



Chevron Rockies Business Unit

Noble Energy, Inc.
1625 Broadway Ste 2200
Denver, Colorado, 80220

COGCC Wildlife Protection Plan- Wells Ranch Comprehensive Drilling Plan OGDP 1- A18-09 Drill Pad

Per Colorado Oil and Gas Conservation Commission (COGCC) 300 Series and 1200 Series Rules for the protection of wildlife and habitat, Chevron/Noble (Noble) is presenting this Wildlife Protection Plan (WPP) for the proposed Wells Ranch Comprehensive Drilling Plan (CDP) and Oil and Gas Development Plan 1 (WR OGDP 1) and specifically the A18-09 Drill Pad, presented as Figure 1. OGDP 1 includes four separate drill pads reporting to a centralized production facility and lies within T6N, R64W, Section 7 (NW/NW, NE/NE, SE/NE and SE/SE) and Section 18 (NE/SE). The evaluations herein are submitted in support of the COGCC 2A permitting process and specifically the A18-09 Drill Pad, pursuant to Rule 304.c.(17) Wildlife Protection Plan, and Rule 1201.a for an Oil and Gas Location outside of High Priority Habitat (HPH). It should be noted that figures supporting this WPP are schematic representations used for approximate presentation of environmentally sensitive habitat in the project area, and that full design drawings should be referenced for detailed location placement and analysis.

Operating Requirements

Pursuant to Rule 1202.a, Noble commits to the following Operational Requirements in protection of the WR OGDP 1, A18-09 Drill Pad environment.

- Black Bear Habitat 1202.a.(1)- The proposed A18-09 Drill Pad is not within black bear habitat.
- Water Transportation 1202.a.(2)- Noble will follow appropriate protocols for disinfecting water collection and transportation equipment and thereby protecting any surface water sources utilized by Noble operations.
- Refueling/Chemical Storage Areas 1202.a.(3)- Willow Creek, Greeley #2 Canal and their associated fringe-wetlands are located in the immediate area of the A18-09 Drill Pad (Figure 2). As described below under Environmental Review, a Professional Wetland Scientist (PWS) provided full hydrologic review of surface waterway, wetlands, irrigation channel, and riparian areas potentially impacted by the A18-09 pad construction and operations (full reporting is attached to this plan). Based on this detailed review, Noble may be situating new staging, refueling, or chemical storage areas within 500 feet of the Ordinary High-Water Mark (OHWM) of the Greeley #2 Canal.
- Wildlife Exclusions 1202.a.(4)- Noble will implement appropriate wildlife exclusion devices for drilling, completion and production operations. Noble will not construct or utilize drilling pits or production pits on location. Permanent medium or large volume

secondary containment structures are not anticipated for the project. However, fresh water may be stored on location in Minion Tanks during well drilling/completion activities. These tanks are completely netted to protect wildlife and are treated for WNV and larvae control.

The following wildlife exclusion devices will be installed:

- Fencing may be installed and maintained around the pad perimeter following drilling and completion activities and in coordination with surface landowner preferences
 - Netting will be installed and maintained on all small-volume secondary containment structures that may hold precipitation and liquids
 - Drip pans will have functional lids and be kept closed
 - Bird exclusion devices will be installed on the vent stacks for all separation and combustion devices
 - All produced water and water collection vessels will be close-topped, and all access ports will be sealed or netted
 - Administrative Controls- daily inspections and good housekeeping practices will be followed for early prevention/detection of wildlife-related issues
-
- Trenching 1202.a.(5)- Any flowline/pipeline trenches left open for more than five consecutive days will have wildlife escape ramps at a minimum of one ramp per ¼ mile of trench.
 - Reclamation and Seed Mix 1202.a.(6)- While conducting interim and final reclamation activities (pursuant to 1000 Series Rules), Noble will use CPW-recommended seed mixes when consistent with the Surface Owner's approval and any Soil Conservation District requirements.
 - Fencing 1202.a.(7)- Noble will use CPW-recommended fence designs when consistent with the Surface Owner's approval and any relevant Local Government requirements.
 - Migratory Birds 1202.a.(8)- Noble will conduct all vegetation removal necessary for Oil and Gas Operations outside of the established nesting season for migratory birds (April 1-July 31). For any vegetation removal activities performed between April 1 and July 31, Noble will conduct pre-construction nesting surveys within the proposed disturbance area prior to vegetation removal. Should active nests be located, Noble will establish appropriate work zone buffers.
 - West Nile Virus and Mosquito Larvae Control 1202.a.(9)- Noble will not utilize drilling or production pits. However, fresh water may be stored on location in Minion Tanks during well drilling/completion activities. These tanks are completely netted to protect wildlife and are treated for WNV and larvae control.
 - 1202.a.(10) Best Management Practices for activities in Proximity to Aquatic HPH 1202.c.(1).Q-S- Noble has not proposed any activities within 500-1000 feet from Aquatic HPH areas for the WR OGD 1 development.

Additional Committed BMPs

- Best Management Practices- The following additional BMPs are committed under this Wildlife Protection Plan and are standard Noble processes for new development.
 - Noble will pre-clear all proposed disturbances according to CPW guidance meeting Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act (BGEPA) and Endangered Species Act (ESA) laws in protection of active nesting activities, observe CPW/USFWS requested protected buffers for active nesting species, and consult with CPW/USFWS as warranted.
 - Noble will install and maintain bird-deterrent devices on all open-vent exhaust stacks on production equipment to discourage perching, roosting and nesting activities.
 - Will employ Noble's Stormwater Management Program to protect soil resources, minimize erosion, identify pollutants, apply pollutant control measures, and conduct regular inspections.
 - All interim and final reclamation areas will be contoured and re-vegetated to a stable condition to restore natural habitats for wildlife species.
 - Noble will meet weed management targets during construction, drilling, production and reclamation lifecycles.
 - Noble commits to employ Noise, Light, Dust and Odor mitigation efforts meeting COGCC Series 400 Rules in the protection of Wildlife Resources. A general summary of wildlife BMP commitments under the Series 400 aesthetic rules and incorporated by this WPP include:
 - Prior to the commencement of Production Operations, Noble will take all necessary and reasonable precautions to ensure that lighting, dust, noise and odor from the Oil and Gas Location does not unnecessarily impact the health, safety, and welfare of Wildlife occupying any High Priority Habitat within 2,000 feet of the Oil and Gas Location. For permanent facilities this includes:
 - Identify permanent and temporary housing of resident wildlife and ensure locations are recorded in wildlife reports kept in-house by HSE
 - Conduct a daily walkthrough of the location to ensure no wildlife have built nest(s) in/around lighting or noise sources. If nest(s) are found, HSE reporting will be issued to appropriate personnel to either remove the nest and/or temporarily abandon the lighting source until nest is abandoned.
 - Inform and educate all field employees and contractors on wildlife conservation practices, including no harassment or feeding of wildlife.
 - Utilization of telemetry equipment for remote monitoring to limit in-person visitation by production operations personnel.
 - Institute the Noble safety program meeting Operational Excellence Management System initiatives and "Stop Work" authority.
 - Construct pipeline infrastructure to provide takeaway of oil, natural gas, and fresh and produced water from the CDP development, eliminating truck traffic and emissions associated with hauling product from the oil and gas development and limiting vehicle/wildlife interactions.
 - Any encroachment of wetlands or active water ways potentially considered Waters of the United States (WOTUS) will be reviewed and/or protected under USACE Nationwide or General Permit processes.

Environmental Review

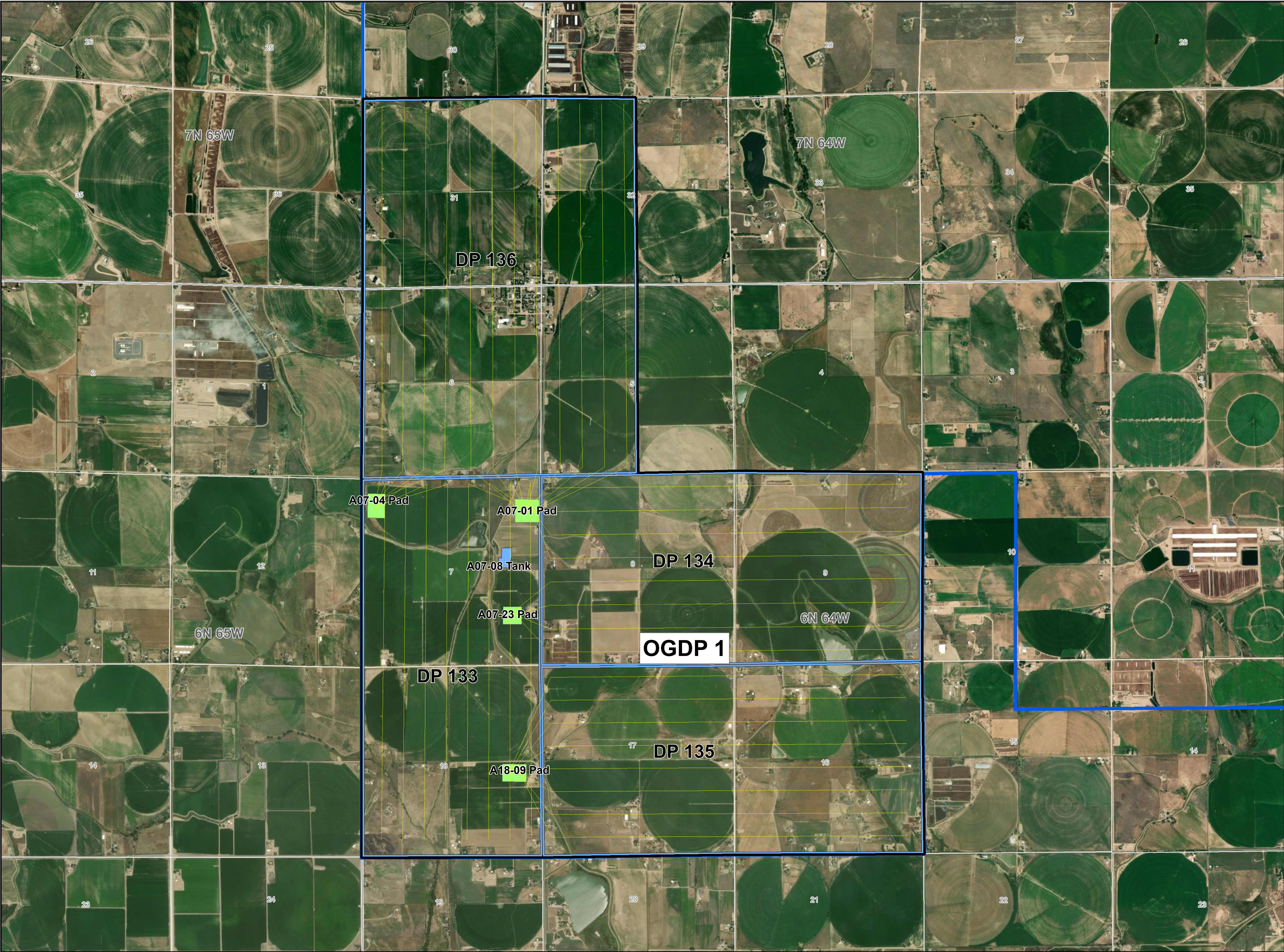
Noble's WR OGD 1 will include four drill pads and one production facility. The development does not encroach upon any 1202.c. or 1202.d. HPH, and Willow Creek and the Greeley #2 Canal irrigation structure are within the proposed development area, as depicted on Figure 2. Potential environmental constraints for the project include these water-way structures, their associated wetland areas, and the FEMA 100-year Floodplain associated with Willow Creek.

Hydrologic field review by SWCA Environmental Services Professional Wetland Scientist (PWS) was performed the week of November 1st, 2021. Survey activities were performed based on existing hydrologic features identified in the field including National Wetland Inventory (NWI)-mapped wetlands and National Hydrography Dataset (NHD) delineations, and the features presented on the A18-09 Well Pad Hydrology Map submitted with the 2A packet. As depicted on Figure 3, SWCA confirmed that the Greeley #2 Canal and its defined Ordinary High-Water Mark (OHWM) is located ± 318 feet east of the proposed pad surface; no associated fringe wetland was delineated on the immediate channel bank and no hydric soils were present. The NWI-mapped freshwater pond $\pm 292'$ to the northeast does contain OHWM and likely has connectivity to the Greeley #2 Canal. The concrete ditch structure approximately $\pm 381'$ southeast does exhibit a 3' OHWM and should be protected as well. No other associated wetlands, water features or hydrophytic plant or soil indicators were identified within 500' of the pad area or within the proposed pad disturbance footprint.

The recent hydrology field investigation suggests that per Rule 1202.a.(3) pad placement, construction, drilling/completions and operations could potentially impact the Greeley #2 Canal, freshwater pond and irrigation ditch structure east of the proposed pad and within 500' of the pad surface (Figure 3). Based on the short-term presence of chemical injection skids, acid and chlorine dioxide tanks, and fuel tanks on the A18-09 drill pad, Noble commits to obtaining CPW Waiver approval for pad construction and to institute the following BMPs to be protective of the canal and irrigation channel.

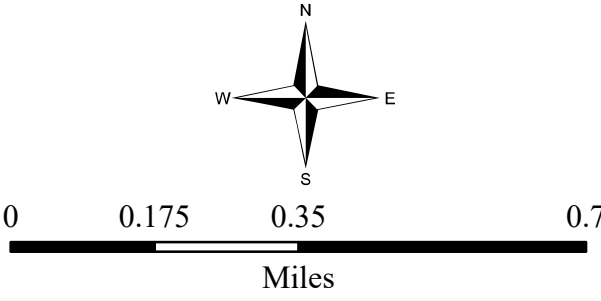
- Noble will construct the A18-09 drill pad with 4-6" of clay and 3-5" of road-based cuttings. In addition to the road-based cuttings, Noble will use a 30-mill geosynthetic liner to underlie the drill rig, cuttings and mud storage areas;
- All surficial activities performed by Noble during well drilling and completion (D&C) activities will be protective of the environment. Bulk liquids used during D&C activities, including chemical injection skids, acid and chlorine tanks, and fuel tanks will be containerized in appropriate sealed vessels and underlain by an impervious liner and/or secondary containment system capable of containing any spill or leak from that vessel;
- Valves and temporary flow lines associated with D&C activities will be inspected daily for damage or leaks while in service;
- The Greeley #2 Canal, freshwater pond and concrete irrigation structure are all upgradient from the proposed A18-09 drill pad. Existing ground conditions would convey all runoff to the west of the site, away from the sensitive water features. Also, structural stormwater controls within the pad perimeter will ensure flow off the pad to the perimeter channel and into a detention-pond structure, further protecting upgradient surface water features.

Flowline installation between the northern A07-04 and A07-01 drill pads, and between the southern A18-09 drill pad and the centralized production facility will be subsurface-bored underneath Willow Creek (and its associated FEMA Floodplain) and the Greeley #2 Canal, respectively. The remaining flowline installation will avoid impact to any sensitive water way, floodplain, or wetland. As previously stated, it should be recognized by CPW that use of the chemical injection skids, acid and chlorine dioxide tanks, and fuel tanks proposed for the A18-09 Drill Pad will only be onsite during transitory drilling/completion operations and will not be present during long-term production operations.



Legend

- Oil & Gas Development Plan
- Wells Ranch CDP
- Well Pad
- Planned Wells
- Township/Range
- Sections



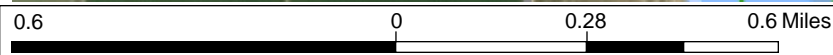
Wells Ranch CDP
OGDP 1

Weld County, Colorado

CSR:	NAD 1983 UTM Zone 13N	
Revised by:	jacobfrost	Date: 2/26/2021

Disclaimer: This map has been carefully compiled using multiple data sources available to Noble Energy Inc. While the information used is held to the highest possible degree of accuracy, its uses are for informational purposes only and therefore are not suitable for legal, engineering, or surveying purposes. Noble Energy Inc. does not guarantee or assume responsibility for misuse or misinterpretation of any information presented. Recipient agrees to not reproduce, distribute, or digitize without express consent from Noble Energy Inc. or its affiliates.

FIGURE 2 - Chevron RBU Wells Ranch CDP- OGD 1



WGS_1984_Web_Mercator_Auxiliary_Sphere

Source: iNAV
Map Date:
11/23/2021

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Notes

FIGURE 2

FIGURE 3- A18-09 Drill Pad

The complete Hydrologic Survey Report for the A18-09 Drill Pad is attached to this Wildlife Protection Plan.

Wildlife Protection Plan References and Sources

State of Colorado Rulemaking in support of Sensitive and Protected Species/Habitat:

Document references to COGCC Rules in support of this Wildlife Protection Plan include:

- 300 Series Rules:
 - Rule 304: Form 2A: Oil and Gas Location Assessment Application
 - Rule 309: CPW Consultation
- 400 Series Rules:
 - Dust, Light, Noise and Odor Mitigation
- 500 Series Rules:
 - 529: Rulemaking Proceedings
- 1200 Series Rules: Protection of Wildlife Resources

Source: [COGCC Regulation \(state.co.us\)](https://state.co.us/cogcc/regulation)

Colorado Parks and Wildlife:

Colorado Parks and Wildlife High Priority Habitat maps in support of COGCC Rule Making and supporting this Wildlife Protection Plan:

Source: [COGCC Maps \(state.co.us\)](https://state.co.us/cogcc/maps)

Colorado Parks and Wildlife, Department of Natural Resources- Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors (2020):

Colorado Parks and Wildlife, Department of Natural Resources- Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls (revised 4/6/21):

Source: [Colorado Parks and Wildlife \(state.co.us\)](https://state.co.us/cpw)

U.S. Endangered Species Act (ESA):

“Take” (as defined by ESA) of a federally-protected threatened and endangered species is illegal without permit. The project analysis must take into consideration threatened and endangered species as well as candidate and/or petitioned species. Species information may be obtained by contacting a local U.S. Fish and Wildlife field office with project information and/or accessed via the source below:

Source: <https://ecos.fws.gov/ipac/>

Critical Habitat under ESA

Critical habitat are specific areas deemed essential to the conservation of (ESA) endangered and threatened species and may need special management or protections. Projects must be evaluated for the presence of critical habitat.

Source: <https://www.fws.gov/southeast/endangered-species-act/critical-habitat/>

Migratory Bird Treaty Act (MBTA):

The MBTA prohibits intentional take of federally-protected birds without permit. Projects shall be evaluated for risk of take of MBTA-listed species, focusing on those species listed Birds of Conservation Concern (BCC) and Birds of Management Concern (BMC). This information may be obtained by contacting a local U.S. Fish and Wildlife field office with project information and/or may be accessed at the source below:

Source: <https://ecos.fws.gov/ipac/>

Bald and Gold Eagle Protection Act (BGEPA):

“Take” (as defined by BGEPA) of federally protected eagles is illegal without permit. Projects shall be evaluated for risk of take of bald and golden eagles. Species information may be obtained by contacting a local U.S. Fish and Wildlife office with project information and/or may be accessed at the source below:

Source: <https://ecos.fws.gov/ipac/>

Clean Water Act (CWA):

The CWA regulates the discharge of pollutants into the Waters of the United States and quality standards for surface waters. CWA makes it unlawful to intentionally or negligently discharge any pollutant from a point source into navigable waters, unless a permit is obtained.

Waters of the United States (WOTUS):

The Department of the Army, acting through the U.S. Army Corps of Engineers, has authority to permit the discharge of dredged or fill material in waters of the U.S. under Section 404 of the CWA, and permit work and the placement of structures in navigable waters of the U.S. under Sections 9 and 10 of the Rivers and Harbors Act of 1899. Projects resulting in impacts to WOTUS are subject to federal permitting requirements. Projects shall be evaluated for risk of impacts to jurisdictional Waters of the United States.

In addition to the use of topographic maps, the following information is useful for WOTUS determinations:

National Hydrography Dataset (NHD)/Watershed Boundary Dataset:

Source: https://nhd.usgs.gov/NHD_High_Resolution.html

USFWS National Wetland Inventory (NWI) Mapper:

Source: <https://www.fws.gov/wetlands/>

NOTE: National Resource Conservation Service (NRCS) Soil and Topography Data (*see section below*) must be utilized to ascertain presence of hydric soils and flood risk.

National Historic Preservation Act (NHPA)/Colorado Historical, Prehistorical and Archaeological Resources Act of 1973):

Projects shall be evaluated for presence of cultural resources and historical artifacts.

NOTE: Archaeological investigations must be performed or supervised by an archaeologist who meets the U.S. Secretary of the Interior's Professional Qualification Standards for Archaeology (48FR 22716 or 36 CFR Part 61); or meets the requirements for Principal Investigator defined in 8 CCR 1405-7.

Federal Emergency Management Administration (FEMA) Floodplain;

Projects constructed in floodplains may require additional permitting. Projects shall be evaluated for potential impacts to floodplains and flood risk.

Source: <https://msc.fema.gov/portal>

NOTE: If floodplain maps are not available (i.e. "unmapped"), NRCS Soil and Topography Data must be used for planning purposes (See NRCS data below).

The logo for the Southwestern Water Conservancy Association (SWCA) is positioned vertically on the left side of the page. It consists of the letters 'S', 'W', 'C', and 'A' in a large, stylized, light blue font, stacked one above the other.

Aquatic Resources Inventory Report for Proposed Development of the A018-09 Drill Pad, Weld County, Colorado

NOVEMBER 2021

PREPARED FOR

Chevron Rockies Business Unit

PREPARED BY

SWCA Environmental Consultants

AQUATIC RESOURCES INVENTORY REPORT FOR PROPOSED DEVELOPMENT OF THE A018-09 DRILL PAD, WELD COUNTY, COLORADO

Prepared for

Chevron Rockies Business Unit
1625 Broadway Street, Suite 2200
Denver, Colorado 80202

Prepared by

SWCA Environmental Consultants
295 Interlocken Boulevard, Suite 300
Broomfield, Colorado 80021
(303) 487-1183
www.swca.com

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1 INTRODUCTION

On behalf of Chevron Rockies Business Unit, SWCA Environmental Consultants (SWCA) completed an aquatic resources inventory, commonly referred to as a wetland delineation, for the proposed development of the A018-09 drill pad located in Weld County, Colorado (Figure A1 in Appendix A). SWCA evaluated and delineated wetlands and other aquatic resources located within 500 feet of the proposed drill pad area that includes Greely Number 2 Canal, and the holding ponds and ditches identified west of the canal (hereafter referred to as the survey area). The approximate center point of the project is located at the center of the proposed drill pad, latitude 40.485047°, longitude -104.586711° (see Figure A1). The goal of conducting an aquatic resources inventory is to identify aquatic resources containing an ordinary high water mark (OHWM) or wetland within 500 feet of the proposed project in order to comply with Colorado Oil and Gas Conservation Commission's (COGCC) Rule 1202(3).

The inventory of aquatic resources included the identification and recording of features that may be determined to be waters of the U.S. by the U.S. Army Corps of Engineers (USACE). Waters of the U.S. include waterbodies such as rivers, creeks, streams, arroyos, lakes, and associated wetlands, which have connectivity to downstream navigable waters or tidal seas. Under the Clean Water Act, wetlands are aquatic resources that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE 1987). Non-wetland waters are generally identified and delineated by the presence of an ordinary high-water mark (OHWM), which is a defined boundary on the shore or bank of an aquatic resource established by water fluctuations and movement.

2 METHODS

The aquatic resources inventory included a desktop review of existing data and field surveys. The following sections provide a summary of the methods used to generate the collected data and aquatic resource mapping.

2.1 Existing Data Review

SWCA conducted a desktop review of existing spatial data prior to the field surveys to identify areas with the greatest potential for aquatic resources. Sources used during the existing data review included U.S. Geological Survey (USGS) 7.5-minute quadrangles, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps (USFWS 2021), the National Hydrography Dataset (NHD) (USGS 2015), the USGS StreamStats tool (Version 4.6.1) (USGS 2020), Natural Resources Conservation Service (NRCS) soil survey maps (NRCS 2020), and historic and current aerial photographs of the survey area (Google Earth 2020; NETROnline 2021).

2.2 Field Surveys

The aquatic resources inventory included a desktop review of existing data and field surveys. The following sections provide a summary of the methods used to generate the collected data and aquatic resource mapping. SWCA conducted the aquatic resources field surveys on November 9, 2021.

2.2.1 Mapping

A handheld global positioning system (GPS) receiver with submeter accuracy was used to record the spatial extent of features, geographically reference data points, and demarcate wetland and waterbody boundaries during the field surveys. Geographic information system (GIS) software was used to analyze recorded features, calculate areas, and generate the survey area maps. When wetland or non-wetland waters within the survey area extended outside of the survey area boundaries, SWCA occasionally mapped the portions of these features outside of the survey area, if this additional information appeared potentially useful (e.g., if avoidance of impacts during construction might be feasible or if these features may be relevant to the jurisdictional status of areas within the survey area).

2.2.2 Wetlands

The presence/absence of wetlands was determined in the field using delineation methods provided in the *Corps of Engineers Wetlands Delineation Manual* (Manual) (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Great Plains Region* (Version 2.0) (Regional Supplement) (USACE 2010). Data at each potential wetland were recorded on the Regional Supplement wetland determination data forms (datasheet). Determination of wetland habitat (type) is based on the classification system developed by Cowardin et al. (1979). Per the Manual and Regional Supplement, wetlands are present in areas where three wetland parameters (i.e., wetland hydrology, hydric soils, and hydrophytic vegetation community) are present under normal circumstances. The presence of these wetland parameters is determined using the indicators provided in the Regional Supplement. One data point is recorded within each potential wetland (or wetland type for proximate, similar wetlands) along with a corresponding upland data point. These data provided the basis for mapped wetland–upland boundaries.

2.2.3 Non-Wetland Waters

The presence and extent of non-wetland waters (e.g., constructed ditches and reservoirs, active channels, and ponds) was determined in the field using the guidance and methods provided in USACE Regulatory Guidance Letter 05-05 (USACE 2005) and the USACE technical guidance *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008). An OHWM is the line on a shore established by fluctuations of water and is typically identified by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas. The spatial extent of non-wetland waters is delineated using the identified OHWM for each feature.

Non-wetland waters were characterized hydrologically as ephemeral, intermittent, or perennial waters. Ephemeral features flow only in direct response to precipitation or snowfall and flow for a brief period of time. Intermittent waters have prolonged flow that is sustained (at least in part) by melting snowpack or a groundwater source. Perennial waters flow continuously but may have periods of less flow. According to the USACE Manual and policy (USACE 1987, 2008), erosional features that lack an OHWM, or lack a continuous OHWM, are not waters of the U.S.

3 RESULTS

The results of the existing data review and field surveys for the A018-09 drill pad project on OGD 1 are presented in the following sections. Project maps are provided in Appendix A; copies of the wetland determination data forms are provided in Appendix B; representative photographs of the field-delineated

wetland and waterbody features are provided in Appendix C; and the NRCS soil report for the survey area is provided in Appendix D.

3.1 General Observations and Desktop Review Results

The survey area is in the South Platte basin, roughly 4,710 feet above sea level (see Appendix A). The survey area terrain ranges from flat to undulating, and primarily consists of cultivated cropland and oil and gas development. Based on data provided by the USGS StreamStats tool, the project survey area is in an approximately 0.81-square-mile drainage basin that receives approximately 13.65 inches of mean annual precipitation.

The A018-09 drill pad survey area is not located within a 100-year floodplain. The closest 100-year floodplain is associated with the Lone Tree Creek, located approximately 950 feet west of the proposed drill pad area (Colorado Oil and Gas Conservation Commission 2021; Federal Emergency Management Agency 2020). Geologic mapping for this area indicates that the survey area is in upper cretaceous shale, claystone, siltstone, and other rock types (Tweto 1979). According to the NRCS soil surveys for Weld County, Colorado, one of the five soil map units within the survey area has a strong potential to satisfy the hydric soil criteria: Aquolls and Aquepts, flooded, described as poorly drained with recorded depths to groundwater ranging from 6 to 36 inches (NRCS 2020) (see Appendix D). Other dominant soil map units present within the survey area include Otero sandy loam, Nunn loam, Olney fine sandy loam and Nelson fine sandy loam which are described as well drained and have recorded depths to groundwater greater than 80 inches.

The latest NHD and NWI maps indicate that the A018-09 drill pad survey area encompasses a freshwater pond and a riverine feature, Greeley Number 2 Canal, both located west of the proposed drill pad area (USFWS 2021).

Based on SWCA's review of available data and observations made at the time of the surveys, hydrologic conditions in the vicinity of the survey area are generally representative of typical conditions for this time of year. The recorded rainfall amounts for September through November 2021 are compared with normal rainfall amounts for these months in Table 1. According to data obtained from Weather Underground (2021), in the 3-month period preceding SWCA's site visit the project area received less than the normal rainfall amount, showing less than normal precipitation levels in all three months assessed.

Table 1. Monthly Recorded Precipitation at the Greeley, Colorado, Weather Station

Month	Recorded Rainfall (inches)	Normal Rainfall (inches)	Difference (inches)
September 2021	0.23	1.11	0.88
October 2021	0.11	1.01	0.90
November 2021	0.06	0.74	0.68
Total	0.40	2.86	2.46

Source: U.S. Climate Data (2020); Weather Underground (2021).

3.2 Field Survey Results

Qualified SWCA biologists conducted the on-site field surveys on November 9, 2021. Data were recorded in the field for potential wetland and non-wetland waters. Supporting data are provided in individual wetland data forms in Appendix B.

3.2.1 Wetlands

SWCA identified no wetlands within 500-feet of the A018-09 drill pad survey area.

3.2.2 Non-Wetland Waters

SWCA delineated three non-wetland water features totaling approximately 0.999 acres within the survey area (Table 3, Figure A2). These features, all located west of the proposed drill pad area, consist of the Greely Number 2 Canal (WB01), an adjacent farm pond and a concrete agricultural ditch.

Table 2. Waterbodies Identified within A018-09 Drill Pad Survey Area

Waterbody ID	500' Survey Area (ac.)	500' Survey Area (linear ft.)	Dist. from pad (ft.)	Direction from pad
WB01	0.45	1052.3	277.02	East
WB02	0.53	217.3	256.75	East
WB03	0.019	321.2	297.60	Northeast
Total	0.999	1590.8		

The following subsections provide additional information regarding these features.

3.2.2.1 GREELY NUMBER 2 CANAL (WB01)

Greely Number 2 Canal (WB01) is an intermittent riverine feature (R4SBCx) that flows north to south crossing through the survey area, receiving waters primarily from upstream reservoirs and runoff, approximately 277.02 feet east of the proposed drill pad area (see Figures B3 and B4). The canal will typically have flowing water only during peak flow events and throughout the growing season, depending primarily on agricultural/municipal water supply demands. The segment of the canal within the project area is comprised of steep, undercut banks, showing signs of significant water movement.

The banks of the Greely Canal are dominated mostly by hydrophytic vegetation, which typically consists of reed canarygrass (*Phalaris arundinacea*). The canal banks encompassing the reed canarygrass did not show signs of hydric soils, therefore not meeting the criterion of a wetland habitat.

3.2.2.2 FARM POND ADJACENT TO THE GREELY NUMBER 2 CANAL (WB02)

SWCA delineated approximately 0.53 acre of a freshwater pond (WB02). The farm pond feature, located approximately 256.75 feet east of the proposed drill pad, relies on seasonal water supplies provided by the subsurface diversion culverts installed in the Greely Number 2 Canal (see Appendix A).

Upland vegetation communities observed above the OHWM of the pond community was comprised of upland low-growing herbaceous species, such as western wheatgrass (*Pascopyrum smithii*), kochia (*Bassia scoparia*), cheatgrass (*Bromus tectorum*) and sunflower (*Helianthus annuus*) (see Figures B5 and B6).

3.2.2.3 CONCRETE AGRICULTURAL DRAINAGE (WB03)

SWCA delineated approximately 0.043 acres of an ephemeral concrete drainage (WB03) associated with, located west of the canal and east of the farm ponds, approximately 297.60 feet southeast of the proposed drill pad (see Figure A1). The vegetation community upland from the ditch consisted of cultivated cropland, which included corn (*Zea mays*).

4 SUMMARY AND RECOMMENDATIONS

Three waterbodies with an ordinary high water mark, totaling 0.999 acres were within the A018-09 project survey area. No of the potentially jurisdictional aquatic resources were recorded within the proposed pad boundary and construction is not expected to require permitting under Section 404 of the CWA.

COGCC Rule 1202(3) states that operators will not situate new staging, refueling, or chemical storage areas within 500 feet of the OHWM of any river, perennial or intermittent stream, lake, pond, or wetland. Based on our understanding of the proposed project, the delineated waterbodies containing an ordinary high water mark are located 277 feet (WB01), 257 feet (WB02), and 298 feet (WB03) from the A07-08 disturbance boundary. Respectively, these waterbodies are 533 feet (WB01), 686 feet (WB02), and 746 feet (WB03) northeast of the center of the A07-23 drill pad.

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APPENDIX A

Aquatic Resources Inventory Maps

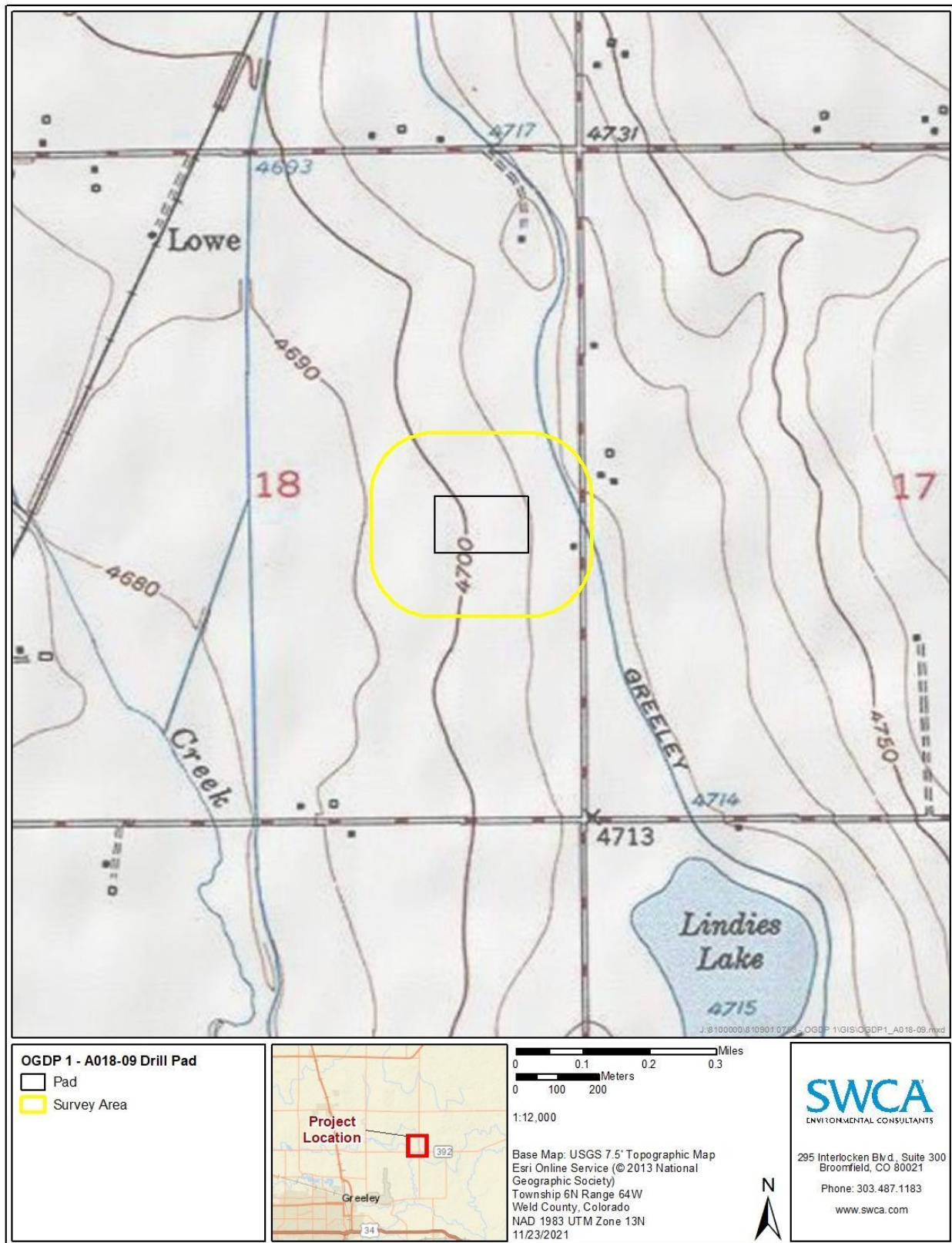


Figure A1. Overview of survey area.

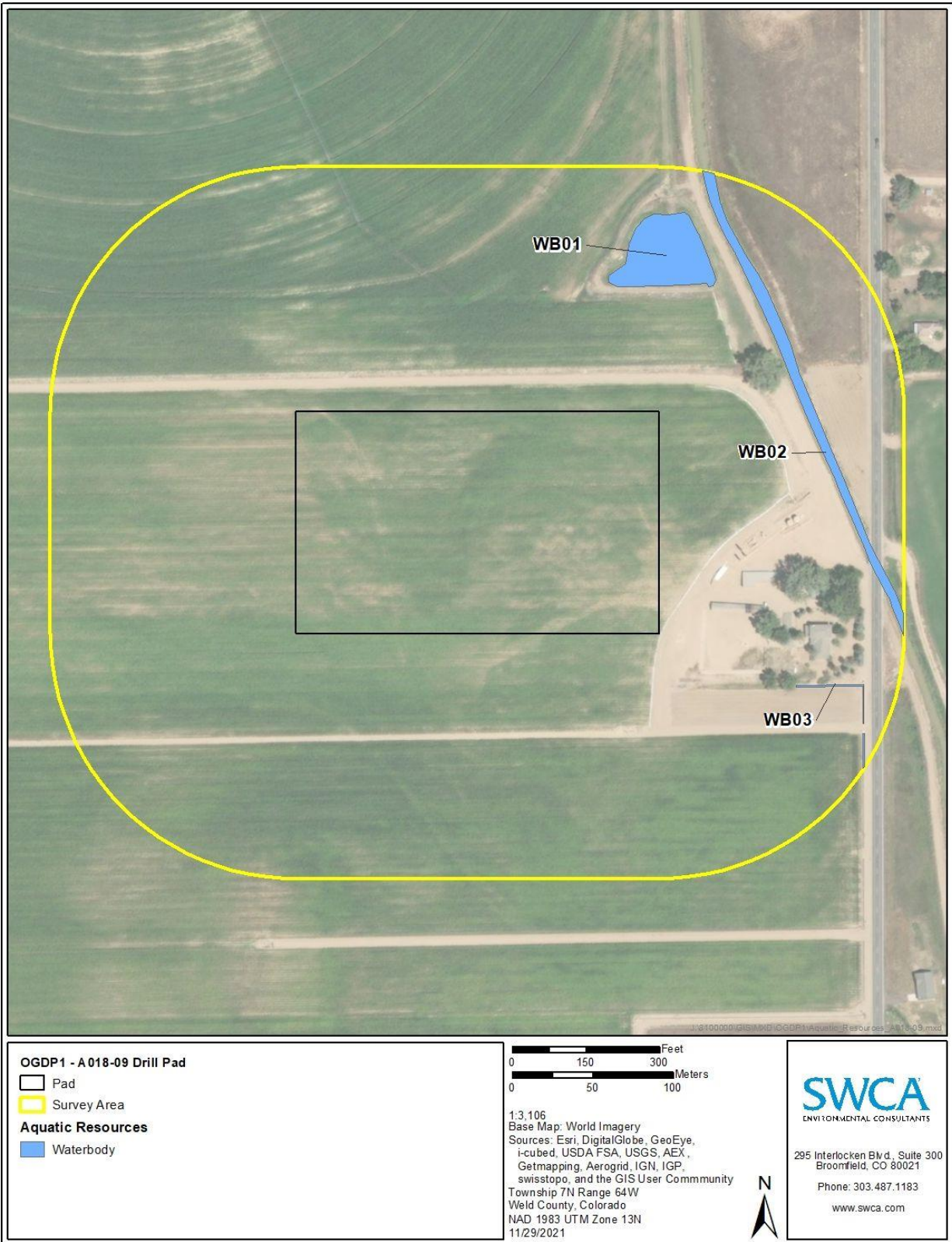


Figure A2. Delineated aquatic resources in survey area.

APPENDIX B

Wetland and Waterbody Photographs



Figure B1. Overview of proposed A018-09 drill pad, facing southeast towards existing facility.



Figure B2. Overview of proposed A018-09 drill pad, facing south towards existing facility.



Figure B3. Overview of Greely Number 2 Canal (WB01), facing north.



Figure B4. Overview of Greely Number 2 Canal (WB01), facing south.



Figure B5. Overview of farm pond (WB02) adjacent to Greely Number 2 Canal.



Figure B6. Overview of farm pond (WB02) adjacent to Greely Number 2 Canal.



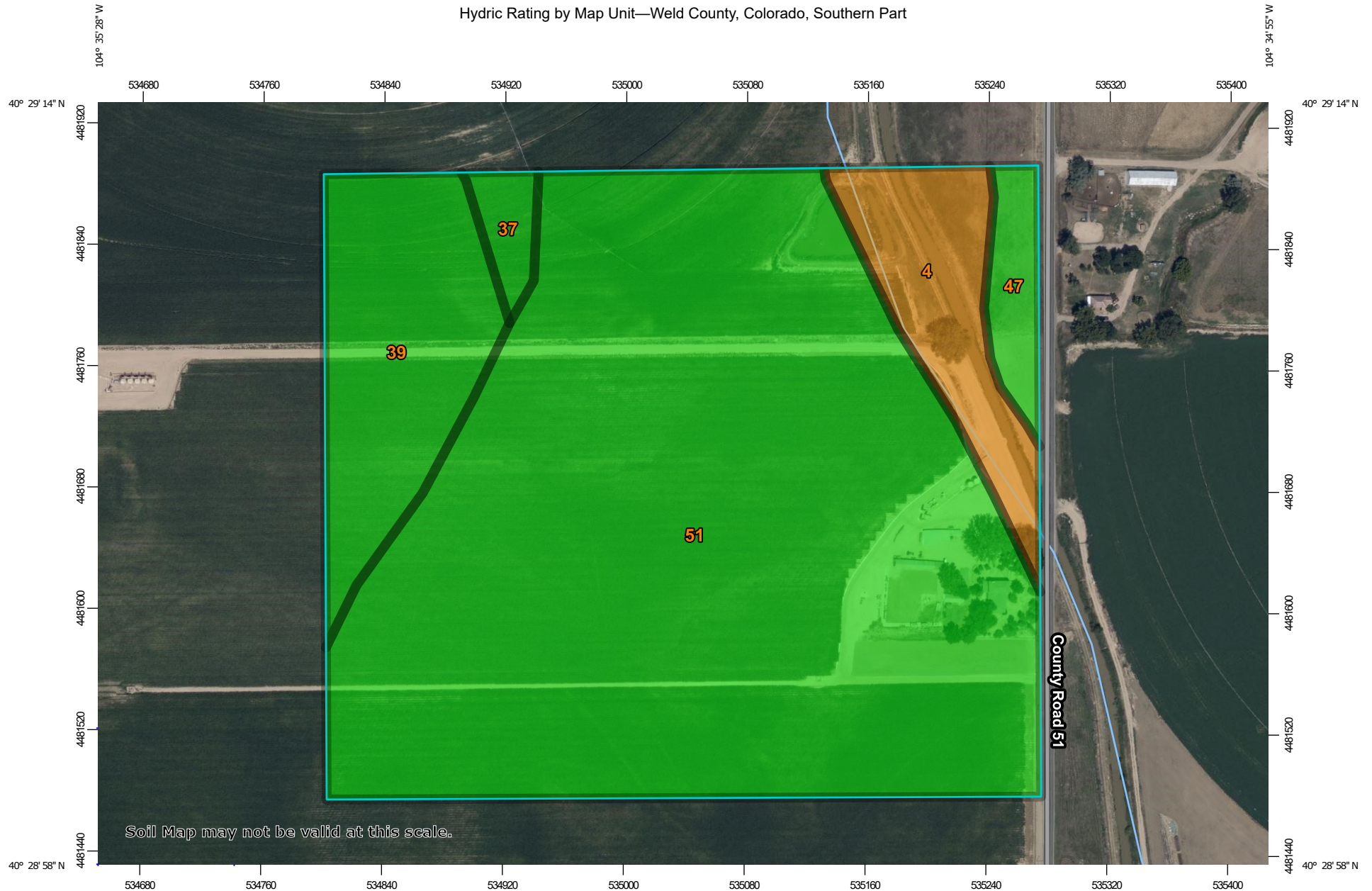
Figure B7. Overview of concrete agricultural ditch (WB04).

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Appendix C

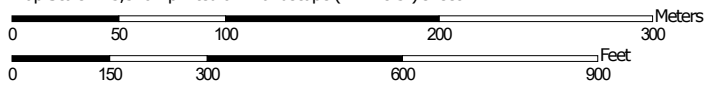
NRCS Soil Report for Survey Area

Hydric Rating by Map Unit—Weld County, Colorado, Southern Part



Soil Map may not be valid at this scale.

Map Scale: 1:3,540 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

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


MAP LEGEND

Area of Interest (AOI)







 Area of Interest (AOI)

Soils







Soil Rating Polygons

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available


Soil Rating Lines

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available






Soil Rating Points

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available


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 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Weld County, Colorado, Southern Part
Survey Area Data: Version 20, Aug 31, 2021

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

Date(s) aerial images were photographed: Jul 19, 2018—Aug 10, 2018

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.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
4	Aquolls and Aquepts, flooded	80	3.7	7.7%
37	Nelson fine sandy loam, 0 to 3 percent slopes	0	0.7	1.5%
39	Nunn loam, 0 to 1 percent slopes	0	6.0	12.3%
47	Olney fine sandy loam, 1 to 3 percent slopes	0	1.3	2.7%
51	Otero sandy loam, 1 to 3 percent slopes	0	36.8	75.7%
Totals for Area of Interest			48.6	100.0%