



Kerr-McGee Oil & Gas Onshore LP

Waste Management Plan

**Alder 26-16HZ
Well Pad and Production Facility**

Township 2 North, Range 63 West, 6th P.M.
NE/4 SW/4 Section 16
Weld County, Colorado

1. Waste Management

Kerr-McGee Oil & Gas Onshore LP (KMOG) operations will meet the requirements Weld County Code Sec. 21-5-320.B.9, Sec. 21-5-450, and the Colorado Oil and Gas Conservation Commission (COGCC) 900 Series, and EPA CFR 40 & 49, Including 40 CFR 261.4(B)(5). All waste management and best management practices (BMP) will be conducted in accordance with the operational requirements listed below.

2. Waste Storage, Handling, and Best Management Practices

The proper handling and storage of waste is essential to ensuring protection of human health and the environment, while minimizing company liability. The following guidelines identify proper waste handling and storage practices to be employed by personnel at this Well Pad and Facility.

- Wastes will be stored in containers or on lined containment that are chosen for compatibility and checked periodically for leaks or integrity problems. Examples of containment include but are not limited to 3-sided steel tanks, steel tanks, lined containment, plastic totes, drums, etc.
- All specific wastes in the attached site-specific Table will have a detailed Safety Data Sheet available which includes information such as the properties of the wastes; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical.
- The proper personal protective equipment will always be worn when handling waste. Employees will refer to the Safety Data Sheet for additional information.
- Good housekeeping measures will be implemented in the operating area and to ensure safety and environmental well-being.
- Wastes will be segregated and stored according to its waste type.
- When feasible, wastes will be recycled, re-used, or treated onsite. As a BMP fluid are generally re-used from location to location if possible. No onsite treatment or recycling is planned onsite for this location. In the event, that onsite treatment or recycling is feasible, a written management plan will be submitted to the COGCC Director for approval on a Form 4.
- All waste streams will be transported off location for recycling or disposal in a timely manner in accordance with local, state, and federal regulations.
- All spills or leaks will be cleaned up upon discovery in accordance with local, state, and federal testing and cleanup standards. All waste generated from the cleanup process will be profiled, as required by local, state, and federal regulations, for recycling or disposal. Manifests will be used to track all waste generated.
- During drilling, completions, and facility construction, human waste and septic from temporary buildings will be stored in tanks. These tanks will be emptied via vacuum truck for disposal. Temporary portable restrooms will also be available for workers during this phase.

3. Waste Characterization and Volumes

Wastes will be characterized in accordance with local, state, and federal requirements. Different types of wastes will be characterized via process knowledge, safety data sheets, or laboratory analysis in accordance with regulations and the requirements of the permitted facility to which they will be taken for ultimate disposition. Different types of wastes have different classifications such as hazardous, non-hazardous, and E&P exempt. The majority of wastes generated at this well pad will be E&P exempt. Volumes of wastes will be highly variable with some potential wastes

never being generated and can vary greatly throughout the life of the well. Wastes such as drill cuttings and produced fluids will certainly be generated with volumes ranging from approximately 350-700 cubic yards per well and 50-1,500 barrels per day, respectively.

4. Waste Transportation and Disposal

Wastes will be transported to facilities authorized by the COGCC Director, to permitted commercial waste disposal facilities, permitted commercial waste facilities, or permitted beneficial use sites.

All E&P wastes transported offsite will be ticketed, signed by the transporter, and maintained to be provided upon request for a minimum of five years. Each ticket will include the information listed below

- The date of the transport.
- The identity of the waste generator.
- The identity of the waste transporter.
- The location of the waste pickup site.
- The type and volume of waste.
- The name and location of the treatment or disposal site.

5. Site Specific Information

The attached Table 1 lists the Potential Waste Management Options for this location. For each waste type a variety of options are identified due to factors that change during normal operation and life of the facility such as waste volumes, disposal facility hours of operation, facility capacities, etc.

Table 1 – Potential Waste Management Options



| Waste Type | Storage Container | Waste Disposal or Centralized E&P Management Facility | Potential Volume per Well | Frequency of transport per Well | Waste Characterization | Potential Hazard | E&P Exempt | Narrative/Phase of Generation |
|---|---|---|---------------------------|---------------------------------|---|---|------------|---|
| Water-based drilling fluids and associated drill cuttings | Steel bins, roll-offs, or tanks | Drilling Fluid Management Facility #3 (COGCC Facility ID 439305) | 300-700 cubic yards | Daily-weekly | DFMF 3 COGCC permit requirements | None | Yes | Drilling, Plugging and Abandonment |
| | | Aggregate State Fluid Recycling Facility (COGCC Facility ID 456644) | | | Aggregate State Fluid Recycling Facility Waste Management Plan requirements | | | |
| | | Waste Connections, Erie, Colorado | | | Landfill requirements | | | |
| | | Buffalo Ridge, Keenesburg, Colorado | | | | | | |
| Oil-based drilling fluids and associated drill cuttings | Steel bins, roll-offs, or tanks | Aggregate State Fluid Recycling Facility (COGCC Facility ID 456644) | 300-700 cubic yards | Daily-weekly | Aggregate State Fluid Recycling Facility Waste Management Plan requirements | Ingitable/Combustible, Toxic | Yes | Drilling, Plugging and Abandonment, Spill Response and Remediation |
| | | Waste Connections, Erie, Colorado | | | Landfill requirements | | | |
| | | Buffalo Ridge, Keenesburg, Colorado | | | | | | |
| Flowback sand | Steel bins, roll-offs, or tanks | Aggregate State Fluid Recycling Facility (COGCC Facility ID 456644) | 100-300 cubic yards | Daily-weekly | Aggregate State Fluid Recycling Facility Waste Management Plan requirements | Ingitable/Combustible, Toxic | Yes | Drilling, Plugging and Abandonment, Spill Response and Remediation |
| | | Waste Connections, Erie, Colorado | | | Landfill requirements | | | |
| | | Buffalo Ridge, Keenesburg, Colorado | | | | | | |
| Flowback and produced water | Steel tanks | KMOG 16-24i and 19-3i SWDs | 50-1,500 bbls per day | Daily-weekly | COGCC UIC permit requirements | Ingitable/Combustible, Toxic | Yes | Completions, Flowback, Production, Facility Decommissioning, Plugging and Abandonment |
| | | EWS #3, #4, and #5 SWDs | | | | | | |
| | | Lonestar Select SWD | | | | | | |
| Oil and produced fluid impacted soil | Containment, steel roll-offs, or loaded directly into transportation | KMOG Land Treatment Facility (COGCC Facility ID 149007) | Highly Variable | Daily-Never | Land Treatment Facility Waste Management Plan requirements | Ingitable/Combustible, Toxic | Yes | Spill Response and Remediation |
| | | Aggregate State Fluid Recycling Facility (COGCC Facility ID 456644) | | | Aggregate State Fluid Recycling Facility Waste Management Plan requirements | | | |
| | | Waste Connections, Erie, Colorado | | | Landfill requirements | | | |
| | | Buffalo Ridge, Keenesburg, Colorado | | | | | | |
| Tank bottoms, oily waste, and workover fluids | Steel bins, roll-offs, tanks, containment, or loaded directly into transportation | KMOG Landfarm (COGCC Facility ID 149007) | Highly Variable | Weekly-Never Generated | Land Treatment Facility Waste Management Plan requirements | Ingitable/Combustible, Toxic | Yes | Drilling, Completions, Flowback, Production, Spill Response and remediation, Facility Decommissioning, Plugging and Abandonment |
| | | Aggregate State Fluid Recycling Facility (COGCC Facility ID 456644) | | | Aggregate State Fluid Recycling Facility Waste Management Plan requirements | | | |
| | | Waste Connections, Erie, Colorado | | | Landfill requirements | | | |
| | | Buffalo Ridge, Keenesburg, Colorado | | | | | | |
| | | Tower Road Landfill, Denver, Colorado | | | | | | |
| | | Foothills Landfill, Golden, Colorado | | | | | | |
| Clean Harbors, Deer Trail, Colorado | | | | | | | | |
| Hazardous materials | Steel bins, roll-offs, tanks, totes, drums, clean packs | Clean Harbors, Kimble, Nebraska | Highly Variable | Yearly-Never Generated | Resource, Conservation, and Recovery ACT (RCRA) and Landfill requirements | Ingitable/Combustible, Corrosive, Reactive, Toxic | No | Drilling, Completions, Production |
| | | Clean Harbors, Deer Trail, Colorado | | | | | | |
| Human Waste | Steel Septic Tanks or Port-a-lets | McDonald Farms, Longmont, Colorado | Highly Variable | Weekly-Monthly | No characterization required | Biological | No | Construction, Drilling, Completions, Flowback, Production, Spill Response and Remediation, Facility Decommissioning, Plugging and Abandonment |
| | | Columbia Sanitation, Golden, Colorado | | | | | | |
| General trash and non-hazardous municipal solid waste | Steel bins or roll-offs | Waste Connections, Erie, Colorado | Highly Variable | Weekly-Never Generated | No characterization required | None | No | Construction, Drilling, Completions, Flowback, Production, Spill Response and Remediation, Facility Decommissioning, Plugging and Abandonment |
| | | Buffalo Ridge, Keenesburg, Colorado | | | | | | |