TARRYTOWN FORMER MGP SITE
REVISED CONCEPTUAL REMEDIATION PLAN
JUNE 2003

by

Haley & Aldrich of New York
Rochester,New York

for

New York State Department of Environmental Conservation
Albany, New York

File No. 28590-002
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Subject: Tarrytown Former MGP Site
Revised Conceptual Remediation Plan – June 2003

Dear Ms. Maiurano:

The purpose of this letter is to present the final revised conceptual remediation plan for the Tarrytown Former Manufactured Gas Plant (MGP) site. This revised plan incorporates minor changes discussed with David Crosby of your office on July 21, 2003. Following NYSDEC approval of the conceptual remediation plan, the final, detailed design (Remedial Design Documents) will be submitted for this site. Upon acceptance of this conceptual plan by NYSDEC, the mutual desire of National/Resources and NYSDEC is to initiate the public comment period for this project by publication of the proposed remedy in the Environmental Notice Bulletin.

BACKGROUND

Site Description

The site is located on the east side of the Hudson River north of the Tappan Zee Bridge in the Village of Tarrytown, New York, as shown on Figure 1. The site plan is shown on Figure 2. Division and River Streets bound the site on the north, Railroad Avenue on the east, West Main Street on the south and the Hudson River on the west. The site encompasses approximately 20 acres, and is primarily industrial-commercial in use. The main activities on the site are an asphalt batch plant in the northwest portion and a trucking terminal and maintenance facility in the southeast portion.

The central portion of the site includes a former manufactured gas plant (MGP), reportedly operated between 1873 and 1938. The operational boundary and outlines of former structures of the MGP, derived from Sanborn™ maps, are shown on Figure 2. The MGP was last operated by the Westchester Lighting Company, which has been succeeded in ownership by the Consolidated Edison Company of New York, Inc. (Con Edison).

Intended Development and Site Use

A multi-use development plan is being proposed for this site, including residential, commercial and industrial land use, as shown on Figure 3. The site development plan shows industrial/commercial uses on the northern and eastern portions of the site, and residential uses on the southern and western parts of the site. The development plan also shows areas that will be designated for roadways, parking, and other similar use.

The Village of Tarrytown considers the development plan to be an improvement for the community, compared to the current industrial and transportation-oriented uses. In particular, the proposed residential redevelopment and public access that will be provided at the river-front and West Main Street areas is considered critical to municipal desires for redevelopment. The development plan depends on completing the remediation activities in a timely fashion with the bulk of the work to be performed during the 2003 construction season.

It should be noted that two parcels in the proposed commercial / industrial use area (P-13 and P-14, shown on Figures 2 and 3) will be excluded from the Voluntary Cleanup Agreement executed between NYSDEC and National RE / sources.

The current asphalt batch plant operations, operations at the maintenance building on Parcel P-15, and the operations located on parcel P-24 (primarily office space and vehicle maintenance) will continue for an undetermined amount of time. Evidence of LNAPL residuals was found at the location of SV-10 near the bus maintenance garage on parcel P-24. The source of this contamination is being evaluated.

The asphalt plant area is planned for future residential use. Decommissioning will include closure of any above- or below-ground storage tanks per applicable regulations and guidance. After the plant is decommissioned, additional subsurface investigations will be performed within the plant footprint, as outlined in the March 19, 2003 supplemental site investigation work plan. These will consist of three soil borings and one soil vapor probe, with sampling and chemical analysis of soil and vapor for TCL compounds.

The maintenance building on parcel P-15 is planned for continued commercial / industrial use. Investigations will be performed during final design to determine the need for any soil remediation associated with historical oil storage tanks on the parcel. As requested by NYSDEC, six borings in the vicinity of the former oil tanks on the east side of the building will be advanced to ten feet (or to the water table). A subsurface soil sample will be collected from each boring for analysis and results will be compared to TAGM 4046.

For the asphalt plant, parcel P-15, and the area near SV-10 on parcel P-24, remediation of the contamination, if needed, will be performed in a manner consistent with the planned remediation activities on the rest of the site (see below).

Site Management Plan

A Site Management Plan will be submitted to NYSDEC for review and approval as part of the final Remedial Design Documents. The Site Management Plan will outline the administrative and engineering controls to address the exposure potential remaining at the site following remediation, if any. The site management plan will include the following items:

- Future use of the property shall be in accordance with all elements of the Voluntary Cleanup Agreement; for example, residential development shall be restricted to areas identified in the Agreement for residential development;

- A comprehensive soil gas sampling program must be developed and initiated in all areas of the site where buildings intended for occupancy will be constructed or existing buildings will be re-occupied following remediation of the site. The data from this investigation will be evaluated to determine the need for active versus passive soil gas ventilation systems beneath the future dwellings. At a minimum, passive subslab depressurization systems must be installed beneath any future residential or commercial buildings;

- A Soil Management Plan that addresses the following items:

    - In areas not proposed for future building construction or impervious covering, residually contaminated soils that meet the clean-up criteria (i.e., 500 ppm for total SVOCs, < 10 ppm for total BTEX compounds, and visual evidence of LNAPL- and DNAPL-contaminated media), may be managed in place with the provision of a demarcation barrier and minimum two-foot cover of clean imported fill. The existence of the residually contaminated soils in these "Green Space" areas must be identified in the pertinent deeds and measures included in the soil management plan to protect the integrity of the clean-fill covering

    - Prior to any construction activities below the 2 foot clean line, the owner must notify the NYSDEC of the proposed work. Site soil that is excavated (such as for foundations, utilities, etc.) is to be removed from the property and must be managed, characterized and properly disposed in accordance with NYSDEC regulations and directives. A site Health and Safety Plan must be prepared that details how workers and the public will be protected during any excavation activities. Workers are to be notified in advance of the site conditions with clear instructions regarding how the work is to proceed

- Any additional fill material brought to the site for filling and grading purposes shall be from an acceptable borrow source free of industrial and/or other potential sources of chemical contamination. Analytical samples of the borrow soil must be provided for NYSDEC review and acceptance;

- The use of site groundwater as potable or process water without necessary water quality treatment will not be permitted;

- The Owner will complete and submit to the NYSDEC an Annual Report by February 15 the following year. Such annual report shall contain certification that the institutional controls put in place are still in place, have not been altered and are still effective.

In addition to the Site Management Plan, the Remedial Design Documents will include a Health and Safety Plan (HASP) and a Community Air Monitoring Plan (CAMP), to be implemented during the remedial action. The Remedial Design Documents will be stamped by a professional engineer licensed to practice in New York State.

Prior Investigations

As described in a number of previous reports (see Reference List), the site exhibits contamination in several areas that are derived either from the former MGP or from former fuel storage and handling operations. In addition, field investigations performed by Haley & Aldrich in April 2003 supplemented previous work. Results of this supplemental investigation are summarized and referenced in the Conceptual Remediation discussion herein and all results are shown on the Tables attached. The Supplemental Site Investigation – Spring 2003 report by Haley & Aldrich, June 2003 was submitted separately to NYSDEC.

The April 2003 field investigations included installation of one monitoring well and 10 soil vapor probes as proposed to and approved by NYSDEC. Five additional soil borings were completed as well as soil vapor measurements in shallow soil at eight locations along West Main Street. Interface probe readings were taken in all accessible monitoring wells. Figure 4 shows the locations of the wells, probes and borings and shows the PID readings taken, as well as the measured LNAPL thickness at the various measuring locations.

Soil and water samples were analyzed for selected volatile organic, semi-volatile organic, and inorganic parameters, consistent with previous site investigations and our proposal investigation to NYSDEC. Soil vapor samples were extracted at the ten soil vapor probe locations and at two of the shallow soil sampling locations along West Main Street. The samples were analyzed for the MGP constituent list provided by the NYSDEC. Results of the soil, water and vapor sampling are provided in summary Tables 1, 2 and 3.

This plan describes proposed remedial actions at the site, organized by area of contamination, as follows:

- Western DNAPL Area
- Northern DNAPL Area
- River Sediment Area
- LNAPL Area
- Holder and Tar Well Area.

For each area, an overview of the environmental concern is given, the purpose of the remedial action is presented, and the proposed action is summarized. In addition, a summary of recent investigation results are provided as relevant to each area of contamination and remediation

WESTERN DNAPL AREA

Description

The Western DNAPL Area, shown on Figure 2, is located about 270 feet north of the current ferry landing. It is depicted (Parsons 2000) as having an east-to-west length of about 240 feet. The primary environmental concern in this area is soil found to be saturated with DNAPL (presumably coal tar), in soil boring SB-32, monitoring wells MW-22 and MW-25, and in recovery wells RW-1 and RW-2. The saturated soils are located between 22 and 26 feet below ground surface (bgs), as shown on Figure 5. The zone of saturation was observed at the bottom of the fill, and extends zero to one foot into the top of the natural soil layer. The natural soil layer is apparently of low permeability and exhibits an increase in clay content with depth, thus providing a barrier to vertical downward migration of the DNAPL.

In April 2003, borings SB-301, SB-302 and SB-303 were completed to better define the northern and southern limits of the DNAPL that has been extracted from recovery wells RW-1 and RW-2. Based on borings SB-301 and SB-303 made in April 2003, the width of the DNAPL area that requires migration control and recovery, measured north to south, is less than 40 feet.

Purpose

The saturated zone of DNAPL is well below grade (22-26 feet) and therefore isolated from surface activities. The purpose of the remedial action for saturated zones of DNAPL on the land-side of the existing retaining wall is to prevent further westward migration by installing a barrier and to provide DNAPL recovery upgradient from the barrier.

Remedial Action

As shown on Figure 2, a 160 foot long barrier is proposed along the Hudson River, beginning at the southern end of the previously constructed retaining wall, and extending southward from there. Figure 6 depicts the general features of the barrier. The length of the barrier corresponds to the limits of the greatest DNAPL contamination in the river sediments.

Watertight sheeting, comprised of material suitable for salt water conditions, will be installed on the Hudson River side of the existing retaining wall, extending downward to bedrock, approximately 13-15 ft below the top of the river sediments. The sheeting will be temporarily tied back into the cap of the existing bulkhead. Permanent tiebacks will be installed above the low tide level of the Hudson River.

The space underneath the existing bulkhead cap and between the timber retaining wall and new sheeting will be backfilled. The first step will be to install walls at the north and south ends using tremied concrete, which will fill the space between the new sheeting and existing retaining wall. Once the end walls are placed, the space between the new sheeting, the existing retaining wall and the end walls will be backfilled with stone. The top of stone is expected to be about 4 feet below the bulkhead cap near the new sheeting and about 8 feet below the cap near the existing timber retaining wall. The space above the stone fill will be filled with tremied concrete, which will encapsulate the permanent tiebacks. The end walls and backfill will prevent any future mobilization of contaminated sediments located underneath the existing bulkhead cap.

Once the barrier is complete, the 60 ft long recovery trench will be constructed, parallel to and approximately 50 ft inland from the new barrier wall. The location is dictated by length of the bulkhead cantilever over the river (25±ft.) and the need to avoid encroaching on any tie back system for the existing wall and on the tieback system for the new barrier wall. The trench will be constructed using a cell or cells of temporary sheeting, extending downward to approximately 32 ft bgs. The cell will be 4 to 8 feet wide, depending on the ability to keep the temporary sheeting vertical in the fill soils. Alternatively, the trench would be constructed using biopolymer slurry methods, as described below. Under either installation method, sheeting will be used on the river side of the trench for stability. At the end of installation, sheeting sections will be removed to allow flow from both east and west sides of the trench. The bottom of the excavation will be at 28 ft below ground surface. Two recovery wells will be installed, each 15 feet from the end of the trench. The bottom of the trench will be sloped at five percent toward each recovery well. The trench will be backfilled with stone to 20 ft bgs to provide a higher permeability zone, and will be backfilled with excavated soils thereafter.

Two observation wells will be installed. One will be located 10 to 15-feet from each end of the recovery trench (depending on site obstructions, etc.) to enable detection of mobile

DNAPL and provide a mechanism to monitor for migration beyond the ends of the recovery trench, under the limited chance that it should occur.

Excavated soils will be handled according to which part of the excavation they are taken from. Above the high water table, the soils have not been shown to be contaminated, and will be stockpiled for later backfill. Beneath the high water table, this area of the site exhibits contamination due to fuel spills (discussed below) and due to MGP waste (DNAPL). Those soils will be thermally treated at a permitted facility off site. Any water pumped from the excavation will be sent through a carbon treatment system, prior to discharge to the local sanitary sewer system.

NORTHERN DNAPL AREA

Description

The Northern DNAPL Area, as shown on Figure 2, is located underneath the existing County Asphalt office building, and is depicted (Parsons, 2000) as about 500 feet long and 200 feet wide. The primary environmental concern in this area is soil affected by discrete zones saturated with DNAPL (presumably coal tar), in soil borings SB-7, SB-10, SB-16 and SB-19 and in monitoring wells MW-11, MW-13 and MW-26. The subject zones are located between 12 and 15 ft bgs on the west side of the building and between 9 and 13 ft bgs on the east side, as shown on Figure 5. As with the Western DNAPL Area, the zone of saturation appears at the bottom of the fill, and extends zero to one foot into the top of the natural soil layer. The natural soil layer is apparently of low permeability and exhibits an increase in clay content with depth, thus providing a barrier to vertical downward migration of the DNAPL.

In April 2003, MW-28 was installed for the purpose of assessing water quality in the zone higher than that where the soils saturated with DNAPL are found, and to provide more information on the soil stratigraphy. The schematic profile B-B in Figure 5 was modified based on the information obtained from the April 2003 field work, and review of the previous nearby boring logs. Results of water quality sampling and analysis are given in Table 2.

Purpose

The saturated zone of DNAPL is well below grade (deeper than 9 ft) and therefore isolated from surface activities. The purpose of the remedial action for the Northern DNAPL Area is to prevent potential westward migration by installing a barrier and to provide DNAPL recovery capability upgradient from the barrier. Note that, unlike the Western DNAPL area, the Northern DNAPL area has not yielded recoverable product.

Remedial Action

As shown on Figure 2, a maximum 360-foot long barrier, located to the west of the depicted limits of the Northern DNAPL Area is proposed. Soil borings SB-14, SB-15, SB-20, SB-21, SB-22 and SB-23 indicate that there are no zones of soil saturated with DNAPL crossed by the proposed barrier. The barrier will be watertight sheeting, driven approximately five feet into the lower permeability silty clay. A recovery trench will be installed on the upgradient side of the barrier wall. The depth of this recovery trench has been deepened based on feedback from NYSDEC on the initial conceptual design.

The barrier will be formed by watertight steel sheeting. Slots will be cut into the portion of the sheets extending from a point two feet above the top of the recovery trench drainage stone to one foot above high groundwater level. This will allow groundwater to pass the barrier. The barrier will be cut off at least three feet below the ground surface.

The recovery trench will be constructed after the barrier is in place using biopolymer slurry methods. The biopolymer slurry has a unit weight of about 65 pounds per cubic foot and is used to hold the trench open during excavation and backfilling. At the completion of the excavation and backfill, an enzyme is introduced to break down the polymer. This 'broken' slurry is then removed from the trench, as discussed below.

Proper construction of a biopolymer-supported excavation requires good mixing of the biopolymer, careful excavation management, use of adequate enzyme for breakdown of the biopolymer, and adequate flushing of the polymer from the constructed matrix.

The proper mixing of the slurry is important because unmixed polymer, once trapped in the drainage stone pore space, may become difficult to breakdown and/or remove. To ensure proper mixing, an eductor will be used to prevent the formation of unmixed balls of polymer powder (commonly referred to as "fish eyes").

During trenching, a steel caisson pipe will be used to separate the excavation area, where soil particles from the excavation are being temporarily suspended in the slurry, from the gravel backfilling area. This will help minimize the amount of unwanted soil particles being trapped in the collection stone pore space. Also during excavation, when a section has been excavated to grade, the excavation will stop for a period of 15 to 30 minutes to allow the soil that is temporarily suspended to settle to the trench bottom. Once on the bottom, the excavator can be used to carefully remove the sediment while minimizing the amount that is re-suspended.

After drainage stone placement, the trench will be developed, similar to a well. A minimum of three pore volumes will be pumped from the trench.

The recovery trench will extend one to two feet into the silty clay layer. Six recovery wells will be installed, spaced evenly along the trench alignment. The bottom of the recovery trench will be sloped at five percent toward each well, with high points at the midpoint between each well. The backfill will be permeable stone from the bottom to about 10 feet bgs, and excavated soils thereafter. A geotextile will separate the permeable stone from the subsequently placed fill soils.

Two observation wells will be installed. One will be located 10 to 15-feet from each end of the recovery trench (pending clearance of site obstructions) to enable detection of mobile DNAPL that may possibly migrate around the ends of the recovery trench.

Management of excavated soils and excavation water will be similar to that previously described. In this area, the soil above the high water table is uncontaminated. It will be stockpiled and used later as backfill. The soil below generally exhibits some low level of MGP contamination (odor, sheen, and blebs) and will be thermally treated at a permitted facility off site. Discharge from the excavation dewatering system will be sent through a carbon treatment system prior to release to the local sanity sewer.

RIVER SEDIMENT

Description

As shown on Figure 2, DNAPL-contaminated river sediment was identified west of the Western DNAPL Area. It extends about 160 ft along the existing retaining wall, and outward into the river by varying distances, up to about 120 ft. Sediment contaminated with DNAPL was identified in river borings RB-1, RB-3, RB-6 through RB-9, RB-11, RB-12, RB-15A, and RB-17 through RB-19. Significant DNAPL contamination was also identified in river borings RB-2, RB-13, RB-23, and RB-24. The depth of the observed DNAPL ranges from one foot up to 8 feet below the top of sediment.

Purpose

There is a potential for exposure of the DNAPL to the river's aquatic environment and sediments may move due to erosive action of the Hudson River. The purpose of the remedial action is to remove the areas of most concentrated contamination and the potential for impact to the river.

Remedial Action

The planned remedial action is to excavate the sediments where borings have indicated heavy sheen and high concentrations of blebs. These areas and target depths of proposed excavation

are shown on Figure 7. The excavated sediment will be dewatered and then thermally treated off site, (about 3,000 cy).

The excavation will take place within a work area defined by a double silt curtain, anchored to the river bottom. Placement and river depths along the silt curtain alignment will be carefully coordinated with the Coast Guard and Corps of Engineers to ensure adequate understanding of bathymetry affecting and construction of the silt curtain. The curtain would encompass a rectangular area, with three walls comprised of silt curtain, and the fourth being the new barrier wall for the Western DNAPL Area. Turbidity monitoring both north and south of the excavation area will be performed to ensure that river turbidity outside the silt curtain is maintained within acceptable limits. If turbidity levels are unacceptable, operations will be suspended or modified, until acceptable ranges can be achieved.

A long-boom excavator mounted on a barge will perform the excavation. A control system will be employed to establish the lines and grades of the excavation. There will be transitional side slopes between areas of deeper excavation (say 8 feet) and adjacent shallower excavation (say 5 feet). The transitional slopes (from 8 feet to 5 feet) will have grades lower than the target elevation of the shallower area, to ensure that the targeted contaminated sediments are removed.

The river spoils will be placed in another barge, prior to transfer to a dewatering area on land. Dewatering will be performed using appropriate methods, including gravity dewatering, and/or the use the geotubes, filter presses or other technologies. The method or methods to be employed will be selected during final design and will be approved by NYSDEC. Dewatering will take place on shore within a lined and bermed pad. Foam will be used, if needed, to suppress odors from the stockpiled sediment. The dewatered sediment will be taken off site for treatment and/or disposal at a permitted facility. Water draining from the sediment will be sent through a carbon treatment system prior to discharge to the local sanitary sewer.

Two alternative approaches to accomplishing the sediment remediation may be adopted, based on input from NYSDEC during the final design process. The location and limits of excavation would be the same. In one alternative, hydraulic dredging, rather than long-boom excavation would be done inside the double silt curtain. This would increase the amount of dewatering needed to prepare the sediment for transport to off-site disposal. The other alternative would involve use of a clamshell excavator inside temporary sheet piling, instead of the silt curtain. In both cases, turbidly monitoring would be done north and south of the excavation area. Other items that will be addressed in the final design process are pre- and post-dredging surveys and sediment sampling.

The excavated area will be backfilled by placing a filter fabric, followed by imported stone to meet a final grade acceptable to the Corps of Engineers (that is, the final grade would be consistent with past dredging practices in this docking area). The material will be placed with the excavator.

LNAPL AREA

Description

A zone of measurable free floating LNAPL (primarily diesel fuel) is present in a triangular area defined by MW-2, MW-3 and MW-6, as shown on Figure 2. Measurements in those monitoring wells in 1998-1999 give free product thickness in this area ranging from 0.01 ft to 0.5 ft, with fewer than five instances where 1.5 to 1.9 ft of product was measured in MW-3. Measurements in April 2003 showed free product thicknesses of 0.2 ft in MW-2, a spotty sheen in MW-3, and no measurable product in MW-6. The floating LNAPL thickness varies as the water table depth fluctuates on a seasonal basis.

Residual contamination due to the historic LNAPL releases is evident between the triangular area of free-floating LNAPL and West Main Street. April 2003 investigations confirmed previous data. SB-304 and SB-305 showed LNAPL odors and staining in the 4-8 ft zone. Soil vapor probe SV-4 exhibited a PID reading of 650 ppm and elevated concentrations of benzene in the gas analysis.

Figure 8 presents soil profiles in this area, with the high and low water table elevations shown. In this part of the site, the water table varies from about 3.5 to 7.0 feet below grade.

In the western portion of the site, historic fuel spills have not resulted in the same level of contamination as described above for the area bounded by MW-2, MW-3 and MW-6. In 1996, evidence of LNAPL was noted by Parsons Engineering in test pit logs TP-5 through TP-8 and some diesel product was noted in boring log SB-24. However, the boring logs for MW-22 through MW-25, SB-29 and SB-30 noted only sheens and petroleum odors at the water table.

In 2000, Parsons Engineering performed four rounds of interface probe readings in monitoring wells MW-17 through MW-27 (Parsons 2002). No measurable free product was noted at any location. Films or sheens (some intermittent) were noted in MW-19 through MW-22, MW-25, MW-26 and MW-27. No films or sheen were noted in MW-17, MW-18 and MW-24 in any of the four rounds.

Interface probe readings taken in April 2003 by Haley and Aldrich showed evidence of LNAPL, but no recoverable product in MW-21, MW-23, MW-24, MW-25, RW-1 and RW-2. Soil vapor probe SV-5 had a PID reading of 6.7 ppm and concentrations of contaminants

measured by soil vapor analysis within the EPA Vapor Intrusion Guidelines (see sampling results for location SV-5 in Table 3). The 2003 data agrees with the data collected in 2000 and provides evidence that there is no recoverable LNAPL in the western portion of the project site.

The location of the water table, and hence the LNAPL residual, is 8-10 ft bgs in this western area, well below the depths for building foundation excavation. Groundwater quality has not been observed to be significantly degraded by the LNAPL residuals. The soil vapor concentrations from location SV-5 indicate levels are consistent with and acceptable for the intended residential development. A summary of all PID and soil analytical data for the 18 borings performed in this western area (around SB-302) was compiled and submitted to NYSDEC in a response to NYSDEC comments dated 3 June 2003. Twenty-three soil samples were analyzed from various depths within the borings. Only two of the samples exceeded either the 10 ppm value for total BTEX or the 500 ppm value for total PAH, both at depths in excess of 22 feet bgs, in zones where DNAPL product was noted (MW-22 and MW-25). The data submitted demonstrates that exceedance of TAGM guidance criteria for total BTEX and total PAHs only occurs at the depth of MGP DNAPL (not LNAPL) horizons in the western area. This information will continue to be evaluated with NYSDEC so that the detailed Remedial Design Documents can accommodate the information for this western area and address criteria (such as TAGM 4046) accordingly.

Purpose

The purpose of the remedial action in this area is to remove, to the extent feasible, the floating free LNAPL and to remove and treat the contaminated soils in the smear zone between the high and low water table, in areas where they are expected to cause unacceptable concentrations of contaminants in soil vapor.

Remedial Action

The remedial action is proposed to address the free floating LNAPL and the residual contamination that is expected to cause unacceptable concentrations of contaminants in soil vapor. The remedial action is proposed to be consistent with the site development plan shown on Figure 3. The site development plan shows industrial/commercial uses on the eastern portions of the site, residential uses on the southern and western parts of the site and an area of future commercial-industrial use in the north central portion of the site. The development plan also shows areas that will be designated for roadways, parking, and other similar use.

The remedial action will address the triangular area of free floating LNAPL by installing a new recovery trench parallel to and about 150 feet north of West Main Street in a location downgradient from the zone of floating LNAPL. The new trench will be tied to the existing recovery trench. During the remedial construction project, the free product collecting in the

extraction manhole will be actively skimmed, sent through an oil water separator and recycled or disposed off site. The water discharged from the oil water separator will be sent to the on site treatment plant for carbon filtration.

The development plan for the project site envisions parking area over the present zone of floating LNAPL. By restricting the land use, no exposure pathways to residents or employees will exist.

The second part of the remedial action will consist of excavating contaminated soil from the area between the free floating LNAPL and West Main Street, where residential land use is proposed. The soils would be treated and/or disposed off site. Excavation will be performed by conventional methods. The excavation will be opened in manageable units, to keep a reasonable pace with the soil preparation and truck loading process, thus avoiding excessively large stockpiles of soil. The soils above the high water table have not been shown to be contaminated, and will be stockpiled for later use as backfill.

The horizontal extent of the excavation will be determined during initial remediation design work by employing a grid of soil vapor readings from 4-ft deep geoprobe borings. The grid will cover the on-site area south of the proposed recovery trench, north of West Main Street, and extend westward no farther than SV-3. PID readings from the geoprobe borings will be taken and recorded. As has been shown in the past, the PID readings are expected to drop with distance away from the former fuel storage tanks and floating LNAPL. Where the PID readings indicate low levels of soil vapor contamination, soil vapor samples will be taken using summa canisters. The results will be evaluated with reference to EPA's Vapor Intrusion Guidance, to determine acceptability for indoor air quality, assuming slab-on-grade construction with vapor barrier and if needed passive sub-slab ventilation.

The combination of PID readings and summa canister sample analyses will be used to identify the area where the residual contamination would be expected to cause unacceptable concentrations of contaminants in soil vapor. The area so defined will be excavated to remove contaminated soil for treatment and/or disposal. Sidewall samples will be taken in the excavation on the western, southern and eastern sides of the excavation and analytical results will be compared to TAGM 4046, specifically 10 ppm for total BTEX and 500 ppm for total PAH, in the area proposed for residential use. Strict conformance with TAGM is not necessary on the north side where the recovery trench will provide separation between the parking area to the north, or to the south.

The depth of excavation would not likely extend more than one foot below the low water table elevation. At the lowest point, the excavation is not expected to exceed 8 feet bgs. The excavation will be backfilled using the uncontaminated on-site soils taken from the excavation. The balance of backfill will be either back-hauled treated soil or other imported clean fill.

Water that collects and needs management in the excavation will be pumped from the excavation, sent through an oil-water separator with the water portion continuing to a carbon treatment system, prior to discharge to the sanitary sewer. An oil skimmer will be operated in the excavation to remove any free product that may collect. The recovered LNAPL will be sent off site for recycling or disposal at permitted facility(s).

The underground utilities on West Main Street will continue to be investigated as possible pathways for migration of LNAPL. Once the investigation is complete, a remedial action will be proposed during final design for mitigating the problem. The remediation may be to excavate contaminated soil or to install barriers to migration of LNAPL along the utility lines, or some combination of both.

HOLDER AND TAR WELL AREA

Description

Based on test pitting, two circular holders from the former MGP are located about 80 feet northwest of the existing maintenance garage, designated as Holder B and Holder C on Figure 2. Based on Sanborn™ maps, the holders are about 48 feet and 32 feet in diameter, respectively. Test pits TP-4 and TP-3 revealed that residual coal tar and debris remains inside both holders, but was not encountered outside the masonry holder walls. Test pits and borings at two other holder locations, Holder A and D shown on Figure 2, revealed no residual coal tar pockets.

Subsurface investigations in and around the former tar well area (TP-1, MW-7 and SB-6) revealed zones saturated with DNAPL (presumably coal tar) in a zone from 6 to 13.5 ft bgs. The tar well area depicted on Figure 2 is located about 100 feet southwest of the holders and has a length of about 140 feet and width of about 60 feet.

Purpose

The purpose of remedial action in the Holder and Tar Well Area is to remove and treat the soils, and holder contents and structure that are heavily contaminated with DNAPL.

Remedial Action

The remedial action will be similar to that for the LNAPL-contaminated soils.

At the request of NYSDEC, during initial design investigations test pits will be excavated in Holder A and Holder D to confirm that no free flowing MGP DNAPL is present. If such contamination were found, then the remedial action would be the same as that outlined for Holder B and C in the following section.

At Holders B and C, the soil above the tops of the holder walls is uncontaminated and will be excavated and stockpiled. The excavation will be sloped to prevent sloughing. The contents of the holders will be removed and taken off site for treatment and/or disposal (about 1,000 cy of material). Foam will be used for odor suppression during the operations. The exterior walls of the holders will be exposed by excavating the soil surrounding each holder. Uncontaminated soil and structural debris will be stockpiled for later use (soil) or management as solid waste (debris). Contaminated soil will be sent off site for treatment and/or disposal. Contaminated holder walls and floor will be removed and the masonry debris will be sent off site for treatment and/or disposal. Any connecting pipes 6-inches or larger in diameter will be identified and inspected to determine if they contained significant residual MGP waste. The pipes containing significant amounts of MGP waste will be removed and sent off site for disposal. If free flowing MGP DNAPL is encountered in the soils beneath the holders, then the contaminated soils will be excavated and taken off site for disposal. Samples taken from the limit of excavation will be compared to a total PAH criterion of 1000 ppm.

In the Tar Well Area, the bottom dimensions of the excavation are expected to be limited to the area shown on Figure 2. Based on the elevation of top of natural soils in the area, the depth of excavation would extend no more than approximately 13.5 feet bgs. The top 6 feet of soil is uncontaminated and will be excavated and stockpiled for backfill (about 2,500 cy). The contaminated soil will be excavated and sent off site for treatment and/or disposal (about 2,000 cy). The goal of the source area removal will be to excavate coal tar and DNAPL saturated soils. Samples taken from the limit of excavation will be compared to a total PAH criterion of 1000 ppm to ensure that no significant source material remains.

The excavation will be dewatered using construction pumps, and the water sent through a carbon treatment system prior to discharge to the local sanitary sewer system. Foam will be used for odor suppression. The uncontaminated soil will be backfilled first, followed by treated or imported clean soil. Backfilled soil will meet a criteria of 10 ppm total BTEX and 500 ppm total PAH.

SOIL TREATMENT AND/OR DISPOSAL

Soil thermal treatment and/or disposal will be done off site at an appropriately permitted facility. The contaminated soil will be prepared in a designated soil management area on site to render it suitable for transportation and disposal off site.

SCHEDULE

The remedial action described above is expected to take eight to nine months to complete, once work permits are in place and equipment and materials have been mobilized. The sequencing calls for installing the Western DNAPL Area barrier and recovery system first to isolate the zones of DNAPL contamination from the Hudson River. Work would then

progress to the Northern DNAPL barrier and recovery trench, while simultaneously excavating the river sediment. The LNAPL Area would be remediated next, followed by the Holder and Tar Well Area. Figure 9 shows the schedule and sequence graphically.

The sequencing was conceived to provide two advantages. By placing the barriers first, protection against the possible re-mobilization of saturated zones of DNAPL is provided. By excavating the Holder and Tar Well Area last, the work will take place in relatively cold weather, which will be beneficial for reducing odor impacts.

Some alternate technological approaches may be considered for certain elements of the remediation as the project moves forward, however the conceptual design described herein represents a reasonable approach based on currently available information.

CLOSURE

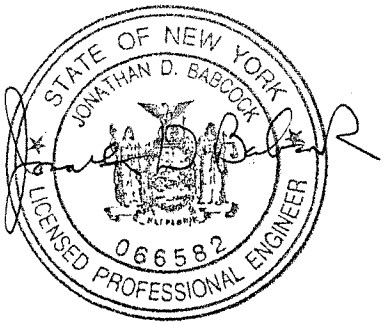
Again, your expedited consideration of this conceptual work plan and response would be most appreciated in order to provide initiation of the public comment period and maintain a schedule to meet the project's objectives. Please contact us if you need more information.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Jonathan D. Babcock, P.E.
Senior Engineer

Vincent B. Dick
Vice President

Attachments
Table 1 Summary of Soil Sample Analytical Results
Table 2 Summary of Groundwater Sample Analytical Results
Table 3 Soil Vapor Testing Results
Figure 1 Project Locus
Figure 2 Site Plan
Figure 3 Site Development Plan
Figure 4 Site Investigation Results – Spring 2003
Figure 5 Subsurface Profiles B-B and C-C
Figure 6 General Features of Western DNAPL Barrier
Figure 7 Sediment Excavation Plan
Figure 8 Subsurface Profiles D-D, E-E and F-F
Figure 9 Construction Schedule



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REFERENCES

1990	Metcalf & Eddy	Preliminary Soil Gas Survey Results, Leaseway Motorcar Transportation Corporation, Tarrytown, New York.
1991	Metcalf & Eddy	Site Assessment for Anchor Motor Freight, Inc., Tarrytown, New York.
1991	Metcalf & Eddy	Remedial Action Plan for Anchor Motor Freight, Inc, Tarrytown, New York.
1991	Metcalf & Eddy	Underground Storage Tank Removal, Valente Industries, Tarrytown, New York.
1991	Metcalf & Eddy	New Trench Drain System, Anchor Motor Freight, Inc., Tarrytown, New York.
1994	Metcalf & Eddy	Geoprobe Subsurface Investigations, Leaseway Motorcar Transportation Corporation, Tarrytown, New York.
1994	Woodward-Clyde	Results of Geophysical Survey, Leaseway Motorcar Transportation Corporation, Tarrytown, New York.
1995	Rust	Site Environmental History, Anchor Motor Freight, Inc. Tarrytown, New York.
1996	RETEC	Site Investigation, Anchor Motor Freight, Inc. Tarrytown, New York.
1996	Rust	Underground Storage Tank Field Observation Report, Leaseway Motorcar Transportation Corporation, Tarrytown, New York.
1997	Parsons Engineering Science	Site Investigation Report for the Tarrytown Site, ConEdison, Tarrytown, New York.
1998	Parsons Engineering Science	Sediment Remediation Engineering Evaluation Report for the Tarrytown Site, ConEdison, Tarrytown, New York.
2000	Parsons Engineering Science	Supplemental Site Investigation Report Tarrytown Former MGP Site, ConEdison, Tarrytown, New York.
2000	Handex	Site Status Report, Penske Truck Leasing, Tarrytown, New York.
2002	Parsons Engineering Science	Supplemental Sediment Sampling Report Tarrytown Former MGP Site, ConEdison, Tarrytown, New York.
2002	Parsons Engineering Science	Supplemental Site Investigation Report, Tarrytown Former MGP Site, ConEdison, Tarrytown, New York.

TABLE 1A
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
DETECTED COMPOUNDS (VOCs and SVOCs)

Tarrytown, NY Con Ed MGP Site **Soil Analytical Data**		TAGM 4046 Soil Cleanup Objectives	SV-1 Columbia Soil 4/7/2003	SV-2 Columbia Soil 4/7/2003	SV-3 Columbia Soil 4/7/2003	SV-9 Columbia Soil 4/7/2003	SV-10 Columbia Soil 4/7/2003	SB-304 Columbia Soil 4/8/2003	SB-305 Columbia Soil 4/8/2003
CAS#	Compound	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	VOLATILE ORGANICS								
71-43-2	Benzene	60	ND	ND	ND	ND	ND	ND	ND
1634-04-4	Methyl tert-butyl ether	120	ND	ND	ND	ND	ND	ND	ND
100-41-4	Ethylbenzene	5,500	ND	ND	ND	ND	ND	1,000	320
108-88-3	Toluene	1,500	ND	ND	ND	ND	1,900	ND	45
136777-61-2	m,p-Xylene	1,200	ND	ND	ND	ND	ND	ND	ND
95-47-6	o-Xylene	1,200	ND	ND	ND	ND	4,000	2,500	560
	SEMIVOLATILES								
83-32-9	Acenaphthene	50,000	ND	ND	ND	ND	6,000	9,300	430
208-96-8	Acenaphthylene	41,000	ND	ND	ND	ND	ND	ND	470
120-12-7	Anthracene	50,000	ND	1,000	830	ND	ND	6,200	ND
56-55-3	Benz(a)anthracene	N/A	ND	3,600	1,900	ND	ND	4,200	ND
50-32-8	Benzo(a)pyrene	N/A	ND	3,800	1,600	ND	ND	ND	ND
205-99-2	Benzo(b)fluoranthene	1,100	ND	3,000	1,200	ND	ND	ND	ND
191-24-2	Benzo(g,h,i)perylene	50,000	ND	2,900	770	ND	ND	ND	ND
207-08-9	Benzo(k)fluoranthene	1,100	ND	2,700	1,000	ND	ND	ND	ND
100-51-6	Benzyl Alcohol	N/A	ND	ND	ND	ND	ND	ND	ND
85-68-7	Butyl benzyl phthalate	50,000	ND	ND	ND	ND	ND	ND	ND
84-74-2	Di-n-butyl phthalate	8,100	ND	ND	ND	ND	ND	ND	ND
86-74-8	Carbazole	N/A	ND	ND	ND	ND	ND	ND	ND
193-39-5	Indeno(1,2,3-cd)pyrene	3,200	ND	2,300	690	ND	ND	ND	ND
106-47-8	4-Chloroaniline	N/A	ND	ND	ND	ND	ND	ND	ND
111-91-1	Bis(2-chloroethoxy)methane	N/A	ND	ND	ND	ND	ND	ND	ND
111-44-4	Bis(2-chloroethyl)ether	N/A	ND	ND	ND	ND	ND	ND	ND
91-58-7	2-Chloronaphthalene	N/A	ND	ND	ND	ND	ND	ND	ND
95-57-8	2-Chlorophenol	800	ND	ND	ND	ND	ND	ND	ND
108-60-1	2,2' -Oxybis (1-Chloropropane)	N/A	ND	ND	ND	ND	ND	ND	ND
218-01-9	Chrysene	400	ND	3,500	2,100	ND	ND	4,200	4,200
53-70-3	Dibenz(a,h)anthracene	N/A	ND	ND	ND	ND	ND	ND	ND
132-64-9	Dibenzofuran	6,200	ND	ND	ND	ND	ND	ND	ND
541-73-1	1,3-Dichlorobenzene	N/A	ND	ND	ND	ND	ND	ND	ND
95-50-1	1,2-Dichlorobenzene	N/A	ND	ND	ND	ND	ND	ND	ND
106-46-7	1,4-Dichlorobenzene	N/A	ND	ND	ND	ND	ND	ND	ND
91-94-1	3,3´-Dichlorobenzidine	N/A	ND	ND	ND	ND	ND	ND	ND
120-83-2	2,4-Dichlorophenol	400	ND	ND	ND	ND	ND	ND	ND
84-66-2	Diethyl phthalate	7,100	ND	ND	ND	ND	ND	ND	ND
131-11-3	Dimethyl phthalate	2,000	ND	ND	ND	ND	ND	ND	ND
105-67-9	2,4-Dimethylphenol	N/A	ND	ND	ND	ND	ND	ND	ND
51-28-5	2,4-Dinitrophenol	N/A	ND	ND	ND	ND	ND	ND	ND
121-14-2	2,4-Dinitrotoluene	N/A	ND	ND	ND	ND	ND	ND	ND
606-20-2	2,6-Dinitrotoluene	1,000	ND	ND	ND	ND	ND	ND	ND
117-81-7	Bis(2-ethylhexyl)phthalate	50,000	ND	ND	ND	ND	ND	ND	ND
206-44-0	Fluoranthene	50,000	ND	6,600	3,400	630	ND	13,000	590
86-73-7	Fluorene	50,000	ND	ND	ND	ND	6,600	12,000	660
118-74-1	Hexachlorobenzene	410	ND	ND	ND	ND	ND	ND	ND
87-68-3	Hexachlorobutadiene	N/A	ND	ND	ND	ND	ND	ND	ND
77-47-4	Hexachlorocyclopentadiene	N/A	ND	ND	ND	ND	ND	ND	ND
67-72-1	Hexachloroethane	N/A	ND	ND	ND	ND	ND	ND	ND
78-59-1	Isophorone	4,400	ND	ND	ND	ND	ND	ND	ND
91-57-6	2-Methylnaphthalene	36,400	ND	ND	ND	ND	ND	57,000	ND
534-52-1	4,6-Dinitro-2-methylphenol	N/A	ND	ND	ND	ND	ND	ND	ND
59-50-7	4-Chloro-3-methylphenol	N/A	ND	ND	ND	ND	ND	ND	ND
95-48-7	2-Methylphenol	N/A	ND	ND	ND	ND	ND	ND	ND
65794-96-9	3 & 4-Methylphenol	900	ND	ND	ND	ND	ND	ND	ND
91-20-3	Naphthalene	1,300	ND	ND	ND	ND	ND	ND	ND
88-74-4	2-Nitroaniline	N/A	ND	ND	ND	ND	ND	ND	ND
99-09-2	3-Nitroaniline	N/A	ND	ND	ND	ND	ND	ND	ND
100-01-6	4-Nitroaniline	N/A	ND	ND	ND	ND	ND	ND	ND
98-95-3	Nitrobenzene	N/A	ND	ND	ND	ND	ND	ND	ND
88-75-5	2-Nitrophenol	N/A	ND	ND	ND	ND	ND	ND	ND
100-02-7	4-Nitrophenol	N/A	ND	ND	ND	ND	ND	ND	ND
62-75-9	N-Nitrosodimethylamine	N/A	ND	ND	ND	ND	ND	ND	ND
86-30-6	N-Nitrosodiphenylamine	N/A	ND	ND	ND	ND	ND	ND	ND
117-84-0	Di-n-octyl phthalate	N/A	ND	ND	ND	ND	ND	ND	ND
87-86-5	Pentachlorophenol	N/A	ND	ND	ND	ND	ND	ND	ND
85-01-8	Phenanthrene	50,000	ND	3,800	2,700	490	8,900	33,000	1,200
108-95-2	Phenol	N/A	ND	ND	ND	ND	ND	ND	ND
101-55-3	4-Bromophenyl phenyl ether	N/A	ND	ND	ND	ND	ND	ND	ND
7005-72-3	4-Chlorophenyl phenyl ether	N/A	ND	ND	ND	ND	ND	ND	ND
129-00-0	Pyrene	50,000	ND	6,200	2,800	500	ND	13,000	790
120-82-1	1,2,4-Trichlorobenzene	N/A	ND	ND	ND	ND	ND	ND	ND
95-95-4	2,4,5-Trichlorophenol	N/A	ND	ND	ND	ND	ND	ND	ND
88-06-2	2,4,6-Trichlorophenol	N/A	ND	ND	ND	ND	ND	ND	ND

NOTES:
1. TAGM 4046 refers the NYSDEC's Technical and Administrative Guidance Memorandum #4046 "Determination of Soil Cleanup Objectives and Cleanup Levels" (1/24/1994).
2. "ND" indicates not detected above the reporting limit.

Exceeds Criteria

TABLE 1B
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
DETECTED INORGANIC COMPOUNDS

Tarrytown, NY Con Ed MGP Site **Soil Analytical Data**		TAGM 4046 Soil Cleanup Objectives ug/kg	SV-1 Columbia Soil 4/7/2003 ug/kg	SV-2 Columbia Soil 4/7/2003 ug/kg	SV-3 Columbia Soil 4/7/2003 ug/kg	SV-9 Columbia Soil 4/7/2003 ug/kg	SV-10 Columbia Soil 4/7/2003 ug/kg	SB-304 Columbia Soil 4/8/2003 ug/kg	SB-305 Columbia Soil 4/8/2003 ug/kg
CAS#	Compound								
	INORGANIC COMPOUNDS								
7440-38-2	Arsenic	7,500 or SB *	7870	7,450	6,050	8,460	5,760	6,130	2,080
7439-92-1	Lead	500,000 (See TAGM)	25,100	37,600	1,310,000	986,000	184,000	394	140,000
7439-97-6	Mercury	100 **	ND	162	689	390	158	1,270	537
7440-66-6	Zinc	20,000 or SB ***	34,800	16,100	219,000	378,000	90,100	227,000	106,000
	Cyanide	N/A	ND	3,050	2,370	ND	ND	ND	ND

NOTES:
1. TAGM 4046 refers to the NYSDEC's Technical and Administrative Guidance Memorandum #4046 "Determination of Soil Cleanup Objectives and Cleanup Levels" (1/24/1994).
2. "ND" indicates not detected above the reporting limit.
3. "SB" indicates site background.
4. * New York State background (3,000 - 12,000 ug/kg)
5. ** Eastern USA background (1 - 200 ug/kg)
6. *** Eastern USA background (9,000-50,000 ug/kg)

Exceeds Criteria

TABLE 2
SUMMARY OF GROUNDWATER SAMPLE ANALTICAL RESULTS
DETECTED COMPOUNDS

Tarrytown, NY Con Ed MGP Site Groundwater Analytical Data		TOGS 1.1.1 Groundwater Cleanup Objectives	MW-12 Columbia Water 4/8/2003	MW-28 Columbia Water 4/10/2003
CAS#	Compound	ug/L	ug/L	ug/L
	PURGEABLE AROMATICS			
71-43-2	Benzene	1	ND	2.9
1634-04-4	Methyl tert-butyl ether	10	ND	1.3
100-41-4	Ethylbenzene	5	23	ND
108-88-3	Toluene	5	ND	ND
136777-61-2	m,p-Xylene	5	19	ND
95-47-6	o-Xylene	5	46	ND
	SEMIVOLATILES			
83-32-9	Acenaphthene	20	42	16
208-96-8	Acenaphthylene	N/A	ND	ND
120-12-7	Anthracene	50	ND	ND
56-55-3	Benz(a)anthracene	0.002	ND	ND
50-32-8	Benzo(a)pyrene	ND	ND	ND
205-99-2	Benzo(b)fluoranthene	0.002	ND	ND
191-24-2	Benzo(g,h,i)perylene	N/A	ND	ND
207-08-9	Benzo(k)fluoranthene	0.002	ND	ND
100-51-6	Benzyl Alcohol	N/A	ND	ND
85-68-7	Butyl benzyl phthalate	50	ND	ND
84-74-2	Di-n-butyl phthalate	50	ND	ND
86-74-8	Carbazole	N/A	ND	ND
193-39-5	Indeno(1,2,3-cd)pyrene	0.002	ND	ND
106-47-8	4-Chloroaniline	5	ND	ND
111-91-1	Bis(2-chloroethoxy)methane	N/A	ND	ND
111-44-4	Bis(2-chloroethyl)ether	1	ND	ND
91-58-7	2-Chloronaphthalene	10	ND	ND
95-57-8	2-Chlorophenol	N/A	ND	ND
108-60-1	2,2' -Oxybis (1-Chloropropane)	N/A	ND	ND
218-01-9	Chrysene	0.002	ND	ND
53-70-3	Dibenz(a,h)anthracene	N/A	ND	ND
132-64-9	Dibenzofuran	N/A	ND	ND
541-73-1	1,3-Dichlorobenzene	3*	ND	ND
95-50-1	1,2-Dichlorobenzene	3*	ND	ND
106-46-7	1,4-Dichlorobenzene	3*	ND	ND
91-94-1	3,3´-Dichlorobenzidine	5	ND	ND
120-83-2	2,4-Dichlorophenol	1**	ND	ND
84-66-2	Diethyl phthalate	50	ND	ND
131-11-3	Dimethyl phthalate	50	ND	ND
105-67-9	2,4-Dimethylphenol	50	ND	ND
51-28-5	2,4-Dinitrophenol	10	ND	ND
121-14-2	2,4-Dinitrotoluene	5	ND	ND
606-20-2	2,6-Dinitrotoluene	5	ND	ND
117-81-7	Bis(2-ethylhexyl)phthalate	5	ND	ND
206-44-0	Fluoranthene	50	ND	ND
86-73-7	Fluorene	50	9.5	ND
118-74-1	Hexachlorobenzene	0.04	ND	ND
87-68-3	Hexachlorobutadiene	0.5	ND	ND
77-47-4	Hexachlorocyclopentadiene	5	ND	ND
67-72-1	Hexachloroethane	5	ND	ND
78-59-1	Isophorone	5	ND	ND
91-57-6	2-Methylnaphthalene	N/A	79	20
534-52-1	4,6-Dinitro-2-methylphenol	N/A	ND	ND
59-50-7	4-Chloro-3-methylphenol	N/A	ND	ND
95-48-7	2-Methylphenol	N/A	ND	ND
65794-96-9	3 & 4-Methylphenol	N/A	ND	ND
91-20-3	Naphthalene	10	460 E	ND
88-74-4	2-Nitroaniline	5	ND	ND
99-09-2	3-Nitroaniline	5	ND	ND
100-01-6	4-Nitroaniline	5	ND	ND
98-95-3	Nitrobenzene	0.4	ND	ND
88-75-5	2-Nitrophenol	N/A	ND	ND
100-02-7	4-Nitrophenol	N/A	ND	ND
62-75-9	N-Nitrosodimethylamine	N/A	ND	ND
86-30-6	N-Nitrosodiphenylamine	50	ND	ND
117-84-0	Di-n-octyl phthalate	50	ND	ND
87-86-5	Pentachlorophenol	1**	ND	ND
85-01-8	Phenanthrene	50	ND	ND
108-95-2	Phenol	1**	ND	ND
101-55-3	4-Bromophenyl phenyl ether	N/A	ND	ND
7005-72-3	4-Chlorophenyl phenyl ether	N/A	ND	ND
129-00-0	Pyrene	50	ND	ND
120-82-1	1,2,4-Trichlorobenzene	5***	ND	ND
95-95-4	2,4,5-Trichlorophenol	N/A	ND	ND
88-06-2	2,4,6-Trichlorophenol	N/A	ND	ND

NOTES:
1. Togs 1.1.1 refers to the NYSDEC's Technical and Operational Guidance Series (1.1.1) "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (June 1998).
2. "ND" indicates Not Detected above the reporting limit.
3. "E" indicates concentration exceeds the calibration range of instrument for that analysis.
4. * Applies to each isomer (1,2-, 1,3-, 1,4-dichlorobenzene) individually.
5. ** Applies to the sum of the total phenols or Phenolic compounds.
6. *** Applies to each isomer (1,2,3-, 1,2,4,-, and 1,3,5- trichlorobenzene) individually.

Exceeds Criteria

TABLE 3
SOIL VAPOR TESTING RESULTS
DETECTED COMPUNDS

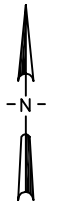
Compound	Benzene		Toluene		Ethylbenzene		m,p-Xylenes		o-Xylene		Methyl tert-Butyl Ether (MTBE)		Chloroform	
CAS #	71-43-2		108-88-3		1634-04-4		136777-61-2		95-47-6		1634-04-4		67-66-3	
NIOSH REL	325		375,000		435,000		N/A		435,000		N/A		9780	
OSHA PEL	3,000		200,000		435,000		N/A		100,000		N/A		240,000	
ACGIH TLV	2,000		191,000		441,000		441,000		666,000		147,000		50,000	
EPA	130		40,000		23,000		700,000		700,000		300,000		N/A	
Sample	RESULT	MRL	RESULT	MRL	RESULT	MRL	RESULT	MRL	RESULT	MRL	RESULT	MRL	RESULT	MRL
SV-1	ND	2.5	**15**	2.5	ND	2.5	**5.6**	2.5	ND	2.5	**3.0**	2.5	ND	2.5
SV-2	ND	2.5	**18**	2.5	ND	2.5	**7**	2.5	ND	2.5	ND	2.5	ND	2.5
SV-3	**3.3**	1.3	**23**	1.3	**3.1**	1.3	**9**	1.3	**2.1**	1.3	**60**	1.3	**3.9**	1.3
SV-4	**25,000**	12,000	ND	12,000	ND	12,000	ND	12,000	ND	12,000	ND	12,000	ND	12,000
SV-5	**73**	5	**40**	5	ND	5	ND	5	ND	5	ND	5	ND	5
SV-6	ND	25	**27**	25	ND	25	ND	25	ND	25	ND	25	ND	25
SV-7	ND	1.3	**16**	1.3	**2.5**	1.3	**7.4**	1.3	**1.7**	1.3	**1.5**	1.3	ND	1.3
SV-8	**20**	3.2	**32**	3.2	**5.4**	3.2	**5.4**	3.2	ND	3.2	**120**	3.2	ND	3.2
SV-9	ND	12	**26**	12	ND	12	**13**	12	ND	12	**110**	12	ND	12
SV-10	ND	410	ND	410	ND	410	ND	410	ND	410	ND	410	ND	410
SL-4	ND	6.3	**90**	6.3	ND	6.3	**12**	6.3	ND	6.3	ND	6.3	ND	6.3
SL-5	ND	1.3	**14**	1.3	ND	1.3	**2.5**	1.3	ND	1.3	ND	1.3	ND	1.3
Equipment Blank	ND	1.3	**9.3**	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3	ND	1.3
Method Blank	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Method Blank	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0

NOTES:
1. NIOSH REL indicates the National Institute for Occupational Safety and Health recommended exposure limit from NIOSH Pocket Guide to Chemical Hazards (1997).
2. OSHA PEL indicates the Occupational Health and Safety Act permissible exposure limits from NIOSH Pocket Guide to Chemical Hazards (1997).
3. ACGIH TLV indicates the American Conference of Governmental Industrial Hygienists threshold value limits from the ACGIH "1999 TLVs and BEIs, Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices".
4. EPA indicates U.S. Environmental Protection Agency, "Supplemental Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway (Vapor Intrusion Guidance)," Draft for comment 10/23/01.
5. MRL indicates the method reporting limit.
6. ND indicates the compound was not detected above the laboratory reporting limit.
7. Concentrations in ug/m^3.

TABLE 3
SOIL VAPOR TESTING RESULTS
DETECTED COMPUNDS

Compound	Cumene		Dichlorodifluoromethane (CFC 12)		Tetrachloroethene		1,1,1-Trichloroethane		Trichlorofluromethane		1,2,4-Trimethylbenzene	
CAS #	98-82-8		75-71-8		127-18-4		71-55-6		75-69-4		95-63-6	
NIOSH REL	245,000		4,950,000		N/A		1,900,000		5,600,000		125,000	
OSHA PEL	245,000		4,950,000		689,000		1,900,000		5,600,000		NONE	
ACGIH TLV	245,787		N/A		172,000		1,941,000		N/A		125,000	
EPA	N/A		N/A		N/A		N/A		N/A		N/A	
Sample	RESULT	MRL	RESULT	MRL	RESULT	MRL	RESULT	MRL	RESULT	MRL	RESULT	MRL
SV-1	ND	2.5	**2.9**	2.5	**3.2**	2.5	ND	2.5	ND	2.5	ND	2.5
SV-2	ND	2.5	**2.9**	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
SV-3	ND	1.3	**33.7**	1.3	ND	1.3	ND	1.3	**20**	1.3	ND	1.3
SV-4	ND	12,000	ND	12,000	ND	12,000	ND	12,000	ND	12,000	ND	12,000
SV-5	ND	5	**990**	5	ND	5	ND	5	ND	5	ND	5
SV-6	ND	25	**52**	25	ND	25	ND	25	ND	25	ND	25
SV-7	ND	1.3	**2.2**	1.3	ND	1.3	**2.9**	1.3	ND	1.3	ND	1.3
SV-8	**9.3**	3.2	**ND**	3.2	ND	3.2	ND	3.2	ND	3.2	ND	3.2
SV-9	ND	12	ND	12	ND	12	ND	12	ND	12	ND	12
SV-10	ND	410	ND	410	ND	410	ND	410	ND	410	ND	410
SL-4	ND	6.3	ND	6.3	ND	6.3	ND	6.3	ND	6.3	**8.6**	6.3
SL-5	ND	1.3	ND	1.3	ND	1.3	ND	1.3	**1.6**	1.3	ND	1.3
Equipment Blank	ND	1.3	**2.7**	1.3	ND	1.3	ND	1.3	**1.5**	1.3	ND	1.3
Method Blank	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
Method Blank	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0

NOTES:
1. NIOSH REL indicates the National Institute for Occupational Safety and Health recommended exposure limit from NIOSH Pocket Guide to Chemical Hazards (1997).
2. OSHA PEL indicates the Occupational Health and Safety Act permissible exposure limits from NIOSH Pocket Guide to Chemical Hazards (1997).
3. ACGIH TLV indicates the American Conference of Governmental Industrial Hygienists threshold value limits from the ACGIH "1999 TLVs and BEIs, Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices".
4. EPA indicates U.S. Environmental Protection Agency, "Supplemental Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway (Vapor Intrusion Guidance)," Draft for comment 10/23/01.
5. MRL indicates the method reporting limit.
6. ND indicates the compound was not detected above the laboratory reporting limit.
7. Concentrations in ug/m^3.



QUADRANGLE LOCATION: WHITE PLAINS, N.Y.

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UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

TARRYTOWN PROPERTY DEVELOPMENT
NATIONAL RE/SOURCES
TARRYTOWN, NEW YORK

CONCEPTUAL REMEDIATION PLAN
TARRYTOWN FORMER MGP SITE
PROJECT LOCUS

SCALE: 1" = APPROX. 2000'

JUNE 2003

FIGURE 1

NOTES:

1. BASE PLAN ILLUSTRATING EXISTING SITE STRUCTURES , FEATURES, EXISTING EXPLORATIONS AND EXTENT OF IMPACTED AREAS DERIVED FROM PARSONS ENGINEERING SCIENCE, INC., FIGURE 3-1 ENTITLED "TOTAL BTEX CONCENTRATIONS IN SOIL SAMPLES, SUPPLEMENTAL INVESTIGATION TARRYTOWN SITE" DATED 28 SEPTEMBER 2000.

LEGEND:

- MW-28 — PROPOSED MONITORING WELL
- SV-1 — PROPOSED SOIL VAPOR PROBE
- SB-301 — PROPOSED BORING TO CHECK DNAPL LIMITS - 28'
- SL-4 — PROPOSED SLAM BAR SOIL VAPOR SAMPLE LOCATION
- MW-01 — MONITORING WELL LOCATIONS
- SB-01 — SOIL BORING LOCATIONS
- RB06 — RIVER BORING LOCATION
- GT-2 — GEOTECHNICAL BORING LOCATION
- ES-1 — RIVER MEASURING POINT
- TP03 — TEST PIT LOCATIONS
- G-207 — GEOPROBE BORINGS CONDUCTED BY RETEC IN OCTOBER 1996
- SB-202 — SOIL BORINGS CONDUCTED BY RETEC IN OCTOBER 1996
- B-2 — GEOTECHNICAL BORINGS CONDUCTED BY COUNTY ASPHALT IN MARCH 1998
- FORMER STRUCTURES
- BUILDINGS
- **LNAPL AREA - LIMITS OF MEASURABLE FLOATING LNAPL**
- **PROPOSED RECOVERY WELL LOCATION**
- OW-1 — **PROPOSED DNAPL OBSERVATION WELL**
- ZONES SATURATED WITH MGP DNAPL
- LENSES SATURATED WITH MGP DNAPL
- 58/4 — APPROX. LOCATIONS OF SOIL GAS SAMPLES PERFORMED BY METCALF & EDDY, DATED DECEMBER 1990. 58/4=SAMPLE#/PID RESULTS IN PPM.
- B5 — APPROX. LOCATIONS OF SOIL SAMPLE BORINGS PERFORMED BY METCALF & EDDY, DATED DECEMBER 1990. B5=PROBE NO.
- 120 — APPROX. LOCATIONS OF SOIL PROBES PERFORMED BY METCALF & EDDY, DATED DECEMBER 1994. 120=PROBE NO.

0 60 120 180 240

APPROXIMATE SCALE IN FEET

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TARRYTOWN, NEW YORK

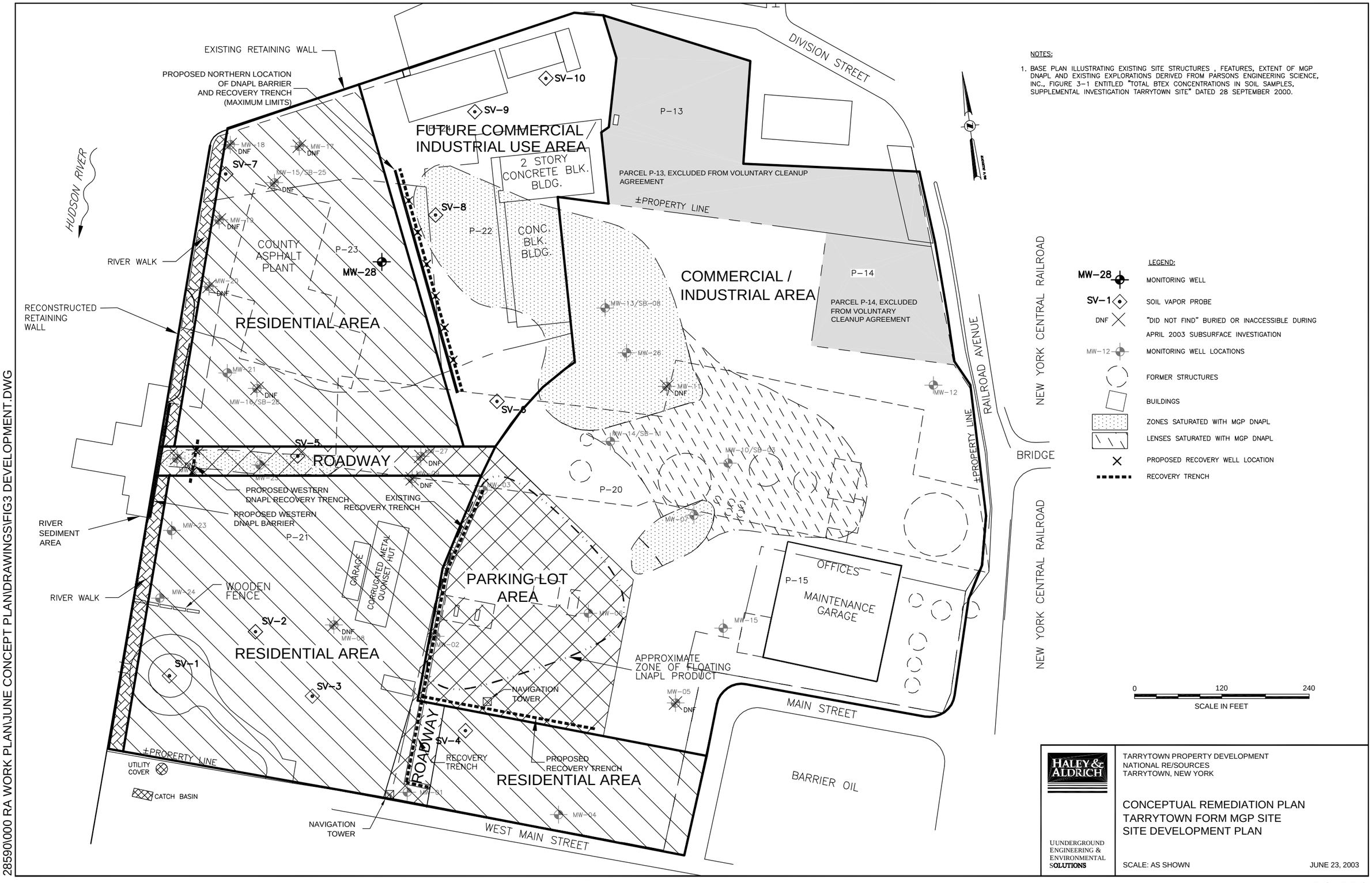
CONCEPTUAL REMEDIATION PLAN
TARRYTOWN FORMER MGP SITE
SITE PLAN

SCALE: AS SHOWN

JUNE 23, 2003

28590\000 RA WORK PLAN\JUNE CONCEPT PLAN\DRAWINGS\FIG2 SITE PLAN.DWG

FIGURE 2



NOTES:

1. BASE PLAN ILLUSTRATING EXISTING SITE STRUCTURES , FEATURES, EXTENT OF MGP DNAPL AND EXISTING EXPLORATIONS DERIVED FROM PARSONS ENGINEERING SCIENCE, INC., FIGURE 3-1 ENTITLED "TOTAL BTEX CONCENTRATIONS IN SOIL SAMPLES, SUPPLEMENTAL INVESTIGATION TARRYTOWN SITE" DATED 28 SEPTEMBER 2000.

LEGEND:

- MW-28 — MONITORING WELL
- SV-1 — SOIL VAPOR PROBE
- DNF — "DID NOT FIND" BURIED OR INACCESSIBLE DURING APRIL 2003 SUBSURFACE INVESTIGATION
- MW-12 — MONITORING WELL LOCATIONS
- FORMER STRUCTURES
- BUILDINGS
- ZONES SATURATED WITH MGP DNAPL
- LENSES SATURATED WITH MGP DNAPL
- PROPOSED RECOVERY WELL LOCATION
- RECOVERY TRENCH

28590000 RA WORK PLAN\JUNE CONCEPT PLAN\DRAWINGS\FIG3 DEVELOPMENT.DWG

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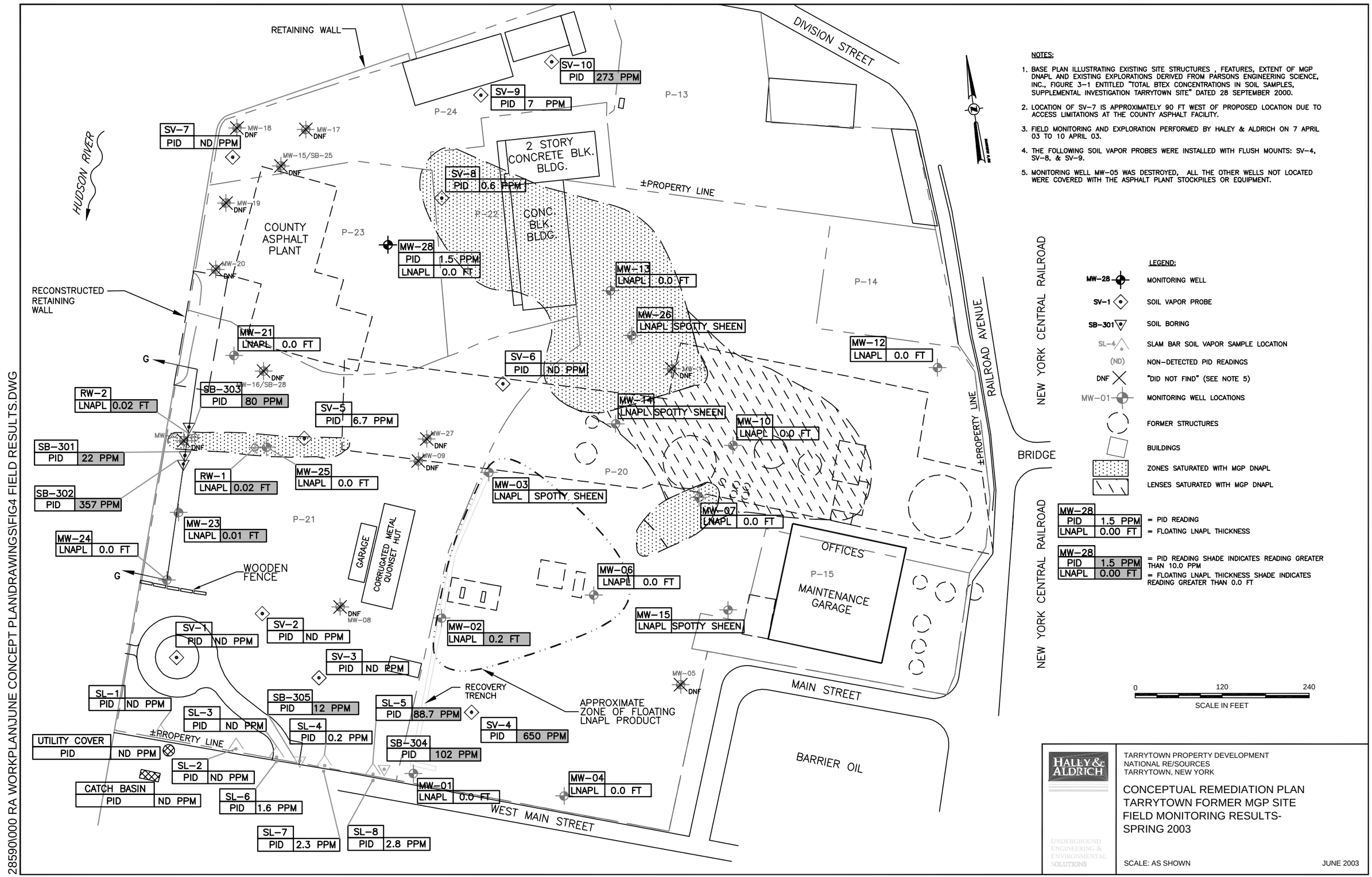
TARRYTOWN PROPERTY DEVELOPMENT
NATIONAL RE/SOURCES
TARRYTOWN, NEW YORK

CONCEPTUAL REMEDIATION PLAN
TARRYTOWN FORM MGP SITE
SITE DEVELOPMENT PLAN

SCALE: AS SHOWN

JUNE 23, 2003

FIGURE 3


RETAINING WALL
DIVISION STREET
HUDSON RIVER
SV-10 PID 273 PPM
SV-9 PID 7 PPM
SV-7 PID ND PPM
MW-18 DNF
MW-17 DNF
MW-15/SB-25 DNF
MW-19 DNF
P-24
P-13
2 STORY CONCRETE BLK. BLDG.
±PROPERTY LINE
SV-8 PID 0.6 PPM
P-22
CONC. BLK. BLDG.
COUNTY ASPHALT PLANT
P-23
MW-28 PID 1.5 PPM LNAPL 0.0 FT
MW-20 DNF
MW-13 LNAPL 0.0 FT
MW-26 LNAPL SPOTTY SHEEN
P-14
RECONSTRUCTED RETAINING WALL
MW-21 LNAPL 0.0 FT
SV-6 PID ND PPM
MW-12 LNAPL 0.0 FT
G
DNF MW-16/SB-28
SB-303 PID 80 PPM
RW-2 LNAPL 0.02 FT
MW-14 LNAPL SPOTTY SHEEN
MW-10 LNAPL 0.0 FT
SV-5 PID 6.7 PPM
MW-27 DNF
MW-09 DNF
SB-301 PID 22 PPM
RW-1 LNAPL 0.02 FT
MW-25 LNAPL 0.0 FT
P-20
MW-03 LNAPL SPOTTY SHEEN
SB-302 PID 357 PPM
MW-07 LNAPL 0.0 FT
MW-23 LNAPL 0.01 FT
P-21
MW-24 LNAPL 0.0 FT
GARAGE
CORRUGATED METAL QUONSET HUT
OFFICES
P-15
MAINTENANCE GARAGE
WOODEN FENCE
G
MW-06 LNAPL 0.0 FT
MW-15 LNAPL SPOTTY SHEEN
DNF MW-08
SV-1 PID ND PPM
SV-2 PID ND PPM
MW-02 LNAPL 0.2 FT
SV-3 PID ND PPM
MW-05 DNF
SL-1 PID ND PPM
SB-305 PID 12 PPM
SL-5 PID 88.7 PPM
RECOVERY TRENCH
APPROXIMATE ZONE OF FLOATING LNAPL PRODUCT
MAIN STREET
SL-3 PID ND PPM
SL-4 PID 0.2 PPM
SV-4 PID 650 PPM
UTILITY COVER PID ND PPM
±PROPERTY LINE
SB-304 PID 102 PPM
BARRIER OIL
SL-2 PID ND PPM
CATCH BASIN PID ND PPM
SL-6 PID 1.6 PPM
MW-01 LNAPL 0.0 FT
MW-04 LNAPL 0.0 FT
WEST MAIN STREET
SL-7 PID 2.3 PPM
SL-8 PID 2.8 PPM
NEW YORK CENTRAL RAILROAD
RAILROAD AVENUE
±PROPERTY LINE
BRIDGE
NEW YORK CENTRAL RAILROAD
N
NOTES:
1. BASE PLAN ILLUSTRATING EXISTING SITE STRUCTURES , FEATURES, EXTENT OF MGP DNAPL AND EXISTING EXPLORATIONS DERIVED FROM PARSONS ENGINEERING SCIENCE, INC., FIGURE 3-1 ENTITLED "TOTAL BTEX CONCENTRATIONS IN SOIL SAMPLES, SUPPLEMENTAL INVESTIGATION TARRYTOWN SITE" DATED 28 SEPTEMBER 2000.
2. LOCATION OF SV-7 IS APPROXIMATELY 90 FT WEST OF PROPOSED LOCATION DUE TO ACCESS LIMITATIONS AT THE COUNTY ASPHALT FACILITY.
3. FIELD MONITORING AND EXPLORATION PERFORMED BY HALEY & ALDRICH ON 7 APRIL 03 TO 10 APRIL 03.
4. THE FOLLOWING SOIL VAPOR PROBES WERE INSTALLED WITH FLUSH MOUNTS: SV-4, SV-8, & SV-9.
5. MONITORING WELL MW-05 WAS DESTROYED, ALL THE OTHER WELLS NOT LOCATED WERE COVERED WITH THE ASPHALT PLANT STOCKPILES OR EQUIPMENT.
LEGEND:
MW-28 MONITORING WELL
SV-1 SOIL VAPOR PROBE
SB-301 SOIL BORING
SL-4 SLAM BAR SOIL VAPOR SAMPLE LOCATION
(ND) NON-DETECTED PID READINGS
DNF "DID NOT FIND" (SEE NOTE 5)
MW-01 MONITORING WELL LOCATIONS
FORMER STRUCTURES
BUILDINGS
ZONES SATURATED WITH MGP DNAPL
LENSES SATURATED WITH MGP DNAPL
MW-28 PID 1.5 PPM = PID READING
LNAPL 0.00 FT = FLOATING LNAPL THICKNESS
MW-28 PID 1.5 PPM = PID READING SHADE INDICATES READING GREATER THAN 10.0 PPM
LNAPL 0.00 FT = FLOATING LNAPL THICKNESS SHADE INDICATES READING GREATER THAN 0.0 FT
0 120 240
SCALE IN FEET
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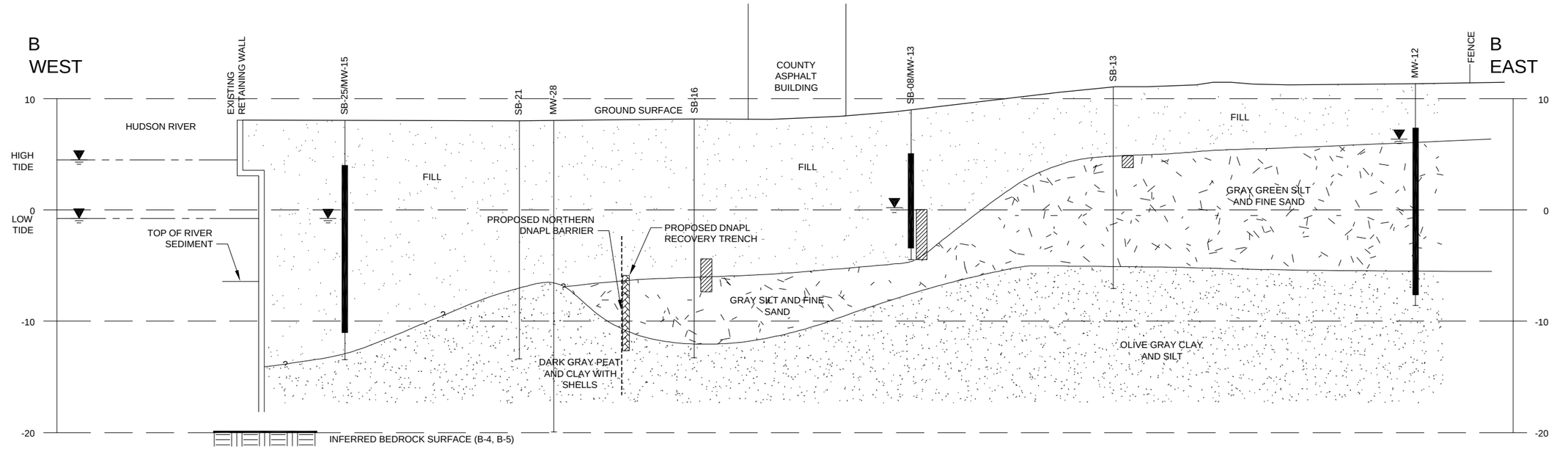
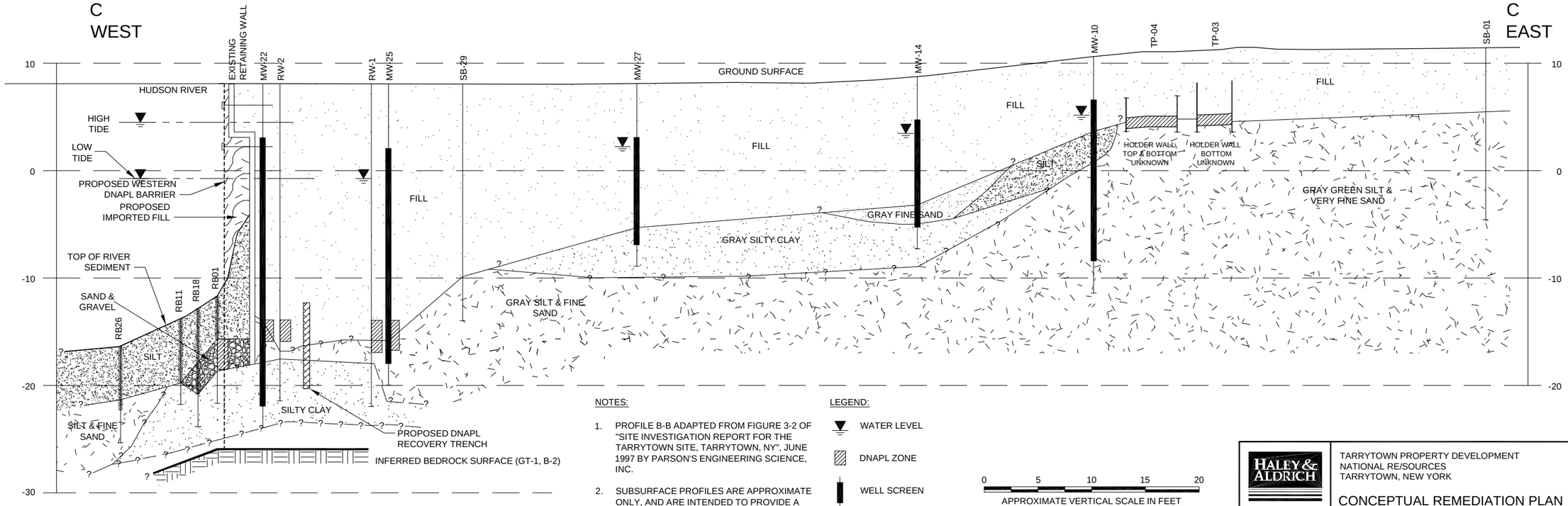
TARRYTOWN PROPERTY DEVELOPMENT
NATIONAL RE/SOURCES
TARRYTOWN, NEW YORK
CONCEPTUAL REMEDIATION PLAN
TARRYTOWN FORMER MGP SITE
FIELD MONITORING RESULTS-
SPRING 2003
SCALE: AS SHOWN
JUNE 2003
28590\000 RA WORKPLAN\JUNE CONCEPT PLAN\DRAWINGS\FIG4 FIELD RESULTS.DWG

FIGURE 4





NOTES:

1. PROFILE B-B ADAPTED FROM FIGURE 3-2 OF "SITE INVESTIGATION REPORT FOR THE TARRYTOWN SITE, TARRYTOWN, NY", JUNE 1997 BY PARSON'S ENGINEERING SCIENCE, INC.
2. SUBSURFACE PROFILES ARE APPROXIMATE ONLY, AND ARE INTENDED TO PROVIDE A GENERAL ILLUSTRATION OF SITE CONDITIONS.
3. LATERAL DIMENSIONS OF HOLDERS BASED ON SANBORN (TM) MAPS. DEPTH BASED ON ADJACENT HOLDER WHERE HOLDER BOTTOM WAS FOUND.

LEGEND:

- WATER LEVEL
- DNAPL ZONE
- WELL SCREEN
- RECOVERY TRENCH
- SHEEN & BLEBS IN RIVER SEDIMENT

0 5 10 15 20
APPROXIMATE VERTICAL SCALE IN FEET

0 50 100 150 200
APPROXIMATE HORIZONTAL SCALE IN FEET

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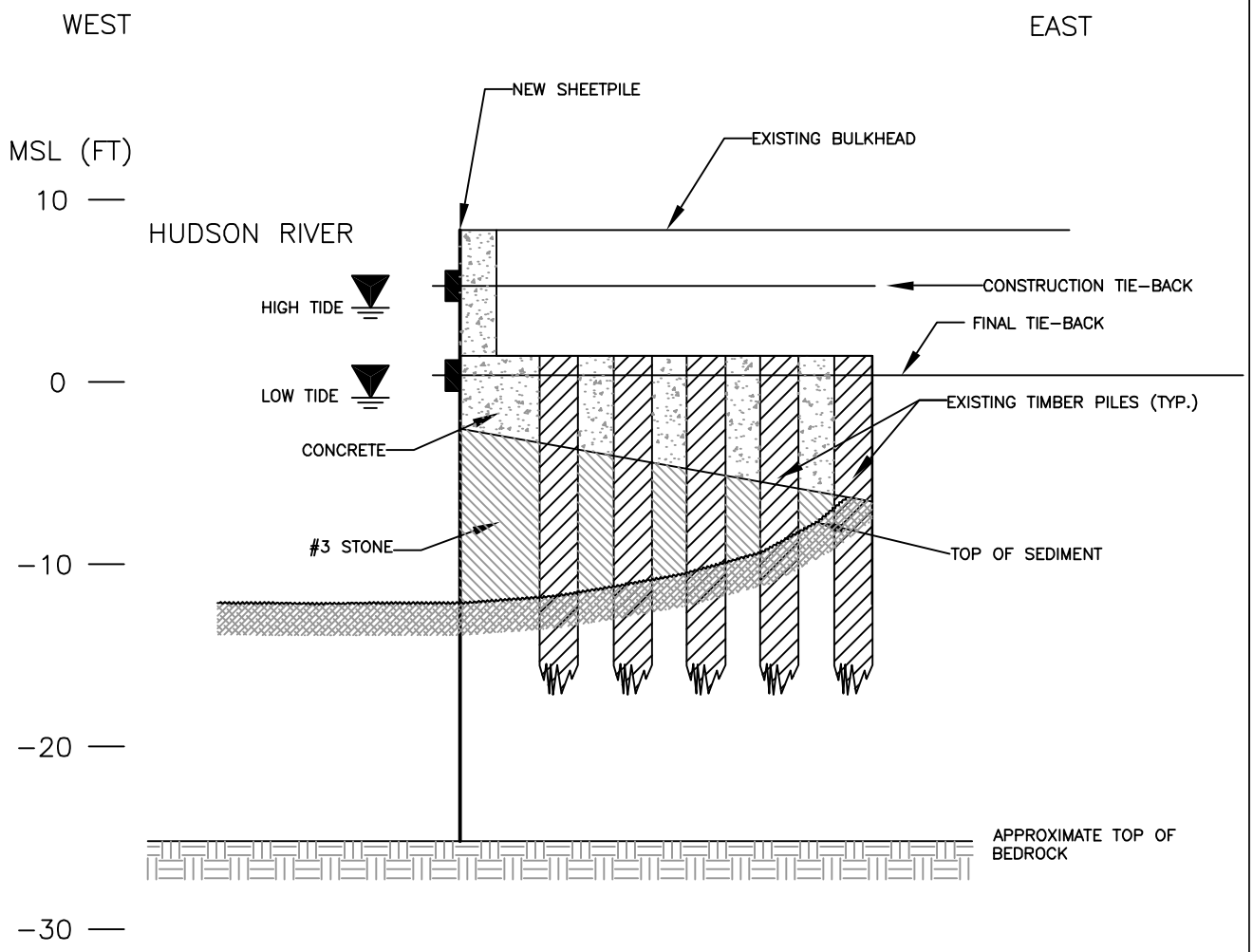
CONCEPTUAL REMEDIATION PLAN
TARRYTOWN FORMER MGP SITE
SUBSURFACE PROFILES
B-B AND C-C

SCALE: AS SHOWN

JUNE 2003

FIGURE 5

28590\000 RA WORK PLAN\JUNE CONCEPT PLAN\DRAWINGS\PROFILES.DWG



SEQUENCE:

1. INSTALL SHEETPILE
2. INSTALL CONSTRUCTION TIE−BACK
3. INSTALL FINAL TIE−BACK
4. BACKFILL WITH STONE
5. CONCRETE CAP

NOTE:

THIS IS A CONCEPTUAL CONFIGURATION ONLY. THE FINAL DESIGN WILL BE COMPLETED IN THE FUTURE, WHICH MAY CHANGE SOME FEATURES.

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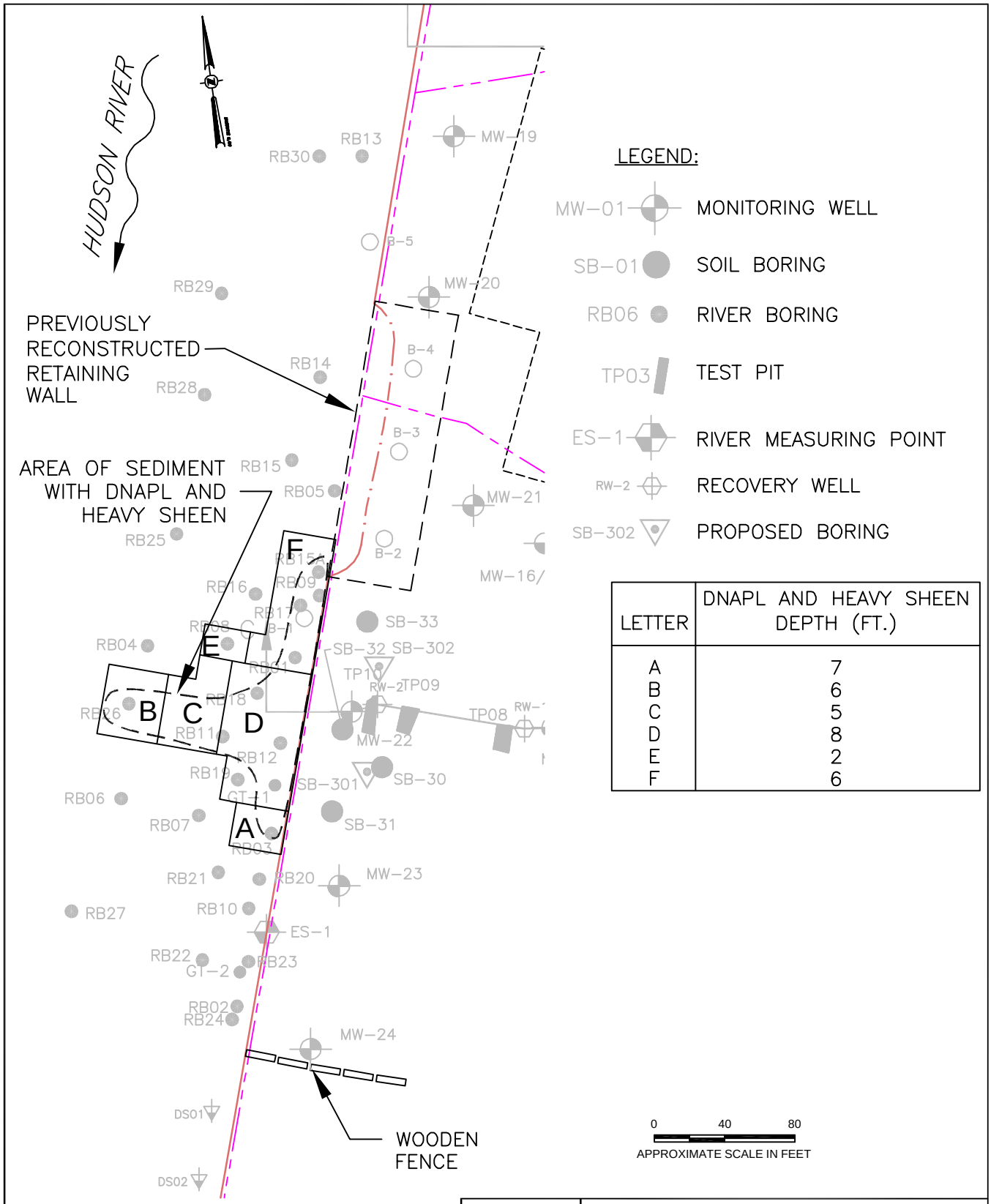
CONCEPTUAL REMEDIATION PLAN
TARRYTOWN FORMER MGP SITE
GENERAL FEATURES WESTERN DNAPL BARRIER

SCALE AS SHOWN. JUNE 2003

FIGURE 6



LETTER	DNAPL AND HEAVY SHEEN DEPTH (FT.)
A	7
B	6
C	5
D	8
E	2
F	6

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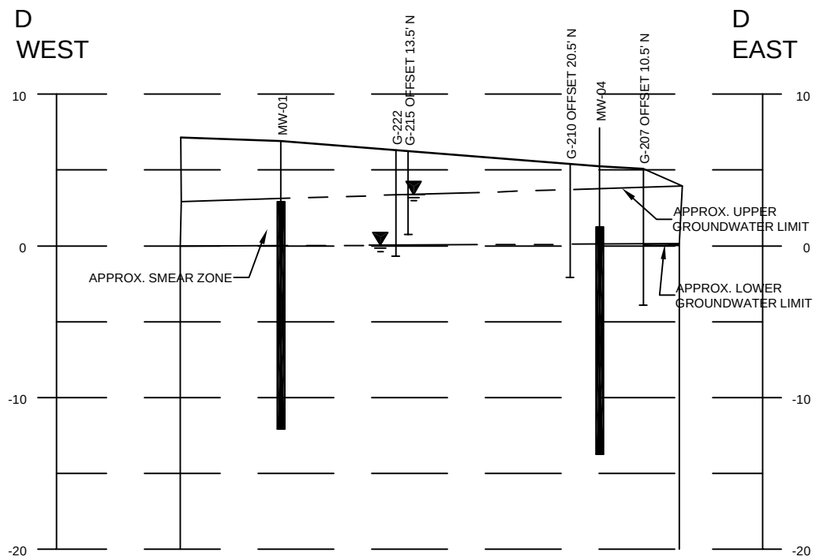
TARRYTOWN, NEW YORK

CONCEPTUAL REMEDIATION PLAN
TARRYTOWN FORMER MGP SITE
SEDIMENT EXCAVATION PLAN

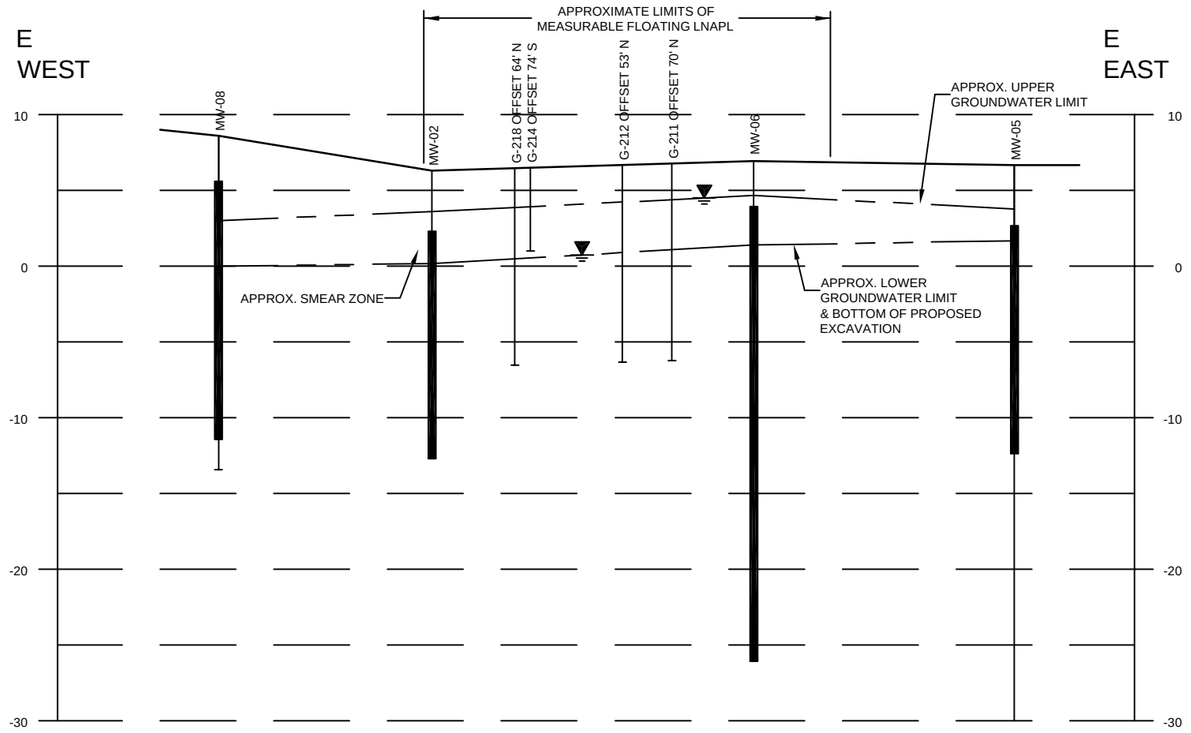
SCALE: AS SHOWN

JUNE 2003

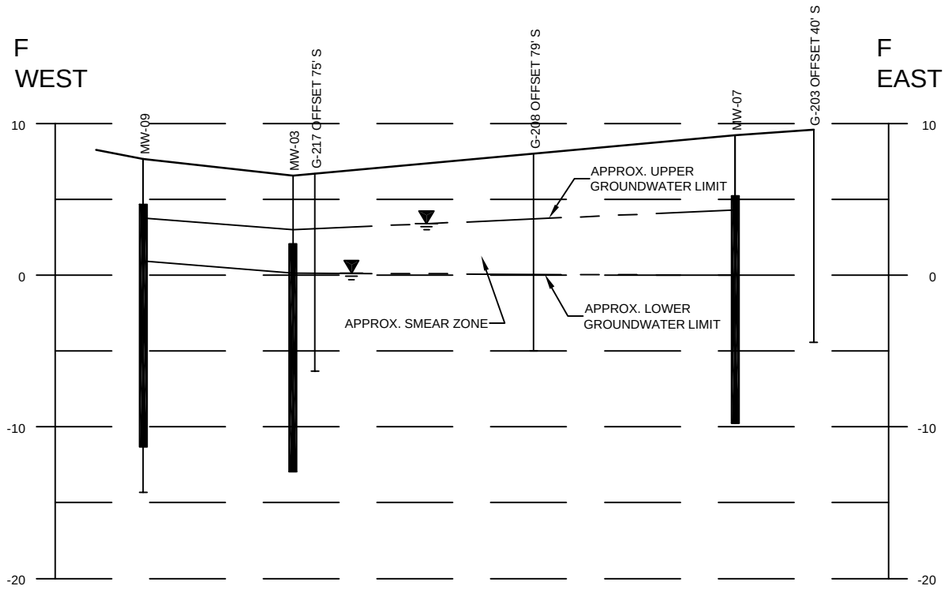
FIGURE 7



CROSS SECTION D-D



CROSS SECTION E-E



CROSS SECTION F-F

NOTES:

1. SUBSURFACE PROFILES ARE APPROXIMATE ONLY, AND ARE INTENDED TO PROVIDE A GENERAL ILLUSTRATION OF SITE CONDITIONS.

LEGEND:

WATER LEVEL

WELL SCREEN

0 10 20
APPROXIMATE VERTICAL SCALE IN FEET

0 100 200
APPROXIMATE HORIZONTAL SCALE IN FEET

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CONCEPTUAL REMEDIATION PLAN TARRYTOWN FORMER MGP SITE SUBSURFACE PROFILES D-D, E-E AND F-F

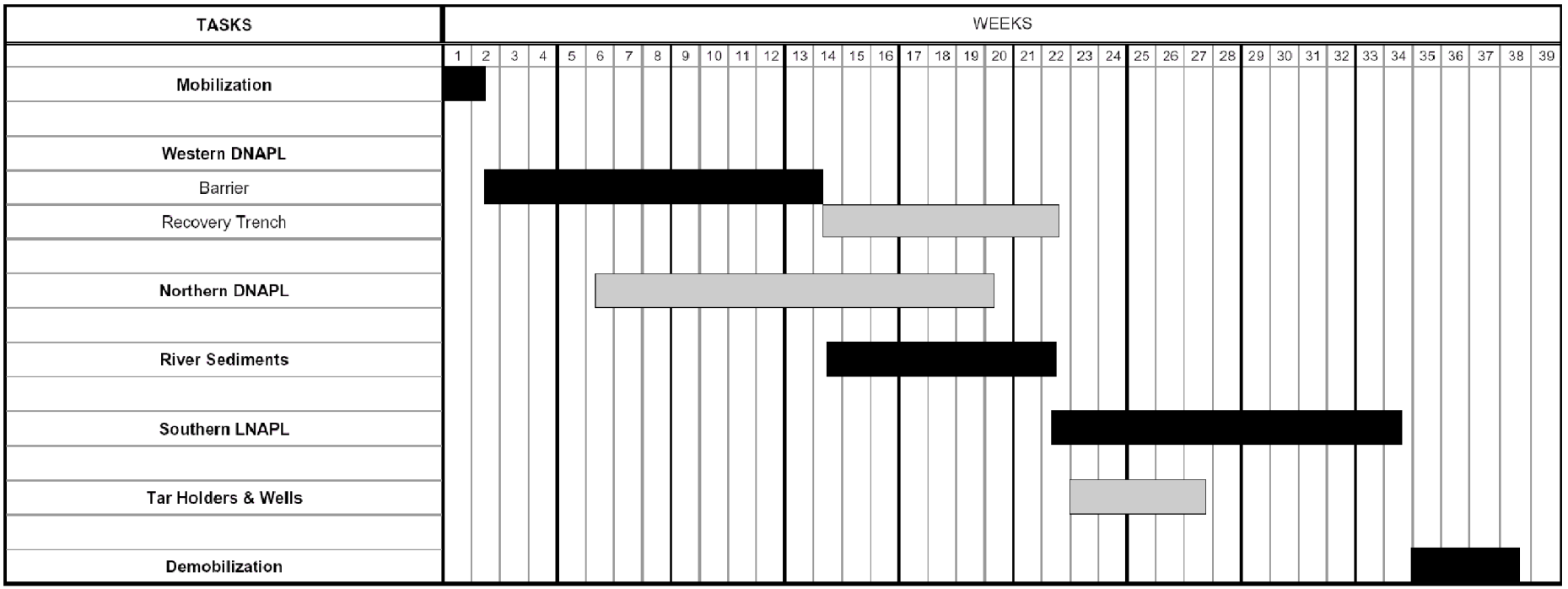
SCALE: AS SHOWN

JUNE 2003

FIGURE 8

28590\000 RA WORK PLAN\JUNE CONCEPT PLAN\DRAWINGS\PROFILES.DWG

28590\000 RA WORK PLAN\JUNE CONCEPT PLAN\DRAWINGS\SCHEDULE.DWG



LEGEND:

CRITICAL PATH

TASK DURATION

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CONCEPTUAL REMEDIATION PLAN
TARRYTOWN FORMER MGP SITE
CONSTRUCTION SCHEDULE

SCALE AS SHOWN. JUNE 2003

FIGURE 9