

#### **4. Surface and Subsurface Environmental Conditions**

Phase 1 Environmental Site Assessments were prepared for the project site by ERM and are provided in Appendix C, and summarized below.

Information on the environmental setting is based on United States Department of Agriculture (USDA) Natural Resource Conservation Service various geologic and hydrogeologic studies of Long Island, specifically the Town of Brookhaven. The current environmental conditions are based on Phase 1 Environmental Site Assessments (ESAs) performed in accordance with American Society of Testing Materials (ASTM) E 1527-05 Standard Practice for Environmental Site Assessment: Phase I Environmental Site Assessment Process. The four Phase I ESAs for Areas A, B, C and D are provided in Appendix C.

The environmental condition of the ±278 acres in the Town of Brookhaven, hamlet of Yaphank which constitutes the project area was evaluated by performing a Phase I ESA. Four distinct Phase I ESAs were completed for each of the designated Areas that comprise the area. Figure 1-1 depicts each of the four areas (A through D). Although Phase I ESA's were not performed at the areas proposed for SCDPW relocation (Area E) and STP expansion (Area F), these areas were visually inspected from the perimeter and pertinent observations of potential environmental conditions are included in this draft GEIS.

The Phase I ESAs were conducted to evaluate and identify conditions indicative of releases and threatened releases of hazardous substances and petroleum products on, at, in or to, the four Areas that comprise the ±282 acres of surplus land that is defined as the project area. The Phase I ESAs sought to gather information regarding:

- (1) current and past property users and occupancies;
- (2) current and past users of hazardous substances and petroleum products;
- (3) waste management and disposal activities that could have caused a release or threatened release of hazardous substances;
- (4) current and past corrective actions and response activities to address past and on-going releases of hazardous substances at the subject property;
- (5) engineering controls at the subject property;
- (6) institutional controls at the subject property; and

- (7) properties adjoining or located near the subject property that have environmental conditions that could have resulted in conditions indicative of releases or threatened releases of hazardous substances to the subject property.

The scope of Phase I ESAs included:

- On-site inspections of each Area to evaluate current conditions and identify areas of potential concern;
- Review of Area and area-wide history through interviews, including review of any available historical document sources;
- Observation of adjacent properties and the local area to evaluate the potential for adverse environmental impact to the Area;
- Interviews/research of local city/county, tribal, state, and federal records, including contracting of Environmental Data Resources, Inc. (EDR) to identify regulatory listed sites as required in the regulatory records review section of the ASTM standard for Phase I ESAs, where available; and
- Interviews and/or requests for information from the User and Area owner, as deemed appropriate by the Environmental Professional (EP).

With respect to environmental conditions, the Phase I ESA for each Area makes one or more of the following determinations:

- Recognized Environmental Condition (REC): “The presence or likely presence of hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property...The term is not intended to include de minimis conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.”
- Historical REC: “...an environmental condition which in the past would have been considered a recognized environmental condition, but may or may not be considered a recognized environmental condition currently.”

- de minimis condition: issues that are not considered RECs and “...generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.”
- Data gap: “lack of, or inability to, obtain information required by this practice despite good faith efforts by the EP to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice, including, but not limited to site reconnaissance (for example, an inability to conduct the site visit), and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.). The Phase I ESA shall identify and comment on significant data gaps that affect the ability of the EP to identify recognized environmental conditions and identify the sources of information that were consulted to address the data gaps.”
- Data failure: occurs “when all of the standard historical sources that are reasonably ascertainable [within the User-prescribed timeframe] and likely to be useful have been reviewed and yet the objectives have not been met. Data failure is not uncommon in trying to identify the use of the property at five year intervals back to first use or 1940 (whichever is earlier). Notwithstanding a data failure, standard historical sources may be excluded if: (1) the sources are not reasonably ascertainable, or (2) if past experience indicates that the sources are not likely to be sufficiently useful, accurate, or complete in terms of satisfying the objectives.”

#### **4.1. Area A Environmental Conditions**

Area A is a ±34 acre irregular shaped Area of land located in the Town of Brookhaven, New York, approximately 200 feet south of the Long Island Expressway (Interstate-495) and adjacent to Yaphank Avenue (County Road 21). The general location of Area A and surrounding area physiographic features are shown on Figure 4-1.

Land use in the area of the Area A includes residential, agricultural, and commercial zoning. The adjacent properties and nearby land use, as during the inspection were as follows:

- North: Expressway Drive South and beyond by the Long Island Expressway (Interstate-495). A cemetery is located to the northeast of Area A;
- South: Suffolk County Offices (Board of Elections);

- East: vacant undeveloped land; and
- West: Yaphank Avenue and beyond by the Suffolk County Infirmiry.

Based on observations during the inspection, the closest residence is located approximately 850 feet southeast of Area A on Park Street. No visual evidence of environmental concerns was observed on immediately surrounding properties.

Area A is located at an elevation ranging from approximately 38-55 feet above mean sea level, and is gently sloping to the south-southeast. The overall topographic trend of the surrounding area is also south-southeast towards Carmans River. According to the EDR report, Area A is not located within a wetland delineated area or the 100 or 500-year flood plains.

Groundwater underlying Area A is encountered at approximately 12 to 62 feet below grade. The predominant groundwater flow direction is from the west to the east as shown in Figure 5-5. Based on the predominant groundwater flow direction, residential properties to the east are located hydraulically cross-gradient of Area A.

The following RECs were identified at Area A:

- Underground Storage Tank (UST): During the site reconnaissance a concrete pad and vent pipes were observed on the eastern side of the Highway Garage / Crew Shop (CO0382) building. In May of 2008, the SCDHS issued an Order on Consent (T8-08-550) to the SCDPW for this 2,500-gallon fuel oil UST installed in 1993. Said Order on Consent states that the facility failed to remove the UST within 90 days after it was declared abandoned, taken out of service and/or not in use, according to SCDHS Article 12 requirements. The UST has not been properly abandoned since issuance of the 2008 Order on Consent. In addition the UST has not been tightness tested since the building was converted to natural gas heat.
- On-site Septic Systems: Wastewater discharges from Area A consist of sanitary wastewater from the buildings, restrooms, and general cleaning. The Cottage/Maintenance Office (CO0161) and Highway Garage/Crew Shop (CO382) are serviced by on-site septic systems located on the east and south sides, respectively. The location of the on-site septic systems servicing Highway Garage and Paint Shop (CO021) and Sanitation/Mason Shop/ Garage (CO502) could not be determined.

These buildings may be connected to the Yaphank sewer system. Based on the history of operations (paint storage, vehicle maintenance activities, etc) at the site as well as the observed poor housekeeping practices (staining on the floors of the repair shops, within the slop sink of the highway garage, and paint stains on the floor of the paint shop), the potential exists for discharges to the septic systems. This potential represents a REC that could have impacted the environmental quality at Area A.

- Storm Water Dry Wells: Storm water runoff generated from the paved parking/access areas travels as sheet flow and is discharged into drywells located in the parking lot. Based upon the volume of equipment stored on-site, the staining observed in the paved areas of Area A, and observed poor housekeeping practices (staining observed on floor and within sinks), there is a potential that accidental spills and equipment leaks could have entered the subsurface via the on-site drywells.
- Paint Building Drywells: Two internal drywells were observed within the Highway Garage and Paint Shop (CO021) building. Staining (oil, grease, and paint) was observed proximal to said internal drywells. Based on the paint storage and winter vehicle maintenance activities within the building, the potential exists for discharges to the soil beneath the building. This potential represents a REC that could have impacted the environmental quality at Area A.

#### **4.2. Area B Environmental Conditions**

Area B is a ±123 acre rectangular Area of land is located in the Town of Brookhaven, New York, approximately 1/3-mile south of the Long Island Expressway (Interstate-495) and 1/4-mile west of Yaphank Avenue (County Road 21). The general location of Area B and the surrounding area physiographic features are shown on Figure 4-2.

Land use in the area of Area B includes residential, agricultural, and commercial zoning. The adjacent properties and nearby land use, as observed during the inspection were as follows:

- North: Long Island Railroad (LIRR) and the Suffolk County Farm;
- South: vacant undeveloped land, Suffolk County Minimal Correction Facility, and the John J. Foley Nursing Facility;
- East: Suffolk County Police Headquarters; and

- West: undeveloped vacant land.

Based on observations during the inspection, the closest residence is located to the southeast of Area B beyond Yaphank Avenue. No visual evidence of environmental concerns was observed on immediately surrounding properties.

Area B is located at an elevation ranging from approximately 48-98 feet above mean sea level, and is gently sloping to the south-southeast. The overall topographic trend of the surrounding area is also south-southeast towards Carmans River. According to the EDR report, Area B is not located within a wetland delineated area or the 100 or 500-year flood plains.

Groundwater underlying Area B is encountered at approximately 10 to 43 feet below grade. The predominant groundwater flow direction is from the north-northwest to the south-southeast (toward Yaphank Creek and Carmans River) as shown in Figure 5-5. Based on the predominant groundwater flow direction, residential properties to the east are located hydraulically cross-gradient of Area B.

The following RECs were identified at Area B:

- Target Practice Area: An area (160 feet by 175 feet) in the southeastern portion of Area B was observed to be cleared of trees from review of from aerial photographs. Upon further investigation during the site reconnaissance, it was discovered that the area was being used for target practice. A large number of shotgun shell casings and fractured clay pigeons targets were present in this area, indicating fairly regular use by hunters and skeet shooters. Based on review of material safety data sheets (MSDS), shotgun shell casings may contain heavy metals (lead, brass, and zinc) and fractured clay pigeons targets (based upon review of MSDS) may contain polycyclic aromatic hydro-carbons (PAHs). Consequently, the use of Area B for target practice and related hunting activities may have resulted in environmental impacts, particularly at the location where these activities occurred.
- Groundwater Plume: A groundwater investigation by the SCDHS in 1998 determined that a tetrachlorethene (PCE) plume extends 1.9 miles, originating near Sills Road and Long Island Avenue (migrating in an east-southeast direction) towards Southaven Park and the Carmans River. The PCE plume is approximately 800 feet in width and has a maximum depth of 90 feet thick at Yaphank Avenue. The highest PCE

concentration of 180 ug/L was detected 80 feet below the water table at Yaphank Avenue. The PCE groundwater plume flows beneath the southwestern portion of Area B. Based on the documented groundwater impacts and location of the plume of contamination in proximity to Area B, potential for impacts to soil vapor at Area B cannot be ruled out.

In addition to the above RECs, the following de minimis or other potential issues were identified:

- During the site reconnaissance, several types of debris were observed throughout Area B. Said debris included discarded tires, bricks, wood, stone, and metal, etc. There was no visual evidence of petroleum or chemical impacts to the debris. On Long Island, the NYSDEC investigates any illegal dumping of waste materials of unknown origin and the property owner is required to follow proper regulatory procedures for addressing the unauthorized disposal of these types of materials under guidance by the NYSDEC.

#### **4.3. Area C Environmental Conditions**

Area C is a 30± acre rectangular Area of land is located in the Town of Brookhaven, New York, approximately 0.75-mile south of the Long Island Expressway (Interstate-495) and 0.6-mile west of Yaphank Avenue (County Road 21). The general location of Area C and surrounding area physiographic features are shown on Figure 4-3.

Land use in the area of Area C includes residential, agricultural, and commercial zoning. The adjacent properties and nearby land use, as observed during the inspection were as follows:

- North: vacant undeveloped land and beyond by the Long Island Railroad (LIRR);
- South: The New York Pyrotechnics Product Corp (also known as the Grucci Firework Facility) to the southwest and vacant undeveloped land to the southeast;
- East: Suffolk County Minimal Correction Facility and the John J. Foley Nursing Facility; and,
- West: undeveloped vacant land.

Based on observations during the inspection, the closest residence is located to the east of Area C beyond Yaphank Avenue. No visual evidence of environmental concerns was observed on immediately surrounding properties.

Area C is located at an elevation ranging from approximately 45-95 feet above mean sea level, and is gently sloping to the south-southeast. The overall topographic trend of the surrounding area is also south-southeast towards Carmans River. According to the EDR report, Area C is not located within a wetland delineated area or the 100 or 500-year flood plains.

Groundwater underlying Area C is encountered at approximately 16 to 66 feet below grade. The predominant groundwater flow direction is from the north-northwest to the south-southeast (toward Yaphank Creek and Carmans River) as shown in Figure 5-5. Based on the predominant groundwater flow direction, residential properties to the east are located hydraulically cross-gradient of Area C.

The following RECs were identified at Area C:

- Groundwater Plume: From a review of the plume investigation performed in 1998, it appears the PCE plume is located beneath northeast portion of Area C. The data from the investigation indicated that the source of the PCE plume was in the vicinity of Sills Road and Long Island Avenue, south of Long Island Expressway Exit 66. The PCE source was most likely a short term release, possibly roadside dumping. It is very likely the PCE plume has impacted the groundwater at Area C. In addition, due to the presence of PCE in groundwater, there is potential for PCE vapors to migrate from the groundwater plume to overlying soils in the form of soil vapor.

In addition to the above RECs, the following de minimis or other potential issues were identified:

- During the site reconnaissance, several types of debris were observed throughout Area C. Said debris included discarded tires, bricks, wood, stone, and metal, etc. There was no visual evidence of petroleum or chemical impacts to the debris. On Long Island, the NYSDEC investigates any illegal dumping of waste materials of unknown origin and the property owner is required to follow proper regulatory procedures for addressing the unauthorized disposal of these types of materials under oversight by the NYSDEC.

#### **4.4. Area D Environmental Conditions**

Area D is a 95± acre lateral double-rectangular Area of land is located in the Town of Brookhaven, New York, approximately 1-mile south of the Long Island Expressway (Interstate-495) and 1/2-mile west of Yaphank Avenue (County Road 21). The general location of Area D and the surrounding area physiographic features are shown on Figure 4-4.

Land use in the area of Area D includes residential, agricultural, and commercial zoning. The adjacent properties and nearby land use, as observed during the inspection were as follows:

- North: vacant undeveloped land;
- South: Horseblock Road and beyond by the Town of Brookhaven Landfill;
- East: vacant undeveloped land and Suffolk County buildings; and,
- West: The New York Pyrotechnics Product Corp (also known as the Grucci Firework Facility) and undeveloped vacant land.

Based on the inspection, the closest residence is located approximately 2,500 feet east of Area D on Yaphank Avenue. No visual evidence of environmental concerns was observed on immediately surrounding properties.

Area D is located at an elevation ranging from approximately 35-55 feet above mean sea level, and is gently sloping to the south-southeast. The overall topographic trend of the surrounding area is also south-southeast towards Carmans River. According to the EDR report, Area D is not located within a wetland delineated area or the 100 or 500-year flood plains.

Groundwater underlying Area D is encountered at approximately 8 to 18 feet below grade. The predominant groundwater flow direction is from the north-northwest to the south-southeast (toward Yaphank Creek and Carmans River) as shown in Figure 5-5. Based on the predominant groundwater flow direction, residential properties to the east are located hydraulically cross-gradient of Area D.

The following RECs were identified at Area D:

- Target Practice Area: An area along the southern property boundary was discovered as being used for target practice. A large number of shotgun shell casings and fractured clay pigeons targets were present in this area, indicating fairly regular use by hunters and skeet shooters. Based on review of material safety data sheets (MSDS), shotgun shell casings may contain heavy metals (lead, brass, and zinc) and fractured clay pigeons targets may contain polycyclic aromatic hydro-carbons (PAHs). Consequently, the use of Area D for target practice and related hunting activities may have resulted in environmental impacts to soil, particularly at the location where these activities occurred.
- Groundwater Plume: From a review of the perchlorate plume investigation performed in 2001, it appears the plume is located beneath a majority of Area D. As a result of plume delineation location, it is very likely the perchlorate plume has impacted the groundwater at Area D.

In addition to the above RECs, the following de minimis or other potential issues were identified:

- During the site reconnaissance, several types of debris were observed throughout Area D. Said debris included discarded tires, bricks, wood, stone, and metal, etc. There was no visual evidence of petroleum or chemical impacts to the debris. On Long Island, the NYSDEC investigates any illegal dumping of waste materials of unknown origin and the property owner is required to follow proper regulatory procedures for addressing the unauthorized disposal of these types of materials under oversight by the NYSDEC.

#### **4.5. Area E Environmental Conditions**

The area that is proposed for relocation of the SCDPW facility was traversed for visual inspection. This area, whose approximate location is shown in Figure 1-1, is approximately 800 feet by 800 feet in size. Groundwater underlying Area E is encountered at approximately 15 to 20 feet below grade. The predominant groundwater flow direction is from the north-northwest to the south-southeast (toward Yaphank Creek and Carmans River) as shown in Figure 5-5.

The proposed relocation area is located south of the Suffolk County Minimal Security Facility, north of the Yaphank Sewer Treatment Plant (Yaphank STP) and west of the

Suffolk County Firematics (practice area for fire fighter and rescue operations) and Probation offices. It is undeveloped forest mostly consisting of oak and pine scrub growth.

During the visual inspection of the proposed relocation area, several types of debris were observed. The debris included 55-gallon drums (appeared empty), concrete pillars, discarded tires, bricks, wood, stone, and metal, etc. Although there was no visual evidence of petroleum or chemical impacts to the debris, NYSDEC procedures typically warrant investigation of any illegal dumping of waste materials of unknown origin and the property owner is required to follow proper regulatory procedures for addressing the unauthorized disposal of these types of materials under guidance by the NYSDEC.

#### **4.6. Area F Environmental Conditions**

The area that is proposed for expansion of the Yaphank STP was traversed for visual inspection. This area, whose approximate location is shown in Figure 1-1, is approximately 800 feet by 800 feet in size. Groundwater underlying Area F is encountered at approximately 13 to 18 feet below grade. The predominant groundwater flow direction is from the north-northwest to the south-southeast (toward Yaphank Creek and Carmans River) as shown in Figure 5-5.

The proposed STP expansion area is located south of the Suffolk County Firematics (practice area for fire fighter and rescue operations) and Probation offices and east of the current Yaphank STP. It is undeveloped forest mostly consisting of oak and pine scrub growth.

During the visual inspection, several types of debris were observed on the proposed STP expansion area. The debris included over one-hundred 55-gallon drums, discarded tires, wood, bricks, stone, and metal, etc. Some of the debris appeared to be charred and burnt, however, no visual evidence of petroleum or chemical impacts to the soil were evident. It appeared from the inspection that the area is used to simulated firefighting operations/activities. To the extent this activity involves the ignition of flammable materials to simulate fires for training purposes, there is potential for environmental impacts to soil and subsurface in this area. Fire training involving ignition of flammable materials in open ground areas have been known to result in adverse environmental conditions.

#### **4.7. Nearby Air Emission Sources**

A search of facilities with air emission sources within the vicinity of the project site was performed for the Town of Yaphank (Zip Code 11980) using the EPA's Enforcement & Compliance History Online (ECHO) Database. The database includes National Emissions Inventory data and identifies inspection, violation, and enforcement actions under the Clean Air Act.

Based on review of the database report (updated 12/11/2010), there are a total of eight facilities identified as stationary sources of air emissions in the general vicinity of the project site. Of these eight facilities, six were identified as minor sources of air pollution with no reported compliance violations within the previous three years. Two facilities were identified as major sources (i.e., having potential and/or actual emissions above the major source thresholds) both having reported regulatory violations and/or compliance orders within the previous five years. These facilities are discussed below.

The Brookhaven Landfill & Recycling Area is located approximately ¼-mile to the south of the project site. The facility is a major source of air pollution including hazardous air pollutants (HAP). The facility received an Administrative Compliance Order (ACO) from the EPA for failure to comply with a condition in its Title V Operating Permit that required the facility to complete the construction and start operating a sulfur control system. The compliance violation was closed in September 2009. According to the ECHO database, a Notice of Violation was issued in May 2010, however the nature of the violation and the current compliance status was not reported.

The Caithness Long Island Energy Center is located approximately ¼- mile to the west of the project site. The facility is reportedly a major source of air pollution including oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC). The facility received a Notice of Violation and Administrative Compliance Order in 2009 because the facility failed to comply with its permit emission limits for some potential operating scenarios including when the combustion turbine is firing on distillate oil with supplemental firing of the duct burner on natural gas. This ACO requires Caithness to conduct and report on performance tests by January 31, 2010 in order to demonstrate compliance with these operating scenarios and prohibits the facility from operating in these modes until compliance has been demonstrated. No additional information on the status of the violation was reported.

#### **4.8. Proposed Mitigation**

The Selected Developer will investigate the identified RECs during the due diligence period. The Selected Developer will either utilize the Phase 1 Environmental Site Assessments prepared for this DGEIS or will prepare new Phase 1 Environmental Site Assessments, and if necessary, a Phase II environmental assessment during that time. Responsibility for remediation, if required, rests with the Selected Developer as the contract specifies that the purchase is in “As Is” condition. Remediation, if required, will be completed prior to and/or during project construction, as appropriate.







