

Exploration and Production Waste Handling Operations

The following outlines the typical procedures that Mineral Resources will use to handle and dispose of exploration and production (E&P) waste.

E&P Petroleum Contaminated Waste

- Petroleum contaminated soils will be disposed of at either a COGCC approved land application site or a commercial solid waste disposal facility.
- Tank bottoms will be disposed of at either a COGCC approved land application site or a commercial solid waste disposal facility.

Land Application Site: Ludwig #1 Land Application Site
Facility ID: 430649
NW/4, SECTION 1, T3N, 6RRW

Solid Waste Disposal Facility: Waste Management - North Weld Landfill
40000 WCR 25
Ault, CO 80610

Waste Management - Buffalo Ridge Landfill
11655 WCR 59
Keenesburg, CO 80643

Liquid Waste (Flowback & Produced Water)

- Flowback fluids recovered after hydraulic fracturing is complete are temporarily stored on-site in tanks. When necessary, the tanks will be pumped and trucked off-site to a Class II Injection Facility.
- Produced water is stored on-site in 100-500 bbl fiberglass/steel tanks located within the tank battery. Produced water will be collected and trucked off-site to a Class II Injection Facility at an appropriate interval determined by production.

Class II Injection Facility: High Sierra Water Services, LLC.

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|---|--|
| C1-Kersey 25849 WCR 46 Kersey, CO 80644 | C2- Brighton 1191 WCR 19 Brighton, CO 80601 |
| C3-LaSalle 19094 WCR 40 La Salle, CO 80645 | C4-Greeley 22625 WCR 64 Greeley, CO 80631 |
| C6-Platteville 13159 WCR 39 Platteville, CO 80651 | C7-Cornish 35857 WCR 74 Briggsdale, CO 80611 |

Transportation

- All E&P wastes will be trucked off-site. Truck transport frequency will vary depending on the site and the volume of waste produced.
- Fluids and produced water will be hauled in tanker or vacuum trucks and cuttings will be hauled in dump trucks.

Transporter (solids):

Select Energy Services
821 County Road 27
Brighton, CO 80603
(303) 659-0982

Transporter (liquids):

Magna Energy Services
23295 U.S. 85
La Salle, CO 80645
(970) 284-5752

E&P Drilling Wastes

- Drilling wastes, including water based bentonitic drilling fluids and associated drill cuttings will be disposed of through land application on privately owned land per COGCC Rule 907.d.(3).
- Mineral Resources' E&P Waste Management Plan for Land Application & Incorporation of Water-Based Bentonitic Drilling Fluids & Associated Drill Cuttings can be found on the next page.
- The proposed land application site is also attached.

E&P Waste Management Plan

Land Application & Incorporation of Water-Based Bentonitic Drilling Fluids & Associated Drill Cuttings

Triple Creek Directional Project

This E&P Waste Management Plan outlines the operational requirements for applying water-based bentonitic drilling fluids and associated drill cuttings to privately owned land to maintain compliance with COGCC Rule 907.d. (3). Only water-based bentonitic drilling fluids and associated drill cuttings generated by Mineral Resources, Inc (Operator) will be applied at this site. The drilling fluids and drill cuttings will be applied as a beneficial soil amendment. The proposed land application site is located in Weld County, Colorado NW/4, Section 1, Township 3 North, Range 66 West (Legal). A topographic map showing the site location is provided as Figure 1. An aerial photograph showing the location of the proposed land application site is provided as Figure 2. The E&P Waste Management Plan is detailed below.

1. Mineral Resources, Inc (Operator) shall obtain written authorization from the surface owner prior to land application of the water-based bentonitic drilling fluids and associated drill cuttings.
2. The signed agreement shall state that only water-based bentonitic drilling fluids and associated drill cuttings generated by Mineral Resources, Inc (Operator) will be applied at this site. No other E&P waste shall be deposited at this site.
3. A 3-inch maximum lift of water-based bentonitic drilling fluids and associated drill cuttings will be applied prior to incorporation.
4. Mineral Resources, Inc (Operator) personnel will ensure that the material is incorporated into the soil within 10 days (site and weather conditions permitting).
5. Mineral Resources, Inc (Operator) will maintain records of the following information:
 - name of well where material was generated
 - date the material was transferred from the well to the land application site
 - volume of material taken to the land application site
 - name of the transporter
6. Soil sampling:
 - Background samples will be collected and analyzed for electrical conductivity (EC), sodium absorption ratio (SAR), pH, and total metals (excluding boron) in order to document background soil conditions.
 - Following incorporation of the drilling mud, a 4-point composite sample will be collected from an interval of 0-8 inches below ground surface (bgs) from every approximate 20 acre area.

E&P Waste Management Plan
Land Application & Incorporation of Water-Based Bentonitic
Drilling Fluids & Associated Drill Cuttings
Triple Creek Directional Project

- At a minimum, post incorporation soil samples will be analyzed for total petroleum hydrocarbons (TPH-C6-C36), benzene, toluene, ethyl benzene, xylenes (BTEX), EC, SAR, pH, and total metals (excluding boron) to ensure compliance with COGCC Table 910-1.
7. Water-based bentonitic drilling fluids and associated drill cuttings will be applied at this site for a maximum of three years.
 8. Upon closure of the site Mineral Resources, Inc (Operator) will submit a Form 4 Sundry Notice providing confirmation soil sample data and request closure for this site.

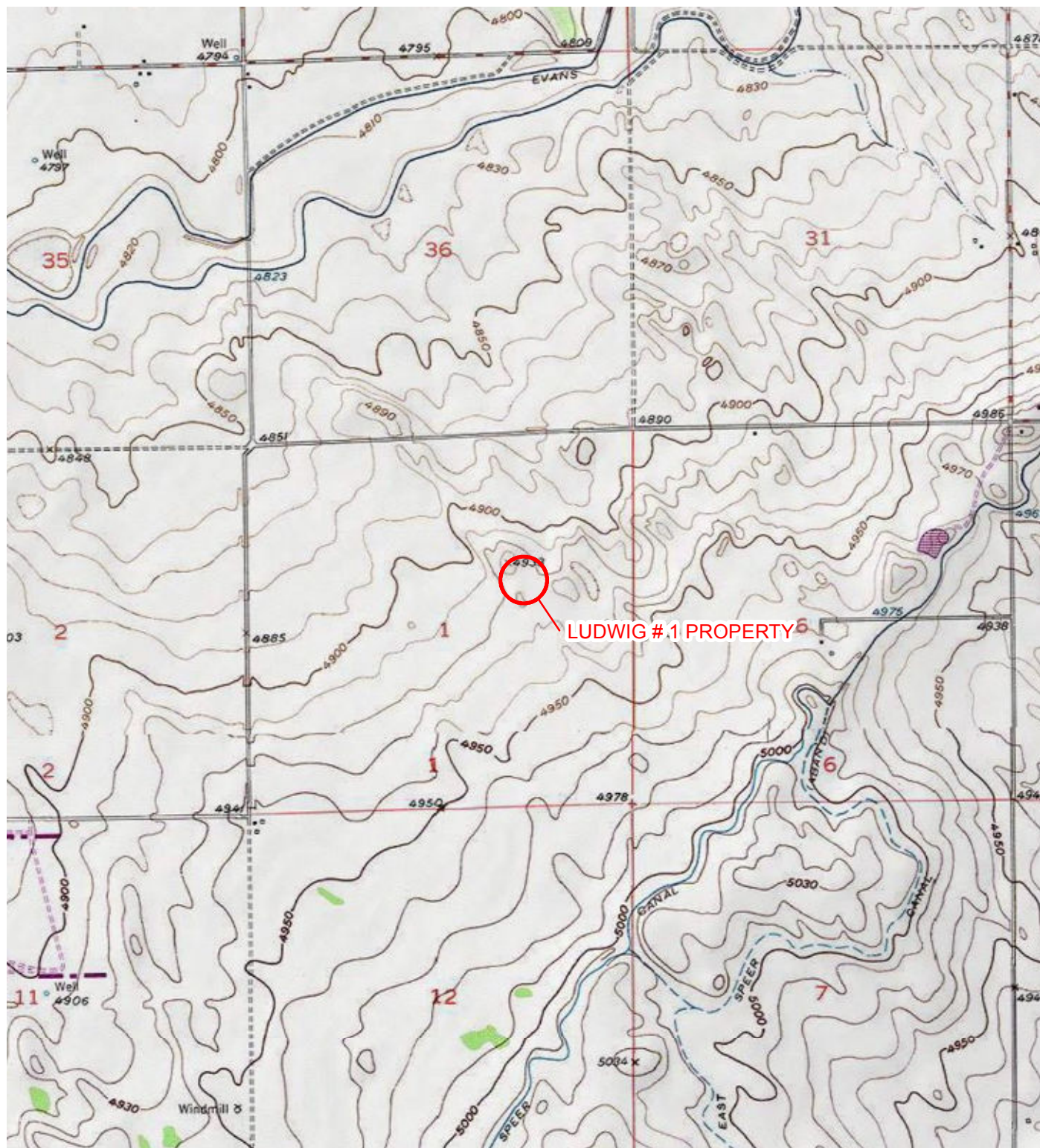


IMAGE COURTESY OF USGS/ESRI

LEGEND

○ SITE LOCATION

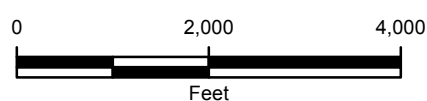


FIGURE 1
SITE LOCATION MAP
LUDWIG #1 PROPERTY
NW SEC 1 T3N R66W
WELD COUNTY, COLORADO
PDC ENERGY, INC.



