



**Anadarko E&P Company, LP/Kerr-McGee Oil & Gas Onshore LP**

**Waste Management Plan  
Land Application of Water-Based Bentonitic  
Drilling Fluids & Associated Drill Cuttings**

This document outlines the operational requirements to be used when applying water-based bentonitic drilling fluids and associated drill cuttings to private or company-owned spread fields or the land treatment and application of water-based bentonitic drilling fluids and associated cuttings on the pad location where they were generated to maintain compliance with COGCC Rule 907.d.(3). These materials are being applied as a beneficial soil amendment.

The spread fields covered under this Waste Management Plan are detailed in Table 1. Only water-based bentonitic drilling fluids and associated drill cuttings generated by Kerr-McGee Oil & Gas Onshore LP/Anadarko E&P Company, LP (Kerr-McGee/Anadarko) will be applied at these sites. No other E&P waste shall be deposited at these sites. Changes to Table 1 will be provided to the COGCC in a Form 4 Sundry Notice.

**Spread Fields (Private Surface or Company Owned)**

1. Kerr-McGee/Anadarko shall obtain written authorization from the surface owner (if non- Kerr-McGee/Anadarko land) prior to land application of water-based bentonitic drilling fluids and associated drill cuttings. The signed agreement shall state that only Kerr-McGee/Anadarko-generated materials will be accepted and that incorporation of the material will occur within 10 days of application.
2. Each spread field will be divided into approximately equal sized pods. A 3-inch maximum lift of water-based bentonitic drilling fluids and associated drill cuttings will be applied.
3. Daily tracking tickets will be used and will include the following information:
  - \* name of well where material was generated
  - \* date of transfer of the material from the well to the spread field
  - \* volume of material taken to the spread field
  - \* name of transporter
  - \* pod where drilling fluid was applied
4. The volume of material transported to the spread field will be tracked using a spreadsheet to help ensure the 3-inch maximum lift per pod is not exceeded.
5. Conditions permitting Kerr-McGee/Anadarko personnel will ensure the material will be incorporated into the soil within 10 days.

6. Soil sampling will be conducted following incorporation.
  - \* A 4-point composite soil sample will be collected from an interval of 0-8 inches below ground surface (bgs), from every pod where material was applied.
  - \* At a minimum, soil samples will be analyzed for total petroleum hydrocarbons (TPH – C6-C36), benzene, toluene, ethylbenzene, xylenes (BTEX), electrical conductivity (EC), sodium adsorption ratio (SAR), pH, arsenic, and barium to ensure compliance with COGCC Table 910-1 or applicable background levels of native soils.
7. In the event of any Table 910-1 exceedance, a COGCC Form 4 Sundry Notice will be prepared and submitted (along with supporting documentation) to explain the exceedance and outline appropriate remediation measures.

**Land Treatment and Application Onsite (Private Surface or Company Owned)**

1. Kerr-McGee/Anadarko shall obtain written authorization from the surface owner (if non- Kerr-McGee/Anadarko land) prior to onsite land treatment with solidification and/or bioremediation products and application of water-based bentonitic drilling fluids and associated cuttings to the well pad location. The signed agreement shall state that only Kerr-McGee/Anadarko-generated materials will be accepted and that incorporation of the material after treatment will occur within 10 days, weather permitting, after the conclusion of drilling and/or well completion activities at the well pad location.
2. During treatment, water-based bentonitic drilling fluids and associated cuttings will be stored in a temporary containment area.
3. Soil sampling will be conducted to ensure that resulting concentrations do not exceed Table 910-1 allowable levels or applicable background levels.
4. Soil sampling will be conducted following incorporation.
  - \* A 4-point composite soil sample will be collected from an interval of 0-8 inches bgs, from every well pad where material was applied.
  - \* At a minimum, soil samples will be analyzed for TPH, BTEX, EC, SAR, pH, arsenic, and barium to ensure compliance with COGCC Table 910-1 or applicable background levels of native soils.
5. In the event of any Table 910-1 or applicable background level exceedance, a COGCC Form 4 Sundry Notice will be prepared and submitted (along with supporting documentation) to explain the exceedance and outline appropriate remediation measures.



**Table 1**  
**Spread Field Locations**  
**Anadarko E and P Company, LP/Kerr-McGee Oil and Gas Onshore LP**

<b>Spread Field</b>	<b>Legals</b>	<b>Directions</b>
Drill Green	SE Sec 33-T3N-R66W	WCR 26 x WCR 31, N 0.3 mi, W into
Allan Frank SW*	SW Sec 6-T3N-R66W	WCR 38 x WCR 25.5, S 0.5 mi, W into
Olin Farms*	NE Sec 16-T3N-R66W	WCR 32 x WCR 31, N 0.6 mi, W into
Moser Farms NE	NE Sec 25-T3N-R65W	WCR 30 x WCR 49, W 0.45 mi, S into
Dechant Farms	SE Sec 36-T3N-R65W	WCR 22 x WCR 49, N 2 mi, W into
Allan Frank NW*	NW Sec 6-T3N-R66W	WCR 38 x WCR 25.5, W 100 ft, S into
Kevin Moser*	SE Sec 4-T2N-R65W	WCR 24 x WCR 41, N 0.1 mi, E into
Moser Farms SE	SE Sec 25-T3N-R65W	WCR 30 x WCR 49, S 1.15 mi, W into
Moser Farms Dairy	SW Sec 28-T3N-R65W	WCR 28 x WCR 41, N 0.2 mi, E into
Miller Farms East & West	NW & SW Sec 24-T3N-R66W	WCR 32 x WCR 35, E 0.5 mi, S into
KMG 19-3*	SW Sec 3-T1N-R68W	WCR 12 x WCR 7, E 0.15 mi, N into
Hutchinson	NE Sec 10-T10N-R67W	WCR 118 x WCR 21, N 0.5 mi, W into
Gobbler Section 22	NE Sec 22-T2N-R66W	WCR 20 x WCR 31, E 0.75 mi, S into
Gobbler Section 23	NE Sec 23-T2N-R66W	WCR 20 x WCR 31, E 1.75 mi, S into

\*Spread field is no longer active.