

2.9-1 INTRODUCTION

This section of Chapter 2 discusses the potential for Project 1, Shaft and Bypass Tunnel Construction to result in significant adverse impacts related to hazardous materials. On the west connection site, Project 1 would entail demolition of certain existing structures and subsurface disturbance and dewatering. On the east connection site, Project 1 would entail limited demolition, removal, and renovation of existing structures and trailers as well as more limited subsurface disturbance and potentially dewatering. As described below, these activities would not result in any significant adverse impacts to workers or the surrounding communities. A variety of procedures would be implemented to manage hazardous materials (e.g., asbestos and lead-based paint) in existing structures on the west and east connection sites and any potential hazardous materials in the subsurface of the two connection sites as well as the dewatering pipeline route.

2.9-2 METHODOLOGY

The methodology used to determine the existing conditions, future conditions without Project 1, and potential hazardous materials impacts associated with Project 1 construction is described below.

The principal potential hazardous materials concerns during construction of Project 1, and therefore the associated hazardous materials study area, would be related to the shallow subsurface construction for shafts on the west and east connection sites and for the dewatering pipeline. Construction associated with the deeper portions of the shafts and with the bypass tunnel itself would not represent a significant concern as the potential sources of contamination on the west and east connection sites are limited to current and historical surface activities in the vicinity, and migration of potential hazardous materials from these uses to the tunnel depth is extremely unlikely. Typical contaminants released at the surface (e.g., those related to petroleum) rarely migrate farther than the depth of the water table which is several hundred feet above the tunnel depth.

To evaluate the potential presence of hazardous materials on the west and east connection sites and along the dewatering pipeline route, Phase I Environmental Site Assessments (ESAs) were

first performed. The industry standard and regulatory guideline for performing Phase I ESAs is known as ASTM E-1527-05. In summary, it is a non-ground-intrusive process used to identify “recognized environmental conditions” or RECs, i.e., “*the presence or likely presence of any 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.*” A Phase I ESA includes site reconnaissance, research on current/historical use, and review of federal and state regulatory listings for both the site itself and for its neighboring properties within certain specified distances.

Where a Phase I ESA finds evidence of RECs, a subsurface (also known as a Phase II) investigation is generally recommended. Unlike a Phase I ESA, which is limited to a visual inspection and review of paperwork or electronic information, a Phase II investigation typically includes laboratory analysis of soil and groundwater samples in the areas of potential disturbance. Both Phase I and Phase II studies also frequently include evaluation of non-REC issues typically associated with structures, e.g., asbestos-containing materials (ACM) or lead-based paint. Hazardous materials associated with existing structures must be addressed in accordance with established regulatory requirements, especially when buildings are being renovated or demolished.

For Project 1, as described in more detail below, Phase I ESAs conducted west of the Hudson River found evidence of RECs (as well as non-REC issues, such as ACM and lead-based paint) and recommended that subsurface investigations be performed to better understand the nature of potential contaminants on the west connection site and dewatering pipeline route. Phase II investigations were then undertaken for the west connection site. East of the Hudson, both a Phase I and a Phase II investigation have already been performed as part of a previous project, and results of these studies are presented below.

2.9-3 WEST OF HUDSON

2.9-3.1 EXISTING CONDITIONS—WEST OF HUDSON

WEST CONNECTION SITE

Phase I ESAs

The west connection site consists of five lots in the Town of Newburgh: tax parcels 8-1-15.2, 15.3, 16, 17, and 19.1 (see Figure 1-8 in Chapter 1, “Program Description,” and Section 2.2, “Land Use, Zoning, Public Policy, and Open Space,” which describes the current uses on these parcels).

Phase I ESAs were conducted for each of these lots in May and June 2011. RECs were identified on each of the lots, as follows:

- Current or historical fuel oil aboveground storage tanks (ASTs) associated with the residences or agricultural uses (tax parcels 8-1-15.3, 16 and 17). No signs of staining or leaks were noted near these tank locations; however the plywood floor of the shed on tax parcel 8-1-15.3 was stained in the vicinity of several automotive liquid containers. The area under the plywood could not be inspected.
- Debris, including: discarded metal piping, plastic containers, and common household debris (tax parcel 8-1-15.3); abandoned cars, tires, paint cans, oil cans, and empty 55-gallon drums in poor condition with signs of rusting and corrosion (tax parcel 8-1-16); large pieces of concrete rubble seemingly imported to the property (tax parcels 8-1- 15.2 and 19.1); several 55-gallon drums, including one appearing to be full of a petroleum product (tax parcel 8-1-19.1).
- Current or historical on-site septic systems and potable supply wells with no documentation of proper decommissioning (tax parcels 8-1-15.3, 16, 17, and 19.1).
- Prior agricultural use, with potential associated chemical/pesticide use (all five parcels).

Other non-REC issues identified included potential ACM and lead-based paint associated with existing or historical structures (all parcels except 8-1-15.2, though this lot may have included portions of structures primarily located on adjacent tax parcel 8-1-19.1).

Phase II Subsurface Investigations

These investigations included collection and laboratory analysis of soil and groundwater samples as well as testing for lead-based paint (LBP) and asbestos-containing materials (ACM) in existing structures. Soil sampling results were compared to 6 NYCRR Part 375-6 Residential Soil Cleanup Objectives (RSCOs): stringent criteria which are sometimes exceeded in background samples unaffected by spills or releases. Groundwater sampling results were compared to standards in 6 NYCRR Part 703 which assume use as a source of drinking water. A geophysical survey in three areas where petroleum underground storage tanks (USTs) were suspected found no evidence of USTs.

Tax Parcels 8-1-15.2 and 8-1-19.1

A total of 22 soil samples were collected at the two parcels as well as a groundwater samples from the property's well. Levels above RSCOs were found of various metals (including lead and chromium) and pesticides (including DDT) in debris samples, in the former drum storage area and to a lesser extent in former agricultural areas. The groundwater sample had levels of iron and aluminum above the groundwater standard, but these were likely naturally occurring.

Tax Parcel 8-1-15.3

Eleven soil samples were collected as well as a groundwater sample from the property's well. The metal arsenic was found at levels above RSCOs in the majority of soil samples but was likely attributable to site background conditions. The levels of lead and mercury in one soil sample slightly exceeded the RSCOs, but were well below the cleanup objectives for exposed

soils in commercial or industrial settings. No exceedances of groundwater standards were found. Lead-based paint was found, but sampling did not identify any ACM.

Tax Parcels 8-1-16 and 8-1-17

A total of 25 soil samples were collected at the two parcels as well as groundwater samples from each of the three wells. Levels above RSCOs in soil samples were found of various metals (including lead and chromium) and pesticides (including DDT). One of the wells on Lot 16 had a level of mercury above the groundwater standard. Other groundwater exceedances (for iron, aluminum and manganese) were likely naturally occurring. No exceedances of groundwater standards were found. Lead-based paint was found in the structures on both parcels, and ACM was found in the main house and in debris near the barn.

WATER MAIN EXTENSION AND DEWATERING PIPELINE

Subsequent to the issuance of the DEIS, DEP advanced the design of the dewatering pipeline that would be constructed from the west connection site to the Hudson River, selecting one dewatering pipeline route (Option 2 in the DEIS) as the only route further evaluated for the FEIS.

The anticipated routes of the dewatering pipeline (see Figure 1-10) from the west connection site (also the route of the anticipated water main extension) were examined for potential presence of hazardous materials by reviewing the regulatory databases per the requirements of an ASTM Phase I ESA. The typical historical fire insurance (e.g., Sanborn) mapping of the area to determine past uses along the dewatering pipeline routes does not exist, but analysis conducted for Section 2.5, “Historic and Archaeological Resources,” indicated the portion along Route 9W between the west connection site and Old Post Road was farmland until the road was constructed in the late 19th century. The section along Old Post Road is along the northern perimeter of a cemetery founded in 1865 and the remainder west of Danskammer Road had no historical industrial or other suspect uses. Beyond this point, Option 1 would cross the power plant facility and railroad tracks. Prior to these uses, this property included a brickworks. The analysis did not reveal any historical (i.e., before the power plant) industrial or other suspect uses along the route of Option 2.

The database review identified numerous sites in the vicinity of the dewatering pipeline routes, including some nearby uses with a higher potential to have caused subsurface contamination. In particular, the waterfront Roseton/Danskammer Generating Station, which extends from the waterfront to Danskammer Road/River Road, has numerous listings relating to petroleum spills and hazardous waste generation. Some of the spills have an “open” status indicating cleanup has not been completed. It should be noted that the actual locations of spills/waste generation at the Generating Station (which the anticipated routes would either cross or run along the boundary of) cannot be determined from the regulatory databases as reporting is generally limited to the facility address.

Other sites, also in the Town of Newburgh, included:

- A gas station at 5465 Route 9W—known petroleum releases.
- Kozaczek Bros. (automotive) facility at 5512 Route 9W—hazardous waste generator and likely discharges to drywell.
- The Danskammer Landfill (located northeast of the intersection of Danskammer Road and River Road)—potential groundwater contamination.

2.9-3.2 FUTURE WITHOUT PROJECT 1, SHAFT AND BYPASS TUNNEL CONSTRUCTION—WEST OF HUDSON

WEST CONNECTION SITE

This analysis assumes that without Project 1, Shaft and Bypass Tunnel Construction, the properties that comprise the west connection site would remain in their current condition. As with current conditions, there would be no significant risks from hazardous materials, though DEP would be responsible for complying with applicable regulatory requirements relating to ACM and lead-based paint for existing structures, should any buildings be reoccupied or demolished.

WATER MAIN EXTENSION AND DEWATERING PIPELINE

This analysis assumes that without Project 1, the water main extension and dewatering pipeline would not be built. Cleanup of existing petroleum spills by nearby property owners would continue if required by the New York State Department of Environmental Conservation (NYSDEC). As with current conditions, there would be no significant risks from hazardous materials in the future without Project 1.

2.9-3.3 PROBABLE IMPACTS OF PROJECT 1, SHAFT AND BYPASS TUNNEL CONSTRUCTION—WEST OF HUDSON

WEST CONNECTION SITE

As discussed in Section 2.1, “Description of Project 1, Shaft and Bypass Tunnel Construction,” Project 1 would entail demolition of the existing structures on the west connection site and subsurface disturbance associated with site regrading and construction of new utilities, building foundations, electrical substations, roads and parking areas, and the shaft itself. Dewatering would also be required.

To the extent that the soil or groundwater may be contaminated by past uses on the west connection site, construction activities could result in adverse impacts. However, to minimize the potential for such impacts, the following measures would be implemented as part of Project 1:

For Demolition

- All above-ground petroleum tanks would be closed and removed, along with any associated contaminated soil, in accordance with applicable requirements, including NYSDEC spill reporting requirements. If additional tanks are discovered, they would be properly registered, if required, with NYSDEC.
- An asbestos survey would be completed before demolition, and all ACM that would be disturbed by the demolition would be removed and disposed of in accordance with local, state, and federal requirements.
- Any demolition activities with the potential to disturb lead-based paint would be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62—Lead Exposure in Construction).
- Known or suspected PCB-containing fluorescent lighting fixtures, transformers, and other electrical equipment and fluorescent lights that could contain mercury would be disposed of in accordance with applicable federal, state, and local requirements.
- Disposal of any chemicals or empty drums would be in accordance with applicable requirements.

For Excavation and Subsurface Disturbance

- Before beginning excavation, the results of the Phase II subsurface investigations and any subsequent investigation and waste characterization testing would be used to prepare a site-specific ~~Remedial Action Plan (RAP)~~ and Construction Health and Safety Plan (CHASP) for implementation during construction. The scope of the ~~RAP/CHASP~~ would be submitted to DEP for review and approval. ~~The RAP would provide procedures for handling, stockpiling, testing, transportation, and disposal of excavated materials, including any unexpectedly encountered contaminated soil and petroleum storage tanks, in accordance with applicable regulatory requirements.~~ The CHASP would ensure that subsurface disturbance is performed in a manner protective of workers, the community, and the environment so as to minimize the potential for adverse impacts and would be in accordance with applicable OSHA requirements, including 29 CFR Parts 1910 and 1926. Before such related work is undertaken, required procedures for handling, stockpiling, testing, transportation, and disposal of excavated materials (including any unexpectedly encountered contaminated soil and petroleum storage tanks) would be identified in accordance with applicable regulatory requirements.
- All dewatering required during subsurface work would be performed in accordance with NYSDEC State Pollution Discharge Elimination System (SPDES) permitting requirements. If necessary, the water would be pretreated prior to discharge.
- All excavated rock, soil, or fill materials requiring off-site disposal would be handled and disposed of in accordance with applicable regulatory requirements. Should contaminated soil and/or petroleum tanks be encountered, applicable regulatory requirements (e.g.,

those relating to spill reporting and tank registration) would be followed to address removal of the tanks and any associated soil or groundwater contamination.

For Other Construction Activities

Project 1 would require the storage and use of a variety of petroleum and other chemical products, e.g., diesel fuel for back up power, lubricating oil for construction vehicles, dielectric fluid in substations, and miscellaneous cleaning and maintenance chemicals. The use and storage of all of these would be in accordance with applicable regulatory requirements including those relating to: federal Spill Prevention, Control, and Countermeasures (SPCC) requirements; and State petroleum bulk storage, chemical bulk storage (CBS) and spill reporting requirements.

WATER MAIN EXTENSION AND DEWATERING PIPELINE

As with construction activities on the west connection site, construction of the water main extension and dewatering pipeline could involve excavation and dewatering in soil and groundwater that was potentially contaminated by past uses near the pipeline route. Similar measures to those described above for the west connection site would be implemented before and during excavation to avoid impacts. A Phase II subsurface investigation would be performed once the exact location of the water main extension and dewatering pipeline is finalized, and a RAP/CHASP consistent with the findings of the Phase II would be developed to protect workers, the community, and the environment from any potential hazardous materials impacts.

2.9-4 EAST OF HUDSON

2.9-4.1 EXISTING CONDITIONS—EAST OF HUDSON

Existing conditions on the east connection site were evaluated based on site information gathered from the following sources:

- Revised Environmental Assessment (EA) for DEP's DEL-185 Tunnel and Shaft Rehabilitation Project (January 2007);
- Results of subsurface sampling conducted by Testwell, Inc. (March 2008). A total of 33 soil samples were collected and analyzed including two locations within the currently projected area of disturbance; and
- Regulatory databases and historic aerial photographs (Toxics Targeting, July 2011).

As described in the EA, the DEP-owned Shaft 6 facility located along the River Road in the Town of Wappinger includes the Shaft 6 building, the Hudson River Pump Station, an electrical substation, a storage building, and landscaped and forested areas. Regulatory databases indicate that the site has over the years generated small quantities of hazardous waste (primarily relating to disposal of old equipment, such as mercury-containing gauges) and reported several spills, including a 1996 overfill of a fuel oil tank; a 1997 release of a small amount of transformer oil; and small mercury spills in 1998, 1999, and 2001. All of these spills have a closed status,

indicating they were cleaned up to the satisfaction of NYSDEC. A 2004 Hazardous Materials Report for the Shaft 6 building identified the presence of ACM, lead-based paint, mercury, arsenic, and PCB-containing materials. The mercury and possibly PCBs were contained within thermostats and electrical/lighting equipment. PCBs were from liquids and solids in samples from the building's main sump. Sump waters are routinely removed from the sump and properly disposed of, eliminating the potential for contamination improperly leaving the facility.

Following the EA, 33 soil samples were collected and analyzed from the Shaft 6 property in 2008 to assess site conditions. Two of these sampling locations were within the currently projected area of disturbance. Laboratory analysis of samples from these two locations indicated no detectable volatile or semivolatile organic compounds (VOCs or SVOCs), pesticides, herbicides or polychlorinated biphenyls (PCBs) were present. In addition, levels of metals were generally well below the then NYSDEC guidelines (TAGM 4046), with the exception of some slight exceedances for chromium, nickel, and zinc. However, given the prior uses at the locations, these results most likely reflected natural conditions rather than a nearby release of hazardous materials. Laboratory analysis also indicated that none of the samples exceeded the thresholds associated with classification as a "hazardous waste."

Review of a 2011 regulatory database search and a 1968 historical aerial photograph did not indicate any significant additional hazardous materials concerns:

- Three additional closed-status spills (of small quantities of diesel fuel, antifreeze, and vegetable oil-based dye) were reported and cleaned up in 2008. Approximately 400 pounds of additional hazardous wastes were removed and disposed of off-site in both 2008 and 2010.
- The 1968 aerial photograph (the oldest available) showed only buildings still present at the Shaft 6 site, though additional structures have been constructed since. No uses likely to have resulted in hazardous material concerns were apparent in the vicinity.

2.9-4.2 FUTURE WITHOUT PROJECT 1, SHAFT AND BYPASS TUNNEL CONSTRUCTION—EAST OF HUDSON

This analysis assumes that without Project 1, the east connection site would remain in its current condition. As with current conditions, DEP would continue to operate the Shaft 6 facility in accordance with applicable regulatory requirements, and there would be no significant risks from hazardous materials.

2.9-4.3 PROBABLE IMPACTS OF PROJECT 1, SHAFT AND BYPASS TUNNEL CONSTRUCTION—EAST OF HUDSON

Project 1 would entail some demolition or removal of various existing structures on the east connection site (primarily limited to a building, trailers and storage containers). However, because of their recent age, these structures are not expected to contain ACM or lead-based paint). Subsurface disturbance would be required: associated with site regrading and construction

of new facilities, utilities, and building foundations, and modifications to roads and parking areas. Dewatering might be required for some of the construction.

To the extent that the soil or groundwater may be contaminated by past uses on the east connection site, construction activities could result in adverse impacts. However, to minimize the potential for such impacts, the following measures would be implemented as part of Project 1:

FOR DEMOLITION

- An asbestos survey would be completed before demolition, and all ACM that would be disturbed by Project 1 would be removed and disposed of in accordance with local, state, and federal requirements.
- Any activities with the potential to disturb lead-based paint would be performed in accordance with the applicable OSHA regulation (OSHA 29 CFR 1926.62—Lead Exposure in Construction).
- Known or suspected PCB-containing fluorescent lighting fixtures, transformers, and other electrical equipment and fluorescent lights that could contain mercury would be disposed of in accordance with applicable federal, state, and local requirements. Similarly, should disturbance or removal of arsenic, asbestos, lead-based paint, mercury, and/or PCB-containing contaminated surfaces be required, monitoring and appropriate disposal of these wastes and residues would follow applicable federal, state, and local regulations.

FOR EXCAVATION AND SUBSURFACE DISTURBANCE

- Even though the 2008 sampling program found no significant soil contamination on the east connection site or elsewhere on the larger existing Shaft 6 property, as a contingency to provide additional measures to protect workers and the public from potential impacts, additional soil and groundwater sampling would be conducted, focusing on areas where excavation would occur. Using the results of this investigation, a site-specific ~~RAP~~ and CHASP would then be prepared for implementation during construction. Both the scope of the investigation and the ~~RAP/CHASP~~ would be submitted to DEP for review and approval. ~~The RAP would provide procedures for handling, stockpiling, testing, transportation, and disposal of excavated materials, including any unexpectedly encountered contaminated soil, in accordance with applicable regulatory requirements.~~ The CHASP would ensure that subsurface disturbance is performed in a manner protective of workers, the community, and the environment and would be in accordance with applicable OSHA requirements, including 29 CFR Parts 1910 and 1926. Before such related work is undertaken, required procedures for handling, stockpiling, testing, transportation, and disposal of excavated materials (including any unexpectedly encountered contaminated soil and petroleum storage tanks) would be identified in accordance with applicable regulatory requirements.

- All dewatering required during subsurface work would be performed in accordance with DEP and NYSDEC SPDES permitting requirements. If necessary, the water would be pretreated prior to discharge.
- All excavated rock, soil, or fill materials requiring off-site disposal would be handled and disposed of in accordance with applicable regulatory requirements. Should contaminated soil be encountered, applicable regulatory requirements (e.g., those relating to spill reporting and tank registration) would be followed.

FOR OTHER CONSTRUCTION ACTIVITIES

Project 1 would require the storage and use of a variety of petroleum and other chemical products, e.g., diesel fuel for back up power, lubricating oil for construction vehicles, and miscellaneous cleaning and maintenance chemicals. The use and storage of all of these would be in accordance with applicable regulatory requirements including those relating to: federal Spill Prevention, Control, and Countermeasures (SPCC) requirements; and State petroleum bulk storage, chemical bulk storage (CBS) and spill reporting requirements.

2.9-5 CONCLUSIONS

2.9-5.1 WEST OF HUDSON

There is some potential for hazardous materials to be present at both the west connection site and the dewatering pipeline route. At the west connection site, this includes both hazardous materials in the existing structures (e.g., ACM and lead-based paint) as well as possible subsurface contamination associated with past activities (e.g., fuel oil storage or pesticide use). The dewatering pipeline route could have been contaminated by spills from nearby facilities, including a power plant and automotive facilities. To avoid impacts associated with these sources, the following measures would be implemented during Project 1, Shaft and Bypass Tunnel Construction, including the demolition of the existing buildings at the west connection site and subsurface disturbance at both locations:

- Remove petroleum tanks and address any associated spills in accordance with applicable regulatory requirements.
- Remove ACM prior to demolition in accordance with applicable regulatory requirements.
- Follow applicable lead-based paint requirements during demolition.
- Properly dispose of equipment that could contain PCBs or mercury and all chemicals or drums in accordance with applicable regulatory requirements.
- Dispose of any chemicals or empty drums in accordance with applicable requirements.
- Conduct ~~Phase II~~ subsurface investigations in order to prepare ~~RAPs and~~ CHASPs to be implemented during Project 1 construction. Both the scope of the Phase II and ~~RAPs/CHASPs~~ would be submitted to DEP for review and approval. ~~The RAPs would~~

~~provide procedures for managing all excavated materials. Should contaminated soil and/or petroleum tanks be encountered, applicable regulatory requirements (e.g., those relating to spill reporting and tank registration) would be followed to address removal of the tanks and any associated soil or groundwater contamination. The CHASP would ensure that subsurface disturbance is performed in a manner protective of workers, the community, and the environment and would be in accordance with applicable OSHA requirements, including 29 CFR Parts 1910 and 1926. Before such related work is undertaken, required procedures for handling, stockpiling, testing, transportation, and disposal of excavated materials (including any unexpectedly encountered contaminated soil and petroleum storage tanks) would be identified in accordance with applicable regulatory requirements.~~

- All dewatering would be performed in accordance with DEP and NYSDEC SPDES permitting requirements. If necessary, the water would be pretreated prior to discharge.

2.9-5.2 EAST OF HUDSON

There are some known hazardous materials associated with the existing facilities on the east connection site (Shaft 6), including ACM, lead-based paint, mercury, arsenic, and PCB-containing materials. However, testing of the site soils found no significant contamination, though some constituents in the soil were found to be at levels above the most stringent guidelines. On-site conditions are likely due to some combination of natural conditions (in the case of metals levels) and the presence of urban-type fill materials containing ash or other man-made materials (in the case of SVOCs).

To minimize the potential for adverse impacts, the following measures would be implemented during construction of Project 1:

- Remove ACM in the portions of existing facilities to be affected by the Project 1 before demolition in accordance with applicable regulatory requirements.
- Follow applicable lead-based paint requirements during renovation/demolition.
- Properly dispose of equipment that could contain PCBs or mercury and all chemicals or drums in accordance with applicable regulatory requirements.
- Conduct any required disturbance or removal of arsenic, asbestos, lead-based paint, mercury, and/or PCB-containing contaminated surfaces in accordance with applicable regulatory requirements.
- Prepare and implement during construction a site-specific ~~RAP~~ and CHASP. The ~~RAP~~/CHASP would be submitted to DEP for review and approval. The ~~RAPs~~-CHASP would provide procedures for managing all excavated materials. Should contaminated soil and/or petroleum tanks be encountered, applicable regulatory requirements (e.g., those relating to spill reporting and tank registration) would be followed to address removal of the tanks and any associated soil or groundwater contamination. The CHASP

would ensure that subsurface disturbance is performed in a manner protective of workers, the community, and the environment and would be in accordance with applicable OSHA requirements, including 29 CFR Parts 1910 and 1926.

- All dewatering would be performed in accordance with DEP and NYSDEC SPDES permitting requirements. If necessary, the water would be pretreated prior to discharge.*