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TCE Site in Hudson County, New Jersey

INTEX is in charge of an investigation of groundwater contamination at a former specialty gas manufacturing facility. The site has been the subject of numerous remedial investigations and remedial actions since the original ISRA (at the time ECRA) triggered in the early 1990s. The remaining environmental issue at the site over the past several years has been the presence of volatile organic compounds, principally trichloroethene (TCE) and related compounds, in the on-site monitoring wells. Most recently, INTEX supervised the drilling of soil borings and monitoring wells to investigate groundwater flow direction and the horizontal and vertical extent of the groundwater contamination.

Several monitoring wells were installed on the site and the first five sampling events, detected low levels of TCE and 1,1,1-trichloroethane (1,1,1-TCA) at maximum concentrations of 14 ug/l. Overtime concentrations of TCE increased significantly to 4,300 ug/l and 3,300 ug/l. Five additional monitoring wells were later installed. One well located off-site, detected concentrations of TCE ranging from 790 ug/l to 7,800 ug/l.

The complicated hydraulic gradients present at the site and the fact that no two gradient configurations were the same suggested either an influence by the tides, or effects of isolated or micro-hydrogeologic environments on the site, such as sand or clay lenses of limited areal extent. In an effort to determine the magnitude of any tidal effects, an investigation was implemented. Continuous water level recorders were placed in wells and these wells were recorded by electronic data loggers at 10 minute intervals for 71 hours.

In general, the Remedial Investigation Report concluded that the shallow groundwater on the site was affected by the tides, but to a small degree. The most significant findings of the investigation were that water level changes in one well were many times larger than in the other wells, and that a well, previously thought to be the farthest downgradient well on the site, was upgradient of the site during the 71 hour monitoring period. This occurrence documented the fact that periodic gradient reversals occur on the site, and that it is possible for an off-site contamination source to enter the site from the west as well as the east.

The Remedial Investigation Report to document the continued investigation of groundwater contamination is currently under review at NJDEP. It is anticipated that a Remedial Action Workplan will be prepared along with a Remedial Action Selection Report and Implementation with the final issuance of a Remedial Action Outcome (RAO) under the direction of INTEX's LSRP.