

6.0 CONCLUSIONS AND RECOMMENDATIONS

This section presents conclusions and recommendations for the Site based on the findings of the IEC investigation. The conclusions focus on the conditions that exist at the Site that could possibly pose an acute, direct threat to human health. These conclusions are supported by the data generated and evaluated during the investigation, as well as information obtained in the background review.

6.1 IMMEDIATE ENVIRONMENTAL CONCERN

Based on the results of the analyses of the potable well, soil, surface water, sediment, leachate, and soil gas samples collected, current conditions at the Site do not pose an Immediate Environmental Concern (IEC) according to the SOP attached to the January 1995 NJDEP memorandum. The following sections detail the findings for the three basic types of IECs identified in the SOP.

6.1.1 Potable Water

None of the conditions for potable water IEC, as stated in Section 1.0, exists in the area surrounding the Site. All potable wells tested were within either USEPA or NJDEP Drinking Water Standards for primary contaminants. Potable wells 10MR and 27MR exceeded the secondary Drinking Water standard for sodium only. Secondary Drinking Water Standards are not regulated criteria, but indicate contaminants that require further study by the EPA. The sodium intake from water is not a concern for healthy individuals, but may be a concern to individuals on a sodium-restricted diet. Notification of the results obtained from these samples was sent to both the owners of the wells and the local Health Department. These wells are located southeast of the landfill and the groundwater flow directions in the area are believed to be in this direction. It is possible that the source of the sodium is due to contaminant migration from the landfill; however, it is also possible that these homes contain water-softeners that increase the sodium content of the water. Efforts to contact the homeowners to verify this were unsuccessful.

6.1.2 Direct Contact

The analytical results for the soil samples collected at the Site indicate that there are no current conditions present for a Direct Contact IEC from soils. The detections of PAHs in soil sample SO-3 are all marginally above the NJDEP RDCSCC or NRDCSCC. However, these PAHs are considered to be typical of landfilled and/or historic filled sites. The lead concentration detected in soil sample SO-2 slightly exceeds the NRDCSCC, but is considerably above the RDCSCC.

However, as any direct contact at the Site is more likely the result of an occasional occurrence rather than long-term exposure, we believe that the NRDSCC exposure risk is the more applicable criteria. Furthermore, under a trespasser exposure scenario, the potential for dermal contact with contaminated surficial soil and/or waste material at the landfill that could result in an acute human health impact is negligible; the potential for ingestion or inhalation is also negligible. Therefore, in accordance with the January 1995 NJDEP memorandum, these conditions do not pose a potential direct contact impact for human exposure. The analytical results for the sediment samples indicate that there are no exceedances of the RDCSCC or NRDCSCC.

The analytical results for surface water samples indicate that there is no immediate current concern for direct contact through this media. The analytical results for leachate samples indicate that there are two marginal exceedances of the SWQs for benzene (LO-3) and nitrate (LO-4). Although human contact is possible at these leachate locations, the potential exposure hazard would be through ingestion of the water or leachate. We believe that the potential for such ingestion is remote and would not result from normal activities that would occur on the Site. The surface water sample results also indicate that the leachate from the landfill does not have a significant impact on downgradient surface waters. We conclude therefore, that there is no IEC condition, from a human health perspective, posed by surface water or leachate at the Site.

6.1.3 Toxic or Harmful Gas Exposure

The results of the soil gas survey indicate that there is no condition around the perimeter of the Site in which subsurface contaminants have migrated into an occupied or confined space producing a toxic or harmful gas that could result in an acute or short-term human health exposure, produces an oxygen deficient atmosphere, or results in physical damage to essential underground services. The gas results reported for this IECA were obtained from probes that were driven 2 feet into the soil. The measurements represent these subsurface conditions and are not indicative of conditions above or at the surface of the landfill. We do not believe that the subsurface LEL readings would provide a potential for explosive or toxic conditions to exist at the surface of the landfill under normal activities, as no confined or occupied spaces exist at the Site. Although the samples collected from the interior landfill area show higher concentrations of gases, such as methane, these are typical of solid waste landfills and do not appear to have affected conditions at the perimeter of the Site. As the perimeter areas are those that would most likely result in either on-Site contact or off-site migration, we conclude that there is no toxic or harmful gas exposure IEC.

6.1.4 Additional Investigations

The results of the groundwater samples indicate that only ammonia exceeds the Interim Groundwater Quality Standards (IGWQS); all other parameters were within the NJDEP GWQS or IGWQS. Groundwater does not pose a potential human health impact through direct contact and does not appear to be impacting nearby potable wells.

6.2 RECOMMENDATIONS

Based on the results of the analyses of the potable well, soil, surface water, sediment, leachate, and soil gas samples collected, no conditions were found to exist at the site that pose an acute, immediate direct threat to human health. Accordingly, this Site does not pose an Immediate Environmental Concern (IEC) as defined by NJDEP. We do, however, recommend that periodic sampling of the potable wells near the Site be performed and that the analytical protocol include the landfill parameters.