



Kerr-McGee Oil & Gas Onshore LP

Stormwater Management Plan

**Fern Well Pad and Facility
SW ¼, SE ¼, Sec 31, T3N, R66W**

Weld County, Colorado

September 2024

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1.0 INTRODUCTION

Kerr-McGee Oil & Gas Onshore LP (KMOG) has prepared this site-specific Stormwater Management Plan (SWMP) for construction activities in Weld County, Colorado. The SWMP is intended to ensure construction activities adhere to good engineering, hydrologic, and pollution control practices, and to ensure erosion, sediment and stormwater control measures are selected, installed, implemented, and maintained to protect state waters, and minimize site erosion or degradation. This facility is a part of KMOG’s Area 4 operations and is covered under CDPS Permit COR402543.

2.0 SITE DESCRIPTION

Operator:	Kerr-McGee Oil & Gas Onshore LP
Project / Site Name:	Fern Well Pad and Facility
Location:	Sec. 31, T3N, R66W, Weld County, Colorado
Total Area of Project:	15.75 acres
Description of Existing Vegetation:	Existing vegetation on the subject property is irrigated crops, primary use is agriculture.
Percentage of Existing Vegetation Cover:	Percentage of existing vegetation cover on the location is 80%. Method for determination: National Resource Conservation Service (NRCS) soil survey data, and on-site assessment at the time of pit excavation for planning and permitting purposes.
Soil Type(s):	1 – Altvan loam, 0 to 1 percent slopes, HSG: B 21 – Dacono clay loam, 0 to 1 percent slopes, HSG: C
Stream Crossings:	There are not any stream crossings associated with the location.
Primary Receiving Water:	Unnamed ditch approximately 42’ west of the location.
Operator ID:	47120
CDPS Permit:	COR402543
Stormwater Manager:	Lynna Scranton, HSE Director Kerr-McGee Oil & Gas Onshore LP Office: (720) 929-6317
SWMP Administrator:	Austin Lee, HSE Advisor Kerr-McGee Oil & Gas Onshore LP Office: (970) 515-1058
Emergency Contact:	Integrated Operation Center (IOC) Office: (970) 515-1500

3.0 PROPOSED SEQUENCE OF MAJOR ACTIVITIES

- | | | | | |
|---|--|--|---|---|
| <input checked="" type="checkbox"/> Delineation of Disturbance Limits | <input checked="" type="checkbox"/> Access Road Construction | <input checked="" type="checkbox"/> Perimeter /Control Measures Installation | <input checked="" type="checkbox"/> Grading, stripping, excavation, earthwork | <input checked="" type="checkbox"/> Well drilling & Completions |
| <input checked="" type="checkbox"/> Facility Construction | <input checked="" type="checkbox"/> Pipeline & Flowline Installation | <input checked="" type="checkbox"/> Disturbance Reduction | <input checked="" type="checkbox"/> Interim & Final Reclamation | <input checked="" type="checkbox"/> Return to Agriculture |

All construction and development shall be in accordance with the Colorado Department of Public Health and Environment’s CDPS General Permit for Stormwater Discharges Associated with Construction Activity, and the Colorado Energy and Carbon Management Commission (ECMC) 304.c.15 and 1002.f Rules and requirements.

4.0 POTENTIAL POLLUTANT SOURCES

Potential pollution sources shall be placed within the project construction boundary, designated staging area(s), working surface, contained by general or sized secondary containment, and stormwater perimeter controls. Anticipated pollution sources which will be managed by appropriate BMP fact sheets or operational best management standard operating procedures include, but are not limited to:

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Disturbed and stored soils | <input checked="" type="checkbox"/> Vehicle/equipment maintenance and fueling | <input type="checkbox"/> Non-industrial waste |
| <input checked="" type="checkbox"/> Vehicle tracking of sediments | <input checked="" type="checkbox"/> Dust generating processes | <input checked="" type="checkbox"/> Potential Spills |
| <input type="checkbox"/> Management of contaminated soils | <input checked="" type="checkbox"/> Routine maintenance activities | <input type="checkbox"/> Spill prevention and response |
| <input checked="" type="checkbox"/> Loading/unloading ops | <input checked="" type="checkbox"/> On-site waste management | |
| <input checked="" type="checkbox"/> Outdoor storage activities | <input type="checkbox"/> Concrete truck washing | |

No dedicated concrete or asphalt batch plants will be at the project location. Safety Data Sheets (SDS) for materials to be used are maintained by KMOG. Pollutants shall be managed in accordance with waste regulations administered by ECMC 900 series Rules.

5.0 STORMWATER, EROSION & SEDIMENT CONTROL MEASURES / BMPS

Measures for stormwater, erosion and sediment control will be accomplished through a combination of construction techniques, structural and non-structural controls, vegetation and re-vegetation, administrative controls, and good housekeeping practices. Control measures will be implemented and adjusted with changing site conditions, as well as phases of construction. All control measures deployed throughout construction shall be identified on the site-specific stormwater management plan (grading plan), as well on as-built plans verified in the field.

A summary of stormwater control measures can be found in Section 11.0 of this document. A detailed description of intended structural and non-structural stormwater control measures for Fern is as follows.

5.1 Structural Control Measures / BMPs

Structural control measures are established to reduce erosion and site degradation, and to minimize or mitigate off-site sediment transport in a manner effective for development and operation of an oil and gas location. The following structural control measures will be implemented at the proposed location:

5.1.1 Limits of Construction (LOC)

- Limits of construction will be used to designate the area of intended development and areas intended for surface disturbing activities.
- The LOC will be identified prior to commencement of surface disturbing activities, on the location grading plan, and in-field with wooden survey lathe / staking to delineate the boundary.
- The LOC surrounds the entirety of Fern.
- LOC will remain in-place until interim reclamation activities are complete.

5.1.2 Vehicle Tracking Control (VTC)

- Vehicle tracking controls will serve as a stabilized site access point which removes sediment from vehicle tires and mitigates off-site tracking onto paved surfaces.
- VTC will be installed prior to commencement of surface disturbing activities.
- VTC will be installed at the primary access for Fern, which is to the west of both the well pad and production facility pad. The access road adjoins/intersects Weld County Road 25½, approximately 50 feet west of the location.
- VTC will remain in place until interim reclamation activities are complete.

5.1.3 Temporary Diversion Ditch and Berm (DD)

- A diversion ditch and berm will be implemented to divert stormwater run-on & run-off throughout Fern to a designated outlet structure(s).
- This BMP will be installed prior surface disturbing activities and will surround the entirety of the location to create continuous perimeter control.
- Diversion ditch and berm will remain in-place until interim reclamation activities are complete.

5.1.4 Temporary Spillway and Outlet (SW/O)

- A temporary spillway and/or outlet is designed to capture sediment transported in surface runoff and slowly release flows to allow time for settling of sediment prior to discharge from the location.
- Spillway and/or outlet will be installed concurrently with the production facility diversion ditch and berm, and prior to commencement of surface disturbing activities.
- A temporary spillway/outlet will be installed in the northwestern segment of the disturbance area ditch and berm for Fern.
- All spillways and outlets will remain in-place until interim reclamation activities are complete.

5.1.5 Culvert (C)

- Culverts are used to move water under a road or crossing, or to direct flow to a designated endpoint, and are sized to manage anticipated watershed and flow rates.
- A Culvert will be installed at the western location access points for Fern well pad and production facility pad. Additional culverts will be evaluated at the time of construction and installed as needed.
- Culverts will be reinforced with inlet and outlet protection to mitigate sediment transport and surface erosion.
- These BMPs will remain in place throughout the life of construction for Fern and removed during interim reclamation.

5.1.6 Inlet / Outlet Protection (IP/OP)

- Inlet / outlet protection is a permeable barrier installed around a drain or culvert to filter runoff and remove sediment.
- This BMP will be installed prior to commencement of surface disturbing activities.
- Inlet and outlet protection will be installed for all permanent culverts, temporary spillways, and temporary outlets at Fern.
- Inlet and outlet protection will remain in place on all permanent features throughout the life of production for Fern and removed during final reclamation.

5.1.7 Seed & Mulch (SM)

- Seed and mulch are utilized in disturbed areas to establish stabilization through vegetative cover.
- Seeding will take place once surface disturbing activities are complete. Topsoil stockpiles will be stabilized with seed and mulch no longer than 14-days after completion of stockpiling efforts unless weather or ground conditions are not suitable to properly create a seedbed and promote successful germination.
- Seed & mulch will be installed on all disturbed areas no longer utilized for construction, and on all topsoil stockpiles which will remain on Fern for use during interim and final reclamation. Anticipated topsoil stockpiles will be situated along the northern perimeter of the well pad and production facility pad.
- Seed and mulch will be disturbed and re-applied during topsoil application and final reclamation practices.

5.2 Non-Structural Control Measures / BMPs

Non-structural control measures / BMPs do not involve a structure or engineered solution. Non-structural control measures include:

5.2.1 Construction Phasing & Sequencing

- Construction phasing and sequencing will be implemented at Fern to minimize the amount of surface disturbance and exposed soils to the greatest extent practicable.

5.2.2 Construction Site Waste Management

- All waste from materials imported to Fern will be placed in containment bins, and removed for disposal/recycling at an approved, licensed facility.
- Self-contained port-o-lets will be placed on both the facility and well pad at Fern and maintained by a licensed contractor at a frequency appropriate based on daily use.
- No waste materials will be buried or dumped on Fern.

5.2.3 Protection and Preservation of Existing Vegetation

- Pre-existing vegetation cover will only be removed where necessary for the operation of construction and development at Fern. Trees will only be cut or trimmed to facilitate clearing, grading and safe installation of the location.
- Vegetative buffers will be preserved to the greatest extent practicable for construction and development.

5.2.4 Good Housekeeping

- Good housekeeping measures will be implemented to prevent sediment, trash and toxic or hazardous substances from entering surface waters or impacting soils. Housekeeping practices include routine inspections, regular cleaning, site and equipment organization and maintenance, and appropriate chemical storage.

5.2.5 Materials Management

- Materials stored on Fern will be kept away from direct traffic to prevent accidents.
- Dumpsters and trash receptacles will be enclosed and/or covered to prevent dissemination of rubbish when not in use.
- Storage areas will be swept for trash / rubbish, and cleanup coordinated by construction personnel.
- Drums and chemical storage containers will be clearly labeled, and an appropriate SDS kept on file to be made available for on-site personnel as needed.

5.2.6 Training and Certification

- All personnel involved with construction and stormwater activities will be adequately trained and familiarized with the applicable CDPS stormwater permit, local/State regulations, requirements for the stormwater permit, and identification of potential pollutant sources.
- Training(s) will cover information and procedures identified in this SWMP, and will be conducted prior to the start of construction, and as needed.
- Training is considered initial and ongoing for all personnel involved with construction and development at Fern.

6.0 MATERIALS HANDLING AND SPILL PREVENTION

Discharges of hazardous substances or oil resulting from spills or construction operations are not authorized under the Construction General Permit or this plan. Spills and leaks will be managed by KMOG personnel or their designee, and according to the KMOG *Wattenberg Field, Colorado Spill Prevention, Control and Countermeasures (SPCC) Plan*. KMOG personnel and designees are trained to prevent, mitigate, evaluate, and response to spills and releases. **In the event of a spill, notify the Stormwater Manager, after taking emergency and internal procedures for notification.** Depending on the nature of the spill and material involved, the Colorado Department of Public Health and Environment 24-hour spill reporting line (877-518-5608) will be contacted and/or downstream water users notified, as necessary.

7.0 NON-STORMWATER DISCHARGES

Sources of non-stormwater discharges include emergency fire-fighting activities or a fire hydrant, uncontaminated springs which do not originate from an area of land disturbance, and construction dewatering. In the event of construction dewatering, control measures shall be implemented and Low Risk Discharge Guidance for Uncontaminated Groundwater to Land (WQP27) shall be followed.

8.0 FINAL STABILIZATION

All soil horizons segregated for the purpose of construction shall be replaced to their original relative positions and contour for reclamation and final stabilization. Following topsoil re-distribution, the reclamation area shall be cross ripped to alleviate compaction. Soil amendments will be determined and applied as necessary, and incorporated by disking, harrowing or cultipacking during seedbed preparation.

Seed used for reclamation will be determined based on surface owner consultation, and consider soil type, land use, and adjacent reference area(s) vegetation. The approved seed mix, in combination with certified weed-free mulch, will be installed when seasonal or weather conditions are most favorable to take advantage of moisture, such as early spring or late fall, and never during windy or frozen conditions.

The Colorado Department of Health and Environment (CDPHE) defines final stabilization as, “finally stabilized means that all ground surface disturbing activities at the site have been completed, and all disturbed areas have been either built on, paved, or a uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, and the vegetation cover is

capable of providing erosion control equivalent to pre-existing conditions, or equivalent permanent, physical erosion reduction methods have been employed.” Stabilized unpaved surfaces, such as gravel access roads or working surfaces, necessary for the operation of the facility or nearby facilities, also qualifies as “final stabilized”.

9.0 POST-CONSTRUCTION STORMWATER

Following final stabilization, and pursuant of ECMC Rule 1002.f and ECMC Rule 1004, BMPs shall be maintained under KMOG’s Post-Construction Stormwater Program, and evaluated for Tier 1 / Non-Tier 1 status as applicable and per ECMC 100 series definitions, until the facility is abandoned, and final reclamation is achieved.

10.0 INSPECTION AND MAINTENANCE PROCEDURES

10.1 Inspections

Inspections will be conducted to document the status of construction activities, stormwater control measure placement, maintenance needs, and effectiveness, to evaluate pollution sources, and to document reclamation / final stabilization progress. Inspections will be managed by the Stormwater Manager and SWMP Administrator and conducted by their designated representative(s). Inspection forms will document non-compliance conditions, including any release of sediment or other contaminants, additional control measures that are needed, or repair and maintenance work orders.

During construction, inspections shall be conducted every 14 days, and after a major precipitation or melt event, which has the potential to cause surface runoff.

For sites earthwork and construction is completed, but final stabilization is not achieved due to vegetative cover, inspections shall be conducted every 30 days and exclude precipitation or melt event response. Inspections will continue until all reclaimed areas have achieved a cover of 70% the pre-construction reference vegetation (i.e. final stabilization).

Findings, inspection records and site maps are documented electronically and available within 24 hours of any inspection. All inspection records are stored for a minimum of three years after the location has achieved final stabilization.

10.2 Maintenance

For maintenance items discovered at active construction locations, action and documentation towards completing repairs identified at the time of inspection, shall be made within 24 hours of discovery.

Maintenance items discovered post-construction will be documented and coordinate with production personnel.

Timeline for completion of maintenance items are a priority and will depend on scope; but in all cases, shall not be completed until field conditions allow for safe access, and utility clearance has been confirmed for actions requiring ground disturbance / earthwork.

11.0 SUMMARY OF SITE-SPECIFIC STORMWATER, EROSION & SEDIMENT CONTROLS / BMPS FOR CONSTRUCTION, DRILLING & COMPLETIONS PHASES

11.1 Stormwater will be managed during construction by a combination of site-specific erosion and sediment control measures including:

11.1.1 Delineation of limits of construction to establish a workspace.

- 11.1.2** A Vehicle Tracking Control (VTC) placed along the western portion of the access road to the well pad and the production facility pad to mitigate off-site sediment migration from vehicle traffic onto Weld County Road 25 ½ , approximately 50 feet west of the location.
- 11.1.3** A Temporary Diversion Ditch & Berm (DD) around the entire location to manage run-on and run-off.
- 11.1.4** Temporary Spillways and Outlet (SW/O) structures placed in the northwestern portion of the disturbance area ditch which will allow for settling of sediment from stormwater prior to discharge.
- 11.1.5** Approximately 2 temporary Culverts (C) with inlet and outlet protection will be installed in the primary well pad and production facility access points to direct stormwater to designated discharge structures.
- 11.1.6** Seed & Mulch (SM) to stabilize areas no longer needed for construction, as well as for topsoil stockpiles which will remain in place until interim and final reclamation.
- 11.1.7** During active construction, daily inspections will be completed by on-site personnel. A contractor will conduct stormwater compliance inspections every 14-days and/or following a rain event which produces 0.25” of precipitation or equivalent snow melt which causes surface erosion. Inspections will review all control measures / BMPs implemented, their status, and whether repair or replacement is needed.
- 11.1.8** Maintenance and repair will be completed as soon as practicable, immediately in most cases.

APPENDIX A

CDPS STORMWATER GENERAL PERMIT CERTIFICATION



COLORADO

Department of Public
Health & Environment

**CERTIFICATION TO DISCHARGE
UNDER
CDPS GENERAL PERMIT COR400000
STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY**

Certification Number: **COR402543**

This Certification to Discharge specifically authorizes:

**Owner Kerr McGee Oil and Gas Onshore LP
Operator Kerr McGee Oil and Gas Onshore LP
to discharge stormwater from the facility identified as**

Kerr Area 4

To the waters of the State of Colorado, including, but not limited to:

South Platte River

Facility Activity : OilGas
Disturbed Acres: 376.6 acres
Facility Located at: See Map in File Greeley 80651
Weld County
Latitude 40.01 Longitude -104.596

**Specific Information
(if applicable):**

Certification is issued and effective: 4/1/2024

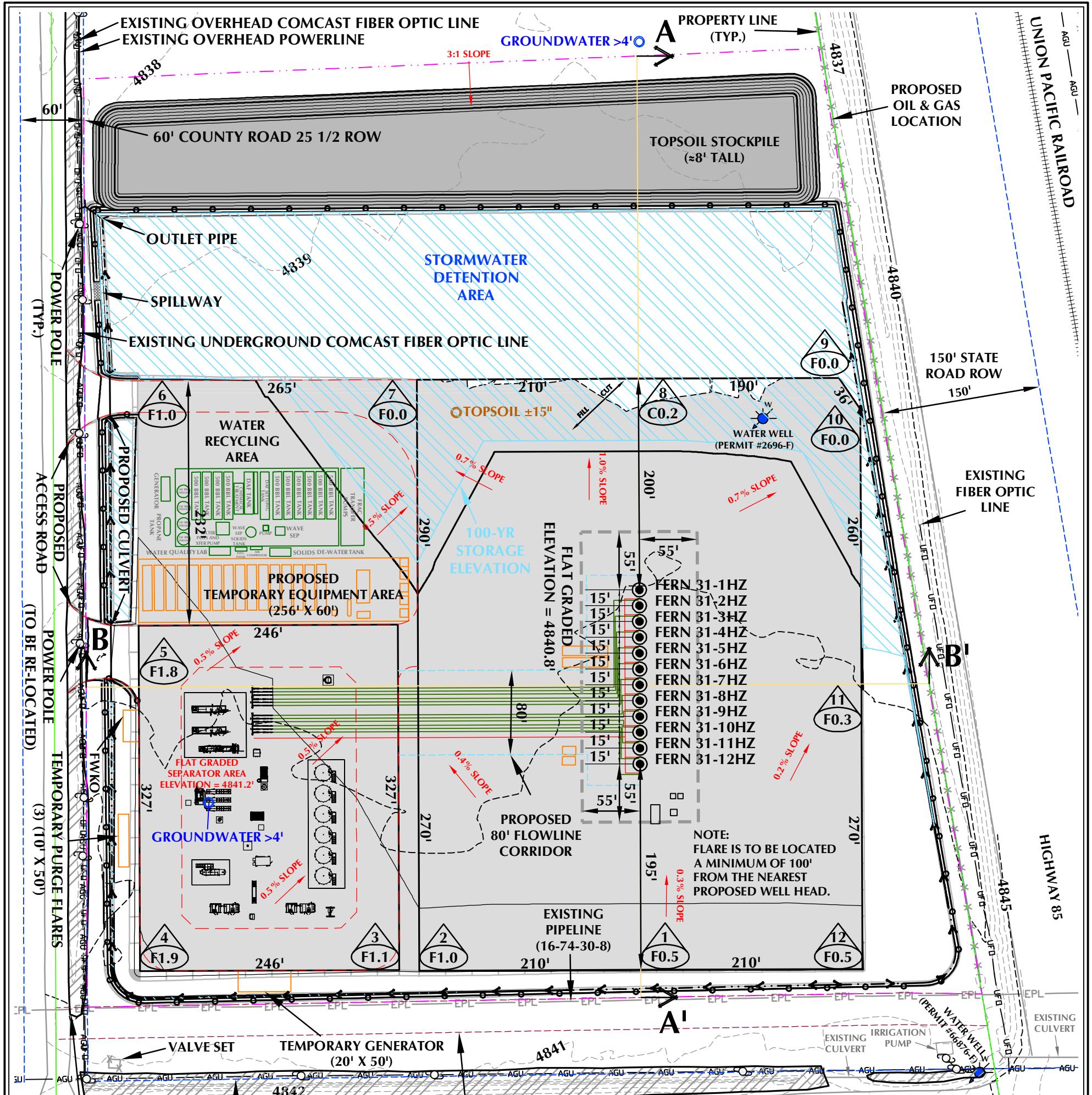
Expiration date of general permit: 3/31/2029

This certification under the general permit requires that specific actions be performed at designated times. The certification holder is legally obligated to comply with all terms and conditions of the COR400000 permit.

This certification was approved by:
Andrew Sayers-Fay Permits Section Manager
Clean Water Program
Water Quality Control Division



APPENDIX B
GRADING PLANS



NOTES:

- PIPELINE AND UTILITY CORRIDORS ARE PLANNED AND DETERMINED BY THIRD PARTY COMPANIES. SPECIFIC PIPELINE AND UTILITY CORRIDOR LOCATIONS WILL BE DECIDED BY THOSE THIRD PARTY COMPANIES CLOSER TO THE START DATE OF OPERATIONS BASED ON CONTRACT RIGHT-OF-WAY NEGOTIATIONS.
- EXISTING UTILITIES DISPLAYED ON THE GRADING PLAN ARE FOR REFERENCE PURPOSES ONLY. PRIOR TO CONSTRUCTION OR EARTHWORK, CONTRACTOR WILL BE RESPONSIBLE TO CALL FOR LOCATES: (800) 922-1987
- DIVERSION DITCH AND/OR BERM TO BE CONSTRUCTED AROUND THE ENTIRE PAD LOCATION. BERM SECTIONS TO BE COMPACTED IN ACCORDANCE WITH STANDARD CONSTRUCTION PRACTICES.
- CENTER OF PAD REFERENCED BELOW CORRESPONDS TO THE SURFACE LOCATION OF THE FERN 31-7HZ WELL.
- GRADED AREAS TO BE PARTIALLY RECLAIMED DURING INTERIM RECLAMATION.

ACCESS ROAD AND BERM DESIGN SUMMARY

DESIGN PARAMETERS
 CUT/FILL SLOPES = 3:1
 SHRINKAGE FACTOR = 1.10
 SWELL FACTOR = 1.00

QUANTITIES
 TOTAL CUT = 0 C.Y.
 TOTAL FILL = 560 C.Y.
 TOTAL ROAD TOPSOIL STRIPPING AREA = 0.16 ACRES
 TOPSOIL @ 15" DEPTH = 325 C.Y.
 IMPORT MATERIAL = 560 C.Y.

WELL NAME:	C/F
FERN 31-1HZ	F0.8
FERN 31-2HZ	F0.7
FERN 31-3HZ	F0.7
FERN 31-4HZ	F0.6
FERN 31-5HZ	F0.6
FERN 31-6HZ	F0.6
FERN 31-7HZ	F0.6
FERN 31-8HZ	F0.6
FERN 31-9HZ	F0.5
FERN 31-10HZ	F0.4
FERN 31-11HZ	F0.5
FERN 31-12HZ	F0.5

PAD - FERN DESIGN SUMMARY

QUANTITIES AND DESIGN PARAMETERS
 EXISTING GRADE @ CENTER OF PAD = 4840.2'
 FINISHED GRADE ELEVATION = 4840.8'
 CUT SLOPES = 5:1
 FILL SLOPES = 5:1
 SHRINKAGE FACTOR = 1.10
 SWELL FACTOR = 1.00
 GRADED PAD SURFACE AREA = 8.79 ACRES
 TOTAL PAD AREA = 9.00 ACRES
 PROPOSED OIL & GAS LOCATION = 15.75 ACRES

PAD QUANTITIES
 TOTAL CUT FOR PAD = 0 C.Y.
 TOTAL FILL FOR PAD = 30,972 C.Y.
 TOPSOIL @ 15" DEPTH = 18,149 C.Y.
 IMPORT MATERIAL = 30,972 C.Y.
 TOTAL IMPORT = 31,532 C.Y.

LEGEND

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- EXISTING CONTOURS (1' INTERVAL)
- PROPOSED CONTOURS (1' INTERVAL)
- EXISTING PIPELINE
- PROPOSED FLOWLINE
- EXISTING FENCE
- DIVERSION DITCH
- BERM

SCALE: 1" = 100'

DATE: 6/18/24

REVISIONS:

CDR	8/23/24
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PAD - FERN

PAD - GRADING PLAN
 FERN 31-1HZ, FERN 31-2HZ, FERN 31-3HZ,
 FERN 31-4HZ, FERN 31-5HZ, FERN 31-6HZ,
 FERN 31-7HZ, FERN 31-8HZ, FERN 31-9HZ,
 FERN 31-10HZ, FERN 31-11HZ & FERN 31-12HZ
 LOCATED IN SECTION 31, T3N, R66W, 6TH P.M.
 WELD COUNTY, COLORADO

FACILITY REVISION: FERN-PP-2020 REV B

Kerr-McGee Oil & Gas Onshore LP
 1099 18th Street
 Denver, Colorado 80202

609 CONSULTING, LLC

LOVELAND OFFICE
 6706 North Franklin Avenue
 Loveland, Colorado 80538
 Phone 970-776-4331

SHERIDAN OFFICE
 1095 Saberton Avenue
 Sheridan, Wyoming 82801
 Phone 307-674-0609

SCALE: 1" = 100'

DATE: 6/18/24

REVISIONS:

CDR	8/23/24
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SHEET NO: 1 OF 1

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