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Subject: Summary of Fence Line and Community Air Monitoring Data – 12/18/2014 – 5:00 pm to 12:00 am

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The following is a summary of the data collected by the fence line and community air monitoring systems as part of the Richmond Community Air Monitoring Program. The data were collected between 5:00 pm and 12:00 am on December 18, 2014. All air monitoring systems were fully operational and logging data. During this time period, the winds were extremely light and coming from a general direction of the Southeast (from the community, into the refinery).

Summary of Data Collected from the Community Air Monitoring Systems

The air monitoring equipment located at the three monitoring stations in Richmond, California are capable of detecting volatile organic compounds (VOCs), ammonia, black carbon, hydrogen sulfide, and particulate matter less than 2.5 microns (PM 2.5). During this time period, no VOC was detected above 2 parts-per-billion (ppb). The maximum detection of ammonia was 16.15 ppb and occurred at the North Richmond air monitoring station at 10:35 pm. The largest detection of Hydrogen Sulfide was 3.64 ppb and occurred at the North Richmond air monitoring station at 11:15 pm. The largest detection of Black Carbon was 3.88 µg/m3 and occurred at the North Richmond air monitoring station at 8:00 pm. All three monitoring stations reported steady increases in the detection of PM 2.5 during the reporting period with maximum concentrations ranging from 24 to 26 µg/m3 between 11:00 pm to 12:00 am. All concentrations detected by the community air monitoring systems were below state and federal health standards.

Summary of Data Collected from the Fence Line Air Monitoring Systems

The fence line air monitoring systems located at the fence line of the Chevron Richmond Refinery are capable of detecting benzene, carbon disulfide, hydrogen sulfide, sulfur dioxide, toluene and xylene. During this time period, the maximum Sulfur Dioxide reading was

detected at a concentration of 5.55 ppb by Point Richmond fence line monitoring system at 10:45 pm. The maximum concentration of Toluene was detected by the Atchison Village fence line monitoring system throughout this time period with the maximum concentration of 7.02 ppb at 12:00 am. No other gases were detected by the fence line monitoring systems during this time period. All concentrations detected by the fence line air monitoring systems were below state and federal health standards.

Summary and Conclusions

During the time period of the 5:00 pm to 12:00 am on December 18, 2014, all of the air monitoring systems associated with the Richmond Community Air Monitoring Program were fully operational and functioning during the flaring events at the Chevron Richmond Refinery. The fence line monitoring equipment indicated no detections of gases outside the normal concentration ranges seen in urban environments. Given the fact the gas coming from the flare were at a significantly higher temperature than the ambient air temperature, it is likely the plume was higher than the fence line monitor's beam path during the flaring events. The community monitoring systems did indicate an increase of PM 2.5 concentrations during the flaring events but were lower than the Bay Area standards for this compound. All other gas detects were consistent with gas concentrations normally seen in urban environments and were below state and federal health standards.

Feel free to contact me if you have any questions,

Best Regards,

Donald S. Gamiles PhD
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