

## HA #5 Well Pad Form 2A

### Kinder Morgan CO2 Company, LP

#### INTRODUCTION

This Form 2A stormwater report includes the Best Management Practices (BMPs) and reclamation plans for Kinder Morgan's proposed HA #5 well pad in accordance with Colorado Oil and Gas Conservation Commission's (COGCC) Form 2A requirements. BMP diagrams and additional general stormwater information is included with Kinder Morgan's Regional Stormwater Management Plan (RSWMP) for oil and gas construction activities for McElmo Dome and Doe Canyon. The RSWMP can be obtained from Kinder Morgan and are in accordance with Colorado Department of Public Health and Environment (CDPHE) stormwater guidelines. The Kinder Morgan contact person is Bob Clayton and his contact information is below:

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#### PROJECT DESCRIPTION

The proposed well pad would be located on agricultural land converted to CRP (Conservation Reserve Program). The location is fairly level with a uniform cover of reseeded vegetation. The proposed access road would traverse similar habitat. Slopes within the proposed disturbance range from 1-7 degrees. Disturbance would include the removal of top soil to create a level pad (360 feet by 350 feet) for drilling.

#### ESTIMATED TOTAL AREA OF THE SITE TO UNDERGO CLEARING, EXCAVATION, OR GRADING

The maximum disturbance associated with the proposed well pad would be 5.41 acres.

#### EXISTING SOIL DATA AND ESTIMATED RUNOFF COEFFICIENT BEFORE AND AFTER CONSTRUCTION

Parent materials found at the project site and surrounding areas are Eolian deposits derived from sandstone. The surveyed soil map units found within the proposed project area consist of Wetherill loam, 3 to 6 percent slopes and Wetherill loam, 6-12 percent slopes (NRCS 2011<sup>1</sup>).

Dominant soils in the Wetherill loam, 3 to 6 percent slopes unit are associated with hills and mesas and are found at the base of slopes and on side slopes. They tend to be well drained and deep. The water transmitting capacity of the most limiting layer is moderately high and the available water capacity is high. The dominant soils in the Wetherill loam, 6 to 12 percent slope unit have the same characteristics, but can be found at the crests of slopes as well as the base and sides. Aquent soils make up a small percentage of both map units and are located in drainage ways. In the project area, they would likely be found in the small drainage that cuts through the western half of the proposed well pad.

The dominate Wetherill soils are in hydrologic group B (NRCS 2011<sup>1</sup>). The percent imperviousness of the unimproved areas of the location is 2 percent (UDFCD 2007<sup>2</sup>). Using Table 5 in Urban Drainage and Flood Control District Criteria Manual Volume 1, the runoff coefficient is estimated to be about 0.03 for 2-year storm events. The packed gravel surfaces that will remain in place on the access road and the well pad have a percent imperviousness of 40 percent and a runoff coefficient of 0.23 during 2-year storm events (UDFCD 2007<sup>2</sup>).

<sup>1</sup> Natural Resources Conservation Service (NRCS). 2011. Web Soil Survey. Available online at: <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed March 15, 2013.

<sup>2</sup> Urban Drainage and Flood Control District (UDFCD). 2007. Criteria Manual (volume 1). Available online at: <http://www.udfcd.org/downloads/pdf/critmanual/Volume%201%20PDFs/050%20Chapter%2005%20Runoff%202008-04%20Rev.pdf>. Accessed March 20, 2013.

#### DESCRIPTION OF EXISTING VEGETATION AND ESTIMATE OF PERCENT OF GROUND COVER

The proposed well pad would be located on agricultural land that has been converted to CRP. Vegetation within the well pad location consists primarily of *Pascopyrum smithii* (western wheatgrass) and *Thinopyrum intermedium* (intermediate wheatgrass). *Bromus tectorum* (cheatgrass) makes up a smaller component of the site, but is still abundant. Species occurring infrequently include *Salsola tragus* (prickly Russian thistle), *Cirsium* sp., *Ericameria nauseosa* (rubber rabbitbrush), and *Helianthus annuus* (common sunflower). Similar vegetation exists along the proposed access road, which will follow the southern boundary of the pad once it leaves the main county road. Cover was estimated to be 60 percent vegetation and 30 percent herbaceous litter.

#### NAME OF RECEIVING WATER AND TYPE OF OUTFALLS

The nearest perennial water—indicated on the U.S. Geological Survey (USGS) topographic map—is the San Juan River, located 30 miles southwest of the project area. Drainage from the proposed project would generally flow southwest through several named and unnamed ephemeral and intermittent drainages to the San Juan River. There are no perennial water sources, wetlands, seeps, springs, or riparian areas within the proposed well pad or surrounding area.

#### PROJECT-SPECIFIC BMPs

The following listed BMPs are site-specific BMPs identified by Ecosphere during the field visit conducted on March 14, 2013. Site-specific BMPs should be installed pre-construction and during the construction process. BMP diagrams are included in the RSWMP. BMPs would be maintained or amended by Kinder Morgan as site conditions change throughout the construction and reclamation process. Stormwater inspections would occur as stipulated in the RSWMP and required by the Colorado Department of Public Health and Environment (CDPHE). A map showing the BMP locations is attached. Site-specific BMPs will be installed pre-construction and during the construction process and will continue to be maintained until vegetation reaches 70 percent of the pre-construction cover as mandated by the COGCC and CDPHE.

BMP 1: Fiber wattles will encompass the entire periphery of the disturbed area.

BMP #2: Disturbed portions of the well pad not necessary for operation and maintenance of the well would be re-contoured and roughened to blend into the surrounding terrain. In addition, a landowner-approved seed mix would be applied at the appropriate time using seeding and mulching methods outlined in the PSWMP.

Photograph 1. Looking west from the well head stake. This area will likely see the most disturbances.



PROJECT BMP MAP

