Twin Bridges LLC

GAS CAPTURE PLAN

Twin Bridges Resources LLC has prepared this Gas Capture Plan for the Red Rocks 1-13 exploratory helium gas well in Las Animas County, Colorado. The sections below correspond to Colorado Oil & Gas Conservation Commission (COGCC) requirements in Rule 304.c.(12) to prepare a Gas Capture Plan consistent with Rule 903.e.

1. WELL DRILLING AND TESTING

The Red Rocks helium gas well is an exploratory wildcat well. It will be used to identify and delineate the presence and concentration of helium. Helium is an inert, non-toxic, non-combustible, and non-flammable gas. Helium is anticipated to be present with predominantly nitrogen, which is also a non-combustible and non-greenhouse gas. Historical well logs in the area indicate that hydrocarbons and methane are not present, and the well logs indicate relatively low levels of carbon dioxide. The well will be drilled without mud. The absence of natural gas, hydrocarbons, and methane prevents venting, flaring, and public health and safety concerns from these compounds.

The duration for drilling and completion is an estimated 7 to 10 days. During that time, a gas sample from the well will be captured in a test cylinder. The test cylinder will be sent to an off-site laboratory for analysis. A flow test also will be conducted at the well for approximately 12 to 24-hours using an orifice tester. The orifice tester will measure pressure to calculate the flow volume from the well. After gas sampling and flow testing, the well will be shut in. If economical volumes of helium gas are detected, a productivity test will be conducted for an additional estimated 24-72 hours to confirm sustained flow from the well and to test for no water intrusion.

Regarding air emissions, a representative gas analysis is shown in Table 1 from the Texaco Cynthia True Government #1 well drilled in 1963. The well was developed as an exploratory oil well and is dry and abandoned. The well is located approximately 13 miles northwest of the Red Rocks well in Section 30, Township 28 South, Range 56 West. In this well, inert gas containing a high concentration of helium was encountered in the uppermost Lyons Formation at 1,015 feet. There were no hydrocarbons present. The Texaco Cynthia True Government #1 well showed the constituents below from data maintained by the Bureau of Land Management.

Table 1. Texaco Cynthia True Government #1
Gas Analysis

Constituent	Percent
Nitrogen	75.7
Carbon Dioxide	14.6
Helium	8.8
Argon	0.9
Methane	0
Ethane	0
Propane	0
Pentane	0
Iso-Propane	0
Butane	0
Iso-Pentane	0
Other	0
TOTAL	**100**

Based on the gas analysis in Table 1, potential for emissions of criteria pollutants is not anticipated from the well. COGCC requested additional information specific to nitrogen, nitrogen oxides, and carbon dioxide, which are discussed below.

Nitrogen is expected to be present in the proposed Red Rocks well. Nitrogen is the most abundant element in the earth's atmosphere (78 percent). At normal temperatures, nitrogen and oxygen in the atmosphere do not react together. As such, nitrogen from the helium gas well is anticipated to be inert, nonreactive, comparable to naturally occurring nitrogen, and not a contributor to air quality impacts.

Nitrogen oxides, or NOx (NO and NO2), contribute to ground-level ozone. However, nitrogen requires combustion at high temperatures to react with oxygen and form NOx. Because combustion at high temperatures will not be present at the well, the well is not anticipated to emit or contribute to nitrogen oxides.

Carbon dioxide, or CO2, is considered a greenhouse gas (GHG). CO2 from the proposed well is expected at a low concentration relative to the overall gas stream. It is expected to occur for the approximately 8 to 14 days anticipated for well drilling and testing before the well is shut in. The volume of CO2 will be determined by the gas analysis and flow data obtained through well testing. Carbon dioxide is discussed further under Section 2, Production.

2. PRODUCTION

Twin Bridges commits to connecting to a gas gathering system following drilling and testing and prior to commencement of production operations. The gas gathering system will capture all gases produced from the well at the wellhead. It will consist of a single buried polyethylene flowline from the wellhead to an off-location skid-mounted helium unit. The flowline and helium unit are shown on the Form 2A, Related Location and Flowline Map. If the exploratory well is developed for production, this helium unit will be located at a separate location approximately 3 miles from the helium well. The helium unit will be located on lands outside of the Oil and Gas Development Plan but leased from the same lessor as the helium well. The landowner agreement provides for installation of the gas gathering line, buried below plow depth. No public rights of way are necessary for the gas gathering system. Gases from the well are planned to be separated at the helium unit. Purified helium will be compressed and loaded onto a tube trailer for transport.

Regarding scheduling, if an economical volume of helium is encountered from the well, the skid-mounted helium unit and flowline are estimated to be in place approximately 6 to 9 months after well drilling. The schedule provides for procurement and installation. The helium gas well will remain shut in during this period until the flowline and helium unit are ready for use.

If CO2 is confirmed to be present in the gas stream, Twin Bridges will determine its disposition based on control design at the helium unit and regulatory requirements from the Colorado Department of Public Health and Environment (CDPHE), Air Quality Control Commission (AQCC). Regulatory requirements for consideration include AQCC Regulation 3 – *Stationary Source Permitting and Air Pollutant Emission Notice Requirements*, AQCC Regulation 7 – *Control of Ozone via Ozone Precursors and Control of Hydrocarbons via Oil and Gas Emissions*, and AQCC Regulation 22 – *Colorado Greenhouse Gas Reporting and Emission Reduction Requirements*.

Based on an initial analysis and review, AQCC Regulation 22 does not appear to apply to the helium unit. The helium unit does not fall within the source categories listed directly or by reference in the rule (Part A, Section III.A).

Twin Bridges' initial review and analysis suggests that the helium unit will not be subject to the permitting or Air Pollutant Emission Notice (APEN) requirements under AQCC Regulation 3. Under Regulation 3, stationary sources that are exempt from the filing of an APEN are also not required to obtain a construction permit (Part B, Section II.D.1.a). Sources with emissions that are not criteria or non-criteria reportable emissions (e.g., hazardous air

pollutants) are not required to file APENs (Part A, Section II.D.1.oo). The provision specifically lists CO2 among the emissions exempted from the APEN requirements (Part A, Section II.D.1.oo).

Twin Bridges' initial review and analysis suggests that the helium unit will likely be required to comply with annual emission inventory reporting AQCC Regulation 7, Part D, Section V. Under Regulation 7, an owner or operator of oil and natural gas operations and equipment at or upstream of a natural gas processing plant must submit an annual report of actual emissions, which includes CO2 (Part D, V.A.1). Twin Bridges will confirm emission inventory reporting requirements prior to commencing operation of the helium unit.