1. Section 2.4 discusses the general situation at AOI-8 regarding surface water as a potential receptor, including the relationship between groundwater and surface water. The section states that interaction between groundwater and the Schuylkill River is "limited by the bulk head and sheet pile wall." The reference here is to the bulkhead along the river bank, which is partially wood and partially steel sheet pile.

   The statement cited above does not appear to consider two important factors. First, the wooden bulkhead is highly degraded, especially in the portions that are (or were) above the low tide elevation in the river. Thus the wooden bulkhead does not prevent river water from entering the landward side of the bulkhead line and interacting with soil or fill material along the riverbank. Second, the report does not mention the buried sheet pile cut-off wall that was constructed in about 1994, and that runs parallel to the bulkhead line for about 3400 feet. DEP believes that it would be appropriate and prudent for this report to document the presence of the sheet pile cut-off wall. Not only does the buried cut-off wall likely affect the relationship between shallow groundwater and the river, but in addition it is a substantial structure which should not be forgotten or ignored.

2. Section 2.5 summarizes Sunoco's investigations in the area of the Jackson Street sewer, including groundwater investigations and inspections of the interior of the structure. In spite of this long history and the variety of activities undertaken by Sunoco, there remains some uncertainty concerning whether and how contaminated material from soil or groundwater may enter the sewer. Sunoco's remediation efforts since the early 1990s appear to have reduced the occurrence of such discharges, but the potential for future discharges has not been eliminated. DEP requests that Sunoco should take these comments into account as they prepare the Cleanup Plan and the Post-Remediation Care program for AOI-8.

3. Appendix I contains a timeline and details concerning Sunoco's efforts to investigate the possible sources of oil to the Jackson Street Sewer. This Appendix mentions that in 2005 Sunoco "…blanked off [a] pipe located at the western end of the sewer which was discharging NAPL into [the] sewer." This work was apparently a significant remediation achievement. However, DEP is unable to find contemporaneous documentation of this achievement in our files. We request that Sunoco provide additional documented of this work for our information.

4. Section 2.5 discusses a 2009 sewer air sampling event in the Jackson Street Sewer. This information is mentioned again in Section 3.8 and Section 5.5. In Section 5.5, Sunoco concludes that "… the water curtain is effectively controlling vapor migration from the sewer." DEP does not agree. The conclusion is not supported by the evidence. The 2009 sampling effort was aimed at investigating the chronic but occasional odor problem in the Jackson Street sewer, documented between 2002 and 2008. DEP believes that this single sampling event, cited in this Report to demonstrate the effectiveness of the water curtain, is not conclusive. DEP's files contain documentation of another data set produced by Sunoco in July and August, 2006 that consists of periodic meter readings for ionizable vapor from two manholes, one on either side of the water curtain. This data spans several weeks of time, and shows how the vapor

concentrations in different parts of the sewer can vary over time. It also shows that organic vapor concentrations often appear on both sides of the water curtain. [We note that this focused effort in 2006 to collect data about vapor in the sewer should be included in the timeline provided in Appendix I.] There remains uncertainty concerning why there appear to be highly variable concentrations of vapor in the sewer, and about the variable conditions of pressure that could affect the movement of air and vapors in the sewer. Taken all together, the evidence suggests that, while the water curtain appears to be useful in limiting the migration of sewer vapors, it is not a perfectly reliable solution to the problem of vapor migration in the sewer. DEP requests that Sunoco should take these comments into account as they prepare the Cleanup Plan and the Post-Remediation Care program for AOI-8.

5. Contaminants of concern (COC) found in soil are benzene, benzo(a)pyrene, naphthalene and lead. Based on the current and future intended non-residential use, site investigation was conducted for shallow soil only (0-2ft). Exposure assessment was also conducted for the COC that were above the non-residential direct contact MSCs found in shallow soil. The potential direct contact pathway for soil greater than two feet is described as incomplete based on Sunoco's existing permitting procedure (OSHA and personal protective equipment, PPE). . The PRCP may need to incorporate this internal permit procedure. Please also note that a future termination of the existing Sunoco internal permit procedure may become a reopener of an Act 2 release. In order for site soil to be eligible for a release of liability under Act 2, additional soil investigation will be required for the 2-15 ft. interval (or soil to groundwater interface for the current scenario). Please follow the TGM on how to select a Cleanup Standard for soil medium for the non-residential scenario. Furthermore, the soil to groundwater pathway was not evaluated. The release of liability under Act 2 for soil will be granted only for those areas that has been investigated and remediated.

6. The sheet pile bulkhead should be recognized as an engineering control; therefore a Post Remediation Care Plan must be developed for the sheet pile bulkhead that will include periodic inspection for the structural integrity of the bulkhead. The UECA for AOI-5 will ultimately require compliance with the PRCP for the bulkhead and other areas with engineering controls.

7. The LNAPL thickness at Monitoring well (N-112) is 3.2 ft. and at the most installed Monitoring well (N-125) is 2.89 ft.. Further delineation in the vicinity of the locations of the aforementioned wells is required to determine the extent of the LNAPL. Results of the LNAPL delineation and proposed recovery must be documented in the RIR/Cleanup Plan.

8. The following comments are offered on the review of the Risk Assessment Section (Appendix K) of the RIR ;

- Page No. 4 is missing.
- Units in Table K-1 are incorrect for TR (should be unitless) and for IF (should be mg-yr/Kg-hr).
- Units in Table K-2 are incorrect for RFD (should be mg/kg-day) and for CF (should be mg/kg).
- Units in Table K-3 are incorrect for CF (should be mg/kg) and for TR (should be unitless).
- In Table K-5, the maximum Naphthalene concentration is 15 mg/kg which is well below the MSC of 56,000 mg/kg. If the SSS is the only selected standard, then screening site data against the MSC in the risk assessment process is not allowed.