Form C-141
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State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | nAPP2216427127 |
| District RP | |
| Facility ID | |
| Application ID | |

# Closure

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 (electronic submittals in .pdf format are preferred) 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.

**Closure Report Attachment Checklist**: ***Each of the following items must be included in the closure report.***

N/A A scaled site and sampling diagram as described in 19.15.29.11 NMAC

[X] Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

[X] Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

N/A Description of remediation activities

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.

Printed Name: Dale Woodall Title: Environmental Professional

Signature: Dale Woodall Date: 11/8/2022

email: dale.woodall@dvn.com Telephone: 575-748-1838

**OCD Only**

Received by: Jocelyn Harimon Date: 11/08/2022

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Robert Hamlet Date: 1/25/2023

Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced

| | |
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| Incident ID | nAPP2216427127 |
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# Site Assessment/Characterization

*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? | 67 (ft bgs) |
| Did this release impact groundwater or surface water? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? | ☐ Yes ☒ No |
| Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a wetland? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying a subsurface mine? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying an unstable area such as karst geology? | ☐ Yes ☒ No |
| Are the lateral extents of the release within a 100-year floodplain? | ☐ Yes ☒ No |
| Did the release impact areas **not** on an exploration, development, production, or storage site? | ☐ Yes ☒ No |

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

**Characterization Report Checklist**: ***Each of the following items must be included in the report.***

- ☒ N/A Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ N/A Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ N/A Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ N/A Topographic/Aerial maps
- ☒ N/A Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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State of New Mexico
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**Closure Report Attachment Checklist**: ***Each of the following items must be included in the closure report.***

☒ N/A A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ X Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ X Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ N/A Description of remediation activities

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Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

November 4, 2022 Vertex Project #: 22E-02178

**Spill Closure Report:** Collie Pad (Section 35, Township 22 South, Range 27 East)
County: Eddy
Incident ID: nAPP2216427127

**Prepared For:** **Devon Energy Production Company**
6488 Seven Rivers Highway
Artesia, New Mexico 88220

**New Mexico Oil Conservation Division – District 2 – Artesia**
811 South 1st Street
Artesia, New Mexico 88210

Devon Energy Production Company (Devon) retained Vertex Resource Services Inc. (Vertex) to conduct a Spill assessment and liner inspection for produced water release that occurred at Collie Pad, Incident nAPP2216427127 (hereafter referred to as "Collie"). Devon provided spill notification to the New Mexico Oil Conservation District (NMOCD) District 2, via submission of an initial C-141 Release Notification (Attachment 1). This letter provides a description of the Spill Assessment and includes a request for Spill Closure. The spill area is located at N 32.352505, W -104.152934.

## Background

The site is located approximately 1.06 miles east of Otis, New Mexico (Google Inc., 2022). The legal location for the site is Section 35, Township 22 South and Range 27 East in Eddy County, New Mexico. The spill area is located on private property.

The *Geological Map of New Mexico* indicates the surface geology at Collie is comprised of Qa – Alluvium (Holocene to upper Pleistocene; New Mexico Bureau of Geology and Mineral Resources, 2022). The Natural Resources Conservation Service *Web Soil Survey* characterizes the soil at the site as Reagan loam, which is characterized as loam material. It tends to be well-drained with a low runoff (United States Department of Agriculture, Natural Resources Conservation Service, 2022). There is medium potential for karst geology at Collie (United States Department of the Interior, Bureau of Land Management, 2018).

The surrounding landscape is associated with fan remnants and alluvial fans typical of elevations of 1,100 to 5,300 feet above sea level. The climate is semi-arid, with average annual precipitation ranging between 7 and 15 inches. Limited to no vegetation is allowed to grow on the compacted facility pad. Historically, the plant community consists of black grama, tobosa, bunch grasses, soaptree yucca, ephedra, fourwing saltbush, broom snakeweed, and prickly pear. The surrounding land is farmland of statewide importance.

There is no surface water located on-site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is the Pecos River located approximately 1.77 miles northeast of the site (U.S. Fish and Wildlife Services: National

Wetlands Inventory). There are no continuous flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

## Incident Description

The spill occurred on June 10, 2022, due to an equipment failure and allowing the tanks to overflow in the secondary lined containment. The release was reported on June 13, 2022 and involved the release of approximately 18 barrels (bbl.) of produced water into the lined containment of the tank battery. Approximately 18 bbl. of free fluid was removed during initial spill clean-up. The NMOCD C-141 Report: nAPP2216427127 is included in Attachment 1. The daily field report (DFR) and site photographs are included in Attachment 2.

## Closure Criteria Determination

The depth to groundwater was determined using information from the United States Department of the Interior, United States Geological Survey (2022) National Water Information Mapping System and New Mexico Office of the State Engineer (2022) Water Rights Reporting System. A 0.5-mile search radius was used to determine groundwater depth. The closest recorded depth to groundwater was determined to be 67 feet below ground surface (bgs) and 0.44 miles from the site. Documentation used in Closure Criteria Determination research is included in Attachment 3.

| **Closure Criteria Worksheet** | | | |
|---|---|---|---|
| **Site Name: Collie 35-34-22-27 Fee #401H** | | | |
| **Spill Coordinates:** | | **X: 32.352552** | **Y: -104.152891** |
| **Site Specific Conditions** | | **Value** | **Unit** |
| 1 | Depth to Groundwater | **65** | feet |
| 2 | Within 300 feet of any continuously flowing watercourse or any other significant watercourse | 9,334 | feet |
| 3 | Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark) | 11,529 | feet |
| 4 | Within 300 feet from an occupied residence, school, hospital, institution or church | 2,410 | feet |
| 5 | i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or** | 2,323 | feet |
| | ii) Within 1000 feet of any fresh water well or spring | 2,323 | feet |
| 6 | Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves | No | (Y/N) |
| 7 | Within 300 feet of a wetland | 1,330 | feet |
| 8 | Within the area overlying a subsurface mine | No | (Y/N) |
| 9 | Within an unstable area (Karst Map) | Medium | Critical<br>High<br>Medium<br>Low |
| 10 | Within a 100-year Floodplain | Undetermined | year |
| 11 | Soil Type | Reagan loam | |
| 12 | Ecological Classification | Loamy | |
| 13 | Geology | Qa | |
| | **NMAC 19.15.29.12 E (Table 1) Closure Criteria** | 51-100' | <50'<br>51-100'<br>>100' |

Based on data included in the closure criteria determination worksheet, the release at Collie would not be subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 of the New Mexico Administrative Code (NMAC) and the closure criteria for the site would be determined to be associated with the following constituent concentration limits based on depth to groundwater. Based on closure criteria, the criterium falls under the "51-100 feet to ground water". The closure criteria determined for the site are associated with the following constituent concentration limits as presented in Table 1.

**Table 1. Closure Criteria for Soils Impacted by a Release**

| Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS | Constituent | Limit |
|---|---|---|
| 51 feet - 100 feet | Chloride | 10,000 mg/kg |
| | TPH (GRO+DRO+MRO) | 2,500 mg/kg |
| | GRO+DRO | 1,000 mg/kg |
| | BTEX | 50 mg/kg |
| | Benzene | 10 mg/kg |

TPH – total petroleum hydrocarbons, GRO – gas range organics, DRO – diesel range organics, MRO – motor oil range organics, BTEX – benzene, toluene, ethylbenzene and xylenes

## Remedial Actions Taken

A site inspection of the spill was completed on July 14, 2022, which identified the area of the spill specified in the initial C-141 Reports. The DFR associated with the site inspection is included in Attachment 2.

Notification that a liner inspection was scheduled to be completed was provided to the NMOCD on July 11, 2022. Visual observation of the liner was completed on all sides and the base of the containment, around equipment, and of all seams in the liner. As evidence in the DFR, Attachment 2, liner integrity was confirmed, and the Liner Inspection Notification email is presented in Attachment 4.

## Closure Request

Vertex recommends no additional remediation action to address the release at Collie. The secondary containment liner was intact and contained the release. There are no anticipated risks to human, ecological, or hydrological receptors associated with the release site.

Vertex requests that this incident (nAPP2216427127) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Devon certifies that all information in this report and the attachments are correct and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain closure on the June 10, 2022, release at Collie Pad.

Should you have any questions or concerns, please do not hesitate to contact Monica Peppin at 575.361.9880 or mpeppin@vertex.ca.

Monica Peppin, A.S.
PROJECT MANAGER, REPORTING

November 4, 2022
Date

## Attachments

Attachment 1. NMOCD C-141 Report
Attachment 2. Daily Field Report with Pictures
Attachment 3. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
Attachment 4. Required 48-hr Notification of Liner Inspection to Regulatory Agencies

## References

Google Inc. (2022). *Google Earth Pro (Version 7.3.4)* [Software]. Retrieved from http://google.com/earth.

New Mexico Bureau of Geology and Mineral Resources. (2022). *Interactive Geologic Map.* Retrieved from http://geoinfo.nmt.edu.

New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2022). *Water Column/Average Depth to Water Report.* Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html.

New Mexico Oil Conservation Division. (2018). *New Mexico Administrative Code – Natural Resources and Wildlife Oil and Gas Releases*. Santa Fe, New Mexico.

United States Department of Agriculture, Natural Resources Conservation Service. (2022). *Web Soil Survey*. Retrieved from https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

United States Department of the Interior, Bureau of Land Management. (2018). *CFO Karst Public*. https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html

United States Department of the Interior, United States Geological Survey. (2022). *National Water Information System: Web Interface*. Retrieved from https://nwis.waterdata.usgs.gov/usa/nwis/gwlevels/?site_no=321822104104101.

United States Fish and Wildlife Service. (2022). *National Wetlands Inventory*. Retrieved from https://www.fws.gov/wetlands/data/Mapper.html.

## Limitations

This report has been prepared for the sole benefit of Devon Energy Production Company (Devon). This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division without the express written consent of Vertex Resource Services Inc. (Vertex) and Devon. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

# ATTACHMENT 1

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

| | |
|---|---|
| Incident ID | |
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| Facility ID | |
| Application ID | |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party | OGRID |
| Contact Name | Contact Telephone |
| Contact email | Incident # *(assigned by OCD)* |
| Contact mailing address | |

## Location of Release Source

Latitude _____ Longitude _____
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name | Site Type |
| Date Release Discovered | API# *(if applicable)* |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| | | | | |

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

## Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

| | | |
|---|---|---|
| ☐ Crude Oil | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Produced Water | Volume Released (bbls) | Volume Recovered (bbls) |
| | Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l? | ☐ Yes ☐ No |
| ☐ Condensate | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Natural Gas | Volume Released (Mcf) | Volume Recovered (Mcf) |
| ☐ Other (describe) | Volume/Weight Released (provide units) | Volume/Weight Recovered (provide units) |
| Cause of Release | | |

State of New Mexico
Oil Conservation Division

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| | |
|---|---|
| Was this a major release as defined by 19.15.29.7(A) NMAC?<br><br>☐ Yes ☐ No | If YES, for what reason(s) does the responsible party consider this a major release? |
| If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? | |

## 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.
☐ The impacted area has been secured to protect human health and the environment.
☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☐ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

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

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Printed Name: _____ Title: _____

Signature: Kendra Ruiz Date: _____

email: _____ Telephone: _____

**OCD Only**

Received by: Jocelyn Harimon Date: 06/22/2022

State of New Mexico
Oil Conservation Division

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Signature: Dale Woodall Date: 11/8/2022

email: dale.woodall@dvn.com Telephone: 575-748-1838

**OCD Only**

Received by: _____ Date: _____

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**OCD Only**

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

# ATTACHMENT 2

# Daily Site Visit Report

| | | | |
|---|---|---|---|
| Client: | Devon Energy Corporation | Inspection Date: | 7/14/2022 |
| Site Location Name: | Collie Fee #401 H | Report Run Date: | 7/14/2022 10:47 PM |
| Client Contact Name: | Wes Matthews | API #: | |
| Client Contact Phone #: | (575) 748-0176 | | |
| Unique Project ID | | Project Owner: | |
| Project Reference # | | Project Manager: | |

## Summary of Times

| | |
|---|---|
| Arrived at Site | 7/14/2022 8:04 AM |
| Departed Site | 7/14/2022 9:52 AM |

## Field Notes

**8:16** Arrived at site and filled out safety paperwork.

**8:17** Will conduct a liner inspection around and near equipment where the reported spill happened.

**8:19** This includes areas around the containment, between equipment, down each wall of the containment, and areas where the release occurred.

**9:07** Liner inspection has been completed. Overall the liner is in good condition even after the release. Within the containment, no apparent tears or holes, that could lead to a breach in the liner, were observed.

**9:11** No significant staining was observed outside the containment wall.

## Next Steps & Recommendations

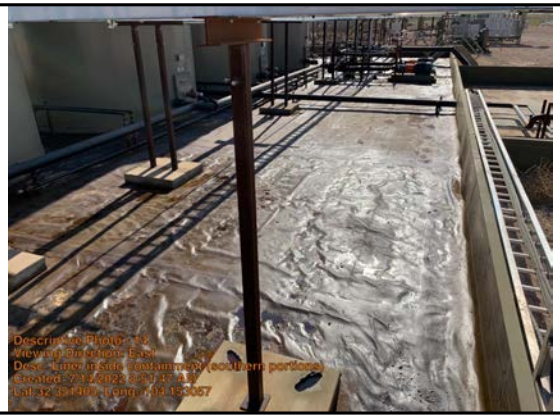
**1** Delineate the release area

# Daily Site Visit Report

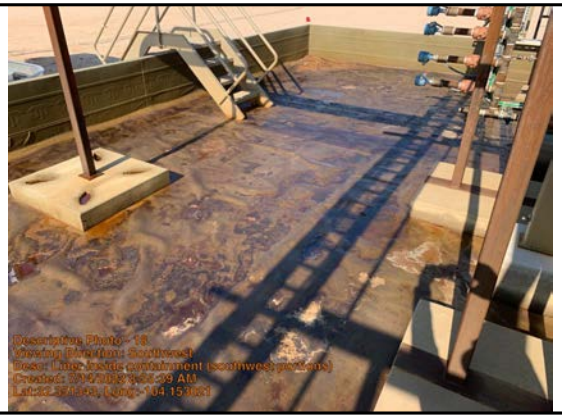
## Site Photos

| **Viewing Direction**: Southeast | **Viewing Direction**: Northwest |
|---|---|
|  |  |
| Northwest corner of containment wall | Southeast corner of containment wall |
| **Viewing Direction**: Northwest | **Viewing Direction**: Southeast |
|  |  |
| Liner inside containment (southeast portions) | Liner inside containment (southeast portions) |

# Daily Site Visit Report

| **Viewing Direction**: West | **Viewing Direction**: East |
|---|---|
|  |  |
| Liner inside containment (southern portions) | Liner inside containment (southern portions) |
| **Viewing Direction**: Northeast | **Viewing Direction**: Northeast |
|  |  |
| Southwest corner of containment wall | Liner inside containment (southwest portions) |

# Daily Site Visit Report

| **Viewing Direction**: Southwest | **Viewing Direction**: Southwest |
|---|---|
|  |  |
| Liner inside containment (southwest portions) | Liner inside containment (southwest portions) |
| **Viewing Direction**: North | **Viewing Direction**: Southeast |
|  |  |
| Areas between tanks | Liner inside containment (northwest portions) |

# Daily Site Visit Report

| **Viewing Direction**: North | **Viewing Direction**: Northwest |
|---|---|
|  |  |
| Areas between tanks | Liner inside containment (northwest portions) |
| **Viewing Direction**: Southeast | **Viewing Direction**: Southeast |
|  |  |
| Northern containment wall | Liner inside containment (northern portions) |

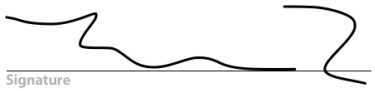
# Daily Site Visit Report

| **Viewing Direction**: Southwest | **Viewing Direction**: Southwest |
|---|---|
|  |  |
| Northeast corner of containment wall | Liner inside containment (northeast portions) |
| **Viewing Direction**: Northeast | **Viewing Direction**: West |
|  |  |
| Liner inside containment (northeast portions) | Liner inside containment (northern portions) |

# Daily Site Visit Report

## Daily Site Visit Signature

**Inspector:** Fernando Rodriguez

**Signature:** 

# ATTACHMENT 3

# Collie Pad


11/4/2022, 11:48:53 AM

- Override 1
- GIS WATERS PODs
  - Active
  - Pending
- OSE District Boundary
- Water Right Regulations
  - Negative Easement Area
- New Mexico State Trust Lands
  - Subsurface Estate
- Conveyances
  - Ditch
- SiteBoundaries

1:9,028

0 0.07 0.15 0.3 mi

0 0.15 0.3 0.6 km

Esri, HERE, GeoTechnologies, Inc., Esri, HERE, Garmin, GeoTechnologies, Inc., U.S. Department of Energy Office of Legacy Management, Maxar

Web Generated Map
Map is generated by web users.

# New Mexico Office of the State Engineer
# Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

| Well Tag | POD Number | Q64 | Q16 | Q4 | Sec | Twn | Rng | X | Y |
|---|---|---|---|---|---|---|---|---|---|
| | C 01312 | 3 | 1 | | 35 | 22S | 27E | 578373 | 3579593* |

**Driller License:** 108 **Driller Company:** SMITH, SAM S.

**Driller Name:** SAM SMITH

| | | | | | |
|---|---|---|---|---|---|
| **Drill Start Date:** | 12/28/1966 | **Drill Finish Date:** | 01/23/1967 | **Plug Date:** | |
| **Log File Date:** | 03/03/1967 | **PCW Rcv Date:** | 04/07/1967 | **Source:** | Shallow |
| **Pump Type:** | TURBIN | **Pipe Discharge Size:** | | **Estimated Yield:** | 1800 GPM |
| **Casing Size:** | 16.00 | **Depth Well:** | 203 feet | **Depth Water:** | 65 feet |

| Water Bearing Stratifications: | Top | Bottom | Description |
|---|---|---|---|
| | 140 | 162 | Sandstone/Gravel/Conglomerate |

| Casing Perforations: | Top | Bottom |
|---|---|---|
| | 68 | 188 |

| | | | |
|---|---|---|---|
| **Meter Number:** | 5422 | **Meter Make:** | MCC |
| **Meter Serial Number:** | 010591010 | **Meter Multiplier:** | 1.0000 |
| **Number of Dials:** | 6 | **Meter Type:** | Diversion |
| **Unit of Measure:** | Acre-Feet | **Return Flow Percent:** | |
| **Usage Multiplier:** | | **Reading Frequency:** | |

**Meter Readings (in Acre-Feet)**

| Read Date | Year | Mtr Reading | Flag | Rdr | Comment | Mtr Amount | Online |
|---|---|---|---|---|---|---|---|
| 04/09/2002 | 2002 | 0 | A | MB | No electric meter | 0 | |
| 05/07/2002 | 2002 | 26 | A | ms | | 26.496 | |
| 06/13/2002 | 2002 | 61 | A | CID | | 34.257 | |
| 09/04/2002 | 2002 | 89 | A | ms | | 28.270 | |
| 01/16/2003 | 2002 | 93 | A | ms | | 3.508 | |
| 04/03/2003 | 2003 | 120 | A | ms | | 27.218 | |
| 06/05/2003 | 2003 | 208 | A | ms | | 88.310 | |
| 08/21/2003 | 2003 | 325 | A | ab | | 117.247 | |
| 01/07/2004 | 2003 | 377 | A | ab | | 51.517 | |
| 05/11/2004 | 2004 | 410 | A | RM | | 33.534 | |
| 07/15/2004 | 2004 | 473 | A | TW | | 63.012 | |
| 10/21/2004 | 2004 | 500 | A | TW | | 26.621 | |
| 01/03/2005 | 2004 | 500 | A | TW | | 0 | |
| 03/31/2005 | 2005 | 500 | A | JW | | 0 | |
| 07/07/2005 | 2005 | 500 | A | JW | meter off | 0 | |
| 01/02/2012 | 2012 | 0 | A | tw | | 0 | |
| 07/24/2012 | 2012 | 370 | A | tw | | 369.947 | |
| 02/28/2013 | 2012 | 496 | A | tw | | 125.585 | |
| 10/29/2013 | 2013 | 764 | A | tw | | 268.276 | |
| 02/11/2014 | 2014 | 764 | A | tw | | 0 | |

| | | | | | |
|---|---|---|---|---|---|
| 12/09/2014 | 2014 | 780 | A | tw | 16.137 |
| 07/21/2015 | 2015 | 780 | A | tw | 0 |
| 09/18/2015 | 2015 | 780 | A | tw | 0 |
| 08/10/2016 | 2016 | 780 | A | tw | 0 |
| 12/08/2016 | 2016 | 780 | A | tw | 0.064 |
| 05/28/2017 | 2017 | 780 | A | tw | 0 |
| 12/28/2017 | 2017 | 780 | A | tw | 0 |

x

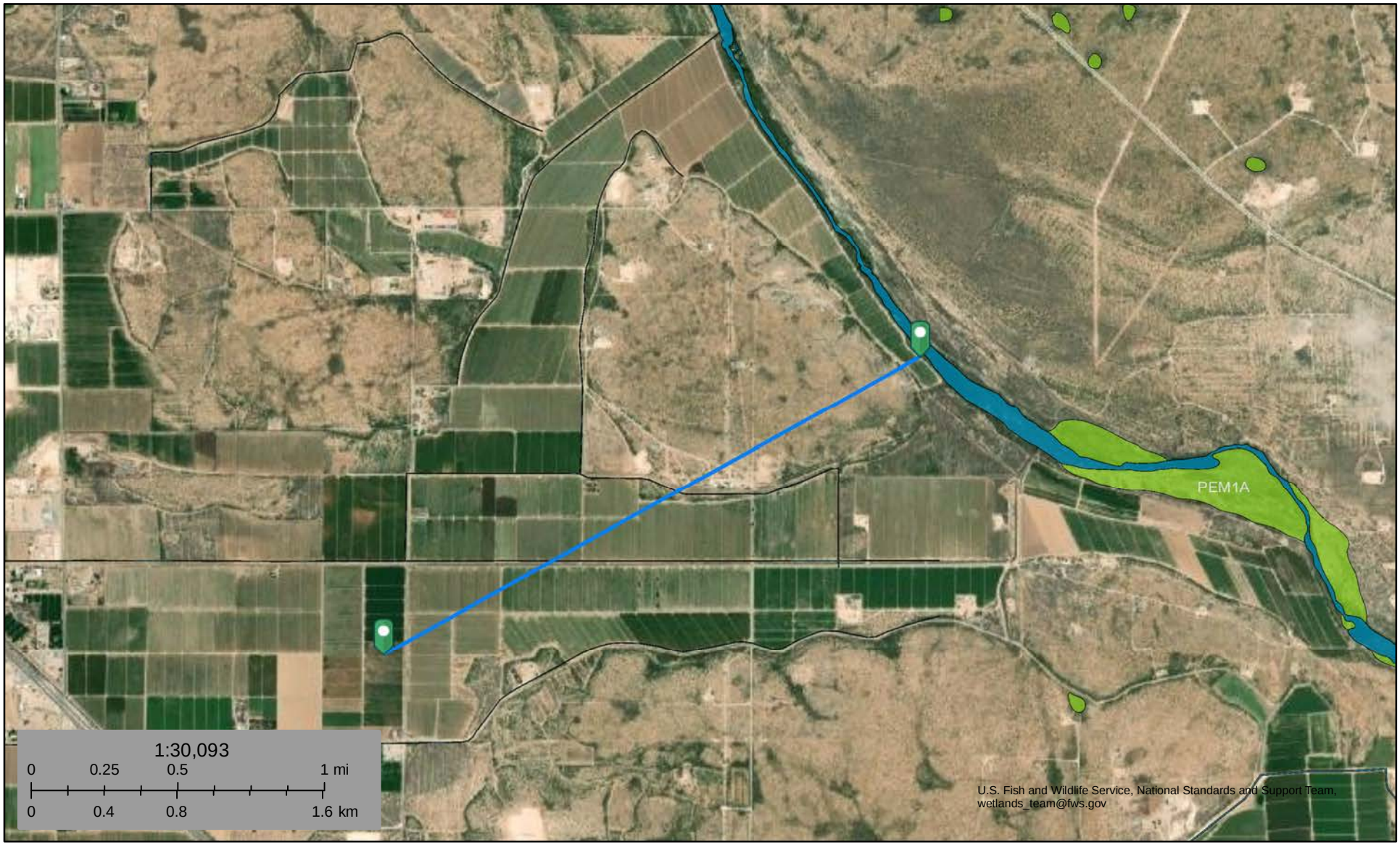
| **YTD Meter Amounts: | Year | Amount |
|---|---|---|
| | 2002 | 92.531 |
| | 2003 | 284.292 |
| | 2004 | 123.167 |
| | 2005 | 0 |
| | 2012 | 495.532 |
| | 2013 | 268.276 |
| | 2014 | 16.137 |
| | 2015 | 0 |
| | 2016 | 0.064 |
| | 2017 | 0 |

x

***UTM location was derived from PLSS - see Help**

U.S. Fish and Wildlife Service
National Wetlands Inventory

# Collie 35-34-22-27 Fee #401H




July 11, 2022

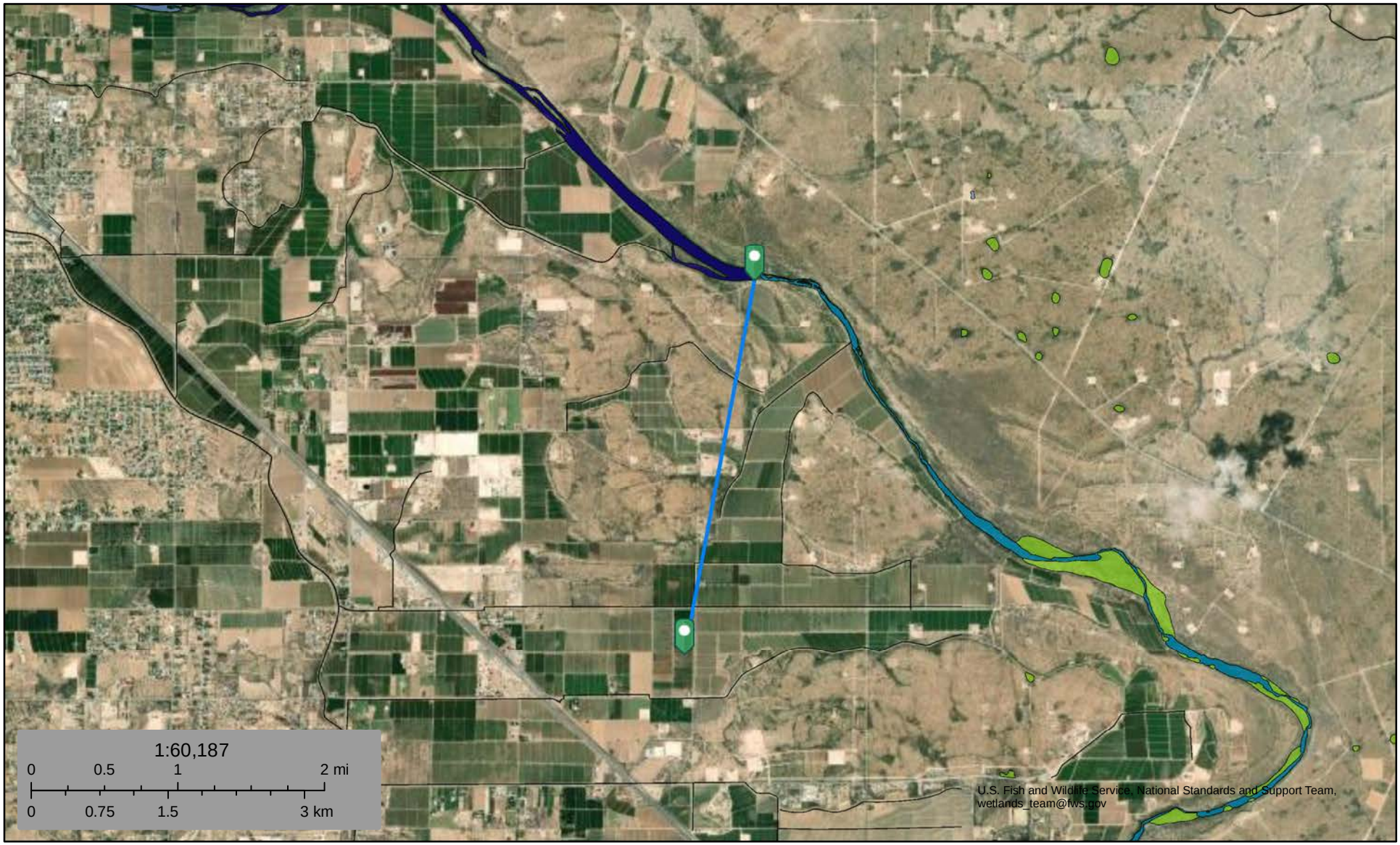
**Wetlands**

- 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.

U.S. Fish and Wildlife Service
National Wetlands Inventory

# Collie 35-34-22-27 Fee #401H




July 11, 2022

**Wetlands**

- Estuarine and Marine Deepwater
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National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

# Collie 35-34-22-27 Fee #401H

Nearest Residence: 0.46 miles (2,410 feet)



*New Mexico Office of the State Engineer*

# Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

| Well Tag | POD Number | Q64 | Q16 | Q4 | Sec | Tws | Rng | X | Y |
|---|---|---|---|---|---|---|---|---|---|
| | C 03282 | 3 | 3 | 2 | 35 | 22S | 27E | 579082 | 3579508* |

**Driller License:** **Driller Company:**

**Driller Name:**

**Drill Start Date:** **Drill Finish Date:** **Plug Date:**

**Log File Date:** **PCW Rcv Date:** **Source:**

**Pump Type:** **Pipe Discharge Size:** **Estimated Yield:**

**Casing Size:** **Depth Well:** **Depth Water:**

***UTM location was derived from PLSS - see Help**

# *New Mexico Office of the State Engineer*
# Water Right Summary

get image list

**WR File Number:** C 03282 **Subbasin:** C **Cross Reference:** -

**Primary Purpose:** DOL 72-12-1 DOMESTIC AND LIVESTOCK WATERING

**Primary Status:** PMT PERMIT

**Total Acres:** **Subfile:** - **Header:** -

**Total Diversion:** 3 **Cause/Case:** -

**Owner:** JAMES WALTERSCHEID

**Documents on File**

| | Trn # | Doc | File/Act | Status 1 | Status 2 | Transaction Desc. | From/ To | Acres | Diversion | Consumptive |
|---|---|---|---|---|---|---|---|---|---|---|
| get images | 468596 | 72121 | 2006-05-19 | PMT | APR | C 03282 | T | | 3 | |

**Current Points of Diversion**

(NAD83 UTM in meters)

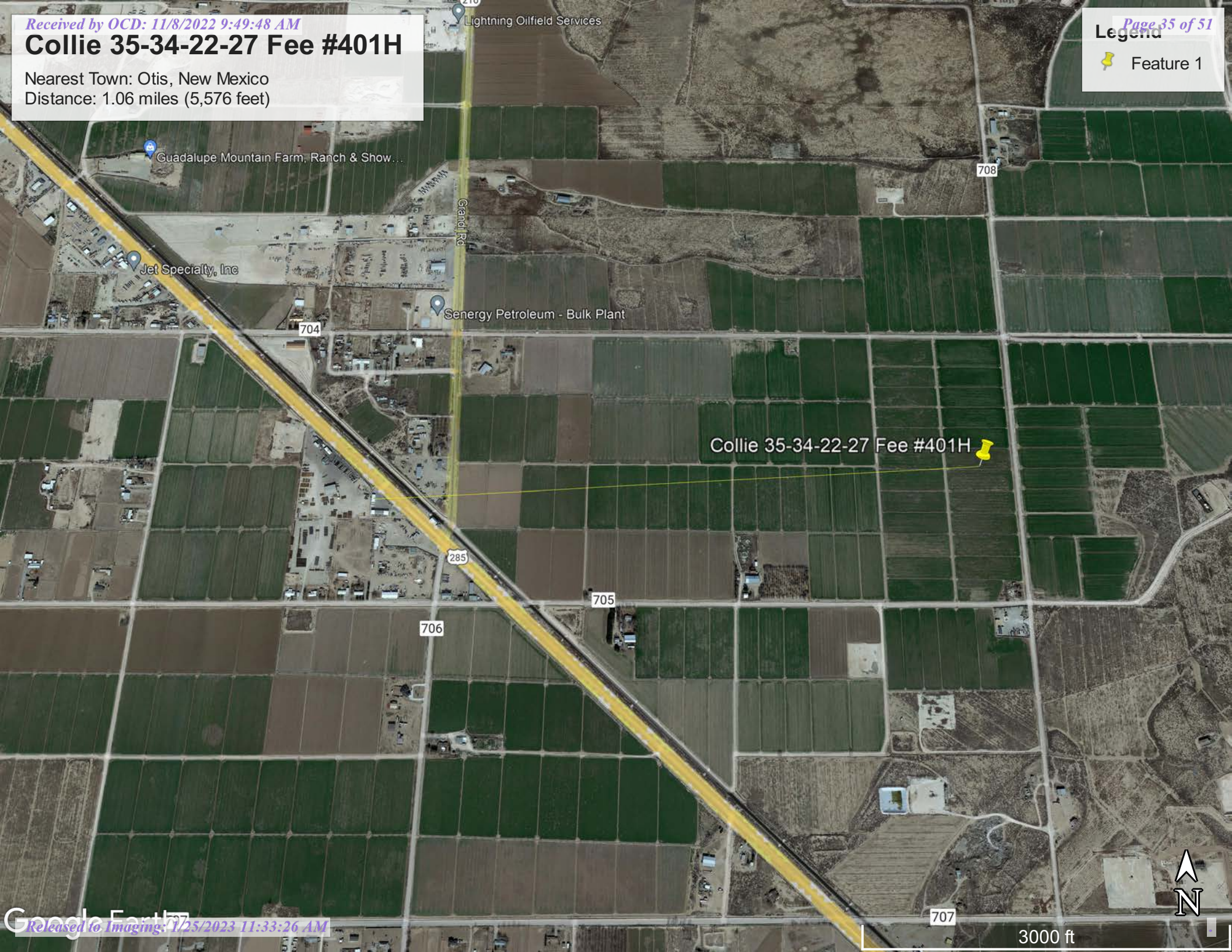
| POD Number | Well Tag | Source | Q 64 | Q16 | Q4 | Sec | Tws | Rng | X | Y | Other Location Desc |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C 03282 | | | 3 | 3 | 2 | 35 | 22S | 27E | 579082 | 3579508* | |

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

# Collie 35-34-22-27 Fee #401H

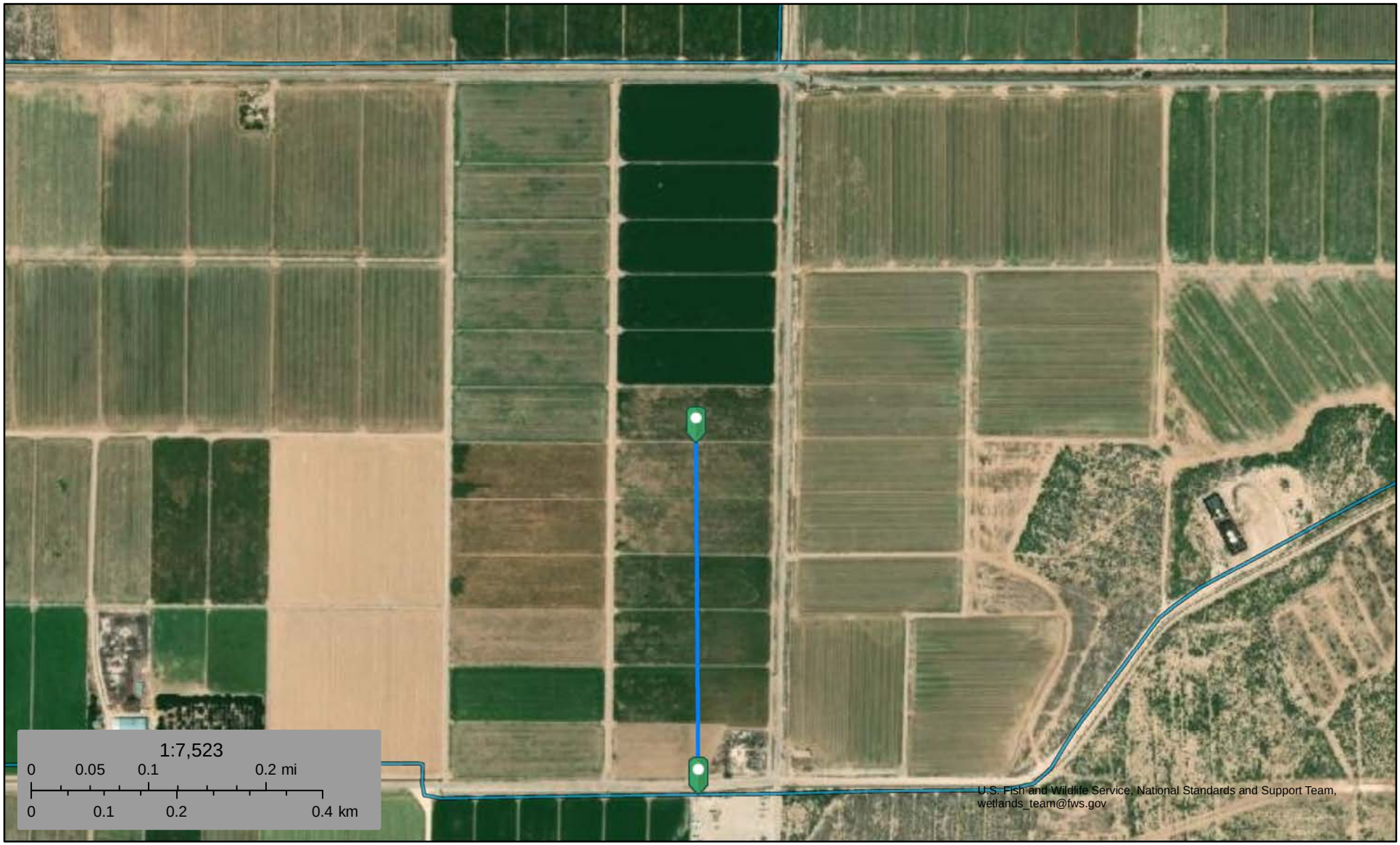
Nearest Town: Otis, New Mexico
Distance: 1.06 miles (5,576 feet)





U.S. Fish and Wildlife Service
National Wetlands Inventory

# Collie 35-34-22-27 Fee #401H




July 11, 2022

**Wetlands**

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

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# Ecological Reference Worksheet

**Author(s) / participant(s):** John Tunberg,

**Contact for lead author :** 505-761-4488 **Reference site used? Yes/No** No

**Date:** 2/12/2010 **MLRA:** 42.3 **Ecological Site:** Loamy This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

**Indicators:** For each indicator, describe the potential for the site. Where possible, **(1)** use numbers, **(2)** include expected range of values for above and below average years for **each** community within the reference state, when appropriate & **(3)** site data. Continue description on separate sheet.

**1. Number and extent of rills :** There should not be any rills.

After wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances rills may double in number on steeper slopes at the margins of this site after high-intensity summer thunderstorms. Any rills formed should not be long lived or interconnected and should heal rapidly.

**2. Presence of water flow patterns:** There can be evidence of sheet flow.

There can be a few flow patterns that should be short and discontinuous. There can be some sheet flow. Water flow patterns should only be present following intense storm events on upper slope limits at the margins of this site. Numerous obstructions alter flow paths. Flow pattern length and numbers may double after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances.

**3. Number and height of erosional pedestals or terracettes:** Pedestals should be rare. Terracettes can occure and should be discontinuous.

There can be a few pedestals that should be less than 1 inch high. Terracettes can be common and should be discontinuous. If present plant or rock pedestals and terracettes are almost always in flow patterns. Wind caused pedestals are rare and only would be on the site following after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. These would show signs of healing within 1 year after event.

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

Bare ground can make up to 50% of the ground cover on this site according to the ESD. Bare patch size should be small.

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

Gullies and erosion associated with gullies should be rare are infrequent. Typically, gullies if present will only follow the micro topography. Natural drainages with little to no active cutting are common on this site. There should not be any accelerated erosion. After high-intensity summer thunderstorms or after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances then gully formation would be accelerated for a year or two. Evidence of healing within 1 year of event and continuing after that.

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

There should not be any wind scoured, blowouts and/or depositional areas. However there can be potential for depositional areas. Wind erosion is minimal when the site is in a well vegetated condition. Significant wind erosion would only be present following high-intensity summer thunderstorms, after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. After rain events, exposed soil surfaces form physical crusts that tend to reduce wind erosion. Deposition from off site sources can be common on this site and is in fact a primary soil forming process. This site is succeptable to wind erosion when vegetation is removed or significantly decreased.

**7. Amount of litter movement (describe size and distance expected to travel) :**

Litter should be small (less than "1 in diameter) and its movement should be minimal. This site has adequate vegetation to stop litter movement after short distances. Most of the litter movement on this site will be litter that has been transported onto the site from adjacent sites. Litter produced on this site stays on the site and only travels short distances.

**8. Soil surface (top few mm) resistance to erosion (stability) values are averages - most sites will show a range of values for both plant canopy and interspaces, if different) :**

This site can be susceptible to alluvial erosion. Stability values are estimated to be 1-2 in interspaces and 3-5 at bases of vegetation. This would be

**9. Soil surface structures and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different) :**

The SOM content should be less than 1%. A--0 to 6 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; hard, friable, slightly sticky; surface 1/2 to 2 inches has weak thin to medium platy structure; common very fine and fine pores; common very fine, fine and medium roots; strongly calcareous; slightly alkaline (pH 7.6); clear smooth boundary. (4 to 8 inches thick)

**10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff:**

Overall, infiltration rates should be slow for this site but can be higher around bases of grasses than in interspaces and around bases of shrubs. The soils of this site are deep to moderately deep. The moderately deep soils have either a petrocalcic, petrogypsic or gypsum horizon between 30 and 40 inches. Surface textures are loam, silt loam, very fine sandy loam, or clay loam. Substratum textures are loam, silty clay loam, clay loam, or silt loams. Subsoil textures are silt loam , clay loam silty clay loam, gravelly loam, gravelly clay loam or very gravelly loam. Permeability is moderate to slow and the available water holding capacity is high to moderate.

**11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction):**

There should not be any compaction layers on this site. There are soil profile features in the top 9 inches of the soil profile that would be mistaken for a management induced soil compaction layer. Management induced compaction layers will be more difficult to penetrate than clay lenses.

**12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: indicate much greater than ( >>) , greater than (>) , and equal to (=) :**

black grama >> tobosa > C 4 bunch grasses (dropseeds) > C4 midgrasses (threeawns) >= soaptree yucca, ephedra, fourwing saltbush >= forbs (croton, desert marigold, globemallow, > broom snakeweed, prickly pear, = other forbs.

**13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence) :**

Black grama and bunchgrasses can show decadence in centers of plants.

**14. Average percent litter cover ( _____ % ) and depth ( _____ inches).**

Average 15% cover and 0.75 inch deep. (As per ESD)

**15. Expected annual production (this is <u>TOTAL</u> above-ground production, not just forage production):**

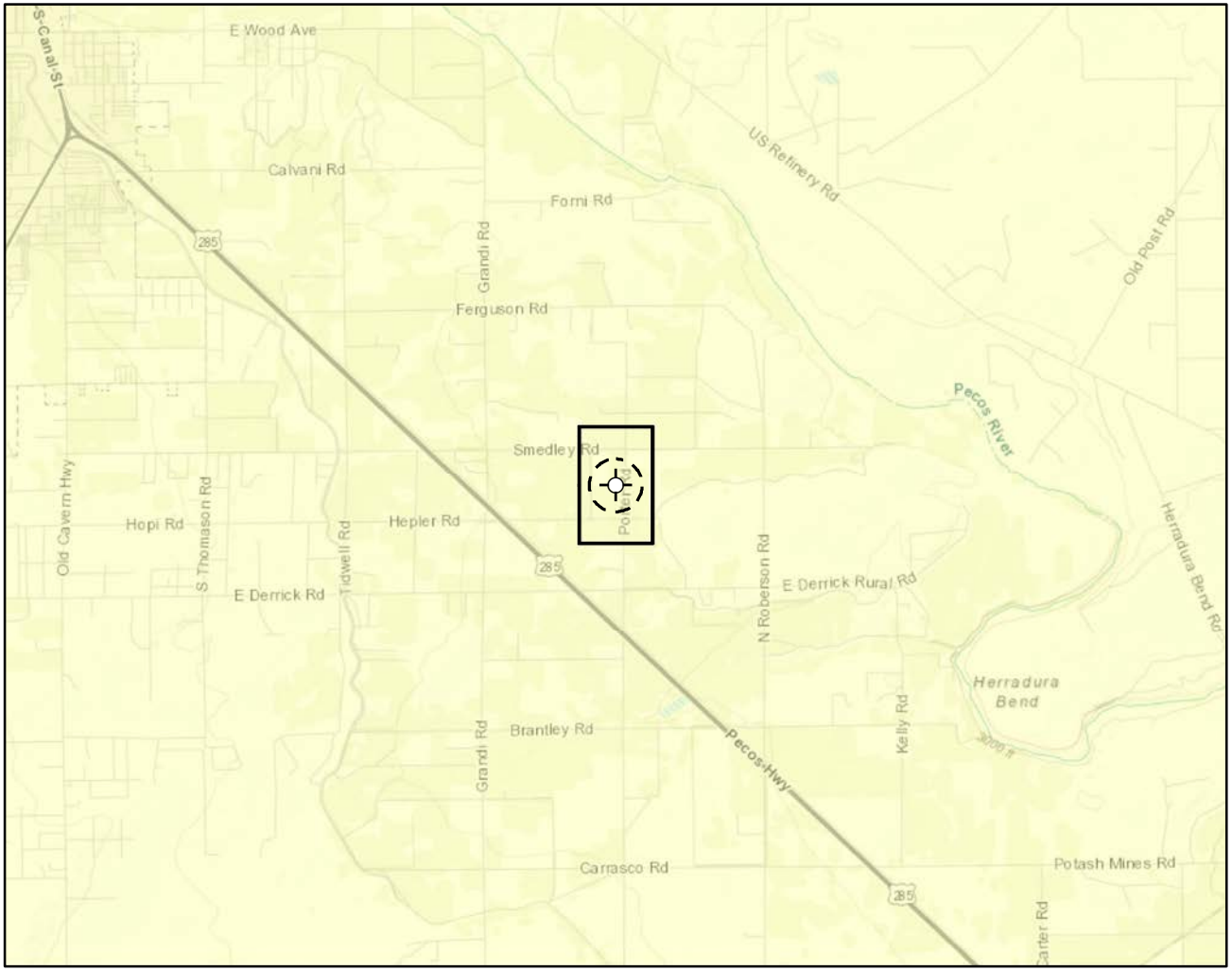
(Low Production 650 lbs./ac.) (Average RV Production 925 lbs./ac.) (High Production 1200 lbs./ac.) After wildfires, high herbivore impacts, extended drought, or combinations of these disturbances, can cause production to be significantly reduced (100-200 lbs per ac. the first growing season following a wildfire) and recover slowly under below average precipitation regimes.

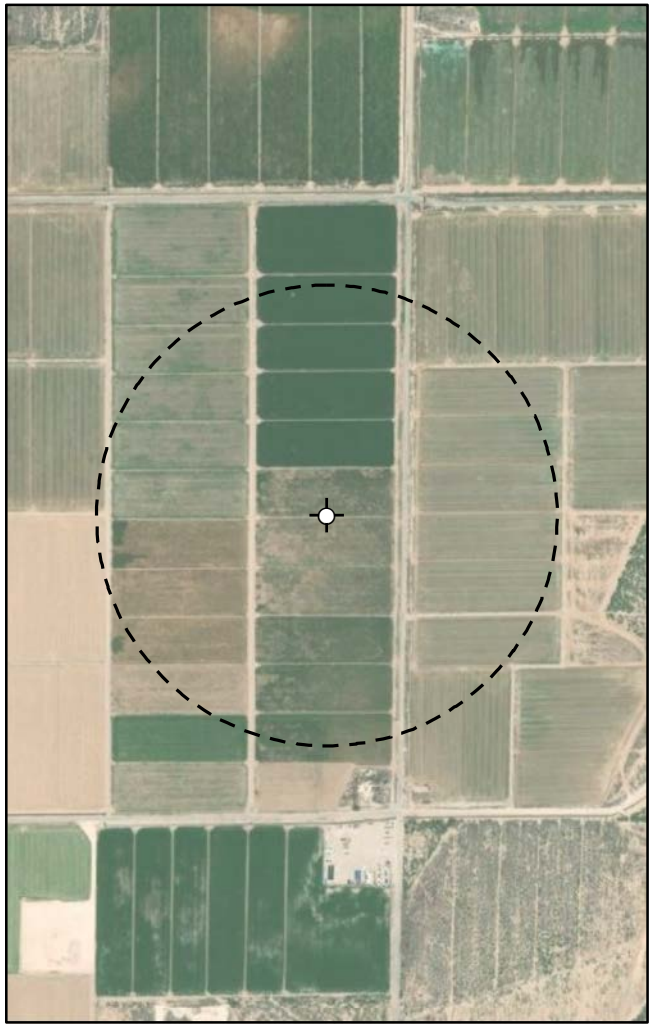
**16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do , continue to increase regardless of the management of the site and may eventually dominate**

Tarbush, creosote and mesquite can be invaders to this site. Invasive plants should not occur in reference plant community. However, lovegrass, Russian thistle, kochia, and other nonnative annuals may initialy invade following extended disturbance. Mesquite and tarbush and creosote and lovegrass are the greatest threat to dominate this site in the long term after disturbance (primarily following wildfire exclusion but also includes high human or herbivore impacts and extended drought). Mesquite and tarbush and creosote and lovegrass are most likely to retain dominance if allowed to alter natural fire regime (this alteration may require poor land management combined with years of wet winter-spring; dry summer-fall conditions). Any of these invaded communities represent a departure from the reference state.

**17. Perennial plant reproductive capability :**

Black grama reproduces by seed sporadically and reproduction by tiller and stolon can be common. The C4 midgrasses should have high reproductive potential and rapidly recover from drought in the absence of additional stresses (grazing).



**Karst Potential**

- Critical
- High
- Medium
- Low

Site Location

Site Buffer (1,000 ft.)

**Overview Map**

0 0.25 0.5 1 1.5 mi

**Detail Map**

0 150 300 600 ft.

VERTEX

Map Center:
Lat/Long: 32.352552, -104.152891

NAD 1983 UTM Zone 13N
Date: Jul 12/22

N

**Karst Potential**
**Collie 35-34-22-27 Fee #401H**

FIGURE:
**X**

devon

Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Inset Map, ESRI 2018; Overview Map: ESRI World Topographic. Karst potential data sourced from Rosswell Field Office, Bureau of Land Management, 2020 or United States Department of the Interior, Bureau of Land Management. (2018). Karst Potential.

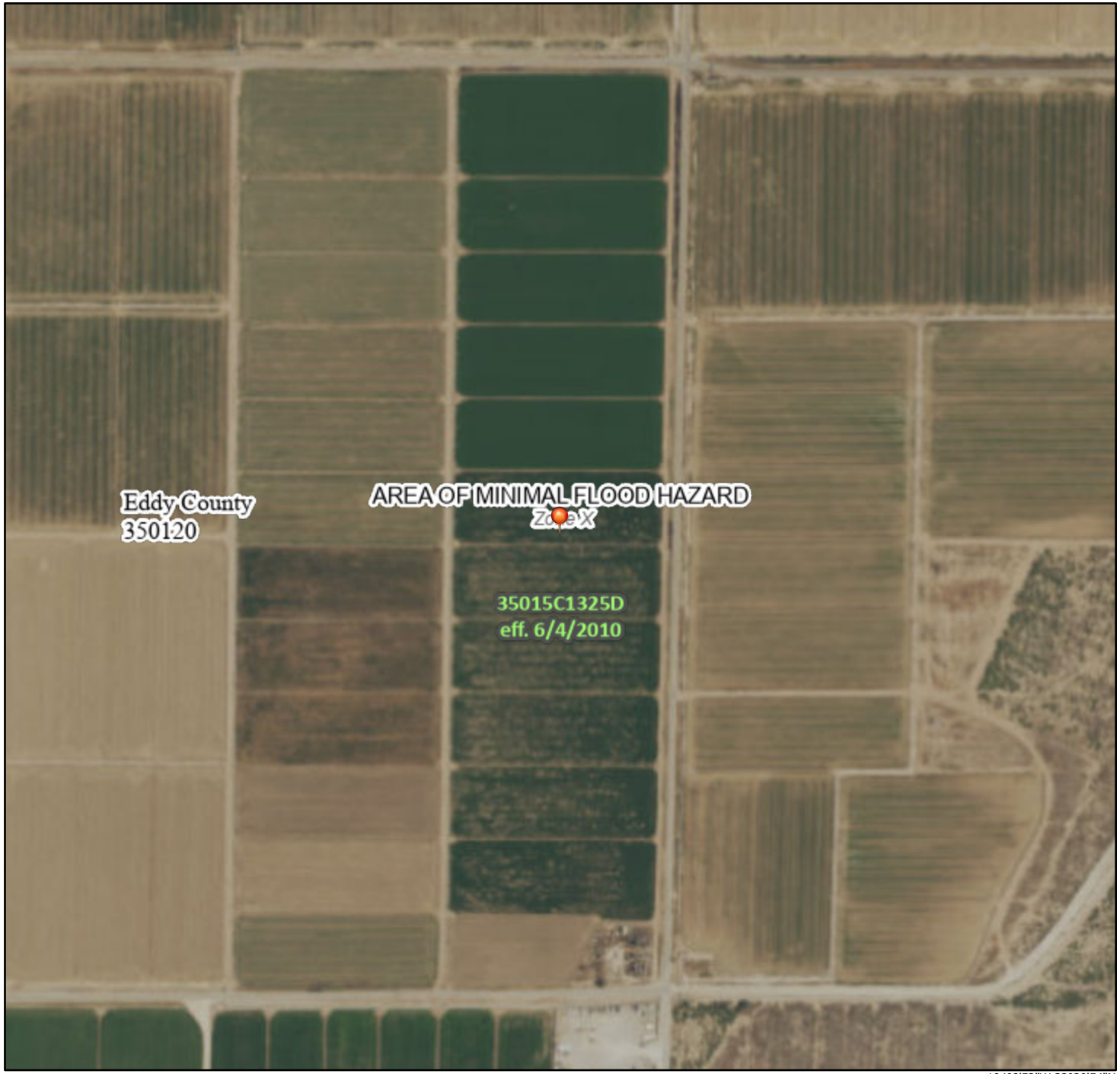
VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\2022\22E-02178 - Collie Fee #401 H\Figure X Karst Potential Collie Fee #401 H.mxd

# National Flood Hazard Layer FIRMette

FEMA

104°9'29"W 32°21'24"N




104°8'52"W 32°20'54"N

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

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

## 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 / 17.5 Cross Sections with 1% Annual Chance / 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 7/11/2022 at 6:20 PM 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—Eddy Area, 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: Eddy Area, New Mexico
Survey Area Data: Version 17, Sep 12, 2021

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

Date(s) aerial images were photographed: Feb 27, 2020—Feb 28, 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 |
|---|---|---|---|
| Rc | Reagan loam, 0 to 1 percent slopes | 7.1 | 100.0% |
| **Totals for Area of Interest** | | **7.1** | **100.0%** |

# Eddy Area, New Mexico

## Rc—Reagan loam, 0 to 1 percent slopes

### Map Unit Setting

*National map unit symbol:* 1w5l
*Elevation:* 1,100 to 5,300 feet
*Mean annual precipitation:* 7 to 15 inches
*Mean annual air temperature:* 57 to 70 degrees F
*Frost-free period:* 200 to 240 days
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Reagan and similar soils:* 97 percent
*Minor components:* 3 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Reagan

#### Setting

*Landform:* Fan remnants, alluvial fans
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Convex, linear
*Across-slope shape:* Linear
*Parent material:* Alluvium and/or eolian deposits

#### Typical profile

*H1 - 0 to 8 inches:* loam
*H2 - 8 to 82 inches:* loam

#### Properties and qualities

*Slope:* 0 to 1 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
*Maximum salinity:* Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 1.0
*Available water supply, 0 to 60 inches:* Moderate (about 8.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 6c
*Hydrologic Soil Group:* B

*Ecological site:* R042XC007NM - Loamy
*Hydric soil rating:* No

**Minor Components**

**Reeves**
*Percent of map unit:* 1 percent
*Ecological site:* R042XC007NM - Loamy
*Hydric soil rating:* No

**Reagan**
*Percent of map unit:* 1 percent
*Ecological site:* R042XC007NM - Loamy
*Hydric soil rating:* No

**Upton**
*Percent of map unit:* 1 percent
*Ecological site:* R042XC025NM - Shallow
*Hydric soil rating:* No

# Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 17, Sep 12, 2021

# Ecological Reference Worksheet

**Author(s) / participant(s):** John Tunberg,

**Contact for lead author :** 505-761-4488 **Reference site used? Yes/No** No

**Date:** 2/12/2010 **MLRA:** 42.3 **Ecological Site:** Loamy This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

**Indicators:** For each indicator, describe the potential for the site. Where possible, **(1)** use numbers, **(2)** include expected range of values for above and below average years for **each** community within the reference state, when appropriate & **(3)** site data. Continue description on separate sheet.

**1. Number and extent of rills :** There should not be any rills.

After wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances rills may double in number on steeper slopes at the margins of this site after high-intensity summer thunderstorms. Any rills formed should not be long lived or interconnected and should heal rapidly.

**2. Presence of water flow patterns:** There can be evidence of sheet flow.

There can be a few flow patterns that should be short and discontinuous. There can be some sheet flow. Water flow patterns should only be present following intense storm events on upper slope limits at the margins of this site. Numerous obstructions alter flow paths. Flow pattern length and numbers may double after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances.

**3. Number and height of erosional pedestals or terracettes:** Pedestals should be rare. Terracettes can occure and should be discontinuous.

There can be a few pedestals that should be less than 1 inch high. Terracettes can be common and should be discontinuous. If present plant or rock pedestals and terracettes are almost always in flow patterns. Wind caused pedestals are rare and only would be on the site following after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. These would show signs of healing within 1 year after event.

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

Bare ground can make up to 50% of the ground cover on this site according to the ESD. Bare patch size should be small.

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

Gullies and erosion associated with gullies should be rare are infrequent. Typically, gullies if present will only follow the micro topography. Natural drainages with little to no active cutting are common on this site. There should not be any accelerated erosion. After high-intensity summer thunderstorms or after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances then gully formation would be accelerated for a year or two. Evidence of healing within 1 year of event and continuing after that.

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

There should not be any wind scoured, blowouts and/or depositional areas. However there can be potential for depositional areas. Wind erosion is minimal when the site is in a well vegetated condition. Significant wind erosion would only be present following high-intensity summer thunderstorms, after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. After rain events, exposed soil surfaces form physical crusts that tend to reduce wind erosion. Deposition from off site sources can be common on this site and is in fact a primary soil forming process. This site is succeptable to wind erosion when vegetation is removed or significantly decreased.

**7. Amount of litter movement (describe size and distance expected to travel) :**

Litter should be small (less than "1 in diameter) and its movement should be minimal. This site has adequate vegetation to stop litter movement after short distances. Most of the litter movement on this site will be litter that has been transported onto the site from adjacent sites. Litter produced on this site stays on the site and only travels short distances.

**8. Soil surface (top few mm) resistance to erosion (stability) values are averages - most sites will show a range of values for both plant canopy and interspaces, if different) :**

This site can be susceptible to alluvial erosion. Stability values are estimated to be 1-2 in interspaces and 3-5 at bases of vegetation. This would be

**9. Soil surface structures and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different) :**

The SOM content should be less than 1%. A--0 to 6 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; hard, friable, slightly sticky; surface 1/2 to 2 inches has weak thin to medium platy structure; common very fine and fine pores; common very fine, fine and medium roots; strongly calcareous; slightly alkaline (pH 7.6); clear smooth boundary. (4 to 8 inches thick)

**10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff:**

Overall, infiltration rates should be slow for this site but can be higher around bases of grasses than in interspaces and around bases of shrubs. The soils of this site are deep to moderately deep. The moderately deep soils have either a petrocalcic, petrogypsic or gypsum horizon between 30 and 40 inches. Surface textures are loam, silt loam, very fine sandy loam, or clay loam. Substratum textures are loam, silty clay loam, clay loam, or silt loams. Subsoil textures are silt loam , clay loam silty clay loam, gravelly loam, gravelly clay loam or very gravelly loam. Permeability is moderate to slow and the available water holding capacity is high to moderate.

**11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction):**

There should not be any compaction layers on this site. There are soil profile features in the top 9 inches of the soil profile that would be mistaken for a management induced soil compaction layer. Management induced compaction layers will be more difficult to penetrate than clay lenses.

**12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: indicate much greater than ( >>) , greater than (>) , and equal to (=) :**

black grama >> tobosa > C 4 bunch grasses (dropseeds) > C4 midgrasses (threeawns) >= soaptree yucca, ephedra, fourwing saltbush >= forbs (croton, desert marigold, globemallow, > broom snakeweed, prickly pear, = other forbs.

**13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence) :**

Black grama and bunchgrasses can show decadence in centers of plants.

**14. Average percent litter cover ( _____ % ) and depth ( _____ inches).**

Average 15% cover and 0.75 inch deep. (As per ESD)

**15. Expected annual production (this is <u>TOTAL</u> above-ground production, not just forage production):**

(Low Production 650 lbs./ac.) (Average RV Production 925 lbs./ac.) (High Production 1200 lbs./ac.) After wildfires, high herbivore impacts, extended drought, or combinations of these disturbances, can cause production to be significantly reduced (100-200 lbs per ac. the first growing season following a wildfire) and recover slowly under below average precipitation regimes.

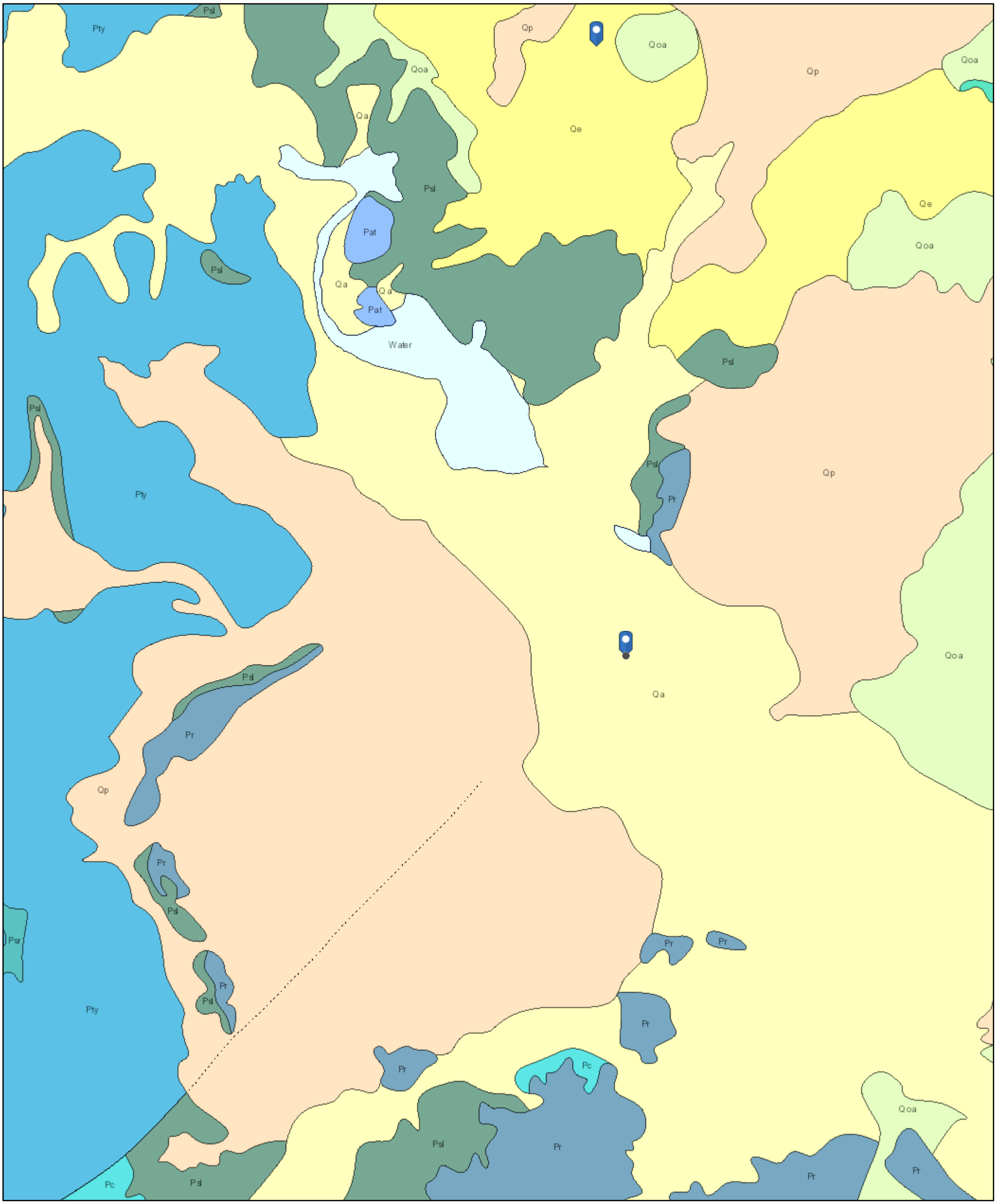
**16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do , continue to increase regardless of the management of the site and may eventually dominate**

Tarbush, creosote and mesquite can be invaders to this site. Invasive plants should not occur in reference plant community. However, lovegrass, Russian thistle, kochia, and other nonnative annuals may initialy invade following extended disturbance. Mesquite and tarbush and creosote and lovegrass are the greatest threat to dominate this site in the long term after disturbance (primarily following wildfire exclusion but also includes high human or herbivore impacts and extended drought). Mesquite and tarbush and creosote and lovegrass are most likely to retain dominance if allowed to alter natural fire regime (this alteration may require poor land management combined with years of wet winter-spring; dry summer-fall conditions). Any of these invaded communities represent a departure from the reference state.

**17. Perennial plant reproductive capability :**

Black grama reproduces by seed sporadically and reproduction by tiller and stolon can be common. The C4 midgrasses should have high reproductive potential and rapidly recover from drought in the absence of additional stresses (grazing).

# Collie 35-34-22-27 Fee #401H




7/11/2022, 3:42:40 PM

Lithologic Units

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

1:144,448

0 1.25 2.5 5 mi

0 2.25 4.5 9 km

Esri, NASA, NGA, USGS, 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

ArcGIS Web AppBuilder

# ATTACHMENT 4

## Monica Peppin

**From:** Dhugal Hanton <vertexresourcegroupusa@gmail.com>
**Sent:** Monday, July 11, 2022 12:07 PM
**To:** Enviro, OCD, EMNRD; spills@slo.state.nm.us
**Cc:** Monica Peppin; dale.woodall@dvn.com
**Subject:** nAPP2216427127 Collie Fee 401H 48-HR Notification Liner Inspection

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled a liner inspection to be conducted for the following releases:

nAPP2216427127 DOR: 06/10/2022 Site Name: Collie 35-34-22-27 Fee #401H

This work will be completed on behalf of Devon Energy Production Company.

On Thursday, July 14, 2022 at approximately 11:00 a.m., Fernando Rodriguez will be on site to conduct a liner inspection for the above release. He can be reached at 575-361-4509. If you need directions to the site, please do not hesitate to contact him.

Thank you,

**Monica Peppin**
Project Manager

Vertex Resource Services Inc.
3101 Boyd Drive,
Carlsbad, NM 88220

**P 575.725.5001 Ext. 711**
**C 575.361.9880**
**F**

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Phone:(505) 334-6178 Fax:(505) 334-6170
**District IV**
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 157029

## CONDITIONS

| | |
|---|---|
| Operator:<br>DEVON ENERGY PRODUCTION COMPANY, LP<br>333 West Sheridan Ave.<br>Oklahoma City, OK 73102 | OGRID:<br>6137 |
| | Action Number:<br>157029 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| rhamlet | We have received your closure report and final C-141 for Incident #NAPP2216427127 COLLIE 35 34 22 27 FEE #401H, thank you. This closure is approved. | 1/25/2023 |