Souder, Miller & Associates ♦ 201 S. Halagueno St.♦ Carlsbad, NM 88220
(575) 689-8801

January 21, 2025 5E33088 BG# 9

EMNRD – Oil Conservation Division
506 W. Texas Ave
Artesia, NM 88210

SUBJECT: Closure Request Report for the Jayhawk 7 CTB 3, Incident ID # nAPP2430926272, Eddy County, New Mexico

1.0 Introduction

On behalf of Devon Energy Production Company, LP (Devon), Souder, Miller & Associates (SMA) has prepared this Closure Request Report. This report describes the corrective actions for a produced water incident related to oil and gas production activities at the Jayhawk 7 CTB 3 (Jayhawk), Incident ID nAPP2430926272, that occurred on November 3, 2024. The spill area is located at latitude N 32.0545445 and longitude W -103.506107.

Devon completed a release notification to the New Mexico Energy, Minerals, and Natural Resources Department – Oil Conservation Division (OCD) via Operators Electronic Permitting and Payment Portal on November 3, 2024, for the submission of Notice of Release (NOR), followed by the submission of the Form C-141, Release Notification on November 4, 2024. This letter provides a description of the spill assessment and includes a request for spill closure.

Table 1: Release Information and Closure Criteria

Name	Jayhawk 7 CTB 3	Company	Devon Energy Production Company, LP
API Number	fAPP2130256817	Location	J-07-26S-34E N 32.0545445, W -103.506107
Incident Number	nAPP2430926272	Land Status	Federal
Date of Release	November 3, 2024	Lease Number	NMNM114991
Source of Release	Water transfer pump failure		
Released Volume	64 bbls	Recovered Volume	64 bbls
NMOCD Closure Criteria	Depth to groundwater >100 feet below ground surface (bgs)		

2.0 Background

On November 3, 2024, a water transfer pump failed resulting in a fluid release. The total volume of released fluids was 64 barrels (bbls) of produced water. The release occurred within the secondary lined containment at Jayhawk. Initial response activities were conducted by the operator, including source elimination, photographs of standing fluids, recovery of approximately 64 bbls of produced water, and verification that the affected area was properly exposed and cleaned for visual observation.

Documentation of the liner inspection, including photographs, is provided in the Site Assessment Report in Attachment 1.

3.0 Site Geology and Vegetation

The Geologic Map of New Mexico by New Mexico Bureau of Geology and Mineral Resources indicates the surface geology at the incident location area is comprised of primarily To– Ogallala Formation (lower Pliocene to middle Miocene) – Alluvial and eolian deposits, and petrocalcic soils of the southern High Plains. Locally includes Qoa geological features, deposits of upland plains and piedmont areas, and calcic soils and eolian cover sediments of High Plains region.

The surrounding geography and terrain are associated with plains, fan piedmonts, alluvial fans, and dunes, at elevations between 2,800 and 5,000 feet above mean sea level (amsl). The annual average rainfall and precipitation ranges between 8 to 13 inches. The parent material consists of mixed alluvial and or eolian sands derived from sedimentary rock.

The primary surficial soil type on the location is Berino-Cacique association, hummocky. Subsurface features consist of a loamy fine sand, coarse sandy loam, fine sandy loam, or loam while substratum is a fine sandy loam or gravelly fine sandy loam with some layers high in lime or with caliche fragments and tends to be well drained, with low runoff, and a moderate available water supply.

The ecological setting is vegetation of a grassland aspect dominated by black grama, dropseeds, and bluestems. Sand sage and shinnery oak tend to be evenly dispersed due to the coarse soil surface. Perennial and annual forbs are reflective of rainfall. Drought conditions and grazing affect the disbursement of the plant population.

4.0 Site Information and Closure Criteria

The Jayhawk is located approximately 17.28 miles south of Bennett, New Mexico, on BLM land at an elevation of approximately 3,370 feet amsl. SMA completed site assessment/characterization pursuant to 19.5.29.11-12 NMAC to determine potential environmental impacts and closure criteria. Site assessment and characterization results are included in Attachments 1 and 2.

There is no surface water located on site or within closure criteria parameters of the site. The nearest significant watercourse, as defined in 19.15.17.7.P NMAC, is the Red Bluff Reservoir located approximately 24.8 miles southwest of the site (U.S. Fish and Wildlife Service, National Wetlands Inventory, 2024). There are no continuous flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features within the defined distance, as outlined in Paragraph (4) of Subsection C of 19.15.29.11 NMAC.

Depth to ground water was determined using New Mexico Office of the State Engineer (NMOSE) Water Rights Pod Location: ArcGIS Interactive Online Map. The nearest active pod is Pod 04827-POD1, a temporary borehole used for depth to groundwater determination located 0.4 miles east from Jayhawk. The temporary borehole was drilled to a depth of 105 feet bgs, where groundwater was not encountered. A stock watering freshwater well, Pod C-02295, located northwest of Jayhawk is described as the nearest freshwater well used for stock watering purposes at 0.73 miles northwest from Jayhawk.

Karst potential for the area that Jayhawk is low and is 0.65 miles east of a medium karst feature, based on the New Mexico State Land Office Land Status Interactive Map (NMSLO).

Documentation of site characterization, including depth to groundwater, surface water features, and karst potential, are included in Attachment 2.

Based on data included in the closure criteria determination worksheet, the incident at Jayhawk is not subject to the requirements of 19.15.29.11.A.4 NMAC. The closure criteria for the site are the constituent concentration limits associated with greater than 100 feet depth to groundwater (DTGW), as stated in Table I of 19.15.29.12 NMAC.

5.0 Remediation Activities

Notification of the liner inspection, scheduled for December 5, 2024, was provided to Devon and Bureau of Land Management (BLM) through email by SMA personnel on December 3, 2024. Devon provided notification to NMOCD through the ENMRD Electronic Permitting and Payment Portal for Operators on December 3, 2024. Notification documentation is included in Attachment 3.

On December 5, 2024, SMA personnel performed an on-site visual inspection of the secondary containment to verify liner integrity as outlined in in Paragraph (5)(a) of Subsection A of 19.15.29.11 NMAC.

Visual observation of the liner included a complete inspection of all sidewalls and the base of the containment, around equipment, and all seams of the liner. The inspection included looking for any potential perforations in the liner that could lead to a breach of the secondary containment. Observations concluded no signs of any cuts, rips, tears, or weathering of the liner condition which need repairs or replacement. Liner integrity was confirmed. Photo documentation of the liner inspection is in the Site Assessment Photolog (Attachment 1).

6.0 Conclusions and Recommendations

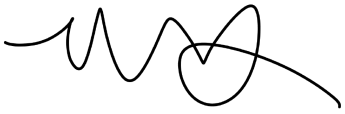
Based on the liner inspection and assessment, SMA concludes the liner integrity is adequate to contain the release related to incident nAPP2430926272. There is no evidence of a release to the environment. Based on the professional activities and site assessment, Devon Energy Production Company respectfully requests closure of the incident that occurred at Jayhawk 7 CTB 3.

7.0 Scope and Limitations

The scope of our services included: visual inspection for liner integrity; regulatory liaison; and preparing this report. All work has been performed in accordance with accepted professional environmental consulting practices for oil and gas incidents in the Permian Basin in New Mexico.

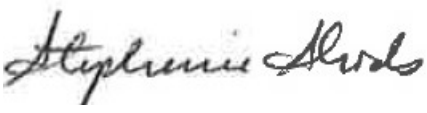
If there are any questions regarding this report, please contact Stephanie Hinds at (505) 302-1127 or Monica Peppin at (575) 909-3418.

Submitted by:
SOUDER, MILLER & ASSOCIATES



Monica Peppin, A.S.
Project Manager

Reviewed by:



Stephanie Hinds, P.E.
Senior Engineer

REFERENCES:

New Mexico Office of the State Engineer (NMOSE) online water well database
Httpe://gis.ose.state.nm.us/gisapps/ose_pod_locations/

USGS National Water Information System: Web interface online water well database
https://nwis.waterdata.usgs.gov/nwis/gwlevels?site_no=321205103544701&agency_cd=USGS&format=html

U.S. Fish and Wildlife Service: National Wetlands Inventory
Wetlands Mapper | U.S. Fish & Wildlife Service

New Mexico State Land Office: Land Status
NMSLO Land Status

United States Department of Agriculture: Natural Resources Conservation Service: Web Soil Survey
https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

USDA, USGS The National Map: Orthoimagry: FEMA's National Flood Hazard Layer (NFHL) Viewer
https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd

ATTACHMENTS:

Attachment 1: Site Assessment Photolog
Attachment 2: Closure Criteria Determination Research
Attachment 3: Correspondence

ATTACHMENT 1: SITE ASSESSMENT REPORT

Site Assessment Report and Photolog

Client: Devon Energy Corporation
Site Name: Jayhawk 7 CTB 3
API: fAPP2130256817

Incident ID: nAPP2430926272
Project Manager: Monica Peppin
Project Owner: Jim Raley

Field Notes

Dec 5, 2024, at 1:11 PM

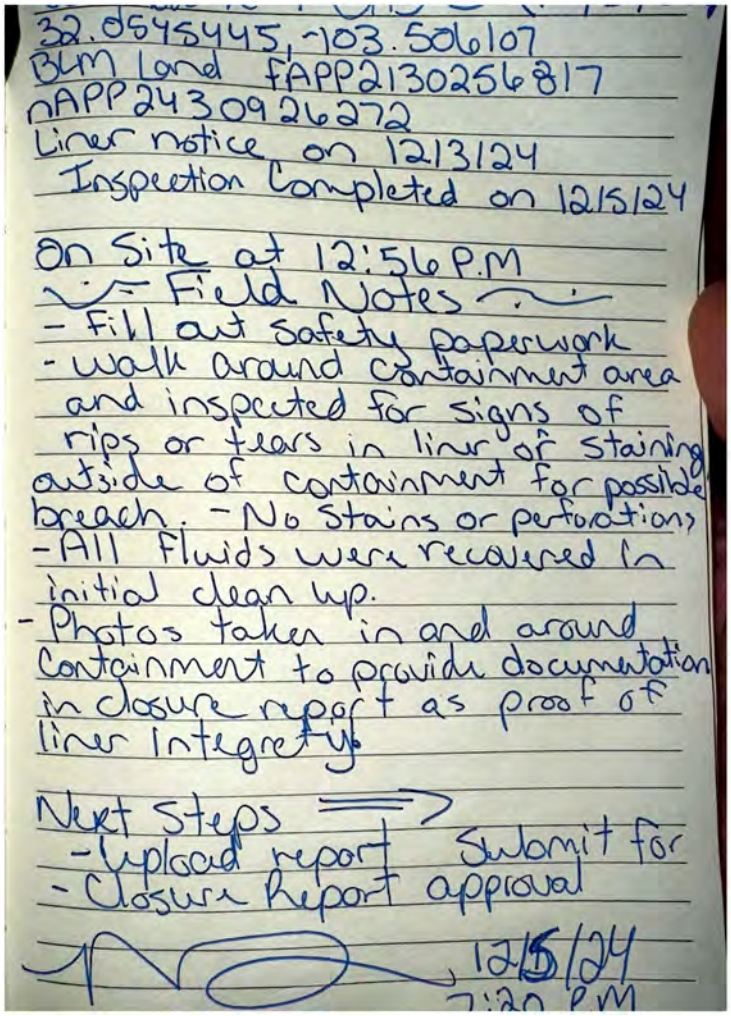
- Arrive on site at 1:00 PM
- Complete safety paperwork
- Complete visual inspection of secondary containment on all sides and inside for signs of possible breach
- Collect photos of liner in each cardinal direction and additional views for proof of liner integrity
- Inspected for any visible perforations, cuts, rips, tears, or substantial weathering that could lead to the potential breach through the liner
- Inspection concluded that there are no signs of permeation through the liner and the barrier between the secondary containment and ground surface is isolated to withhold fluids
- No additional concerns and inspection is complete

Next Steps/Recommendations

- Upload field report
- Complete Closure Report and submit for approval

Visual documentation

Photograph #1: Lease sign with site information

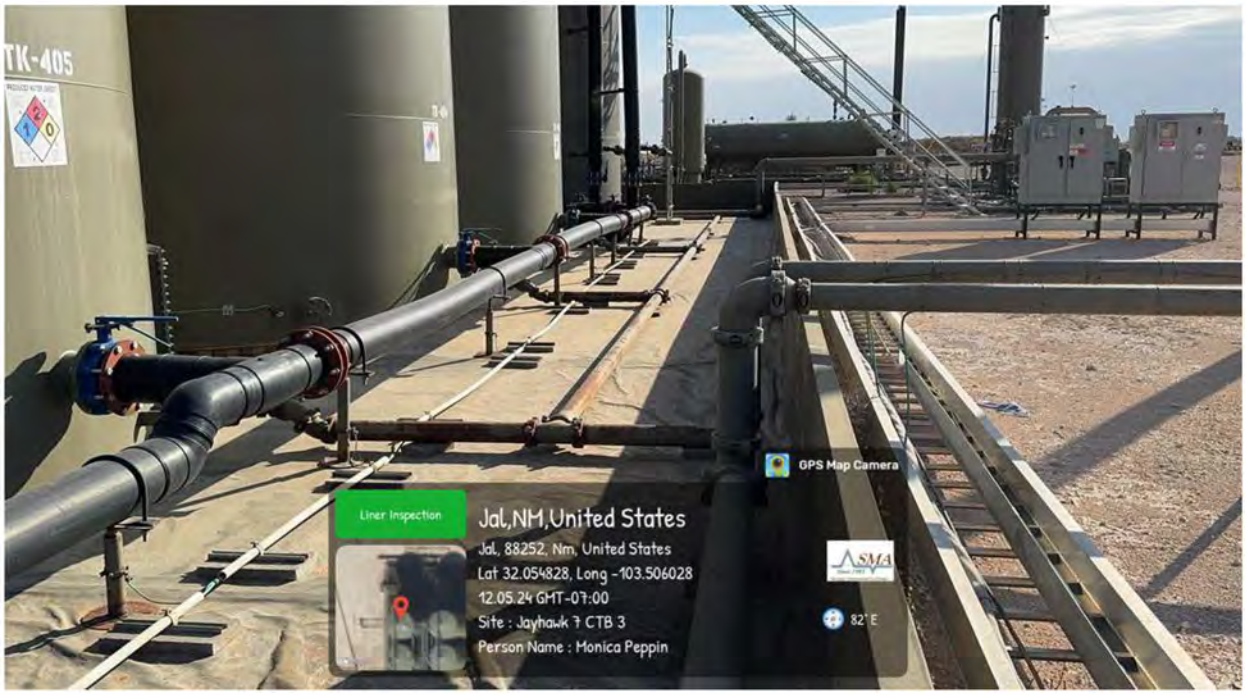

32.0545445, -103.506107
BLM Land fAPP2130256817
nAPP2430926272
Liner notice on 12/3/24
Inspection Completed on 12/5/24

On Site at 12:56 P.M
Field Notes
- Fill out safety paperwork
- walk around containment area and inspected for signs of rips or tears in liner or staining outside of containment for possible breach. - No stains or perforations
- All fluids were recovered in initial clean up.
- Photos taken in and around Containment to provide documentation in closure report as proof of liner integrity.

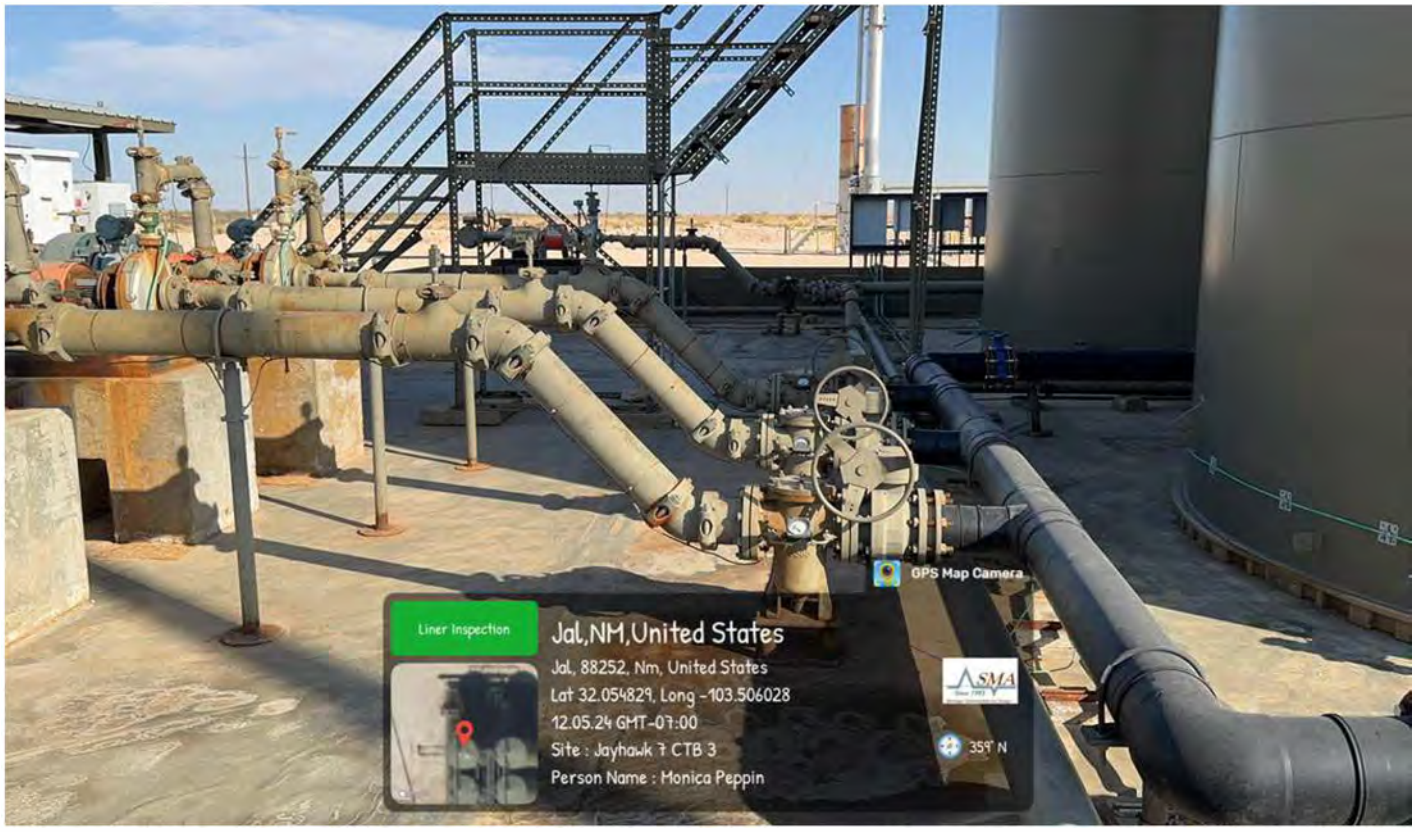
Next Steps
- Upload report Submit for
- Closure Report approval

12/5/24
7:20 PM

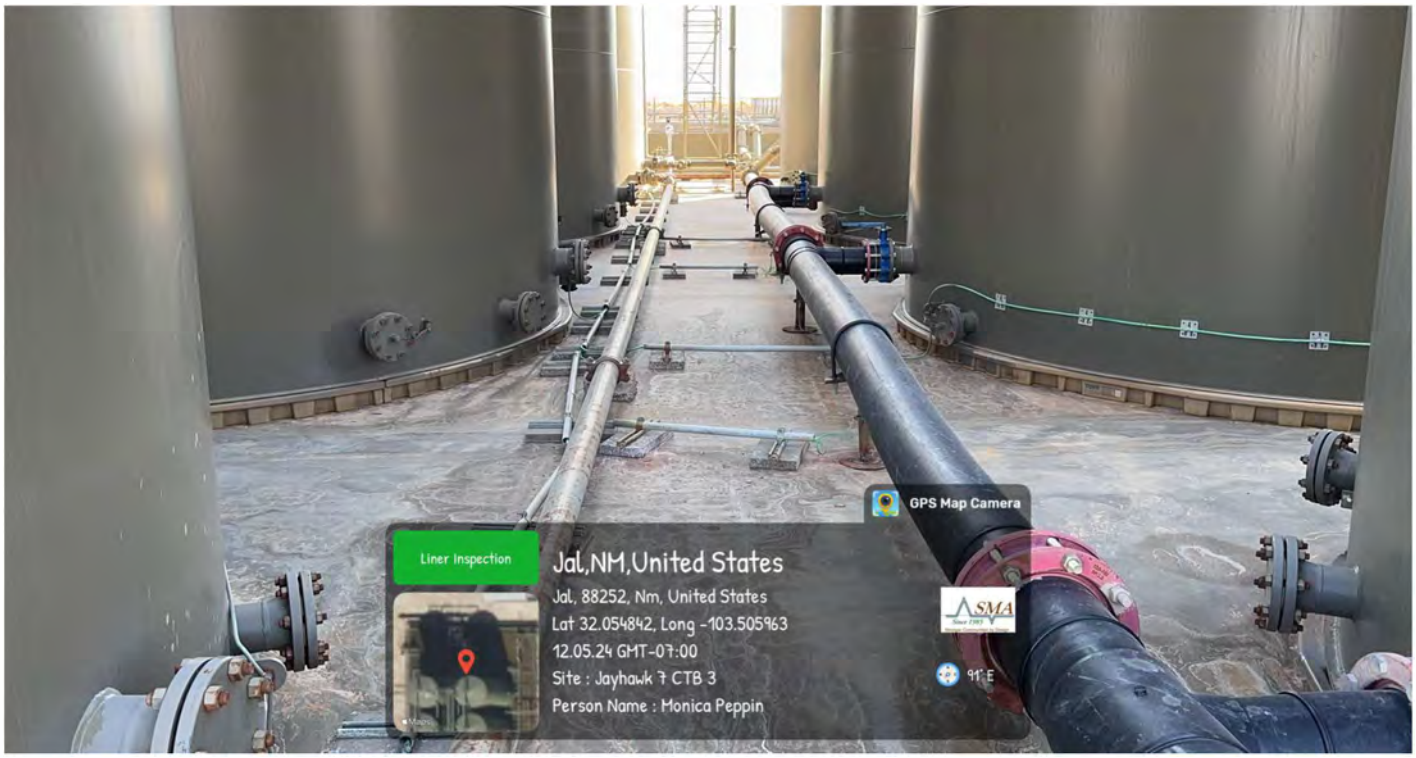
Photograph #2: Field notes



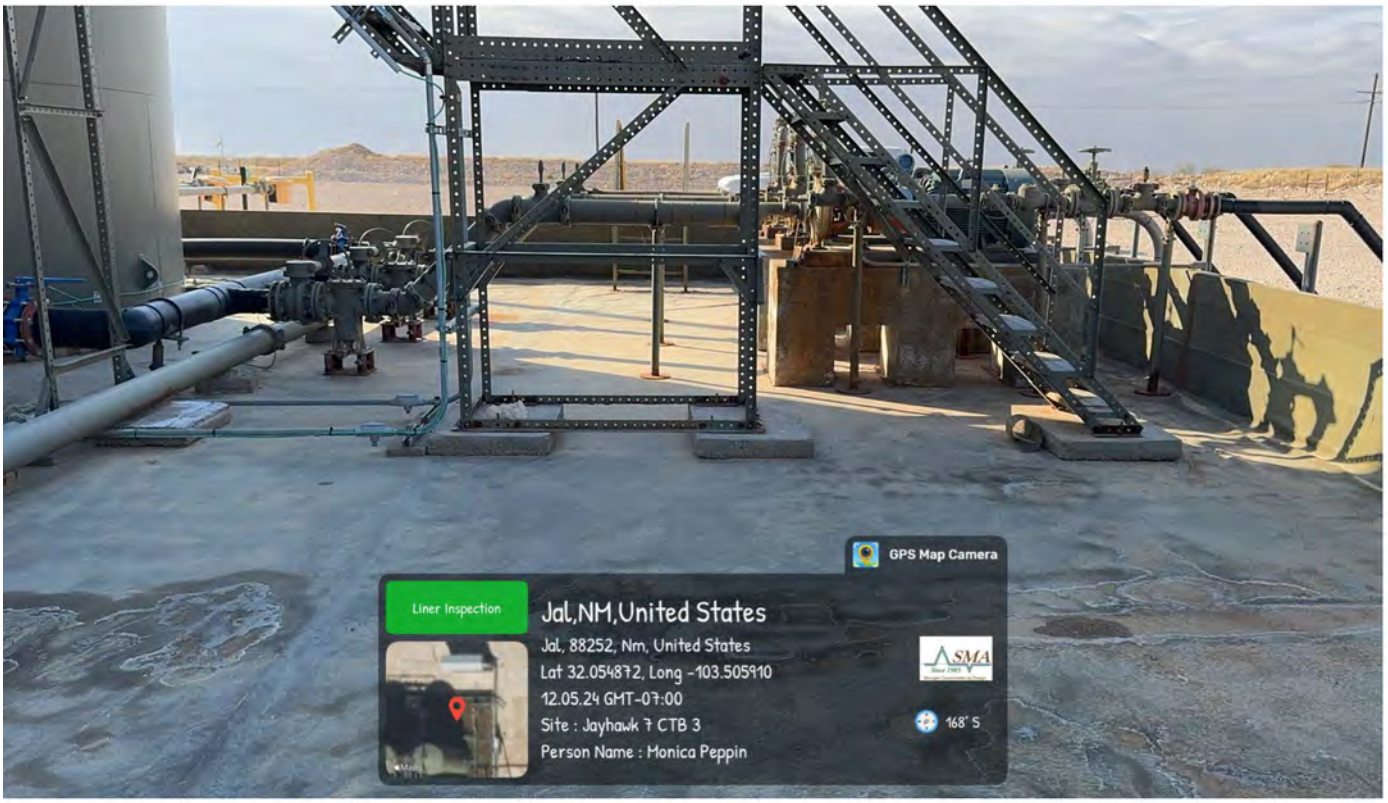
Photograph #3: West side of containment facing south



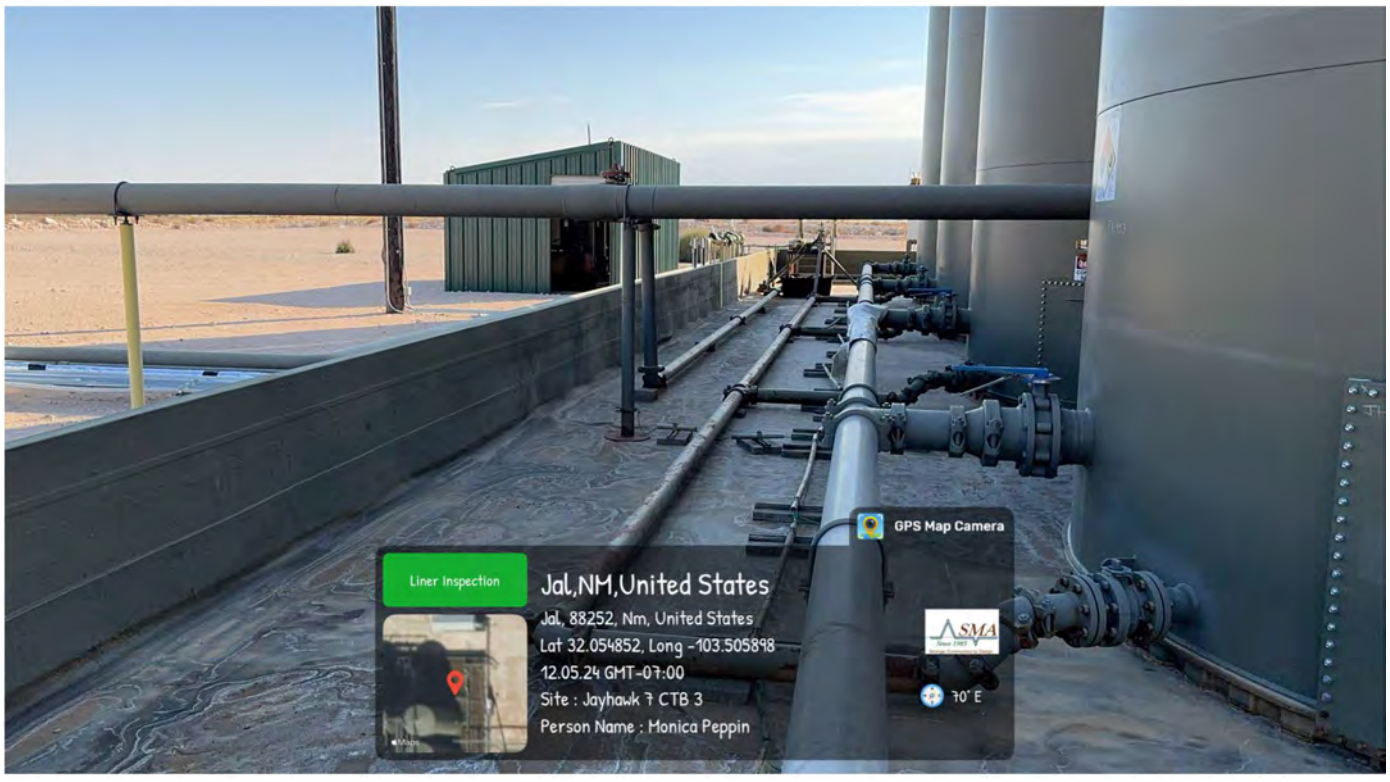
Photograph #4: north end of containment facing east



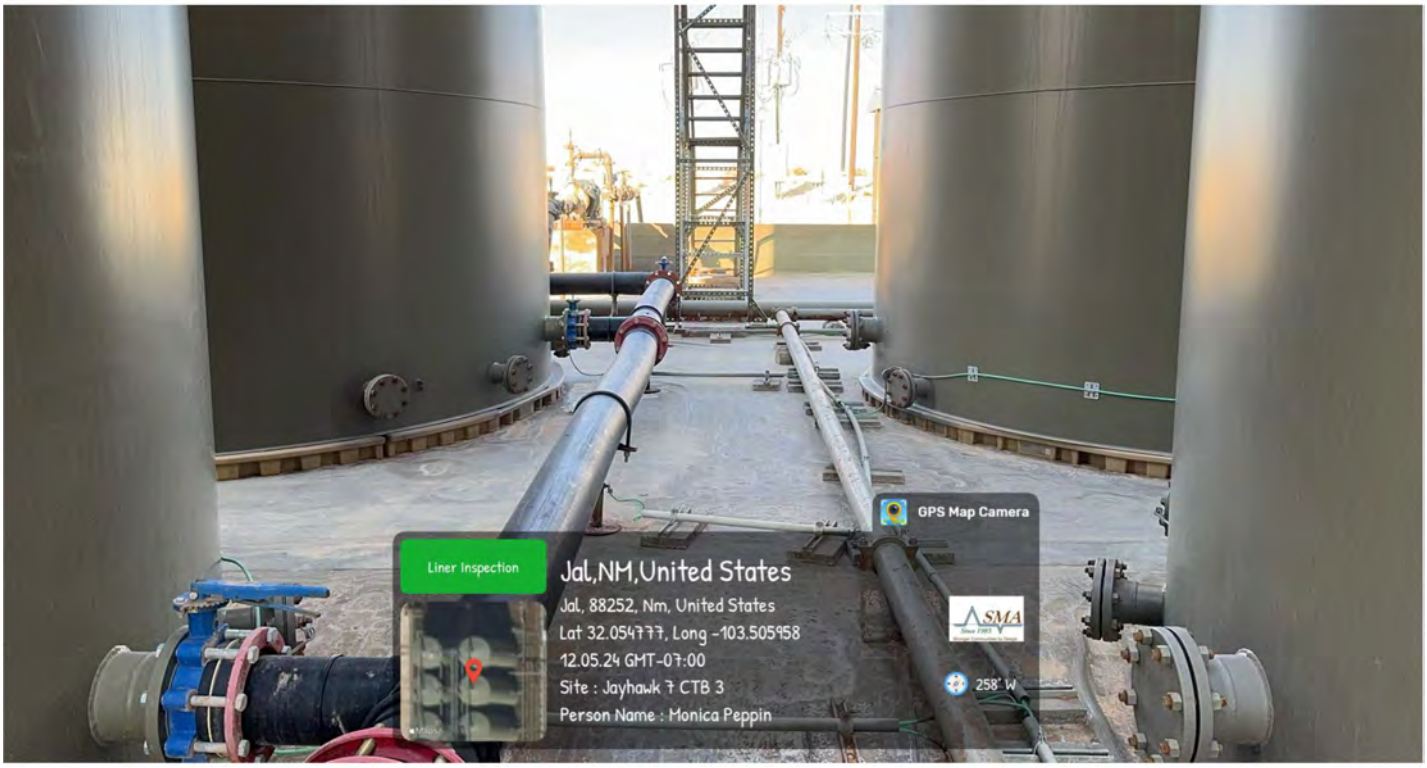
Photograph #5: Facing west to show middle area between tanks



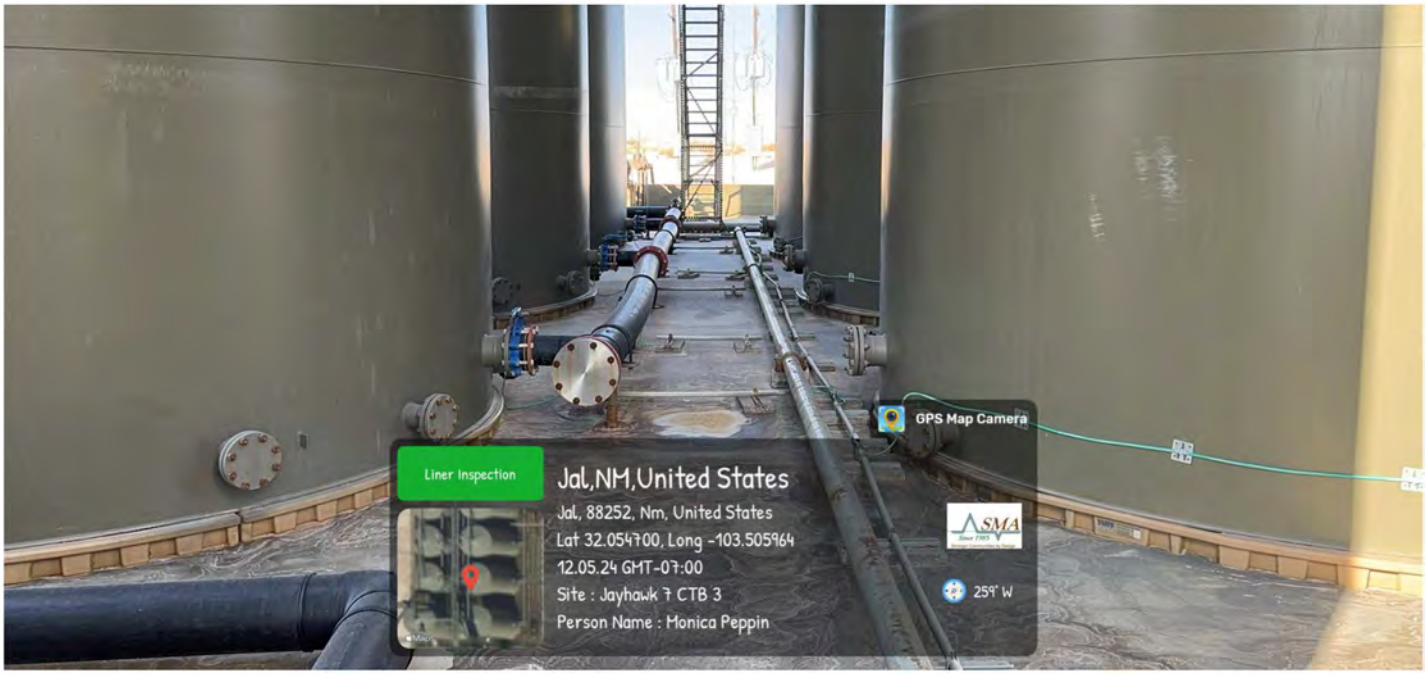
Photograph #6: north side of containment facing west



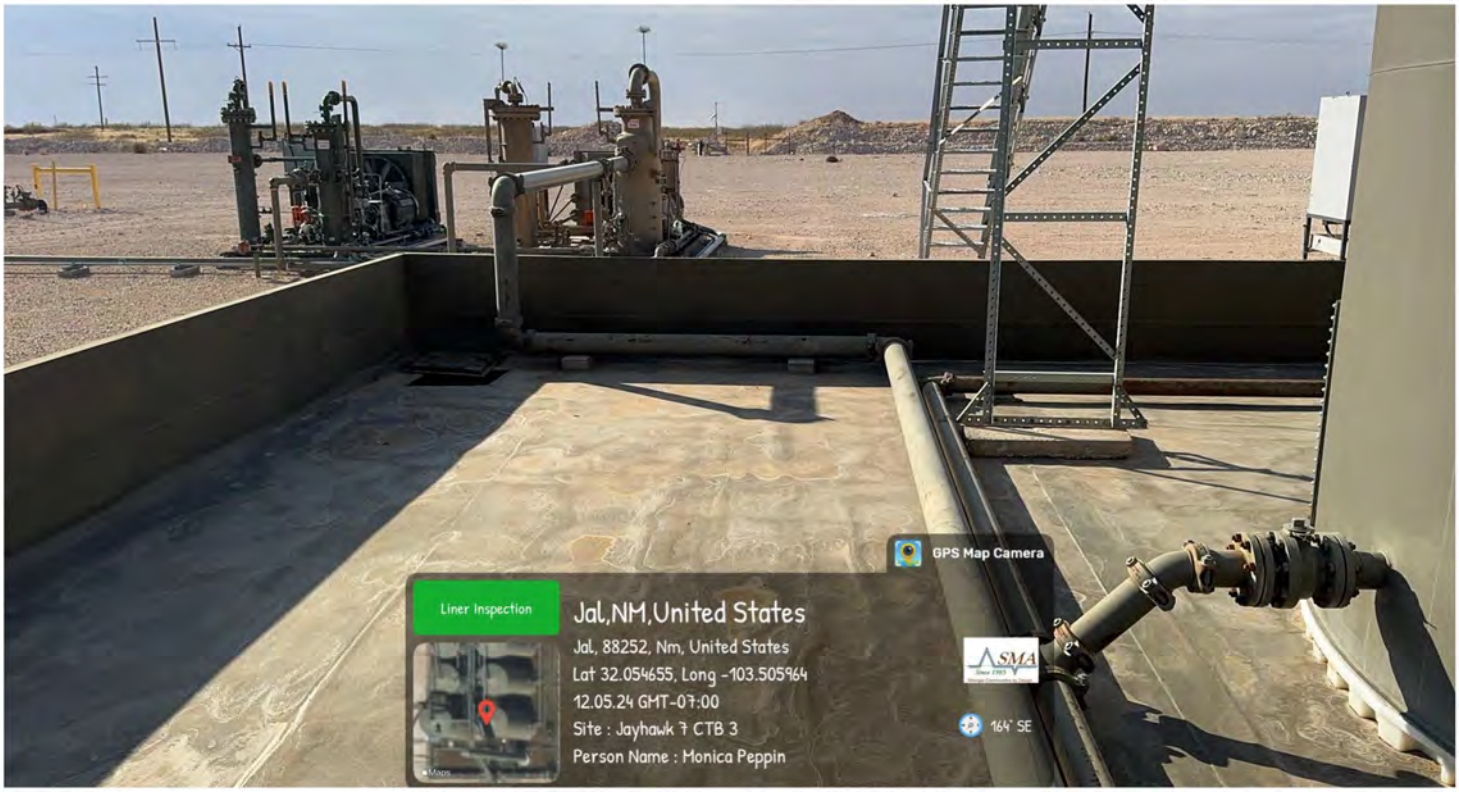
Photograph #7: Facing south to show east side of containment area



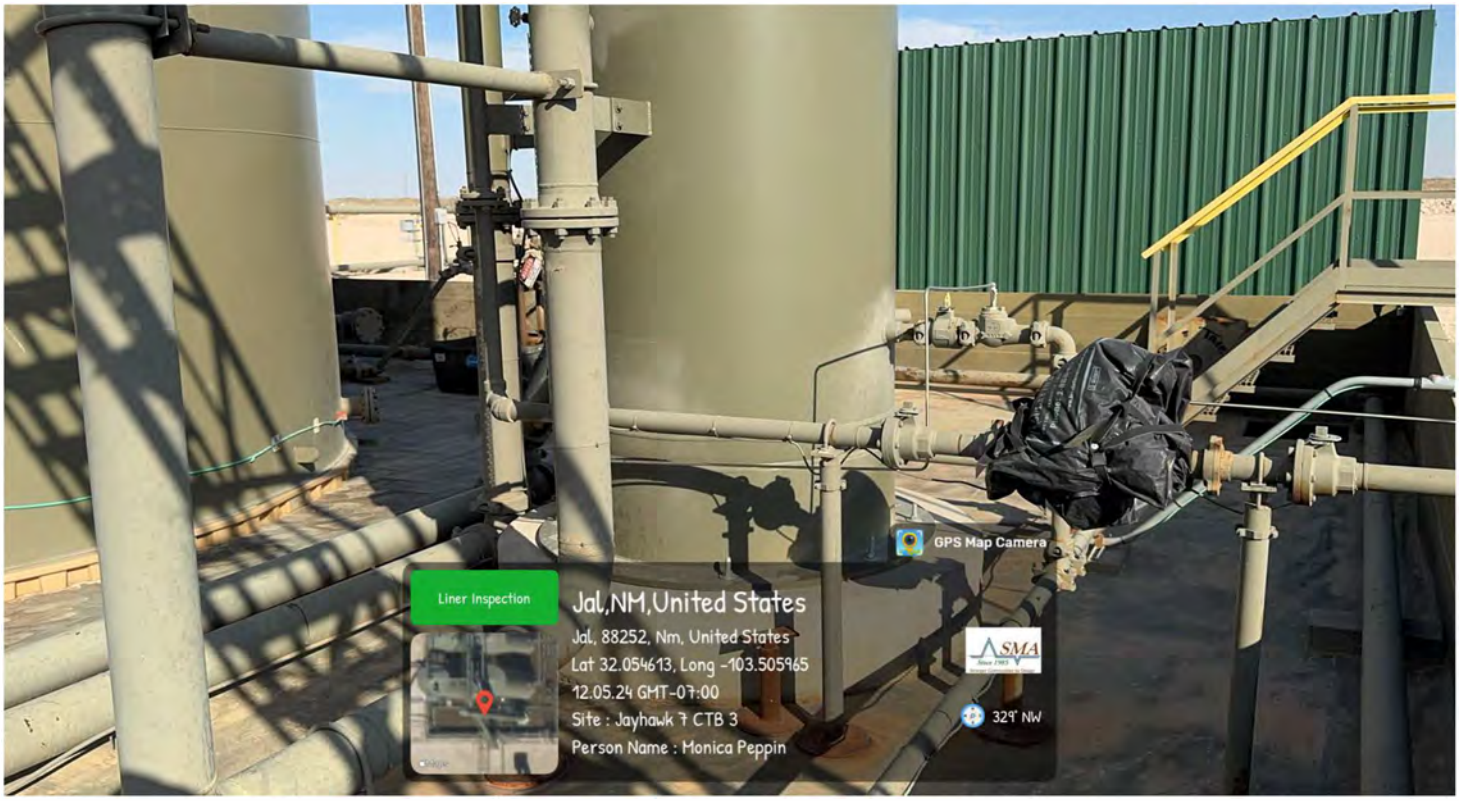
Photograph #8: Facing north to show between tanks closer to northern end



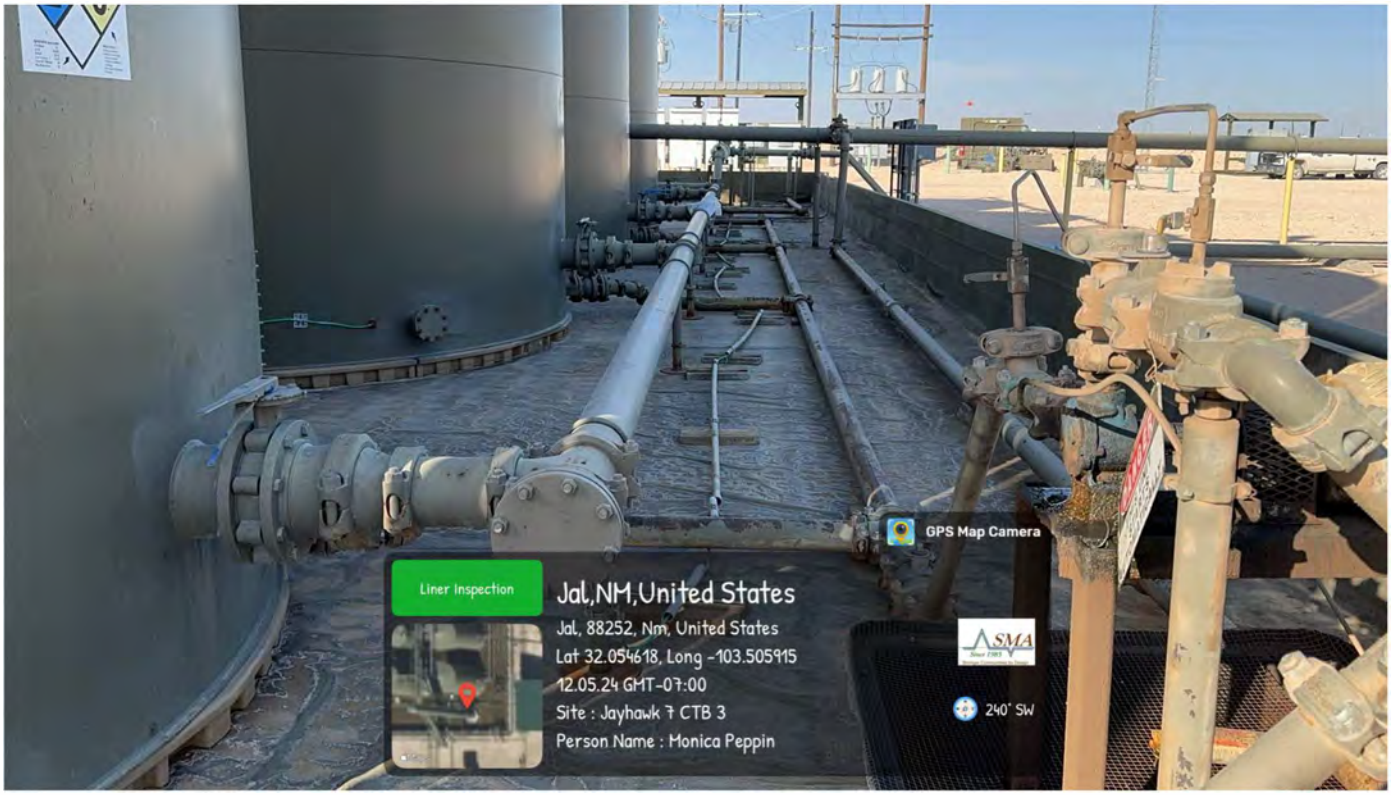
Photograph #9: Facing north in between tanks of containment



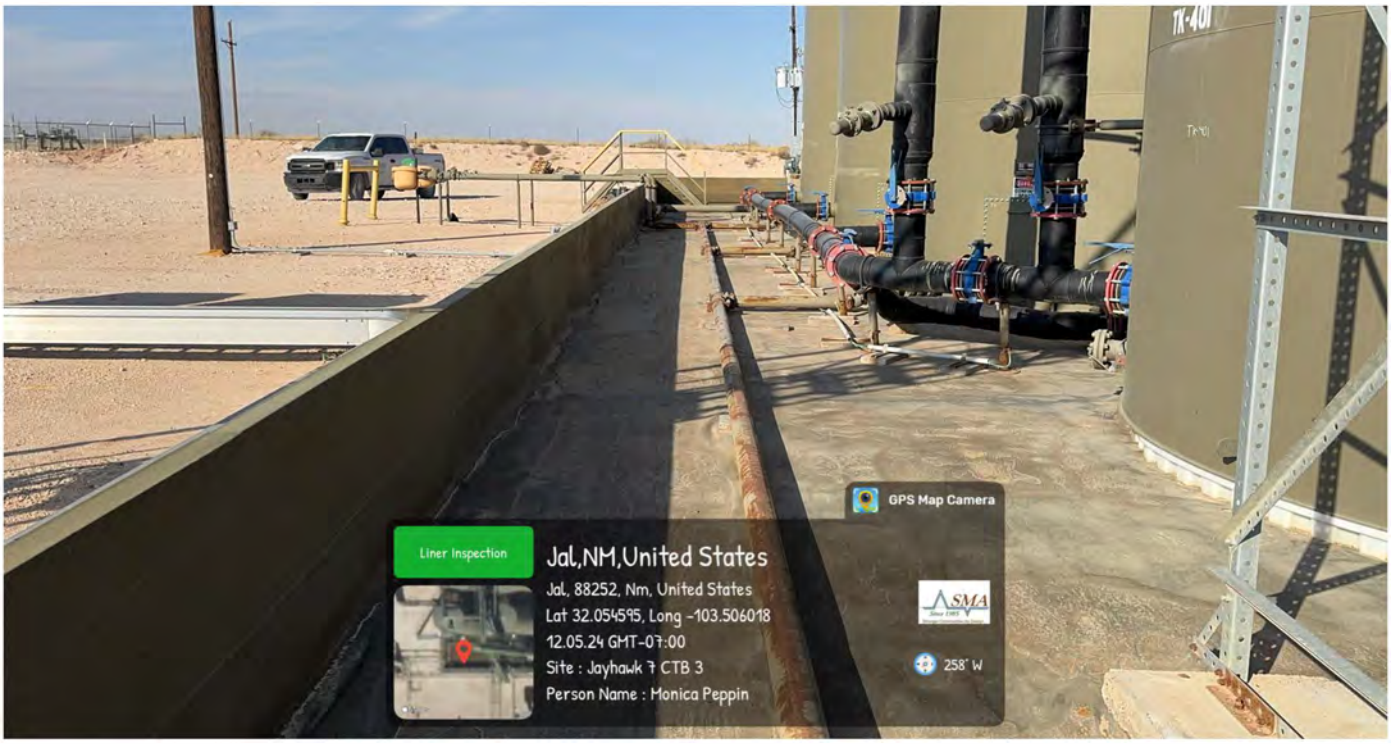
Photograph #10: south end of containment facing west



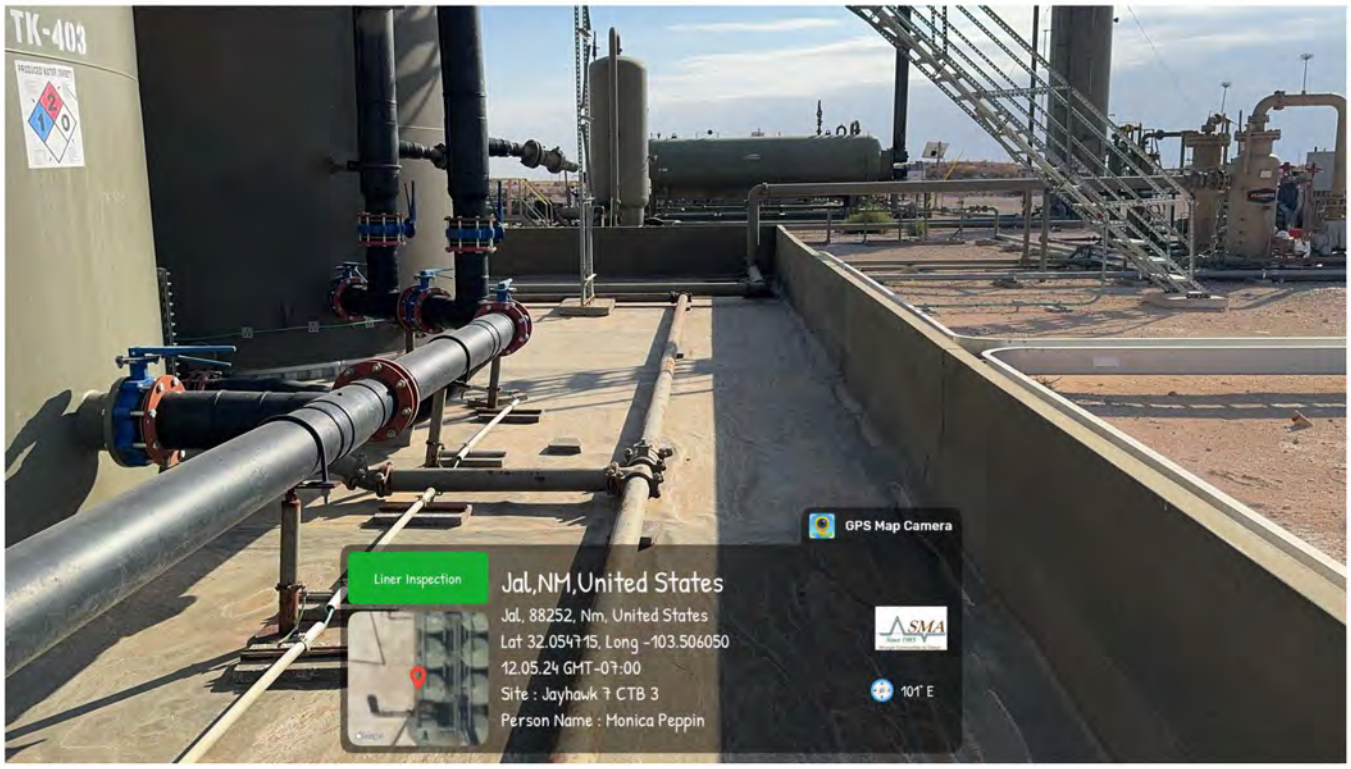
Photograph #11: South end of containment to show southeast corner



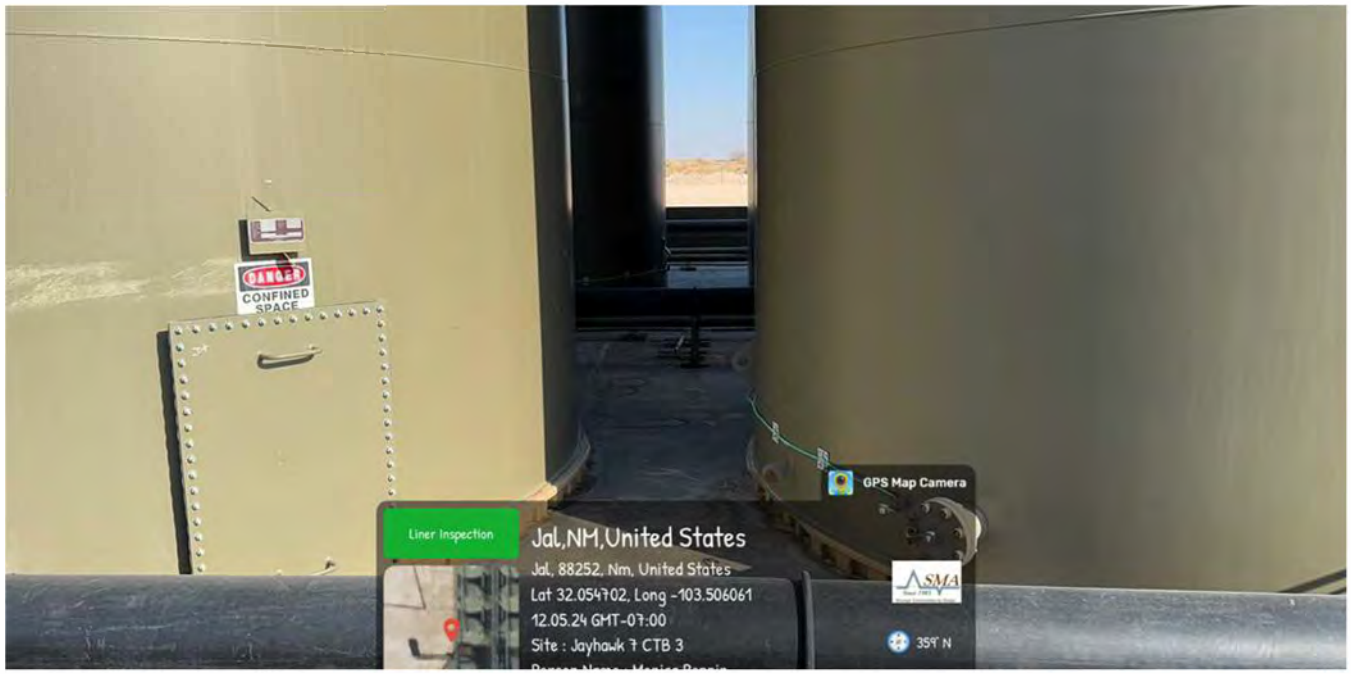
Photograph #12: Facing east showing south side of containment



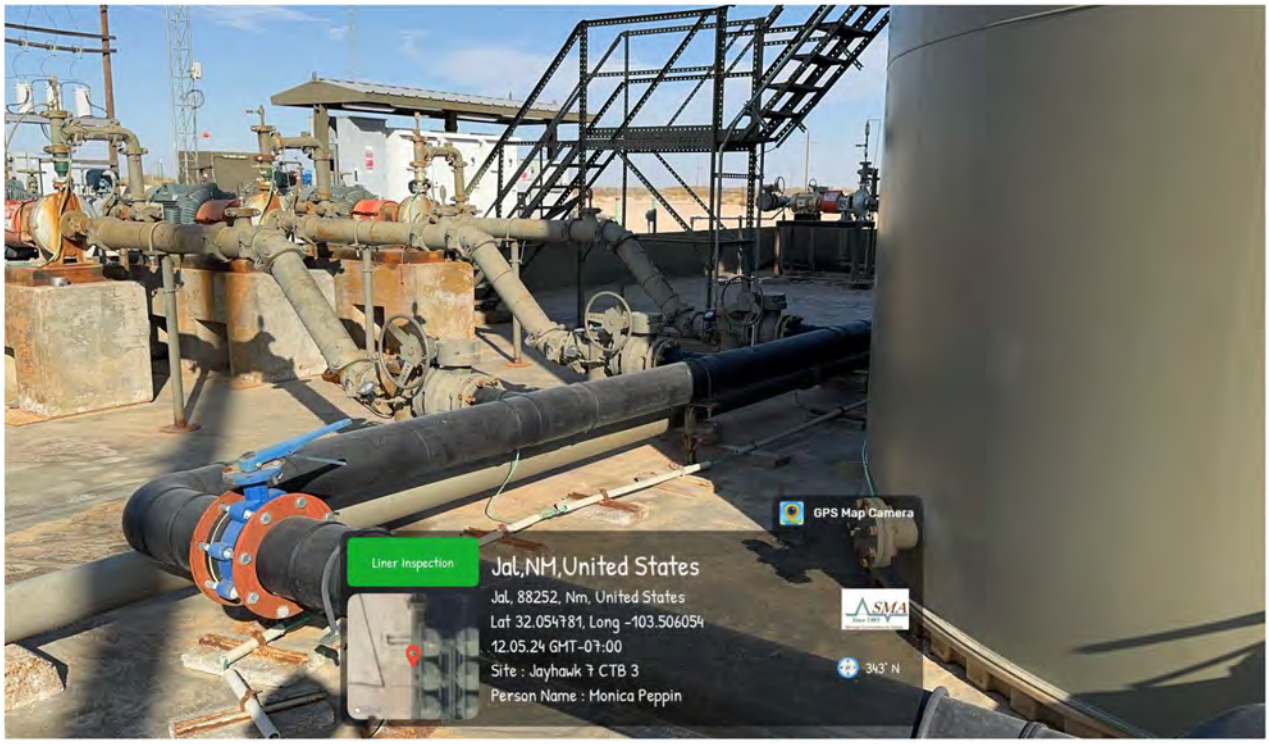
Photograph #13:Facing north showing liner from west side of containment



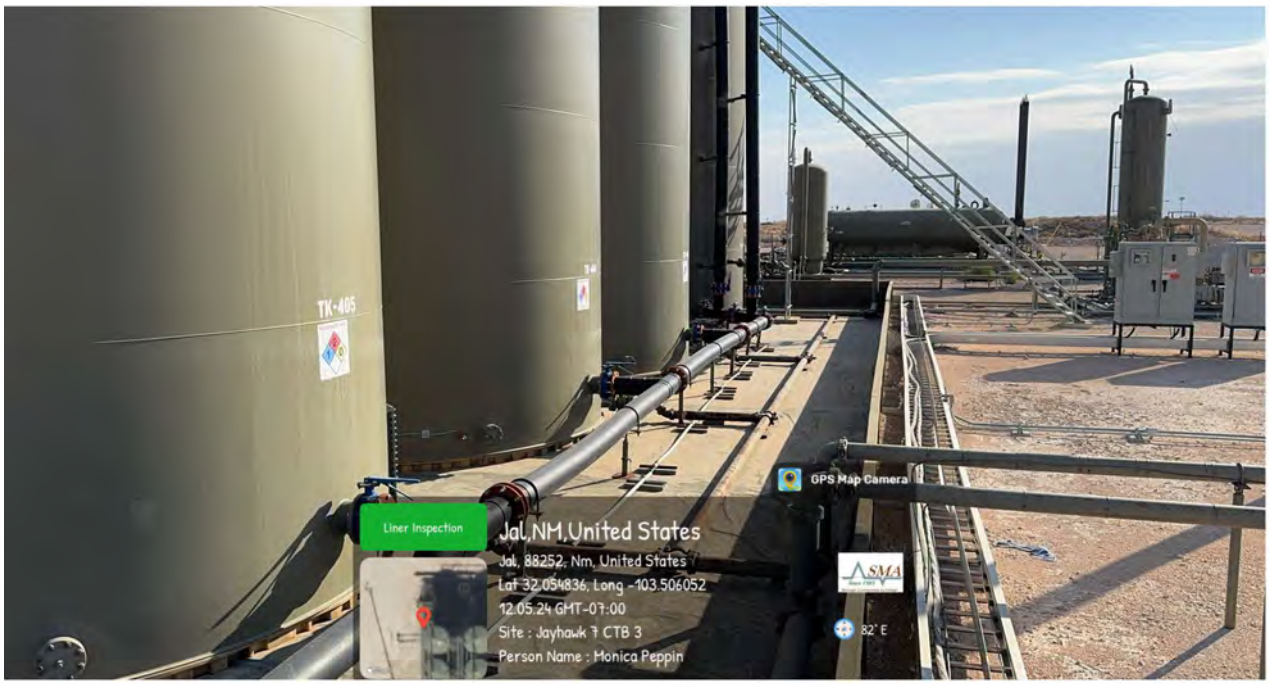
Photograph #14: Facing south showing liner on west side of containment



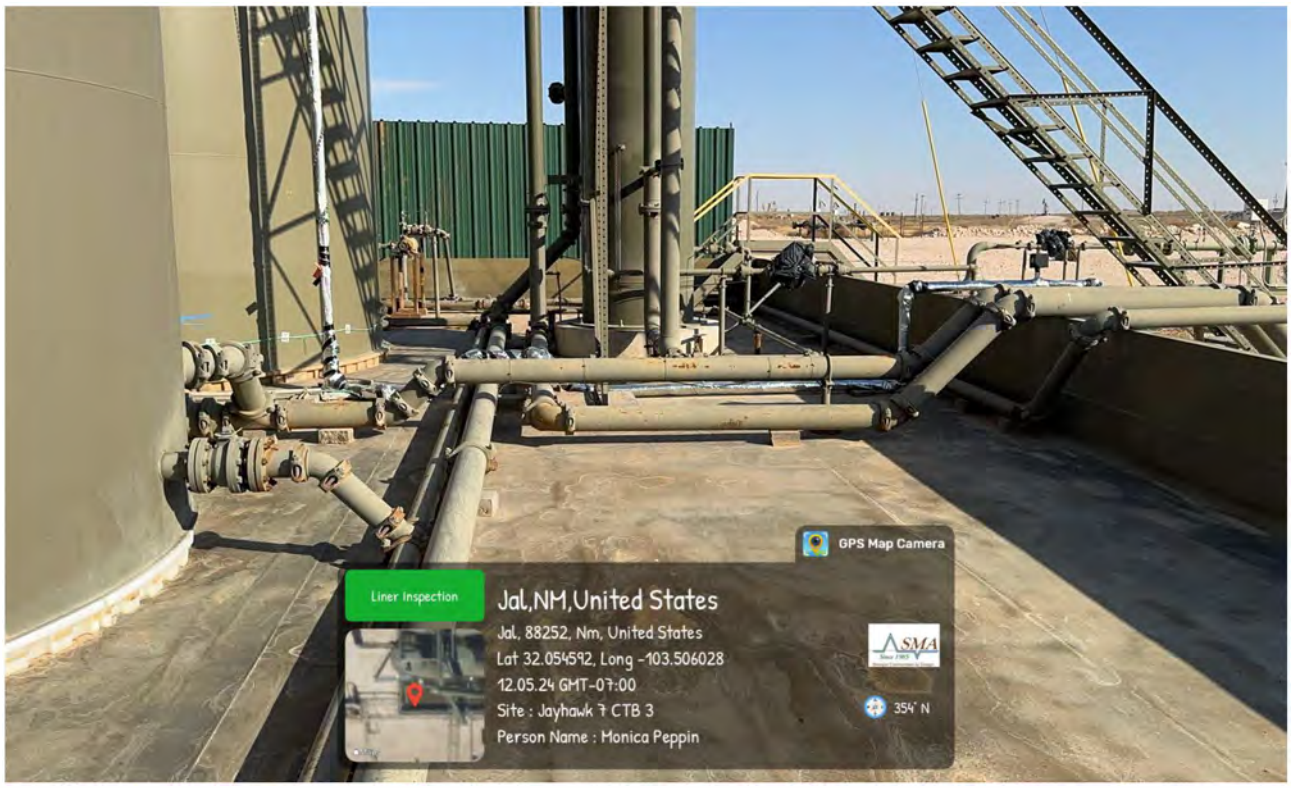
Photograph #15: Middle area facing east from west side



Photograph #16: Looking northeast showing west corner



Photograph #17: West side of containment area



Photograph #18: Facing west showing liner on south end of containment

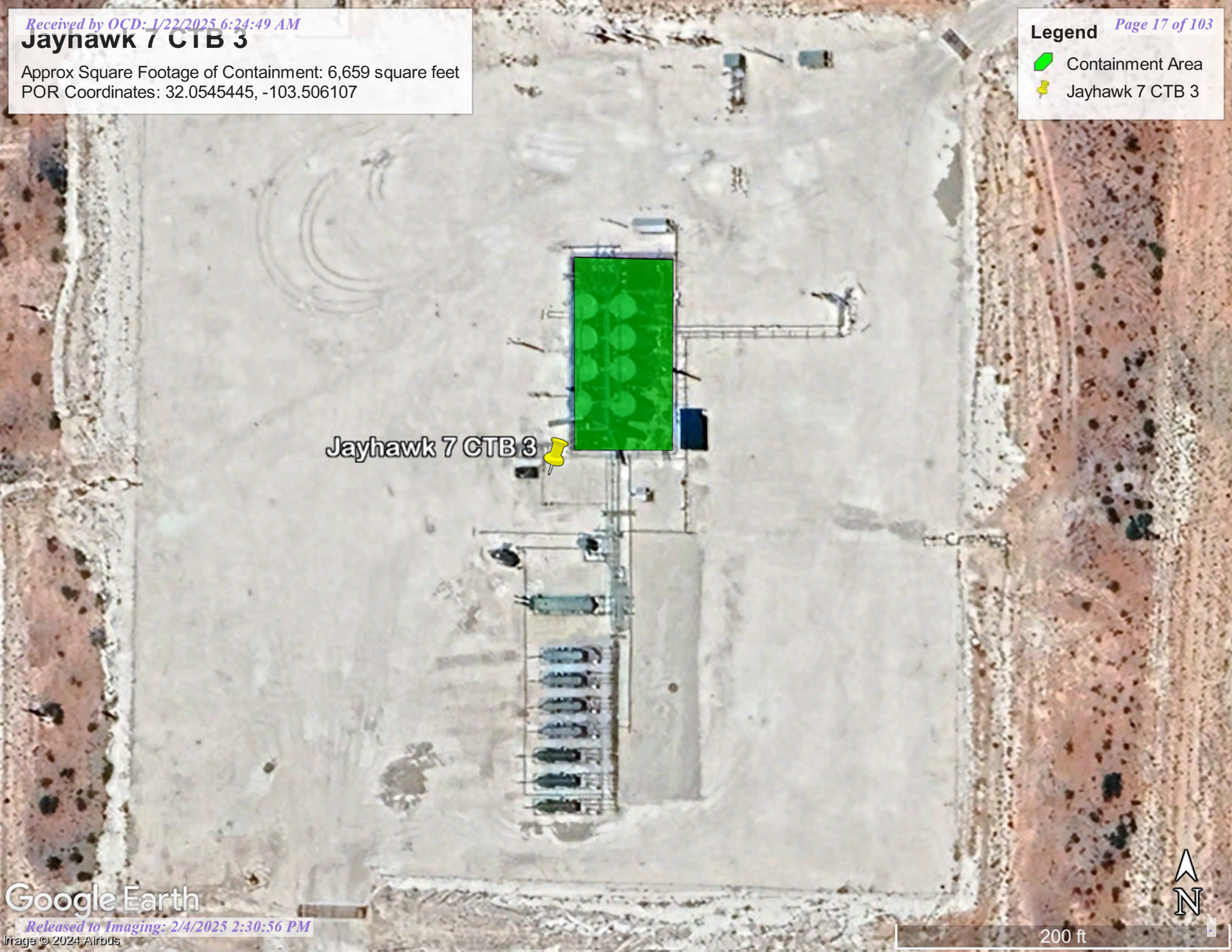
Technician: Monica Peppin Date: 12/5/2024

Signature: _____

ATTACHMENT 2: CLOSURE CRITERIA DETERMINATION RESEARCH

Jayhawk 7 CTB 3

Approx Square Footage of Containment: 6,659 square feet
POR Coordinates: 32.0545445, -103.506107



Jayhawk 7 CTB 3 - OSE Pod 0.5-Mile Radius/ Nearest OSE Pod

1/7/2025, 8:54:42 AM

Override 1
GIS WATERS PODs
Active
Pending
OSE District Boundary
Water Right Regulations
Closure Area

Nearest OSE Pod - C-04827-Pod1
Distance - 0.40 miles (2,124 feet)

1:9,028

0 0.07 0.15 0.3 mi
0 0.13 0.25 0.5 km

Esri, HERE, iPC, Esri, HERE, Garmin, iPC, Maxar

Online web user
This is an unofficial map from the OSE's online application.

lo. C-04827 POD1

NEW MEXICO OFFICE OF THE STATE ENGINEER

WR-07 APPLICATION FOR PERMIT TO DRILL

A WELL WITH NO WATER RIGHT

(check applicable boxes):

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:	☐ Pollution Control And/Or Recovery	☐ Ground Source Heat Pump
☐ Exploratory Well*(Pump test)	☐ Construction Site/Public Works Dewatering	☒ Other(Describe):
☐ Monitoring Well	☐ Mine Dewatering	

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

*New Mexico Environment Department-Drinking Water Bureau (NMED-DWB) will be notified if a proposed exploratory well is used for public water supply.

☐ Check here if the borehole is anything other than vertifical (directional boring or angle boring) and include a schematic of your design.

☒ Temporary Request - Requested Start Date: 5/1/2024 Requested End Date: 5/1/2025

Plugging Plan of Operations Submitted? ☒ Yes ☐ No

Note: if there is known artesian conditions, contamination or high mineral content at the drilling location, include the borehole log or a well log from an existing well at that location. If this information is not submitted, check box and attach form WD-09 to this form. ☐

1. APPLICANT(S)

Name: Tetra Tech on behalf of ConocoPhillips	Name:
Contact or Agent: check here if Agent ☐ Christian Llull	Contact or Agent: check here if Agent ☐
Mailing Address: 8911 N. Capital of Texas Highway Bldg. 2 Suite 2310	Mailing Address:
City: Austin	City:
State: Texas Zip Code: 78759	State: Zip Code:
Phone: 512-565-0190 ☐ Home ☒ Cell Phone (Work):	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): christian.llull@tetratech.com	E-mail (optional):

OSE DIT APR 19 2024 AM 11:23

FOR OSE INTERNAL USE	Application for Permit, Form WR-07, Rev 02/29/2024	
File No.: C-04827	Trn. No.: 759161	Receipt No.: 2-46814
Trans Description (optional):		
Sub-Basin: CUB	PCW/LOG Due Date: 4/29/25	

2. WELL(S) Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).
District II (Roswell), District V (Aztec) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

■ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves , Section, Township, Range*) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
DTW-GUNNER C-04827 POD1	32.053208	-103.499466	Unit Letter M, Section 8, Township 26 South, Range 34 East

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ■ No If yes, how many _____

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: BLM

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. **Attached?** ☐ Yes ■ No
If yes, how many_____

Approximate depth of well (feet): 105	Outside diameter of well casing (inches): 2 in.
Driller Name: John Scarborough, Inc.	Driller License Number: WD1188

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

OSE DII APR 19 2024 AM 11:23

Drilling temporary monitoring well to determine depth to groundwater.

The well will be installed on an active pad on BLM land. BLM was emailed on 3/26/2024 for access approval. BLM approved the DTW location on 4/3/2024 (attached).

FOR OSE INTERNAL USE Application for Permit, Form WR-07 Version 02/29/2024

File No.: C-04827 POD1 Trn No.: 759161

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory*: Is proposed well a future public water supply well? ☐ Yes ☒ NO If Yes, an application must be filed with NMED-DWB, concurrently. ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge. ☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring*: ☐ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.		**Ground Source Heat Pump:** ☐ Include a description of the geothermal heat exchange project, ☐ The number of boreholes for the completed project and required depths. ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

(* if exploration or monitoring drilling activity is required by NMED, then you must also submit the NMED Work Plan)

ACKNOWLEDGEMENT

I, We (name of ~~applicant(s)~~), CHAMPION LLULL
Print Name(s)

affirm that the foregoing statements are true to the best of (my,our) knowledge and belief.

Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is: OSE DII APR 19 2024 AM11:23

☑ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 29th day of April 20 24, for the State Engineer,

MIKE A. HAMMAN, P.E., State Engineer

By: K. Parekh
Signature

KASHYAP PAREKH
Print

Title: WATER RESOURCE MANAGER I
Print

FOR OSE INTERNAL USE Application for Permit, Form WR-07 Version 02/29/2024

File No. C-04827 POD 1 Trn No. 759161

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL

17-16 Construction of a water well by anyone without a valid New Mexico Well Driller License is illegal, and the landowner shall bear the cost of plugging the well by a licensed New Mexico well driller. This does not apply to driven wells, the casing of which does not exceed two and three-eighths inches outside diameter.

17-1A Depth of the well shall not exceed the thickness of the valley fill.

17-4 No water shall be appropriated and beneficially used under this permit.

17-6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable and approved by the state engineer. The well shall be plugged with an office of the state engineer approved sealant for use in the plugging of non-artesian wells. The well driller shall cut the casing off at least four (4) feet below ground surface and fill the open hole with at least two vertical feet of approved sealant. The driller must fill or cover any open annulus with sealant. Once the sealant has cured, the well driller or well owner may cover the seal with soil. A Plugging Report for said well shall be filed with the Office of the State Engineer in a District Office within 30 days of completion of the plugging.

Trn Desc: C 04827 POD1 File Number: C 04827
Trn Number: 759161

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

17-7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.

17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record.
The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.

17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.

17-Q The State Engineer retains jurisdiction over this permit.

17-R Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.

Trn Desc: C 04827 POD1 File Number: C 04827
Trn Number: 759161

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

LOG The Point of Diversion C 04827 POD1 must be completed and the Well Log filed on or before 04/29/2025.

IT IS THE PERMITTEE'S RESPONSIBILITY TO OBTAIN ALL AUTHORIZATIONS AND PERMISSIONS TO DRILL ON PROPERTY OF OTHER OWNERSHIP BEFORE COMMENCING ACTIVITIES UNDER THIS PERMIT.

ACTION OF STATE ENGINEER

Notice of Intention Rcvd: Date Rcvd. Corrected:
Formal Application Rcvd: 04/19/2024 Pub. of Notice Ordered:
Date Returned - Correction: Affidavit of Pub. Filed:

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 29 day of Apr A.D., 2024

Mike A. Hamman, P.E., State Engineer

By: K. Parekh
KASHYAP PAREKH

GREAT SEAL OF THE STATE OF NEW MEXICO * 1912 *

Trn Desc: C 04827 POD1 File Number: C 04827
Trn Number: 759161

Chavira, Lisbeth

From: Taylor, Shelly J <sjtaylor@blm.gov>
Sent: Wednesday, April 3, 2024 6:50 PM
To: Llull, Christian
Cc: Chavira, Lisbeth
Subject: Re: [EXTERNAL] Access Request - Gunner 8 Federal #008H FL (NAPP2400930878)

BLM authorizes you to drill and DTW bore on federal surface.

Respectfully,
Shelly J Taylor
Assistant Field Manager
Lands & Minerals - Acting

Bureau of Land Management
Pecos District/Roswell Field Office
2909 W 2nd St
Roswell, NM 88201

Direct 575.627.0250
Mobile 575.200.0614
sjtaylor@blm.gov

OSE DIT APR 13 2024 AM 11:25

From: Llull, Christian <Christian.Llull@tetratech.com>
Sent: Tuesday, March 26, 2024 10:45 AM
To: Taylor, Shelly J <sjtaylor@blm.gov>
Cc: Chavira, Lisbeth <LISBETH.CHAVIRA@tetratech.com>
Subject: [EXTERNAL] Access Request - Gunner 8 Federal #008H FL (NAPP2400930878)

Shelly,

Tetra Tech is assisting ConocoPhillips with assessment activities associated with a previously reported unplanned release that occurred on December 21, 2023.
The **Gunner 8 Federal #008H FL Release** was the result of equipment failure, approximately 2 bbls of produced water, of which 1 bbl of produced water were recovered.

In order to complete the assessment and the submittal process we are requesting verbal approval to install a DTW on an active COG pad on BLM Land.
KMZ file attached and screengrab below.
This boring location is an on pad – previously disturbed area.

To comply with the New Mexico State Office of Engineer permit requirements, we must include landowner approval when submitting the *Application for Permit to Drill* (WR-07).
Please let me know if you require any other permitting or compliance items in addition to this email approval before we begin work.

Gunner 8 Federal #008H FL
Unit Letter M, Section 8, Township 26 South, Range 34 East
Lea County, New Mexico
Incident Identification (ID) NAPP2400930878
Approximate Release Location: 32.052130°,-103.498346°
Date Release Discovered: 12/21/2023
Volume Released: Approximately 2 barrels (bbls) of produced water were released of which 1 bbl was recovered.
Release in pasture

OSE DIT APR 19 2024 AM 11:23

Christian Llull, P.G. | Program Manager
Mobile **+1 (512) 565-0190** | christian.llull@tetratech.com

Tetra Tech | *Leading with Science®* | OGA
8911 N. Capital of Texas Highway | Bldg. 2, Suite 2310 | Austin, TX 78759 | tetratech.com

Coordinates

UTM - NAD 83 (m) - Zone 13

Easting 641659.540

Northing 3547317.428

State Plane - NAD 83 (f) - Zone E

Easting 799683.885

Northing 384090.808

Degrees Minutes Seconds

Latitude 32 : 3 : 11.548800

Longitude -103 : 29 : 58.077600

Location pulled from Coordinate Search

NEW MEXICO OFFICE OF THE STATE ENGINEER

1:2,257

N

4/29/2024

Office of the State Engineer
Interstate Stream Commission

Spatial Information

Land Grant: Not in Land Grant

County: Lea

Groundwater Basin: Carlsbad

Abstract Area:
Carlsbad 72-12-1
Carlsbad Underground Basin

Regulation Area:

Carlsbad/Capitan/Lea Closure

PLSS Description

SWNWSWSW Qtr of Sec 08 of 026S 034E

Derived from CADNSDI- Qtr Sec. locations are calculated and are only approximations

Parcel Information

UPC/DocNum:

Parcel Owner:

Address:null null null

Legal:

POD Information

Owner:

File Number:

POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose:

Coord Search Location

Water Right Regulations

Closure Area

OSE District Boundary

Bernalillo County Parcels 2023

Catron County Parcels 2023

Chaves County Parcels 2023

Cibola County Parcels 2023

Colfax County Parcels 2023

Curry County Parcels 2023

De Baca County Parcels 2023

Doña Ana County Parcels 2023

Eddy County Parcels 2023

Grant County Parcels 2023

Guadalupe County Parcels 2023

Harding County Parcels 2023

Hidalgo County Parcel 2023

Lea County Parcels 2023

Lincoln County Parcels 2023

Los Alamos County Parcels 2023

Luna County Parcels 2023

McKinley County Parcels 2023

Mora County Parcels 2023

Otero County Parcels 2023

Quay County Parcels 2023

Rio Arriba County Parcels 2023

Roosevelt County Parcels 2023

Sandoval County Parcels 2023

San Juan County Parcels 2023

San Miguel County Parcels 2023

Santa Fe County Parcels 2023

Sierra County Parcels 2023

Socorro County Parcels 2023

Taos County Parcels 2023

Torrance County Parcels 2023

Union County Parcels 2023

Valencia County Parcels 2023

Mike A. Hamman, P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 759161
File Nbr: C 04827

Apr. 29, 2024

CHRISTIAN LLULL
TETRA TECH ON BEHALF OF CONOCO PHILLIPS
8911 N CAPITAL OF TEXAS HIGHWAY
BLDG.2 SUITE 2319
AUSTIN, TX 78759

Greetings:

Your approved copy of the above numbered permit to drill a well for non-consumptive purposes is enclosed. You must obtain an additional permit if you intend to use the water. It is your responsibility to provide the contracted well driller with a copy of the permit that must be made available during well drilling activities.

Carefully review the attached conditions of approval for all specific permit requirements.

* If use of this well is temporary in nature and the well will be plugged at the end of the well usage, the OSE must initially approve of the plugging. If plugging approval is not conditioned in this permit, the applicant must submit a Plugging Plan of Operations for approval prior to the well being plugged. The Plugging Record must be properly completed and submitted to the OSE within 30 days of the well plugging.

* If the final intended purpose and condition requires a well ID tag and meter installation, the applicant must immediately send a completed meter report form to this office.

* The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole.

* This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us.

Sincerely,

Rodolfo Chavez
(575)622-6521

Enclosure

explore

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: C-4827-P001

Name of well owner: Tetra Tech Inc. on Behalf of ConocoPhillips

Mailing address: 8911 N. Capital of Texas Highway, Bldg. 2 Suite 2310 County:

City: Austin State: Texas Zip code: 78759

Phone number: 512-565-0190 E-mail: christian.llull@tetratech.com

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: John Scarborough Drilling Inc.

New Mexico Well Driller License No.: WD1188 Expiration Date: 3/31/2026

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32.053208° deg, -103.49946 min, _____ sec
Longitude: _____ deg, _____ min, _____ sec, NAD 83

2) Reason(s) for plugging well(s): OSE DII APR 19 2024 AM 11:24

Completion of monitoring period

3) Was well used for any type of monitoring program? Yes If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? UNK If yes, provide additional detail, including analytical results and/or laboratory report(s): Unknown

5) Static water level: UNK feet below land surface / feet above land surface (circle one)

6) Depth of the well: 105 feet

7) Inside diameter of innermost casing: 2 inches.

8) Casing material: Sch. 40 PVC

9) The well was constructed with:

☐ an open-hole production interval, state the open interval: _____

■ a well screen or perforated pipe, state the screened interval(s): 15-25

10) What annular interval surrounding the artesian casing of this well is cement-grouted? _____

11) Was the well built with surface casing? NA If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? NA If yes, please describe:

Temporary Well

12) Has all pumping equipment and associated piping been removed from the well? _____ If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

☐ **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

Tremie Type 1 Cement-Bentonite Slurry from bottom of boring to ground level.

2) Will well head be cut-off below land surface after plugging? NA Temporary

OSE DII APR 13 2024 AM 11:24

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 17.13 ga lbns

4) Type of Cement proposed: Type 1 Cement-Bentonite

5) Proposed cement grout mix: 5.2 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

x mixed on site

7) Grout additives requested, and percent by dry weight relative to cement:

N/A

8) Additional notes and calculations:

N/A

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

N/A

VIII. SIGNATURE:

I, CHRISTIAN LLULL, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

Signature of Applicant — Date: 4/4/24

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

OSE DII APR 19 2024 AM 11:24

X Approved subject to the attached conditions.

_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 23rd day of April 2024.

Mike A. Hamman P.E.

_____., New Mexico State Engineer

By: K. Parekh

Kashyap Pare

Water Resources Manager I

WD-08 Well Plugging Plan
Version: March 07, 2022
Page 3 of 5

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			0
Bottom of proposed interval of grout placement (ft bgl)			30
Theoretical volume of grout required per interval (gallons)			17.13
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			5.2
Mixed on-site or batch-mixed and delivered?			on-site
Grout additive 1 requested			
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested			OSE OIL APR 19 2024 AM 11:25
Additive 2 percent by dry weight relative to cement			

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

OSE OIL APR 19 2024 AM 11:25

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL

Mike A. Hamman, P.E.
State Engineer

DISTRICT II
1900 West Second St.
Roswell, New Mexico 88201
Phone: (575) 622-6521
Fax: (575) 623-8559

April 23, 2024

Tetra Tech Inc. on behalf of Conoco Phillips
8911 N. Capital of Texas Highway, Bldg 2, Suite 2310
Midland, TX 79701

RE: Well Plugging Plan of Operations for well No C-4827-POD1

Greetings:

Enclosed is your copy of the Well Plugging Plan of Operations for the above referenced well subject to the attached Conditions of Approval. The proposed method of operation is found to be acceptable and in accordance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted June 30, 2017 by the State Engineer. subject to the attached Conditions of Approval.

Within 30 days after the well is plugged, the well driller is required to file a complete plugging record with the OSE and the permit holder.

Sincerely,

K. Parekh

Kashyap Parekh
Water Resources Manager I

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL
1900 West Second St.
Roswell, New Mexico 88201
Phone: (575) 622-6521
Fax: (575) 623- 8559

Applicant has identified a well, listed below, to be plugged. John Scarborough Drilling Inc. (WD-1188) will perform the plugging.

Permittee: Tetra Tech Inc on behalf of Conoco Phillips
NMOSE Permit Number: C-4827-POD1

NMOSE File	Casing diameter (inches)	Well depth (feet bgl)	Approximate static water level (feet bgl)	Latitude	Longitude
C-4827-POD1	2.0	105	Unknown	32.053208°	103.49946°

Specific Plugging Conditions of Approval for Well located in Lea County.

1. Water well drilling and well drilling activities, including well plugging, are regulated under 19.27.4 NMAC, which requires any person engaged in the business of well drilling within New Mexico to obtain a Well Driller License issued by the New Mexico Office of the State Engineer (NMOSE). Therefore, the firm of a New Mexico licensed Well Driller shall perform the well plugging.

2. Theoretical volume of sealant required for abandonment of the 2.0 inch diameter (I.D.) casing is approximately 17.12 gallons. Total minimum volume of necessary sealant shall be calculated upon sounding the actual pluggable depth of well, which is estimated at 105 feet below ground surface (b.g.s.).

3. The cement-bentonite slurry (bentonite powder) shall be mixed using a maximum of 5.2 gallons water per 94-lb sack of Type I/II Portland cement **PLUS** 0.65 gallons per 1% increase in bentonite up to a maximum 6% bentonite by dry weight ratio.

4. The bentonite shall be hydrated separately with its required increments of water prior to being mixed into the cement slurry.

5. Placement of the sealant within the wells shall be by pumping through a tremie pipe extended to near well bottom and kept below top of the slurry column as the well is plugged from bottom-upwards in a manner that displaces the standing water column.

6. Should cement "shrinks-back" occur in the well, use of a tremie for topping off is required for cement placement deeper than 20 feet below land surface or if water is present in the casing. The approved sealant for topping off is identified in condition 3. of these Specific Conditions of Approval.

7. Any open annulus encountered surrounding the casing shall also be sealed by the placement of the approved sealant. When plugging shallow wells with no construction or environmental concerns, and if the well record on a well to be plugged shows a proper 20-foot annular seal, a plugging plan can propose the use of clean fill material to a nominal 30 feet bgs, then placing an OSE approved sealant to surface. Lacking that information, we would require an excavation of at least 2-feet which shall then be filled in its entirety with sealant to surface.

8. Should the NMED, or another regulatory agency sharing jurisdiction of the project authorize, or by regulation require a more stringent well plugging procedure than herein acknowledged, the more-stringent procedure should be followed. This, in part, includes provisions regarding pre-authorization to proceed, contaminant remediation, inspection, pulling/perforating of casing, or prohibition of free discharge of any fluid from the borehole during or related to the plugging process.

9. NMOSE witnessing of the plugging of the non-artesian well will not be required.

10. Any deviation from this plan must obtain an approved variance from this office prior to implementation.

11. A Well Plugging Record itemizing actual abandonment process and materials used shall be filed with the State Engineer within 30 days after completion of well plugging. For the plugging record, please resurvey coordinate location for well and note coordinate system for GPS unit. Please attach a copy of these plugging conditions.

The NMOSE Well Plugging Plan of Operations is hereby approved with the aforesaid conditions applied.

Witness my hand and seal this 23rd day of April 2024

Mike A. Hamman, P.E. State Engineer

By: K. Parekh

Kashyap Parekh
Water Resources Manager I

U.S. Fish and Wildlife Service

National Wetlands Inventory

Jayhawk 7 CTB 3

Nearest Flowing Watercourse - Red Bluff Reservoir

Distance - 24.8 miles (130,764 feet)

January 7, 2025

Wetlands

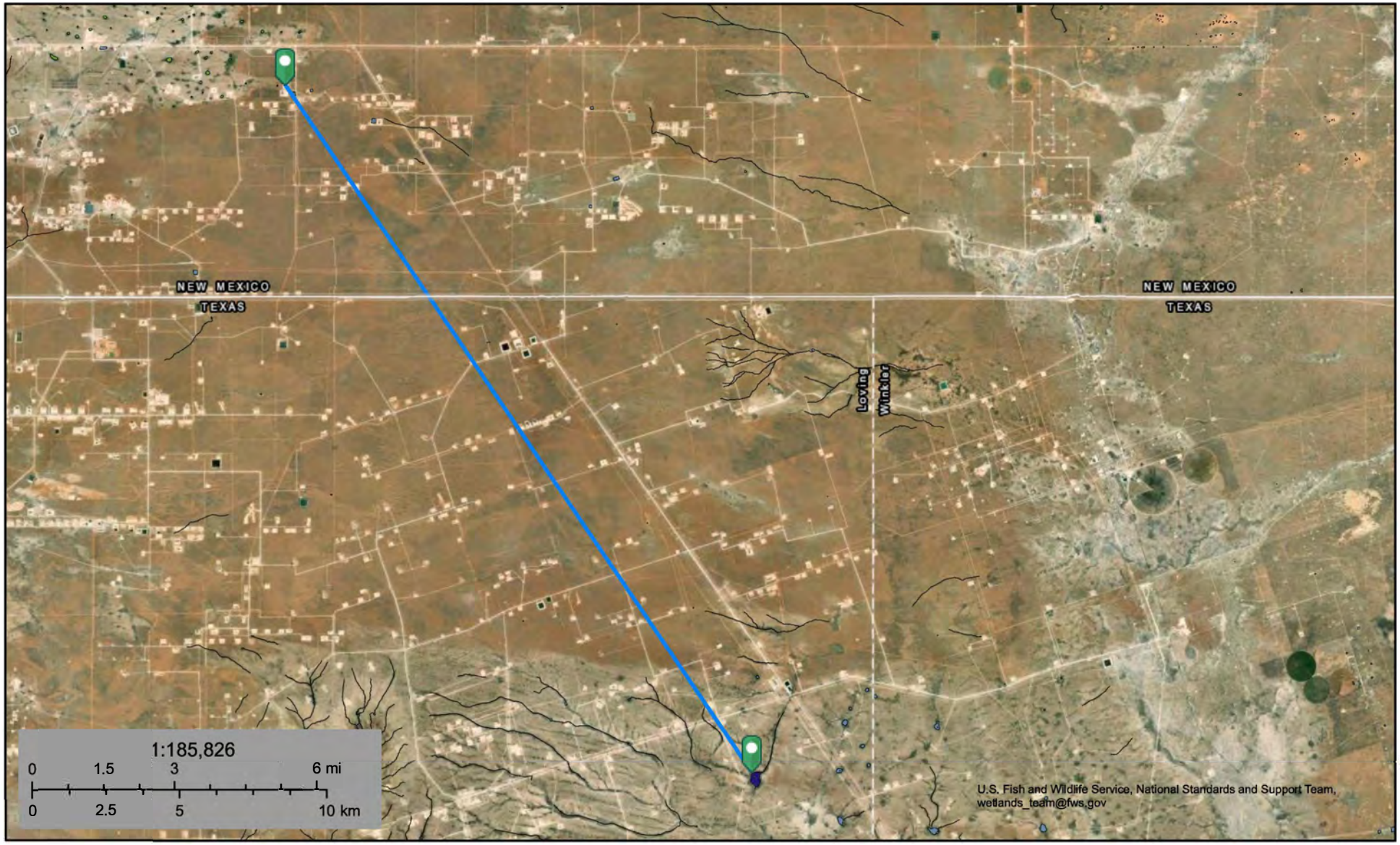
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish and Wildlife Service
National Wetlands Inventory

Jayhawk 7 CTB 3
Nearest Lakebed
Distance - 14.8 miles (78,273 feet)



January 7, 2025

Wetlands

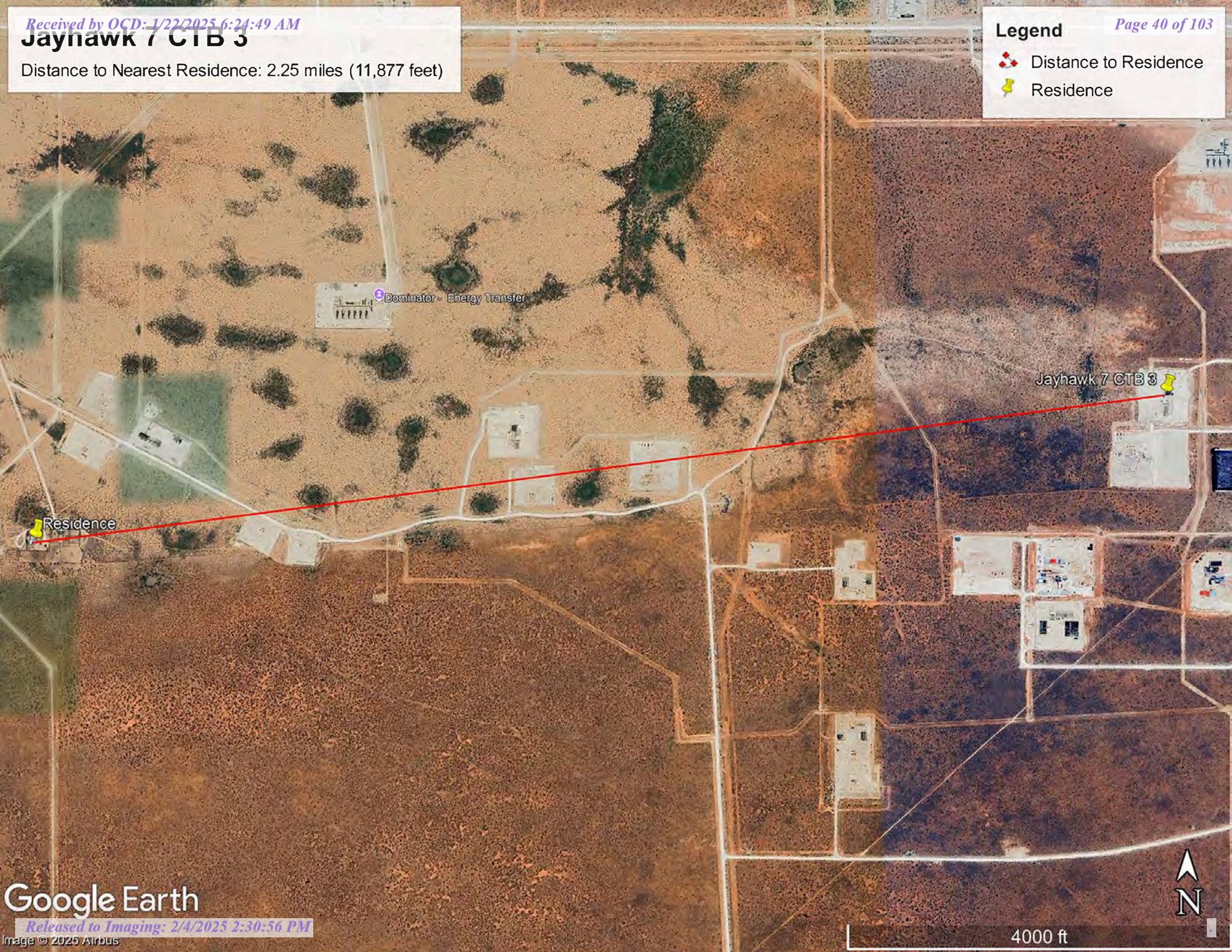
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Jayhawk 7 CTB 3

Distance to Nearest Residence: 2.25 miles (11,877 feet)



Jayhawk 7 CTB 3 - Nearest Freshwater Well (stock watering)

1/9/2025, 5:51:36 PM

Override 1

GIS WATERS PODs

Active

Distance to Pod: 0.73 miles (3,863 feet)

1:9,028

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

Esri, HERE, iPC, Esri, HERE, Garmin, iPC, Maxar

File No. C-2295

NEW MEXICO OFFICE OF THE STATE ENGINEER

CHANGE OF OWNERSHIP OF WATER RIGHT (NON-72-12-1) FOR (check one):

Important: Acceptance of the form for filing by the State Engineer does not constitute verification of the right conveyed.

☐ **Individual**	☐ **Corporation**
☐ **Trustee**	☐ **Partnership**
☐ **Estate**	☒ **Limited Liability Co.**

1. OWNER OF RECORD (Seller)

Name: Dinwiddie Cattle Company, LLC		Name:	
Phone: Phone (Work):	☐ Home ☐ Cell	Phone: Phone (Work):	☐ Home ☐ Cell
a. Owner of Record File No: C-2295		**b.** Sub-file No.:	**c.** Cause No.:

2. NEW OWNER (Buyer) Note: If more owners need to be listed, attach a separate sheet. Attached? ☐ Yes

Name: Intrepid Potash-New Mexico, LLC		Name:	
Contact or Agent: Katie Keller	check here if Agent ☐	Contact or Agent:	check here if Agent ☐
Mailing Address: 1001 17th Street, Suite 1050		Mailing Address:	
City: Denver		City:	
State: Colorado	Zip Code: 80202	State:	Zip Code:
Phone: Phone (Work): (303) 996-6160	☐ Home ☐ Cell	Phone: Phone (Work):	☐ Home ☐ Cell
E-mail (optional):		E-mail (optional):	

Required: Submit warranty deed(s) or other instrument(s) of conveyance properly recorded with the county clerk's office.

3. PURPOSE OF USE & AMOUNT CONVEYED

Check all that apply: ☐ Domestic ☐ Industrial ☒ Livestock ☐ Commercial ☐ Irrigation ☐ Other Uses (specify): _____ ☐ Municipal	Amount of Water (acre-feet per annum): If more details are needed, type "See Comments" in "Other" field below, and explain in Additional Statements Section. Diversion: 3.0 Consumptive Use: 3.0 Other (include units): _____
Owner of record has conveyed all or part of said right (please check one) ☒ All ☐ Part	

FOR OSE INTERNAL USE — Change of Ownership, Form wr-02, Rev 11/15/17

File No.: C-2295	Trn. No.: 652904	Well Tag ID No. (if applicable): N/A	
Trans Desc. (optional): COWNF		Sub-Basin: CUB	Receipt No.: 2-40883

4. LIST ALL KNOWN POINT(S) OF DIVERSION (POD) FOR THE WATER RIGHT CONVEYED

OSE POD No.	Well Tag ID No.	Subdivision and/or Lat/Long or Easting/Northing	Section	Township	Range
C -2295		NE NE SE	12	26S	33E

Check all that apply: ☒ Well ☐ Pump ☐ Ditch Name _____ ☐ River Course _____

5. PLACE(S) OF USE (list each individually)

a. NA Acres of Irrigated Land Described as Follows (applicable to irrigation use only):

b. Legally Described By: ☐ Public Land Survey System (PLSS) ☐ Hydrographic Survey Report or Map ☐ Irrigation or Conservation District Map ☐ Subdivision PLSS Quarters or Halves, **and/or** Name of Hydrographic Survey or District, **and/or** Name and County of Subdivision	c. PLSS Section **and/or** Map No. **and/or** Lot No.	d. PLSS Township **and/or** Tract No. (Please list each tract individually) **and/or** Block No.	e. PLSS Range	f. Acres	g. Priority
					12/31/1949

h. Other description relating place of use to common landmarks, streets, or other:
Well is located on property commonly known as the Dinwiddie Ranch.

i. Place of use is on land owned by:

j. Are there other sources of water for these lands? No ☐ Yes ☐ If yes, describe by OSE file number:

Note: If on Federal or State Land, please provide copy of lease

6. ADDITIONAL STATEMENTS OR EXPLANATIONS

Water Rights deed of conveyance is attached.

FOR OSE INTERNAL USE Change of Ownership, Form wr-02, Rev 11/15/17

File No.: C-2295	Trn. No.: 652904	Well Tag ID No. (if applicable): N/A
Trans Desc. (optional): COWNF	Sub-Basin: CUB	Receipt No.: 2-40888

7. CONSENT TO LAWFUL CHANGE IN PLACE AND/OR PURPOSE OF USE

(to be completed only if it is an irrigation water right and has been conveyed separate from the land to which it was appurtenant.)

(I, We) the above owner(s) of record, hereby consent to a lawful change in the place and/or purpose of use of the above-described water right:

Signature Signature

ACKNOWLEDGEMENT FOR INDIVIDUAL

I, We (name of owner(s)), _____
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Signature Signature

State of _____)
ss.
County of _____)

This instrument was acknowledged before me this _____ day of _____ A.D., 20 _____, by (name of owner(s)):

Notary Public: _____
My commission expires: _____

ACKNOWLEDGEMENT FOR CORPORATION

I, We (name of owner(s)). Margaret McCandless
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Margaret E. McCandless
Officer Signature Officer Signature

State of Colorado)
ss.
County of Denver)

This instrument was acknowledged before me this 17th day of May A.D., 20 19, by the following on behalf of said corporation.

Name of Officer: Margaret McCandless
Title of Officer: VP & General Counsel and Corporate Secretary
Name of Corporation Acknowledging: Intrepid Potash-New Mexico, LLC
State of Corporation: New Mexico

YOLANDA M BARRIENTOS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20044032943
MY COMMISSION EXPIRES SEPTEMBER 15, 2020

Notary Public: Yolanda M. Barrientos
My commission expires: 9/15/2020

FOR OSE INTERNAL USE Change of Ownership, Form wr-02, Rev 11/15/17

File No.: C-2295	Trn. No.: 652904	Well Tag ID No. (if applicable): N/A
Trans Desc. (optional): COWNF		Sub-Basin: CUB Receipt No. 2-40883

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BY CRESLEY SPEARS

WARRANTY DEED

DINWIDDIE CATTLE COMPANY, LLC, a New Mexico limited liability company ("***Grantor***"), for consideration paid, grants and assigns, subject to the express reservations and restrictions below, to INTREPID POTASH-NEW MEXICO, LLC, a New Mexico limited liability company, having an address of c/o Intrepid Potash Inc., 1001 17th Street, Suite 1050, Denver, CO 80202 ("***Grantee***"), an undivided one hundred (100%) percent interest, the following:

(a) that certain real property more particularly described on Exhibit A attached hereto and by this reference made a part hereof (the "***Fee Land***"), together with any and all rights of any kind or character appurtenant thereto;

(b) all structures, buildings, and other improvements, and any fixtures and systems, including windmills, tanks, barns, pens, fences, gates, sheds, outbuildings and corrals (collectively, the "***Improvements***"), located on the Fee Land, including those Improvements identified on Schedule 1 to Exhibit A;

(c) the wells, tanks, booster stations, generators and pumping facilities (collectively, the "***Facilities***") located on the Fee Land, including those Facilities identified on Schedule 2 to Exhibit A;

(d) all flow lines, pipelines, gathering systems, meters and appurtenances thereto constituting a part of the Facilities or used or held for use in connection with the operation of the Facilities (collectively, the "***Pipelines***") located on the Fee Land, including those Pipelines identified on Schedule 3 to Exhibit A;

(e) all pits for storage of groundwater ("***Freshwater Storage Pits***") located on the Fee Land, including those identified on Schedule 4 to Exhibit A;

(f) all wells utilized to dispose of produced water recovered as a byproduct of oil and gas exploration and production ("***SWD Wells***") located on the Fee Land, including those identified on Schedule 5 to Exhibit A;

(g) the right to drill disposal wells to any depth beneath the surface, including a permanent easement for use (collectively, the "***Disposal Rights***"), on the Fee Land, for the purpose of injecting produced water from oil and gas wells located either on or off the Fee Land;

(h) all easements, rights-of-way, servitudes, and other rights, privileges, and appurtenances (collectively, the "***Easements***") on or appurtenant to the Fee Land;

(i) all metallic and non-metallic minerals and mineral substances that are commonly mined or quarried by surface mining methods and/or used for industrial, building or construction purposes, including clay, limestone, building stone, all other stone, aggregate, soil, near-surface coal, near surface lignite, sand, gravel, caliche, and near-surface shale, to the extent, and including as, part of the surface estate thereof or as part of the mineral estate thereof, including any severed or unsevered interest of Grantor therein, together with all of Grantor's rights of ingress and egress thereto and therefrom (the "***Asset Minerals***"), in, on or under the Fee Land;

(j) all wind rights and solar rights of any kind or character, including all such rights that are choate, inchoate, vested, unvested, harvested, unharvested, captured, uncaptured, reduced to possession, not reduced to possession, appropriated, unappropriated, used or useful for the generation of electricity or production of heat or not so used or useful, or applied to beneficial use or not so applied (the "***Wind and Solar Rights***"), appurtenant, on or relating to the Fee Land,

BUT SUBJECT TO, all reservations, restrictions, encumbrances and other matters set forth on Exhibit B, **with warranty covenants.**

FOR THE SAME CONSIDERATION, Grantor does hereby assign to Grantee the following (including all after-acquired title of Grantor):

(a) the agricultural leases issued by Commissioner of Public Lands, State of New Mexico described in Exhibit C attached hereto and by this reference made a part hereof (the "***State Leases***"), as well as a leasehold estate in the real property described in Exhibit C, pursuant and subject to the State Leases (the "***State Lease Land***");

(b) all Improvements, Facilities, Pipelines, Water Rights, Freshwater Storage Pits, SWD Wells, Disposal Rights (with respect to produced water from oil and gas wells located either on or off the State Lease Land), Easements, Asset Minerals, and Wind and Solar Rights appurtenant, on or relating to the State Lease Land;

(c) all licenses and permits from governmental authorities, and any amendments thereto, which are directly or indirectly related to or connected with the Fee Land and the State Lease Land (and the Improvements located on such Fee Land and State Lease Land), the Water Rights, the Asset Minerals, and any other assets conveyed herein, or the development or use of any of the foregoing,

with special warranty covenants.

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FOR THE SAME CONSIDERATION, Grantor does hereby assign to Grantee all Grantor's interests (including all after-acquired title of Grantor) in all water rights appurtenant to, associated with, held, used or useful in connection with, or with points of diversion and/or places of use on the Fee Land or the State Lease Land (collectively, the "***Water Rights***").

Grantor is not making any warranties of any kind or character, express or implied, with respect to the Water Rights.

EXCLUDING from said conveyance any and all pipelines, flow lines, gathering systems, meters, and appurtenances owned by third parties;

SAVE AND EXCEPT FROM THIS CONVEYANCE AND RESERVING TO GRANTOR:

1. **Mineral Estate Reservation:** All right, title and interest, in and to the oil, gas and other hydrocarbons, whether in liquid or gaseous form, and other minerals in, on, or under and that may be produced from the Fee Land, and not previously reserved, including any interest therein of any kind or character, and any rights appurtenant thereto of any kind or character, including, but not limited to, all executive and leasing rights therein, EXCEPTING the Asset Minerals and appurtenant rights thereto which are conveyed by this Warranty Deed to Grantee, *provided, that*, Grantor agrees that Grantor's implied easement to explore for and produce the non-hydrocarbon reserved minerals will not be exercised in any manner which interferes in any way with the operations of Grantee; and

2. **SWD Royalty Reservation:**

a. Unless and until Grantee enters into any Adjacent Disposal Venture, as defined below, a 10% royalty, proportionally reduced as to Grantee's interests, on Grantee's undivided interest share of all saltwater disposal revenue received by Grantee from any salt water disposal wells developed from and after the Execution Date on any portion of the Fee Land or the Lease Land, as defined below; and

b. From and after the date that Grantee enters into any Adjacent Disposal Venture, a 10% royalty, proportionally reduced as to Grantee's interests, on Grantee's undivided interest share of all saltwater disposal revenue received by Grantee from any salt water disposal wells developed from and after the Execution Date on any portion of the Fee Land, Lease Lands, Beckham Ranch, described below, and/or McCloy Ranch, described below, (in each case, to the extent covered by the Adjacent Disposal Venture) pursuant to and in accordance with such Adjacent Disposal Venture.

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Whether or not Grantee has entered into any Adjacent Disposal Venture, and notwithstanding anything to the contrary herein, the SWD Royalty shall (A) expire and terminate without any other action by Grantor or Grantee on the date that is 20 years following the Execution Date, and (B) explicitly exclude any and all revenues arising from that certain Saltwater Disposal Lease and Easement Agreement dated February 1, 2014, by and between Grantor and BC&D Operating, Inc., covering a portion of the Land comprising Township 25 South, Range 36 East, Section 17: NE/4 located in Lea County, New Mexico, as amended.

As used in this Reservation, the following terms have the following meanings:

"***Adjacent Disposal Venture***" means any joint venture, joint development arrangement, or other similar contractual relationship between (a) Grantee, its successors and assigns, on the one hand, and (b) the owner(s) of the Beckham Ranch and/or McCloy Ranch, on the other hand, that is entered into in order to exploit, develop and market the Disposal Rights granted to Grantee under this Warranty Deed and any similar rights underlying the Beckham Ranch and/or McCloy Ranch. Notwithstanding anything in the foregoing to the contrary, for purposes of defining the SWD Royalty, the term "Adjacent Disposal Venture" shall only cover the Disposal Rights granted to Grantee under this Warranty Deed and similar rights (and revenues therefrom) with respect to the Fee Land, the Lease Lands, the Beckham Ranch, and/or the McCloy Ranch, as applicable, and not any other assets or rights that may be held by Grantee or such owner(s) of the Beckham Ranch and/or McCloy Ranch.

"***Beckham Ranch***" means the geographic area situated in Lea County, New Mexico generally described and depicted on the map attached as Exhibit D hereto.

"***McCloy Ranch***" means the geographic area situated in Lea County, New Mexico generally described and depicted on the map attached as Exhibit E hereto.

"***Lease Lands***" means the State Lease Land and the leasehold estate in, or other interest in or right to, the real property subject to the Bureau of Land Management grazing allotment permits described on Exhibit F hereto.

To the extent permitted by law, Grantee shall be subrogated to Grantor's rights in and to representations, warranties and covenants given by others with respect to the interests conveyed herein, and Grantor hereby grants and transfers to Grantee, its successors and assigns, in the same undivided percentages referenced above and to the extent so transferable and permitted by law, the benefit of and the right to enforce the covenants, representations and warranties, if any, which Grantor is entitled to enforce with respect to said interests.

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This Warranty Deed is expressly made subject to the terms and conditions of that certain Purchase and Sale Agreement, dated February 5, 2019, by and among Grantor, Sherbrooke Partners LLC ("***Sherborroke***") and Grantee (as such may be amended and/or modified from time to time, the "***Purchase and Sale Agreement***") (which terms and conditions shall control in the event of a conflict with the terms and conditions of this Warranty Deed). Prior to the Execution Date hereof, Sherbrooke has assigned all of its rights in and to the Purchase and Sale Agreement to Grantee. The Purchase and Sale Agreement contains certain representations, warranties, covenants, indemnities and agreements between the parties, some of which may survive the delivery of this Warranty Deed, as more particularly provided for therein, but third parties may conclusively rely on this Warranty Deed to vest title to the Real Property in Grantee as described herein.

[Signature and Acknowledgement Page Follows]

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IN WITNESS WHEREOF, Grantor and Grantee have caused these presents to be executed as of this 1st day of May, 2019 (the "***Execution Date***"), by its duly authorized agent, but effective for all purposes as of 12:00 A.M., Mountain Standard Time, on March 1, 2019.

GRANTOR:

DINWIDDIE CATTLE COMPANY, LLC,
a New Mexico limited liability company

By: _____
John Thomas (Tommy) Dinwiddie
Managing Member

STATE OF NEW MEXICO)
)
COUNTY OF LEA)

This instrument was acknowledged before me on May 1, 2019, by John Thomas (Tommy) Dinwiddie, as Managing Member of Dinwiddie Cattle Company, LLC, a New Mexico limited liability company.

_____
Notary Public

(Seal, if any)

My Commission Expires: OFFICIAL SEAL
Amanda Baker
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 10-9-21

[Signature and Acknowledgment Page to Warranty Deed]

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GRANTEE:

INTREPID POTASH – NEW MEXICO, LLC,
a New Mexico limited liability company

By: _____
Robert P. Jornayvaz III
President and Chief Executive Officer

STATE OF NEW MEXICO)
) ss.
COUNTY OF LEA)

This instrument was acknowledged before me on May 1, 2019, by Robert P. Jornayvaz III, as President and Chief Executive Officer of Intrepid Potash – New Mexico, LLC, a New Mexico limited liability company.

_____
Notary Public

(Seal, if any)

My Commission Expires:

OFFICIAL SEAL
Amanda Baker
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 6-7-21

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[Signature and Acknowledgment Page to Warranty Deed]

EXHIBIT A

ATTACHED TO AND MADE A PART OF THAT CERTAIN WARRANTY DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

FEE LAND

TOWNSHIP 25 SOUTH, RANGE 33 East, N.M.P.M., LEA COUNTY, NEW MEXICO:
Section 33: SW¼, W½E½
Section 34: E½SE¼
Section 35: S½NW¼, SW¼, W½SE¼

TOWNSHIP 26 SOUTH, RANGE 33 East, N.M.P.M., LEA COUNTY, NEW MEXICO:
Section 3: E½NE¼, SE¼, NW¼, E½SW¼, W½SW¼
Section 4: N½, N½S½, S½S½
Section 10: NW¼, NE¼, E½SW¼, W½SE¼
Section 11: W½
Section 12: S½NE¼, SE¼
Section 14: W½

TOWNSHIP 25 SOUTH, RANGE 34 East, N.M.P.M., LEA COUNTY, NEW MEXICO:
Section 13: NE¼, W½NW¼, NE¼NW¼
Section 24: S½NE¼, SE¼

TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO:
Section 5: W½SW¼, N½N½, S½NW¼
Section 6: E½

TOWNSHIP 25 SOUTH, RANGE 35 East, N.M.P.M., LEA COUNTY, NEW MEXICO:
Section 1: All
Section 12: NW¼NE¼, S½NE¼, NE¼SW¼, E½NW¼, N½SE¼, LESS AND EXCEPT A Parcel of land situated in Section 12, Township 25 South, Range 35 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows: Beginning at the Northeast corner of the parcel of land herein described being a point 75.00 feet to the left of, northerly and opposite Construction Centerline Station 1877+60.31 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, said point being on the line common to Section 12, T25S, R35E, and Section 7, T25S, R36E, NMPM, whence the Quarter Section Corner common to Section 12, T25S, R35E, and Section 7, T25S, R36E bears N00°29'00"W, 197.73 feet distance; thence, S00°29'00"E, 79.00 feet distance to a point on the Centerline Station 1877+85.12 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, S00°29'00"E, 26.15 feet distance to the southeast corner of the parcel of land herein described being a point on the existing northerly right-of-way line of N.M. Project S-1271(1); thence, N 72°10'57"W, 4,167.36 feet distance to the southwest corner of the parcel of land herein described; thence N00°29'57"W, 26.27 feet distance to a point on the Centerline Station 1836+17.71 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, N00°29' 57"W, 79.00 feet distance to the northwest corner of the parcel of land

EXHIBIT A

ATTACHED TO AND MADE A PART OF THAT CERTAIN WARRANTY DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

FEE LAND

herein described; thence, S72°10'51"E, 4,167.43 feet distance to the Point of Beginning of the parcel of land herein described, said tract referenced in Warranty Deed filed October 14, 2008, in Book 1604, Page 922, Lea County Records, Lea County, New Mexico.

Section 13: S½
Section 14: S½SE¼, NE¼SE¼
Section 17: N½, N½SW¼, SE¼
Section 18: S½NE¼
Section 20: N½NE¼
Section 21: NW¼
Section 23: E½
Section 24: W½, NE¼, N½SE¼
Section 27: SW¼
Section 28: SE¼
Section 33: NE¼
Section 34: NW¼

TOWNSHIP 24 SOUTH, RANGE 36 East, N.M.P.M., LEA COUNTY, NEW MEXICO:

Section 31: N½, W½SW¼

TOWNSHIP 25 SOUTH, RANGE 36 East, N.M.P.M., LEA COUNTY, NEW MEXICO:

Section 4: All
Section 5: All
Section 6: All
Section 7: W½NE¼, SE¼, NW¼, LESS AND EXCEPT A Parcel of land situated in the SE¼ of Section 7, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows: Beginning at the northeast corner of the parcel of land herein described being a point 75.00 feet to the left of, northerly and opposite Construction Centerline Station 1933+20.00 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, said point being on the line common to Sections 7 and 8, T25S, R36E, NMPM, whence the Quarter Section Corner common to Sections 7 and 8, T25S, R36E bears N00°28'22"W, 1,924.28 feet distance; thence, S00°28'22"E, 78.99 feet distance to a point on the Centerline Station 1933+44.80 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, S00°28'22"E, 25.98 feet distance to the southeast corner of the parcel of land herein described being a point on the existing northerly right-of-way line of N.M. Project S-1271 (I); thence, N 72°10'57"W, 2,782.07 feet distance to the southwest corner of the parcel of land herein described; thence, N00°22'04"W, 26.05 feet distance to a point on the Centerline Station 1905+62.75 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, N00°22'04"W, 78.94 feet distance to the northwest

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EXHIBIT A

ATTACHED TO AND MADE A PART OF THAT CERTAIN WARRANTY DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

FEE LAND

corner of the parcel of land herein described; thence, S72°10'51"E, 2,781.90 feet distance to the Point of Beginning of the parcel of land herein described, said tract being referenced on that certain Warranty Deed filed in Book 1604, Page 925, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

Section 8: All, LESS AND EXCEPT A Parcel of land situated in Section 8, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows: Beginning at the northwest corner of the parcel of land herein described being a point 75.00 feet to the left of, northerly and opposite Construction Centerline Station 1933+20.00 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, said point being on the line common to Sections 7 and 8, T25S, R36E, NMPM, whence the Quarter Section Corner common to Sections 7 and 8, T25S, R36E bears N00°28'22"W, 1,924.28 feet distance; thence, S72°10'51"E, 125.70 feet distance to the point of curvature; thence, Southeasterly, 3,601.12 feet distance along the arc of a 00°30'27" degree curve bearing to the left (said arc having a radius of 11,290.00 feet, a central angle of 18°16'31" and a chord which bears S81°19'07"E, 3,585.87 feet distance) to the point of tangency; thence, N89°32'38"E, 1,628.77 feet distance to the northeast corner of the parcel of land herein described being a point on the line common to Sections 8 and 9, T25S, R36E, NMPM ; thence, S00°29'31"E, 75.00 feet distance to a point on the Centerline Station 1986+99.56 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, S00°29'31"E, 23.15 feet distance to the southeast corner of the parcel of land herein described being the Section Corner common to Sections 8, 9, 16 and 17, T25S, R36E; thence, S89°28'12"W, 1,271.62 feet distance to a point on the existing northerly right-of-way line of N.M. project S-1271(1); thence, S89°32'36"W, 355.84 feet distance to the point of curvature; thence, Northwesterly 3634.43 feet distance along the arc of a 00°30'10" degree curve bearing to the right (said arc having a radius of 11,395.10 feet, a central angle of 18°16'28" and a chord which bears N81°19'11"W, 3619.05 feet distance) to the point of tangency; thence N72°10'57"W, 92.60 feet distance to the Southwest corner of the parcel of land herein described being a point on the line common to Sections 7 and 8, T25S, R36E; thence N00°28'22"W, 25.98 feet distance to a point on the Centerline Station 1933+44.80 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence N00°28'22"W, 78.99 feet distance to the point of beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 928, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

EXHIBIT A

ATTACHED TO AND MADE A PART OF THAT CERTAIN WARRANTY DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

FEE LAND

Section 9: All, LESS AND EXCEPT a Parcel of land situated in Section 9, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows:
Beginning at the northwest corner of the parcel of land herein described being a point 75.00 feet to the left of, northerly and opposite Construction Centerline Station 1986+99.51 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, said point being on the line common to Sections 8 and 9, T25S, R36E, NMPM, whence the Quarter Section Corner common to Sections 8 and 9, T25S, R36E bears N00°29'31"W, 2540.67 feet distance; thence N89°32'38"E, 5279.26 feet distance to the Northeast corner of the parcel of land herein described being a point on the line common to Sections 9 and 10, T25S, R36E, NMPM; thence S00°31'36"E, 75.00 feet distance to a point on the Centerline Station 2039+78.87 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence S00°31'36"E, 12.92 feet distance to the Southeast corner of the parcel of land herein described as being the Section corner common to Sections 9, 10, 15 and 16, T25S, R36E; thence S89°25'58"W, 2639.66 feet distance to the Quarter Section corner common to Sections 9 and 16, T25S, R36E; thence S89°25'58"W, 2,639.66 feet distance to the Southwest corner of the parcel of land herein described being the Section corner common to Sections 8, 9, 16 and 17, T25S, R36E; thence N00°29'31"W, 23.15 feet distance to a point on the Centerline Station 1986+99.56 of N.M. Project No. AC-GRIP-(TPM)-127(23)38; thence N00°29'31"W, 75.00 feet distance to the point of beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 934, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

Section 10: W½, LESS AND EXCEPT a Parcel of land situated in the SW1/4 of Section 10, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows: Beginning at the northwest corner of the parcel of land herein described being a point 75.00 feet to the left of, northerly and opposite Construction Centerline Station 2039+78.78 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, said point being on the line common to Sections 9 and 10, T25S, R36E, NMPM, whence the Quarter Section Corner common to Sections 9 and 10, T25S, R36E bears N00°31'36"W, 2,551. 77 feet distance; thence, N89°32'38"E, 2,642.51 feet distance to the northeast corner of the parcel of land herein described being a point on the north-south center line of Section 10, T25S, R36E; thence, S00°23'06"E, 75.00 feet distance to a point on the Centerline Station 2066+21.19 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, S00°23'06"E, 7.76 feet distance to the Southeast corner of the parcel of land herein described being the Quarter Section Corner common to Sections 10 and 15, T25S, R36E; thence,

EXHIBIT A

ATTACHED TO AND MADE A PART OF THAT CERTAIN WARRANTY DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

FEE LAND

S89°25'55"W, 2,642.30 feet distance to the southwest corner of the parcel of land herein described being the Section Corner common to Sections 9, 10, 15 and 16, T25S, R36E; thence, N00°31'36"W, 12.92 feet distance to a point on the Centerline Station 2039+78.87 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, N00°31' 36"W, 75.00 feet distance to the Point of Beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 940, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

Section 14: N½, LESS AND EXCEPT a Parcel of land situated in Section 14, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows:
Beginning at the northwest corner of the parcel of land herein described being a point on the line common to Sections 14 and 15, T25S, R36E, NMPM, a point 73.38 feet to the left of, northeasterly and opposite Construction Centerline Station 2093+28.20 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, whence the Quarter Section Corner common to Sections 10 and 11, T25S, R36E bears N00°31'31"W, 3,068.49 feet distance; thence, S55°16'31"E, 206.82 feet distance to the most easterly corner of the parcel of land herein described being a point on the existing northerly right-of-way line of N.M. Project S-1271(1); thence, N56°10'38"W, 204.57 feet distance to the southwest corner of the parcel of land herein described being a point on the line common to Sections 14 and 15, T25S, R36E N00°31'31"W, 3.94 feet distance to the northwest corner and Point of Beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 949, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation. AND FURTHER LESS AND EXCEPT a Parcel of land situated in Section 14, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows. Beginning at the southwest corner of the parcel of land herein described being a point on the line common to Sections 14 and 15, T25S, R36E, NMPM, a point 57.47 feet to the right of, southwesterly and opposite Construction Centerline Station 2094+17.64 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, whence the Quarter Section Corner common to Sections 14 and 15, T25S, R36E bears S00°31'31"E, 2,051.91 feet distance; thence, N00°31'31"W, 9.21 feet distance to the northwest corner of the parcel of land herein described being a point on the existing southerly right-of-way line of N.M. Project S-1271(1); thence, S56°10'38"E, 122.56 feet distance to the most easterly corner of the parcel of land herein described; thence, N59° 53'03"W,

EXHIBIT A

ATTACHED TO AND MADE A PART OF THAT CERTAIN WARRANTY DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

FEE LAND

117.61 feet distance to the southwest corner and Point of Beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 952, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

Section 15: S½, and being Tract Two as referenced on that certain Claim of Exemption Plat filed March 22, 2019, in Book 2, Page 558, Survey Records, Lea County, New Mexico.

Section 16: All, LESS AND EXCEPT a Parcel of land situated in Section 16, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows:
Beginning at the southwest corner of the parcel of land herein described being a point on the line common to Sections 16 and 17, T25S, R36E, NMPM, a point 24.78 feet to the right of, southerly and opposite Construction Centerline Station 1986+99.58 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38 and a point on the existing northerly right-of-way line of N.M. Project S-1271(1); thence, N00°29'31"W, 1.62 feet distance to the northwest corner of the parcel of land herein described being the Section Corner common to Sections 8, 9, 16 and 17, T25S, R36E; thence N89°25'58"E, 2639.66 feet distance to the Quarter Section corner common to Sections 9 and 16, T25S, R36E; thence N89°25'58"E, 2639.66 feet distance to the northeast corner of the parcel of land herein described being the Section Corner common to Sections 9, 10, 15 and 16, T25S, R36E; thence S00°29'56"E, 11.81 feet distance to the Southeast corner of the parcel of land herein described; thence S89°32'36"W, 5279.32 feet distance to the Southwest corner and point of beginning of the parcel of land herein described, said tract of land referenced in that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 937, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

Section 17: All, LESS AND EXCEPT a Parcel of land situated in Section 17, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows:
Beginning at the northeast corner of the parcel of land herein described being the Section Corner common to Sections 8, 9, 16 and 17, T25S, R36E, a point 23.15 feet to the right of, southerly and opposite Construction Centerline Station 1986+99.58 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, S00°29'31"E, 1.62 feet distance to the Southeast corner of the parcel of land herein described being a point on the existing Northerly right of way line of N.M. Project S-1271(1); thence S89°32'36"W, 1271.62 feet distance to the most westerly corner of the parcel of land herein described; thence N89°28'12"E,

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EXHIBIT A

ATTACHED TO AND MADE A PART OF THAT CERTAIN WARRANTY DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

FEE LAND

1271.62 feet distance to the point of beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 931, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC a New Mexico limited liability company to New Mexico Department of Transportation.

Section 18: Lots 3, 4, E½SW¼, NE¼, E½SE¼, W½SE¼
Section 19: NW¼
Section 20: All
Section 21: All
Section 22: All
Section 23: W½, W½E½
Section 25: A tract of land beginning at the Southwest corner of Section 25; thence North 363 feet; thence East 363 feet; thence South 363 feet and thence West 363 feet to the point of beginning.
Section 26: W½, W½NE¼, W½SE¼, W½E½SE¼
Section 35: All
Section 36: All

TOWNSHIP 26 SOUTH, RANGE 36 East, N.M.P.M., LEA COUNTY, NEW MEXICO:

Section 1: N½, SW¼, NW¼SE¼
Section 9: All – Less and Except that portion of said Section 9 described in that certain Warranty Deed filed June 6, 2016, in Book 2031, Page 11, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC to EOG Resources, Inc.
Section 10: All – Less and Except that portion of said Section 10 described in that certain Warranty Deed filed June 6, 2016, in Book 2031, Page 11, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC to EOG Resources, Inc.
Section 13: All
Section 24: All
Section 25: All
Section 36: All

TOWNSHIP 26 SOUTH, RANGE 37 East, N.M.P.M., LEA COUNTY, NEW MEXICO:

Section 6: S½ Lot 2 and All of Lot 3

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WATER RIGHTS AND PERMITS DEED

DINWIDDIE CATTLE COMPANY, LLC, a New Mexico limited liability company ("**Grantor**"), for consideration paid, grants to **INTREPID POTASH - NEW MEXICO, LLC**, a New Mexico limited liability company, having an address of c/o Intrepid Potash Inc., 1001 17th Street, Suite 1050, Denver, CO 80202 ("**Grantee**"), an undivided 100% interest, in the following described property associated with real property in Lea County, New Mexico (including all after-acquired title of Grantor in and to any of the following):

All wells, water, water rights, rights to appropriate, use and or sell water, and other rights, under the New Mexico State Engineer ("**State Engineer**") file and permit numbers set forth on **Exhibit A** attached hereto and by this reference made a part hereof; water rights, rights to appropriate, use and/or sell water, flood rights, and other rights relating to water, whether perfected or unperfected, decreed or undecreed, adjudicated or unadjudicated, licensed or unlicensed, permitted or unpermitted, declared or undeclared, Mendenhall, surface or underground, appropriated or unappropriated, appropriative or non-appropriative, or other, appurtenant to, associated with, held, used or useful in connection with, or with points of diversion and/or places of use on, that certain real property more particularly described on **Exhibit B** attached hereto and by this reference made a part hereof (the "**Land**"); (iii) water storage rights, water sales and water supply contracts, water taps, water withdrawal rights, water diversion rights and other rights in and to, or relating to, the use or sale of water produced on or from the Land; (iv) rights, claims and entitlements associated with the historical beneficial use of water on or produced from the Land; (v) pending and approved applications to the State Engineer for permits, including but not limited to Grantor's 10/23rd interest in application CP-1687, and permits issued by the State Engineer, for any purpose, including the appropriation of water from points of diversion on the Land or the use of water on the Land, to drill wells on the Land for any purpose, including exploration for water and monitoring water levels and/or water quality, (vi) canals and canal rights, ditches and ditch rights, springs and spring rights, and reservoirs and reservoir rights, located or having a place of use on, relating to water or water rights associated with, or with points of diversion and/or places of use on, the Land; (vii) shares of stock and other interests in any irrigation, ditch or reservoir company that delivers, has delivered or may in the future deliver, water to the Land; (viii) rights, titles and interests in, to and under water wells (including wells to produce water for domestic, livestock, commercial, industrial, exploration, monitoring and/or irrigation purposes) located on or associated with water or water rights held, used or useful in connection with or with places of use on, the Land; (ix) points of diversion, water well bores, water exploration drill holes, pumps, pumping stations, motors, casing, tubing, pipes, pipelines, irrigation equipment and facilities, livestock, game and other animal watering equipment and facilities, electric generation and transmission equipment and facilities, tanks, dams, weirs, other diversion works, ditches, gates, chutes, turnouts, and other equipment, facilities and property, utilities, and structures and devices associated with or used or useful in connection with the exploration for or the production, conveyance, measurement, storage or use of water; (x) easements, rights-of-way, licenses, permits, servitudes, agreements, covenants, leases, and contract rights used or held in connection with the ownership or operation of the foregoing; and (xi) rents, income, profits, proceeds and

products of and from any of the foregoing (the property described above is herein collectively called the "**Water Rights**").

Grantor is not making any warranties of any kind or character, express or implied, with respect to the Water Rights.

To the extent permitted by law, Grantee shall be subrogated to Grantor's rights in and to representations, warranties and covenants given by others with respect to the Land and/or the Water Rights, and Grantor hereby grants and transfers to Grantee, its successors and assigns, to the extent so transferable and permitted by law, the benefit of and the right to enforce the covenants, representations and warranties, if any, which Grantor is entitled to enforce with respect to the Land and/or the Water Rights.

This Water Rights and Permits Deed is expressly made subject to the terms and conditions of that certain Purchase and Sale Agreement, dated February 5, 2019, by and among Grantor, Sherbrooke Partners LLC ("**Sherbrooke**") and Grantee (as such may be amended and/or modified from time to time, the "**Purchase and Sale Agreement**") (which terms and conditions shall control in the event of a conflict with the terms and conditions of this Water Rights and Permits Deed). Prior to the execution of this Water Rights and Permits Deed, Sherbrooke has assigned all of its rights in and to the Purchase and Sale Agreement to Grantee. The Purchase and Sale Agreement contains certain representations, warranties, covenants, indemnities and agreements between the parties, some of which may survive the delivery of this Water Rights and Permits Deed, as more particularly provided for therein, but third parties may conclusively rely on this Water Rights and Permits Deed to vest title to the Land and Water Rights in Grantee as described herein.

[SIGNATURE AND ACKNOWLEDGMENT PAGE FOLLOWS]

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IN WITNESS WHEREOF, Grantor and Grantee have caused these presents to be executed as of this 1st day of May, 2019, but effective for all purposes as of 12:00 A.M., Mountain Standard Time, on March 1, 2019.

GRANTOR:

DINWIDDIE CATTLE COMPANY, LLC, a New Mexico limited liability company

By: Tommy Dinwiddie
John Thomas (Tommy) Dinwiddie
Managing Member

State of New Mexico)
) ss.
County of Lea)

This instrument was acknowledged before me on May 1, 2019, by John Thomas (Tommy) Dinwiddie, as Managing Member of Dinwiddie Cattle Company, LLC, a New Mexico limited liability company.

(Seal, if any)

Notary Public

My Commission Expires:

OFFICIAL SEAL
Amanda Baker
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 1-9-21

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[Signature and Acknowledgment Page to Water Rights and Permits Deed]

GRANTEE:

INTREPID POTASH – NEW MEXICO, LLC,
a New Mexico limited liability company

By: _____
Robert P. Jornayvaz III
President and Chief Executive Officer

State of New Mexico)
) ss.
County of Lea)

This instrument was acknowledged before me on May 1, 2019, by Robert P. Jornayvaz III, as President and Chief Executive Officer of Intrepid Potash – New Mexico, LLC, a New Mexico limited liability company.

_____
Notary Public

(Seal, if any)

My Commission Expires: 6-9-21

OFFICIAL SEAL
Amanda Baker
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 6-9-21

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[Signature and Acknowledgment Page to Water Rights and Permits Deed]

EXHIBIT A

ATTACHED TO AND E A PART OF THAT CERTAIN WATER RIGHTS AND ITS DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

WATER RIGHTS

Basin	OSE Permit
JAL (Decl)	J-8
	J-9
	J-10
Jal (Permit))	J-11
Capitan (permit)	CP-1285
	CP-858
	CP-857
	CP-938
	CP-1380
	CP-1647
	CP-1049
	CP-1379
	CP-1378
Capitan (Decl)	CP-174
	CP-175
	CP-176
	CP-177
	CP-178
	CP-179
	CP-180
	CP-181
	CP-182
	CP-183
	CP-859
	CP-860
	CP-1658
Carlsbad	C-2285

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EXHIBIT A

ATTACHED TO AN DE A PART OF THAT CERTAIN WATER RIGHTS AN MITS DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

WATER RIGHTS

(decl)	C-2286
	C-2287
	C-2288
	C-2289
	C-2290
	C-2291
	C-2292
	C-2293
	C-2294
	C-2295
	C-2296
	C-2297
	C-2298
	C-2299
Carlsbad (permit)	C-3441
	C-3442

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EXHIBIT B

ATTACHED TO AND MADE A PART OF THAT CERTAIN WATER RIGHTS AND USE DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

LAND

FEE LAND

TOWNSHIP 25 SOUTH, RANGE 33 East, N.M.P.M., LEA COUNTY, NEW MEXICO:
Section 33: SW¼, W½E½
Section 34: E½SE¼
Section 35: S½NW¼, SW¼, W½SE¼

TOWNSHIP 26 SOUTH, RANGE 33 East, N.M.P.M., LEA COUNTY, NEW MEXICO:
Section 3: E½NE¼, SE¼, NW¼, E½SW¼, W½SW¼
Section 4: N½, N½S½, S½S½
Section 10: NW¼, NE¼, E½SW¼, W½SE¼
Section 11: W½
Section 12: S½NE¼, SE¼
Section 14: W½

TOWNSHIP 25 SOUTH, RANGE 34 East, N.M.P.M., LEA COUNTY, NEW MEXICO:
Section 13: NE¼, W½NW¼, NE¼NW¼
Section 24: S½NE¼, SE¼

TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO:
Section 5: W½SW¼, N½N½, S½NW¼
Section 6: E½

TOWNSHIP 25 SOUTH, RANGE 35 East, N.M.P.M., LEA COUNTY, NEW MEXICO:
Section 1: All
Section 12: NW¼NE¼, S½NE¼, NE¼SW¼, E½NW¼, N½SE¼, LESS AND EXCEPT A Parcel of land situated in Section 12, Township 25 South, Range 35 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows: Beginning at the Northeast corner of the parcel of land herein described being a point 75.00 feet to the left of, northerly and opposite Construction Centerline Station 1877+60.31 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, said point being on the line common to Section 12, T25S, R35E, and Section 7, T25S, R36E, NMPM, whence the Quarter Section Corner common to Section 12, T25S, R35E, and Section 7, T25S, R36E bears N00°29'00"W, 197.73 feet distance; thence, S00°29'00"E, 79.00 feet distance to a point on the Centerline Station 1877+85.12 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, S00°29'00"E, 26.15 feet distance to the southeast corner of the parcel of land herein described being a point on the existing northerly right-of-way line of N.M. Project S-1271(1); thence, N 72°10'57"W, 4,167.36 feet distance to the southwest corner of the parcel of land herein described; thence N00°29'57"W, 26.27 feet distance to a point on the Centerline Station 1836+17.71 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, N00°29' 57"W, 79.00 feet distance to the northwest corner of the parcel of land

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EXHIBIT B

ATTACHED TO AN DE A PART OF THAT CERTAIN WATER RIGHTS ANI MITS DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DENWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

LAND

herein described; thence, S72°10'51"E, 4,167.43 feet distance to the Point of Beginning of the parcel of land herein described, said tract referenced in Warranty Deed filed October 14, 2008, in Book 1604, Page 922, Lea County Records, Lea County, New Mexico.

Section 13: S½
Section 14: S½SE¼, NE¼SE¼
Section 17: N½, N½SW¼, SE¼
Section 18: S½NE¼
Section 20: N½NE¼
Section 21: NW¼
Section 23: E½
Section 24: W½, NE¼, N½SE¼
Section 27: SW¼
Section 28: SE¼
Section 33: NE¼
Section 34: NW¼

TOWNSHIP 24 SOUTH, RANGE 36 East, N.M.P.M., LEA COUNTY, NEW MEXICO:

Section 31: N½, W½SW¼

TOWNSHIP 25 SOUTH, RANGE 36 East. N.M.P.M., LEA COUNTY, NEW MEXICO:

Section 4: All
Section 5: All
Section 6: All
Section 7: W½NE¼, SE¼, NW¼, LESS AND EXCEPT A Parcel of land situated in the SE¼ of Section 7, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows: Beginning at the northeast corner of the parcel of land herein described being a point 75.00 feet to the left of, northerly and opposite Construction Centerline Station 1933+20.00 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, said point being on the line common to Sections 7 and 8, T25S, R36E, NMPM, whence the Quarter Section Corner common to Sections 7 and 8, T25S, R36E bears N00°28'22"W, 1,924.28 feet distance; thence, S00°28'22"E, 78.99 feet distance to a point on the Centerline Station 1933+44.80 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, S00°28'22"E, 25.98 feet distance to the southeast corner of the parcel of land herein described being a point on the existing northerly right-of-way line of N.M. Project S-1271 (l); thence, N 72°10'57"W, 2,782.07 feet distance to the southwest corner of the parcel of land herein described; thence, N00°22'04"W, 26.05 feet distance to a point on the Centerline Station 1905+62.75 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, N00°22'04"W, 78.94 feet distance to the northwest corner of the parcel of land herein described; thence, S72°10'51"E, 2,781.90 feet distance to the Point of Beginning of the parcel of land herein described, said tract

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EXHIBIT B

ATTACHED TO AND MADE A PART OF THAT CERTAIN WATER RIGHTS AND ITS DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

LAND

being referenced on that certain Warranty Deed filed in Book 1604, Page 925, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

Section 8: All, LESS AND EXCEPT A Parcel of land situated in Section 8, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows: Beginning at the northwest corner of the parcel of land herein described being a point 75.00 feet to the left of, northerly and opposite Construction Centerline Station 1933+20.00 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, said point being on the line common to Sections 7 and 8, T25S, R36E, NMPM, whence the Quarter Section Corner common to Sections 7 and 8, T25S, R36E bears N00°28'22"W, 1,924.28 feet distance; thence, S72°10'51"E, 125.70 feet distance to the point of curvature; thence, Southeasterly, 3,601.12 feet distance along the arc of a 00°30'27" degree curve bearing to the left (said arc having a radius of 11,290.00 feet, a central angle of 18°16'31" and a chord which bears S81°19'07"E, 3,585.87 feet distance) to the point of tangency; thence, N89°32'38"E, 1,628.77 feet distance to the northeast corner of the parcel of land herein described being a point on the line common to Sections 8 and 9, T25S, R36E, NMPM ; thence, S00°29'31"E, 75.00 feet distance to a point on the Centerline Station 1986+99.56 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, S00°29'31"E, 23.15 feet distance to the southeast corner of the parcel of land herein described being the Section Corner common to Sections 8, 9, 16 and 17, T25S, R36E; thence, S89°28'12"W, 1,271.62 feet distance to a point on the existing northerly right-of-way line of N.M. project S-1271(1); thence, S89°32'36"W, 355.84 feet distance to the point of curvature; thence, Northwesterly 3634.43 feet distance along the arc of a 00°30'10" degree curve bearing to the right (said arc having a radius of 11,395.10 feet, a central angle of 18°16'28" and a chord which bears N81°19'11"W, 3619.05 feet distance) to the point of tangency; thence N72°10'57"W, 92.60 feet distance to the Southwest corner of the parcel of land herein described being a point on the line common to Sections 7 and 8, T25S, R36E; thence N00°28'22"W, 25.98 feet distance to a point on the Centerline Station 1933+44.80 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence N00°28'22"W, 78.99 feet distance to the point of beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 928, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

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Section 9: All, LESS AND EXCEPT a Parcel of land situated in Section 9, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows:
Beginning at the northwest corner of the parcel of land herein described being a point 75.00 feet to the left of, northerly and opposite Construction Centerline

EXHIBIT B

ATTACHED TO AN DE A PART OF THAT CERTAIN WATER RIGHTS ANI MITS DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

LAND

Station 1986+99.51 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, said point being on the line common to Sections 8 and 9, T25S, R36E, NMPM, whence the Quarter Section Corner common to Sections 8 and 9, T25S, R36E bears N00°29'31"W, 2540.67 feet distance; thence N89°32'38"E, 5279.26 feet distance to the Northeast corner of the parcel of land herein described being a point on the line common to Sections 9 and 10, T25S, R36E, NMPM; thence S00°31'36"E, 75.00 feet distance to a point on the Centerline Station 2039+78.87 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence S00°31'36"E, 12.92 feet distance to the Southeast corner of the parcel of land herein described as being the Section corner common to Sections 9, 10, 15 and 16, T25S, R36E; thence S89°25'58"W, 2639.66 feet distance to the Quarter Section corner common to Sections 9 and 16, T25S, R36E; thence S89°25'58"W, 2,639.66 feet distance to the Southwest corner of the parcel of land herein described being the Section corner common to Sections 8, 9, 16 and 17, T25S, R36E; thence N00°29'31"W, 23.15 feet distance to a point on the Centerline Station 1986+99.56 of N.M. Project No. AC-GRIP-(TPM)-127(23)38; thence N00°29'31"W, 75.00 feet distance to the point of beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 934, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

Section 10: W½, LESS AND EXCEPT a Parcel of land situated in the SW1/4 of Section 10, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows: Beginning at the northwest corner of the parcel of land herein described being a point 75.00 feet to the left of, northerly and opposite Construction Centerline Station 2039+78.78 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, said point being on the line common to Sections 9 and 10, T25S, R36E, NMPM, whence the Quarter Section Corner common to Sections 9 and 10, T25S, R36E bears N00°31'36"W, 2,551. 77 feet distance; thence, N89°32'38"E, 2,642.51 feet distance to the northeast corner of the parcel of land herein described being a point on the north-south center line of Section 10, T25S, R36E; thence, S00°23'06"E, 75.00 feet distance to a point on the Centerline Station 2066+21.19 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, S00°23'06"E, 7.76 feet distance to the Southeast corner of the parcel of land herein described being the Quarter Section Corner common to Sections 10 and 15, T25S, R36E; thence, S89°25'55"W, 2,642.30 feet distance to the southwest corner of the parcel of land herein described being the Section Corner common to Sections 9, 10, 15 and 16, T25S, R36E; thence, N00°31'36"W, 12.92 feet distance to a point on the Centerline Station 2039+78.87 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, N00°31' 36"W, 75.00 feet distance to the Point of Beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 940, Lea

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EXHIBIT B

ATTACHED TO AND MADE A PART OF THAT CERTAIN WATER RIGHTS AND USE DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

LAND

County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

Section 14: N½, LESS AND EXCEPT a Parcel of land situated in Section 14, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows:
Beginning at the northwest corner of the parcel of land herein described being a point on the line common to Sections 14 and 15, T25S, R36E, NMPM, a point 73.38 feet to the left of, northeasterly and opposite Construction Centerline Station 2093+28.20 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, whence the Quarter Section Corner common to Sections 10 and 11, T25S, R36E bears N00°31'31"W, 3,068.49 feet distance; thence, S55°16'31"E, 206.82 feet distance to the most easterly corner of the parcel of land herein described being a point on the existing northerly right-of-way line of N.M. Project S-1271(1); thence, N56°10'38"W, 204.57 feet distance to the southwest corner of the parcel of land herein described being a point on the line common to Sections 14 and 15, T25S, R36E N00°31'31"W, 3.94 feet distance to the northwest corner and Point of Beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 949, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation. AND FURTHER LESS AND EXCEPT a Parcel of land situated in Section 14, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows. Beginning at the southwest corner of the parcel of land herein described being a point on the line common to Sections 14 and 15, T25S, R36E, NMPM, a point 57.47 feet to the right of, southwesterly and opposite Construction Centerline Station 2094+17.64 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38, whence the Quarter Section Corner common to Sections 14 and 15, T25S, R36E bears S00°31'31"E, 2,051.91 feet distance; thence, N00°31'31"W, 9.21 feet distance to the northwest corner of the parcel of land herein described being a point on the existing southerly right-of-way line of N.M. Project S-1271(1); thence, S56°10'38"E, 122.56 feet distance to the most easterly corner of the parcel of land herein described; thence, N59° 53'03"W, 117.61 feet distance to the southwest corner and Point of Beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 952, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

Section 15: S½, and being Tract Two as referenced on that certain Claim of Exemption Plat filed March 22, 2019, in Book 2, Page 558, Survey Records, Lea County, New Mexico.

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BY CRESLEY SPEARS

EXHIBIT B

ATTACHED TO AN DE A PART OF THAT CERTAIN WATER RIGHTS ANI VITS DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

LAND

Section 16: All, LESS AND EXCEPT a Parcel of land situated in Section 16, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows:
Beginning at the southwest corner of the parcel of land herein described being a point on the line common to Sections 16 and 17, T25S, R36E, NMPM, a point 24.78 feet to the right of, southerly and opposite Construction Centerline Station 1986+99.58 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38 and a point on the existing northerly right-of-way line of N.M. Project S-1271(1); thence, N00°29'31"W, 1.62 feet distance to the northwest corner of the parcel of land herein described being the Section Corner common to Sections 8, 9, 16 and 17, T25S, R36E; thence N89°25'58"E, 2639.66 feet distance to the Quarter Section corner common to Sections 9 and 16, T25S, R36E; thence N89°25'58"E, 2639.66 feet distance to the northeast corner of the parcel of land herein described being the Section Corner common to Sections 9, 10, 15 and 16, T25S, R36E; thence S00°29'56"E, 11.81 feet distance to the Southeast corner of the parcel of land herein described; thence S89°32'36"W, 5279.32 feet distance to the Southwest corner and point of beginning of the parcel of land herein described, said tract of land referenced in that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 937, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC, a New Mexico limited liability company to New Mexico Department of Transportation.

Section 17: All, LESS AND EXCEPT a Parcel of land situated in Section 17, Township 25 South, Range 36 East, New Mexico Principal Meridian, Lea County, New Mexico, being more particularly described as follows:
Beginning at the northeast corner of the parcel of land herein described being the Section Corner common to Sections 8, 9, 16 and 17, T25S, R36E, a point 23.15 feet to the right of, southerly and opposite Construction Centerline Station 1986+99.58 of N.M. Project No. AC-GRIP-(TPM)-1271(23)38; thence, S00°29'31"E, 1.62 feet distance to the Southeast corner of the parcel of land herein described being a point on the existing Northerly right of way line of N.M. Project S-1271(1); thence S89°32'36"W, 1271.62 feet distance to the most westerly corner of the parcel of land herein described; thence N89°28'12"E, 1271.62 feet distance to the point of beginning of the parcel of land herein described, said tract of land being referenced on that certain Warranty Deed filed October 14, 2008, in Book 1604, Page 931, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC a New Mexico limited liability company to New Mexico Department of Transportation.

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Section 18: Lots 3, 4, E½SW¼, NE¼, E½SE¼, W½SE¼
Section 19: NW¼
Section 20: All
Section 21: All
Section 22: All
Section 23: W½, W½E½

EXHIBIT B

ATTACHED TO AND MADE A PART OF THAT CERTAIN WATER RIGHTS AND ITS DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

LAND

Section 25: A tract of land beginning at the Southwest corner of Section 25; thence North 363 feet; thence East 363 feet; thence South 363 feet and thence West 363 feet to the point of beginning.
Section 26: W½, W½NE¼, W½SE¼, W½E½SE¼
Section 35: All
Section 36: All

TOWNSHIP 26 SOUTH, RANGE 36 East, N.M.P.M., LEA COUNTY, NEW MEXICO:

Section 1: N½, SW¼, NW¼SE¼
Section 9: All – Less and Except that portion of said Section 9 described in that certain Warranty Deed filed June 6, 2016, in Book 2031, Page 11, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC to EOG Resources, Inc.
Section 10: All – Less and Except that portion of said Section 10 described in that certain Warranty Deed filed June 6, 2016, in Book 2031, Page 11, Lea County Records, Lea County, New Mexico, executed by Dinwiddie Cattle Company, LLC to EOG Resources, Inc.
Section 13: All
Section 24: All
Section 25: All
Section 36: All

TOWNSHIP 26 SOUTH, RANGE 37 East, N.M.P.M., LEA COUNTY, NEW MEXICO:

Section 6: S½ Lot 2 and All of Lot 3

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BY CRESLEY SPEARS

EXHIBIT B

ATTACHED TO AND MADE A PART OF THAT CERTAIN WATER RIGHTS AND PERMITS DEED DATED EFFECTIVE MARCH 1, 2019 BETWEEN DINWIDDIE CATTLE COMPANY, LLC, AS GRANTOR, AND INTREPID POTASH-NEW MEXICO, LLC, AS GRANTEE

LAND

STATE LEASE LAND

STATE OF NEW MEXICO GRAZING LEASES:

1. GT-2459-0000 a copy of which is attached hereto as Exhibit B-1.
2. GM-2911 a copy of which is attached hereto as Exhibit B-2.
3. GT-0226-0000 a copy of which is attached hereto as Exhibit B-3.

FEDERAL LEASE LAND

BUREAU OF LAND MANAGEMENT GRAZING PERMITS:

1. Old Baldy – NM-76041 a copy of which is attached hereto as Exhibit B-4.
2. East Rattlesnake – NM-76033 a copy of which is attached hereto as Exhibit B-5.
3. Medlin-Wells – NM-76035 a copy of which is attached hereto as Exhibit B-6.

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BY CRESLEY SPEARS

John R. D Antonio, Jr., P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 652904
File Nbr: C 02295

Jun. 19, 2019

KATIE KELLER
INTREPID POTASH NEW MEXICO LLC
1001 17TH STREET
SUITE 1050
DENVER, CO 80202

Greetings:

Enclosed is one original copy of a Change of Ownership of a Water Right submitted to this office for filing. This Change of Ownership is accepted for filing in accordance with Section 72-1-2.1, NMSA 1978 (1996 Supp.), effective May 15, 1996. The acceptance by the State Engineer Office does not constitute validation of the right claimed.

According to Section 72-1-2.1, NMSA 1978 (1996 Supp.), you must record this Change of Ownership with the clerk of the county in which the water is located. The filing shall be public notice of the existence and contents of the instruments so recorded.

Sincerely,

Deborah Jones
(575)622-6521

Enclosure

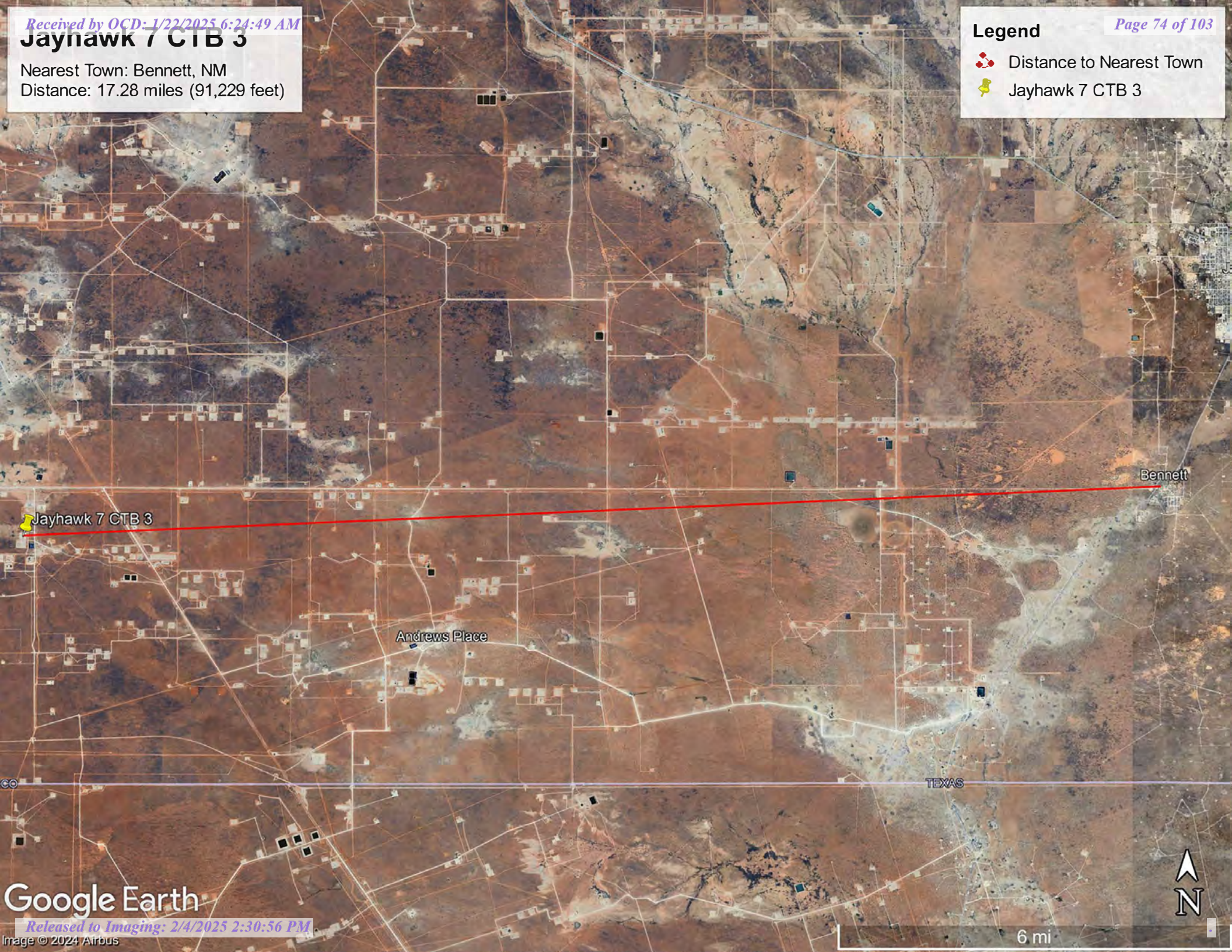
chngowrc

Jayhawk 7 CTB 3

Nearest Town: Bennett, NM
Distance: 17.28 miles (91,229 feet)

Legend

- Distance to Nearest Town
- Jayhawk 7 CTB 3



U.S. Fish and Wildlife Service
National Wetlands Inventory

Jayhawk 7 CTB 3 - Nearest Wetlands

Distance: 0.15 miles (778 feet)

January 7, 2025

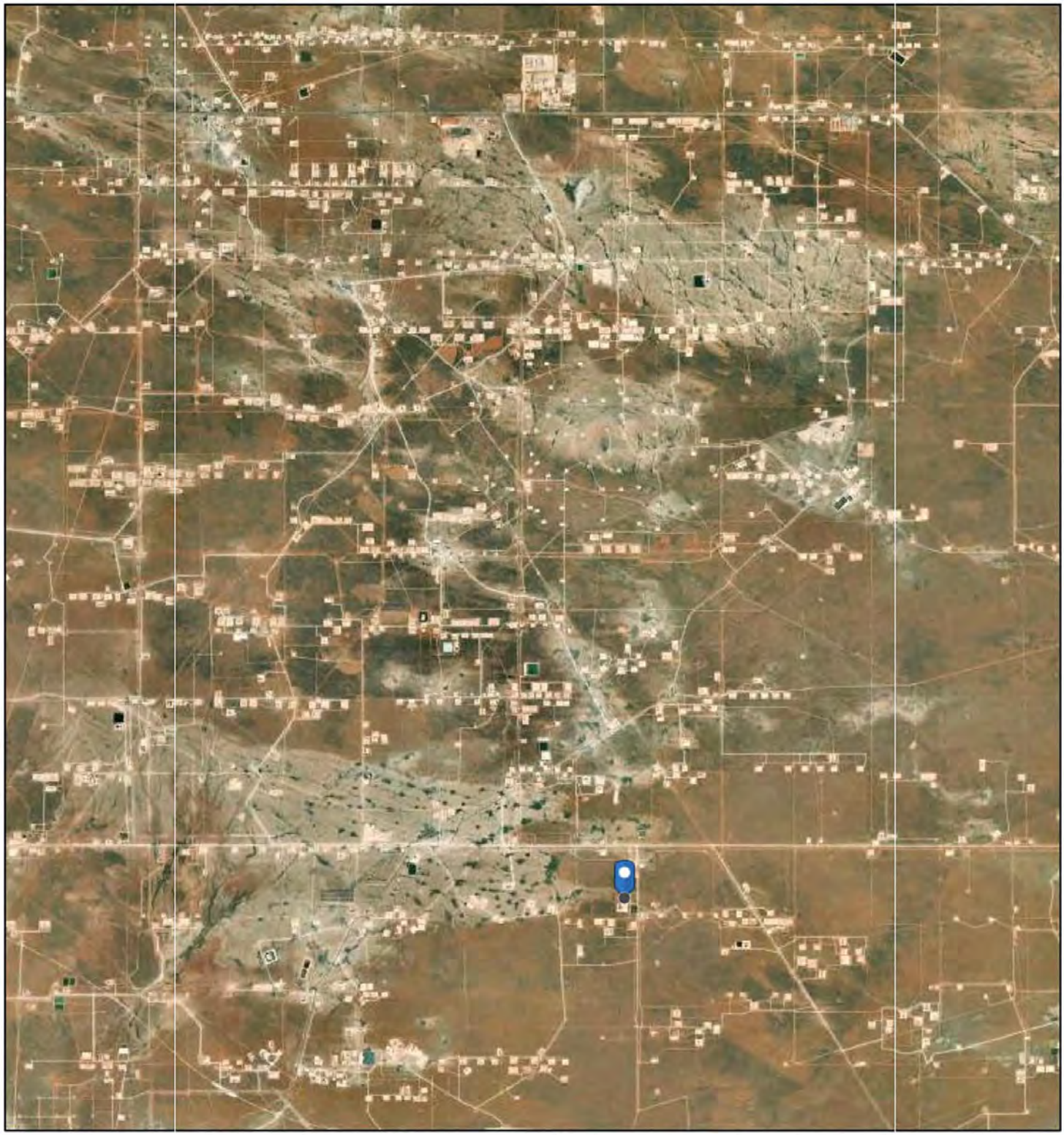
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Jayhawk 7 CTB 3 - Mines Map



1/9/2025, 5:38:11 PM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

STATEMAP (1993 to Present) [Publications]

- Mapping is Complete
- Mapping in Progress
- Uranium Occurrence – No Production
- Minor Uranium – Produced
- Major Uranium Deposits – Not Produced
- Major Uranium Deposits
- Uranium Mills
- Counties

REE_Districts

- Fe skarn, carbonate-hosted Pb-Zn
- REE-Th-U veins, fluorite veins

New Mexico Bureau of Geology and Mineral Resources, New Mexico Bureau of Geology & Mineral Resources, Earthstar Geographics, NMBGMR

ArcGIS Web AppBuilder

New Mexico Bureau of Geology and Mineral Resources | U.S. Bureau of Land Management | New Mexico Bureau of Geology and Mineral Resources | New Mexico Bureau of Geology & Mineral Resources |

Jayhawk 7 CTB 3 - Karst Potential Map

0 0.1 0.2 0.4 mi

N

New Mexico State Land Office

Disclaimer:
The New Mexico State Land Office assumes no responsibility or liability for, or in connection with the accuracy, reliability or use of the information provided herein with respect to State Land Office data or data from other sources.

Data pertaining to New Mexico State Trust Lands are provisional and subject to revision, and do not constitute an official record of title. Official records may be reviewed at the New Mexico State Land Office in Santa Fe, New Mexico.

Map Created: 1/9/2025

- User drawn points
- Oil and Gas Leasing Restrictions
- Energy Leases
- Agricultural Leases
- Oil and Gas Leases
- Minerals Leases
- Commercial Leases

New Mexico State Trust Lands
- Subsurface Estate
- Surface Estate
- Both Estates

Karst_Potential_NM
Potential
- High
- Medium
- Low

National Flood Hazard Layer FIRMette

FEMA

103°30'41"W 32°3'32"N

103°30'3"W 32°3'1"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

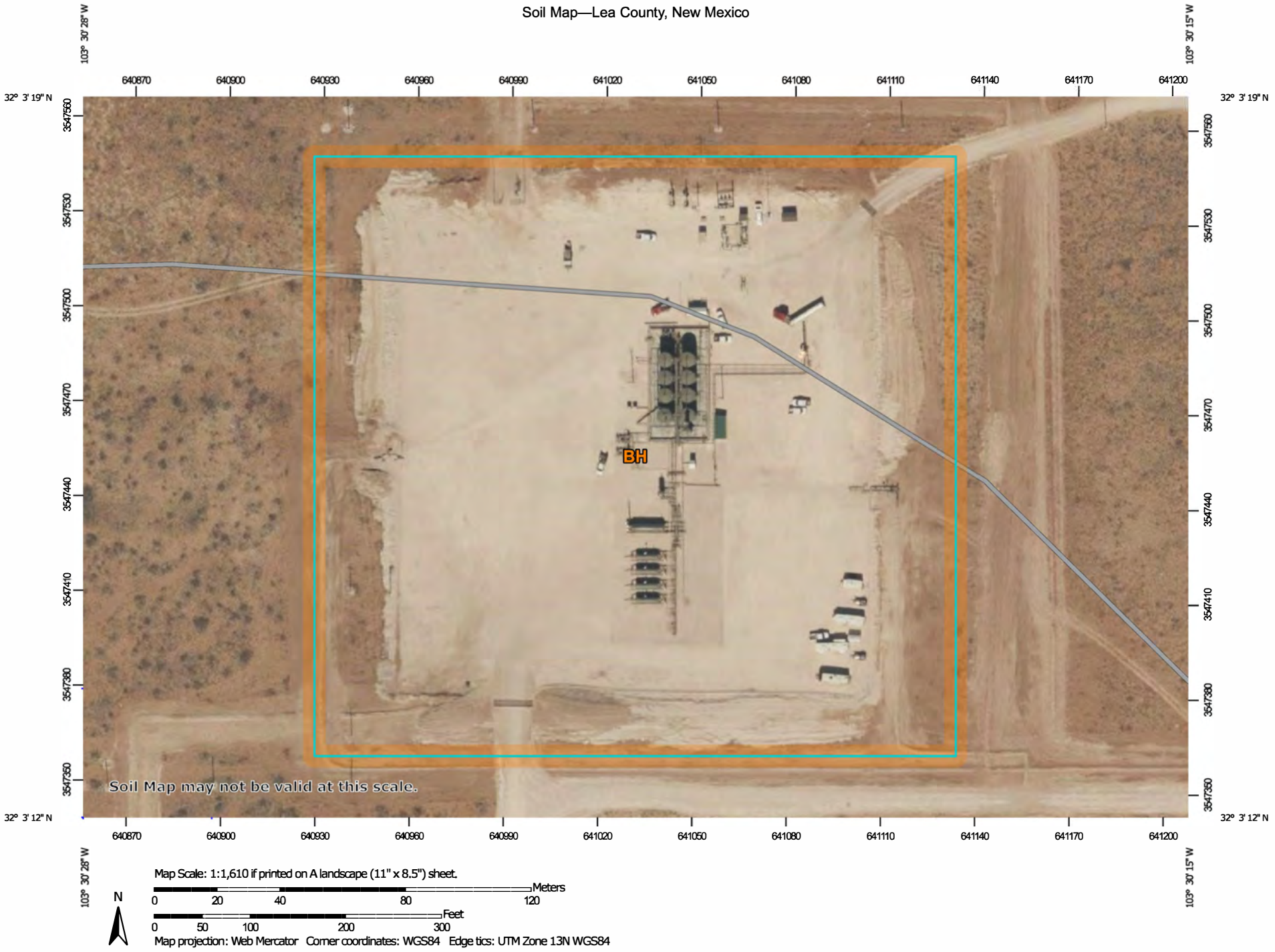
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/10/2025 at 1:18 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Soil Map—Lea County, New Mexico



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 21, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 7, 2020—May 12, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BH	Berino-Cacique association, hummocky	9.6	100.0%
Totals for Area of Interest		**9.6**	**100.0%**

Lea County, New Mexico

BH—Berino-Cacique association, hummocky

Map Unit Setting

National map unit symbol: dmpg
Elevation: 3,000 to 4,400 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Berino and similar soils: 50 percent
Cacique and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Berino

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits derived from sedimentary rock over calcareous sandy alluvium derived from sedimentary rock

Typical profile

A - 0 to 10 inches: fine sand
Btk - 10 to 60 inches: sandy clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Description of Cacique

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 7 inches: fine sand
Bt - 7 to 28 inches: sandy clay loam
Bkm - 28 to 38 inches: cemented material

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to petrocalcic
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: R070BD004NM - Sandy
Hydric soil rating: No

Minor Components

Kermit

Percent of map unit: 4 percent
Ecological site: R070BD005NM - Deep Sand
Hydric soil rating: No

Maljamar

Percent of map unit: 3 percent

Ecological site: R077CY028TX - Limy Upland 16-21" PZ
Hydric soil rating: No

Palomas
Percent of map unit: 2 percent
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Dune land
Percent of map unit: 1 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 21, Sep 3, 2024

USDA Natural Resources Conservation Service

Ecological site R070BD003NM
Loamy Sand

Accessed: 01/10/2025

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Associated sites

R070BD004NM	**Sandy** Sandy
R070BD005NM	**Deep Sand** Deep Sand

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site is on uplands, plains, dunes, fan piedmonts and in inter dunal areas. The parent material consists of mixed alluvium and or eolian sands derived from sedimentary rock. Slope range on this site range from 0 to 9 percent with the average of 5 percent.

Low stabilized dunes may occur occasionally on this site. Elevations range from 2,800 to 5,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Fan piedmont (2) Alluvial fan (3) Dune
Elevation	2,800–5,000 ft
Slope	0–9%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity-short duration thunderstorms.
Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes.

The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.
The average frost-free season is 207 to 220 days. The last killing frost being late March or early April and the first killing frost being in later October or early November.
Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Strong winds blow from the southwest from January through June, which accelerates soil drying during a critical period for cool season plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

Table 3. Representative climatic features

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

This site is not influenced from water from wetlands or streams.

Soil features

Soils are moderately deep or very deep. Surface textures are loamy fine sand, fine sandy loam, loamy very fine sand or gravelly sandy loam.

Subsurface is a loamy fine sand, coarse sandy loam, fine sandy loam or loam that averages less than 18 percent clay and less than 15 percent carbonates.

Substratum is a fine sandy loam or gravelly fine sandy loam with less than 15 percent gravel and with less than 40 percent calcium carbonate. Some layers high in lime or with caliche fragments may occur at depths of 20 to 30 inches.

These soils, if unprotected by plant cover and organic residue, become wind blown and low hummocks are formed.

Minimum and maximum values listed below represent the characteristic soils for this site.

Characteristic soils are:
Maljamar
Berino
Parjarito
Palomas
Wink
Pyote

Table 4. Representative soil features

Surface texture	(1) Fine sand (2) Fine sandy loam (3) Loamy fine sand
Family particle size	(1) Sandy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to moderately rapid

Soil depth	40–72 in
Surface fragment cover <=3"	0–10%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	5–7 in
Calcium carbonate equivalent (0-40in)	3–40%
Electrical conductivity (0-40in)	2–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0–2
Soil reaction (1:1 water) (0-40in)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	4–12%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

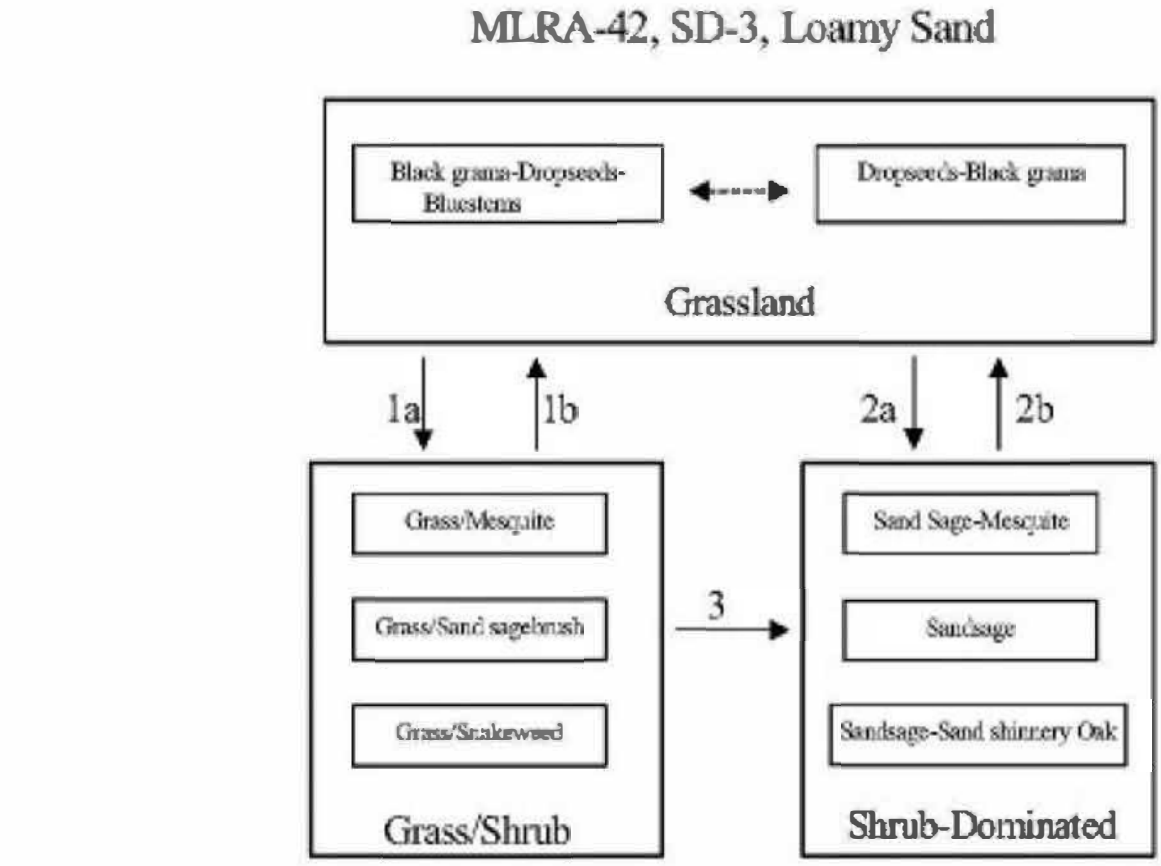
Overview

The Loamy Sand site intergrades with the Deep Sand and Sandy sites (SD-3). These sites can be differentiated by surface soil texture and depth to a textural change. Loamy Sand and Deep Sand sites have coarse textured (sands and loamy sand) surface soils while Sandy sites have moderately coarse textured (sandy loam and fine sandy loam) surfaces. Although Loamy Sand and Deep Sand sites have similar surface textures, the depth to a textural change is different—Loamy Sand sub-surface textures typically increase in clay at approximately 20 to 30 inches, and Deep Sand sites not until around 40 inches.

The historic plant community of Loamy Sand sites is dominated by black grama (*Bouteloua eriopoda*), dropseeds (*Sporobolus flexuosus*, *S. contractus*, *S. cryptandrus*), and bluestems (*Schizachyrium scoparium* and *Andropogon hallii*), with scattered shinnery oak (*Quercus havardii*) and sand sage (*Artemisia filifolia*). Perennial and annual forb abundance and distribution are dependent on precipitation. Litter and to a lesser extent, bare ground, are a significant proportion of ground cover while grasses compose the remainder. Decreases in black grama indicate a transition to either a grass/shrub or shrub-dominated state. The grass/shrub state is composed of grasses/honey mesquite (*Prosopis glandulosa*), grasses/broom snakeweed (*Gutierrezia sarothrae*), or grasses/sand sage. The shrub-dominated state occurs after a severe loss of grass cover and a prevalence of sand sage with secondary shinnery oak and mesquite. Heavy grazing intensity and/or drought are influential drivers in decreasing black grama and bluestems and subsequently increasing shrub cover, erosion, and bare patches. Historical fire suppression also encourages shrub pervasiveness and a competitive advantage over grass species (McPherson 1995). Brush and grazing management, however, may reverse grass/shrub and shrub-dominated states toward the grassland-dominated historic plant community.

State and transition model

Plant Communities and Transitional Pathways (diagram):



1a. Drought, over grazing, fire suppression.
1b. Brush control, prescribed grazing

2.a Severe loss of grass cover, fire suppression, erosion.
2b. Brush control, seeding, prescribed grazing.

3. Continued loss of grass cover, erosion.

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

Grassland: The historic plant community is a uniformly distributed grassland dominated by black grama, dropseeds, and bluestems. Sand sage and shinnery oak are evenly dispersed throughout the grassland due to the coarse soil

surface texture. Perennial and annual forbs are common but their abundance and distribution are reflective of precipitation. Bluestems initially, followed by black grama, decrease with drought and heavy grazing intensity. Historical fire frequency is unknown but likely occurred enough to remove small shrubs to the competitive advantage of grass species. Fire suppression, drought conditions, and excessive grazing drive most grass species out of competition with shrub species. Diagnosis: Grassland dominated by black grama, dropseeds, and bluestems. Shrubs, such as sand sage, shinnery oak, and mesquite are dispersed throughout the grassland. Forbs are present and populations fluctuate with precipitation variability.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	442	833	1224
Forb	110	208	306
Shrub/Vine	98	184	270
Total	**650**	**1225**	**1800**

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	28%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	22%

Figure 5. Plant community growth curve (percent production by month). NM2803, R042XC003NM-Loamy Sand-HCPC. SD-3 Loamy Sand - Warm season plant community .

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	3	5	10	10	25	30	12	5	0	0

State 2
Grass/Shrub

Community 2.1
Grass/Shrub

Grass/Shrub State: The grass/shrub state is dominated by communities of grasses/mesquite, grasses/snakeweed, or grasses/sand sage. Decreases in black grama and bluestem species lead to an increase in bare patches and mesquite which further competes with grass species. An increase of dropseeds and threeawns occurs. Grass distribution becomes more patchy with an absence or severe decrease in black grama and bluestems. Mesquite provides nitrogen and soil organic matter to co-dominant grasses (Ansley and Jacoby 1998, Ansley et al. 1998). Mesquite mortality when exposed to fire is low due to aggressive resprouting abilities. Herbicide application combined with subsequent prescribed fire may be more effective in mesquite reduction (Britton and Wright 1971). Diagnosis: This state is dominated by an increased abundance of communities including grass/mesquite, grass/snakeweed, or grass/sand sage. Dropseeds and threeawns have a patchy distribution. Transition to Grass/Shrub State (1a): The historic plant community begins to shift toward the grass/shrub state as drivers such as drought, fire suppression, interspecific competition, and excessive grazing contribute to alterations in soil properties and herbaceous cover. Cover loss and surface soil erosion are initial indicators of transition followed by a decrease in black grama with a subsequent increase of dropseeds, threeawns, mesquite, and snakeweed. Snakeweed has been documented to outcompete black grama especially under conditions of fire suppression and drought (McDaniel et al. 1984). Key indicators of approach to transition: • Loss of black grama cover • Surface soil erosion • Bare patch expansion • Increased dropseed/threeawn and mesquite, snakeweed, or sand sage abundances Transition to Historic Plant Community (1b): Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community.

State 3
Shrub Dominated

Community 3.1
Shrub Dominated

Shrub-Dominated State: The shrub-dominated state results from a severe loss of grass cover. This state's primary species is sand sage. Shinnery oak and mesquite also occur; however, grass cover is limited to intershrub distribution. Sand sage stabilizes light sandy soils from wind erosion, which enhances protected grass/forb cover (Davis and Bonham 1979). However, shinnery oak also responds to the sandy soils with dense stands due to an

aggressive rhizome system. Shinnery oak's extensive root system promotes competitive exclusion of grasses and forbs. Sand sage, shinnery oak, and mesquite can be controlled with herbicide (Herbel et al. 1979, Pettit 1986). Transition to Shrub-Dominated (2a): Severe loss of grass species with increased erosion and fire suppression will result in a transition to a shrub-dominated state with sand sage, Shin oak, and honey mesquite directly from the grassland-dominated state. Key indicators of approach to transition: • Severe loss of grass species cover • Surface soil erosion • Bare patch expansion • Increased sand sage, shinnery oak, and mesquite abundance Transition to Historic Plant Community (2b): Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community. In addition, seeding with native grass species will augment the transition to a grassland-dominated state. Transition to Shrub-Dominated (3): If the grass/shrub site continues to lose grass cover with soil erosion, the site will transition to a shrub-dominated state with sand sage, shinnery oak, and honey mesquite. Key indicators of approach to transition: • Continual loss of dropseeds/threeawns cover • Surface soil erosion • Bare patch expansion • Increased sand sage, shinnery oak, and mesquite/dropseed/threeawn and mesquite/snakeweed abundance

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Warm Season**			61–123	
	little bluestem	SCSC	*Schizachyrium scoparium*	61–123	–
2	**Warm Season**			37–61	
	sand bluestem	ANHA	*Andropogon hallii*	37–61	–
3	**Warm Season**			37–61	
	cane bluestem	BOBA3	*Bothriochloa barbinodis*	37–61	–
	silver bluestem	BOSA	*Bothriochloa saccharoides*	37–61	–
4	**Warm Season**			123–184	
	black grama	BOER4	*Bouteloua eriopoda*	123–184	–
	bush muhly	MUPO2	*Muhlenbergia porteri*	123–184	–
5	**Warm Season**			123–184	
	thin paspalum	PASE5	*Paspalum setaceum*	123–184	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	123–184	–
	fringed signalgrass	URCI	*Urochloa ciliatissima*	123–184	–
6	**Warm Season**			123–184	
	spike dropseed	SPCO4	*Sporobolus contractus*	123–184	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	123–184	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	123–184	–
7	**Warm Season**			61–123	
	hooded windmill grass	CHCU2	*Chloris cucullata*	61–123	–
	Arizona cottontop	DICA8	*Digitaria californica*	61–123	–
9	**Other Perennial Grasses**			37–61	
	Grass, perennial	2GP	*Grass, perennial*	37–61	–
Shrub/Vine					
8	**Warm Season**			37–61	
	New Mexico feathergrass	HENE5	*Hesperostipa neomexicana*	37–61	–
	giant dropseed	SPGI	*Sporobolus giganteus*	37–61	–
10	**Shrub**			61–123	

	sand sagebrush	ARFI2	*Artemisia filifolia*	61–123	–
	Havard oak	QUHA3	*Quercus havardii*	61–123	–
11	**Shrub**			34–61	
	fourwing saltbush	ATCA2	*Atriplex canescens*	37–61	–
	featherplume	DAFO	*Dalea formosa*	37–61	–
12	**Shrub**			37–61	
	jointfir	EPHED	*Ephedra*	37–61	–
	littleleaf ratany	KRER	*Krameria erecta*	37–61	–
13	**Other Shrubs**			37–61	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	37–61	–
Forb					
14	**Forb**			61–123	
	leatherweed	CRPOP	*Croton pottsii var. pottsii*	61–123	–
	Indian blanket	GAPU	*Gaillardia pulchella*	61–123	–
	globemallow	SPHAE	*Sphaeralcea*	61–123	–
15	**Forb**			12–37	
	woolly groundsel	PACA15	*Packera cana*	12–37	–
16	**Forb**			61–123	
	touristplant	DIWI2	*Dimorphocarpa wislizeni*	61–123	–
	woolly plantain	PLPA2	*Plantago patagonica*	61–123	–
17	**Other Forbs**			37–61	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	37–61	–

Animal community

This Ecological Site provides habitat which supports a resident animal community that is characterized by pronghorn antelope, desert cottontail, spotted ground squirrel, black-tailed prairie dog, yellow faced pocket gopher, Ord's kangaroo rat, northern grasshopper mouse, southern plains woodrat, badger, roadrunner, meadowlark, burrowing owl, white necked raven, lesser prairie chicken, morning dove, scaled quail, Harris hawk, side blotched lizard, marbled whiptail, Texas horned lizard, western diamondback rattlesnake, dusty hognose snake and ornate box turtle.
Where mesquite has invaded, most resident birds and scissor-tailed flycatcher, morning dove and Swainson's hawk, nest. Vesper and grasshopper sparrows utilize the site during migration.

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.
Hydrologic Interpretations
Soil Series Hydrologic Group
Berino B
Kinco A
Maljamar B
Pajarito B
Palomas B
Wink B
Pyote A

Recreational uses

This site offers recreation potential for hiking, borseback riding, nature observation, photography and hunting. During years of abundant spring moisture, this site displays a colorful array of wildflowers during May and June.

Wood products

This site has no potential for wood products.

Other products

This site is suitable for grazing by all kinds and classes of livestock at any time of year. In cases where this site has been invaded by brush species it is especially suited for goats. Mismanagement of this site will cause a decrease in species such as the bluestems, blsck grama, bush muhly, plains bristlegrass, New Mexico feathergrass, Arizona cottontop and fourwing saltbush. A corresponding increase in the dropseeds, windmill grass, fall witchgrass, silver bluestem, sand sagebrush, shinery oak and ephedra will occur. This will also cause an increase in bare ground which will increase soil erodibility. This site will respond well to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month
Similarity Index Ac/AUM
100 - 76 2.3 – 3.5
75 – 51 3.0 – 4.5
50 – 26 4.6 – 9.0
25 – 0 9.1 +

Inventory data references

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Other references

Literature Cited:

Ansley, R. J.; Jacoby, P. W. 1998. Manipulation of fire intensity to achieve mesquite management goals in north Texas. In: Pruden, Teresa L.; Brennan, Leonard A., eds. Fire in ecosystem management: shifting the paradigm from suppression to prescription: Proceedings, Tall Timbers fire ecology conference; 1996 May 7-10; Boise, ID. No. 20. Tallahassee, FL: Tall Timbers Research Station: 195-204.

Ansley, R. J.; Jones, D. L.; Tunnell, T. R.; [and others]. 1998. Honey mesquite canopy responses to single winter fires: relation to herbaceous fuel, weather and fire temperature. International Journal of Wildland Fire 8(4):241-252.

Britton, Carlton M.; Wright, Henry A. 1971. Correlation of weather and fuel variables to mesquite damage by fire. Journal of Range Management 24:136-141.

Davis, Joseph H., III and Bonham, Charles D. 1979. Interference of sand sagebrush canopy with needleandthread. Journal of Range Management 32(5):384-386.

Herbel, C. H, Steger, R, Gould, W. L. 1974. Managing semidesert ranges of the Southwest Circular 456. Las Cruces, NM: New Mexico State University, Cooperative Extension Service. 48 p.

McDaniel, Kirk C.; Pieper, Rex D.; Loomis, Lyn E.; Osman, Abdelgader A. 1984. Taxonomy and ecology of perennial snakeweeds in New Mexico. Bulletin 711. Las Cruces, NM: New Mexico State University, Agricultural Experiment Station. 34 p.

McPherson, Guy R. 1995. The role of fire in the desert grasslands. In: McClaran, Mitchel P.; Van Devender, Thomas R., eds. The desert grassland. Tucson, AZ: The University of Arizona Press: 130-151.

Pettit, Russell D. 1986. Sand shinnery oak: control and management. Management Note 8. Lubbock, TX: Texas Tech University, College of Agricultural Sciences, Department of Range and Wildlife Management. 5 p.

Contributors

Don Sylvester
Quinn Hodgson

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

2. **Presence of water flow patterns:**

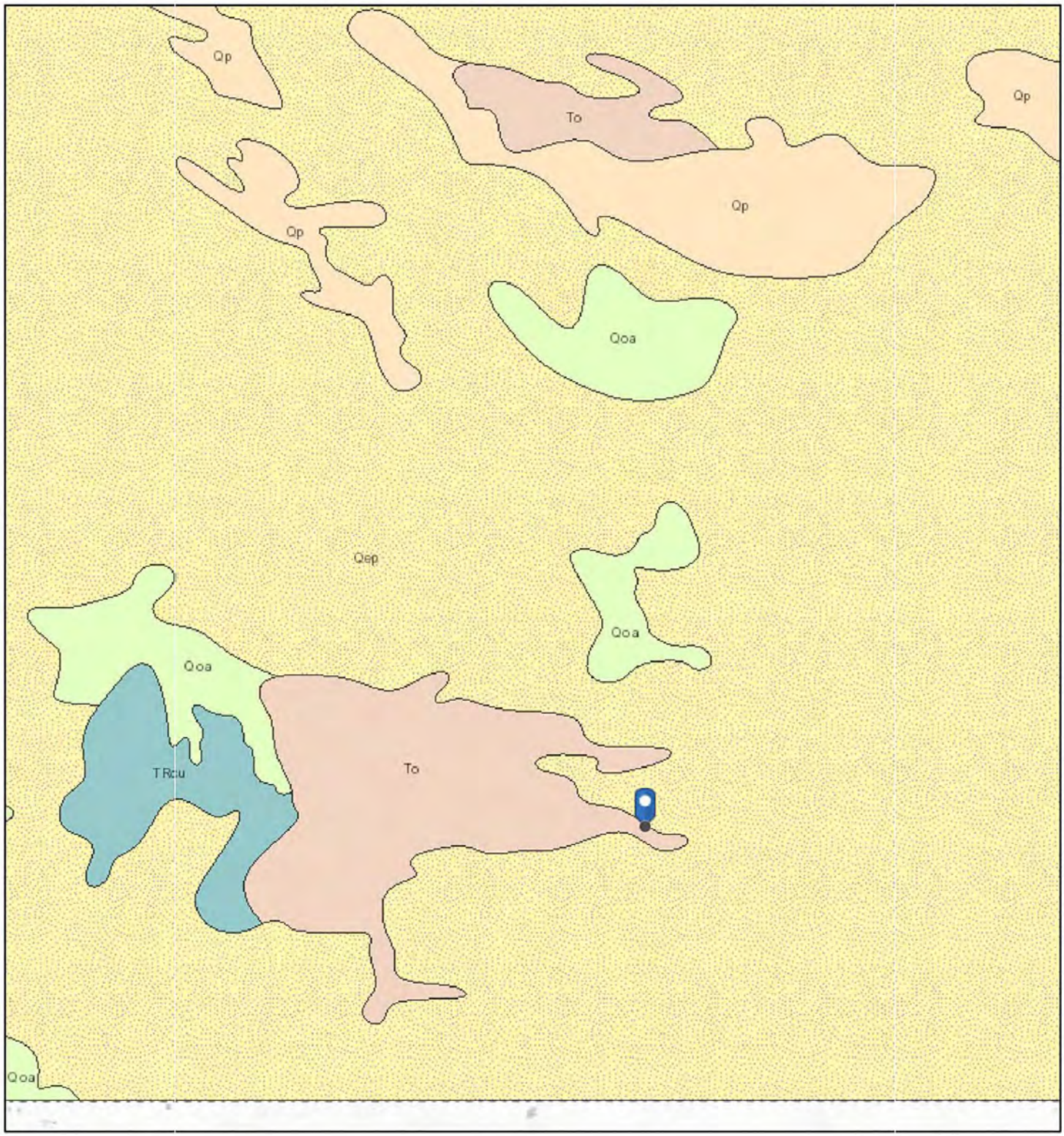
3. **Number and height of erosional pedestals or terracettes:**

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:**

Jayhawk 7 CTB 3 - Geological Map



1/9/2025, 4:34:41 PM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

Lithologic Units

- Playa—Alluvium and evaporite deposits (Holocene)
- Water—Perenial standing water
- Qa—Alluvium (Holocene to upper Pleistocene)

Esri, NASA, NGA, USGS, NMBGMR, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS

ArcGIS Web AppBuilder

3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National

ATTACHMENT 3: CORRESPONDENCE

Outlook

RE: [EXTERNAL] nAPP2430926272 Jayhawk 7 CTB 3

From Raley, Jim <Jim.Raley@dvn.com>
Date Tue 12/3/2024 5:37 AM
To Monica Peppin <Monica.Peppin@soudermiller.com>; ocd.enviro@emnrd.nm.gov <OCD.Enviro@emnrd.nm.gov>; BLM Spill Email <blm_nm_cfo_spill@blm.gov>
Cc Stephanie Hinds <stephanie.hinds@soudermiller.com>

Submitted on 12/3/2024
Note: for date of 12/5/2024 not requested 12/4/2024.

Jim Raley | Environmental Professional - Permian Basin
5315 Buena Vista Dr., Carlsbad, NM 88220
C: (575)689-7597 | jim.raley@dvn.com

devon

From: Monica Peppin <Monica.Peppin@soudermiller.com>
Sent: Wednesday, November 27, 2024 3:54 PM
To: Raley, Jim <Jim.Raley@dvn.com>; ocd.enviro@emnrd.nm.gov; BLM Spill Email <blm_nm_cfo_spill@blm.gov>
Cc: Stephanie Hinds <stephanie.hinds@soudermiller.com>
Subject: [EXTERNAL] nAPP2430926272 Jayhawk 7 CTB 3

All:

SMA anticipates conducting soil sampling activities at the following site on Wednesday, December 4, 2024:
Proposed Date: 12.4.24
Proposed Time Frame: 1:00 PM
Site Name: Jayhawk 7 CTB 3
Incident Number: nAPP2430926272
API: fAPP2130256817

Liner Inspection Notification	
Incident ID and Site Name:	**Jayhawk 7 CTB 3 nAPP2430926272**
API # and Corresponding Agency:	**fAPP2130256817 EMNRD-OCD and BLM**
Question	**Answer (Fill In)**
What is the liner inspection surface area in square feet (secondary containmet):	**6,659 sq ft**
Have all the impacted materials been removed from the liner and cleaned?	**Yes**
Liner inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC: 48 HOURS PRIOR TO INSPECTION	**Wednesday, December 4, 2024**
Time liner inspection will commence:	**1:00 PM**
Please provide any information necessary for observers to contact inspector: (Name and Number)	**Monica Peppin 575.909.3418**
Please provide any information necessary for navigation to liner inspection site and coordinates (Lat/Long)	**Intersection of 128 and Battle Axe Rd, travel south on battle axe for 13.26 miles and turn left travelling east on pipeline road for 2.58 miles, turn right facing south travel 0.64 miles turn right travelling west 0.14 miles and end on location.Site coordinates: 32.32.0545445, -103.506107**

Thank you,
Monica

SMA Since 1985
Stronger Communities by Design
Monica Peppin, A.S.
Project Manager

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

QUESTIONS

Action 423200

QUESTIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 423200
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2430926272**
Incident Name	**NAPP2430926272 JAYHAWK 7 CTB 3 @ 0**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Closure Report Received**
Incident Facility	**[fAPP2130256817] JAYHAWK 7 CTB 3**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	JAYHAWK 7 CTB 3
Date Release Discovered	11/03/2024
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	*Not answered.*
Produced Water Released (bbls) Details	Cause: Equipment Failure | Pump | Produced Water | Released: 64 BBL | Recovered: 64 BBL | Lost: 0 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Transfer pump failed. Produced water spilled to lined secondary containment. Fluids fully recovered.

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Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 423200
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**Yes**
Reasons why this would be considered a submission for a notification of a major release	**From paragraph A. "Major release" determine using:** **(1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.**

With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 01/22/2025

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 423200
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Greater than 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between ½ and 1 (mi.)
Any other fresh water well or spring	Between ½ and 1 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 500 and 1000 (ft.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between ½ and 1 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	Yes
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	11/14/2024
On what date will (or did) the final sampling or liner inspection occur	12/05/2024
On what date will (or was) the remediation complete(d)	12/05/2024
What is the estimated surface area (in square feet) that will be remediated	6659
What is the estimated volume (in cubic yards) that will be remediated	0
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

QUESTIONS (continued)

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QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
Is (or was) there affected material present needing to be removed	Yes
Is (or was) there a power wash of the lined containment area (to be) performed	Yes
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 01/22/2025
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS

Liner Inspection Information	
Last liner inspection notification (C-141L) recorded	**407773**
Liner inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC	**12/05/2024**
Was all the impacted materials removed from the liner	**Yes**
What was the liner inspection surface area in square feet	**6659**

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	**Yes**
Was this release entirely contained within a lined containment area	**Yes**
What was the total surface area (in square feet) remediated	6659
What was the total volume (cubic yards) remediated	0
Summarize any additional remediation activities not included by answers (above)	Secondary Containment inspection completed. No breach through liner

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (in .pdf format) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 01/22/2025

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CONDITIONS

Action 423200

CONDITIONS

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	Action Number: 423200
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CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your Remediation Closure Report for Incident #NAPP2430926272 JAYHAWK 7 CTB 3, thank you. This Remediation Closure Report is approved.	2/4/2025