UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

JUN 05 2012

Mr. Greg Corcoran
Vice President and General Manager
Diamond Shamrock Refining Company L.P., a Valero Company
Valero McKee Refinery
6701 FM 119
Sunray, TX 79086-2013

RE: Completeness Determination for Diamond Shamrock Refining Company L.P. a Valero Company
Greenhouse Gas Prevention of Significant Deterioration Permit Application
Valero McKee Refinery-Crude Expansion Project
Sunray, Moore County, Texas

Dear Mr. Corcoran:

This letter is in response to your application received by this office on December 2, 2011 for a Greenhouse Gas Prevention of Significant Deterioration permit. After our review of the application and supporting information, we have determined that this application is incomplete based on the requirements of 40 CFR 124 and additional information is required to begin the processing of the draft application. Enclosed is a list of the additional information required (see Enclosure).

Upon receipt of the additional information, the Environmental Protection Agency (EPA) will prepare another completeness determination. The requested information is necessary for EPA to develop a Statement of Basis and Rationale for the terms and conditions for the requisite 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.

Although not required as a part of our completeness determination, the EPA may not issue a final permit without determining that there will be no effects on endangered species or until it has completed consultation under Section 7 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 (16 USC 470f). To expedite these consultations, the EPA requests that permit applicants provide a Biological Assessment and a cultural resources report covering the project and action area to the EPA.

If you would like to schedule a conference call to discuss our concerns, please contact Melanie Magee of my staff at (214) 665-7161.

Sincerely yours,

Carl E. Edlund, P.E.
Director
Multimedia Planning and
Permitting Division

cc: Mr. Mike Wilson, P.E.
Director, Air Permits Division
Texas Commission on Environmental Quality

ENCLOSURE

EPA Information Request
Diamond Shamrock Refining Company, L.P., a Valero Company
Application for Greenhouse Gas Prevention of Significant Deterioration Permit
Valero McKee Refinery – Crude Expansion Project,
Sunray, Texas

Process Description

1. On pages 2-2, 2-3, 2-6 and 2-8 of the permit application, it states that proposed changes to the #1 and #2 Crude Process Heaters, #2 Vacuum Heater, Gas Oil Fractionator Charge Heater and the #2 Reformer will not cause an increase in current permitted emission rates to accommodate the additional processing of crude. Please provide the supporting calculations for the GHG pollutant.

2. On page 2-2 of the permit application, it states that "the increased feed rate will result in a firing rate increase at the No.1 Vacuum Unit Charge Heater (EPN: H-2), but will not require an increase in its current represented firing rate." Please clarify if the "represented firing rate" is a practically enforceable limit in the permit and provide supporting data for the GHG pollutant. Also, please clarify and provide the same for similar statements made on pages 2-9 and 2-10 pertaining to the PDA system and the Gasoline Desulfurization Unit Charge Heater, respectively, with respect to the GHG pollutant.

3. On page 2-12 of the permit application, the discussion pertaining to product loading states "with the increased production of motor fuels, turbine fuel, and diesel associated with this project, product loading is expected to increase and is therefore affected. However, the increase will not require any new loading racks or an increase in the currently permitted emission rates for the current loading racks, except for the truck loading (EPN:L-11) and diesel railcar (EPNs: L-5 and L-13)." The truck loading rack and the diesel railcar loading rack are controlled by vapor combustion. What is the applicant's proposed monitoring method for the vapor combustor to ensure that it operates optimally to minimize GHG emissions?

4. On page 2-12 of the permit application, it states that the refinery currently operates four process unit flares (EPNs: FL-1, FL-3, FL-4, FL-8) that receive routine and non-routine vent streams from multiple process units throughout the refinery. With the increased crude processing, there is an expected increase in waste gas that may be generated during routine operations. The application states that the refinery plans to have installed by the end of 2011 a flare gas recovery system that will recover and process the current and future waste gas flare streams. Has this flare gas recovery system been installed? Please provide GHG emission rates for the flares/flares recovery system affected sources.

BACT Analysis

5. On page 4-10 of the permit application for capture of CO_2, it states that "the primary concern with MEA is the corrosion in the presence with O_2 and other impurities, high solvent degradation rates due to reactions with SO_2 and NO_x, and energy requirements for solvent regeneration." Have other solvents, such as DEA, been considered for this project? Please supplement the 5-step top down BACT analysis to support the elimination of DEA from consideration.

6. On page 4-12 of the permit application in the section entitled Use of Low Carbon Fuels, Good Combustion Practices, and Energy Efficient Design, it states that "good combustion practices are inherent in the design and operation of the No. 2 Vacuum Unit Heater".

   A. Please provide supplemental benchmark data comparing the heater to other existing or similar sources, i.e., the percent energy efficiency of the heater.

   B. How will the modifications to the radiant section of the heater and its effects on overall skin temperature on the internal tubes, translate to decreasing coking potential as is asserted in the application? What percentage of coke reduction in the tubes will occur in lbs coke/lbs of product processed? Please include manufacturer's technical data that supports your conclusions, as well as the associated decrease in GHG per pound of product.

   C. What design or process operation modifications will ensure the uniform distribution of the feed and heating in the tubes? Please indicate what operating parameters will be monitored to ensure the heat recovery efficiency.

   D. The permit application also indicates "other energy efficient designs will be incorporated as feasible, depending on the existing heater configuration; specifically, the use of Combustion Air Preheat, Process Heat to Generate Steam, Process Integration and Heat Recovery, and Excess Combustion Air Monitoring and Controls." On page 4-14 in Section 4.2.6., the BACT selection does not specifically provide the energy efficient design that will be incorporated in the heater. Please provide clarification on exactly what will be implemented and the proposed monitoring and recordkeeping strategy for the operating indicators. Each of the possibilities should be considered in the design of the heater or justifiably eliminated as BACT.

7. Beginning on page 4-12 of the permit application, the cost estimates provided for the Carbon Capture and Storage (CCS) appear to solely rely on the August 2010 report entitled "Report of the Interagency Task Force on Carbon Capture and Storage." BACT is a case-by-case determination. Please provide site-specific facility data to evaluate and eliminate CCS from consideration. This material should contain detailed information on the quantity and concentration of CO2 that is in the waste stream and the equipment for capture, storage and transportation. Please include cost of construction, operation and maintenance, cost per pound of CO2 removed by the technologies evaluated and include

the feasibility and cost analysis for storage or transportation for these options. Please discuss in detail any site specific safety or environmental impacts associated with such a removal system.

8. Being mindful of EPA's PSD and Title V Permitting Guidance for GHG dated March, 2011 on page 17, which states the following:

> "The CAA and corresponding implementing regulations require that a permitting authority conduct a BACT analysis on a case-by-case basis, and the permitting authority must evaluate the amount of emissions reductions that each available emissions-reducing technology or technique would achieve, as well as the energy, environmental, economic and other costs associated with each technology or technique. Based on this assessment, the permitting authority must establish a numeric emissions limitation that reflects the maximum degree of reduction achievable for each pollutant subject to BACT through the application of the selected technology or technique. However, 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 propose short-term emission limitations or efficiency based limits for all PSD modified emission sources. Please provide an analysis that substantiates any reasons for infeasibility of a numerical emission limitation. For the emission sources where numerical emission limitations are infeasible, please propose an operating work practice standard that can be practically enforceable.

9. On page 4-15 of the GHG PSD permit application provided to EPA, it states that "Valero McKee Refinery proposes to use a LDAR program that incorporates GHG monitoring as needed." Please specify level of LDAR to be used? Will all fugitive components in the refinery be monitored by the LDAR program, because this project affects most refinery fugitive components? Please provide a 5-step top down analysis that evaluates technologies considered to reduce methane fugitive emissions. The technologies could include, but are not limited to, the following:

   - Installing leakless technology components to eliminate fugitive emission sources;
   - Implementing an alternative monitoring program using a remote sensing technology such as infrared camera monitoring;
   - Designing and constructing facilities with high quality components and materials of construction compatible with the process known as the Enhanced LDAR standards

- Monitoring of flanges for leaks
- Using a lower leak detection level for components

Emission Calculations

10. Table B1 has the Potential to Emit (PTE) annual emissions (tpy) for CO2e for the "affected" units. These numbers do not compute with the annual average (tpy) or the maximum hourly emission (lb/hr) on Table B-10. Please account for the differences.

11. Please provide the supporting data used to determine the fuel carbon content factor of 0.66 represented in Table B12. This fuel factor is used in equation C-5 from 40 CFR 98, Subpart C to calculate CO2e annual emissions. Please include a fuel analysis sample results that supports the carbon factor and meets the requirements of 40 CFR 98.33(a)(2)(ii).

12. Please provide supporting data that determines the baseline emissions for the GHG pollutants and include the associated practical permit limits/numbers for the "affected" units.

13. Please provide the Heat and Material Balance Data Sheets with sources identified that are referenced in the footnotes for Tables B-3 through B-9.

14. Please provide flare gas analysis results that are used to determine the carbon content of the flare gas for the factors required in equations Y-3, Y-4 and Y-5 from 40 CFR 98, Subpart Y.