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GOVERNOR

GRCC 06  
State of New Mexico  
**ENVIRONMENT DEPARTMENT**

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**RON CURRY**  
SECRETARY

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

August 14, 2006

Mr. Ed Riege  
Environmental Superintendent  
Giant Refining Company  
Route 3 Box 7  
Gallup, New Mexico 87301

**RE: REFINERY SEWER LINE DYE TRACE STUDY 2006  
GIANT REFINING COMPANY, CINIZA REFINERY  
EPA ID# NMD000333211  
HWB-GRCC-06-002**

Dear Mr. Riege

The New Mexico Environment Department (NMED) has completed its review of Giant Refining Company's Ciniza Refinery (Permittee) *Dye Trace Study 2006* Report, dated June 19, 2006. The Permittee concludes in the Report that no cross-connects were found between the process sewer and the storm sewer systems and that non-stormwater flow to the Old API Separator (OAPIS) is not a result of sub-surface piping cross-connections within the refinery.

The Permittee has not adequately demonstrated to NMED the source (or leak) of non-stormwater flow to the OAPIS. During a dry period consisting of approximately six months, prior to May 2006, the OAPIS was receiving water that was deemed hazardous. The following points identify areas of concern within the study.

- a. The dye study was conducted during a facility turnaround, which introduces a variety of different variables (e.g., low wastewater discharge conditions) that can yield different results than if the dye study was conducted when the facility was operating at full capacity with all units operating and water constantly flowing through the sewer systems.

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- b. The Permittee observed “green oil” during the dye trace study (the dye did not fluoresce when visually examined under ultraviolet light (UV) light) in the stormwater sewer system, which was thought to be slurry from the [Fluid Catalytic Cracking Unit] FCCU. The Permittee states in the conclusions section of the Report that “it was determined that green-colored antifreeze/coolant or gas oil was sometimes present in the storm sewer system.” The final source of the “green colored oil” was never identified or further discussed in the Report. The presence of the “green oil” signifies some type of cross-connect, leak or spill into the stormwater sewer system or it would not be present.
- c. The Permittee states in Section 3.3 that red dye was used to determine if any cross-connects existed in the Alkylation unit. Since no red dye was detected visually, it was believed no cross-connects existed. During this test “green oil” was observed visually in the lines, which did not fluoresce under UV light. However, the Permittee never determined the source of this “green oil” either. Until the source of the “green oil” is verified, it would appear some type of cross-connects or leaks exists within the Alkylation unit or elsewhere.
- d. Inspections and reporting of the cross connections between the stormwater sewer system and the process sewer system were inconsistent. The New API Separator (NAPIS) was not sampled each time a unit was checked to ensure the dye had reached the process sewer effluent (if it was checked at each unit, this was not always stated in the Report). The Permittee does not mention, in Section 3.3 (Alkylation Unit), the collection of samples from the NAPIS; however, the Permittee does mention, in Section 3.4 (Treating Unit), the collection of samples from the NAPIS to verify that dye had reached the process sewer effluent.
- e. The amount of time spent to observe the dye flowing through the system is unclear. Only the time the dye entered the system was recorded. The Permittee does not describe how specific time lengths were selected to check for the appearance of the dye in the stormwater sewer system at specific locations. For example, stormwater sewer MH17 was observed for approximately 30 minutes after dye was introduced into the Gas Concentration Unit and since dye did not appear, it was assumed there was no cross-connect. The Permittee does not assert the possibility that dye could have reached the storm sewer or leaked elsewhere or that the dye may not have reached the stormwater sewer system after 30 minutes due to an unforeseen obstacle and therefore was never observed.
- f. NMED understands approximately 25, 000 gallons a week of back-flush water (non-contact cooling water and heat exchanger) flows are entering into the OAPIS. However, this does not appear to be the total flow that was entering into the OAPIS

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during the dry period. The Permittee must explain how the non-contact cooling water and heat exchanger back-flush flows and process water will be distinguished from one another and identify the sources of the other continuous flows observed in the OAPIS in the past year.

- g. It is unclear from the Figures provided in the Report where the process sewer system is in relation to the stormwater/non-process wastewater sewer system. An overlay map showing the two sewer systems would be beneficial. (e.g. it is not clear where MH17 in Figure 2 would appear in Figure 1)
- h. The Permittee must complete the last sentence found on page four of the cover letter titled *Sewer Training Outline*. The sentence ends with "and that."

The Permittee has not yet identified the source(s) of water observed in the storm sewer system during the long dry period that preceded the dye trace study and is still responsible for determining the source of process water entering the stormwater/non-process wastewater system and the OAPIS. The presence of contamination must be resolved before the stormwater can be routed to an alternate location. All responses to this letter must be submitted to NMED on or before September 11, 2006.

If you have any questions regarding this letter, please contact me at (505) 428-2545.

Sincerely,



Hope Monzeglio  
Project Leader  
Permits Management Program

HM

cc: J. Kieling, NMED HWB  
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