September 12, 2011

Telma B. Moreira
Contra Costa County Community Development
Department of Conservation & Development
651 Pine Street, 4th Floor – North Wing
Martinez, CA 94533

Subject: DEIR Prepared for the Shell Crude Tank Replacement Project

Dear Ms. Moreira:

Bay Area Air Quality Management District (District) staff has reviewed the County's Draft Environmental Impact Report (DEIR) prepared for the proposed crude tank replacement project at the Shell Refinery in Martinez. The District understands that the project's primary goal is to expand the refinery's storage capacity to accommodate an increase in crude oil delivered to its marine terminal. The project includes the following components: two existing crude oil storage tanks to be replaced with three new larger crude oil tanks; the refurbishment of an existing crude oil storage tank; and an existing crude oil mixing tank to be replaced by a new crude oil mix tank. In addition, Shell has committed to making several operational changes to refinery equipment and implementing on-site emission reduction projects as measures to reduce project emissions.

District staff has the following specific comments on the DEIR.

Marine Vessel Emissions

In response to questions from the District, Shell submitted to the District a "Vessel Transit Distance Summary" on August 8, 2011 (attached). The Vessel Transit Distance Summary estimates criteria pollutant and greenhouse gas (GHG) emissions associated with the increased vessel trips that will deliver crude oil to the marine terminal using average vessel speeds, transit time, combustion rate in gallons/hour, and combustion emission factors. District staff has reviewed this estimate and concurs with the approach taken. Staff recommends the Vessel Transit Distance Summary be included in the Final EIR as a technical appendix.

Particulate Matter ($PM_{2.5}$)

The DEIR's air quality analysis estimates the annual increase in particulate matter (PM) emissions associated with the construction and operation of the project. The project's $PM_{2.5}$ emissions are compared to the District's mass thresholds of 54lbs per day and 10 tons per year. However, the analysis does not compare the project's operational emissions to the $PM_{2.5} > 0.3$ $\mu g/m^3$ annual average risk and

hazard threshold. Staff recommends that the air quality analysis compare the project's $PM_{2.5}$ emissions to the District's project-level risk and hazard threshold of $PM_{2.5} > 0.3$ $\mu g/m^3$ annual average.

Mitigation Measures

Staff acknowledges Shell's commitment to offset the project's annual increases of approximately 79 tons of nitrogen oxide (NO_x) and 17,874 metric tons of GHG emissions. Staff understands that these emission reductions are being attributed to implementing three on-site projects proposed for reducing fuel consumption and increasing energy efficiencies at various pieces of refinery equipment. This includes installing a new air preheater at the Crude Unit Furnace F-40, restricting the firing rates at the Distillates Hydrotreater F-13909, and making a number of operational changes to the Catalytic Cracking Unit. To ensure that the reductions are enforceable, staff recommends that the County make **Mitigation Measure 4.8-2** conditions of approval in the land use permit.

District staff is available to assist the County staff in addressing these comments. If you have any questions, please do not hesitate to contact Ian Peterson, Environmental Planner, at (415) 749-4783 or at ipeterson@baaqmd.gov.

Sincerely,

Jean Roggenkamp
Deputy Air Pollution Control Officer

Attachment

cc: BAAQMD Vice-Chairperson John Gioia
BAAQMD Director David Hudson
BAAQMD Director Mark Ross
BAAQMD Director Gayle B. Uilkema

Attachment A

Vessel Transit Distance Summary

Shell REFEMS and Title V permits provide total emissions limits for a number of refinery units including the wharf. The CTRP does not involve any modifications to the Shell Marine Oil Terminal (MOT). While emissions increases from the additional vessel calls will occur, the increases in emissions will be within the REFEMS/Major Facility Review (Title V) permit BAAQMD limits and the CTRP does not involve any change in those limits. However, the CTRP is required to offset the vessel emission increase under the California Environmental Quality Act because a different "actual" emissions baseline is used. Per BAAQMD request, this narrative is provided to summarize the methodology used by Shell to determine the amount of vessel emissions offsets needed for CEQA and the methodology used to determine the distance traveled by a vessel arriving at and leaving from the Shell Marine Oil Terminal (MOT) assuming a 12-hour round trip transit time.

It is Shell's understanding that the BAAQMD requires vessel emission offsets to be accounted for starting at the Bar Pilot station at 11 nautical miles (nm) from the Golden Gate Bridge in the Pacific Ocean. The methodology used by Shell to calculate vessel emissions for the CTRP Land Use Permit to determine the offsets required by CEQA relies on the calculation for vessel emissions in Shell's Title V permit and uses the number of hours traveled (6 hrs one way, 12 hrs roundtrip).

To determine the distance traveled during the 6 hour one way trip, an average vessel speed was assumed. The maximum speed limit in the SF Bay is 15 knots[1]. The average speed in SF Bay for tankers has been documented by the California State Lands Commission as 10 knots[2]. The typical tanker speed in the Pacific Ocean is 13-15 knots. As the vessel approaches the Bar Pilot Station located 11 nautical miles (nm) from the Golden Gate Bridge, the vessel slows down to approximately 8 knots to allow for the transfer of the Bar Pilot to the vessel. The vessel then typically speeds up as it approaches the Golden Gate Bridge[3]. Hence, it is reasonable to assume a 10 knot average speed in the Pacific Ocean.

The distance from the Shell MOT to the Golden Gate is approximately 30 nm and from the MOT to the Bar Pilot Station is 41 nm. Shell based its emission calculations on an average 10 knot speed for 6 hours one way transit time which provides a conservative distance traveled far beyond the transit time required to travel to the Bar Pilot station. This information is provided graphically in the attached diagram.

References:

[1] Federal regulation 33 CFR Parts 162 and 165 became effective May 3, 1995, limiting vessel speed to 15 knots for power driven vessels of 1,600 or more gross tons within the main ship channels (Regulated Navigation Areas) of San Francisco Bay.

[2]California State Lands Commission, May 2011. Final Environmental Impact Report for the Shell Marine Oil Terminal Lease Consideration.

[3]Personal Communication with Pacific Marine Shipping Association, June 2011.

Shell Vessel Speed Diagram – 6 hours transit time one-way
Not to Scale