Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Camp Georgetown Site
Georgetown, Madison County, New York
Site Number 7-27-010

March, 2004

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* ERIN M. CROTTY, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Camp Georgetown Inactive Hazardous Waste Disposal Site
Georgetown, Madison County, New York
Site No.7-27-010

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Camp Georgetown site, a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Camp Georgetown inactive hazardous waste disposal site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened releases of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and/or the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation and Feasibility Study (RI/FS) for the Camp Georgetown site and the criteria identified for evaluation of alternatives, the NYSDEC has selected a Modified Part 360 Multi-layer Synthetic Cap over the primary area of contamination with other areas of concern to be excavated and consolidated beneath the cap. The components of the remedy are as follows:

1. Installation of an impermeable cap to minimize the risk of exposure to contaminants. This would involve placement of a modified Part 360 multi-layer geomembrane cap over the primary area of contamination. The remaining areas of contaminated soil would be excavated and consolidated beneath the cap.

2. Implementation of a groundwater monitoring program to assess the effectiveness of the remedy.

3. Development of a site management plan to: (a) maintain the capped area (mowing, erosion repairs, etc); and (b) restrict use of shallow groundwater in the area subject to long term monitoring.

4. The property owner would provide an annual certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC, which would certify that the institutional controls and engineering controls put in place, are unchanged from the previous certification and nothing has occurred that would impair the ability of the control to protect public health or the environment or constitute a violation or failure to comply with any operation and maintenance or site management plan.

5. Imposition of an institutional control in the form of an environmental easement that would: (a) require compliance with the approved site management plan, (b) prohibit use and development of the capped area; (c) restrict use of groundwater as a source of potable or process water; and, (d) require the property owner to complete and submit to the NYSDEC an annual certification to insure compliance with the use restrictions.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

_____ _____

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

TABLE OF CONTENTS

SECTION **PAGE**

1: SUMMARY OF THE RECORD OF DECISION 1

2: SITE LOCATION AND DESCRIPTION 2

3: SITE HISTORY 2
- 3.1: Operational/Disposal History 2
- 3.2: Remedial History 3

4: SITE CONTAMINATION 4
- 4.1: Summary of the Remedial Investigation 4
- 4.2: Interim Remedial Measures 11
- 4.3: Summary of Human Exposure Pathways 11
- 4.4: Summary of Environmental Impacts 12

5: SUMMARY OF THE REMEDIATION GOALS 12

6: SUMMARY OF THE EVALUATION OF ALTERNATIVES 13
- 6.1: Description of Remedial Alternatives 13
- 6.2 Evaluation of Remedial Alternatives 16

7: SUMMARY OF THE SELECTED REMEDY 17

Tables
- Table 1: Nature and Extent of Contamination 21
- Table 2: Remedial Alternative Costs 23

Figures
- Figure 1: Site Location Map 24
- Figure 2: Site Map 25
- Figure 3: Groundwater Concentration Map 26
- Figure 4 Impacted Area Summary Map 27
- Figure 5 Preliminary Design of Remedy 28

Appendices
- Appendix A: Responsiveness Summary
- Appendix B: Administrative Record

RECORD OF DECISION

Camp Georgetown Site
Georgetown, Madison County, New York
Site Number 7-27-010
March, 2004

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has seleceted this remedy for the Camp Georgetown site. The presence of hazardous waste has created significant threats to human health and/or the environment that are addressed by this remedy. As more fully described in Sections 3 and 4 of this document, past wood treatment operations using pentachlorophenol (PCP) and chromated copper arsenate (CCA) have resulted in the disposal of hazardous wastes, including semi-volatile organic compounds (SVOCs), dioxins, phenols, and metals. These wastes have contaminated the soil and groundwater at the site, and have resulted in:

- a significant threat to human health associated with current and potential exposure to contaminated soil and shallow groundwater.

- a significant environmental threat associated with the impacts of contaminated soil and groundwater.

To eliminate or mitigate these threats, the NYSDEC has selected the following remedy:

- Installation of an impermeable cap to minimize the risk of exposure to contaminants. This will involve placement of a multi layer geomembrane cap over the primary area of contamination. The remaining areas of contaminated soil will be excavated and consolidated beneath the cap.

- Implementation of a groundwater monitoring program to assess the effectiveness of the remedy.

- Development of a site management plan to: (a) maintain the capped area (mowing, erosion repairs, etc); and (b) restrict use of shallow groundwater in the area subject to long term monitoring.

- The property owner will provide an annual certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC, which will certify that the institutional controls and engineering controls put in place, are unchanged from the previous certification and nothing has occurred that could impair the ability of the

control to protect public health or the environment or constitute a violation or failure to comply with any operation and maintenance or site management plan.

- Imposition of an institutional control in the form of an environmental easement that will: (a) require compliance with the approved site management plan, (b) prohibit use and development of the capped area; (c) restrict use of groundwater as a source of potable or process water; and, (d) require the property owner to complete and submit to the NYSDEC an annual certification to insure compliance with the use restrictions.

- In addition to the remedial components listed above, an option to excavate and consolidate the impacted soils from the Camp Pharsalia site to be included beneath the capped area at Camp Georgetown may be explored. A March 2003 Record of Decision selected a low permeability soil cover remedy for Camp Pharsalia. Due to the similarities in contamination and the close proximity to the Camp Georgetown site, such an option may provide an improved remedial approach for Camp Pharsalia without compromising the effectiveness of this remedy for Camp Georgetown.

The selected remedy, discussed in detail in Section 7, is intended to attain the remediation goals identified for this site in Section 5. The remedy must conform with officially promulgated standards and criteria that are directly applicable, or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, criteria and guidance are hereafter called SCGs.

SECTION 2: SITE LOCATION AND DESCRIPTION

Camp Georgetown is a large complex consisting of a NYSDEC crew headquarters and a New York State Department of Correctional Services (NYSDCS) active incarceration facility, located in the Town of Georgetown, Madison County (see figure 1). The incarceration facility is operated by the NYSDCS, but is located on property managed by the NYSDEC. The NYSDCS occupies the property north of Crumb Hill Road and does not include any past wood treatment operations associated with the contamination. The NYSDEC occupies the property south of Crumb Hill Road, which includes the area defined as the Class 2 inactive hazardous waste disposal site. This area defined as the site occupies approximately 6.6 acres , as shown on Figure 2. The site is bordered on the northeast by Crumb Hill Road, south by private property, and west by State Reforestation Land.

The area around the site is typified by a mature and eroded plateau that is dissected by a series of valleys several hundred feet deep. This plateau has a rolling, rugged appearance. Approximately 45 percent of Madison County is classified as commercial forest.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

Incarceration facility inmates participate in various work programs. One of the work activities formerly performed by the Camp Georgetown inmates was a sawmill and wood treatment operation.

The wood treatment plant was operated from approximately 1970 to 1983 as a dip tank process using the chemical biocide pentachlorophenol. Untreated poles were stored in drying sheds northwest of the treatment building. The poles were moved into the treatment building by rail and then hoisted into one of two empty dip tanks. The poles were strapped in place to prevent the logs from floating during treatment. The dip tank would then be filled with a pentachlorophenol mixture, which would come from one or both of the two 2,000 gallon above ground storage tanks (AST) by gravity flow. The poles were usually submerged in the treatment solution for 24 hours. Wood was treated using a pentachlorophenol (PCP) solution consisting of approximately one part PCP, to eleven parts fuel oil. Unused treatment solution would be pumped back into one of the storage tanks for pentachlorophenol /fuel oil mixtures between treatment batches.

After treatment, the poles were hoisted from the dip tanks and allowed to drip back into the dip tank for a period of time. The poles were then moved by rail to the drip pad, located on the southeast end of the building. The poles would remain in this uncovered area for another 24 hours. Finally, the poles were moved to one of the designated "treated material storage areas." These areas were located around the outside of the treatment building and also along the southwest side of the service road serving the treatment plant and storage buildings.

In 1983 the PCP treatment process was discontinued. From 1983 until 1991, the treatment plant was operated as a pressure treatment process using chromated copper arsenate (CCA)solution. The CCA solution used at Camp Georgetown was comprised of 23.75% chromic acid, 17% arsenic pentoxide, 9.25% cupric oxide, and 50% water. Unlike the dipping process employed for PCP, this process involved placement the wood in a pressurized vessel for treatment.

3.2: Remedial History

In 1999, the NYSDEC listed the site as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York. A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required. This listing was based on the past use of PCP at the site.

The Camp Georgetown site is one of three NYSDCS facilities in the State currently under investigation by the NYSDEC due to former wood treatment operations. Each of the three sites is an active incarceration facility operated by the NYSDCS, and located on property under the jurisdiction of the NYSDEC. The NYSDCS provided the funding for building construction at the Camps and provides for the maintenance and security. The NYSDEC provides the work programs, technical forestry staff to supervise work, and tools and equipment required to carry out the work. The wood treatment programs were developed to provide lumber and round poles for NYSDEC construction and maintenance projects. The pole treatment plants, however, are no longer in operation. Wood treatment at Camp Georgetown was discontinued in 1991.

In October of 1997 the NYSDEC Division of Operations requested that the Division of Environmental Remediation (DER) perform an environmental investigation at Camp Georgetown.

The DER completed a Preliminary Investigation (PI) at Camp Georgetown in 1999. The PI consisted of the excavation of 22 test pits, the installation and sampling of 8 monitoring wells and

the collection of 26 surface soil, and 22 subsurface soil samples. The investigation found PCP in the soil directly below the treatment building and the area extending to the west of the building. The soil under the building was also tested for dioxin, a common impurity in PCP, which was found to be above cleanup criteria. Based on these findings, in December of 1999, the NYSDEC listed the Camp Georgetown site on the State's Registry of Inactive Hazardous Waste Disposal Sites. The site, consisting of the property on the south side of Crumb Hill road, was designated a Class 2 site, which is defined as a site which " presents a significant threat to the public health or the environment."

In 2001, the NYSDEC initiated a Remedial Investigation/Feasibility Study (RI/FS) for the Camp Georgetown site. The RI was developed to build on the information generated during the PI and to help fully delineate the extent of contamination at the site.

SECTION 4: SITE CONTAMINATION

A remedial investigation/feasibility study (RI/FS) has been conducted to evaluate the alternatives for addressing the significant threats to human health and/or the environment.

4.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted between October, 2001 and November 2002**.** The field activities and findings of the investigation are described in the RI report.

The following activities were conducted during the RI:

- Research of historical information, including review of the Preliminary Investigation Report;
- Ground penetrating radar survey to assist in locating buried metal debris, including possible drums;
- Excavation of 24 test pits to assess shallow geologic conditions and collect subsurface soil samples;
- Collection of 2 soil samples within a seep area;
- Collection of surface soil samples (from 0 to 2 inches below the ground surface) from 54 locations;
- Installation of 20 soil borings and 11 new monitoring wells for analysis of soils and grounwater as well as physical properties of soil and hydrogeologic conditions;
- Sampling of 19 new and existing monitoring wells;
- A survey of public and private water supply wells in the area around the site;
- Collection of 4 aquatic sediment samples, and ;

- Collection of fish samples from Mann Brook.

To determine whether the soil, sediment, biota, and groundwater contain contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on NYSDEC "Ambient Water Quality Standards and Guidace Values" and Part 5 of the New York State Sanitary Code. *Division of Water Technical and Operational Guidance Series 1.1.1* (TOGS 1.1.1) was used for screening groundwater. The groundwater standard for total phenolic compounds listed in TOGS 1.1.1 is 1.0 part per billion (ppb). Because PCP is the only phenolic compound detected in the groundwater at the site, an SCG of 1.0 ppb has been used. Finally, 6NYCRR Part 700-705 lists a groundwater standard of 0.0007 parts per trillion (ppt) for 2,3,7,8-TCDD. This value has been adopted as the groundwater SCG, with the other forms of dioxins and furans normalized to 2,3,7,8-TCDD using the USEPA's toxicity equivalence factors (TEFs).

- Soil SCGs are based on the NYSDEC "Technical and Administrative Guidance Memorandum (TAGM) 4046; Determination of Soil Cleanup Objectives and Cleanup Levels". For dioxins/furans a cleanup level of 1 ppb 2,3,7,8-TCDD equivalence has been selected as the soil cleanup objective.

- the NYSDEC "Technical Guidance for Screening Contaminated Sediments" guidance document.

- NYSDEC Technical Report 87-3, *The Niagara River Biota Contamination Project: Fish Flesh Criteria for Piscivorous Wildlife*, July 1987.

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. These are summarized below. More complete information can be found in the RI report.

4.1.1: Site Geology and Hydrogeology

The overburden geology was investigated during the test pit and monitoring well investigations. The top foot of overburden consists of weathered, broken gray shale (i.e., soil and unconsolidated rock fragments) that range in size from gravel to boulders mixed with grey silt and sand or brown sandy topsoil, considered to be non-native fill material most likely originating from a shale quarry located northwest of the site. Underlying the fill material is glacial lodgment till consisting of a silty till with thin sand lenses overlying a clay till with thin sand lenses. Both till layers are very dense and vary in color across the site from grey, tan and brown. Glacial till was observed to a depth of approximately 46 feet bgs (which is the maximum depth of drilling during monitoring well installation during PI activities). Overall thickness of the till was reported to be in excess of 150 feet during the installation of the water supply well, which is approximately 200 feet total depth. The till is very dense as evidenced by high blow counts and difficult drilling conditions. Observations during drilling confirm that the upper 15 feet of the till unit contains numerous thin lenses of more permeable sands and fine gravel that may or may not be interconnected.

Depth to groundwater across the site ranged between 2 to 5 feet bgs during the groundwater sampling events. Gauging data indicates that groundwater flow appears to be in a southwesterly direction, generally following topography and eventually discharging into Mann Brook.
Recharge of the water table is likely provided by precipitation infiltrating areas of the site. Shallow groundwater accumulates in the more permeable sandy lenses found within the till and then appears to disperse slowly into the regional groundwater flow regime. Groundwater recovery rates witnessed during well development and purging activities indicated that the hydraulic conductivity for the till unit is very low.

4.1.2: Nature of Contamination

As described in the RI report, many soil and groundwater samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main categories of contaminants that exceed their SCGs are pentachlorophenol (PCP), dioxins/furans, fuel oil, and metals.

PCP is a manufactured chemical (i.e. not naturally occurring) which is a restricted use pesticide and is used industrially as a wood preservative for utility poles, railroad ties, fence posts, and wharf pilings. PCP was used at the Camp Georgetown site in the treatment of wood using a mixture of PCP and fuel oil. The fuel oil was used to dissolve the PCP into solution for a dipping process.

The primary fuel oil constituents of concern at this site are a subset of semi-volatile compounds (SVOCs), known as polycyclic aromatic hydrocarbons (PAHs).

PCP and dioxins/furans have low water solubility and a strong tendency to adhere to soil or sediment particles in the environment. PAHs are also expected to be adsorbed to soil with limited potential for leaching. Therefore, their mobility in the environment is mainly limited to physical (erosional and depositional) mechanisms. Furthermore, PCP breaks down rapidly when exposed to sunlight and is less likely to be present in exposed surface soils.

CCA is a preservative used at Camp Georgetown subsequent to the PCP operations which was the source of the inorganic contamination identified at the site consisting of chromium, copper, and arsenic.

4.1.3: Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated.

As discussed in Section 3.2, a Preliminary Investigation (PI) was conducted to assess the conditions at the site and determine if additional investigation was warranted. The PI included soil sampling, both shallow and subsurface, installation of 8 monitoring wells, and collection of 8 groundwater samples. Discussions that follow this section include the data generated during both the PI and the RI.

Much of the soil sample data from the PI presented below is from immunoassay testing, as noted. Immunoassay testing is a screening procedure that allows for efficient and cost effective analysis

of the sample for a specific compound, in this case pentachlorophenol. A percentage of the samples collected were split, with one half undergoing the immunoassay testing, the other half sent to a contract laboratory for verification that the immunoassay tests were producing reliable results and therefore usable data. All immunoassay testing was found to be reliable based on this verification method.

Chemical concentrations are reported in parts per billion (ppb) for water, and parts per million (ppm) for soil and sediment. For comparison purposes, where applicable, SCGs are provided for each medium.

Table 1 summarizes the degree of contamination for the contaminants of concern in surface soil, subsurface soil, sediment, groundwater, and biota and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Surface Soil

A total of 88 surface soil samples were collected during the PI and RI from approximately 0 to 2 inches below ground surface (bgs). Seventy-four (74) surface soil samples out of 88 were analyzed for PCP only (PI immunoassay results) or total SVOCs. PCP was the only SVOC detected above a TAGM 4046 guidance value (1.0 ppm) in all surface soil samples sent for laboratory analysis. The PCP guidance value was exceeded in 8 surface soil sample locations The concentrations ranged from 1 ppm to 130 ppm.

PCP was also detected (estimated values) in several additional surface soil samples in the drip pad area, the former AST area, and the area southwest of the former treatment building at levels well below the TAGM 4046 guidance value. PCP was not detected in any of the other surface soils collected from across the site. One potential explanation for the relatively low concentrations of PCP in surface soils is that PCP will readily breakdown by photochemical processes when exposed to the ultraviolet radiation in sunlight.

The highest concentrations of total SVOCs (5.048 ppm) were observed in surface soil sample SS-19. This sample was collected from an apparent drainage area southwest of the former Post Peeler building.

39 of the 88 surface soil samples were also sent for analysis of dioxins. Dioxins and furans were detected at low concentrations in all the samples; only two samples (SS-5 and SS-8) contained 2,3,7,8-TCDD equivalence above the 1.0 ppb guidance value. Slightly exceeding the PCP guidance value of 1.0 ppm at concentrations of 1.09 ppm and 1.16 ppm, respectively, these samples were collected from the former drip pad area.

A total of 40 of the 88 surface soil samples that were collected from "on site" locations were sent to the laboratory for analysis of metals. Additionally, 10 samples were collected from "background" areas (areas where former treatment operations did not appear to have existed). Of the three metals of concern (chromium, copper, arsenic), 1 out of 40 surface soil samples across the site exhibited chromium concentrations above background levels; 2 out of 40 surface soil samples analyzed for

metals showed copper at concentrations above background; and 27 out of 40 soil samples analyzed for metals possessed arsenic above the average background concentrations.

Two (2) soil samples (SEEP-1 and SEEP-2) were collected from a seep that was located near the end of the south footer drain (downgradient) of the former treatment building. Both samples were sent for analysis of SVOCs and dioxins. The analytical results are summarized in Table 1. Pentachlorophenol was detected above the 1.0 ppm TAGM 4046 guidance value in SEEP-1. No PCP was detected in SEEP-2. The two seep samples were also analyzed for dioxins. These results are also included in Table 1. SEEP-1 possessed a 2,3,7,8-TCDD equivalence of 3.29 ppb, while sample SEEP-2 possessed a 2,3,7,8-TCDD equivalence of 2.18 ppb. Both of these values were above the site screening level of 1.0 ppb.

Subsurface Soil

Subsurface soil samples were collected from both soil borings and test pits conducted at the site. Results from the soil boring samples are discussed first, followed by the results for the samples collected from the test pits.

A total of 68 soil samples were collected from 34 soil borings across the site during the PI and RI.

The 68 samples were analyzed for SVOCs, 34 of 68 samples were analyzed for dioxins and 11 of 68 samples were analyzed for metals.

PCP was detected in 10 samples above the 1.0 ppm TAGM 4046 guidance value, located under the former treatment building. The samples were collected from 1-6 feet bgs. PCP was also detected in GSB02-1 (2-4' bgs), GSB02–3 (2-4', 6-8' and 8-10' bgs), GSB02-4 (6-8' bgs) and GSB02-8 (1-2' and 7-8' bgs) above 1.0 ppm in the area immediately surrounding the former treatment plant, including the former drip pad area, and former AST area.

Forty-seven (47) samples were collected from test pits installed during the PI and the RI. These results are summarized on Table 1. Pentachlorophenol was detected above the 1.0 ppm TAGM 4046 guidance value in 7 test pits, 3 located near the former treatment building, 2 located southwest of the former treatment plant within a grid of surface soil samples collected during the PI, and 2 located west of Drying Shed #1. These samples were collected during the PI and are based on immunoassay results.

While several SVOCs were detected in samples collected from the test pits during the RI, none exceeded TAGM 4046 guidance values.

Dioxins were analyzed in 20 of the 47 samples collected, however, no sample exceeded the 2,3,7,8-TCDD equivalence concentration guidance of 1 ppb.

Sediments

Four (4) sediment samples were collected from Mann Brook and sent for analysis of SVOCs and dioxins. The analytical results are summarized in Table 1.

No PCP or any other SVOCs were detected above the NYSDEC "Technical Guidance for Screening Contaminated Sediments" guidance document in any of the four sediment samples collected .

Several dioxin and furan congeners were detected in each sample, however, the total 2,3,7,8-TCDD equivalence concentrations were well below the SCGs.

Groundwater

Groundwater samples were collected in three separate sampling events. Samples were collected in 1998 during the PI as well as during the RI in November 2001 and December 2002. Additional monitoring wells were installed after each round of sampling, as needed based on the evaluation of the data. A total of 8 wells were sampled during the PI, 17 wells during the first round of the RI, and 19 wells during the final round of the RI. The NYSDEC potable water supply well located east of the treatment building was also sampled during the PI.

PI Groundwater Results

Samples were collected from MW-1 through MW-8 and were analyzed for SVOCs, VOCs, pesticides/PCBs, metals and dioxins. Analytical results were below SCGs except for PCP, metals, and dioxin.

Pentachlorophenol was detected in 5 of 8 monitoring wells above the 1.0 ppb TOGS 1.1.1 guidance value ranging from 30ppb to 1700 ppb during the PI sampling event.

Dioxins were also detected above the 0.0007 ppt 2,3,7,8-TCDD equivalence guidance value in all wells (except MW-7) during the PI sampling event.

Chromium was the only metal related to wood treatment activities detected above TOGS 1.1.1 guidance values. Chromium concentrations above guidance values were detected in 4 wells. Copper was detected in every well, however, it didn't exceed the 0.2 ppb guidance value in any sample analyzed. Arsenic was detected in only one well at concentrations below guidance values.

No SVOCs, VOCs, pesticides/PCBs, metals or dioxins were detected in the NYSDEC potable water supply well above SCGs.

RI Groundwater Results 2001

A second round of groundwater samples were collected in December 2001as part of the RI. The 8 wells that were installed during the PI were analyzed for fuel oil, SVOCs and dioxins. Nine newly installed wells were analyzed for pesticides/PCBs, VOCs and SVOCs. The new wells were not analyzed for dioxins during this sampling event.

Fuel components, including diesel fuel, were not detected in any of the eight previously installed monitoring wells that were sampled.

PCP was detected above NYSDEC TOGS 1.1.1 guidance values for water in 5 monitoring wells ranging from 44 ppb to 160 ppb.

Concentrations of dioxins were found in five of the wells sampled. However only three wells exhibited a 2,3,7,8-TCDD equivalence concentration over the 0.0007 ppt TOGS 1.1.1 guidance value. These wells are located radially around the former drip pad area and were identified to have dioxins from the PI. Note all water dioxin results are reported in parts per trillion (ppt). Concentrations ranged from 0.000009 ppt to 1.6694 ppt .

The PCB aroclor 1254 was found in three of the nine wells sampled. Concentrations of Aroclor 1254 in MW-9 (15 ppb), MW-12 (1.7 ppb), and MW-15 (2.7 ppb) were above NYSDEC TOGS 1.1.1 guidance values. Aroclor 1254 concentrations were randomly distributed near the outer perimeter of the Site; MW-9 is north and upgradient, MW-12 is located downgradient to the southeast, and MW-15 is downgradient to the southwest. PCBs are not known to be a site-related contaminant of concern. No pesticides were detected in any of the monitoring wells sampled.

RI Groundwater Results 2002

A third round of groundwater samples were collected in November 2002. Unfiltered samples were collected from 19 wells for analysis of SVOCs, fuel oil, dioxins and pesticides/PCBs. Six (6) of the 19 wells were filtered and analyzed for the same parameters in an attempt to determine if high turbidity in groundwater was a contributing factor in elevated concentrations of contaminants. Groundwater from MW-5, MW-9, MW-12, MW-15, MW-18 and MW-19 was filtered via a 0.45 micron in-line filter.

No PCBs were detected in any of the monitoring wells. Bis(2-ethylhexyl)phthalate was detected above the TOGS 1.1.1 0.6 ppb guidance value in all samples collected except MW-15 (filtered). Bis(2-ethylhexyl)phthalate is believed to be a laboratory artifact.

Pentachlorophenol was detected above the 1.0 ppb TOGS 1.1.1 guidance value in MW-2, MW-3, MW-4, MW-5, MW-5 filtered, MW-6, MW-7 and MW-11. Concentrations ranged from 1 ppb to 370 ppb .

Fuel oil components (e.g. diesel range compounds) were detected in MW-4, MW-6 and MW-7.

Groundwater samples collected from MW-4, MW-7 and MW-8 exhibited 2.3.7,8-TCDD equivalence concentrations above the 0.0007 ppt TOGS 1.1.1 guidance value. Concentrations ranged from 0.0009 ppt in MW-8 to 0.0215 ppt in MW-4.

Groundwater results from all three rounds of sampling are summarized on Table 1 and Figure 3.

Biota (Fish)

A total of 22 fish samples were collected from upstream and downstream locations within Mann Brook, located west and hydraulically down gradient of the site. Fish samples were collected by

electroshock sampling methods and were submitted for laboratory analysis of dioxins. The results are summarized in Table 1.

Eleven of the fish samples were collected upstream of the site. Another eleven samples were collected downstream of the site.

2,3,7,8-TCDD equivalence concentrations are reported as wet weight concentrations in parts per trillion (ppt) and ranged from below detection limits (BDL) to 0.12 ppt, all below the SCG of 2.3 ppt.

Summary

Evaluation of the analytical data generated during the PI and RI resulted in the identification of several areas of concern with soil and localized groundwater contamination exceeding the SCGs. As shown on Figure 4, those areas include:

- Entire area beneath the former treatment building and immediately to the south of the building;
- The area of the former above ground storage tanks;
- The area across the access road to the south west of the former treatment building, and;
- An area across the access road to the north west of the former treatment building associated with a staging area for the drying of treated logs.

4.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

There were no IRMs performed at this site during the RI/FS.

4.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 3.3 of the RI report.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.
The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point

is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

There are no complete exposure pathways currently at the site. Potential pathways include:

- Direct contact with contaminated surficial soils in the former drip pad area and seepage areas of footer drains of the former treatment building. There is currently an institutional control, in the form of fencing, which serves to alert personnel to avoid impacted areas. Inmate access of these portions of the site has been restricted since the Preliminary Investigation.

- Direct contact with contaminated subsurface soils by construction or utility workers in the future.

- Ingestion of potentially contaminated shallow groundwater in the immediate area of the former treatment building is a potential future pathway should a well be installed.

4.4: Summary of Environmental Impacts

This section summarizes the existing and potential future environmental impacts presented by the site. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

The Fish and Wildlife Impact Analysis, which is included in the RI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors. The following potential environmental exposure pathways and ecological risks have been identified:

- Terrestrial animal contact with chemicals present in the surface soil, groundwater (at seep areas);

- Ingestion of chemicals from surface soil, groundwater and food sources, and;

- Direct uptake of chemicals in soil or groundwater by terrestrial and aquatic plants

Samples of the creek sediments and biota in Mann Brook, which receives drainage from the site, did not contain elevated levels of any site related contaminants, therefore a completed exposure pathway to fish and wildlife receptors within the streamwas not identified.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The remediation goals for this site are to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to PCP, dioxins/furans and metals in soil and groundwater;

- environmental exposures of flora or fauna to PCP, dioxins, and metals in surface soil and groundwater;

- erosional transport of contaminated soil;

- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and

Further, the remediation goals for the site include attaining to the extent practicable:

- ambient groundwater quality standards , and ;

- compliance with all applicable SCGs and cleanup goals.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the Camp Georgetown Site were identified, screened and evaluated in the FS report which is available at the document repositories identified in Section 1.

A summary of the remedial alternatives that were considered for this site are discussed below. The present worth represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved.

6.1: Description of Remedial Alternatives

The following potential remedies were considered to address the contaminated soil and groundwater at the site. The alternatives below are numbered sequentially for simplicity and do not necessarily correspond to the numbering system in the FS.

Alternative 1: No Action

Present Worth: *$714,000*
Capital Cost: *$0*
Annual OM&M:
Years 1-30: *$55,000*

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Alternative 2: Excavation and Off-site Disposal

Present Worth: *$13,125,000*
Capital Cost: *$12,701,000*
Annual OM&M:
Years 1-5: *$28,000*

In this alternative, the PCP and dioxin impacted soil would be addressed by excavation and off site disposal. The areas of concern delineated in Figure 4 would be excavated using conventional methods and equipment. The treatment building would be demolished as part of remedial activities.

The estimated removal volume would be 6,270 cubic yards of soil, measured in place. A 20% bulking factor yields roughly 7,530 cubic yards of soil that would be managed. Additionally, stabilization of saturated soils would be necessary (estimated 30% by volume), which would require approximately 1,520 cubic yards of ash or similar product. The slab under the former treatment building would be removed and crushed as part of this remedial alternative. The slab would produce roughly 180 cubic yards of waste that would require disposal. Consequently, the total volume requiring disposal would be approximately 9,230 cubic yards. Excavated soils would be transported to a permitted hazardous waste landfill and may require treatment prior to disposal due to the presence of dioxin.

Since the water table at the site is typically at 2 to 5 feet bgs, excavation operations would require dewatering. Groundwater would be containerized as needed and transported for off site disposal.

Alternative 3A: – Modified Part 360 Multi Layered Synthetic Cap

Present Worth: *$2,287,000*
Capital Cost: *$1,845,000*
Annual OM&M:
Years 1-30: *$29,000*

In this alternative, the PCP and dioxin impacts would be addressed by installing a modified 6NYCRR Part 360 cap across the primary area of concern in the vicinity of the former treatment building (shown as area A on Figure 5) and above ground storage tanks. All other areas of concern

(shown as areas B through G on Figure 5) would be excavated and placed beneath the cap, with the excavations backfilled with clean material. The treatment building would be demolished and disposed off site as part of remedial activities, The modified Part 360 cap would eliminate the potential for direct contact with impacted media and prevent rainwater infiltration into the area of concern. The cap would consist of the following layers:

- Vegetative Layer – approximately 6 inches of topsoil that serves to reduce erosion and infiltration of precipitation;

- Drainage Layer – approximately 24 inches of porous material (sand) that enhances lateral drainage of any precipitation that infiltrates through the vegetative layer; the vegetative and drainage layers help protect the underlying barrier layers from the environmental stresses of wetting/drying and freezing/thawing;

- Synthetic Barrier – low permeability membrane (at least 20 mil thickness) that represents the final impedance to precipitation infiltration;

- Subgrade Layer – approximately 12 inches of sand or other porous material that serves as the foundation for the cap. A gas collection system is not incorporated into the cost estimate for this alternative.

All future site development would account for the capping requirements of the site in their design. Monitoring, including groundwater sampling, would continue for at least 30 years. Institutional controls would be implemented to limit site access and usage.

Design and construction of this alternative would be expected to take 12-24 months. For cost estimating purposes, a 30 year post-remedial operational, maintenance and monitoring period has been adopted.

Alternative 3B: – Low Permeability Cover System (LPCS)

Present Worth: *$2.330,000*
Capital Cost: *$1,888,000*
Annual OM&M:
Years 1-30: *$29,000*

In this containment alternative, the PCP and dioxin impacts would be addressed by installing a LPCS across the primary area of concern in the vicinity of the former treatment building (shown as area A on Figure 5) and above ground storage tanks. All other areas of concern (shown as areas B through G on Figure 5) would be excavated and placed beneath the cap, with the excavations backfilled with clean material The LPCS would eliminate the potential for direct contact with impacted media and greatly reduce rainwater infiltration into the area of concern. A LPCS typically consists of the following layers:

- Vegetative Layer – approximately 6 inches of topsoil that serves to reduce erosion;

- Low Permeability Layer – approximately 12 inches of compacted clay to reduce infiltration into the impacted media.

All future site development would account for the capping requirements of the site in their design. Monitoring would continue for at least 30 years. Institutional controls would be implemented to limit site access and usage.

Design and construction of this alternative is expected to take 12-24 months. For cost estimating purposes, a 30 year post-remedial operational, maintenance and monitoring period has been adopted and a clay LPCS has been assumed.

6.2 Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375, which governs the remediation of inactive hazardous waste disposal sites in New York State. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.
1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy would meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the NYSDEC has determined to be applicable on a case-specific basis.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the

remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

7. Cost-Effectivness. Capital costs and operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision. The costs for each alternative are presented in Table 2.

This final criterion is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the PRAP have been evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the NYSDEC addressed the concerns raised. In general, the public comments received were supportive of the selected remedy. Several comments were received, however, pertaining to the potential option of excavating the contaminated soil at Camp Pharsalia and consolidating that soil beneath the cap at Camp Georgetown. Opinions were mixed regarding the option, with some supportive and others strongly opposed with consolidating the two sites.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based on the Administrative Record (Appendix B) and the discussion presented below, the NYSDEC has selected Alternative 3A, Multi layer geomembrane cap as the remedy for this site, as shown in Figure 5. The elements of this remedy are described at the end of this section. The selected remedy is based on the results of the PI, RI and the evaluation of alternatives presented in the FS.

Alternative 3A has been selected because, as described below, it will satisfy the threshold criteria and provides the best balance of the primary balancing criteria described in Section 6.2. It will achieve the remediation goals for the site by effectively preventing direct contact or potential ingestion of contaminated soil (the potential human health pathways) and erosion or infiltration (the primary mechanisms for contaminant migration).

Because Alternatives 2, 3A and 3B all satisfy the threshold criteria, the five balancing criteria are particularly important in selecting a final remedy for the site.

Alternatives 2, 3A and 3B would all have short-term impacts. The impacts associated with construction would be more significant with Alternative 2 which requires significanlty more excavation and handling of the contaminated media. Alternatives 3A and 3B, which leave the contaminated media in place, would have considerably fewer short-term impacts. The containment alternatives could be implemented without special handling requirements or transport of contaminated media.

Achieving long-term effectiveness would best be accomplished by Alternative 2, which would result in a pre-disposal scenario by removing the contaminated media for offsite disposal. Alternatives 3A and 3B, though contingent on long-term monitoring, would be effective in the long term as contamination would be contained, eliminating the potential for contaminant migration. Each of these alternatives would reduce or eliminate the potential for human and environmental exposure to contaminated soil.

Alternative 2 would require a great deal of coordination. The contamination identified at this site would require disposal as hazardous waste and, depending on the contaminant concentration, pre-treatment may be required. This alternative would require a predesign sampling program to quantify which material would be disposed as hazardous waste, which material would require pre-treatment (e.g. incineration), and which material could be disposed as non-hazardous waste.

Alternative 3A could be implemented using standard construction techniques. Alternative 3B would be the least complicated of these alternatives to implement. Placement of the soil cover system could be completed using standard construction techniques and system design would be straightforward.

Alternative 2 would greatly reduce the mobility, toxicity and volume of contaminants. Alternatives 3A and 3B would not reduce the toxicity and volume of contaminants, but would greatly reduce the mobility of contaminants.

The cost of the alternatives varies significantly. Although Alternative 2 results in greater reduction in toxicity, mobility and volume of contaminated soils,Alternative 3A and Alternative 3B would be more readily implemented and at significantly less costs.

Because each of these alternatives can achieve the remedial goals, the implementation and cost criteria weigh heavily in this evaluation. Alternative 2 is permanent remedy.. This alternative is the most costly of the alternatives evaluated. Alternatives 3A and 3B, coupled with monitoring, present similar protectiveness at much lower cost with fewer short term impacts during construction.

The primary purpose of a cap would be to eliminate the potential for exposure to surface and subsurface soils, eliminate erosional transport of contaminated soils, and prevent the infiltration of precipitation. Of the containment options, Alternative 3A would be only slightly more complex to construct, but at a lower cost. Therefore, for the reasons discussed above, Alternative 3A is the NYSDEC's preferred remedial alternative.

The estimated present worth cost to implement the remedy is $2,287,000. The cost to construct the remedy is estimated to be $1,845,000 and the estimated average annual operation, maintenance, and monitoring costs for 30 years is $29,000 per year.

The elements of the selected remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

2. Demolition and offsite disposal of the former treatment building its contents.

3. Excavation of areas B through G, consolidating the material onto area A for covering with the cap.

4. Placement of a multi layer geomembrane cap over area A including: (a) Vegetative Layer – approximately 6 inches of topsoil that serves to reduce erosion, (b) Frost Protection/Drainage Layer – approximately 24 inches of permeable soil (sand) to promote drainage and frost protection, and (c) Impermeable Geomembrane - a geosynthetic liner to serve as a impermeable containment barrier between the clean and contaminated materials.

5. This type of consolidation and containment remedy may be suitable to include similarly contaminated soil from the Camp Pharsalia site located approximately 15 miles from the site. Camp Pharsalia was also operated as a wood treatment facility by the NYSDEC on a smaller scale, resulting in an estimated 860 cubic yards of PCP and dioxin/furan contaminated soil. An in-place capping remedy utilizing a low permeability soil cover was selected for the site in March, 2003. Excavation and consolidation of the contaminated soils from Camp Pharsalia to the Camp Georgetown site will eliminate the need for long term monitoring and institutional controls at the Camp Pharsalia site, resulting in unrestricted future use of the property as well as significant cost savings. This option will be further explored during the remedial design for Camp Georgetown, including an evaluation of applicable laws to ensure compliance with current regulations.

6. The site will be restored by grading to insure proper drainage, placement of additonal topsoil as necessary, and seeding.

7. To address the identified groundwater contamination and since the remedy will result in untreated hazardous waste remaining at the site, a long term monitoring program will be instituted. Groundwater samples will be collected annually for a period of at least 30 years. This program will allow the effectiveness of the cap to be monitored and will be a component of the operation, maintenance, and monitoring for the site.

8. Development of a site management plan to: (a) maintain the capped area (mowing, erosion repairs, etc); (b) restrict use of shallow groundwater in the area subject to long term monitoring; and (c) prohibit redevelopment or use of the capped area.

9. The property owner will provide an annual certification, prepared and submitted by a professional engineer or environmental professional acceptable to the Department, which will certify that the institutional controls and engineering controls put in place, are unchanged from the previous certification and nothing has occurred that could impair the ability of the control to protect public health or the environment or constitute a violation or failure to comply with any operation an maintenance or soil management plan.

10. Imposition of an institutional control in the form of an environmental easement that will: (a) require compliance with the approved site management plan, (b) prohibit use and development of the capped area; (c) restrict use of groundwater as a source of potable or

process water; and, (d) require the property owner to complete and submit to the NYSDEC an annual certification to insure compliance with the use restrictions.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- Repositories for documents pertaining to the site were established.
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established.
- A fact sheet was sent on February 23, 2004 detailing the Proposed Remedial Action Plan and announcing both the start of the comment period and a public meeting.
- A meeting was held on March 8, 2004 with onsite staff from the NYSDEC and NYSDCS. The purpose of the meeting was to present the RI findings, the proposd remedy, and answer questions concerning the remedial program.
- The public meeting was held on March 10, 2004 to present and receive comment on the PRAP.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP.

TABLE 1
Nature and Extent of Contamination
May 1998 - November 2002

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthracene	ND - 0.36	0.224	1 of 49
	Bis (2-Ethylhexyl)Phtalate	ND - 68	50	1 of 49
	Pentachlorophenol	ND - 130	1	8 of 76
Dioxins/Furans	2,3,7,8 - TCDD TEF	ND - 0.003822	0.001	4 of 46
Inorganic Compounds	Arsenic	5 - 104	7.5	30 of 50
	Chromium	7.8-171	50	1 of 50
	Copper	7.4-59.5	25	1 of 50

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Pentachlorophenol	1.1 - 123	1	24 of 116
Dioxins/Furans	2,3,7,8 - TCDD TEF	ND - .0024951	.001	1 of 49
Inorganic Compounds	Arsenic	8.4 - 33	7.5	8 of 21
	Chromium	7.4 - 68.1	50	1 of 21
	Copper	ND - 32.4	25	3 of 21

Table 1 (Con't.)

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Pentachlorophenol	ND - 1700	1	16 of 44
	Fuel Oil Compounds	ND-820	NA[c]	3 of 10
PCB/Pesticides	Aroclor 1254	ND - 15	0.009	3 of 9
Dioxins/Furans	2,3,7,8 - TCDD TEF	ND - 1.6694	0.0007	14 of 29
Inorganic Compounds	Chromium	24.5 - 155	50	4 of 7
	Lead	8 - 84.1	25	6 of 7

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
ug/m^3 = micrograms per cubic meter

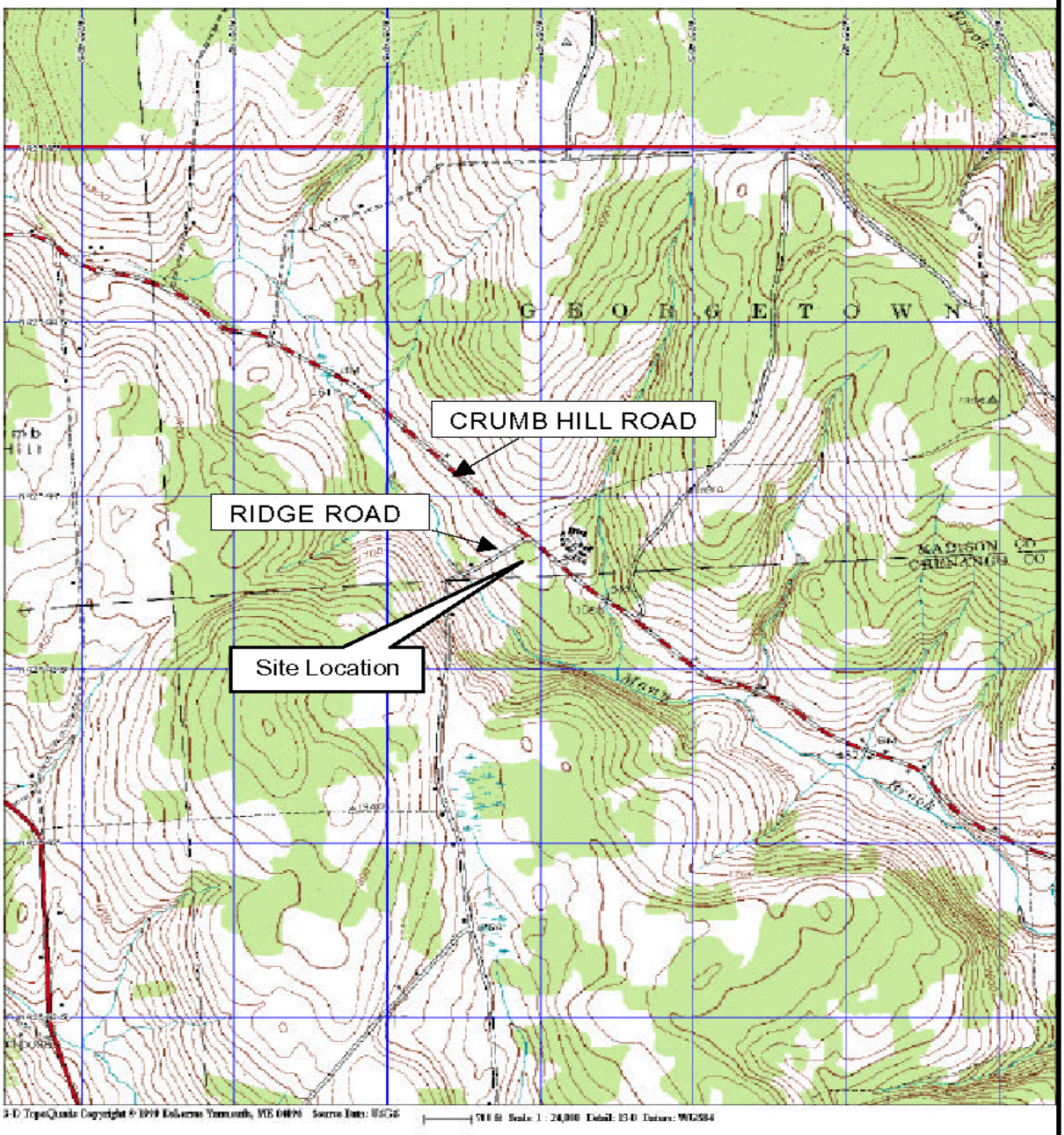
[b] SCG = standards, criteria, and guidance values; {list SCGs for each medium}

[c] Results compared to detection limit of 303 ppb

ND = Compound not detected

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual OM&M	Total Present Worth
No Action	$0	$55,000	$714,000
Excavation and Off-Site Disposal	$12,701,000	$28,000	$13,125,000
Modified Part 360 Multi Layer Cap	$1,845,000	$29,000	$2,287,000
Low Permeability Cover System	$1,888,000	$29,000	$2,330,000

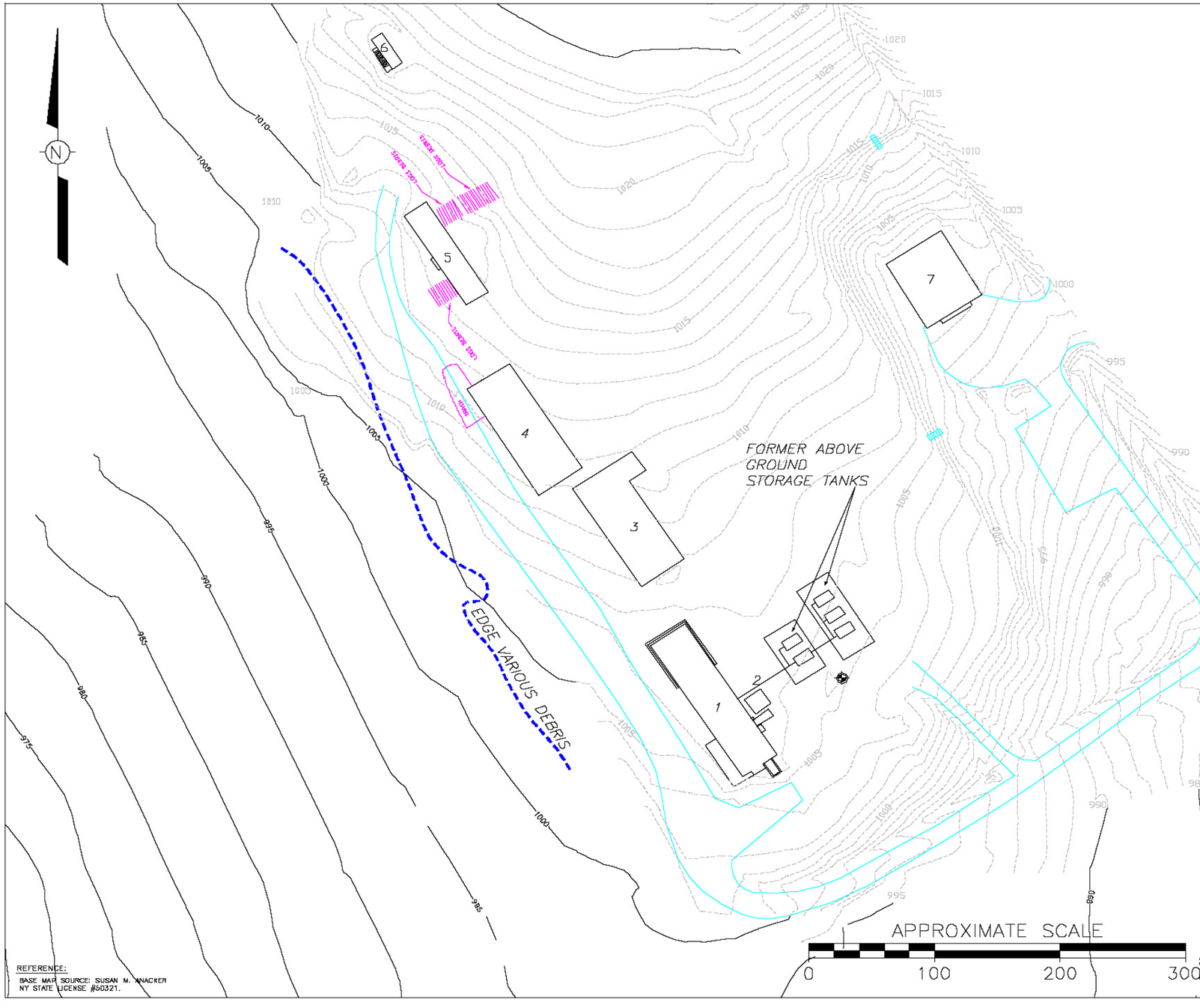


Scale: 1:24,000

Reference:
DeLorme 3-D Topo Quads, 1999
Yarmouth, Me.
Datum WGS84

NYSDEC

Figure 1
Site Location Map
Camp Georgetown



NOTE:

HORIZONTAL AND VERTICAL DATUMS ARE BASED ON A PREVIOUS SURVEY DONE BY MOOI ENGINEERS AND LAND SURVEYORS, AND ARE ASSUMED.

LEGEND:

- WATER SUPPLY WELL
- HISTORIC SURFACE SOIL SAMPLES
- HISTORIC SOIL BORING
- SOIL BORING
- SURFACE SOIL SAMPLES
- MONITORING WELL
- SEEP SAMPLES
- SURFACE SOIL BACKGROUND SAMPLES
- TEST PIT SAMPLES
- HISTORIC TEST PIT SAMPLES
- SED 1 — SEDIMENT SAMPLE
- 1 — TREATMENT BUILDING
- 2 — STORAGE SHED
- 3 — DRYING SHED #1
- 4 — DRYING SHED #2
- 5 — POST PEELER AND ROLLWAYS
- 6 — METEOROLOGY STATION
- 7 — GARAGE / NYSDEC OFFICE

REFERENCE:

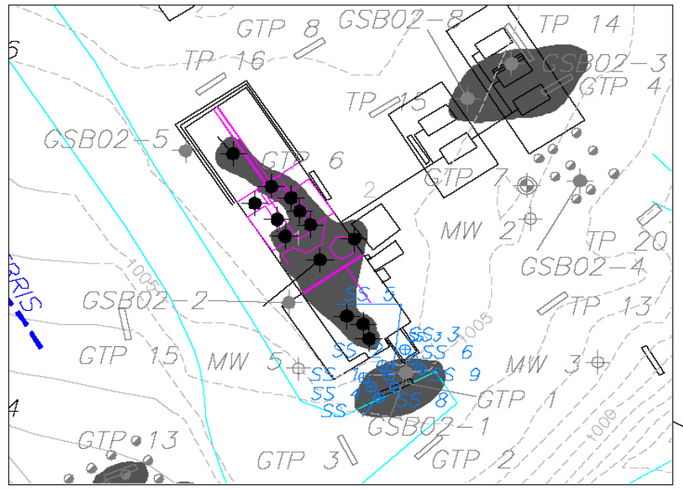
BASE MAP SOURCE: SUSAN M. WACKER NY STATE LICENSE #50321.

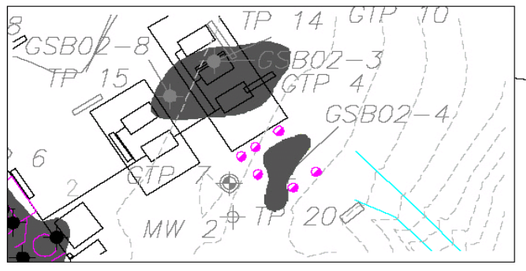
Shaw Environmental, Inc.

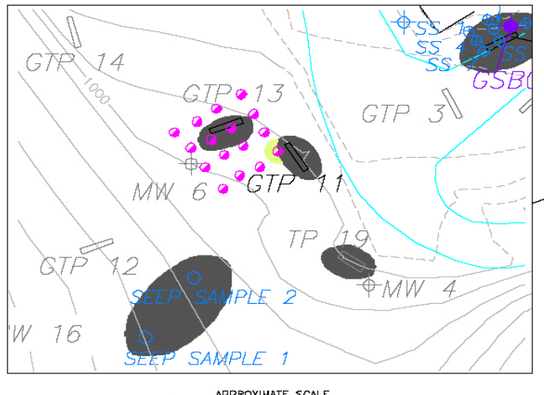
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

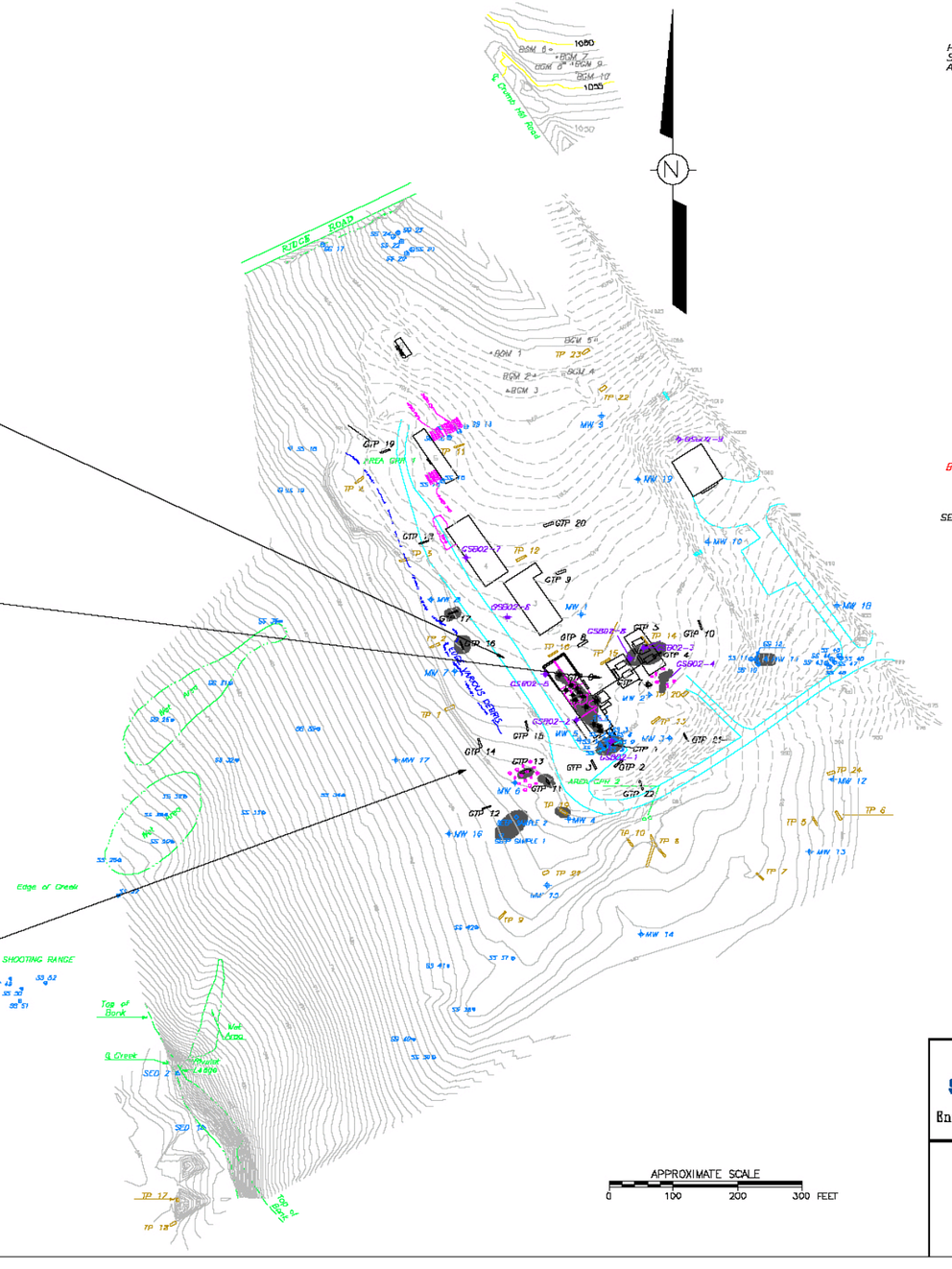
FIGURE 2
SAMPLE LOCATION AND SITE MAP

CAMP GEORGETOWN
MADISON COUNTY, NEW YORK









REFERENCE:

BASE MAP SOURCE: SUSAN M. ANACKER
NY STATE LICENSE #50321.

NOTE:

HORIZONTAL AND VERTICAL DATUMS ARE BASED ON A PREVIOUS SURVEY DONE BY MOOI ENGINEERS AND LAND SURVEYORS, AND ARE ASSUMED.

LEGEND:

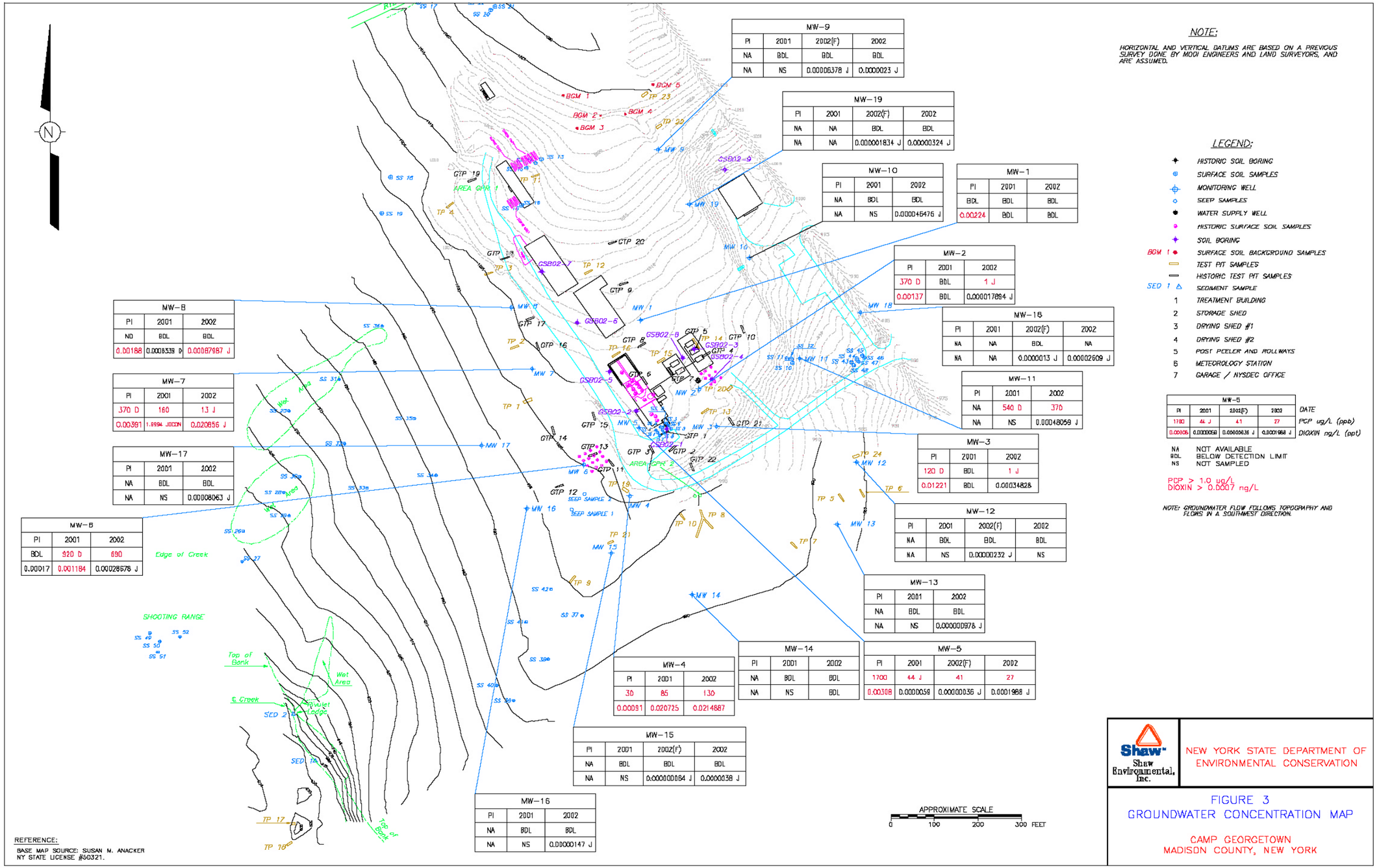
- WATER SUPPLY WELL
- HISTORIC SURFACE SOIL SAMPLES
- HISTORIC SOIL BORING
- SOIL BORING
- SURFACE SOIL SAMPLES
- MONITORING WELL
- SEEP SAMPLES
- BGM 1 — SURFACE SOIL BACKGROUND SAMPLES
- TEST PIT SAMPLES
- HISTORIC TEST PIT SAMPLES
- SED 1 — SEDIMENT SAMPLE
- 1 — TREATMENT BUILDING
- 2 — STORAGE SHED
- 3 — DRYING SHED #1
- 4 — DRYING SHED #2
- 5 — POST PEELER AND ROLLWAYS
- 6 — METEOROLOGY STATION
- 7 — GARAGE / NYSDEC OFFICE
- IMPACTED AREA

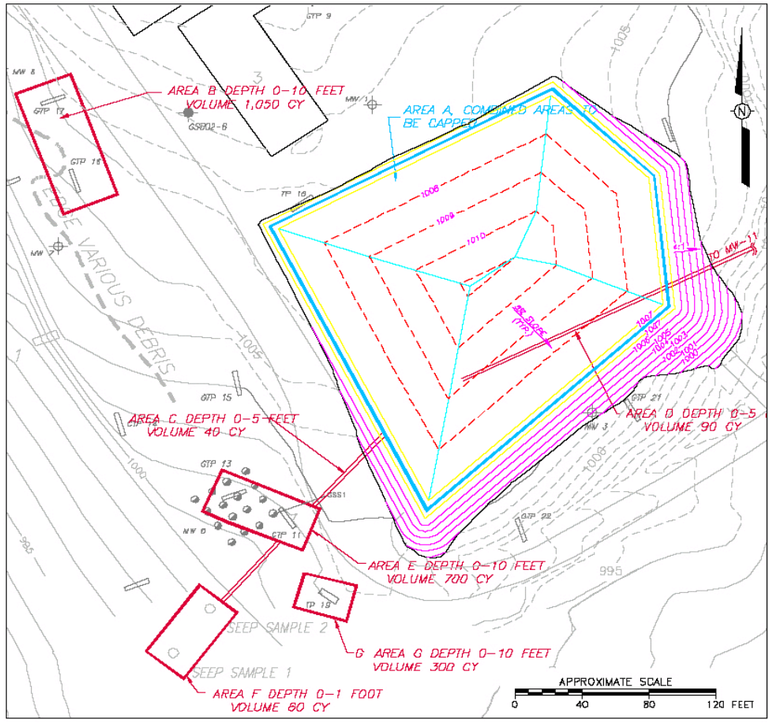
Shaw
Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 4
IMPACTED AREA SUMMARY MAP

CAMP GEORGETOWN
MADISON COUNTY, NEW YORK

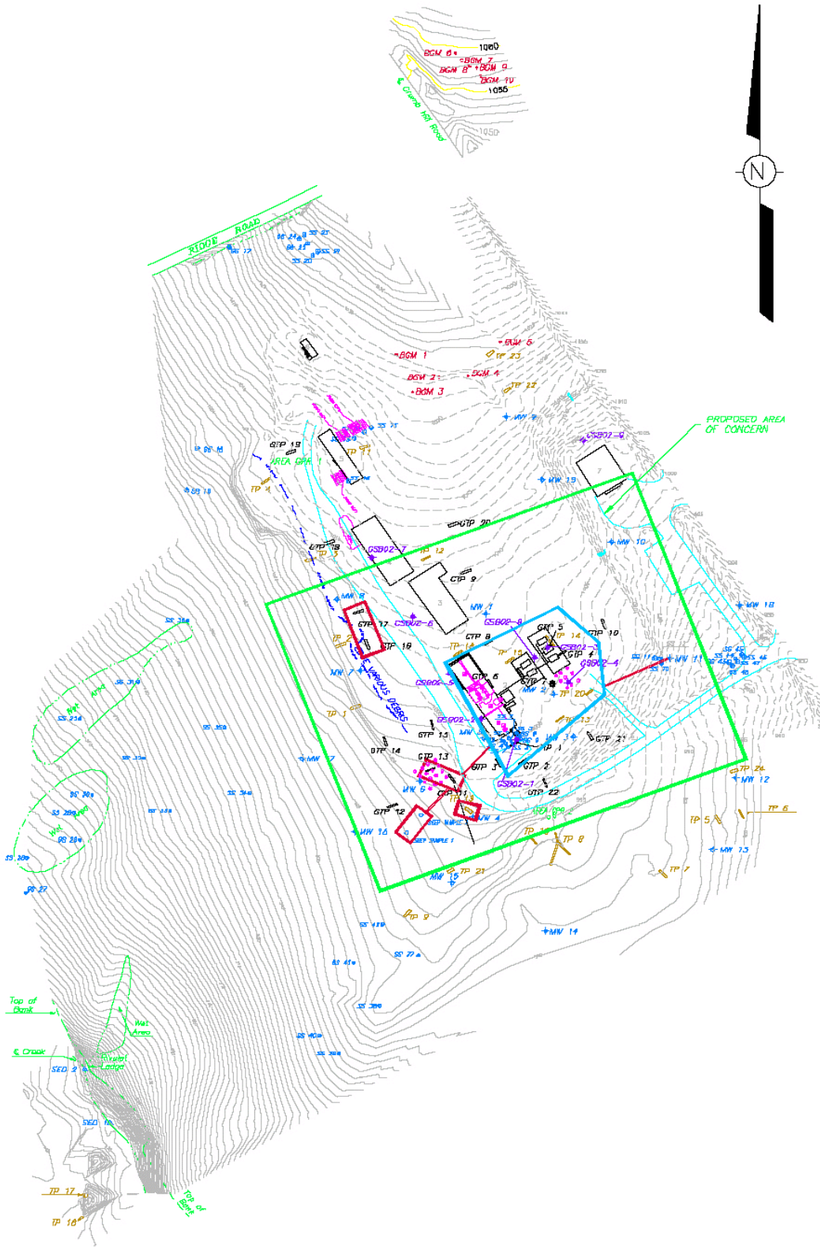

N
MW-9
PI | 2001 | 2002(F) | 2002
NA | BDL | BDL | BDL
NA | NS | 0.00006378 J | 0.0000023 J
MW-19
PI | 2001 | 2002(F) | 2002
NA | NA | BDL | BDL
NA | NA | 0.0000018314 J | 0.00000324 J
MW-10
PI | 2001 | 2002
NA | BDL | BDL
NA | NS | 0.000045476 J
MW-1
PI | 2001 | 2002
BDL | BDL | BDL
0.00224 | BDL | BDL
MW-2
PI | 2001 | 2002
370 D | BDL | 1 J
0.00137 | BDL | 0.000017894 J
MW-18
PI | 2001 | 2002(F) | 2002
NA | NA | BDL | NA
NA | NA | 0.0000013 J | 0.000002609 J
MW-11
PI | 2001 | 2002
NA | 540 D | 370
NA | NS | 0.00048059 J
MW-3
PI | 2001 | 2002
120 D | BDL | 1 J
0.01221 | BDL | 0.00034828
MW-12
PI | 2001 | 2002(F) | 2002
NA | BDL | BDL | BDL
NA | NS | 0.000000232 J | NS
MW-13
PI | 2001 | 2002
NA | BDL | BDL
NA | NS | 0.0000000978 J
MW-14
PI | 2001 | 2002
NA | BDL | BDL
NA | NS | BDL
MW-5
PI | 2001 | 2002(F) | 2002
1700 | 44 J | 41 | 27
0.00308 | 0.0000059 | 0.00000036 J | 0.0001988 J
MW-4
PI | 2001 | 2002
30 | 85 | 130
0.00091 | 0.020725 | 0.0214887
MW-15
PI | 2001 | 2002(F) | 2002
NA | BDL | BDL | BDL
NA | NS | 0.0000000164 J | 0.0000038 J
MW-16
PI | 2001 | 2002
NA | BDL | BDL
NA | NS | 0.00000147 J
MW-8
PI | 2001 | 2002
ND | BDL | BDL
0.00188 | 0.0008539 D | 0.00087987 J
MW-7
PI | 2001 | 2002
370 D | 160 | 1.3 J
0.00391 | 1.6994 JDCN | 0.020856 J
MW-17
PI | 2001 | 2002
NA | BDL | BDL
NA | NS | 0.00008063 J
MW-6
PI | 2001 | 2002
BDL | 920 D | 690
0.00017 | 0.001184 | 0.00028578 J
NOTE:
HORIZONTAL AND VERTICAL DATUMS ARE BASED ON A PREVIOUS SURVEY DONE BY MOOI ENGINEERS AND LAND SURVEYORS, AND ARE ASSUMED.
LEGEND:
HISTORIC SOIL BORING
SURFACE SOIL SAMPLES
MONITORING WELL
SEEP SAMPLES
WATER SUPPLY WELL
HISTORIC SURFACE SOIL SAMPLES
SOIL BORING
BGM 1 SURFACE SOIL BACKGROUND SAMPLES
TEST PIT SAMPLES
HISTORIC TEST PIT SAMPLES
SED 1 SEDIMENT SAMPLE
1 TREATMENT BUILDING
2 STORAGE SHED
3 DRYING SHED #1
4 DRYING SHED #2
5 POST PEELER AND ROLLWAYS
6 METEOROLOGY STATION
7 GARAGE / NYSDEC OFFICE
DATE
PCP ug/L (ppb)
DIOXIN ng/L (ppt)
NA NOT AVAILABLE
BDL BELOW DETECTION LIMIT
NS NOT SAMPLED
PCP > 1.0 ug/L
DIOXIN > 0.0007 ng/L
NOTE: GROUNDWATER FLOW FOLLOWS TOPOGRAPHY AND FLOWS IN A SOUTHWEST DIRECTION.
Edge of Creek
SHOOTING RANGE
Top of Bank
Wet Area
Creek
Rivulet Ledge
SED 2
SED 1
AREA GPR 1
AREA GPR 2
SEEP SAMPLE 1
SEEP SAMPLE 2
APPROXIMATE SCALE
0 100 200 300 FEET
REFERENCE:
BASE MAP SOURCE: SUSAN M. ANACKER NY STATE LICENSE #50321.
Shaw Environmental, Inc.
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FIGURE 3
GROUNDWATER CONCENTRATION MAP
CAMP GEORGETOWN
MADISON COUNTY, NEW YORK



ENLARGEMENT OF THE AREA REQUIRING REMEDIATION

Volume Report Berm 01/28/2004 10:51
Comparing GRID file: O:/PROJECT/BJ0271/EXBJ0271D81.GRD
and GRID file: O:/PROJECT/BJ0271/BERMBJ0271D81.GRD
Grid corner locations: 10891.08,11712.48 to 11755.08,12666.48
Grid resolution X: 432, Y: 487 Grid cell size X: 2.00, Y: 2.00
Area in Cut : 646.9 S.F., 0.01 Acres
Area in Fill: 19,541.2 S.F., 0.45 Acres
Total inclusion area: 20,188.1 S.F., 0.46 Acres
Cut to Fill ratio: 0.00
Average Cut Depth: 0.17 Average Fill Depth: 1.82
Cut (C.Y.) / Area (acres): 8.76
Fill (C.Y.) / Area (acres): 2844.59
Cut volume: 108.7 C.F., 4.06 C.Y.
Fill volume: 35,595.1 C.F., 1,318.34 C.Y.

Volume Report Cell 01/28/2004 10:57
Comparing GRID file: O:/PROJECT/BJ0271/WERG.GRD
and GRID file: O:/PROJECT/BJ0271/DESIGNBJ0271D81.GRD
Grid corner locations: 10891.08,11712.48 to 11755.08,12666.48
Grid resolution X: 432, Y: 487 Grid cell size X: 2.00, Y: 2.00
Area in Cut : 757.3 S.F., 0.00 Acres
Area in Fill: 32,528.6 S.F., 0.73 Acres
Total inclusion area: 32,885.9 S.F., 0.75 Acres
Cut to Fill ratio: 0.00
Average Cut Depth: 0.07 Average Fill Depth: 2.76
Cut (C.Y.) / Area (acres): 0.53
Fill (C.Y.) / Area (acres): 4428.80
Cut volume: 10.8 C.F., 0.40 C.Y.
Fill volume: 85,722.7 C.F., 3,323.08 C.Y.

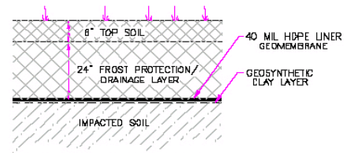


NOTE:

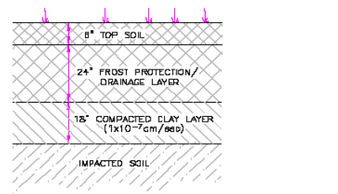
HORIZONTAL AND VERTICAL DATUMS ARE BASED ON A PREVIOUS SURVEY DONE BY MOOI ENGINEERS AND LAND SURVEYORS, AND ARE ASSUMED.

LEGEND:

- WATER SUPPLY WELL
- HISTORIC SURFACE SOIL SAMPLES
- HISTORIC SOIL BORING
- SOIL BORING
- SURFACE SOIL SAMPLES
- MONITORING WELL
- SEEP SAMPLES
- BGM 1 — SURFACE SOIL BACKGROUND SAMPLES
- TEST PIT SAMPLES
- HISTORIC TEST PIT SAMPLES
- SED 1 — SEDIMENT SAMPLE
- 1 — TREATMENT BUILDING
- 2 — STORAGE SHED
- 3 — DRYING SHED #1
- 4 — DRYING SHED #2
- 5 — POST PEELER AND ROLLWAYS
- 6 — METEOROLOGY STATION
- 7 — GARAGE / NYSDEC OFFICE
- PROPOSED AREAS OF EXCAVATION
- PROPOSED AREA OF CONCERN
- CONTAINMENT; PROPOSED LIMITS OF IMPACTED SOIL



TYPICAL MULTI LAYER GEOMEMBRANE CAP
NOT TO SCALE



TYPICAL LOW PERMEABILITY COVER SYSTEM
NOT TO SCALE

REFERENCE:
BASE MAP SOURCE: SUSAN M. ANACKER
NY STATE LICENSE #50321.

Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 5

EXCAVATION AND CONTAINMENT OF IMPACTED SOIL PRELIMINARY DESIGN

CAMP GEORGETOWN
MADISON COUNTY, NEW YORK

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY
Camp Georgetown Site
Proposed Remedial Action Plan
Georgetown, MadisonCounty
Site No.7-27-010

The Proposed Remedial Action Plan (PRAP) for the Camp Georgetown Site was prepared by the New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) and issued to the local document repository on February 23, 2004. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated soil and groundwater at the Camp Georgetown Site. The preferred remedy is a Modified Part 360 Multi-layer Synthetic Cap over the primary area of contamination with other areas of concern to be excavated and consolidated beneath the cap. The remedy would also include monitoring and institutional controls.

The release of the PRAP was announced via a notice to the mailing list, informing the public of the PRAP's availability.

A project briefing for the Department of Correctional Services was held on March 8, 2004 to present the PRAP to those working at the site. A public meeting was held on March 10, 2004, which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meetings provided an opportunity for on-site employees and the general public to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. No written comments were received during the public comment period for the PRAP, which ended on March 26, 2004.

This Responsiveness Summary responds to all questions and comments raised at the March 8th and March 10th meetings.

The following are the comments received, with the NYSDEC's responses immediately following:

Question 1: What buildings are planned for demolition as part of construction of the remedy?

Response 1: The main treatment building will be emptied of its contents and demolished down to the concrete slab. The demolition debris will be sent off site for disposal at a permitted construction and demolition (C&D) debris landfill. The concrete slab will subsequently be broken up for disposal beneath the cap.

Question 2: Why will it cost $714,000 for the no action remedial alternative?

Response 2: The no action alternative is evaluated for all sites to serve as a baseline alternative as required by the National Contingency Plan. The no action alternative for the Camp Georgetown site includes 30 years of groundwater monitoring, which accounts for the estimated costs of $714,000.

Question 3: The PRAP states that transporting contaminated soil from the Camp Pharsalia site for disposal beneath the cap at the Camp Georgetown site may be considered. Does the New York State Department of Environmental Conservation (NYSDEC) feel there is a benefit to combining two hazardous waste sites into one larger site?

Response 3: The NYSDEC believes there are significant benefits to combining the two sites that warrant further consideration.

The Camp Pharsalia site is a much smaller scale, but very similar, wood treatment site also owned by the NYSDEC located approximately 15 miles from Camp Georgetown. A Record of Decision (ROD) was signed in March 2003 selecting a cap remedy for the 1/4 acre site with continued groundwater monitoring for the next 30 years, the same as would be required at Camp Georgetown. The total volume of soil impacted with pentachlorophenol (PCP) and dioxins at Camp Pharsalia is estimated at 860 cubic yards. The estimated volume of contaminated soil at Camp Georgetown is 9,200 cubic yards.

The contamination is essentially the same at the two sites, therefore there would be no additional requirements for the Camp Georgetown remedy other than a modification to the design of the cap to accommodate the approximate 10% increase in volume of soil that would result from including the soil from Camp Pharsalia. Combining the two sites would eliminate the need for extended groundwater monitoring at Camp Pharsalia since all contaminated soil would be removed from

the site. Full removal at Pharsalia would also eliminate the need to place permanent use restrictions and environmental easements on the property

Combining the sites at Camp Georgetown would require an amendment to the Camp Pharsalia ROD, which would include another public comment period at that time. If an amendment is made to the Camp Pharsalia ROD, the Camp Georgetown mailing list would be included in the notification of the amendment and associated public comment period. Evaluation of applicable laws to ensure compliance with current regulations would be necessary prior to moving forward with plans to amend the ROD.

Question 4: What are the public health impacts associated with PCP and dioxin?

Response 4: There are currently no significant exposures to PCP and dioxin occurring at the Camp Georgetown facility. Levels in surface soils are quite low and very localized. According to ATSDR (Agency for Toxic Substances and Disease Registry) studies in workers show that exposure to high levels of PCP in industrial settings can cause increases in body temperature, liver effects, damage to the immune system, reproductive effects, and developmental effects. Exposure to large amounts of dioxins may cause chloracne, and serious skin effects. Former workers at the treatment facility may direct their questions about occupational exposures to PESH, Public Employess Safety & Health. (see Response 8 for contact information).

Question 5: Are PCP and dioxins cancer causing compounds?

Response 5: The US Environmental Protection Agency considers PCP to be a probable human carcinogen. The US Dept. Of Health and Human Services has determined that dioxins, which are present in PCP as contaminants from its manufacturing, may reasonably be anticipated to cause cancer.

Question 6: How deep is the contamination?

Response 6: Soil contamination was found in the upper 10 feet of soil at the site.

Question 7: How deep are the wells at the site?

Response 7: Monitoring wells installed at the site were 14 feet or less in depth.

Question 8: What is being done for past employees who may have been exposed to the PCP and dioxins?

Response 8: Former employees who are concerned that they may have been exposed should contact the Public Employee Safety and Health (PESH) Bureau, which oversees workplace protection of public employees at the State and local level. Alternatively, employees can contact one of the New York State Department of Health Occupational Health Clinics. Contact information is as follows:

PESH District Office - Binghamton
44 Hawley Street 9th Floor
Binghamton, NY 13901
Tel. (607) 721-8211
Fax (607) 721-8207

New York State Department of Health
Network of Occupational Health Clinics
Syracuse/Binghamton/Utica
Central New York Occupational Health Clinical Center
6712 Brooklawn Parkway, Suite 204, Syracuse NY 13211
Tel. (315) 432-8899
Fax (315) 431-9528

Question 9: Who will mow the grass on the cap?

Response 9: It is anticipated the NYSDEC Division of Operations will be responsible for mowing the cap.

Question 10: Will it be okay to walk on the cap once in place?

Response 10: Yes, the cap will be suitable for pedestrian traffic as well as the machinery necessary to keep it mowed.

Question 11: We do not want the Camp Pharsalia wastes brought to Camp Georgetown.

Response 11: Initial reactions to the idea of combining the two sites have been mixed. As stated in RESPONSE 3 above, if it is determined to be a feasible approach after evaluation of applicable laws, the ROD for Camp Pharsalia would be amended. A public comment period of 30 days would be associated with the amendment, at which time concerns and comments would be accepted. As with any remedy for an inactive hazardous waste disposal site, community acceptance is one of the evaluation criteria that is considered.

Question 12: Were there any drums found during the remedial investigation?

Response 12: Anecdotal evidence suggested there may have been drums buried in the wooded area immediately to the south of the treatment building. A geophysical method known as ground penetrating radar (GPR) was employed over the area in an effort to locate any buried metallic objects. If the GPR indicated the presence of buried metal, that area was excavated with a backhoe to determine if a drum was present. There were no drums containing wastes identified as a result of this effort. Metal identified with the GPR included concrete reinforced with steel, empty buckets, and lids from drums. Subsequent soil sampling did not find any contamination in these areas.

Question 13: Fuel oil has made it through the ground surface from past operations. Is the groundwater contaminated?

Response 13: Low level PCP and dioxin contamination has been identified in the groundwater in monitoring wells immediately adjacent to the treatment area. Specific methods for screening for fuel oil did not identify fuel oil in the groundwater. Based on the results from the groundwater sampling conducted at the site, it does not appear that contamination is migrating significantly beyond the monitoring wells located closest to the treatment building. The proposed remedy is expected to eliminatefuture contaminant impacts to groundwater and includes continued groundwater monitoring.

APPENDIX B

Administrative Record

Administrative Record

Camp Georgetown Site
Proposed Remedial Action Plan
Georgetown, MadisonCounty
Site No.7-27-010

1. Proposed Remedial Action Plan (PRAP) for the Camp Georgetown site, dated March 2004, prepared by the NYSDEC.

2. Preliminary Investigation Report, May 1999, NYSDEC.

3. Camp Georgetown Remedial Investigation Report, October 2003, Shaw Environmental, Inc.

4. Camp Georgetown Feasibility Study, January 2004, Shaw Environmental, Inc.

5. Fact Sheet announcing the PRAP, March 2004.

17. Responsiveness Summary for the Remedial Investigation/Feasibility Study and the Proposed Remedial Action Plan (Appendix A of the Record of Decision)