

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

Mr. Charles Griffie
Operations Manager
Delaware Basin JV Gathering LLC
1201 Lake Robbins Drive
Woodlands, TX 77380

SEP 04 2013

RE: Application Completeness Determination for Delaware Basin JV Gathering LLC
Greenhouse Gas Prevention of Significant Deterioration Permit
Avalon Mega CGF

Dear Mr. Griffie:

The EPA has reviewed your Greenhouse Gas (GHG) Prevention of Significant Deterioration (PSD) permit application, including supporting documentation, for Delaware Basin JV Gathering LLC that was received by the EPA on January 28, 2013, and determined that your application is incomplete at this time. A list of the information needed from you so that the EPA can continue its completeness review is enclosed (see Enclosure). Please notify us if a complete response is not possible by September 27, 2013.

The requested information is necessary for EPA to develop a Statement of Basis and Rationale for the terms and conditions for any proposed permit. As we develop our preliminary determination, it may be necessary for EPA to request additional clarifying or supporting information. If the supporting information substantially changes the original scope of the permit application, an amendment or new application may be required.

The EPA may not issue a final permit without determining that there will be no effects on threatened or endangered species or their designated critical habitat, or 2) until it has completed consultation under Section 7(a)(2) of the Endangered Species Act (16 USC § 1536). In addition, the EPA must undergo consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA) (16 USC § 470f). As a reminder, NHPA implementing regulations require that EPA provide information to the public with an opportunity for participation in the Section 106 process. 36 CFR § 800.2(d). If you have not already submitted the Biological Assessment and Cultural Resources Reports that you have agreed to prepare for EPA, we look forward to receiving these reports and continuing to work with you to comply with these statutes.

If you have any questions regarding the review of your permit application, please contact Melanie Magee of my staff at (214) 665-7161 or magee.melanie@epa.gov.

Sincerely yours,

A handwritten signature in blue ink, appearing to read "Wren Stenger", with a stylized flourish at the end.

Wren Stenger
Director
Multimedia Planning and
Permitting Division

Enclosure

ENCLOSURE

EPA Completeness Comments Delaware Basin JV Gathering LLC

Application for Greenhouse Gas Prevention of Significant Deterioration Permit Avalon Mega CGF

1. The process description does not appear to follow the process flow diagram that is provided, or identify all emission points that emit GHG emissions or have the potential to emit. Please update the process flow diagram to include a representation of the equipment that is mentioned in the process description. For example, the application mentions that the amine units and the triethylene glycol (TEG) dehydrators are equipped with reboilers to promote better separation. Also, that both the amine and the TEG units flash tank emissions are recycled back to the fuel gas system for the facility. The current process description refers to the “amine still” and the “TEG dehydrator still”. However, the equipment is not shown on the process flow diagram. Please provide additional information on the operation of the amine and TEG stills. The blocks that are used in the diagram to represent several pieces of equipment make it difficult to understand the process. It is suggested that Delaware Basin JV Gathering LLC (DBJVG) revise the current process flow diagram by delineating further the equipment/components that comprise the amine unit and the TEG unit. A brief description of the purpose or function of this equipment would also facilitate the understanding of DBJVG operation. If DBJVG finds it beneficial or necessary, it is suggested that additional pages be created and provided to EPA to represent the process to avoid overcrowding and confusion.
2. In addition to the previously mentioned comment, please provide supplemental information to the process flow diagram and/or process description:
 - A. What type of reboiler is utilized for the amine units and the TEG unit (steam-heated reboiler, fired reboiler, etc.)? What medium is circulated through the reboiler and used for heat transfer? Is there additional equipment associated with this thermal fluid system (combustion turbine for steam, heater for oil)? If so, please provide supplemental information for this additional equipment (firing rate, thermal efficiency, and load/efficiency curves) and the GHG emissions associated with the operation of this equipment. Also, include a 5-step BACT analysis for the turbine and/or heater used in the thermal fluid system. Please provide manufacturers data on the reboilers that includes operating efficiency. Were different reboiler designs considered for this service? If so, please provide the comparison data used to evaluate the BACT for the reboilers considered and the reasons for the elimination.
 - B. Please supplement the process description with an explanation of the pigging process that is mentioned on page 10 of the permit application. Also, update the process flow diagram to show the piping connections that are a part of the pigging process in relation to the entire unit. Please update the process flow diagram to show the slug catcher and include an explanation in the process description of its purpose in the overall process.
 - C. On page 10 of the application, it states that the liquids removed from the natural gas entering the facility are sent to atmospheric produced water tanks and pressurized condensate storage tanks prior to being loaded to tanker trucks for shipment off-site. The process flow diagram shows that material is directed from the inlet separator to the pressurized condensate storage gas tank and then material is directly routed to the produced water storage tanks. The process flow diagram also indicates one truck loading line from the produced water storage tanks. Are these storage tanks and truck loading connected as shown or is the pressured condensate

storage and produced water tank piping system segregated for the truck loading operation? Do truck loading capabilities exist for the pressurized tanks? Can several trucks be loaded simultaneously? Please provide a BACT analysis for the truck loading. Please include the pollution controls that were evaluated for the reduction and/or minimization of GHG emissions during truck loading and the reasons for eliminating these controls from consideration. Are there operating or work practice standards that will be implemented to minimize GHG emissions generated during truck loading operation? Please provide supplemental information that details these procedures.

- D. How many pressurized condensate storage tanks are being installed for this project? Please identify the size, type of the pressurized condensate and the produced water storage tanks. Please provide analysis results of the material to be stored in the tanks as well as the carbon content and heat value. If there are multiple types of material or waste stored, please provide the constituent profile of this material. Are the storage tank emissions directed to the one of the flares or thermal oxidizers? If so, the combustion of the tank vapors might generate GHG emissions, therefore a BACT analysis should be developed for the tanks to be installed for the project. Please be sure to incorporate into the tank BACT analysis the factors that were considered when comparing internal (IFR) or external (EFR) floating roof, and fixed roof. Please provide any other additional information for the tanks, including whether the applicant chose to have the tanks painted white or another color of high refractive index to reduce vapor production? Please update the process flow diagram and process description to indicate the number of pressurized tanks to be installed. The GHG emission calculations for truck loading that is located in Appendix C of the permit application only appears to include truck loading emissions from the produced water storage tanks. Are GHG emissions generated during truck loading from the pressurized condensate tanks? If so, please include the emission calculations for truck loading for the pressurized condensate tanks. Also, is the water that is removed from the TEG unit collected in the produced water storage tanks?
 - E. On page 10 and 28 of the permit application, it states that the amine still vents are controlled by a thermal oxidizer and the flash tank vents are recycled back to the fuel gas system. Also, the TEG dehydrator still vent and flash tank emissions are recycled back into the fuel gas system. Please update the process flow diagram to reflect this accurately. Please show the fuel gas system and all the streams that are directed to and comprise the fuel gas system.
 - F. On the plot plan in the permit application there is a flare knockout drum. Where is the material that is collected introduced back into the process? Please update the process flow diagram to show the flare knockout drum and the process line tie-ins.
 - G. The process flow diagram only shows the EPNs for one thermal oxidizer (EPN: TO-01), one amine unit (EPN: H-01) and one TEG unit (EPN: RB-01). All emission sources must be identified and label with an EPN on the process flow diagram. Please update the process flow diagram to include the EPNs for the other amine units (EPN: H-02 through H-06), TEG units (EPN: RB-02 through RB-06), and the thermal oxidizers (EPN TO-02 through TO-06)
 - H. The process flow diagram indicates a stream leaving the TEG unit as "discharge". What is this stream and where is it directed?
3. It is not clear if the emission calculations presented in Appendix C are the proposed annual ton per year GHG emission limits for each emission unit. Please provide a supplemental table that clearly summarizes the proposed annual GHG emission limits for each emission unit and tabulates the proposed total annual GHG emission rates. Please include the EPNs for each emission unit. Also, please distinguish between total annual GHG emission rates for normal operating conditions and total annual GHG emission rates for maintenance, startup and shutdown (MSS) operating conditions.

4. On page 10 of the permit application, it is stated that the separated gas is compressed by twelve Caterpillar G3612 engines. Please describe the operational plan for the engines. Since there are six processing trains, will two compressors be dedicated to one train? If so, will one compressor be in operation and the other function as a spare? Please provide manufacturer design specification data sheets for these engines.
5. On page 27 of the permit application, it is stated that GHG emissions from small emission sources such as MSS activities are not included in the BACT analysis. GHG emissions from these negligible sources will be minimized through the employment of work practices. It is not clear if these MSS activities are the same MSS activities that are discussed on page 15 (i.e., compressor and vessel blowdowns). Please clarify. EPA needs to permit these emissions or they are unauthorized. Typically we permit these emissions by either establishing a separate alternative BACT that applies during MSS, or we roll the emissions into each emission point as part of our BACT determination for that unit with the expectation that the unit will meet BACT at all times. Pursuant to EPA's PSD and Title V Permitting Guidance for GHG (March, 2011, at page 17), which states if the permitting authority determines that technical or economic limitations on the application of a measurement methodology would make a numerical emissions standard infeasible for one or more pollutants, it may establish design, equipment, work practices or operational standards to satisfy the BACT requirement. Please provide supplemental data to the BACT analysis that details the work practices and operational standards that DBJVG proposes to implement for these MSS activities. What is the proposed compliance strategy for these work practices and operational standards? Is reuse of this material possible? Can this material be recycled back into the fuel system? Were options evaluated for the reuse or minimization of these streams? If so, please provide supplemental information that lists the options evaluated and reasons for elimination.
6. On page 28 of the permit application, it is stated that the facility utilizes available process streams to transfer heat which reduces combustion heating requirements in the process. Please update the process flow diagram to show the areas where heat recovery is utilized. Also, include supplemental data to the process description by providing a comprehensive list of the areas in the process that benefit from this heat recovery.
7. On page 31 of the permit application, included in the BACT analysis for the amine unit still vents, is a discussion on regenerative thermal oxidizers (RTOs). It is stated that a RTO has a high efficiency heat recovery. This allows the facility to recover heat from the exhaust stream, reducing the overall heat input of the plant. On page 34 of the permit application, the selection of BACT for the amine unit still vents includes the use of a thermal oxidizer. It is not clear if the thermal oxidizer that is proposed is a regenerative thermal oxidizer. Please clarify. If available, please provide any efficiency or optimal temperature benchmark comparison data of similar thermal oxidizers to assist us with our BACT determination. Please provide analysis results of the feed to the thermal oxidizer that includes carbon content and heat value. Also, another proposed BACT selection for the amine still vents is the use of condensers. Please update the process flow diagram to show this equipment. If available, please provide efficiency benchmark data that compares similar sources that use condensers and the resulting reduction of GHG emissions produced.
8. On page 34 of the permit application, it is stated a WGM study determined the total initial capital cost of the equipment and infrastructure required to capture, compress, treat, and transfer the CO₂ to the Kinder Morgan pipeline approximately is \$44,065,000.00, with annual operating

costs of \$1,826,000. These costs were provided in the WGM study in a formal CAPEX Estimate Study for the Avalon Mega CGF project. Please provide supplemental information that details the results of the study conducted which includes site-specific equipment and infrastructure for CCS implementation at the proposed Avalon Mega CGF facility.

9. On page 36 of the permit application, the BACT for the thermal oxidizer includes a list of work practices and requested monitoring and recordkeeping requirements which states that DBJVG will install a temperature monitor in the combustion chamber to record the combustion temperature. DBJVG would like to base the minimum temperature to be determined during the initial performance test. Please propose a combustion temperature for the thermal oxidizer as BACT; otherwise, EPA will need to independently propose an initial BACT, until appropriate testing can occur to determine the most optimal or efficient temperature for the thermal oxidizer.
10. On page 39 of the permit application, it is stated that the proposed operating load range for the proposed compressor engines will be closer to 50% load than 100%. Please provide supplemental data that include production output, gross heat rate and percent efficiency of engines being considered and please provide this data for similarly designed engines recently permitted by air permitting authorities nationwide or operating internationally (this information may be represented graphically in load/efficiency curves at the proposed load ranges).
11. On page 41 of the permit application, the selected BACT for the amine and TEG reboilers is the efficient reboiler design. Please provide supplemental data that includes the manufacturer design specification data sheets and comparative benchmark efficiency and/or data for these proposed reboilers to existing or similar reboilers.
12. On page 45 of the permit application, it is stated that the flares at the Avalon Mega CGF facility will be used to destroy the off-gas produced during emergency situations and during planned MSS activities. Are the proposed flares ground or elevated? Will the flares be enclosed? Please provide supplemental information pertaining to the design of the flare. If available, please provide benchmark data that compares the proposed design to similar sources. Is the flare proposed for this project steam-assist, air-assist or no-assist? Please provide the analysis results of the proposed feed to the flare from MSS activities that includes carbon content and heat value.
13. EPA typically will issue an output-based BACT emission limit (e.g., lb or ton CO₂/MMBtu or MMscfd) or a combination of an output- and input-based limit, where feasible and appropriate. For the individual compressor engines for this project, in addition to the proposed tons per year emission limit, please propose an output-based, combination of an output- and input-based limit or efficiency-based limit. Please include the actual calculations that were performed to derive the proposed BACT limit. Please provide an analysis that substantiates any reasons for infeasibility of a numerical emission limitation or an efficiency based limit for individual emission units. For the emission sources where numerical emission limitations are infeasible, please propose an operating work practice standard that can be practically enforceable.