May 16, 2018

To: David Morrison, United States Environmental Protection Agency
    Kristina Miller, United States Environmental Protection Agency
    James Mitchell, United States Environmental Protection Agency
    Jacob Hassan, United States Environmental Protection Agency
    Robert Thiboldeau, Wisconsin Department of Health Services
    John Sager, Wisconsin Department of Natural Resources
    Pat Schanen, Douglas County
    Kathy Ronchi, Douglas County
    Dave Longsdorf, Douglas County

Ref. No.: 11156937

From: GHD/dh/73

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CC: Dyron Hamlin, MS, PE, CIH; Bradley Free

Subject: Summary of Perimeter Air Monitoring Results: May 15, 2018 - Between 00:00 and 23:59

The purpose of this memorandum is to provide Superior Refining Company LLC (SRC) site management and local, state and federal regulators a summary of GHD’s site perimeter air monitoring activities and results at the Husky Superior Refinery conducted from May 15, 2018 between 00:00 and 23:59 Central Daylight Time (CDT). Air monitoring activities were conducted in accordance with the Air Monitoring Plan, as amended, developed in consultation with the United States Environmental Protection Agency, Wisconsin Department of Natural Resources, Wisconsin Department of Health Services, Douglas County Emergency Management Agency, and Douglas County Health and Human Services.

GHD continued to monitor air quality with 15 AreaRAE monitors located at the refinery site perimeter. Monitor maintenance was conducted by GHD following the Site protocols. The AreaRAE monitors were equipped with a photo ionization detector (PID) (10.6 eV lamp) for monitoring volatile organic compounds (VOCs) and electrochemical sensors specific for carbon monoxide (CO), hydrogen sulfide (H₂S), and flammability (LEL). Eleven of the 15 AreaRAE monitors are equipped with sulfur dioxide (SO₂) electrochemical sensors. The remaining four AreaRAE monitors will be equipped with SO₂ sensors in the following days. On May 15, 2018, two of the 15 AreaRAE monitors were also equipped with ammonia sensors during the ammonia de-inventory operations that were conducted on-Site. GHD monitored meter status and continuous air quality monitoring results via telemetry from the refinery control room. Results were documented through data logging.
VOC detections were logged above the community action levels at one monitor on May 15, 2018. The detections were not sustained readings above the community action levels. Therefore, the detections do not constitute as exceedances of community action levels.

NH₃ detections were logged above the community action levels at one monitor on May 15, 2018. These readings were investigated with handheld air monitoring equipment and confirmed to be caused by sensor error rather than airborne NH₃ concentrations from the refinery. Therefore, the NH₃ detections do not constitute as valid exceedances of community action levels.

Perimeter monitoring locations and status with respect to community action levels over the period of May 15, 2018 between 00:00 and 23:59 are presented on Figure 1.

Perimeter air monitoring results for VOCs, H₂S, SO₂, and Ammonia over this period are presented on Figures 2 through 5, respectively.

The information contained in this memorandum will be considered preliminary until a final Quality Assurance/Quality Control (QA/QC) review of the data is completed. At the completion of the project, all data collected through real-time monitoring will be compiled, summarized, and reported to SRC. Data contained in the final report will go through GHD’s final QA/QC process, including review by a GHD Certified Industrial Hygienist (CIH).
HUSKY ENERGY – SUPERIOR REFINERY FIRE
SUPERIOR, WISCONSIN

PERIMETER ZONE AIR MONITORING RESULTS - SO2 (PPM)
MAY 15, 2018 - 00:00 TO 23:59

FIGURE 4


GIS File: Q:\GIS\PROJECTS\11156000s\11156937\Layouts\PRES007\11156937-00(PRES007)GIS-WA057.mxd
PERIMETER ZONE AIR MONITORING RESULTS - NH3 (PPM)
MAY 15, 2018 - 00:00 TO 23:59


Coordinate System: NAD 1983 HARN StatePlane Wisconsin North FIPS 4801 Feet

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FIGURE 5