLING FACILITY AND CONTAINMENT CHECKLIST

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As indicated in Section 9 on the attached C-147 form, all the required attachments have been included on the submittal, and certification of C-147 delivery to the landowner is acknowledged.

# **Recycling Containment**

## **Design Drawings**



CENTENNIAL RESOURCE DEVELOPMENT, INC.  
**MERCHANT NORTH REUSE PIT**  
 LEA COUNTY, NEW MEXICO  
**CONSTRUCTION PLAN**

SHEET INDEX:

SHEET 1	COVER SHEET
SHEET 2	VICINITY MAP
SHEET 3	POND LAYOUT
SHEET 4	POND CALCULATIONS
SHEET 5	CROSS SECTION PROFILES
SHEET 6	DETAILS 1 OF 3
SHEET 7	DETAILS 2 OF 3
SHEET 8	DETAILS 3 OF 3

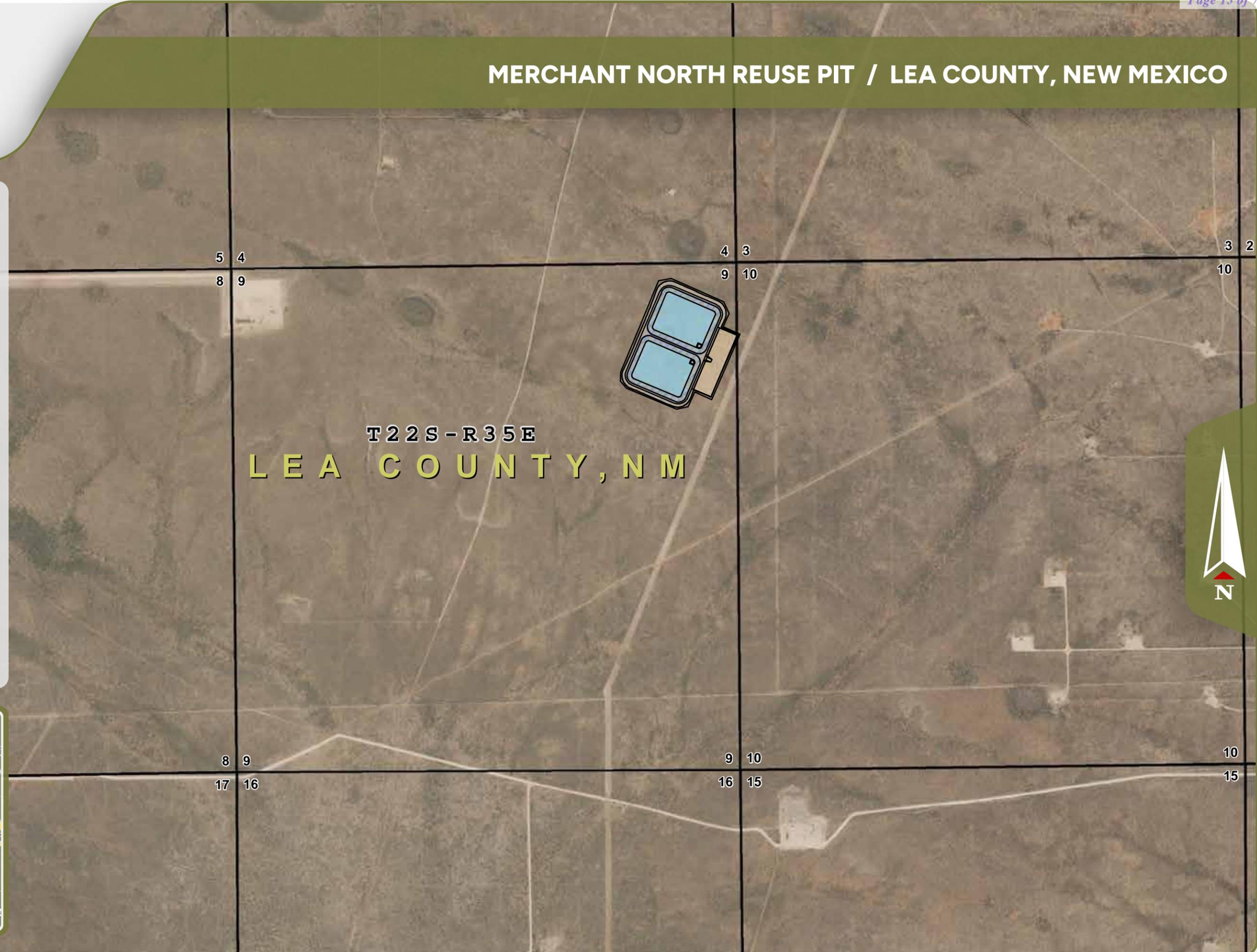




# MERCHANT NORTH REUSE PIT / LEA COUNTY, NEW MEXICO

**GENERAL NOTES:**

1. BEARINGS AND COORDINATES ARE GRID AS DERIVED FROM GPS OBSERVATION AND ARE BASED ON THE STATE PLANE COORDINATES FOR THE NEW MEXICO, EAST ZONE-NAD 83
2. EXISTING UTILITY LOCATIONS SHOWN ARE TAKEN FROM AVAILABLE RECORDS PROVIDED BY THE UTILITY OWNER AND FIELD LOCATIONS OF SURFACE APPURTENANCES. LOCATIONS SHOWN ARE GENERALLY SCHEMATIC IN NATURE AND MAY NOT ACCURATELY REFLECT THE SIZE AND LOCATION OF EACH INDIVIDUAL UTILITY. SOME UTILITY LINES MAY NOT BE SHOWN.
3. ANY DAMAGES THAT MAY OCCUR TO REAL PROPERTY OR EXISTING IMPROVEMENTS SHALL BE RESTORED BY THE CONTRACTOR TO AT LEAST THE SAME CONDITION THAT THE REAL PROPERTY OR EXISTING IMPROVEMENTS WERE IN PRIOR TO THE DAMAGES.



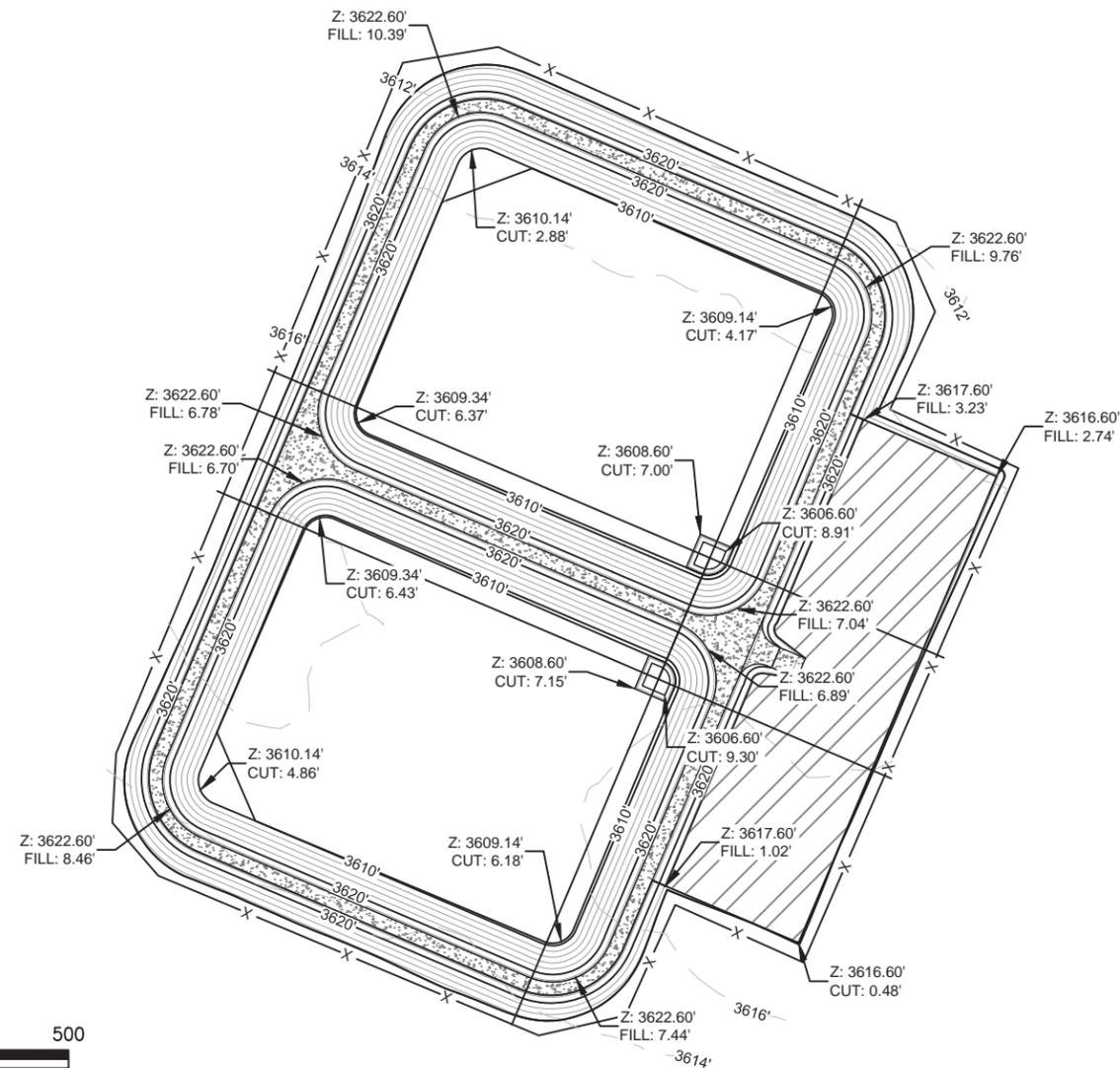
VICINITY MAP



1 INCH = 1000 FEET

JOB NO. 22-100171 / SHEET 2 OF 8 / REVISION NO. 0





NORTH MERCHANT REUSE PIT STAGE STORAGE					
ELEV	DEPTH (FT)	AREA (ACRES)	VOLUME (BBLs)	VOLUME (ACRE FT)	VOLUME (CY)
3,606.60	0.00	0.01	0.00	0.00	0.00
3,607.10	0.50	0.03	114.97	0.01	23.91
3,607.60	1.00	0.04	257.51	0.03	53.55
3,608.10	1.50	0.05	429.97	0.06	89.41
3,608.60	2.00	0.06	635.52	0.08	132.15
3,609.10	2.50	1.60	3,235.93	0.42	672.90
3,609.60	3.00	4.21	14,545.76	1.87	3,024.76
3,610.10	3.50	5.43	33,819.39	4.36	7,032.67
3,610.60	4.00	5.53	55,084.65	7.10	11,454.73
3,611.10	4.50	5.62	76,713.29	9.89	15,952.36
3,611.60	5.00	5.72	98,706.46	12.72	20,525.79
3,612.10	5.50	5.81	121,066.48	15.60	25,175.50
3,612.60	6.00	5.91	143,795.89	18.53	29,902.03
3,613.10	6.50	6.00	166,897.03	21.51	34,705.86
3,613.60	7.00	6.10	190,372.37	24.54	39,587.51
3,614.10	7.50	6.20	214,224.28	27.61	44,547.46
3,614.60	8.00	6.30	238,455.22	30.74	49,586.23
3,615.10	8.50	6.39	263,067.69	33.91	54,704.34
3,615.60	9.00	6.49	288,064.02	37.13	59,902.27
3,616.10	9.50	6.59	313,446.61	40.40	65,180.52
3,616.60	10.00	6.69	339,217.78	43.72	70,539.58
3,617.10	10.50	6.79	365,377.89	47.09	75,979.51
3,617.60	11.00	6.90	391,928.75	50.52	81,500.71
3,618.10	11.50	7.00	418,873.39	53.99	87,103.79
3,618.60	12.00	7.10	446,214.40	57.51	92,789.29
3,619.10	12.50	7.20	473,956.09	61.09	98,558.11
3,619.60	13.00	7.31	502,102.74	64.72	104,411.14
3,620.10	13.50	7.41	530,656.95	68.40	110,348.93
3,620.60	14.00	7.52	559,621.59	72.13	116,372.06
3,621.10	14.50	7.63	588,998.43	75.92	122,480.91
3,621.60	15.00	7.73	618,789.11	79.76	128,675.81
3,622.10	15.50	7.84	648,995.71	83.65	134,957.21
3,622.60	16.00	7.95	679,626.23	87.60	141,326.76

\* INFORMATION ABOVE IS IDENTICAL FOR EACH POND

QUANTITIES HAVE BEEN REVIEWED AND VERIFIED



11/04/22



Description	Unit Quantity	Unit
Liner Areas		
Out-Slope Area	115,781	SQ. FT
Pond Area	661,379	SQ. FT
Rub Sheet	31,093	SQ. FT
Piping		
6" HDPE Casing Pipe	135	LN. FT
4" HDPE Collection Pipe	1,385	LN. FT
12" HDPE Suction line	610	LN. FT
Roads		
Berm Drive (6" Gravel)	89,305	SQ. FT
Fences		
6' Chain link fence	4,241	LN. FT
Mass Grading		
Clearing and Grubbing	23.88	ACRE
Grading	114,039.00	CU. YD

**EARTHWORK QUANTITIES**

CUT VOLUME: 114,039 CU. YD.  
 FILL VOLUME: 81,084 CU. YD.  
 TOPSOIL (6" STOCKPILED): 22,617 CU. YD.  
 TOTAL (EXPORT): 10,338 CU. YD.  
 TOTAL GRADING AREA: 23.88 ACRES

\* VOLUMES ASSUME A FILL FACTOR OF 1.15

**POND SUMMARY**

MAX VOLUME: 679,626.23 BBLs  
 MAX AREA: 7.95 ACRES  
 MAX ELEVATION OF POND: 3,622.60 FT  
 3' FREEBOARD ELEVATION: 3,619.60 FT  
 VOLUME AT FREEBOARD: 502,102.74 BBLs

\* POND INFORMATION IS IDENTICAL FOR EACH POND

**MERCHANT NORTH REUSE PIT**

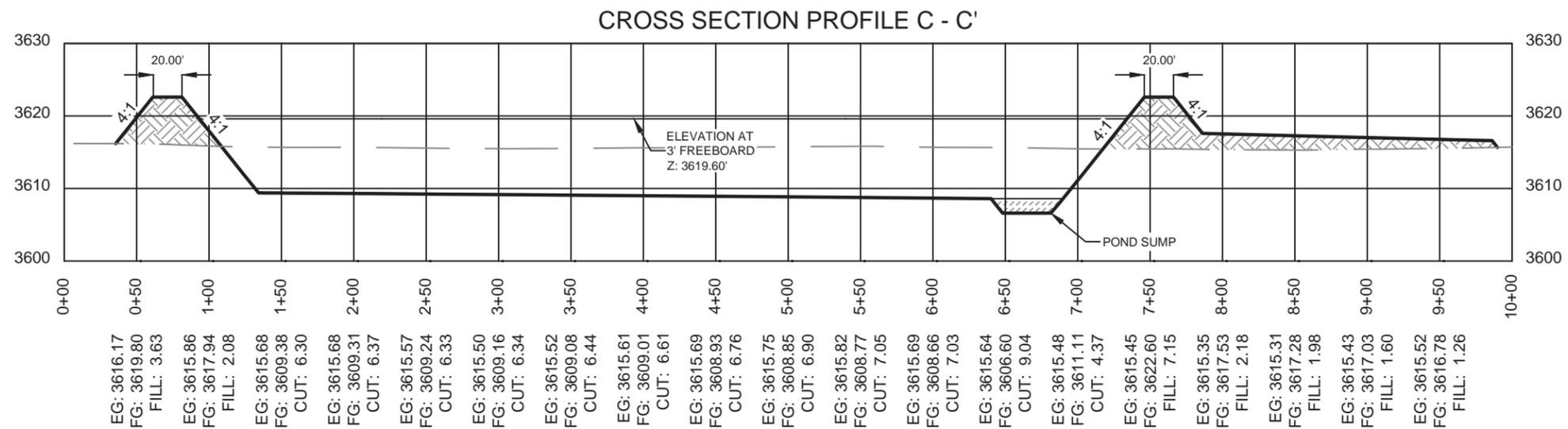
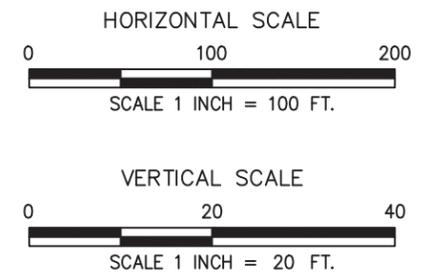
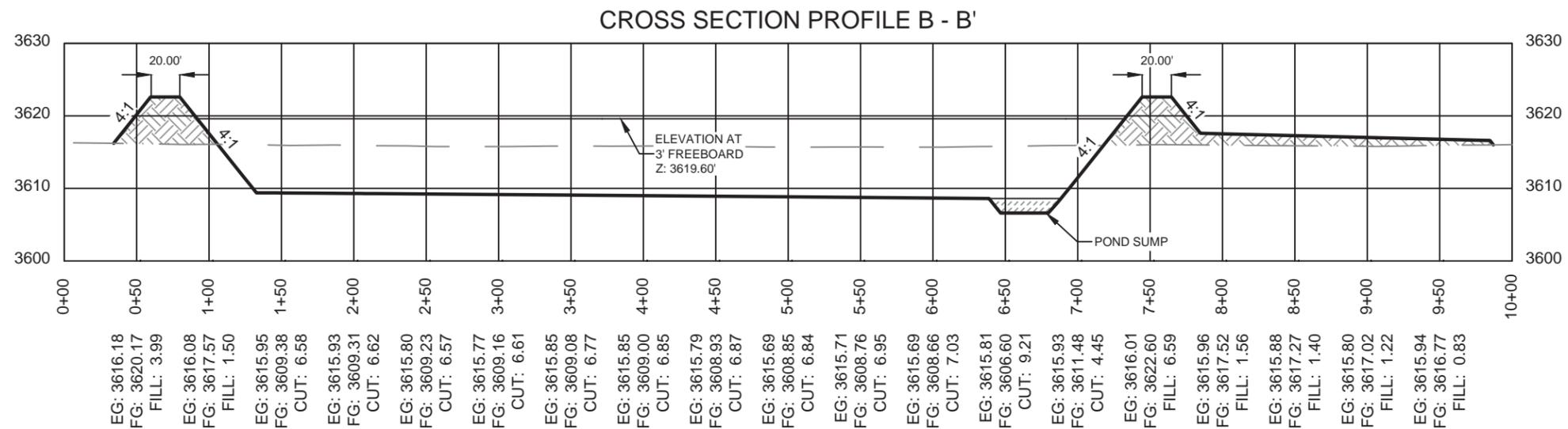
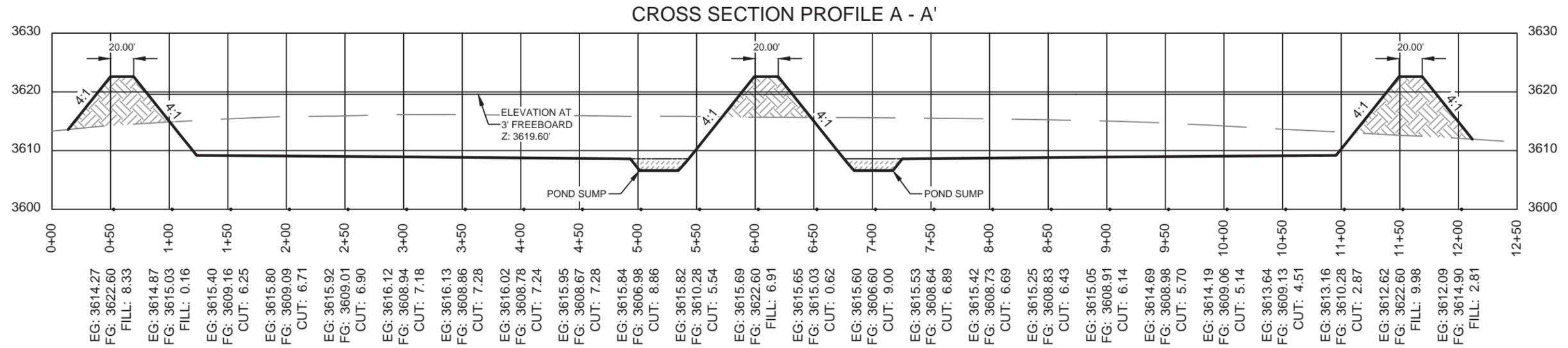
SITUATED IN  
 SECTION 9, T-22-S, R-35-E  
 LEA COUNTY, NEW MEXICO

**POND CALCULATIONS**



CENTENNIAL RESOURCE DEVELOPMENT, INC.

Date: 10/24/22	DATE: 10/24/22	Scale: 1" = 250'
Drawn: AP	Checked: MS	Job: 22-100171
Sheet 4 of 8		REVISION NO. 0

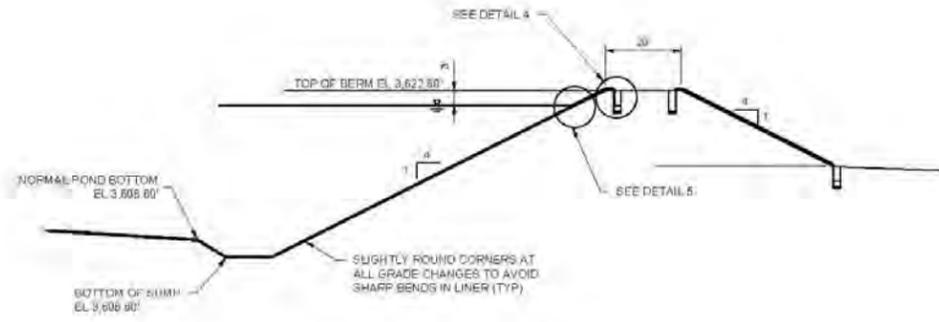


**MERCHANT NORTH REUSE PIT**  
SITUATED IN  
SECTION 9, T-22-S, R-35-E  
LEA COUNTY, NEW MEXICO

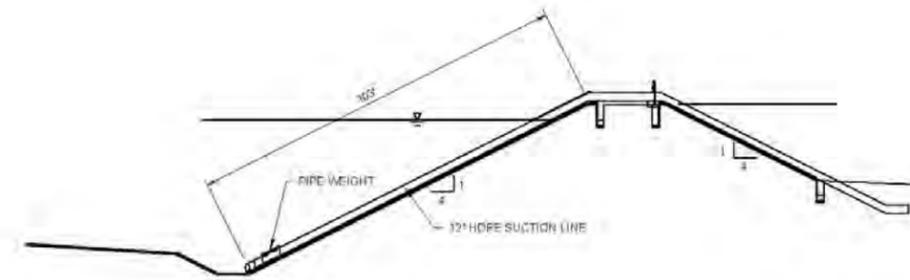
POND CROSS SECTION PROFILES

CENTENNIAL RESOURCE DEVELOPMENT, INC.

Date: 10/24/22	DATE: 10/24/22	Scale: 1" = 100'
Drawn: AP	Checked: MS	Job: 22-100171
Sheet 5 of 8		REVISION NO. 0

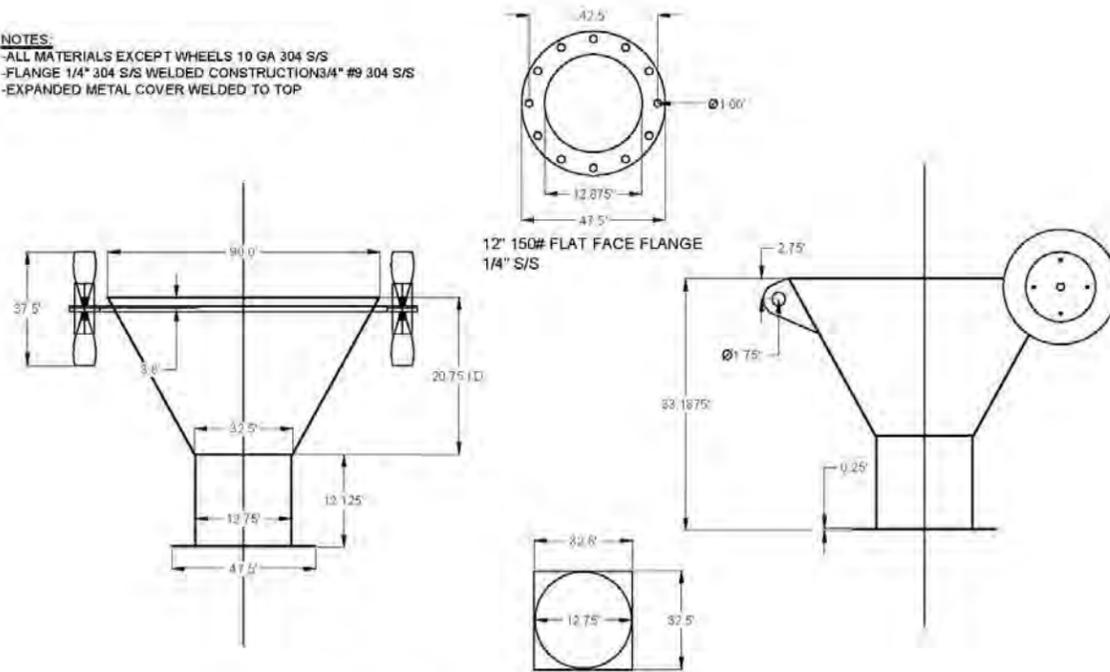


1 TYPICAL BERM SECTION  
NTS

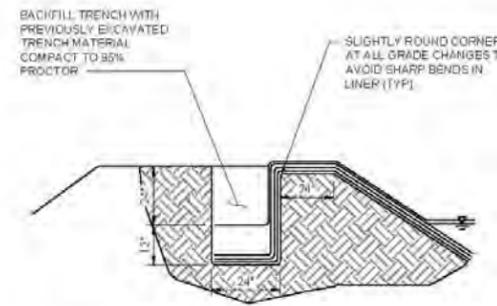


2 SUCTION PIPE SECTION  
NTS

NOTES:  
 -ALL MATERIALS EXCEPT WHEELS 10 GA 304 S/S  
 -FLANGE 1/4" 304 S/S WELDED CONSTRUCTION 3/4" #9 304 S/S  
 -EXPANDED METAL COVER WELDED TO TOP

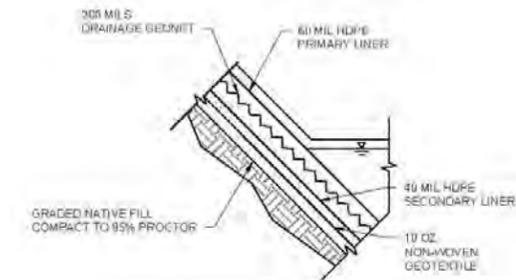


3 SUCTION FUNNEL  
NTS



NOTES:  
 1. AMOUNT OF LAYERS WILL VARY BY POND TYPE AND WHERE 6 PIG SHEET IS UTILIZED.

4 TYPICAL ANCHOR TRENCH  
NTS



5 BRINE WATER LINER SYSTEM  
NTS



11/04/22

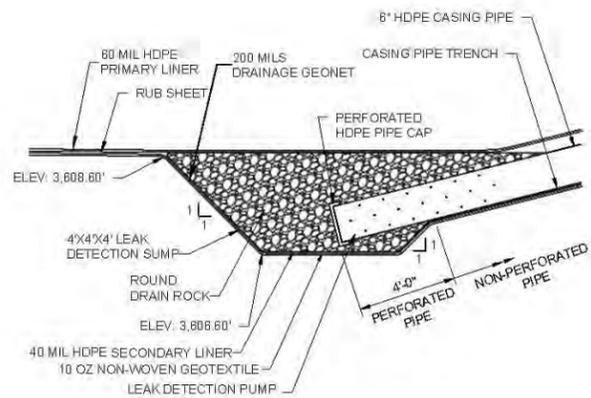
**MERCHANT NORTH REUSE PIT**  
 SITUATED IN  
 SECTION 9, T-22-S, R-35-E  
 LEA COUNTY, NEW MEXICO

DETAILS (1 OF 3)



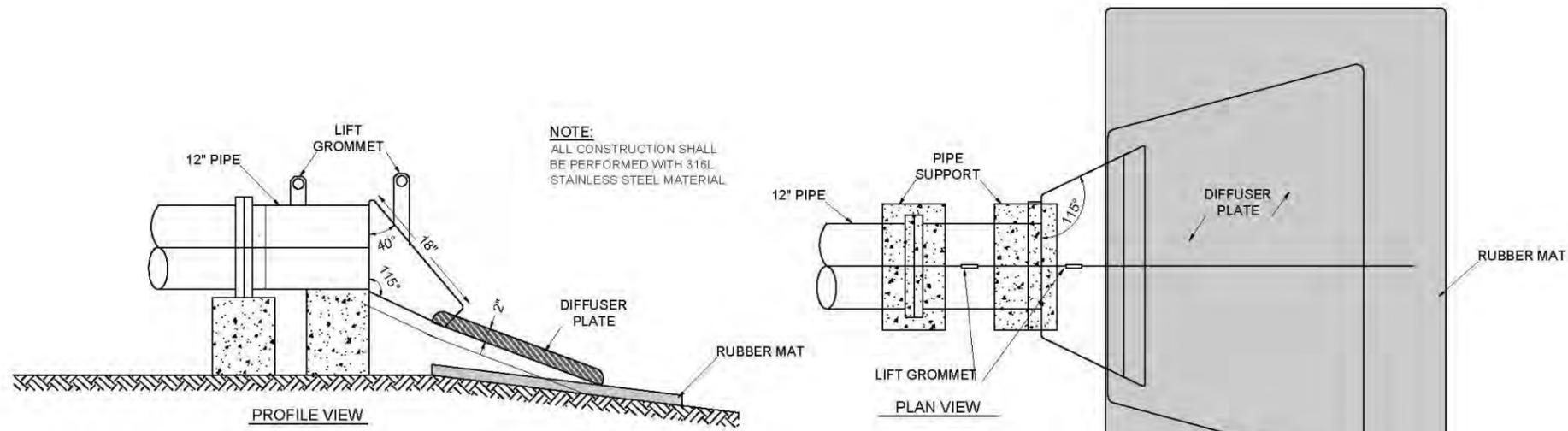
CENTENNIAL RESOURCE DEVELOPMENT, INC.

Date: 10/24/22	DATE: 10/24/22	Scale: N/A
Drawn: AP	Checked: MS	Job: 22-100171
Sheet 6 of 8		REVISION NO. 0



BRINE WATER SECTION

6 LEAK DETECTION SUMP  
NTS

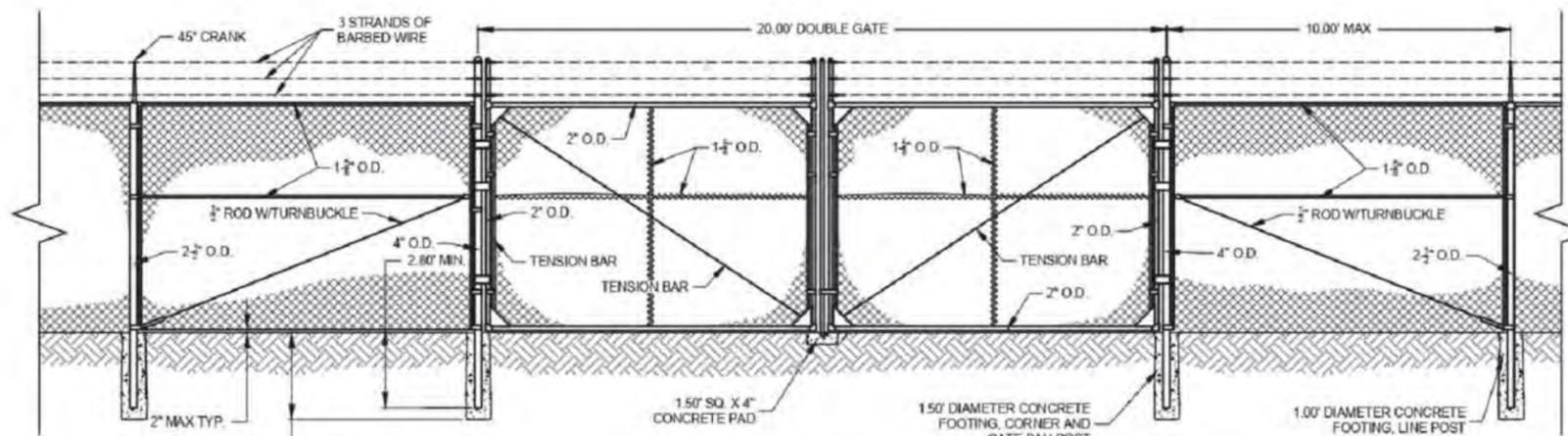


NOTE:  
ALL CONSTRUCTION SHALL  
BE PERFORMED WITH 316L  
STAINLESS STEEL MATERIAL

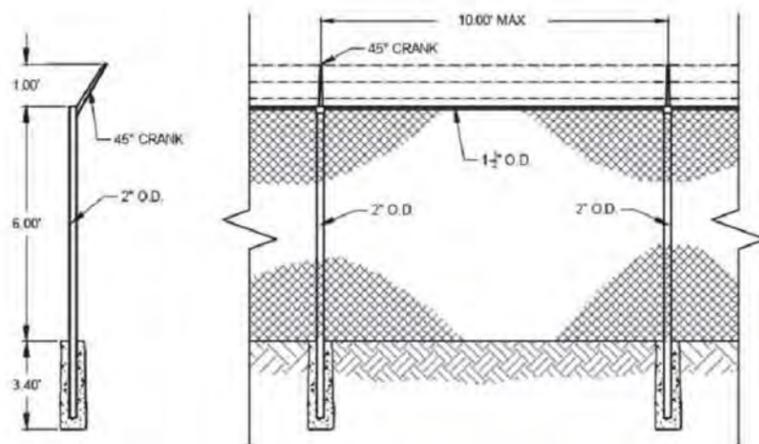
7 POND FILL APPARATUS  
NTS



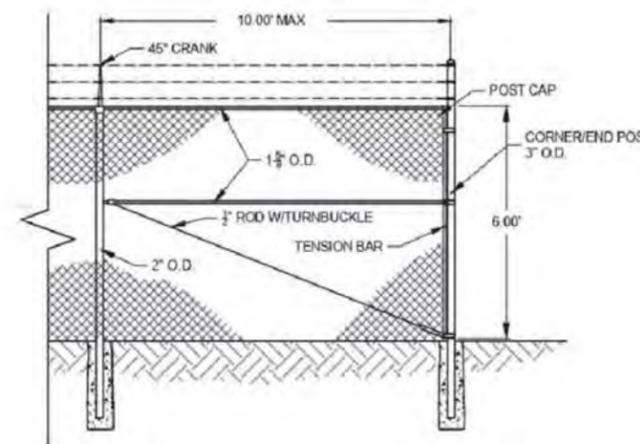
<b>MERCHANT NORTH REUSE PIT</b>		
SITUATED IN SECTION 9, T-22-S, R-35-E LEA COUNTY, NEW MEXICO		
DETAILS (2 OF 3)		
CENTENNIAL RESOURCE DEVELOPMENT, INC.		
Date: 10/24/22	DATE: 10/24/22	Scale: N/A
Drawn: AP	Checked: MS	Job: 22-100171
Sheet 7 of 8		REVISION NO. 0



GATE



UNREINFORCED SECTION



CORNER SECTION

8

PERMANENT 6' CHAINLINK FENCE WITH BARBED WIRE DETAIL



11/04/22

MERCHANT NORTH REUSE PIT

SITUATED IN SECTION 9, T-22-S, R-35-E LEA COUNTY, NEW MEXICO

DETAILS (3 OF 3)



CENTENNIAL RESOURCE DEVELOPMENT, INC.

Date: 10/24/22	DATE: 10/24/22	Scale: N/A
Drawn: AP	Checked: MS	Job: 22-100171
Sheet 8 of 8		REVISION NO. 0

# Liner Installation



## Installation Procedure

**(This is a "Layman's" guide specific instructions follow as determined by IAGI)**

1. Mobilize equipment and crew to location.
2. Once at location before any work is done complete a "JSA" and an equipment check list.
3. Inspect subgrade to determine if it is acceptable to begin work.
4. Begin excavation a 2'x2' anchor trench around the pits perimeter once a line locate has been completed
5. Once subgrade is accepted and before liner is deployed pull samples from one of the rolls to be used and test welders and seam quality (samples will be kept for QAQC documentation).
6. Anytime the welders set for more than two hours or a notable change in temperature occurs, the welders must be retested (samples will be kept for QAQC documentation)
7. The deployment direction will be determined by the direction of the wind on the first day, panels will be deployed moving in the direction that puts the wind at the back of the installer so that it is less likely for wind to get under the material and create air pockets, and unnecessary wrinkles.
  - a. NOTE: You must also look at the forecast and consider any changing wind directions.
8. The first panel will be laid across the width of the pit five feet from the toe, the panel will be "squared" up with the pit and secured in place with the sand bags.
9. You then will begin end cap deployment. Panels will be pulled 3-5 feet past the first toe pull that was installed, corners will be "cut in" so that there are no perpendicular welds on the wall after end cap is completed.
10. Once the end cap is complete proceed with the floor installation.
  - a. Note: For each panel pull overlap and adjust from there for the welder tract
  - b. Note: Each pull will be pulled out to account for the current wind direction. Make sure that the end flap is not in the wind, if needed lift the flap of the installed panel and pull underneath it.
11. Complete the second end cap the same as in #8
12. If the pit is a "multi-layer" pit, or the customer has requested air channel testing you will now begin the QC and air test's.
  - a. All extrusion welds will be Vacuum tested
  - b. All testing will be done in accordance to IAGI standards
13. Net will now be installed in the floor using zip ties every 6" to secure panels together
14. Secondary layer will be installed in the same manner as # 4-11
15. "Dump Pads" or "Rub Sheets" will be installed in the requested location of the customer and will be alternate in color to the main liner. They will be extruded fully.
16. Sand bags will be installed around the entire toe of the pit to ballast the pit until water is available.
17. Documentation will be done throughout the installation, noting the roll numbers, and length of each panel. All repairs will also be documented.

Patriot Environmental, LLC  
220 W. Carl Hubbell Blvd. # 671  
Meeker, OK 74855

# Bonding

4.

**Bonding:**

Covered under bonding pursuant to 19.15.8 NMAC per 19.15.34.15(A)(2) NMAC (These containments are limited to only the wells owned or operated by the owners of the containment.)

Bonding in accordance with 19.15.34.15(A)(1). Amount of bond \$ \_\_\_\_\_ (work on these facilities cannot commence until bonding amounts are approved)

Attach closure cost estimate and documentation on how the closure cost was calculated.

*ONLINE Version*  
**NEW MEXICO STATE LAND OFFICE – Oil, Gas, and Minerals Division**  
**BOND FOR CONTRACT PERFORMANCE AND SURFACE OR IMPROVEMENT DAMAGE**  
**Surface Improvement Damage Megabond**

BOND NO. LPM9260153  
(For use of Surety Company)

BOND NO. \_\_\_\_\_  
(For use of State Land Office)

Know all men by these presents

\_\_\_\_\_ Centennial Resource Production, LLC. \_\_\_\_\_, as Principal,  
and \_\_\_\_\_ Fidelity and Deposit Company of Maryland \_\_\_\_\_, as Surety, a corporation organized,  
existing and doing business under and by virtue of the laws of the State of \_\_\_\_\_ Maryland \_\_\_\_\_ and  
authorized to transact a surety business in the State of New Mexico, are held and firmly bound unto the New Mexico  
Commissioner of Public Lands in the sum of **Twenty-five Thousand Dollars (\$25,000)** for the following uses:

1. For the use and benefit of the Commissioner, to secure the performance of said Principal as lessee under one or more state leases or permits for minerals, oil and gas, coal or geothermal resources or as holder under one or more state rights-of-way or easements which Principal has heretofore executed or may hereafter execute with the Commissioner; and

2. For the use and benefit of the Commissioner, state surface lessees, state land contract purchasers, state patentees, and their successors and assigns, to pay for damages to the surface of lands subject to a state lease or permit for minerals, oil and gas, coal or geothermal resources or a state right-of-way or easement held by Principal, or for damages to surface improvements located thereon, suffered by reason of Principal's operations under a state lease or permit for minerals, oil and gas, coal or geothermal resources or under a state right-of-way or easement.

For the payment of said sum, well and truly to be made, Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

The conditions of the foregoing obligations are:

1. If the above bound Principal or its successors or assigns shall well and truly perform and keep all terms, covenants, conditions, and requirements of all state leases for minerals, oil and gas, coal or geothermal resources and of all state rights-of-way and easements heretofore or hereafter executed by the Commissioner and Principal, including the payment of royalties when due and compliance with all established mining plans; and

2. If Principal or its successors or assigns shall in all respects make good and sufficient recompense, satisfaction or payment to the Commissioner of Public Lands for damages to the surface of lands subject to a state lease or permit for minerals, oil and gas, coal or geothermal resources or a state right-of-way or easement held by Principal and for damages to livestock, water, crops, tangible improvements or surface improvements of any kind located thereon suffered by reason of Principal's operations under such state lease, permit, right-of-way or easement heretofore or hereafter executed by the Commissioner and Principal;

THEN, the obligation to pay the sum of Twenty-five Thousand Dollars (\$25,000) shall be null and void.

If, however, Principal shall default or otherwise fail in performance under such state lease, permit, right-of-way or easement, including the failure to pay royalties when due or to comply with established mining plans, or if Principal shall fail or refuse to make good and sufficient recompense, satisfaction or payment to the Commissioner for damages to the surface of the above designated lands or to improvements located thereon, then the obligation to pay said sum shall remain in full force and effect.

The liability of Surety upon this bond shall not expire upon the termination of any state lease or permit or any

renewal or extension thereof for minerals, oil and gas, coal or geothermal resources or any state right-of-way or easement or any renewal or extension thereof which Principal or its successors or assigns has heretofore executed or may hereafter execute with the Commissioner, but shall be and remain in full force and effect until released in writing by the Commissioner of Public Lands.

Principal and Surety further agree that in the event an action is brought on this bond and a court of competent jurisdiction determines Principal or Surety is in breach of the agreements contained in this bond, Principal or Surety or both of them shall pay to the Commissioner the costs associated with the recovery of the amounts due hereunder, including reasonable attorneys' fees.

This bond is executed pursuant to the laws of the State of New Mexico, including Sections 19-8-24, 19-9-12, 19-10-26, 19-13-19, and 46-6-1 through -9, NMSA 1978.

The premium for which this bond is written is \$375.00 Dollars.

In witness whereof we hereunto set our hands this 11th day of July, 2017.

Centennial Resource Production, LLC.

Fidelity and Deposit Company of Maryland

PRINCIPAL  
1001 17th St, Flr 18, DENVER, CO 80202

SURETY  
1299 Zurich Way, Schaumburg, IL 60196

Address  
BY 

Address  
BY 

Signature  
CHIEF OPERATING OFFICER

Attorney-in-Fact Signature  
Desiree E. Westmoreland

Title  
(Note: Principal, if corporation, affix Corporate seal here.)

(Note: Corporate surety, affix Corporate seal here.)

ACKNOWLEDGMENT FORM FOR NATURAL PERSONS

STATE OF \_\_\_\_\_ )  
 ) ss.  
COUNTY OF \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,

before me personally appeared \_\_\_\_\_, to me known to be the person(s) described in and who executed the same as (his, her, their) free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written.

My commission expires \_\_\_\_\_ Notary Public name \_\_\_\_\_ Signature, notary \_\_\_\_\_  
(Notary Seal)

ACKNOWLEDGMENT FORM FOR CORPORATION LIMITED LIABILITY COMPANY *JK*

STATE OF COLORADO

COUNTY OF DENVER ) ss.

On this 13<sup>th</sup> day of July, 20 17

before me personally appeared SEAN S SMITH, to me personally known, who, being by me duly sworn, did say that s/ he is CHIEF OPERATING OFFICER of CENTENNIAL RESOURCE PRODUCTION LLC

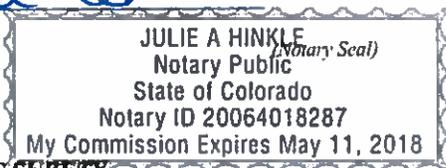
and that this instrument was signed and sealed on behalf of said corporation by authority of its board of directors, and acknowledged said instrument to be the free act and deed of said corporation. LIMITED LIABILITY COMPANY JK

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written. LIMITED LIABILITY COMPANY JK

05-11-2018  
My commission expires

Julie A. Hinkle  
Notary Public name

Julie A. Hinkle  
Signature notary



ACKNOWLEDGMENT FORM FOR CORPORATE SURETY

STATE OF Kansas

COUNTY OF Sedgwick ) ss.

On this 11<sup>th</sup> day of July, 20 17

before me personally appeared Desiree E. Westmoreland, to me personally known, who, being by me duly sworn, did say that s/ he is Attorney-in-Fact of Fidelity and Deposit Company of Maryland

and that this instrument was signed and sealed on behalf of said corporation by authority of its board of directors, and acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written.

1/11/21  
My commission expires

Myriah Valdivia  
Notary Public name

Myriah Valdivia  
Signature, notary

(Notary Seal)



Note: Corporate surety, attach power of attorney.

APPROVED this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
COMMISSIONER OF PUBLIC LANDS

NOTE: File before development or operations are commenced, with:

Commissioner of Public Lands  
New Mexico State Land Office, OGMD  
P.O. Box 1148 or 310 Old Santa Fe Trail  
Santa Fe, New Mexico 87504-1148 Santa Fe, NM 87501-2708

**ZURICH AMERICAN INSURANCE COMPANY  
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY  
FIDELITY AND DEPOSIT COMPANY OF MARYLAND  
POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **GERALD F. HALEY, Vice President**, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Bret S. BURTON, Tim H. HEFFEL, Desiree E. WESTMORELAND, Timothy Craig SMITH, David B. McKINNEY, Todd Alan RAMBO and Myriah A. VALDIVIA**, all of Wichita, Kansas, EACH its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings**, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 7th day of March, A.D. 2017.

**ATTEST:**

**ZURICH AMERICAN INSURANCE COMPANY  
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY  
FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



By: *Eric D. Barnes*

*Gerald F. Haley*

*Secretary*  
**Eric D. Barnes**  
State of Maryland  
County of Baltimore

*Vice President*  
**Gerald F. Haley**

On this 7th day of March, A.D. 2017, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **GERALD F. HALEY, Vice President, and ERIC D. BARNES, Secretary**, of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposed and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

*Maria D. Adamski*  
Maria D. Adamski, Notary Public  
My Commission Expires: July 8, 2019



# Sign

6.

**Signs:**

- 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
- Signed in compliance with 19.15.16.8 NMAC

48"x48"



**MERCHANT NORTH REUSE WATER PIT**  
**NE/NE SEC.09 - T22S - R35E**  
**LEA COUNTY, NM**  
**32.410680<sup>0</sup>, -103.364708<sup>0</sup>**

<p><b>CAUTION</b> <b>PPE</b> <b>REQUIRED</b></p>	<p><b>DANGER</b> <b>H<sub>2</sub>S</b> <b>MAY BE PRESENT</b></p>
<p><b>DANGER</b> <b>NO</b> <b>SMOKING</b></p>	<p><b>NOTICE</b> <b>AUTHORIZED</b> <b>PERSONNEL ONLY</b></p>

# Variations

7.

**Variations:**

Justifications and/or demonstrations that the proposed variance will afford reasonable protection against contamination of fresh water, human health, and the environment.

*Check the below box only if a variance is requested:*

Variance(s): Requests must be submitted to the appropriate division district for consideration of approval. If a Variance is requested, include the variance information on a separate page and attach it to the C-147 as part of the application.

**If a Variance is requested, it must be approved prior to implementation.**

**ALL CONSTRUCTION AND OPERATION VARIANCES HAVE BEEN PREVIOUSLY APPROVED BY NMOCD.**



## Variance Request for Bird Deterrent

Re: Merchant North Containment and Recycle Facility

Centennial Resource Development, Inc. (Centennial) would like to request the OCD's approval for a variance regarding bird deterrents at the location described above. Centennial proposes to utilize the Bird-X Mega Blaster Pro, creating intermittent distress calls to create a "danger zone" that frightens native and or migrating birds and wildlife from the water recycling facility and containment pit area. Two units would be installed, each containing 2 built-in high-output amplifiers and housing 20 speakers, capable of producing up to 125 decibels and a frequency range from 2,000 – 10,000 Hz.

Please see details below.

### **Mega Blaster Pro – Specs:**

- Coverage: Up to 30 acres from single unit
- Box dimensions: Box 1: 23" x 18" x 16" (23 lbs., unit & speaker), Box 2: 32" x 24" x 5" (17 lbs., solar panel)
- Power Input: 12vDC (3 amps) via solar panel and battery
- Sound Pressure: up to 125 decibels
- Frequency: 2,000–10,000 Hz
- Library of predator calls
- Full customizable to the species of bird in our area of operation
- Compliance: UL & CE listed
- EPA Est. 075310-OR-001
- Included: Generating unit with two built-in high-output amplifiers, 20-speaker tower with audio cables, 40-watt solar panel, battery clips, & all mounting hardware
- The unit is typically mounted with a tripod pole setup. The tripod would be a typical sturdy tripod that would be used to support a large PA speaker. The pole that would fit into the top of the tripod that the speaker tower, control box and solar panel would mount to should be ¾" diameter and be 6-12 feet tall. The taller the pole the greater the distance the sound will travel.

- The effective range of the Mega Blaster Pro is 30 acres, in a circular coverage pattern around the 20-speaker tower with a radius of about 666 feet. The 20-speaker tower features 5 speakers pointing in each direction to create the even dispersal

This is the typical configuration Centennial proposes to utilize at the Merchant North Containment and Recycle Facility.



# EFFECTIVE WIDE-AREA BIRD CONTROL!

## Mega Blaster PRO sonic bird repeller covers 30 acres!



Mega Blaster PRO uses intermittent distress calls to create a "danger zone" that frightens infesting birds away for good. PREDATOR cries help scare all the birds.



- NEMA Rated Case
- Crystal-Clear Digital Sounds

- Laughing Gull
- Ring-Billed Gull
- Herring Gull
- California Gull
- Black-Headed Gull
- Glaucous-Winged Gull
- Double Crested Cormorant
- Marsh Hawk

**Perfect for Landfills, Airfields, Fish Farms, Farm Fields or any multi-acre facility.**

Our most powerful system features two high-output amplifiers that drive our specially-designed 20 speaker tower. The intense sound output covers up to 30 acres (12 hectares).

It features solid-state electronics mounted inside a NEMA-type control box, suitable for most any application.

The generating unit mounts easily to a post or pole using the included hardware. The unit comes pre-recorded in four different configurations for the most common bird infestations.

Choose any or all of the 8 sounds, including predators to give the birds even more of a sense of danger. Customize by choosing volume and silent time between sounds.

### Mega Blaster PRO

Complete system includes the generating unit with two built-in high-output amplifiers, 20-speaker tower with audio cables, 40 watt solar panel, battery clips and all mounting hardware.

#### CONFIGURATIONS AVAILABLE:

- Agricultural # MEGA-AG
- Crow / Raven # MEGA-CROW
- Woodpecker # MEGA-WP
- Marine / Gull # MEGA-MAR



The Bird Control 'X'-Perts

**NOTE:** This unit is capable of sound output up to 125 decibels. **HEARING PROTECTION IS RECOMMENDED.**



# Mega Blaster Pro

## Effective Wide-Area Bird Control:

Mega Blaster PRO sonic bird repeller covers 30 acres!

Mega Blaster PRO uses intermittent distress calls to create a "danger zone" that frightens infesting birds away for good.

**PREDATOR** cries scare all pest birds.

Our most powerful system features two high-output amplifiers that drive our specially-designed 20 speaker tower. The intense sound output covers up to 30 acres (12 hectares). It features solid-state electronics mounted inside a NEMA-type control box, suitable for almost any large outdoor application.

The generating unit mounts easily to a post or pole using the included hardware. The unit comes pre-recorded in four different configurations for the most common bird infestations. Choose any or all of the 8 sounds, including predators to give the birds even more of a sense of danger. Customize by choosing volume and silent time between sounds.

Birds are stubborn and territorial, returning year after year. Mega Blaster Pro uses their memory against them and scares them away repeatedly so they learn not to return.

**NOTICE: This unit is capable of sound output up to 125 decibels. HEARING PROTECTION IS RECOMMENDED.**



ELECTRONIC SONIC DEVICES

**Coverage:** up to 30 acres from single unit.

**Pests:** gulls and marine birds, crows, ravens, starlings, blackbirds, grackles, woodpeckers, ring-billed gull, herring gull, california gull, black-headed gull, glaucous-winged gull, double crested cormorant

**Uses:** any multi-acre facility including landfills, airfields, fish farms, beaches, lakes, parks, large estates.

### Configuration Options:

- Agricultural # MEGA-AG
- Crow / Raven # MEGA-CROW
- Woodpecker # MEGA-WP
- Marine / Gull # MEGA-MAR



### SPECIFICATIONS:

**Combined Shipping Weight:** 26 pounds

**Coverage:** To 30 acres(12 hectares)

**Power Input:** 12VDC (3 AMPS) via Solar Panel and Battery

**Sound Pressure:** up to 125 decibels

**Frequency:** 2,000 - 10,000 Hz

**Compliance:** UL / CUL listed; EPA Est. 075310-OR-001

**Included:** Complete system includes the generating unit with two built-in high-output amplifiers, 20-speaker tower with audio cables, 40 watt solar panel, battery clips and all mounting hardware.

**Origin:** Proudly made in the USA





## **Variance Request for Fencing**

Re: Merchant North Containment and Recycle Facility

Centennial Resource Development, Inc. (Centennial) would like to request the OCD's approval for a variance regarding fencing at the location described above. Centennial proposes to utilize a 6-foot galvanized chain-link fence with 3 strands of barbed wire on the top of the chain-link fencing. The 3 strands of barbed wire will be mounted on a galvanized bracket with a 45-degree angle pointing toward the outside of the location. Each post hole will be drilled via an auger to ensure a consistent and accurate depth and will be set in concrete. Six 18" x 18" swinging gates will be installed at ground level for temporary waterlines to pass through. The gates will remain closed as depicted in the pictures below to ensure no wildlife can access the containment site when no waterlines are present.

Please see the details below.

This is the typical configuration Centennial proposes to utilize at the Merchant North Containment and Recycle Facility.





## **Variance Request for Secondary Liner**

Re: Merchant North Containment and Recycle Facility

Centennial Resource Development, Inc. (Centennial) would like to request the OCD's approval for a variance regarding the secondary liner at the location described above. Centennial proposes to utilize 40-mil HDPE for the secondary liner, in lieu of a 30-mil LLDPE string-reinforced liner. The standard LLDPE string-reinforced liner has a hydraulic conductivity no greater than  $1 \times 10^{-9}$  cm/sec and meets or exceeds the EPA SW-846 method 9090A per 19.15.34.12 NMAC.

The proposed 40-mil HDPE Geomembrane liner has a typical Hydraulic Conductivity no greater than  $10^{-12}$  cm/sec, per the attached letter from Solmax. This hydraulic conductivity of no greater than  $10^{-12}$  cm/sec exceeds the standard 30-mil LLDPE string-reinforced liner and EPA SW-846 method 9090A.

We Solve Great Challenges.

## RAVEN INDUSTRIES INC. Statement of Performance

**SUBJECT:** Raven HD400 and HD600 geomembrane liners

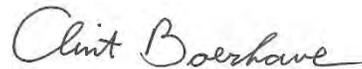
**IN REFERENCE TO:** Hydraulic conductivity rating

**DATE:** April 15, 2022

Raven Industries hereby certifies that our Hydraline HD40 and HD60 polyethylene membranes have hydraulic conductivity of less than  $1 \times 10^{-10}$  cm/sec.

Permeance is calculated from Water Vapor Transmission (WVT) data generated by test method ASTM E96 *Water Vapor Transmission of Materials* or F1249 *Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor*. Using this data, specific hydraulic conductivity rates for the two materials are as follows:

Hydraline HD40	$2.10 \times 10^{-12}$ cm/sec
Hydraline HD60	$4.08 \times 10^{-13}$ cm/sec



Clint Boerhave  
Staff Quality Engineer  
Raven Industries - Engineered Films Division



# Siting Criteria for Recycling Containment

<p>8. <b><u>Siting Criteria for Recycling Containment</u></b></p> <p><i>Instructions: The applicant must provide attachments that demonstrate compliance for each siting criteria below as part of the application. Potential examples of the siting attachment source material are provided below under each criteria.</i></p>	
<p><b><u>General siting</u></b></p> <p><b><u>Ground water is less than 50 feet below the bottom of the Recycling Containment.</u></b>                  NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells</p> <p>Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.</p> <ul style="list-style-type: none"> <li>- Written confirmation or verification from the municipality; written approval obtained from the municipality</li> </ul> <p>Within the area overlying a subsurface mine.</p> <ul style="list-style-type: none"> <li>- Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division</li> </ul> <p>Within an unstable area.</p> <ul style="list-style-type: none"> <li>- Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; topographic map</li> </ul> <p>Within a 100-year floodplain. FEMA map</p> <p>Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).</p> <ul style="list-style-type: none"> <li>- Topographic map; visual inspection (certification) of the proposed site</li> </ul> <p>Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</p> <ul style="list-style-type: none"> <li>- Visual inspection (certification) of the proposed site; aerial photo; satellite image</li> </ul> <p>Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application.</p> <ul style="list-style-type: none"> <li>- NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site</li> </ul> <p>Within 500 feet of a wetland.</p> <ul style="list-style-type: none"> <li>- US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site</li> </ul>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  <input type="checkbox"/> NA</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>



7 November 2022

J. D. McGuire  
Water Resource Manager  
Centennial Resource Development, Inc.  
500 W. Illinois Avenue, Suite 500  
Midland, Texas, 79701

**Re: Merchant North Containment and Recycle Facility- Comprehensive Resource Review –  
Lea County, New Mexico**

Dear Mr. McGuire:

Goshawk Environmental Consulting, Inc. (Goshawk) conducted a comprehensive desktop resource review and limited field investigations for the Merchant North Containment and Recycle Facility in Lea County, New Mexico. The work was conducted on behalf of our client, Centennial Resource Development, Inc. (Centennial). This resource review included Waters of the US (WATERS), Threatened or Endangered (T/E) species, and cultural resources. The purpose of these investigations was to evaluate whether the proposed containment and recycle facility contained any protected resources, the approximate size and location of identified protected resources, and associated development constraints, if applicable. Goshawk also conducted a cultural resources survey of the containment and recycle facility. All figures are in Appendix A.

## INTRODUCTION

The Merchant North Containment and Recycle Facility will include a double-lined water pit with leak detection, a tanker offload and storage area, and a reuse water treatment facility. The main facility is approximately 800 feet wide on its horizontal axis and 1,240 feet long on its vertical axis. It will encompass approximately 22.27 acres. In addition, a 195-foot-wide by 750-foot-long caliche capped offload/storage area, which encompasses 3.3 acres, will abut the facility's eastern side. The facility site is generally located in a very rural portion of Lea County, where land use is primarily cattle ranching and oil/gas exploration and production.

## WATERS REVIEW

### REGULATORY BACKGROUND AND METHODOLOGY

Investigations to identify potential WATERS within the proposed Merchant North Containment and Recycle Facility included a resource review, followed by a field investigation. The resource review included inspection of available United States Geological Survey (USGS) 7.5-minute topographic quadrangle for Oil Center, New Mexico; recent digital aerial orthoimagery; and the Natural Resource Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO). Field investigations were performed in accordance with US Army Corps of Engineers (USACE) guidelines, utilizing the *Corps of Engineers Wetlands Delineation Manual – Technical Report Y-87-1* (January 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) – ERDC/EL TR-08-28* (September 2008).



The jurisdictional status of identified features was determined based on 33 CFR 328.3(a), along with the US Army Core of Engineers (USACE)–Environmental Protection Agency (EPA) joint guidance on Clean Water Act (CWA) jurisdiction, following the US Supreme Court’s decision in *Rapanos v. United States* and *Carabell v. United States*. Current guidance states that the USACE and EPA will assert jurisdiction over (1) traditionally navigable waters (TNWs) and all wetlands adjacent to TNWs; (2) relatively permanent waters (RPWs), which include non-navigable tributaries of TNWs that typically flow year-round or have continuous flow at least seasonally, and all wetlands that are directly abutting RPWs; and (3) other water bodies such as non-RPWs; wetlands adjacent to non-RPWs; and wetlands adjacent to but not directly abutting an RPW that are analyzed and determined to have a significant nexus with a TNW. A significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or an insubstantial effect on the chemical, physical, and/or biological integrity of a TNW.

## LITERATURE REVIEW

### **Topographic Map**

The topographic quadrangle (Figure 1) indicates the Merchant North Containment and Recycle Facility is entirely within grasslands (white background). The terrain is relatively flat, with elevations ranging from slightly below 3,620 feet above mean sea level (AMSL), to slightly above 3,610 feet AMSL. Drainage occurs by overland sheet flow to both the north and south of the proposed facility. No mapped waterbodies (dot-dash blue line) are indicated within the proposed facility. A mapped stream is shown approximately 225 feet southwest of the proposed facility. There is also a mapped depression 260 feet north of the proposed facility, though the USGS map does not indicate that it is a playa.

The Merchant North Containment and Recycle Facility is within the Lower Pecos River Watershed. The nearest direct line point to the Pecos River is approximately 44.9 miles west-southwest. There are no improvements mapped within the proposed facility; however, unimproved roads are mapped to both the north and west of the proposed facility.

### **Aerial Orthoimagery**

The aerial orthoimagery (Figure 2) indicates the Merchant North Containment and Recycle Facility is within relatively open rangeland, dominated by shrubs and short coppice dunes/blowouts. A relatively recent pipeline ROW is visible 102 feet from the facility’s eastern edge. The mapped stream south of the facility is faintly visible and appears at a distance of 272 feet from the facility. The depression is also visible and appears to be a playa. It rests 251 feet north of the proposed facility. The unimproved roads mapped on the USGS topographic maps are also visible.

### **Soils**

The NRCS SSURGO spatial data (Figure 3) indicate the soil map units underlying the Merchant North Containment and Recycle Facility are Kimbrough gravelly loam (KO) and Simona fine sandy loam (SE). Kimbrough soils consist of shallow gravelly loam and loam over deep cemented materials and are typically found on playa rims and plains. They are considered well-drained and have high runoff. Simona soils consist of fine sandy loam over gravelly fine sandy loams, followed by cemented material to depth. They are typically located in plains, are considered well-drained and have a high runoff. Neither of the primary components of these soils are listed as hydric soils.



### **Precipitation**

Data derived from the National Centers for Environmental Information indicated that mean annual precipitation in Lea County for the period of April 1900 to March 2021 was 15.0 inches. However, Lea County only received 9.0 inches of precipitation in the last 12 months (September 2021 to October 2022).

### **Subsurface Water**

Centennial contracted to have one subsurface water well drilled in the vicinity of the proposed project to determine the presence and depth of groundwater (Figure 4). The wells were left open for 48 hours. None of the wells located groundwater (Appendix B).

### **FIELD INVESTIGATION**

A field investigation was conducted on 19 October 2022 to determine the presence of potential WATERS within the proposed Merchant North Containment and Recycle Facility. The proposed facility site was traversed on-foot. The conditions were generally consistent with those depicted on the topographic map and aerial orthoimagery described above. The area was relatively flat and dominated by shrubland vegetation, intermixed with grasses and bare ground. Vegetation within the area consisted primarily of honey mesquite (*Prosopis glandulosa*), Plains yucca (*Yucca glauca*), shinnery oak (*Quercus havardii*), and broom snakeweed (*Gutierrezia*). Vegetative coverage within the site was approximately 70 percent.

Drainage occurs primarily by overland sheet flow toward the north and southwest. No evidence of an Ordinary High Water Mark (OHWM) or standing water was found within the proposed facility. Additionally, no flowing watercourse, lakebed, sinkhole, or playa exhibiting an OHWM were found within the proposed facility or its immediate vicinity. The survey did confirm the presence of the mapped stream/drainage to the south of the facility, as well as the playa to the north. Neither of these exhibits and OHWM within 200 feet of the proposed facility.

### **REGULATORY DEVELOPMENT CONSTRAINTS**

It is Goshawk's opinion that construction of the proposed Merchant North Containment and Recycle Facility will not impact any regulated WATERS. It is important to note that only USACE has the authority to make a formal determination defining its jurisdictional limits under the CWA. Approved jurisdictional determinations are made by USACE in accordance with internal policies and procedures in place at that time and on a case-by-case basis using information at its disposal (such as other permits in the local area and case law) that may not be readily available to the public. Therefore, Goshawk's opinion should not be considered authoritative and cannot wholly eliminate uncertainty regarding USACE's jurisdictional limits.

### **FEMA FLOODPLAIN**

#### **REGULATORY BACKGROUND**

Floodplain management is regulated under the Federal Emergency Management Agency (FEMA); however, a local floodplain administrator is usually responsible for implementation within a community. A local floodplain administrator will operate under FEMA's minimum floodplain management standards or the state and/or local regulations, which provide standards for the purpose of flood damage prevention and reduction. Floodplain management standards are based on FEMA floodplain maps, which identify special flood hazard areas.



## DEVELOPMENT CONSTRAINTS

Lea County would be the floodplain administrator for the proposed project. Although Lea County participates in the National Flood Program, FEMA floodplain maps have not been produced for rural portions of Lea County. The proposed project falls within FEMA flood hazard zone D, which indicates that the area has not been assessed for flood hazards by FEMA. The proposed project falls within panel 35025C1650D, which is listed as “Not Printed”. The Merchant North Containment and Recycle Facility can be developed without any correspondence with Lea County for purposes of floodplain consideration.

## THREATENED OR ENDANGERED SPECIES

### REGULATORY BACKGROUND AND METHODOLOGY

The Endangered Species Act prohibits any action that causes a “take” of any listed T/E species. A “take” is defined as harm or harassment, including hunting, wounding, killing, trapping, and the capture or collection of individuals of listed species. The law also protects against the degradation or loss of vital habitat for listed species. The United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service are the regulatory authorities for federally listed T/E species.

State-listed T/E species are protected under New Mexico Wildlife Conservation Act (17-2-41). The New Mexico Department of Game and Fish (NMDGF) has the authority to establish a list of fish and wildlife species that are endangered or threatened. Unlike the federal act, the state’s regulation makes no provision for the protection of wildlife species from indirect take (e.g., destruction of habitat or unfavorable management practices); rather, it protects from the unlawful killing, trade, or transportation of state-listed species. Therefore, the state-listed species are only a potential development constraint if listed species are determined to be currently occupying the proposed facility.

Literature and agency file searches were conducted to identify the potential occurrence of any federally and state-listed T/E species near the Merchant North Containment and Recycle Facility. An internet search of the USFWS *Information, Planning, and Conservation System* (IPaC) was conducted for Lea County to identify federally listed T/E species “that should be considered as part of an effects analysis” for the proposed project. Additionally, a report from the NMDGF Biota Information System of New Mexico (BISON-M) was obtained and reviewed for Lea County.

### RESOURCE REVIEW

The T/E species listed in the IPaC Trust Resource Report for Lea County (Appendix C) includes only the northern aplomado falcon (*Falco femoralis septentrionalis*), which has an experimental population in Lea County. Critical habitat for this species is not designated within the Merchant North Containment and Recycle Facility or the immediate vicinity.

The state-listed T/E species on NMDGF BISON-M County List for Lea County dated 1 November 2022 (Appendix D) include: broad-billed hummingbird (*Cynanthus latirostris*), least tern (*Sternula antillarum*), bald eagle (*Haliaeetus leucocephalus*), northern aplomado falcon (*Falco femoralis septentrionalis*), peregrine falcon (*Falco peregrinus*), Bell's vireo (*Vireo bellii*), Baird's sparrow (*Centronyx bairdii*), and dunes sagebrush lizard (*Sceloporus arenicolus*). Fish and mollusks are also listed for Lea County; however, due to the nature of the proposed facility and lack of potential habitat, these species would not occur at the proposed facility site.



## DEVELOPMENT CONSTRAINTS

The federally listed least tern is listed because of migratory routes. Although these species occasionally stop at points along the migration routes, use of the proposed Merchant North Containment and Recycle Facility Site would be unlikely due to the lack of suitable habitat. The northern aplomado falcon is listed for many southeastern New Mexico counties (including Lea County) within its historic range. Historically, the falcon utilized open desert grasslands and/or savannas, where scattered shrubs and trees provide roosting and nesting locations. Although the proposed site is within a shrubland, the land uses of this area (heavy cattle grazing and oil/gas production) likely preclude the northern aplomado falcon from utilizing the site. The two listed fish and one mollusk would only be found in perennial aquatic habitats. No aquatic habitats exist within the water reuse pit site. No impacts are expected to any of the federally listed species.

State regulations prohibit the taking, possession, transportation, or sale of any state-listed T/E species. Because Lea County has the potential to support state-listed T/E species, care should be taken to avoid direct impacts (including harassment, harm, killing, and/or collection) to any species that may inhabit the proposed facility. The state-listed birds would have the ability to leave the pit site during active construction to avoid impacts. However, slower-moving species (reptiles and amphibians) are ground-dwelling and relatively slow-moving, which makes them more likely to be impacted by construction activities than other state-listed species.

The dunes sagebrush lizard is more commonly found in portions of Lea County where large sand dunes exist. The facility site lacks suitable habitat for the dunes sagebrush lizard. Care should be taken to avoid harassment, harm, killing, and/or collecting of these species, including slower-moving species. No further investigations relative to T/E species are recommended.

## CULTURAL RESOURCES DESKTOP REVIEW

### REGULATORY BACKGROUND AND METHODOLOGY

Section 106 of the National Historic Preservation Act (NHPA) of 1966 requires Federal agencies to consider the effects of their actions on historic properties and provide the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on their projects. Historic properties are defined as archaeological sites, standing structures, or other historic resources listed on or eligible for listing on the National Register of Historic Places (NRHP). The New Mexico Prehistoric and Historic Sites Preservation Act and the New Mexico Cultural Properties Act provide protection of archaeological sites (prehistoric and historic) listed in the State Register of Cultural Properties or on the NRHP.

The regulatory process seeks to determine if a project will have an “effect” on historic properties. The term “effect” is defined as an “alteration to the characteristics of historic property qualifying it for inclusion in, or eligibility for the National Register (of Historic Places).” An effect is “adverse” when it will endanger those qualities that make the property eligible for inclusion on the NRHP.

Goshawk performed an archival review to evaluate the potential for historic properties present near the Merchant North Containment and Recycle Facility. The Archaeological Records Management Section’s (ARMS) New Mexico Cultural Resources Information System (NMCRIIS) online database, geospatial data



obtained from the US Bureau of Land Management (BLM) Carlsbad Field Office, and the Natural Resources Conservation Service Web Soil Survey were utilized for the review.

#### ARCHIVAL REVIEW

##### **Archival Research**

According to NMCRIS, the proposed Merchant North Containment and Recycle Facility and surrounding area was subjected to partial archaeological survey under 3 different survey projects. Previous surveys have yielded largely negative results in the immediate vicinity of the proposed Merchant North Containment and Recycle Facility (Table 1).

**Table 1: Surveys Undertaken Within 1,640 feet (500 meters) of the Proposed Project**

Activity Number	Organization Name	Lead Agency	Total Acres	Sites Visited	Date of Survey Start/End
133351	TRC Inc.	US Bureau of Land Management Carlsbad Field Office	237.25	2	16 Dec 2014 to 17 Apr 2015
139680	APAC	NM State Land Office	116.91	0	1 Dec to 17 Dec 2017
141068	Lone Mountain Archaeological Services	US Bureau of Land Management Carlsbad Field Office	27299.11	137	4 Jun to 7 Nov 2018

There are no previously documented archaeological sites within 500 meters (1,640 feet) of the proposed project.

The nearest site, LA 191945, was located 3,840.34 feet (1,170.54 m) south of the proposed Merchant North Containment and Recycle Facility. Site LA 191945 was originally recorded in 2018 by Lone Mountain Archaeological Services during NMCRIS Activity 141068. The site, which measured 71 by 62 meters, was documented as a historic Anglo site. Features included a windmill and a water catchment device. No artifacts were noted in associated documents. Site LA 191945 has not been revisited. In 2020, the recorder, the BLM, and the State Historic Preservation Office (SHPO) determined the site not eligible for listing on the National Register of Historic Places (NRHP).

##### **National Register Properties**

No NRHP-listed properties have been recorded near the proposed site. According to the NMCRIS database, the nearest NRHP-listed property is the Pope's Wells Site (LA 69016). This site consists of the remains of a camp and well site that was part of efforts to establish a water well in the area in the 1850's. The Pope's Wells Site lies approximately 37.0 miles southwest of the proposed project.

##### **Soils Analysis**

Soils mapped within the proposed site consisted of Kimbrough gravelly loam and Simona fine sandy loam. Kimbrough gravelly loam soils are shallow soils overlaying cemented materials. These soils are composed of loamy eolian deposits derived from sedimentary rock and are typically located on playa rims and plains. These soils are well-drained and present a low probability for the presence of temporally stratified cultural deposits. Simona fine sandy loam soils are shallow soils overlaying cemented materials. These soils are composed of calcareous eolian deposits derived from sedimentary rock and are typically



located on plains. These soils are well-drained and present a low probability for the presence of temporally stratified cultural deposits. The primary use of all soil types is rangeland where the vegetation is dominated by short and mid grasses; however, shrubs can become prevalent when overgrazed. Native vegetation is typically a mixture of sparse grasses and shrubs. Considering the soils present, there is a low probability for the presence of significant cultural resources within the proposed Merchant North Containment and Recycle Facility.

#### FIELD REVIEW

A Class III archaeological survey of the facility and the surrounding area was conducted on 19 October 2022 under NMCريس activity 151283. A total of 35.95 acres was surveyed on foot by a two-person crew traversing 50-foot (30.48-meter) transects. No archaeological sites, isolated manifestations, or other cultural resources were observed in the course of the survey.

#### DEVELOPMENT CONSTRAINTS

The cultural resources archival review determined there is a low probability for the presence of significant prehistoric resources within the proposed project. Further, a pedestrian survey of the proposed project area did not locate any cultural resources. No impacts to cultural resources would be expected by the proposed Merchant North Containment and Recycle Facility.

#### SUMMARY

Based on the results of the Resource Review, it is Goshawk's opinion that the construction of the proposed Merchant North Containment and Recycle Facility is unlikely to impact any sensitive natural resources, including WATERS and T/E species. Based on the negative results from previous cultural resources surveys, it is Goshawk's opinion that the proposed project is not likely to contain significant cultural resources. In the unlikely event that cultural resources (including human remains) are discovered, all construction or maintenance activities should be immediately halted, and a qualified archaeologist should be notified. If you have any questions or desire additional information, please contact our office.

Sincerely,

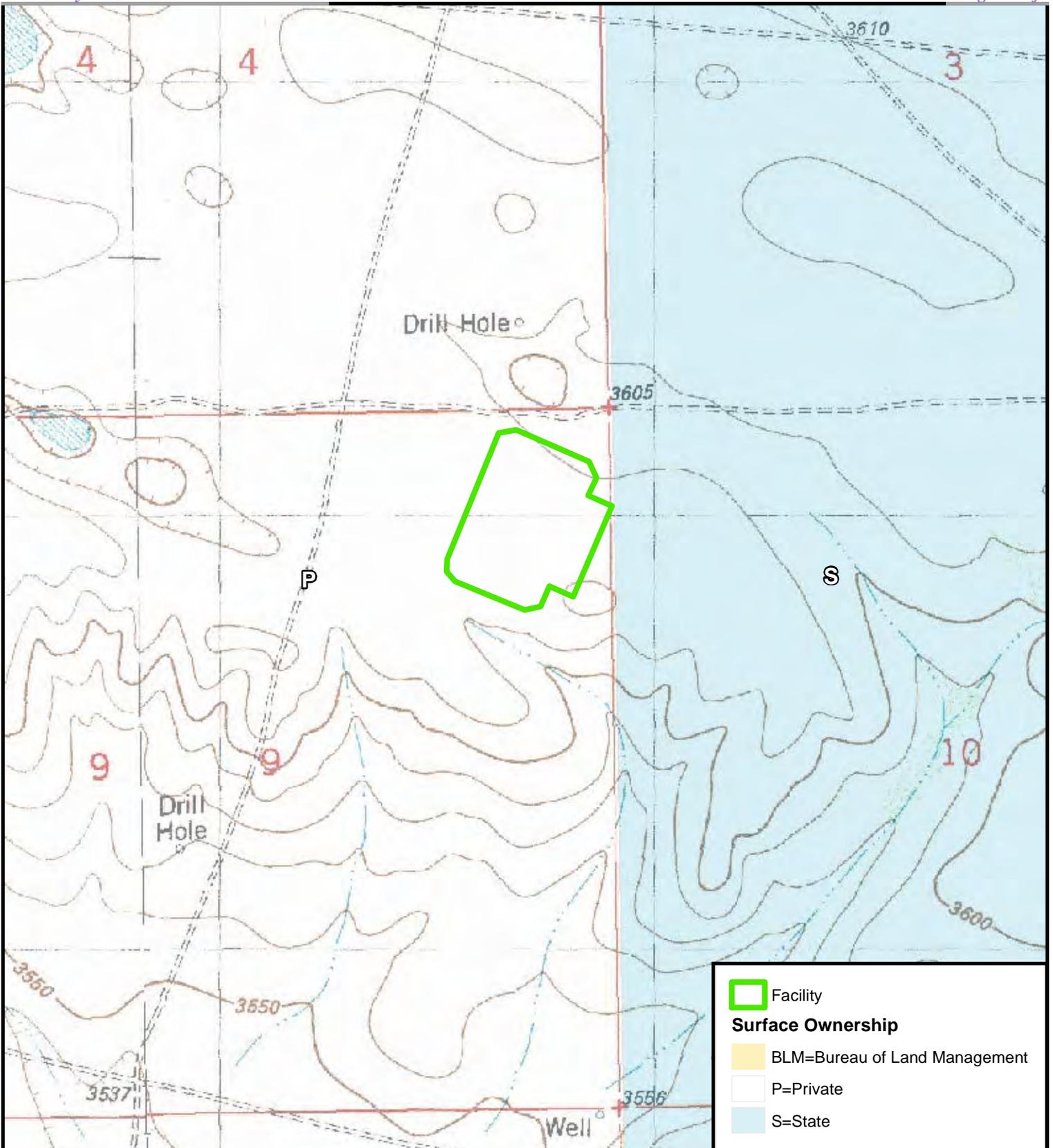
Zane Homesley  
President

Steven Evans, MA, RPA  
Cultural Resources Manager

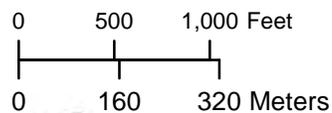
Cc: J. D. McGuire, Centennial Resource Development, Inc.  
Galan Kelley, Cold Peak Environmental, LLC.



**APPENDIX A  
FIGURES**



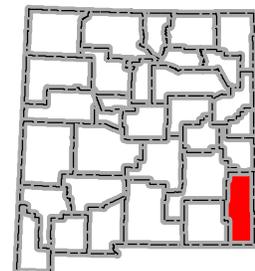
Map Source: U.S. Bureau of Land Management - New Mexico State Office - GIS Data Download; USGS, Oil Center, New Mexico Quadrangle.

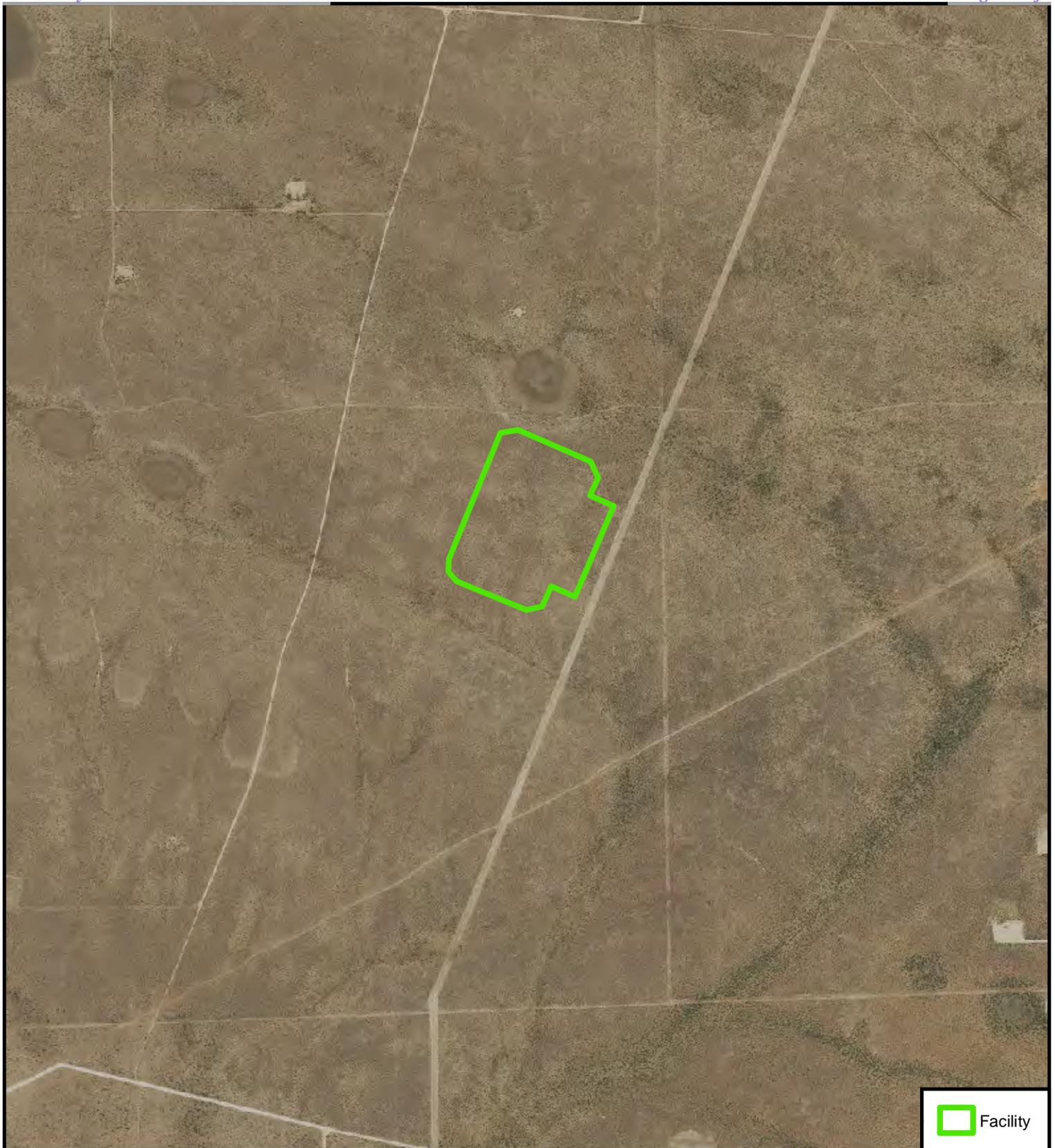


**Figure 1**  
USGS Topographic Map  
Lea County, New Mexico

**Merchant North**  
**Containment and Recycle Facility**  
Township 22S; Range 35E; Section 9

Date: 8 November 2022





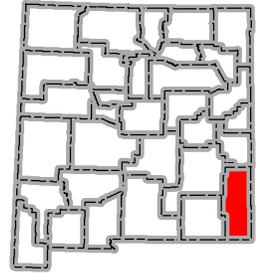
 Facility

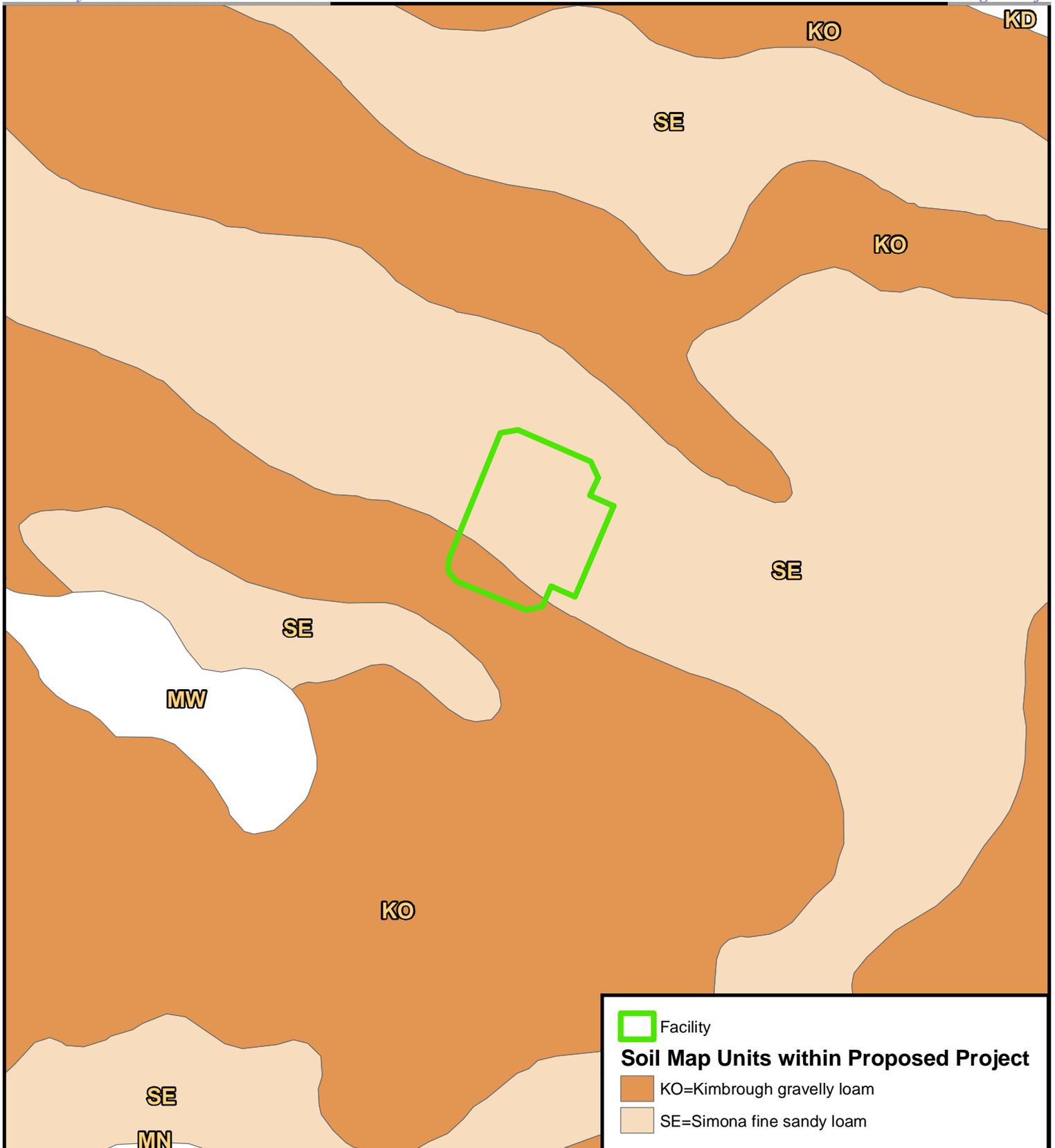
Map Source: USDA, NAIP Natural Color Imagery of New Mexico, 2020.

Date: 8 November 2022

**Figure 2**  
Aerial Orthoimagery  
Lea County, New Mexico

**Merchant North**  
**Containment and Recycle Facility**  
Township 22S; Range 35E; Section 9

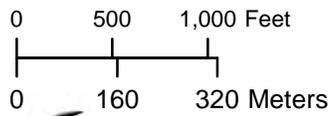




**Soil Map Units within Proposed Project**

- Facility
- KO=Kimbrough gravelly loam
- SE=Simona fine sandy loam

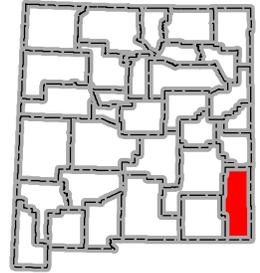
Map Source: USDA/NRCS - National Geospatial Center of Excellence. Soil Survey Geographic (SSURGO) Lea County, New Mexico.

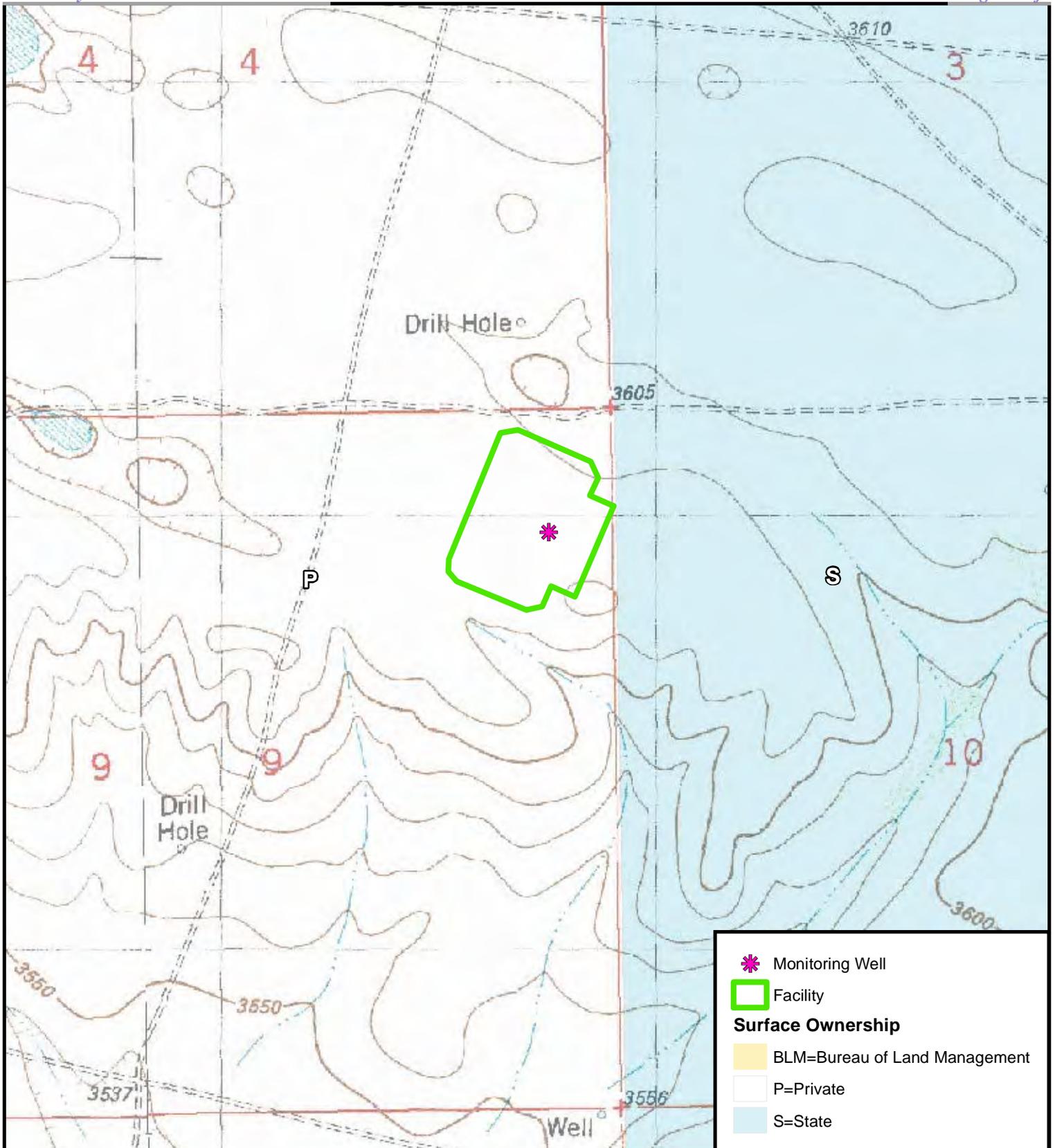


**Figure 3**  
Soil Data  
Lea County, New Mexico

**Merchant North**  
**Containment and Recycle Facility**  
Township 22S; Range 35E; Section 9

Date: 8 November 2022





Map Source: U.S. Bureau of Land Management - New Mexico State Office - GIS Data Download; USGS, Oil Center, New Mexico Quadrangle.

0 500 1,000 Feet  
0 160 320 Meters

**Figure 4**  
Monitoring Well Location  
Lea County, New Mexico

**Merchant North**  
Containment and Recycle Facility  
Township 22S; Range 35E; Section 9

Date: 8 November 2022



**APPENDIX B**  
**Lithology Report**

Project: Merchant North Containment & Recycle Facility  
 Project Number: CDEV-11032022  
 Client: Centennial Resource Development, Inc.  
 Boring Well Number: BH-01  
 Total Depth: 75 Feet  
 Surface Elevation: 3619 FT  
 Latitude: 32.410963°

Drilling Company: Elite Drillers Corporation  
 Driller: Bryce Wallace  
 Drillers Licenst Number: WD-1706  
 Drilling Method: Air Rotary  
 Bore Hole Diameter: 6-1/8"  
 Date Drilled: 11/3/2022  
 Longitude: -103.365465°

DEPTH (FEET)	SYMBOL	SAMPLE	MATERIAL DESCRIPTION	DEPTH (FEET)
			<b>Sand (Wind Blown)</b> * DRY - NO MOISTURE	
5		SS	* DRY - NO MOISTURE	5
10		SS	* DRY - NO MOISTURE	10
			<b>White Caliche / Limestone</b>	
15		SS	* DRY - NO MOISTURE	15
20		SS	* DRY - NO MOISTURE	20
			<b>White Sandy Caliche</b>	
25		SS	* DRY - NO MOISTURE	25
30		SS	* DRY - NO MOISTURE	30
35		SS	* DRY - NO MOISTURE	35
			<b>Red and Tan Sand</b>	
40		SS	* DRY - NO MOISTURE	40
45		SS	* DRY - NO MOISTURE	45
50		SS	* DRY - NO MOISTURE	50
55		SS	* DRY - NO MOISTURE	55
60		SS	* DRY - NO MOISTURE	60
65		SS	* DRY - NO MOISTURE	65
70		SS	* DRY - NO MOISTURE	70
75		SS	* DRY - NO MOISTURE	75
END OF LOG				

NOTE: NO GROUNDWATER WAS PRESENT DURING OR AT THE COMPLETION OF DRILLING ACTIVITIES.



**APPENDIX C**  
**USFWS IPAC RESOURCE TRUST REPORT**

**IPaC****U.S. Fish & Wildlife Service**

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Lea County, New Mexico



## Local office

New Mexico Ecological Services Field Office

☎ (505) 346-2525

📅 (505) 346-2542

2105 Osuna Road Ne  
Albuquerque, NM 87113-1001

NOT FOR CONSULTATION

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

- 
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Birds

NAME	STATUS
Northern Aplomado Falcon <i>Falco femoralis septentrionalis</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1923">https://ecos.fws.gov/ecp/species/1923</a>	EXPN

## Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds  
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds  
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
<p><b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p>	Breeds Oct 15 to Jul 31
<p><b>Cassin's Sparrow</b> <i>Aimophila cassinii</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9512">https://ecos.fws.gov/ecp/species/9512</a></p>	Breeds Aug 1 to Oct 10
<p><b>Chestnut-collared Longspur</b> <i>Calcarius ornatus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 1 to Aug 10

<b>Chimney Swift</b> <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
<b>Eastern Meadowlark</b> <i>Sturnella magna</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 25 to Aug 31
<b>Evening Grosbeak</b> <i>Coccothraustes vespertinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
<b>Ferruginous Hawk</b> <i>Buteo regalis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/6038">https://ecos.fws.gov/ecp/species/6038</a>	Breeds Mar 15 to Aug 15
<b>Lesser Yellowlegs</b> <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
<b>Long-billed Curlew</b> <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/5511">https://ecos.fws.gov/ecp/species/5511</a>	Breeds Apr 1 to Jul 31
<b>Long-eared Owl</b> <i>asio otus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/3631">https://ecos.fws.gov/ecp/species/3631</a>	Breeds Mar 1 to Jul 15
<b>Red-headed Woodpecker</b> <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
<b>Sprague's Pipit</b> <i>Anthus spragueii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8964">https://ecos.fws.gov/ecp/species/8964</a>	Breeds elsewhere

**Virginia's Warbler** *Vermivora virginiae*

Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9441>

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

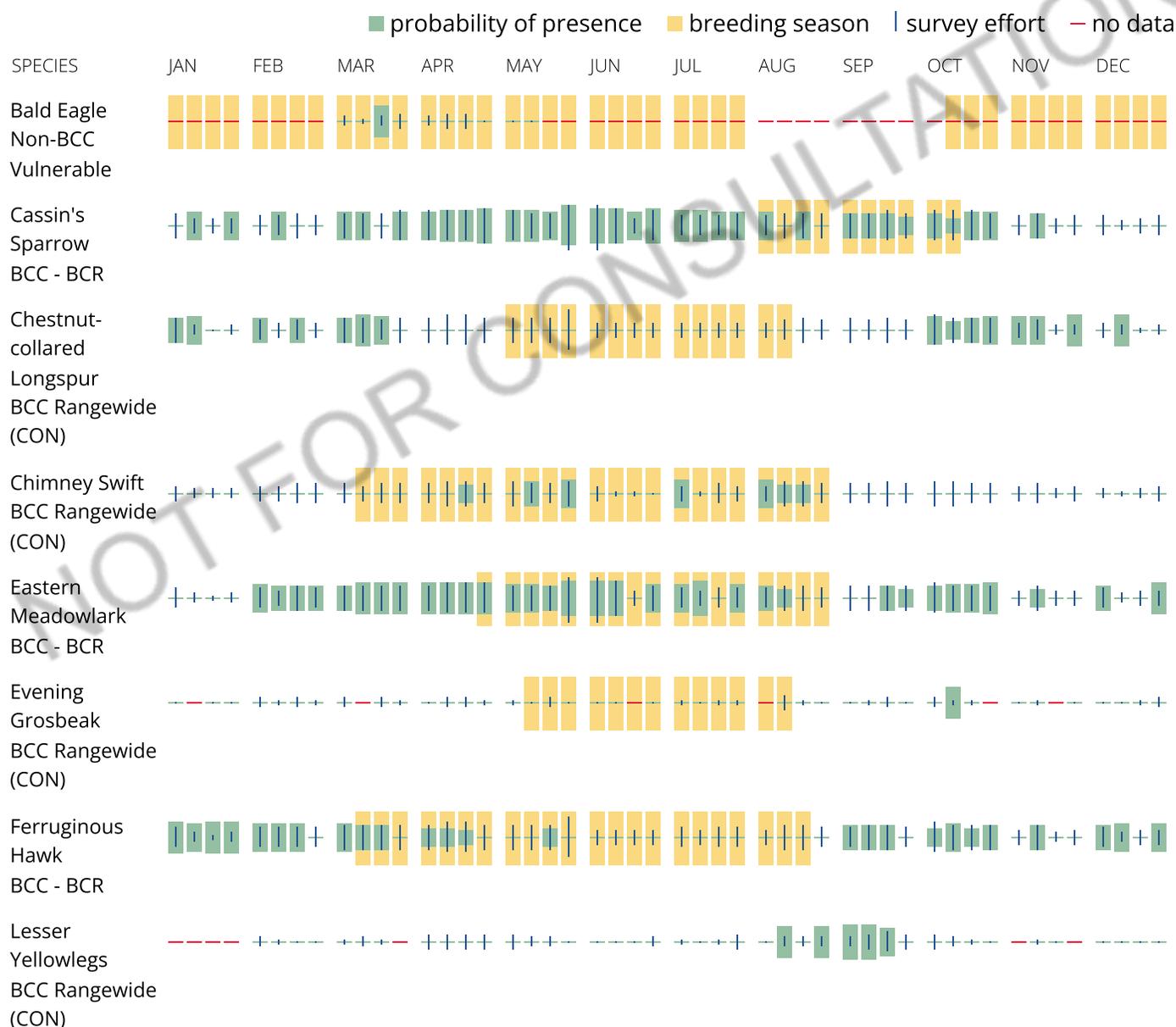
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

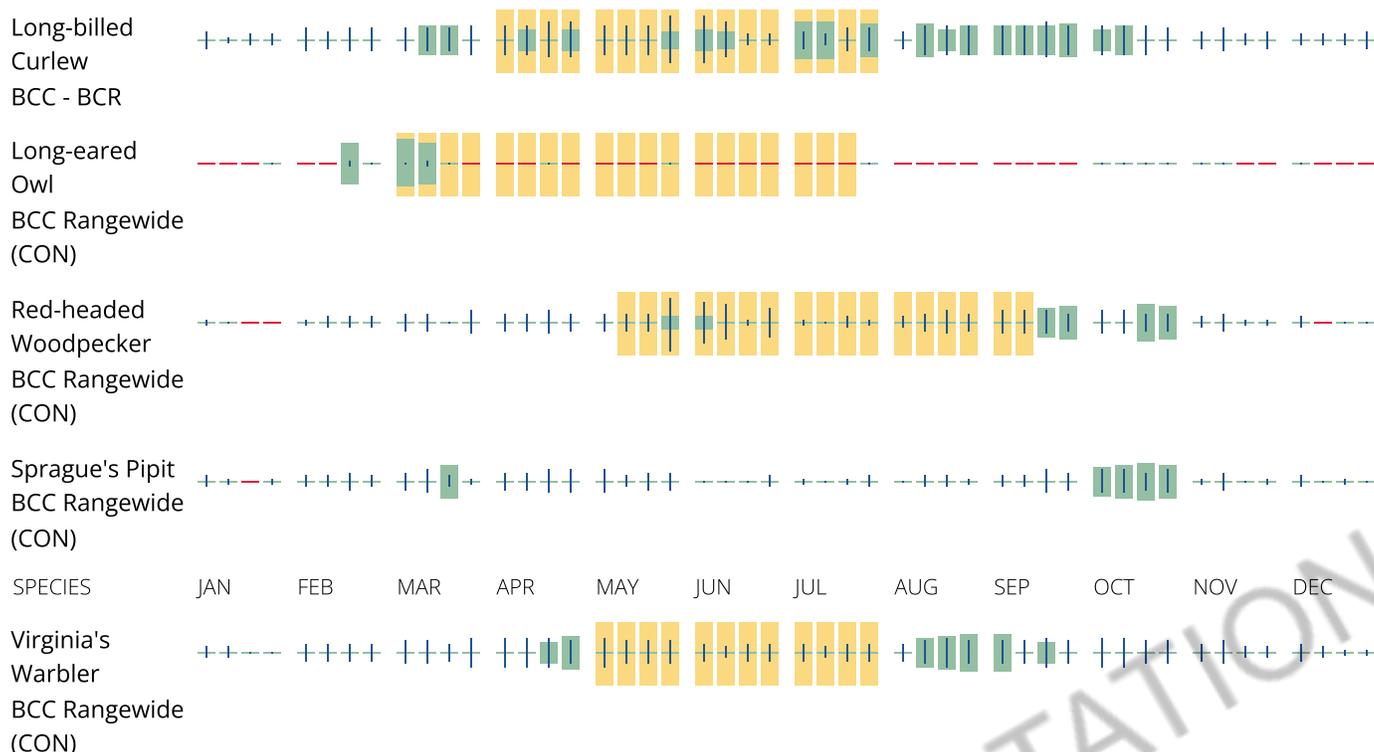
### No Data (-)

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

## What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

## How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

## What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

## Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact

[Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Coastal Barrier Resources System

Projects within the [John H. Chafee Coastal Barrier Resources System](#) (CBRS) may be subject to the restrictions on federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local [Ecological Services Field Office](#) or visit the [CBRA Consultations website](#). The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

There are no known coastal barriers at this location.

### Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the [official CBRS maps](#). The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a

hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: <https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation>

#### Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact [CBRA@fws.gov](mailto:CBRA@fws.gov).

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

### Fish hatcheries

There are no fish hatcheries at this location.

## Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

## Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

# Operating and Maintenance Plan



# OPERATING AND MAINTENANCE PLAN

## Merchant North Containment Pit

### OVERVIEW

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The attached plan details the operational requirements regarding the Merchant North Containment Pit. In addition, the required reporting, and inspections as well as the appropriate actions/notifications are listed.

### PURPOSE

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The attached plan implements the operational requirement as outlined by NMOCD under 19.15.34 NMAC. The application of this plan will ensure the reuse water containment pit is operated in a manner that minimizes any risk to health, safety, and the environment.

### OPERATIONAL REQUIREMENTS

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Below are the operational requirements that must be always adhered to. Deviation from these requirements is prohibited.

- Inlet flow
  - Recycling facility effluent stream water must meet all water quality norms before water is introduced into the containment pit. These norms are to include no detected oil in the stream.
  - Inlet water may only be introduced into the containment pit via the diffuser manifold so as to not cause any stress or damage to the liner system.
  - A minimum of 3ft of freeboard will be maintained in the reuse water containment pit at all times.

- Effluent Flow
  - Effluent water may only exit the reuse water containment via the permanent discharge header system; no external hoses or pipes may be placed into the pit at any time.
  - Effluent water may only be transferred to Centennial completion operations.
- Volume Reporting
  - All influent and effluent volumes are to be logged daily. These volumes are to be tracked via inbound and outbound mag meters and tracked via paper and SCADA systems.
- Site Inspection
  - The pit and surrounding area are to be inspected daily while water is contained within the pit. These inspections are to include all inlet/outlet piping, berms, exposed liner, surrounding grounds, and fencing.
- Leak Detection Testing
  - Leak detection testing shall be conducted weekly. Testing shall include starting the leak detection sump pump to determine if any fluid has collected in the collection sump. The sump pump shall be run for a minimum of 5 minutes to allow for inlet flow. If any flow is detected the proper notification to the Hobbs NMOCD will occur and drainage will commence.

## REPORTING, MONITORING, AND INSPECTION PLAN

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- List of Weekly Reporting and Inspections to be completed:
  - Influent and Effluent Volume Reporting
  - Visually inspect the Facility and Containment Pit
  - Leak Detection test to ensure the integrity of the primary liner has not deteriorated
- List of Monthly Reporting and Inspections to be completed:
  - Monthly volume report via Form C-148
  - Leak Detection test
  - Visual inspection of the Facility and Containment Pit

## NOTIFICATIONS

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In the event of a leak detection denoting a compromised liner below the water level, notice shall be provided via the OCD Permitting Online Portal.

## ASSOCIATED FORMS

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- List of Associated forms for Operating and Maintenance Plan
  - NA

# Closure Plan



# WATER CONTAINMENT CLOSURE PLAN

## Merchant North Containment Pit

### OVERVIEW

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The attached plan details the requirements regarding the closure of the Merchant North Containment Pit. In addition, the required sampling and reporting obligations are detailed.

### PURPOSE

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The attached plan implements the closure requirement as outlined by NMOCD under 19.15.34.14 NMAC. The application of this plan will ensure the reuse water containment pit is closed and reclamation is completed in a manner that minimizes any risk to health, safety, and the environment.

### CLOSURE REQUIREMENTS

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- Containment Pit Drainage
  - All reuse water remaining in the containment pit shall be removed from the impoundment within 60 days of operations cessation. The removed fluids will then be transferred to a division-approved disposal facility. Records of all removal, transfer, and disposal activities shall be retained for inclusion in the final closure report submittal.
- Liner Material Removal and Disposal
  - Removal of the liner shall be conducted in a manner that minimizes any risk of soil disturbance to the surface within and surrounding the containment. The removed liner material will then be transferred to and disposed of at a division-approved disposal facility. Records of all removal,

transfer, and disposal activities shall be retained for inclusion in the final closure report submittal.

- Soil Sampling
  - Soil sampling shall be conducted at the locations depicted in the below schematic, Sampling Point Diagram, by a qualified third-party contractor and analyzed at NELAC certified laboratory.
  - If any contaminant concentration is higher than the parameters listed in Table 1 in 19.15.34.14 NMAC, notice shall be provided to the Hobbs NMOCD office before proceeding with closure.
  - If all sample concentrations are less than or equal to the parameters listed in Table 1 in 19.15.34.14 NMAC, then closure can proceed, backfilling with non-waste containing, uncontaminated, earthen material.
  - Sampling Diagram



- Site Reclamation and Re-vegetation
  - Following closure, reclamation of the containment's location can commence and ensure that it is returned to a safe and stable location that blends with the surrounding undisturbed area. Topsoil and subsoils shall be replaced to original positions and contoured to achieve erosion-free long-term stability and preservation of surface water flow patterns.
  - The disturbed area shall then be reseeded in the first favorable growing season following the closure of the containment. The surface area shall be restored to the condition that existed prior to the construction of the containment.
  - Reclamation of all disturbed areas no longer in use shall be considered complete when all ground surface disturbing activities at the site have

been completed and a uniform vegetative cover has been established that reflects a life form ratio of +/- 50% of pre-disturbance levels and a total percent plant cover of at least 70% of pre-disturbance levels, excluding noxious weeds.

## CLOSURE AND RECLAMATION REPORT SUBMITTAL / NOTICE

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- Closure Report
  - Within 60 days of closure completion, Centennial shall submit a closure report on form C-147 to the NMOCD Hobbs office, including required attachments, to document all closure activities including sampling results and the details of any backfilling, capping, or covering.
  - The closure report shall certify that all information in the report and attachments is correct and that Centennial has complied with all applicable closure requirements and conditions specified in the division rules or directives.
- Reclamation Notice
  - Centennial shall notify the NMOCD Hobbs office when all reclamation and re-vegetation are complete.

## NOTIFICATIONS

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In the event of any deviance from this closure plan or exceeding a sampling constituent, notice shall be provided via the OCD Permitting Online Portal.

## ASSOCIATED FORMS

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- List of Associated forms for containment pit closure
  - NA

**Venegas, Victoria, EMNRD**

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**From:** Venegas, Victoria, EMNRD  
**Sent:** Tuesday, November 22, 2022 2:47 PM  
**To:** JD McGuire; Galan Kelley  
**Subject:** 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845]. Conditions of Approval  
**Attachments:** C-147 1RF-495 - MERCHANT NORTH CONTAINMENT 11.22.2022.pdf

**1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845]. Conditions of Approval**

Good afternoon Mr. McGuire,

NMOCD has reviewed the recycling containment permit application and related documents, submitted by [372165] CENTENNIAL RESOURCE PRODUCTION, LLC on November 15, 2022, for 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845] in Unit Letter A, Section 09, Township 22S, Range 35E, Lea County, New Mexico. [372165] CENTENNIAL RESOURCE PRODUCTION, LLC requested variances from 19.15.34 NMAC for 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845].

The following variances have been approved:

- The variance to 19.15.34.12.A.(4) NMAC for the installation on the containments of a 40-mil HDPE secondary liner is approved. The proposed 40-mil HDPE Geomembrane liner has a typical Hydraulic Conductivity no greater than 10-12 cm/sec. This hydraulic conductivity of no greater than 10-12 cm/sec exceeds the standard 30-mil LLDPE string-reinforced liner and EPA SW - 846 method 9090A
- The variance from 19.15.34.13.D NMAC, for the installation of a 6-foot galvanized chain link fence with 3 strands of barb wire on the top of the chain-link fencing is approved. The 3 strands of barb wire will be mounted on a galvanized barb bracket with a 45-degree angle pointing towards the outside of the location. Six 18" x 18" swinging gates will be installed at ground level for temporary waterlines to pass through. The gates will remain closed as depicted in the pictures below to ensure no wildlife can access the
- The variance from 19.15.34.13.E NMAC for the installation of an audible bird deterrence system, a Bird-X Mega-Blaster, is approved. Two units would be installed, each containing 2 built-in high output amplifiers and houses 20 speakers, capable of producing up to 125 decibels and a frequency range from 2,000 – 10,000 Hz.

The form C-147 and related documents for the 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845] is approved with the following conditions of conditions of approval:

- The purpose of this permit is for oil and gas activities regulated under the NMAC 19.15.34.3 STATUTORY AUTHORITY: 19.15.34 NMAC is adopted pursuant to the Oil and Gas Act, Paragraph (15) of Section 70-2-12(B) NMSA 1978, which authorizes the division to regulate the disposition of water produced or used in connection with the drilling for or producing of oil and gas or both and Paragraph (21) of Section 70-2-12(B) NMSA 1978 which authorizes the regulation of the disposition of nondomestic wastes from the exploration, development, production or storage of crude oil or natural gas.
- [372165] CENTENNIAL RESOURCE PRODUCTION, LLC shall construct, operate, maintain, close, and reclaim the 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845] in compliance with 19.15.34 NMAC.
- 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845] is approved for five years of operation from the date of permit application. 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845] permit expires on November 15, 2027.
- Water reuse and recycling from 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845] is limited to wells owned or operated by [372165] CENTENNIAL RESOURCE PRODUCTION, LLC.

- 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845] consists of two earthen impoundments of 679,626.00 BBL each. The total capacity of 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845] is 1,359,252.00 BBL.
- [372165] CENTENNIAL RESOURCE PRODUCTION, LLC shall notify NMOCD when construction of 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845] commences.
- [372165] CENTENNIAL RESOURCE PRODUCTION, LLC shall notify NMOCD when recycling operations commence and cease at 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845].
- A minimum of 3-feet freeboard must be maintained in 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845] recycling containment, at all times during operations.
- If less than 20% of the total fluid capacity is utilized every six months, beginning from the first withdrawal, operation of the facility is considered ceased and notification of cessation of operations should be sent electronically to [OCD Online](#). An extension to extend the cessation of operation, not to exceed six months, may be submitted using a C-147 form through [OCD Online](#).
- [372165] CENTENNIAL RESOURCE PRODUCTION, LLC shall submit monthly reports of recycling and reuse of produced water, drilling fluids, and liquid oil field waste on NMOCD form C-148 through [OCD Online](#) even if there is zero activity.
- **Please note that NMOCD has updated Form C-148. The new Form C-148 can be found at:**  
<https://www.emnrd.nm.gov/ocd/wp-content/uploads/sites/6/Revised-C-148-Form-January-2022.pdf>
- [372165] CENTENNIAL RESOURCE PRODUCTION, LLC shall comply with 19.15.29 NMAC Releases in the event of any release of produced water or other oil field wastes at 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845].
- The re-vegetation and reclamation obligations imposed by federal, state trust land or tribal agencies on lands managed by those agencies shall supersede these provisions and govern the obligations of any operator subject to those provisions, provided that the other requirements provide equal or better protection of fresh water, human health and the environment.
- [372165] CENTENNIAL RESOURCE PRODUCTION, LLC shall notify the division via [OCD Online](#) when reclamation and re-vegetation are complete.

Please reference number 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [fVV2232637845] in all future communications.

Regards,

**Victoria Venegas** • Environmental Specialist

Environmental Bureau

EMNRD - Oil Conservation Division

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

CONDITIONS

Action 159091

**CONDITIONS**

Operator: CENTENNIAL RESOURCE PRODUCTION, LLC 1001 17th Street, Suite 1800 Denver, CO 80202	OGRID: 372165
	Action Number: 159091
	Action Type: [C-147] Water Recycle Long (C-147L)

**CONDITIONS**

Created By	Condition	Condition Date
vvenegas	NMOCD has reviewed and approved the recycling containment permit application and related documents, submitted by [372165] CENTENNIAL RESOURCE PRODUCTION, LLC on November 15, 2022, for 1RF-495 - MERCHANT NORTH CONTAINMENT AND RECYCLING FACILITY ID [VV2232637845] in Unit Letter A, Section 09, Township 22S, Range 35E, Lea County, New Mexico.	11/22/2022