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File No. 2199.9285

Mr. Mike McClelland
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Subject: Comments on Storm Sewer Study Report, Alameda Point, Alameda, California

The Regional Water Quality Control Board staff has received and reviewed the document titled *Storm Sewer Study Report, Alameda Point, Alameda, California* dated September 1999. In general, we find that the report does not adequately address our agency's concerns regarding migration of polluted groundwater into San Francisco Bay via the storm drain system at Alameda Point (facility). In addition, there is insufficient information presented in the report to allow development of an interim remedy for the pollution that is migrating through the system. We believe that the groundwater/storm water pathway is among the most threatening at the site and that several additional factors must be considered in order to adequately assess the potential risks and determine a feasible remedy. With these concerns in mind, we offer the following comments on the subject report:

1. The report lacks a reasonable overview of the existing data. The report should seek to make the best use of the historical chemical data including storm drain sediment data and storm water sampling data. It is reasonable to expect that some areas where sediments contained high concentrations of pollutants may have been subject to influx of polluted groundwater that subsequently partitioned into the sediment phase. Based on a comparison of the sediment data to the groundwater data, one could assign a high likelihood that groundwater is impacting the storm drain system in the areas where such conditions exist(ed). To facilitate this analysis the groundwater data, sediment data, and storm drain locations should be plotted on maps.
2. An evaluation and presentation of the National Pollutant Discharge Elimination System (NPDES) storm water monitoring data for the facility is necessary to ensure that no trends were observed in the NPDES monitoring data that would indicate an ongoing water quality impact posed by migrating polluted groundwater.
3. The assumption that the existing groundwater data represent stable conditions is unsupported by the analysis. While we envision that an interim remedy will result from application of the storm drain pathway analysis, it would be shortsighted and insufficiently protective to not extrapolate groundwater conditions into the foreseeable future and assess potential future impacts to the storm drain system. In addition, for those locations where the potential for discharge is based on a single sample, we recommend that these areas be identified as candidate sites for additional characterization.

To further guide interpretation of the potential for volatile organic chemical (VOC) plumes to impinge on the storm drain system, we refer you to the Lawrence Livermore National Laboratory document titled *Historical Case Analysis of Chlorinated Volatile Organic Compound Plumes* dated March 8, 1999. This document provides a population level analysis of the potential for VOC plume migration, relying upon the distance from the source rather than from the leading edge of the plume. Although limited analysis of the VOC plumes at the site has been provided to date, it appears that sufficient information exists to develop a simplified relationship between source strength and plume length that would be more supportable than a simplified 50 foot "buffer" from a groundwater sample location.

4. Because the storm sewer system served as the industrial wastewater conveyance system prior to the facility's connection to sanitary sewerage, there is significant potential that pollutants discharged into the system may have impacted surrounding soil and groundwater. There are numerous examples in our region where VOC impacts to soil and groundwater have occurred as a result of discharges to sewers. For this reason, we recommend that those portions of the system that were located downstream of industrial wastewater inputs be more thoroughly evaluated as potential line sources of pollution using existing chemical data where available and additional soil and groundwater characterization data as necessary.
5. The absence of water in the storm drains during dry weather in no way indicates that a discharge of polluted groundwater has not or will not occur during periods when groundwater elevations are above the invert of the storm drain piping. In order to focus remedial efforts on those sites where the storm drain pathway is most pertinent, it seems prudent to better evaluate the relationships between storm drain and groundwater elevations. This analysis could potentially eliminate the storm drain pathway for some sites and highlight concerns for other sites, thus allowing cleanup to be better tailored to the actual site conditions.
6. Based on our experience, even minor flaws in sewer lines can result in significant infiltration/exfiltration of pollution. For this reason, we do not concur with the Navy's assertion that migration control should be attempted only where storm sewer lines appear "unsound". Given the age of the infrastructure at the facility it seems likely that, excepting those areas that have been repaired in the recent past, most of the system would be susceptible to impacts from shallow groundwater plumes. For this reason we recommend that for those sites where groundwater pollution plumes are in close proximity to the storm drain system a plan be developed to sample storm water at the nearest downstream storm drain access points. This sampling should be conducted in a

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manner that can represent conditions over a full hydrologic cycle. For those sites where the potential for discharge of pollution is significant, we would encourage additional subsurface characterization and the employment of automated samplers within the storm drains to provide a more accurate depiction of conditions at the site.

7. In those locations where shallow groundwater plumes have or likely will impinge upon storm drains, we recommend that the backfill for the storm drains also be evaluated as a preferential pathway. In those cases where further investigation indicates that the drains are located within gravel envelopes, we believe that engineered controls will be necessary to prevent further migration of pollution.
8. Oily discharges to the storm drain system are a critical concern. For this reason, we believe that the data contained in the document titled Draft Preliminary Site Characterization Prior to Fuel Pipeline Removal or Closure in Place for Alameda Point, Alameda, California dated October 20, 1999 should be evaluated in context to the threat to storm drain system.

Should you have any questions on this matter please do not hesitate to contact me at (510)-382-0541.

Sincerely,



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