

Enerplus Resources (USA) Corporation

Waste Management Plan

Purpose: This plan is prepared to provide Enerplus Resources (USA) Corporation ("Enerplus") minimum standards for complying with the general requirements of COGCC Rule 907 and the September 15, 2014 Policy on Drill Cuttings Management.

Operator Obligations: Enerplus shall ensure that E&P waste is properly stored, handled, transported, treated, recycled, or disposed to prevent threatened or actual significant adverse environmental impacts to air, water, soil or biological resources or to the extent necessary to ensure compliance with the concentration levels in Table 910-1, with consideration to WQCC ground water standards and classifications.

DRILL CUTTINGS

Enerplus shall utilize a closed loop drilling system for drilling wells. Cuttings collected from the shaker table will be ground and separated from drilling fluids in a centrifuge. Drilling fluids will be directed back to the mud tanks for reuse and will be relinquished back to the drilling fluid supplier for reuse in other well drilling operations upon completion of drilling operations. After the centrifuge, cuttings will be directed to storage bins where it will be slaked with saw dust or in the case of land applying water-based drill cuttings, local soil from the Enerplus Spreadfield until firm for transportation.

Enerplus will use a reputable trucking company to transport drill cuttings using Waste Manifest Forms. Oil-based drill cuttings will be properly disposed at the Waste Management of Northern Colorado landfill at 40000 County Road 25, Ault, CO (970) 686-2800. Water-based drill cuttings will be land applied for beneficial use as a soil amendment at the Enerplus Spreadfield or disposed at the Waste Management of Northern Colorado landfill. Please see the Enerplus Land Application Plan below for further details regarding land application of water-based drill cuttings.

INCIDENTAL SPILLS

All unanticipated spills/releases related to Enerplus operations will be promptly reported and remediated in accordance of COGCC Series 900 Rules. Enerplus shall determine and document the cause of a spill/release of E & P Waste or produced fluids and, to the extent practicable, identify and timely implement measures to prevent spills/releases due to similar causes in the future.

Enerplus shall provide verbal notification to the affected Surface Owner, or the Surface Owner's appointed tenant, prior to commencing operations to remediate E&P waste from a spill/release in an area not being utilized for oil and gas operations.

Enerplus shall provide appropriate notification to Weld County in the event of a spill/release at this location.

Remediation of spills/releases shall comply with the concentration levels provided in Table 910-1 through the use of third party sampling and appropriate analytical procedures.

SECONDARY CONTAINMENT

Impervious secondary containment shall be installed for all oil and produced water storage tanks sufficient to contain 150% of the contents of the largest single tank.

Land Application Plan

Purpose: This plan is prepared to provide Enerplus minimum standards for complying with the general requirements of COGCC September 15, 2014 Drill Cuttings Management Policy and COGCC Land Application Plan Checklist.

Drill Cuttings Management: Enerplus shall ensure that disposal or land applying of water-based bentonitic drill cuttings for beneficial use will comply with all COGCC regulations and policies. Drill cuttings will be properly stored, handled, transported, treated, land applied, or disposed to prevent threatened or actual significant adverse environmental impacts to air, water, soil or biological resources or to the extent necessary to ensure compliance with the concentration levels in Table 910-1, with consideration to WQCC ground water standards and classifications.

Land Application Facility ID: 450526 – Previously used area from May 2017 – May 2020

LAND APPLYING WATER-BASED DRILL CUTTINGS FOR BENEFICIAL USE

Enerplus has secured written authorization from the surface owner for the Eneplus Spreadfield. Enerplus is the operator of record, however, Wright Choice, Inc. is the site coordinator on behalf of Enerplus and will manage day-to-day operations and maintaining records required by COGCC.

DISPOSAL LOCATION INFORMATION

1. The proposed spreadfield is the easternmost 10 acres of the S ½ of the SE ¼ of Section 11, T8N, R66W. The coordinates of the entry point are Latitude 40.67195203 and Longitude - 104.73474144.
2. Please see the map included with this application. There are two groundwater wells within 0.5 miles of the Enerplus Spreadfield. Those wells are denoted on the map and discussed below.

Groundwater Well #1 (0.1 miles)

Owner: Bill Graefe
 Permit #: 273-WCB
 General Use: Irrigation
 Notes: No pump was installed

Groundwater Well #2 (0.46 miles)

Owner: Kelly Berndt
 Permit #: 284757
 General Use: Commercial
 Notes: Pump installed

3. Current land use is Crop Land: dry land agricultural.
4. NA
5. The Enerplus Spreadfield is not located within a Sensitive Area according to the COGCC Interactive Map. The southeast corner of the proposed spreadfield is approximately ¾ mile from Boyd No. 2 Reservoir and 1 ¼ mile from Antelope Reservoir. Depth to groundwater is unknown, but presumed to be greater than 50 feet.
6. The proposed spreadfield is not in a mapped Sensitive Wildlife Habitat or Restricted Surface Occupancy Area as defined by mapped areas available on COGCC GIS Online map.

7. Enerplus has pulled background samples at five locations distributed to the four corners and another in the center of the spreadfield. Soils were sampled from the surface and from a depth of one foot for a total of 10 samples. Analytes include those parameters identified in COGCC table 910-1.
8. The surface owner is Kelly Berndt and can be reached at 970-690-2330.
9. Access to the Enerplus Spreadfield will be provided to COGCC upon request.
10. According to the Weld County Property Portal, this property is zoned Agricultural and no further permitting is required for application of soil amendments.
11. A sign will be posted at the entrance to the Enerplus Spreadfield indicating "No Trespassing" and "Authorized Personnel Only".
12. The native soil, a valent sand, will have the added benefit of increased clay content. When the site is closed and re-vegetated the soil will retain more moisture, which will better support the re-seeding of the native sandy soil and provide an increased resistance to wind erosion.

Land Application Facility ID: 450526 – May 2020 through May 2023

LAND APPLYING WATER-BASED DRILL CUTTINGS FOR BENEFICIAL USE

Enerplus has secured written authorization from the surface owner for the Eneplus Spreadfield. Enerplus is the operator of record, however, Wright Choice, Inc. is the site coordinator on behalf of Enerplus and will manage day-to-day operations and maintaining records required by COGCC.

DISPOSAL LOCATION INFORMATION

1. The proposed spreadfield is the eastern 50 acres of the S ½ of the SE ¼ of Section 11, T8N, R66W. The coordinates of the entry point are Latitude 40.67195203 and Longitude - 104.73474144.
 - a. The permitted facility ID **will not** include the easternmost 10 acres of S1/2 of the SE ¼ Section 11, T8N, R66W that was previously used for beneficial use of E&P waste and subsequently closed out in May 2020.
2. Please see the map included with this application. There are two groundwater wells within 0.5 miles of the Enerplus Spreadfield. Those wells are denoted on the map and discussed below.

Groundwater Well #1 (0.1 miles)

Owner: Bill Graefe
 Permit #: 273-WCB
 General Use: Irrigation
 Notes: No pump was installed

Groundwater Well #2 (0.46 miles)

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 General Use: Commercial
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3. Current land use is Crop Land: dry land agricultural.
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5. The Enerplus Spreadfield is not located within a Sensitive Area according to the COGCC Interactive Map. The southeast corner of the proposed spreadfield is approximately ¾ mile from Boyd No. 2 Reservoir and 1 ¼ mile from Antelope Reservoir. Depth to groundwater is unknown, but presumed to be greater than 50 feet.

6. The proposed spreadfield is not in a mapped Sensitive Wildlife Habitat or Restricted Surface Occupancy Area as defined by mapped areas available on COGCC GIS Online map.
7. Enerplus has pulled background samples at five locations distributed to the four corners and another in the center of the spreadfield. Soils were sampled from the surface and from a depth of one foot for a total of 10 samples. Analytes include those parameters identified in COGCC table 910-1.
8. The surface owner is Kelly Berndt and can be reached at 970-690-2330.
9. Access to the Enerplus Spreadfield will be provided to COGCC upon request.
10. According to the Weld County Property Portal, this property is zoned Agricultural and no further permitting is required for application of soil amendments.
11. A sign will be posted at the entrance to the Enerplus Spreadfield indicating "No Trespassing" and "Authorized Personnel Only".
12. The native soil, a valent sand, will have the added benefit of increased clay content. When the site is closed and re-vegetated the soil will retain more moisture, which will better support the re-seeding of the native sandy soil and provide an increased resistance to wind erosion.

MATERIAL VOLUME

1. As this is a new play in Colorado for Enerplus, volumes are provided as an estimate. Enerplus estimates 15,000 tons per year will hauled to the Enerplus Spreadfield.

MATERIAL HANDLING

1. All cuttings will be solidified prior to trucking to the spreadfield with either native soil from the spreadfield or sawdust. The cuttings will be staged and solidified in a three-sided bin. The wellsite provides adequate stormwater controls in the form of ditch and berms with sediment traps around the entire perimeter of the pad.
2. All water-based bentonitic drill cuttings will be hauled to the Enerplus Spreadfield. Enerplus has contracted with the North Weld County Landfill to dispose of cuttings in the event cuttings cannot be hauled to the Enerplus Spreadfield.
3. Enerplus shall use appropriate Waste Manifests to track each truck hauling drill cuttings from the wellsite and will be provided to the COGCC upon request per Rule 907.b.
4. Water-based bentonitic drill cuttings will be hauled to the Enerplus Spreadfield via truck. The trucks will deposit the cuttings at a staging area within the spreadfield. A spreader truck will be used to spread the cuttings to no more than 3" and the cuttings will be incorporated into the soil via blade and disc within 10 days of application to a depth of 6 inches. The spread truck, blade and disc will be maintained on the property to avoid track-out onto county roads. As the terrain existing at the Enerplus Spreadfield is gently rolling cropland, no sediment controls will be provided at the spreadfield. Since the cuttings will be solidified but remaining moist, no dust controls will be necessary. If excessive dust is liberated from the Enerplus Spreadfield, a water truck will be used to diminish dust liberation. If the ground is frozen or too moist for spreading and incorporation, the landowner will monitor the conditions and incorporate the cuttings as soon as practical.
5. The Enerplus Spreadfield will receive drill cuttings for less than 3 consecutive years from the date of first land application as reported to COGCC via Sundry Notice eForm 4.

POST APPLICATION SAMPLING AND CLOSURE REQUIREMENTS

1. Upon closure of the Enerplus Spreadfield, sampling of all parameters identified in COGCC table 910-1 will occur at the five sample points at the identified two sample depths for a total of 10 samples and will be utilized to verify compliance with the table 910-1 standards.

2. Enerplus will notify COGCC via Form 4 requesting closure of the land application facility. Post-application sample results will be provided to verify compliance with table 910-1 standards. Enerplus will verify that all cuttings have been incorporated and the surface owner is satisfied with the final condition of the property.