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-144
Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

13986

Pit, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

OIL CONS. DIV DIST. 3
DEC 17 2015

Type of action:
- ☒ Below grade tank registration
- ☐ Permit of a pit or proposed alternative method
- ☐ Closure of a pit, below-grade tank, or proposed alternative method
- ☐ Modification to an existing permit/registration
- ☐ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative request

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

1.
Operator: Chevron Midcontinent, LP OGRID #: 241333
Address: 1600 Smith Street, Houston, TX 77002
Facility or well name: Ripley CDP (adjacent to Ripley N 2 #26)
API Number: CDP (adjacent to 30-045-28856) OCD Permit Number:
U/L or Qtr/Qtr N Section 26 Township 32N Range 13W County: San Juan
Center of Proposed Design: Latitude 36.952884 Longitude -108.176965 NAD: ☐ 1927 ☒ 1983
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☐ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC
Temporary: ☐ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☐ yes ☐ no
☐ Lined ☐ Unlined Liner type: Thickness _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☐ String-Reinforced
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____ Volume: _____ bbl Dimensions: L_____ x W_____ x D_____

3.
☒ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC – **BGT #2**
Volume: 95 bbl Type of fluid: Produced Water
Tank Construction material: Steel
☒ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other _____
Liner type: Thickness _____ mil ☐ HDPE ☐ PVC ☐ Other _____

4.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.
Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*
☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*
☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet
☒ Alternate. Please specify Cattle Panel

58

6.

Netting: Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☐ Screen ☐ Netting ☒ Other Solid/Cone-top

☐ Monthly inspections (If netting or screening is not physically feasible)

7.

Signs: Subsection C of 19.15.17.11 NMAC

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

☒ Signed in compliance with 19.15.16.8 NMAC

8.

Variances and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

9.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. **Siting criteria does not apply to drying pads or above-grade tanks.**

General siting	
Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. - ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit . NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☒ NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. **(Does not apply to below grade tanks)** - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within the area overlying a subsurface mine. **(Does not apply to below grade tanks)** - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. **(Does not apply to below grade tanks)** - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. **(Does not apply to below grade tanks)** - FEMA map	☐ Yes ☒ No
Below Grade Tanks	
Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)	
Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Temporary Pit Non-low chloride drilling fluid	
Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
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, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Permanent Pit or Multi-Well Fluid Management Pit	
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No

10.

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

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

☒ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
☒ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☒ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

11.

Multi-Well Fluid Management Pit Checklist: Subsection B of 19.15.17.9 NMAC

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

☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☐ A List of wells with approved application for permit to drill associated with the pit.
☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.

Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC

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

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H_2S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

13.

Proposed Closure: 19.15.17.13 NMAC

Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☒ Below-grade Tank ☐ Multi-well Fluid Management Pit ☐ Alternative

Proposed Closure Method: ☒ Waste Excavation and Removal
☐ Waste Removal (Closed-loop systems only)
☐ On-site Closure Method (Only for temporary pits and closed-loop systems)
☐ In-place Burial ☐ On-site Trench Burial
☐ Alternative Closure Method

14.

Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☒ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☒ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC
- ☒ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☒ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.

Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	

adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☐ No

16.
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC
- ☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC
- ☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- ☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.
Operator Application Certification:

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

Name (Print): April E Pohl Title: Permitting Specialist

Signature: April E Pohl Date: 12/17/15

e-mail address: April.Pohl@chevron.com Telephone: 505-333-1941

18.
OCD Approval: ☒ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: [signature] **Approval Date:** 2/15/16

Title: Environmental Spec **OCD Permit Number:** 13986

19.
Closure Report (required within 60 days of closure completion): 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☐ **Closure Completion Date:** _____

20.
Closure Method:

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)
☐ If different from approved plan, please explain.

21.
Closure Report Attachment Checklist: ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Proof of Closure Notice (surface owner and division)
- ☐ Proof of Deed Notice (required for on-site closure for private land only)
- ☐ Plot Plan (for on-site closures and temporary pits)
- ☐ Confirmation Sampling Analytical Results (if applicable)
- ☐ Waste Material Sampling Analytical Results (required for on-site closure)
- ☐ Disposal Facility Name and Permit Number
- ☐ Soil Backfilling and Cover Installation
- ☐ Re-vegetation Application Rates and Seeding Technique
- ☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐ 1927 ☐ 1983

22.

Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

FOUR STAR
OIL & GAS COMPANY

332 Road 3100
Aztec, New Mexico 87410
Tel: 505-333-1941
Cell: 505-386-8074
Fax: 505-334-7134

January 8, 2016

Mr. Cory Smith
New Mexico Oil & Gas Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Re: BGT permits delivered December 17, 2015

Dear Mr. Smith:

It was found an error was made in our latest BGT permit applications.

Item 10 of the closure plan erroneously incorrectly cites NMAC 19.15.29 and 19.50-30.

The correct rule, NMAC 19.15.17.13.c(3) will replace the rules listed in error.

Thank you,

April E. Pohl
Permitting Specialist
332 Road 3100
Aztec, New Mexico 87410
505-333-1941
April.Pohl@chevron.com

Ripley CDP Hydrogeologic Report

Topography and Surface Hydrology

The Ripley CDP well site is located in what is considered the Colorado River Basin. The largest, continuously flowing streams of the Colorado River Basin are the Animas and San Juan Rivers. The La Plata River is the closest continuously flowing waterway to the site and is approximately 2,424 feet west of the site; see attached ***Topographic Map***. Most stream channels within the Colorado River Basin are ephemeral, with some being intermittent (Stone et al., 1983). The tributaries of the San Juan River that contribute large quantities of water during precipitation events are Canyon Largo, Gallegos Canyon, Chaco River, Animas River, and La Plata River. The nearest significant water course to the Ripley CDP is the Greenhorn Ditch approximately 1,659 feet west of the below grade tank (BGT) and is a first order tributary of the La Plata River; see attached ***Topographic Map***. The nearest wash is the McDermott Arroyo and is approximately 8,395 feet to the southeast of the Ripley CDP well site at an elevation of 5,763 feet (scale at 1:24,000, nearest wash is beyond the map boundaries). This is a southwest flowing ephemeral wash that only exists during periods of heavy precipitation. This wash is a first order tributary of the La Plata River. The general topographic slope of the site is to the east. Storm water runoff flows off of the Ripley CDP well site toward the east and then follows storm water channels toward the McDermott Arroyo, before flowing into the La Plata River.

The nearest wetland area to the Ripley CDP well site is approximately 2,587 feet west of the BGT. This wetland area is identified as "Other" in accordance with the attached ***U.S. Fish and Wildlife Service National Wetlands Inventory Map.***

There are no named lake beds or playa lakes within 100 feet for the proposed BGT location; see attached ***Topographic Map*** (scale at 1:24,000, nearest named lake bed or playa lake are beyond the map boundaries). The nearest unnamed lakebed or playa lake is estimated to be 1,491 feet southeast of the proposed BGT; see attached ***Topographic Map.***

Geology

The area geology is comprised of mostly sandstone, mudstone, and siltstone. The underlying geologic unit in the area of the Ripley N 2-26 CDP well site is the Nacimiento Formation. The **Nacimiento Formation (Tn)** is Paleocene in age and grades laterally into the Animas Formation (Tka) around Dulce, New Mexico thickening considerably around Durango, Colorado. The Animas occurs at the same stratigraphic interval as the Nacimientos (Fassett and Hinds, 1971, p.34). The Nacimiento sits unconformably to conformably below the San Jose Formation, outcrops in a broad band inside the southern and western boundaries of the central basin and rises structurally as a narrow band along the west side of the Nacimiento Uplift (Baltz, 1967, p. 35). The Nacimiento is the surface formation in the eastern third of the San Juan Basin, and being nonresistant, erodes to low rounded hills or the formation of badlands-type physiography distinctive from the much more resistant overlying San Jose Formation. The Nacimiento Formation is present in only the southern two-thirds of the Basin where it conformably both overlies and intertongues with the much thinner Ojo Alamo Sandstone (Fassett, 1974, p. 229). Thickness ranges from 800 feet in the southern part to nearly 2,232 feet (Stone, et al, 1983, p. 30) in the subsurface of the northern part. In the eastern outcrops, the thickness is less than 500 feet to nearly 1,400 feet due to folding and erosion (Baltz, 1967, p. 1). In general, the total thickness of the Nacimiento thickens from the basin margins towards the basin center. The Nacimiento in the southern area is comprised predominantly of drab interbedded black and gray claystones and siltstones with some

discontinuous relatively unconsolidated white, medium to coarse-grained arkosic sandstone with a few interbedded resistant sandstone strata (Stone, et al, 1983, p.30). To the north, the Naciemento Formation contains a much greater proportion of sandstone, and at some localized places more than 50 percent (Baltz, 1967, p. 1), although most of the sandstones extend only a few thousand feet (Brimhall, 1973, p. 201). Overall, the environment of deposition is predominantly lake deposits and to a lesser extent localization in stream channels (Brimhall, 1973, p. 201).

The local underlying geology of the basin is not conducive to sinkhole features, more predominant in soluble rocks such as limestone and dolomite, creating what is considered to be Karst features. Karst features are formed by the dissolution of soluble rocks, such as limestone and dolomite, and can be characterized by springs, caves, and sinkholes. There are no documented Karst features within 50 miles of Ripley CDP well site in accordance with the ***United States Geological Survey (USGS)***; see attached ***Karst Image***.

Groundwater Hydrology

Most water supplies in the San Juan Basin are from groundwater that is accessed through wells completed within the surficial valley-fill deposits of Quaternary age and sandstones of Tertiary, Cretaceous, Jurassic, and Triassic age. The Ripley CDP well site lies in the Nacimiento Formation Aquifer which dips between 7 and 8 degrees to the southeast toward the center of the San Juan Basin (Frenzel, 1983). The Nacimiento Formation lies at the surface in a broad belt at the western and southern edges of the central basin and dips beneath the San Jose Formation in the basin center. (Frenzel, 1983).

There are no registered water wells within 200 feet (~60 meters) of the Ripley CDP well site determined by a Section, Township, and Range search of the BGT on the well site; see attached ***New Mexico Office of the State Engineer Water Column/Average Depth to Water Report***. A cathodic well report was not identified for the Ripley CDP well site. The attached ***iWATERS Database*** search shows a water well approximately 3,951 feet to the southwest of the location with a depth to groundwater of 47 feet. The SJ 03090 water well is labeled on the topographic map with a blue point. The soil type at the Ripley CDP well site is a Doak-Avalon association, gently sloping and a Haplargids-Blackston-Torrierthents complex, very steep. Doak-Avalon association is characterized by Eolian deposits over alluvium derived from sandstone and shale, high permeability, and high water capacity. Haplargids-Blackston-Torrierthents complex is characterized by mixed alluvium, high permeability, and low water capacity; ***see attached USDA Custom Soil Resource Report.***

Resources

New Mexico Office of the State Engineer (NMOSE) New Mexico Water Right Reporting System (iWaters database)

Stone et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico: Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p.

United States Geological Survey, Karst in the United States: A Digital Map Compilation and Database; Weary, David J., and Doctor, Daniel H.

New Mexico Mining and Minerals Division (www.nmmines.com)

Chevron Midcontinent, LP
Below Grade Tank Registration Siting Criteria Compliance Demonstration
Ripley CDP

- **Groundwater is not less than 25 feet below the bottom of the below grade tank (BGT):** Groundwater will be approximately 159 feet below the bottom of the BGT. This was calculated using information from the closest water well located approximately 3,809 feet west of the Ripley CDP. The depth of the water well is 71 feet and the depth to groundwater is recorded as 47 feet; see the *attached* ***New Mexico Office of the State Engineer (NMOSE) Water Column/Average Depth to Water Sheet***. The topographic map indicates the site elevation to be 5,944 feet and the elevation of the water well to be 5,827 feet; see ***Topographic Map***. The BGT is buried 6 feet below ground surface which gives a bottom of the BGT elevation of 5,938 feet. The difference between the BGT bottom elevation and groundwater elevation is 159 feet.

- **The below grade tank is not within 100 feet of a continuously flowing watercourse, significant water course, lake bed, sinkhole, wetland or playa lake:**

    - The nearest continuously flowing watercourse is the La Plata River estimated to be 2,424 feet west of the BGT location and the Ripley CDP well site; see attached ***Topographic Map*** (scale at 1:24,000, nearest continuously flowing watercourse beyond the map boundaries).
    - The nearest significant watercourse is La Plata River and is a first order tributary to the San Juan River. The tributary is approximately 2,424 feet west of the BGT location; see attached ***Topographic Map***.
    - There are no named lake beds or playa lakes within 100 feet for the proposed BGT location; see attached ***Topographic Map*** (scale at 1:24,000, nearest named lake bed or playa lake are beyond the map boundaries). The nearest unnamed lakebed or playa lake is estimated to be 3,825 feet southeast of the proposed BGT; see attached ***Topographic Map.***
    - The nearest wetland is located approximately 2,587 feet west of the BGT location; see attached ***National Wetlands Inventory Map.***
    - There are no sinkholes located within 100 feet of the BGT location at the Ripley CDP well site; see attached ***Hydrogeologic Report*** and ***Karst Image.***

- ***The below grade tank is not within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption:***

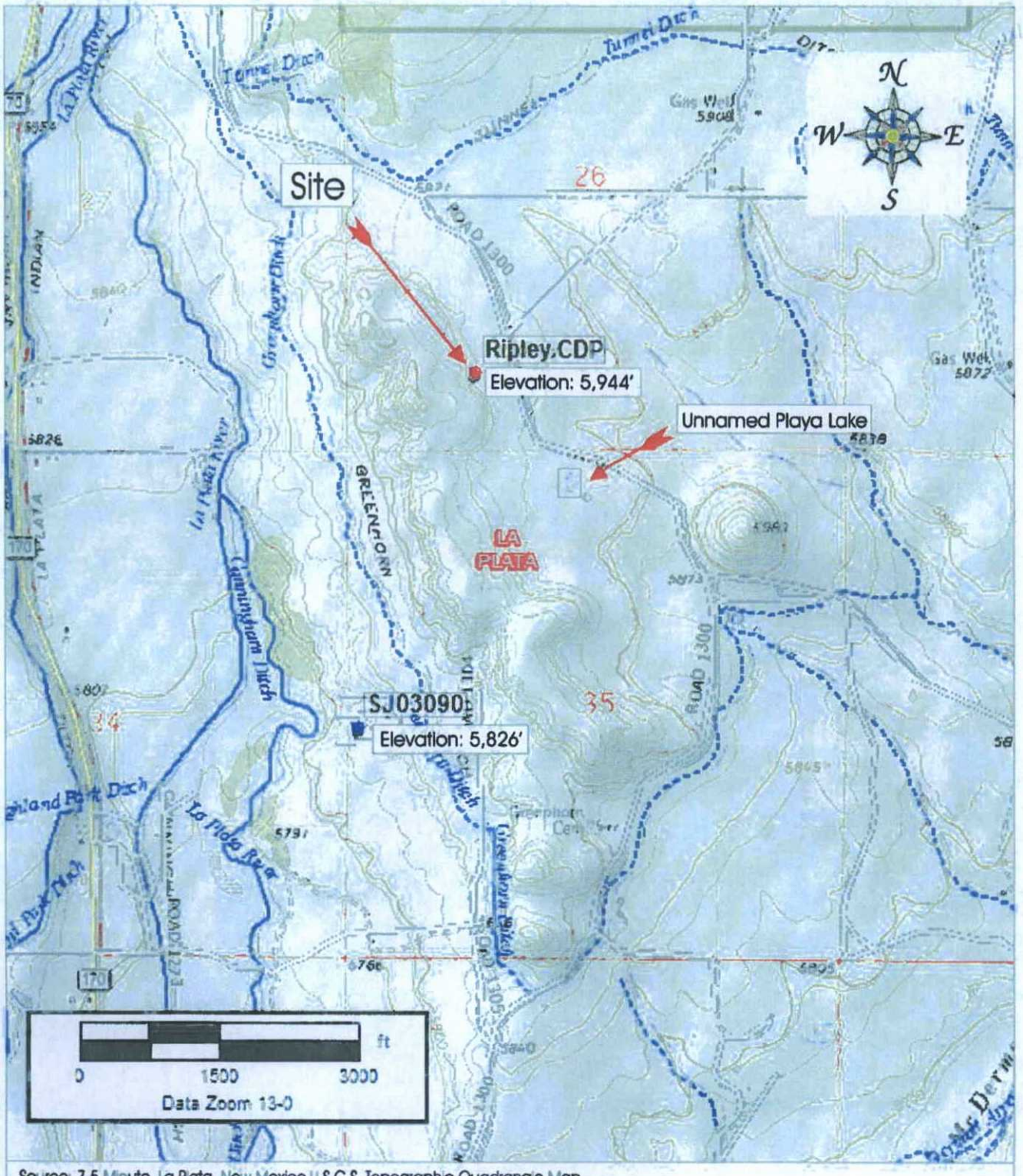
    - There are no registered water wells located within 200 feet of the proposed BGT location at the Ripley CDP well site; see attached ***New Mexico Office of the State Engineer (NMOSE) Water Column/Average Depth to Water Sheet*** (search of the Township and Range of the BGT location).

- **The below grade tank is not within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3:**
    - The BGT location resides outside all local municipal boundaries; see attached ***Municipal Boundary Map.***

- **The below grade tank is not within the area overlying a subsurface mine:**
    - There are no registered mines underlying the BGT; see attached ***Mines of San Juan County Map.***

- **The below grade tank does not lie within a 100 year floodplain:**
    - The BGT lies 2,060 feet east of the nearest floodplain; see attached ***FEMA FIRM.***

- **The below grade tank does not lie within 300 feet of an occupied residence, school, hospital, institution or church:**
    - The BGT does not lie within 300 feet of any of the aforementioned structures.



Source: 7.5 Minute, La Plata, New Mexico U.S.G.S. Topographic Quadrangle Map
Scale: 1:24,000 1" = 2000'

Chevron North America Ripley CDP Section 26, Township 32N, Range 13W San Juan County, New Mexico	envirotech ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64 Farmington, New Mexico 87401 505.632.0615	Topographic Map Figure #1
PROJECT Number:92270-1315 Date Drawn: 5/4/15		DRAWN BY: Falynn Burns PROJECT MANAGER: Greg Crabtree

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 00339		SJ	1	1	4	22	32N	13W	216027	4096502*	50	12	38
SJ 00340		SJ	3	1	4	22	32N	13W	216027	4096302*	50	12	38
SJ 00736		SJ		1	4	22	32N	13W	216128	4096403*	40	15	25
SJ 00906 X		SJ		4	3	22	32N	13W	215702	4096009*	86	26	60
SJ 00922		SJ	4	1	3	22	32N	13W	215415	4096322*	27	12	15
SJ 01079		SJ		3	3	34	32N	13W	215206	4092785*	100	30	70
SJ 01187		SJ	4	4	3	10	32N	13W	215912	4099125*	24	9	15
SJ 01187 CLW226675	O	SJ	4	4	3	10	32N	13W	215912	4099125*	24	9	15
SJ 01285		SJ	4	1	3	28	32N	13W	213760	4094770*	27		
SJ 01353		SJ		3	4	10	32N	13W	216219	4099216*		38	
SJ 01439		SJ		3	4	10	32N	13W	216219	4099216*	45	25	20
SJ 01549		SJ		1	2	15	32N	13W	216403	4098836	47	28	19
SJ 01582	O	SJ	4	1	2	15	32N	13W	216316	4098757	40	32	8
SJ 01582 POD1		SJ	4	1	2	15	32N	13W	216316	4098757	40	32	8
SJ 01943		SJ			4	34	32N	13W	216209	4092951*	8	3	5
SJ 02068		SJ			2	15	32N	13W	216407	4098623*	45	16	29
SJ 02350		SJ	1	3	2	15	32N	13W	216105	4098521*	26		
SJ 02558		SJ	4	1	4	15	32N	13W	216265	4097983	41	23	18
SJ 02577		SJ		4	4	34	32N	13W	216409	4092731*	30	15	15
SJ 02589		SJ	2	3	3	35	32N	13W	216909	4092811*	60	35	25
SJ 02660 POD1		SJ	2	4	4	34	32N	13W	216539	4092762	33		
SJ 02661		SJ	2	4	4	34	32N	13W	216528	4092914	40	20	20
SJ 02704		SJ	2	4	1	22	32N	13W	215840	4096916*	25	12	13
SJ 02705		SJ	2	4	1	22	32N	13W	215840	4096916*	25	12	13
SJ 02748 POD1		SJ	1	1	2	15	32N	13W	216154	4099001	55	30	25
SJ 02783		SJ	4	3	3	35	32N	13W	216909	4092611*	62	48	14

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

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 02847		SJ	1	4	4	22	32N	13W	216408	4096089*	1255	0	1255
SJ 02848		SJ	3	4	2	22	32N	13W	216444	4096695*	608	50	558
SJ 02865		SJ	2	3	2	15	32N	13W	216305	4098521*	44	29	15
SJ 02890		SJ	2	1	4	15	32N	13W	216299	4098116*	55	30	25
SJ 02901		SJ	2	2	4	34	32N	13W	216523	4093246*	50		
SJ 02918		SJ	2	4	3	22	32N	13W	215801	4096108*	51	30	21
SJ 02934		SJ	1	1	4	15	32N	13W	216099	4098116*	34	18	16
SJ 02985		SJ	2	1	2	15	32N	13W	216311	4098918*	47	25	22
SJ 03037		SJ	3	4	1	34	32N	13W	215524	4093478*	100		
SJ 03066		SJ	2	2	2	34	32N	13W	216545	4094053*	41	28	13
SJ 03090		SJ	1	1	3	35	32N	13W	216725	4093232*	59	47	12
SJ 03111		SJ	4	1	2	22	32N	13W	216270	4097108*	19	6	13
SJ 03123		SJ	1	4	3	27	32N	13W	215543	4094485*	30		
SJ 03256		SJ	2	4	1	34	32N	13W	215724	4093678*	21	6	15
SJ 03524		SJ	1	4	3	27	32N	13W	215543	4094485*	33	10	23
SJ 03525		SJ	1	3	4	27	32N	13W	215948	4094470*	71	12	59
SJ 03635		SJ	4	2	4	34	32N	13W	216523	4093046*	44	35	9
SJ 03881 POD1		SJ	1	4	4	34	32N	13W	216438	4092869	28	14	14
SJ 03882 POD1		SJ	4	3	1	35	32N	13W	216831	4093010	78	63	15
SJ 03893 POD1		SJ	3	3	3	35	32N	13W	216820	4092650	77	35	42
SJ 03896 POD1		SJ	3	3	4	10	32N	13W	216128	4099156	25		
SJ 03945 POD1		SJ	3	3	3	35	32N	13W	216802	4092695	54	43	11

Average Depth to Water: **23 feet**

Minimum Depth: **0 feet**

Maximum Depth: **63 feet**

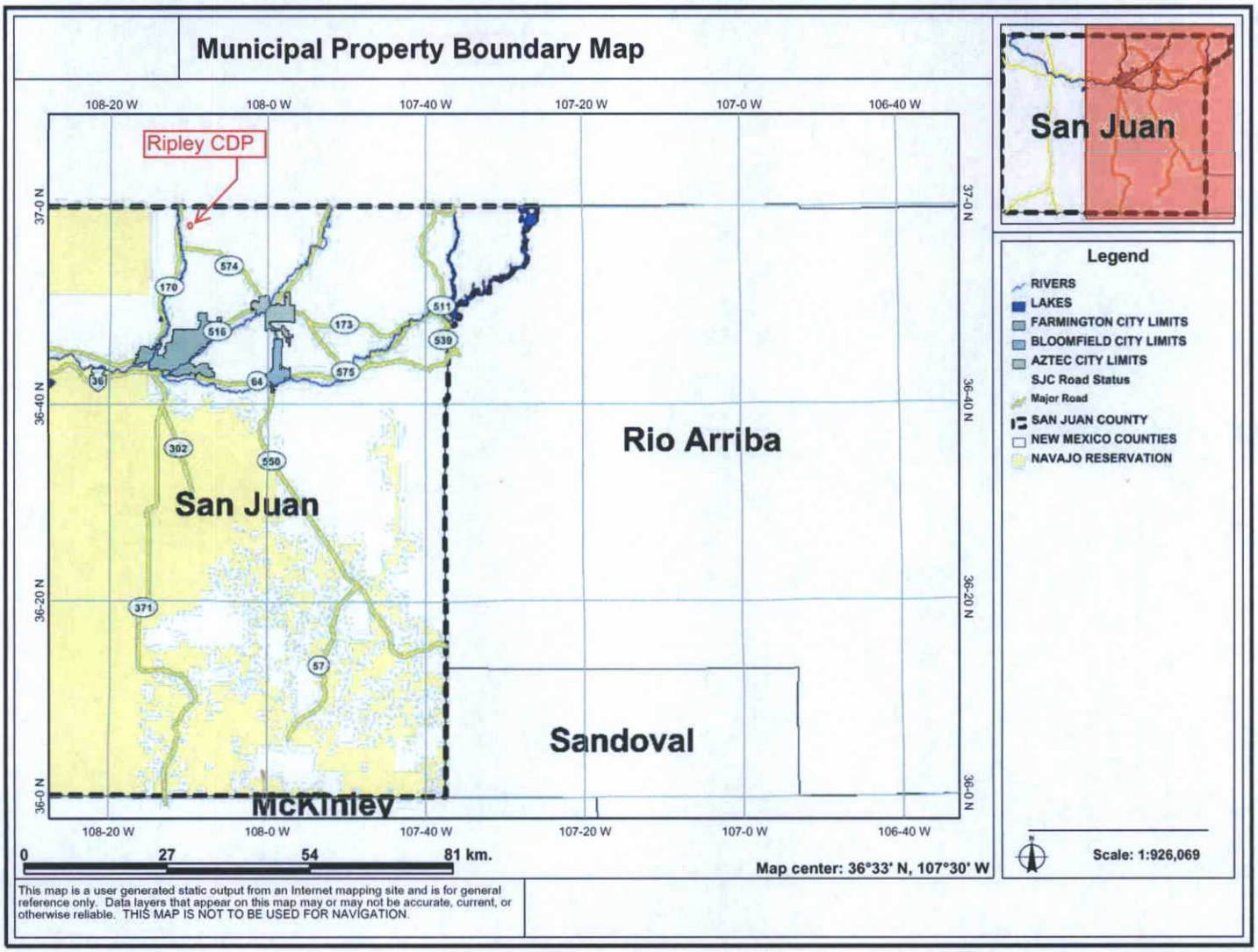
Record Count: 48

PLSS Search:

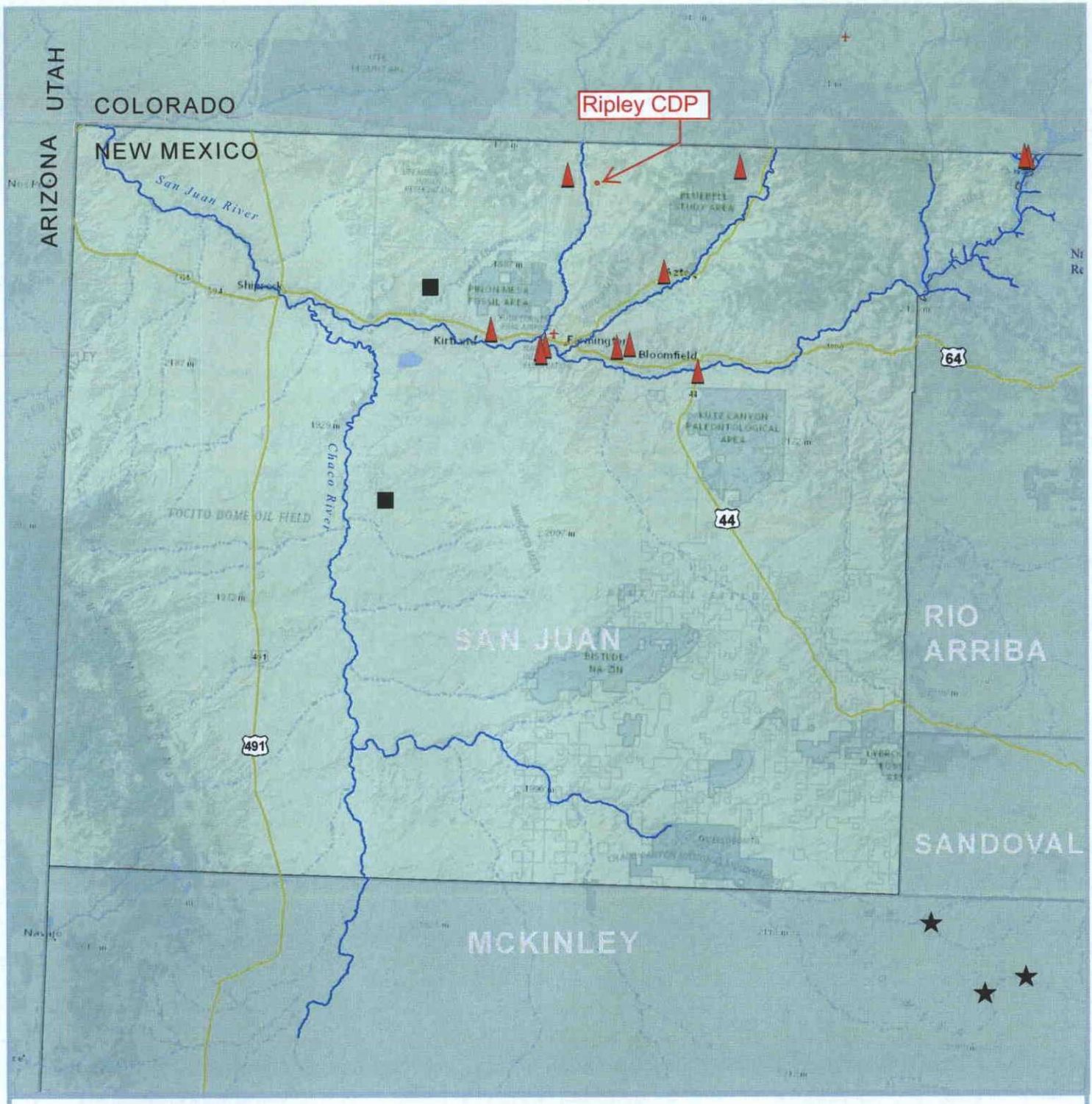
Township: 32N **Range:** 13W

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

Municipal Property Boundary Map



Active Mines in San Juan County, New Mexico, November 2014



Metals

Coal
Potash
Copper
Gold & Silver
Molybdenum

Industrial Minerals

Calcite
Gemstone
Gypsum
Humate
Perlite
Pumice
Salt
Silica / Flux
Silver Silica
Zeolites

Aggregate & Stone

Aggregate
Caliche
Clay & Shale
Dimension & Flagstone
Limestone
Red Dog
Scoria
Travertine

Data: November 2014 database query, Mining & Minerals Division, Mine Registration, Reporting & Safeguarding Program.
Basemap: Esri ArcGIS Online, National Geographic.
Map: Linda S. DeLay, GISP

NAD 83 UTM NM Zone13

N
W
E
S

0 5 10 20
Miles

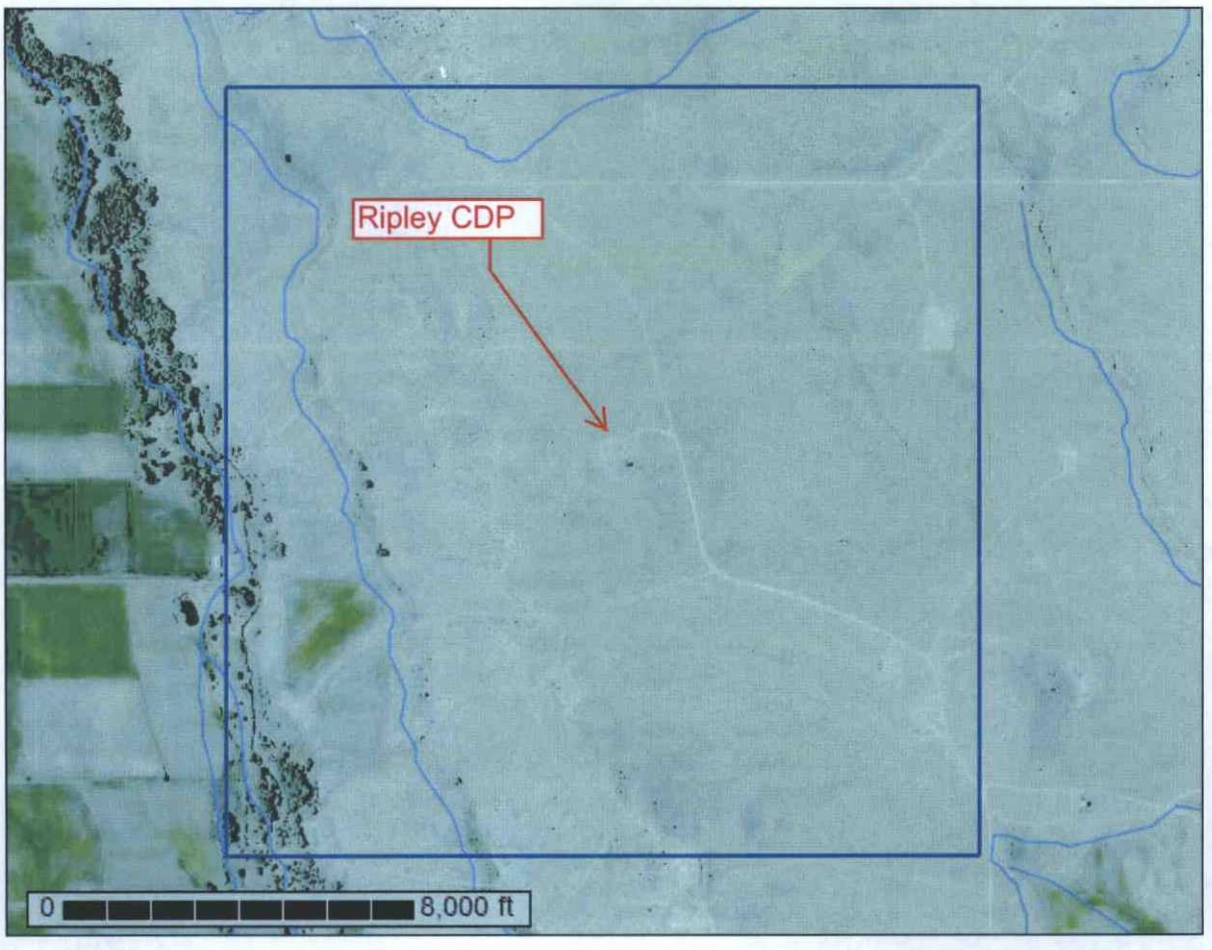
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for San Juan County, New Mexico, Eastern Part



May 4, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

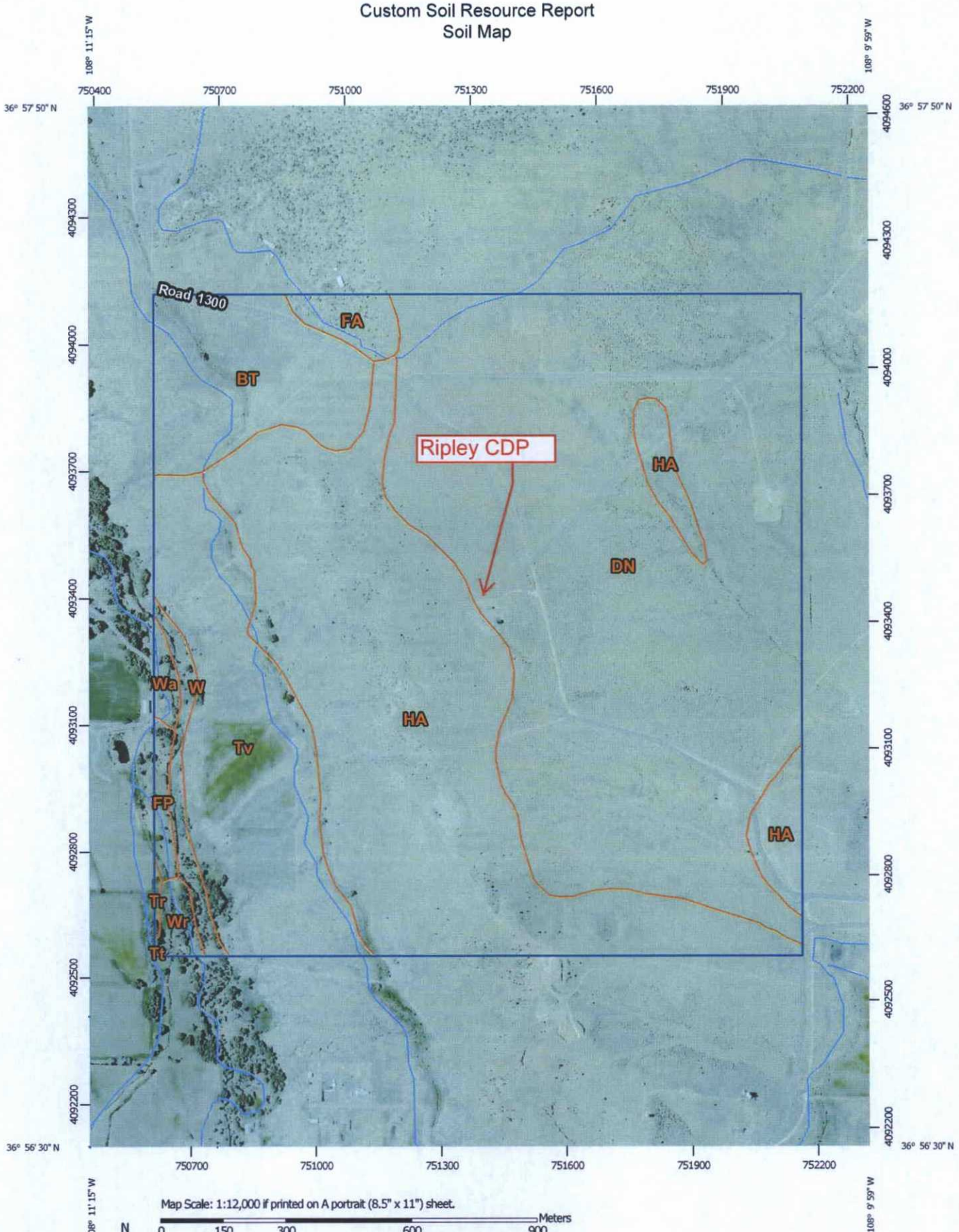
for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:12,000 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

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 1:63,400.

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: http://websoilsurvey.nrcs.usda.gov
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: San Juan County, New Mexico, Eastern Part
Survey Area Data: Version 12, Sep 26, 2014

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

Date(s) aerial images were photographed: May 21, 2010—Nov 5, 2010

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

San Juan County, New Mexico, Eastern Part (NM618)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
BT	Blancot-Notal association, gently sloping	42.6	7.1%
DN	Doak-Avalon association, gently sloping	280.0	46.5%
FA	Farb-Persayo-Rock outcrop complex, moderately steep	7.1	1.2%
FP	Fluvaquents, ponded	3.9	0.6%
HA	Haplargids-Blackston-Torriorthents complex, very steep	179.5	29.8%
Tr	Turley clay loam, 1 to 3 percent slopes	0.5	0.1%
Tt	Turley clay loam, wet, 0 to 2 percent slopes	0.0	0.0%
Tv	Turley-Slickspots complex, 0 to 3 percent slopes	73.9	12.3%
W	Lakes, rivers, reservoirs	8.1	1.3%
Wa	Walrees loam	2.8	0.5%
Wr	Werlog loam	4.0	0.7%
Totals for Area of Interest		**602.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties

and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Juan County, New Mexico, Eastern Part

BT—Blancot-Notal association, gently sloping

Map Unit Setting

National map unit symbol: 1ww6
Elevation: 5,600 to 6,400 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 51 to 55 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Blancot and similar soils: 55 percent
Notal and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blancot

Setting

Landform: Fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fan alluvium derived from sandstone and shale

Typical profile

A - 0 to 2 inches: loam
Btw - 2 to 15 inches: sandy clay loam
Ck - 15 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural 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 in profile: 2 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: Loamy (R035XB001NM)

Description of Notal

Setting

Landform: Stream terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stream alluvium derived from sandstone and shale

Typical profile

A - 0 to 3 inches: silty clay loam
BC - 3 to 60 inches: clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural 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: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: D
Ecological site: Salt flats (R035XB005NM)

DN—Doak-Avalon association, gently sloping

Map Unit Setting

National map unit symbol: 1wwd
Elevation: 5,600 to 6,400 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 51 to 55 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Doak and similar soils: 50 percent
Avalon and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Doak

Setting

Landform: Stream terraces, fan remnants, mesas
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Alluvium derived from sandstone and shale

Typical profile

A - 0 to 5 inches: loam
Btk - 5 to 43 inches: clay loam
Ck - 43 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Loamy (R035XB001NM)

Description of Avalon

Setting

Landform: Mesas, fan remnants, stream terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Eolian deposits over alluvium derived from sandstone and shale

Typical profile

A - 0 to 14 inches: loam
Bk - 14 to 60 inches: loam
Ck - 60 to 64 inches: gravelly loam

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural 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 in profile: 20 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Limy (R035XB003NM)

FA—Farb-Persayo-Rock outcrop complex, moderately steep

Map Unit Setting

National map unit symbol: 1wwp
Elevation: 5,200 to 6,400 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 51 to 55 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Farb and similar soils: 40 percent
Persayo and similar soils: 30 percent
Rock outcrop: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Farb

Setting

Landform: Hills, breaks
Landform position (two-dimensional): Backslope, footslope, shoulder, toeslope
Landform position (three-dimensional): Crest, nose slope, side slope, head slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

A - 0 to 7 inches: fine sandy loam
Ck - 7 to 10 inches: sandy loam
R - 10 to 20 inches: bedrock

Properties and qualities

Slope: 3 to 30 percent

Depth to restrictive feature: 5 to 20 inches to lithic bedrock
Natural drainage class: Excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Shallow (R035XB006NM)

Description of Persayo

Setting

Landform: Breaks, ridges, hills
Landform position (two-dimensional): Backslope, footslope, shoulder, toeslope
Landform position (three-dimensional): Side slope, crest, nose slope, head slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from shale

Typical profile

A - 0 to 2 inches: clay loam
C - 2 to 15 inches: clay loam
Cr - 15 to 20 inches: bedrock

Properties and qualities

Slope: 3 to 30 percent
Depth to restrictive feature: 5 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to moderately saline (0.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Shale hills (R035XA130NM)

Description of Rock Outcrop

Typical profile

R - 0 to 60 inches: bedrock

Properties and qualities

Slope: 10 to 30 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

FP—Fluvaquents, ponded

Map Unit Setting

National map unit symbol: 1wwq
Elevation: 4,800 to 6,000 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 51 to 55 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Fluvaquents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fluvaquents

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stream alluvium derived from igneous and sedimentary rock

Typical profile

C - 0 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 20.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent

Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: Loamy bottom 6-10" p.z. perennial (R035XB269AZ)

HA—Haplargids-Blackston-Torriorthents complex, very steep

Map Unit Setting

National map unit symbol: 1wx2
Elevation: 4,800 to 6,400 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 51 to 55 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Haplargids and similar soils: 45 percent
Blackston and similar soils: 30 percent
Torriorthents and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Haplargids

Setting

Landform: Escarpments
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

A - 0 to 7 inches: cobbly sandy loam
Bt1 - 7 to 26 inches: cobbly sandy clay loam
Bt2 - 26 to 60 inches: cobbly sandy clay loam

Properties and qualities

Slope: 8 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
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 in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Loamy (R035XB001NM)

Description of Blackston

Setting

Landform: Escarpments
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

A - 0 to 11 inches: gravelly loam
Bk - 11 to 26 inches: very gravelly loam
Ck - 26 to 60 inches: very gravelly sand

Properties and qualities

Slope: 8 to 40 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
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 in profile: 30 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Limy (R035XB003NM)

Description of Torriorthents

Setting

Landform: Escarpments
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

C1 - 0 to 3 inches: cobbly loam
C2 - 3 to 15 inches: cobbly clay loam

R - 15 to 60 inches: bedrock

Properties and qualities

Slope: 8 to 50 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Cobbly slopes 10-14" p.z. (R035XC328AZ)

Tr—Turley clay loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1wy0
Elevation: 4,800 to 6,000 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 51 to 55 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Turley and similar soils: 95 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turley

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fan alluvium derived from sandstone and shale

Typical profile

A - 0 to 9 inches: clay loam
C - 9 to 60 inches: clay loam

Ck - 60 to 64 inches: clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Clayey (R035XB004NM)

Tt—Turley clay loam, wet, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1wy2
Elevation: 4,800 to 6,000 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 51 to 55 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Turley variant and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turley Variant

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fan alluvium derived from sandstone and shale

Typical profile

A - 0 to 9 inches: clay loam
Ck - 9 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 24 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C
Ecological site: Clayey (R035XB004NM)

Tv—Turley-Slickspots complex, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1wy3
Elevation: 4,800 to 6,000 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 51 to 55 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Turley and similar soils: 70 percent
Slickspots: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turley

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fan alluvium derived from sandstone and shale

Typical profile

A - 0 to 4 inches: clay loam
CBk - 4 to 60 inches: clay loam
Ck - 60 to 64 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Available water storage in profile: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Clayey (R035XB004NM)

Description of Slickspots

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fan alluvium derived from sandstone and shale

Typical profile

C1 - 0 to 2 inches: clay
C2 - 2 to 60 inches: clay

Properties and qualities

Slope: 0 to 3 percent
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: About 0 inches
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 12.0

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w

W—Lakes, rivers, reservoirs

Map Unit Setting

National map unit symbol: 1wy4

Elevation: 4,800 to 6,400 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition
Water: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting
Landform: Channels
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear

Minor Components

Shorelines
Percent of map unit: 5 percent
Landform: Shorelines
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy bottom 6-10" p.z. perennial (R035XB269AZ)

Wa—Walrees loam

Map Unit Setting
National map unit symbol: 1wy5
Elevation: 6,400 to 7,200 feet
Mean annual precipitation: 10 to 14 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Walrees and similar soils: 85 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walrees

Setting
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear

Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

Ap - 0 to 6 inches: loam
Ck1 - 6 to 30 inches: loam
Ck2 - 30 to 81 inches: stratified gravelly sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 24 to 60 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Available water storage in profile: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C
Ecological site: Shale hills (R035XB009NM)

Minor Components

Wet inclusion

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy bottom 6-10" p.z. perennial (R035XB269AZ)

Wr—Werlog loam

Map Unit Setting

National map unit symbol: 1wy6
Elevation: 6,400 to 7,200 feet
Mean annual precipitation: 10 to 14 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Werlog and similar soils: 85 percent

Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Werlog

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A - 0 to 6 inches: loam
Ck - 6 to 60 inches: stratified fine sandy loam to clay loam
C - 60 to 81 inches: stratified sand to cobbly sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 24 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C
Ecological site: Loamy (R035XB001NM)

Minor Components

Apishapa

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Salt flats (R035XB005NM)

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

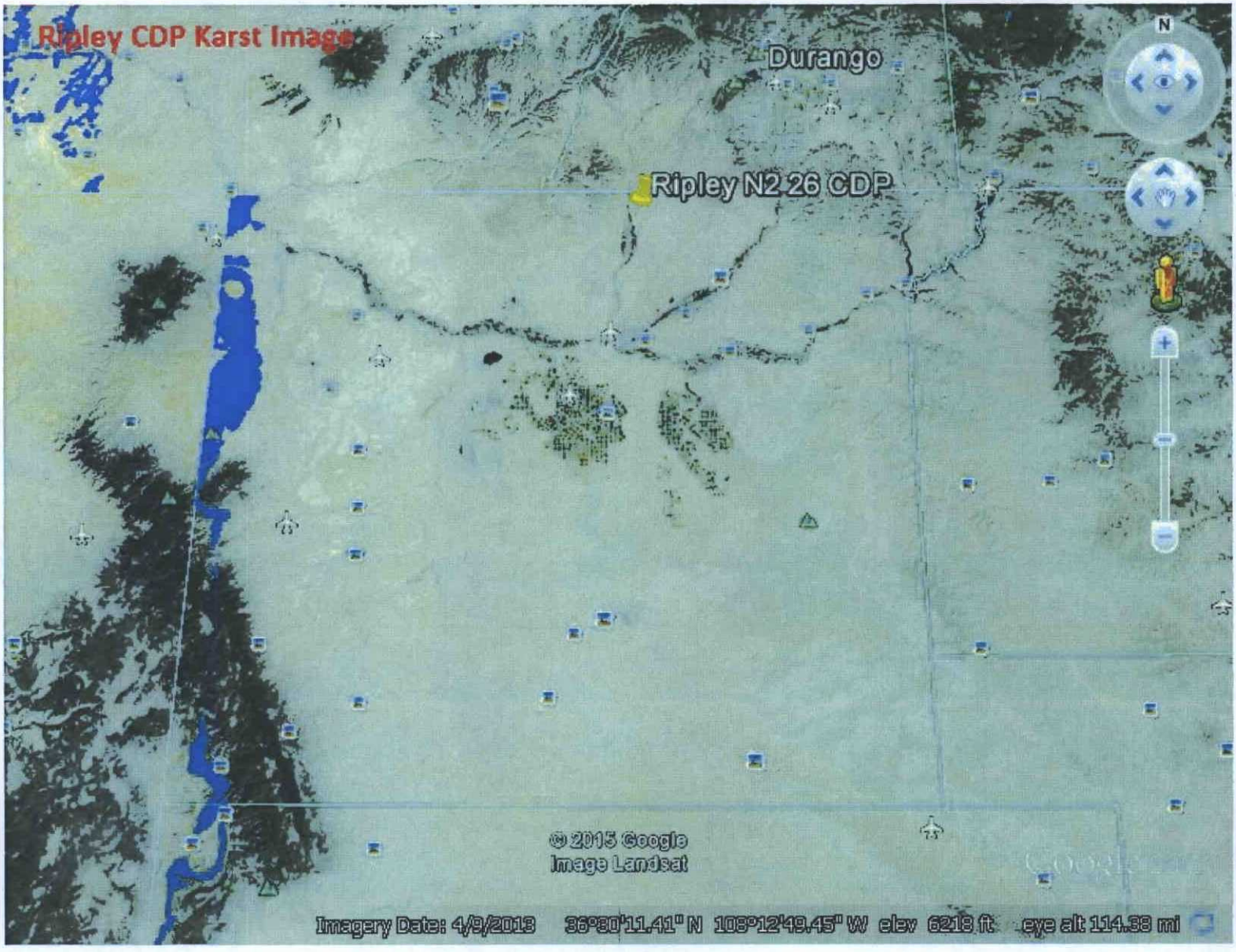
United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

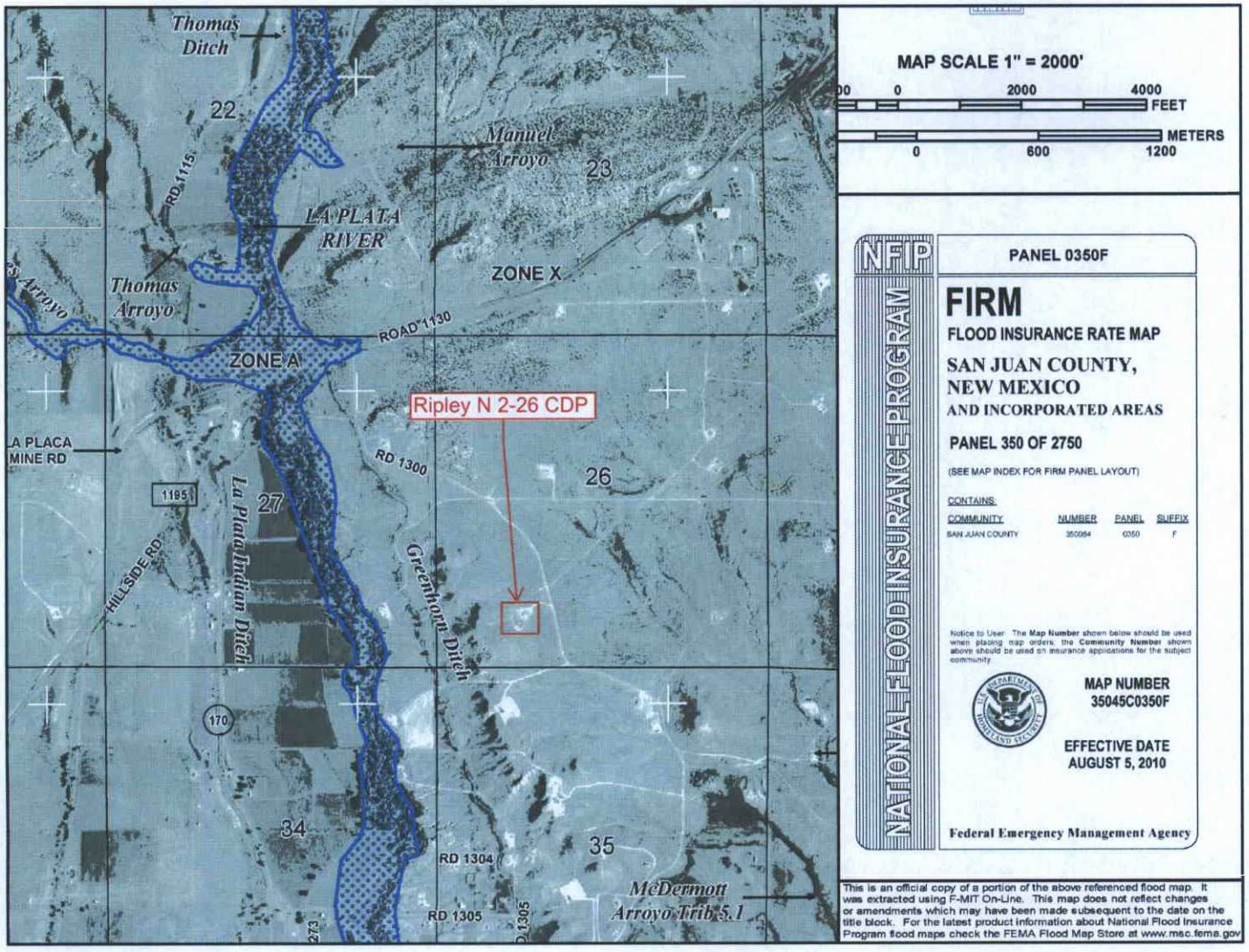
United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

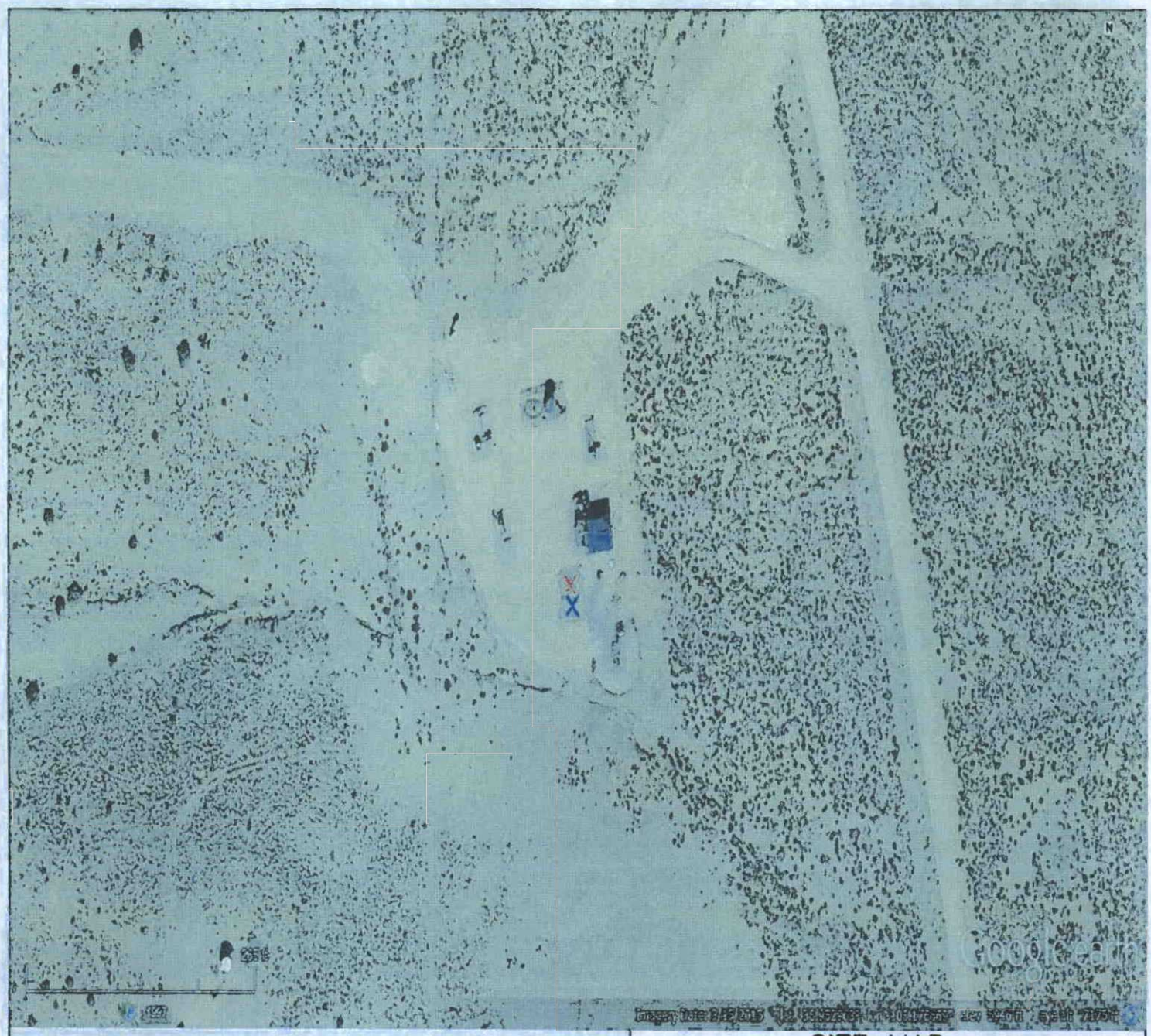
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf


Ripley CDP Karst Image
Durango
Ripley N2 26 CDP
N
© 2015 Google
Image Landsat
Imagery Date: 4/9/2013 36°30'11.41" N 108°12'49.45" W elev 6218 ft eye alt 114.38 mi


Thomas Ditch
22
Manuel Arroyo
23
RD 1115
LA PLATA RIVER
Thomas Arroyo
ZONE X
ROAD 1130
ZONE A
Ripley N 2-26 CDP
LA PLACA MINE RD
RD 1300
26
1185
27
La Plata Indian Ditch
Greenhorn Ditch
HILLSIDE RD
170
34
35
RD 1304
RD 1305
McDermott Arroyo Trib 5.1
MAP SCALE 1" = 2000'
0 2000 4000
FEET
0 600 1200
METERS
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 0350F
FIRM
FLOOD INSURANCE RATE MAP
SAN JUAN COUNTY, NEW MEXICO
AND INCORPORATED AREAS
PANEL 350 OF 2750
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
SAN JUAN COUNTY 350064 0350 F
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER
35045C0350F
EFFECTIVE DATE
AUGUST 5, 2010
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



The below grade tank (BGT) on the Ripley CDP well site is not within 300 feet of:

- an occupied residence
- a school
- hospital
- institution or church

X BGT #1

X BGT #2

◯ Previously Permitted

SITE MAP
Chevron North America
Ripley CDP
SECTION 26, TWP 32 NORTH, RANGE 13 WEST
SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS	FIGURE NO. 2	REV
PROJECT NO92270-1315		

REVISIONS

NO.	DATE	BY	DESCRIPTION

MAP DRWN	FB	10/21/15	BASE DRWN		

envirotech

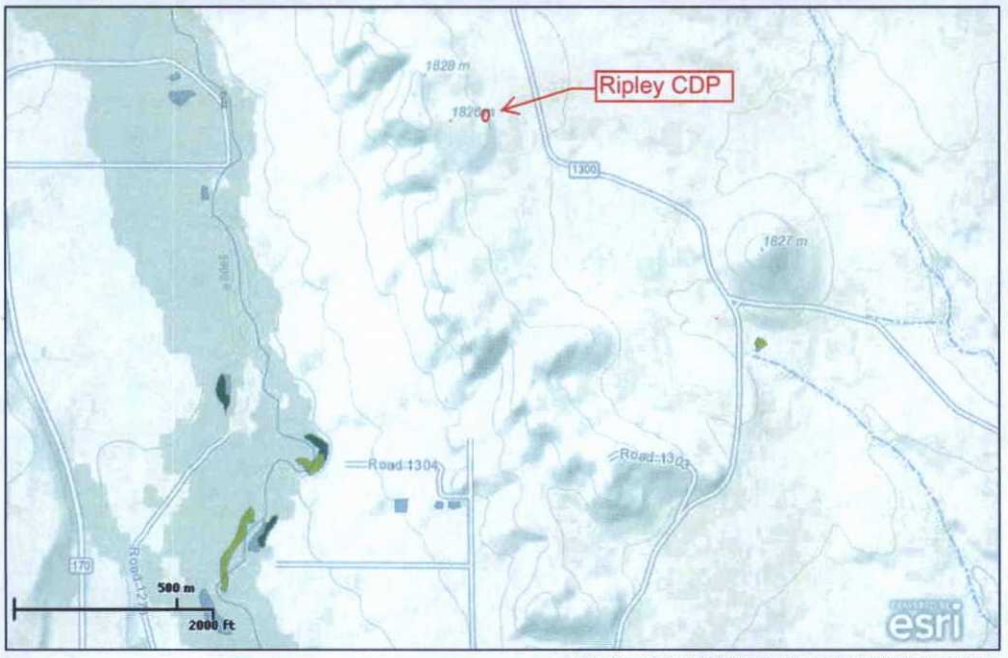
5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615

U.S. Fish and Wildlife Service

National Wetlands Inventory

Ripley N 2-26 CDP

May 4, 2015



Wetlands

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

User Remarks:

Chevron North America

BELOW GRADE TANK (BGT) DESIGN AND CONSTRUCTION PLAN

SUBMITTED TO:

ENVIRONMENTAL BUREAU,

NEW MEXICO OIL CONSERVATION DIVISION

ON BEHALF OF:

CHEVRON USA INC., CHEVRON MIDCONTINENT, L.P., AND FOUR STAR OIL & GAS COMPANY

P.O. BOX 730

AZTEC, NEW MEXICO 87410

(505) 333-1901

CHEVRON
SAN JUAN BASIN
BELOW GRADE TANK DESIGN AND CONSTRUCTION PLAN

INTRODUCTION

In accordance with NMAC §§ 19.15.17.9(B)(3) and 19.15.17.11 Chevron (representing Chevron USA Inc, Chevron Midcontinent, L.P., and Four Star Oil & Gas Company) submits this Design and Construction Plan for below grade tanks (BGTs) in New Mexico. This Plan contains standard conditions that attach to multiple BGTs.

1. Chevron will design and construct a BGT to contain liquids and solids, prevent contamination of fresh water, and protect public health and the environment. NMAC § 19.15.17.11(A).

2. Chevron will post an upright sign not less than 12 inches by 24 inches with lettering not less than two inches in height in a conspicuous place on the fence surrounding the BGT, unless the BGT is located on a site where there is an existing well, signed in compliance with NMAC § 19.15.16.8, that is operated by Chevron. Chevron will post the sign in a manner and location such that a person can easily read the legend. The sign will provide the following information: Chevron's name; the location of the site by quarter-quarter or unit letter, section, township and range; and emergency telephone numbers. NMAC § 19.15.17.11(C).

3. Chevron will fence or enclose a BGT in a manner that prevents unauthorized access and will maintain the fences in good repair. Fences are not required if there is an adequate surrounding perimeter fence that prevents unauthorized access to the well site or facility, including the BGT. NMAC § 19.15.17.11(D)(1).

4. Chevron will fence BGTs to exclude livestock with a four foot fence that has at least four strands of barbed wire evenly spaced in the interval between one foot and four feet above ground level. NMAC § 19.15.17.11(D)(3). Chevron may install tubular steel cattle panels, as it determines appropriate (photo of cattle panel fence submitted to NMOCD, 24 June 2009).

5. Chevron will screen the permanent opening on the tank top with expanding steel mesh in order to render it non-hazardous to wildlife, including migratory birds. NMAC § 19.15.17.11(E).

6. Chevron's BGTs will be constructed with the design features illustrated on the attached drawing.

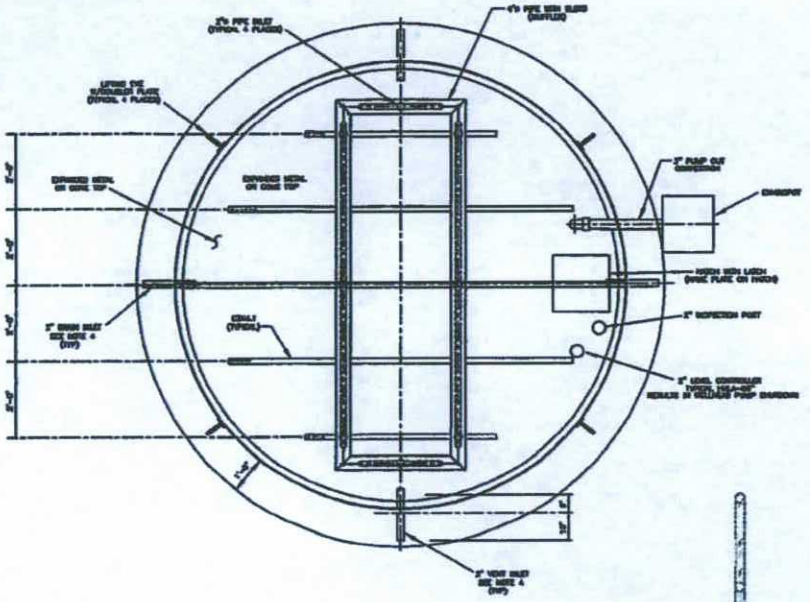
7. Only double-walled, double-bottomed BGTs will be installed.

8. Chevron will use 3/16" carbon steel which is resistant to the anticipated contents and resistant to damage from sunlight. NMAC § 19.15.17.11(I)(1).

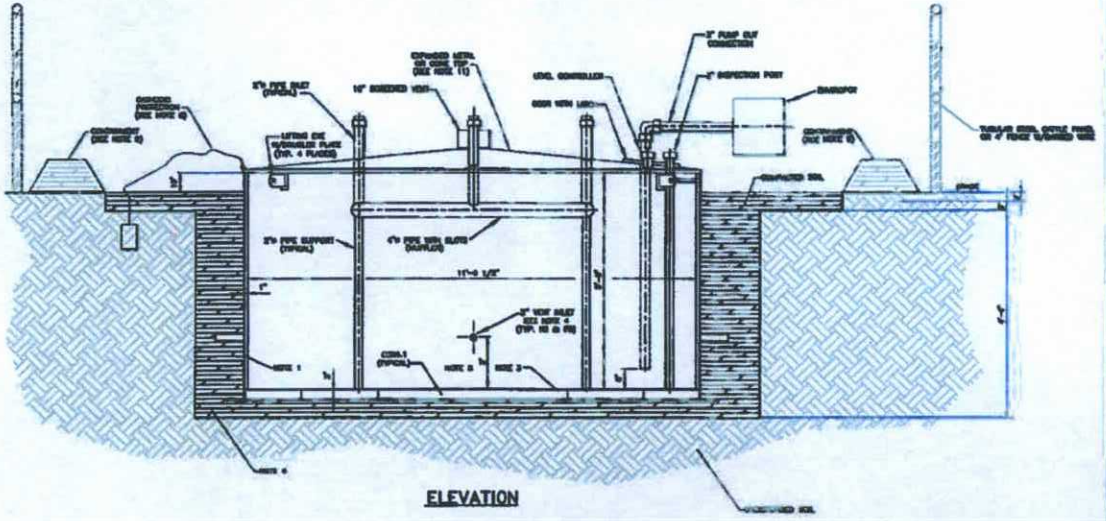
9. Chevron will construct a BGT foundation on a level base free of rocks, debris, sharp edges or irregularities to help prevent punctures, cracks or indentations of the liner or tank bottom. NMAC § 19.15.17.11(I)(2).

10. Chevron will construct a BGT to prevent overflow and the collection of surface water run-on. NMAC § 19.15.17.11(I)(3). Chevron, or a contractor representing Chevron, will install a level control device to help prevent overflow from the BGT and will use berms and/or a diversion ditch to prevent surface run on from entering the BGT. NMAC §§ 19.15.17.11(I)(3), 19.15.17.12(A)(7), and 19.15.17.12(D)(1).

11. All BGTs, in which the side walls are not open for visible inspection for leaks, will be double walled with leak detection capability. NMAC § 19.15.17.11(I)(4)(b).



PLAN



ELEVATION

NOTES

1. FABRICATOR TO PRESSURE TEST THE AREA BETWEEN THE TANK WALLS TO ENSURE LEAK-FREE DOUBLE CONTAINMENT.
2. TANK TO BE CONSTRUCTED OF 3/16" THK. ASTM A36 STEEL. ALL PIPING TO BE SCH. 40 CARBON STEEL.
3. DOUBLE WALL DOUBLE BOTTOM.
4. DEPENDING ON THE ORIENTATION OF THE EQUIPMENT ON LOCATION, ONE OF THE STUBS MAY BE CONNECTED TO THE DIFFUSER. ANY OF THE FOUR 2" STUBS THAT ARE NOT CONNECTED TO THE DIFFUSER WILL BE CAPPED BOTH INTERNALLY AND EXTERNALLY. THESE FOUR NOZZLES WILL NOT BE USED FOR THE MAJORITY OF PIT TANK INSTALLATIONS, SO THERE INTERNAL AND EXTERNAL CAPS SHALL BE SHOP-WELDED BY MANUFACTURE.
5. UNDERGROUND TANK CONNECTIONS AND TRANSFER LINES ARE WELDED. ALL UNDERGROUND TRANSFER LINES HAVE A FUSION BONDED EPOXY (FBE) COATING OR SIMILAR
6. CHEVRON WILL CONSTRUCT A BGT FOUNDATION ON A LEVEL BASE FREE OF ROCKS, DEBRIS, SHARP EDGES OR IRREGULARITIES TO HELP PREVENT PUNCTURES, CRACKS OR INDENTATIONS OF THE LINER OR TANK BOTTOM. NMAC 19.15.17.11(I)(2).
7. EXPANDED METAL TOP SHALL BE BOLTED, NOT WELDED.
8. EXTERNAL CATHODIC PROTECTION IS OPTIONAL.
9. CONTAINMENT SHALL BE BUILT TO THE SAN JUAN BERM COMPACTION SOP.
10. INTERNAL ANODES SHALL BE INSTALLED ONSITE.
11. EXPANDED METAL TOP WILL BE STANDARD AND SHOULD BE USED FOR THE MAJORITY OF PIT TANK INSTALLATIONS. CONE ROOF TOPS SHOULD BE CONSIDERED IN RESIDENTIAL AREAS.

Chevron North America Exploration and Production

BELOW GRADE TANK (BGT) OPERATING AND MAINTENANCE PLAN

SUBMITTED TO:

ENVIRONMENTAL BUREAU,

NEW MEXICO OIL CONSERVATION DIVISION

ON BEHALF OF:

CHEVRON USA INC., CHEVRON MIDCONTINENT, L.P., AND FOUR STAR OIL & GAS COMPANY

P.O. BOX 730

AZTEC, NEW MEXICO 87410

(505) 333-1901

Chevron

San Juan Basin

Below Grade Tank Operating and Maintenance Plan

INTRODUCTION

In accordance with NMAC §§ 19.15.17.9(B)(4) and 19.15.17.12 Chevron (representing Chevron USA Inc, Chevron Midcontinent, L.P., and Four Star Oil & Gas Company) submits this Operating and Maintenance Plan (O&M Plan) for below grade tanks (BGTs) in New Mexico. This O&M Plan contains standard conditions that attach to multiple BGTs. If needed for a particular BGT, a modified O&M Plan will be submitted to the New Mexico Oil Conservation Division (NMOCD or the division) for approval prior to implementation.

GENERAL PLAN:

1. Chevron, or a contractor representing Chevron, will operate and maintain a BGT to contain liquids and solids to prevent contamination of fresh water and to protect public health and environment. NMAC § 19.15.17.12(A)(1).

2. Chevron will not discharge into or store any hazardous waste in a BGT. NMAC § 19.15.17.12(A)(3).

3. If a BGT develops a leak or is penetrated below the liquid surface, Chevron will remove liquid above the damage within 48 hours, notify the appropriate division district office within 48 hours of discovery and will promptly repair the BGT. If a BGT develops a leak Chevron will remove liquid above the damage within 48 hours, notify the appropriate division district office within 48 hours of discovery and will promptly repair or replace the BGT. If replacement is required, the BGT will meet all specification included in the attached approved design drawing and comply with 19.15.17.11(I)(1-4).

4. If Chevron as an operator of a below-grade tank that was constructed and installed prior to June 16, 2008 that does not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC and discovers that the below-grade tank does not demonstrate integrity or that the below-grade tank develops any of the conditions identified in Paragraph (5) of Subsection A of 19.15.17.12 NMAC, then Chevron or their representative shall close the existing below-grade tank pursuant to the closure requirements of 19.15.17.13 NMAC and install a below-grade tank that complies with the requirements of Paragraphs

(1) through (4) of Subsection I of 19.15.17.11 NMAC. NMAC § 19.15.17.12(D)(5). If replacement is required, the BGT will meet all specification included in the attached approved design drawing.

5. If Chevron as the operator of the below-grade tank that was constructed and installed prior to June 16, 2008 that does not comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC and equips or retrofits the existing tank to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC, then Chevron or their representative shall visually inspect the area beneath the below-grade tank during the retrofit and document any areas that are wet, discolored or showing other evidence of a release on form C-141. Chevron shall demonstrate to the division whether the evidence of contamination indicates that an imminent threat to fresh water, public health, safety or the environment exists. If the division determines that the contamination does not pose an imminent threat to fresh water, public health, safety or the environment, the operator shall complete the retrofit or the replacement of the below-grade tank. If Chevron or division determines that the contamination poses an imminent threat to fresh water, public health, safety or the environment, then Chevron shall close the existing below-grade tank pursuant to the closure requirements of 19.15.17.13 NMAC prior to initiating the retrofit or replacement. NMAC § 19.15.17.12(D)(6). If replacement is required, the BGT will meet all specification included in the attached approved design drawing.

6. Chevron, or a contractor representing Chevron, will use berms and/or diversion ditches to prevent surface run-on from entering the BGT by diverting surface water run-on away from the bermed area. NMAC §§ 19.15.17.12(A)(7) and 19.15.17.12(D)(1).

7. Chevron, or a contractor representing Chevron, will not allow a BGT to overflow and will maintain adequate freeboard on existing BGTs by routine inspections utilizing pumper trucks whose routes are timed based on known production rates. Fluid is pumped out on this schedule. For newly constructed BGTs Chevron, or a contractor representing Chevron, will maintain adequate freeboard by installing level control devices that automatically shut off inflow to alleviate potential overtopping. NMAC § 19.15.17.12(D)(1) and 19.15.17.12(D)(4).

8. Chevron, or a contractor representing Chevron, will remove a visible or measurable layer of oil from the fluid surface of a BGT. NMAC § 19.15.17.12(D)(2).

9. Chevron, or a contractor representing Chevron, will inspect the BGT to assess compliance with NMAC § 19.15.17.12, Operational Requirements, at least once monthly and maintain a written record of each inspection for at least five (5) years. The approved inspection form is attached.

Chevron: New Mexico Inspection Form for Below Grade Tanks

Inspection Date:_____

Below Grade Tank (BGT) Location:_____

Does the BGT have adequate freeboard to prevent overflow;	yes	no
Does the tank have visible leaks or signs of corrosion;	yes	no
Do tank valves, flanges and hatches have visible leaks;	yes	no
Is there evidence of significant spillage of produced liquids;	yes	no
Is this a single or double wall tank; _____		
Are berms and/or diversion ditches in place to prevent surface run-on from entering the BGT;	yes	no
Have visible or measurable layers of oil been removed from liquid surface fluid;	yes	no

BELOW GRADE TANK (BGT) CLOSURE PLAN

SUBMITTED TO:

ENVIRONMENTAL BUREAU,

NEW MEXICO OIL CONSERVATION DIVISION

ON BEHALF OF:

CHEVRON USA INC., CHEVRON MIDCONTINENT, L.P., AND FOUR STAR OIL & GAS COMPANY

P.O. BOX 730

AZTEC, NEW MEXICO 87410

(505) 333-1901

CHEVRON
SAN JUAN BASIN
BELOW GRADE TANK CLOSURE PLAN

INTRODUCTION

In accordance with NMAC §§ 19.15.17.9(B)(3) and 19.15.17.13, Chevron {representing Chevron USA Inc, Chevron Midcontinent, L.P., and Four Star Oil & Gas Company) submits this Closure Plan for below grade tanks (BGTs) in New Mexico. This Closure Plan contains standard conditions that attach to multiple BGTs. If needed for a particular BGT, a modified Closure Plan for a proposed alternative closure will be submitted to the New Mexico Oil Conservation Division (NMOCD or the division) for approval prior to closure.

CLOSURE PLAN PROCEDURES AND PROTOCOLS (NMAC §§ 19.15.17.13).

I) Chevron, or a contractor acting on behalf of Chevron, will close a BGT within the time periods provided in NMAC § 19.15.17.13(0)(4), or by an earlier date required by NMOCD to prevent an imminent danger to fresh water, public health, or the environment. NMAC § 19.15.17.13(0)(4).

2) Chevron, or a contractor acting on behalf of Chevron, shall remove liquids and sludge from a below grade tank prior to implementing a closure method and shall dispose of the liquids and sludge in a division approved facility within 60 days of cessation of the BOT's operation. NMAC §§ 19.15.17.13(0)(4.a). A list of Chevron currently approved disposal facilities is included at the end of this document.

3) Chevron, or a contractor acting on behalf of Chevron, shall remove the below-grade tank and dispose of it in a division-approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves. When required, prior approval for disposal will be obtained. NMAC § 19.15.17.13(GX4.b). Documentation regarding disposal of the BGT and its associated liner, if any, will be included in the closure report.

4) In accordance with NMAC § 19.15.17.13(E)(l), Chevron will notify the surface owner by certified mail, return receipt requested, of its plans to close a BGT, at least 72 hours, but not more than one (I) week, prior to beginning closure activities. Chevron will notify the landowner by email if the landowner is determined to be a state, federal, or tribal entity. The notice shall include well name, API number and location. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records is sufficient to demonstrate compliance.

5) Chevron will also notify the appropriate division district office verbally and in writing at least 72 hours, but not more than one week, prior to any closure operation. The notice shall include the operator's name and the location to be closed by unit letter, section, township and range. If the closure is associated with a particular well, then the notice shall also include the well's name, number and API number. NMAC § 19.15.17.13(EX2).

6) The proposed method of closure for this Closure Plan is waste excavation and removal.
NMAC §§ 19.15.17.13 (C).

7) Waste generated during closure will be handled and disposed of in accordance with applicable laws. NMAC § 19.15.35.8(C)(l)(m) provides that plastic pit liners may be disposed at a solid waste facility without testing before disposal, provided they are cleaned well.

8) Chevron, or a contractor acting on behalf of Chevron, will remove all contents and, if applicable, synthetic liners and transferring those materials to a division approved facility. NMAC § 19.15.17.13(C)(2).

9) Chevron, or a contractor acting on behalf of Chevron, will collect at a minimum, a five point composite sample to include any obvious stained or wet soils, or other evidence of contamination shall be taken under the liner or the below-grade tank and that sample shall be analyzed for the constituents listed in Table I of 19.15.17.13 NMAC.

Table 19.15.17.13 NMAC
Ripley CDP Well Site
Depth to Groundwater, Beneath BGT (>100 feet)

Constituent	Method	Unit
Chloride	EPA 300.0	20,000 mg/Kg
TPH	EPASW-846 Method 418.1	2,500 mg!Kg
GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
BTEX	EPA SW-846 Method 8021B or 8260B	50 mglkg
Benzene	EPA SW-846 Method 8021B or8015M	10 mg/kg

10) If Chevron or the division determines that a release has occurred, Chevron will comply with NMAC §§ 19.15.29 and 19.15.30, as appropriate. NMAC § 19.15.17.13(C)(3).

11) If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Table I of NMAC § 19.15.17.13, Chevron will backfill the excavation with compacted, non-waste containing, earthen materials; construct a division prescribed soil cover; re-contour and re-vegetate the site. The division-prescribed soil cover, re-contouring and re-vegetation requirements shall comply with NMAC § 19.15.17.13(H).

12) As per NMAC § 19.15.17.13(H), once Chevron has closed a BGT or is no longer using the BGT or an area associated with the BGT, Chevron will reclaim the BGT location and all areas associated with it including associated access roads not needed by the surface estate owner to a safe and stable condition that blends with the surrounding undisturbed area. Chevron will substantially restore impacted surface area to the condition that existed prior to its oil and gas operations by placement of soil cover as provided in NMAC § 19.15.17.13(H) (see below), re-contour the location and associated areas to a contour that approximates the original contour and blends with the surrounding topography, andre-vegetate according to NMAC § 19.15.17.13(H).

13) Chevron may propose an alternative to the re-vegetation requirement of NMAC § 19.15.17.13(H)(l) if it demonstrates that the proposed alternative effectively prevents erosion, and protects fresh water, human health and the environment. The proposed alternative must be agreed upon in writing by the surface owner. Chevron will submit the proposed alternative, with written documentation that the surface owner agrees to the alternative, to the division for approval. NMAC § 19.15.17.13(H)(I).

14) Soil cover for closures where Chevron has removed the pit contents or remediated the contaminated soil to the division's satisfaction will consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater. NMAC § 19.15.17.13(H)(2).

15) Chevron will construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover material. NMAC § 19.15.17.13(H)(4).

16) As per NMAC § l9.15.17.13(H)(5), Chevron will seed or plant disturbed areas during the first growing season after it is no longer using a BGT or an area associated with the BGT including access roads unless needed by the surface estate owner as evidenced by a written agreement with the surface estate owner, if any and written approval by NMOCD .

17) Seeding will be accomplished by drilling on the contour whenever practical or by other division approved methods. Chevron will obtain vegetative cover that equals 70% of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons. During the two growing seasons that prove viability, Chevron will not artificially irrigate the vegetation. NMAC § 19.15.17.13(HX5).

18) Chevron will notify the division when it has seeded or planted and when it successfully achieves re-vegetation. NMAC § 19.15.17.13(H)(5).

19) Seeding or planting will be repeated until Chevron successfully achieves the required vegetative cover. NMAC § 19.15.17.13(H)(5).

20) When conditions are not favorable for the establishment of vegetation, such as periods of drought, the division may allow Chevron to delay seeding or planting until soil moisture conditions become favorable or may require Chevron to use additional cultural techniques such as mulching, fertilizing, irrigating, fencing or other practices. NMAC § 19.15.17.13(H)(5).

21) As per NMAC § 19.15.17.13(F), within 60 days of closure completion, Chevron will submit a closure report containing the elements required by NMAC § 19.15.17.13(F) including:

i) Confirmation sampling results,
ii) A plot plan ,
iii) Details on back-filling, capping and covering, where applicable, including re-vegetation application rates and seeding technique,
iv) roof of closure notice to the surface owner, if any, and the division,
v) Name and permit number of disposal facility, and
vi) Photo documentation.

22) The closure report will be filed on NMOCD Form C-144. Chevron will certify that all information in the closure report and attachments is correct and that it has complied with all applicable closure requirements and conditions specified in the approved closure plan. NMAC § 19.15.17.13(F).

23) As requested, the following are the current Chevron approved Waste Disposal Sites for the identified waste streams:

Soils and Sludges

i) Envirotech Inc. Soil Remediation Facility, Permit No. NM-01-0011 Solids

ii) San Juan County Regional Land Fill (NMAC § 19.15.35.8 items only, with prior NMOCD approval when required)

Liquids

i) Agua Moss Crouch Mesa Facility, Sunco SWD#I Permit No. NM-01-0009

ii) Basin Disposals Facility, Permit No. NM-01-005.

24) These waste disposal sites are subject to change if their certification is lost or they are closed or other more appropriate, equally protective sites become available. Chevron will provide notice if such a change is affected.