RECORD OF DECISION

Ramapo Paint Sludge Site
Operable Unit Number 02: Torne Valley Road Area
State Superfund Project
Ramapo, Rockland County
Site No. 344064
March 2014

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - RECORD OF DECISION

Ramapo Paint Sludge Site
Operable Unit Number 02: Torne Valley Road Area
State Superfund Project
Ramapo, Rockland County
Site No. 344064
March 2014

Statement of Purpose and Basis

This document presents the remedy for Operable Unit Number: 02: Torne Valley Road Area of the Ramapo Paint Sludge Site, a Class 2 inactive hazardous waste disposal site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375, 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 (the Department) for Operable Unit Number: 02 of the Ramapo Paint Sludge Site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

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, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and

• Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2) In the northern area of OU-2, excavation and off-site disposal of contaminant source areas, including all visible paint sludge; and surface soils exceeding restricted-residential soil cleanup objectives (SCOs). Excavation or hand removal will extend off-site if necessary. Soil containing paint sludge, along with soils from zero to two feet below ground surface (bgs) which exceed restricted-residential SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. Excavation and off-site disposal of paint sludge and soil containing visible paint sludge will continue to a depth of eight feet where necessary. Excavation of paint sludge beyond eight feet (if any) will be completed only to the extent feasible, subject to approval by the Department.

In the southern area of OU-2, excavation of soil containing paint sludge and soil exceeding unrestricted SCOs will continue until bedrock is encountered (approximately 1 foot bgs).

Soil containing visible paint sludge within the 100 year floodplain of the Torne Brooke will be excavated from where it daylights at the toe of the slope horizontally into the embankment for an estimated distance of ten feet and will extend further if necessary and feasible subject to approval by the Department. The depth of embankment excavations will be approximately eight feet vertically into the toe of the slope. Planned areas of excavation are shown on Figure 6. It is anticipated that, approximately 10,000 cubic yards of paint sludge and soil will be removed from the site.

3) Following excavation of paint sludge and soil, excavated materials will be segregated and screened. Paint sludge pieces and soils that contain paint sludge pieces will be disposed off-site at a permitted facility. Excavated soil that does not contain paint sludge will be stockpiled and characterized and then either re-used as backfill on site or disposed off-site at a permitted facility. On-site soil which does not exceed restricted residential and protection of groundwater SCOs may be used to backfill the deeper part of excavations to the extent that a sufficient volume of on-site soil is available. Clean fill meeting the requirements of DER-10, Appendix 5 will be brought in to complete the backfilling of excavations and establish the designed grades at the site. Imported fill must meet the lower of restricted residential SCOs or protection of ecological resources SCOs. Backfill in off-site areas of excavation (Paragraph 2) must meet unrestricted use SCOs.

4) In the northern area of OU-2, at the completion of remediation, at least the top two feet of soils will meet restricted-residential SCOs as set forth in 6 NYCRR Part 375-6.7(d), thus comprising a cover for this portion of the site. The cover will allow for structures such as buildings, pavement, and sidewalks comprising the site development. The cover will consist of backfill in excavated areas and existing soil in unexcavated areas meeting restricted-residential SCOs. Because soil below two feet may exceed restricted-residential SCOs, a visual demarcation layer will be placed between the excavated soil surface and backfill. In excavated areas, the backfill will be restored in accordance with a Department approved restoration plan and re-vegetated. The upper two feet of the soil shall be of sufficient quality to maintain a vegetation layer, of which the upper six inches will be high quality top soil. The soil cover and

the restoration shall be subject to monitoring under the Site Management Plan.

5) In the southern area of OU-2, it is anticipated that paint sludge and impacted soil will be excavated to bedrock meeting unrestricted SCOs. Excavations will be backfilled with soil meeting unrestricted SCOs and restored.

6) Areas excavated along the Torne Brook and within the 100 year floodplain will be back-filled with appropriate material meeting the lower of restricted residential SCOs and protection of ecological resources SCOs or sediment SCGs, respectively. These areas will then be re-vegetated and restored using natural stream restoration techniques consistent with 6 NYCRR Part 608.

7) Imposition of an institutional control in the form of an environmental easement for the controlled property (OU-2) with the exception of the southern area that:

- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allows the use and development of the Northern Area of OU-2 for restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws; and
- requires compliance with the Department approved Site Management Plan.

8) Imposition of a Site Management Plan is required for the Northern Area of OU-2, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: A land use restriction which restricts the use of the Northern Areas of OU-2 to restricted-residential, commercial, or industrial use.

Engineering Controls: The soil cover discussed in Paragraph 4.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- a contingency plan for discovery of additional paint sludge in OU-2;
- descriptions of the provisions of the environmental easement including any land use restrictions;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of the erosion of backfill to ensure the demarcation layer is not visible;
- monitoring of restoration success; and
- a schedule of monitoring and frequency of submittals to the Department.

c. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- maintenance of the OU-2 backfill;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy 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.

March 31, 2014
Date

Robert W. Schick, P.E., Director
Division of Environmental Remediation

RECORD OF DECISION

Ramapo Paint Sludge Site
Operable Unit Number 02: Torne Valley Road Area
Ramapo, Rockland County
Site No. 344064
March 2014

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of hazardous wastes at this site, as more fully described in this document, has contaminated various environmental media. The remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

Finkelstein Memorial Library
24 Chestnut St
Spring Valley, NY 10977
Phone: (845) 352-5700

Village of Hillburn
Village Hall
31 Mountain Avenue
Hillburn, NY 10931
Phone: (845) 357-2036

Town of Ramapo
Attn: Town Clerk
237 Route 59
Suffern, NY 10901
Phone: (845) 357-5100 extension 263

A public meeting was also conducted. At the meeting, the findings of the remedial investigation (RI) and the feasibility study (FS) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Ramapo Paint Sludge Site consists of areas where paint sludge was reportedly disposed of in the Town of Ramapo, Rockland County. At present, three locations have been identified. These areas include the North of Ramapo Well Field, and the Torne Valley Road Area which are located in an undeveloped area approximately two miles north of the Village of Suffern. The Camp Hill Road Area is located in a suburban area approximately one mile southwest of the intersection of the Palisades Parkway and Route 202.

Current Zoning/Use: The North of Ramapo Well Field is undeveloped and is utilized as a well field operated by United Water. The Torne Valley Road Area is vacant and primarily wooded. Both of these areas are zoned for residential use; however the town has filed a restrictive covenant that prohibits single family homes in these areas. The Camp Hill Road Area includes a pond approximately 1 acre in size and encroaches on New York State (NYS) regulated wetland TH-16. The Camp Hill Road area is adjacent to an area that is zoned residential.

Past Uses of the Site: The North of Ramapo Well Field and Torne Valley Road Area have had several historic uses including rock mining and heavy equipment storage. The Torne Valley Road area was reportedly used as a waste transfer station for the adjacent Ramapo Landfill and may have been reworked during the time that the landfill was in operation. The Camp Hill Road Area was formally used as a day camp in the early 1970s. All three areas were the location of illegal disposal of waste paint sludge from the Ford's Mahwah, New Jersey assembly plant.

Operable Units: The site is divided into three operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.

Operable Unit 1 (OU-1) is the North of Ramapo Well Field and consists of a 40-acre area bounded on the east by the Ramapo River and bounded on the west by railroad tracks and Bridge Street. OU-2 is the Torne Valley Road Area and consists of an area to the west of Torne Valley Road and to the east of the Torne Brooke (northern area), and an additional smaller area to the east of Torne Valley Road (southern area). OU-3 is the Camp Hill Road Area and consists of a small area that encroaches on a NYS regulated wetland and is adjacent to a residential development. OU-3 is approximately six miles northeast of OU-1 and OU-2.

Site Geology and Hydrogeology: The North of Ramapo Well Field and Torne Valley Road Area are adjacent to the Ramapo River and Torne Brook. The depth to competent bedrock varies at the site from between 72 and 100 feet. Bedrock is covered by stratified drift which consists of unconsolidated deposits composed of sand, gravel, silt, and clay. Overburden groundwater is present at approximately 10 feet below ground surface and generally flows south following the Torne Brook and Ramapo River. The Camp Hill Road Area is adjacent to a man-made pond. The pond is fed by a small stream from the northwest and has an overflow which discharges to another small stream on the east side of the pond, which then flows into the regulated wetland.

Operable Unit (OU) Number 02 is the subject of this document.

A Record of Decision will be issued for OU 01 and 03 in the future.

A site location map of OU-2 is attached as Figure 1 and a site map is attached as Figure 2.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the RI to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is

included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

Ford Motor Company

The Department and the Ford Motor Company entered into a Consent Order (Index No. A3-0536-1205) on March 16, 2006. The Order obligates the responsible parties to implement a full remedial program.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- surface water
- soil
- sediment

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to 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.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified for this Operable Unit at this site is/are:

LEAD
BARIUM
ACETONE
BENZENE
TOLUENE
ETHYLBENZENE
XYLENE (MIXED)
CADMIUM
COPPER
MERCURY
NICKEL
ZINC
NAPHTHALENE

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- soil

6.2: 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 issuance of the Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

Torne Brook Removal

In 2006, the length of Torne Brook within OU-2 was visually surveyed to identify all areas of paint sludge. This IRM was subsequently undertaken to remove all observed paint sludge. The

limits of removal were based on a detailed visual reconnaissance survey. Only paint sludge was removed (i.e., no soil or sediment was removed). Sediment disturbance was minimized and only hand tools were utilized. Paint sludge pieces were collected and placed in two fifty-five gallon drums and sent off-site for proper disposal.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

The Fish and Wildlife Resources Impact Analysis (FWRIA) for OU 02, 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.

Based upon investigations conducted to date, the primary contaminant of concern (COC) for all OUs are those associated with paint sludge. The paint sludge contains volatile organic compounds (VOCs) as well as several metals most notably lead. VOCs include benzene at concentrations up to 5.63 parts per million (ppm), ethylbenzene at concentrations up to 2,090 ppm, toluene at concentrations up 1,030 ppm, and xylene at concentrations up to 13,700 ppm. Lead has been detected at concentrations up to 2,160 ppm. Paint sludge was present in surface and sub-surface soils in OU-1 at depths of 0 to 10 feet below ground surface. Paint sludge in OU-1 is presently being removed and disposed of off-site as part of an Interim Remedial Measure (IRM). In the OU-2 areas, paint sludge deposits consist mostly of scattered truck-load size deposits within two feet of the ground surface. The deposits are partially covered by fill material, reworked earth, berms and oversized boulders and therefore may extend deeper than two feet below the ground surface. In the OU-3 areas, paint sludge was present in one concentrated area in the sub-surface, and some pieces of paint sludge material were found along the shallow eastern bank of an on-site pond. Paint sludge in OU-3 extends from 0 to 16 feet below the ground surface.

Analytical sampling of site soils, groundwater, and sediment in all OUs does not indicate that paint sludge is migrating through these environmental media. Constituents detected over standards and guidance values in sediment and groundwater, such as polycyclic aromatic hydrocarbons (PAHs), arsenic, iron, manganese, and sodium are different than those found in paint sludge. This suggests that these exceedences are due to naturally-occurring conditions in groundwater and other sources of contamination in sediment.

Because all three OUs were identified by the Department as ecological resources, Fish and Wildlife Impact Analyses (FWIAs) were performed for OU-1, OU-2, and OU-3. No exposure pathways of site contaminants to fish and wildlife were identified.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

The site is not fenced and persons who enter the site could contact contaminants in the soil by walking on the soil, digging or otherwise disturbing the soil within Operable Units 1, 2 and 3.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

To be selected the 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. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the feasibility study (FS) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which 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. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's remedy is set forth at Exhibit D.

The selected remedy is referred to as the Targeted Removal and Disposal of Paint Sludge with Embankment Excavation remedy.

The estimated present worth cost to implement the remedy is $7,514,000. The cost to construct the remedy is estimated to be $7,140,000 and the estimated average annual cost is $24,000.

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, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2) In the northern area of OU-2, excavation and off-site disposal of contaminant source areas, including all visible paint sludge; and surface soils exceeding restricted-residential soil cleanup objectives (SCOs). Excavation or hand removal will extend off-site if necessary. Soil containing paint sludge, along with soils from zero to two feet below ground surface (bgs) which exceed restricted-residential SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. Excavation and off-site disposal of paint sludge and soil containing visible paint sludge will continue to a depth of eight feet where necessary. Excavation of paint sludge beyond eight feet (if any) will be completed only to the extent feasible, subject to approval by the Department.

In the southern area of OU-2, excavation of soil containing paint sludge and soil exceeding unrestricted SCOs will continue until bedrock is encountered (approximately 1 foot bgs).

Soil containing visible paint sludge within the 100 year floodplain of the Torne Brooke will be excavated from where it daylights at the toe of the slope horizontally into the embankment for an estimated distance of ten feet and will extend further if necessary and feasible subject to approval by the Department. The depth of embankment excavations will be approximately eight feet

vertically into the toe of the slope. Planned areas of excavation are shown on Figure 6. It is anticipated that, approximately 10,000 cubic yards of paint sludge and soil will be removed from the site.

3) Following excavation of paint sludge and soil, excavated materials will be segregated and screened. Paint sludge pieces and soils that contain paint sludge pieces will be disposed off-site at a permitted facility. Excavated soil that does not contain paint sludge will be stockpiled and characterized and then either re-used as backfill on site or disposed off-site at a permitted facility. On-site soil which does not exceed restricted residential and protection of groundwater SCOs may be used to backfill the deeper part of excavations to the extent that a sufficient volume of on-site soil is available. Clean fill meeting the requirements of DER-10, Appendix 5 will be brought in to complete the backfilling of excavations and establish the designed grades at the site. Imported fill must meet the lower of restricted residential SCOs or protection of ecological resources SCOs. Backfill in off-site areas of excavation (Paragraph 2) must meet unrestricted use SCOs.

4) In the northern area of OU-2, at the completion of remediation, at least the top two feet of soils will meet restricted-residential SCOs as set forth in 6 NYCRR Part 375-6.7(d), thus comprising a cover for this portion of the site. The cover will allow for structures such as buildings, pavement, and sidewalks comprising the site development. The cover will consist of backfill in excavated areas and existing soil in unexcavated areas meeting restricted-residential SCOs. Because soil below two feet may exceed restricted-residential SCOs, a visual demarcation layer will be placed between the excavated soil surface and backfill. In excavated areas, the backfill will be restored in accordance with a Department approved restoration plan and re-vegetated. The upper two feet of the soil shall be of sufficient quality to maintain a vegetation layer, of which the upper six inches will be high quality top soil. The soil cover and the restoration shall be subject to monitoring under the Site Management Plan.

5) In the southern area of OU-2, it is anticipated that paint sludge and impacted soil will be excavated to bedrock meeting unrestricted SCOs. Excavations will be backfilled with soil meeting unrestricted SCOs and restored.

6) Areas excavated along the Torne Brook and within the 100 year floodplain will be back-filled with appropriate material meeting the lower of restricted residential SCOs and protection of ecological resources SCOs or sediment SCGs, respectively. These areas will then be re-vegetated and restored using natural stream restoration techniques consistent with 6 NYCRR Part 608.

7) Imposition of an institutional control in the form of an environmental easement for the controlled property (OU-2) with the exception of the southern area that:

- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allows the use and development of the Northern Area of OU-2 for restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws; and

- requires compliance with the Department approved Site Management Plan.

8) Imposition of a Site Management Plan is required for the Northern Area of OU-2, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: A land use restriction which restricts the use of the Northern Areas of OU-2 to restricted-residential, commercial, or industrial use.

Engineering Controls: The soil cover discussed in Paragraph 4.

This plan includes, but may not be limited to:
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- a contingency plan for discovery of additional paint sludge in OU-2;
- descriptions of the provisions of the environmental easement including any land use restrictions;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
- monitoring of the erosion of backfill to ensure the demarcation layer is not visible;
- monitoring of restoration success; and
- a schedule of monitoring and frequency of submittals to the Department.

c. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
- maintenance of the OU-2 backfill;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into four categories: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/ polychlorinated biphenyls (PCBs), and inorganics (metals and cyanide). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Waste/Source Areas

As described in the RI report, waste/source materials were identified at the site and are impacting soil.

Wastes are defined in 6 NYCRR Part 375-1.2(aw) and include solid, industrial and/or hazardous wastes. Source areas are defined in 6 NYCRR Part 375(au). Source areas are areas of concern at a site where substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium.

Waste materials identified at the Ramapo Paint Sludge Site in OU-2 consist of sludge reportedly from the former Ford Motor Company plant in Mahwah, New Jersey. Paint sludge was encountered during the RI in test pits and during a detailed visual reconnaissance survey of the OU-2 site surface. Paint sludge was encountered on the ground surface and at depths of up to 2 feet. In some areas there were multiple observations of paint sludge, whereas in other areas only small isolated amounts or pieces of paint sludge were observed. The size of the paint sludge deposits varied from isolated pieces one inch or less in diameter, to continuous flows several feet long. In some locations in OU-2 paint sludge was observed emanating from the toe of berms up to 20 feet high. It is not known how far this paint sludge extends laterally into the berms. Locations where paint sludge was encountered in OU-2 during the RI are shown on Figure 3.

To provide representative analytical results of paint sludge, the laboratory analytical results of paint sludge samples from both OU-1 and OU-2 are summarized in Tables 1 and 2. Paint sludge contains several contaminants in exceedence of restricted-residential SCOs including the VOCs benzene, ethylbenzene, toluene, and xylene; the SVOC naphthalene; and the inorganics barium, cadmium, copper, lead, mercury, and nickel. Paint sludge also exceeds the hazardous waste threshold for barium and lead based on Toxicity Characteristic Leaching Procedure (TCLP) testing.

Table 1 – Paint Sludge (Waste Material)

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
VOCs					
Acetone	ND – 8.99	0.05	11 of 58	100	0 of 58
Benzene	ND – 5.63	0.06	25 of 58	4.8	1 of 58
Ethylbenzene	ND – 2,090	1	42 of 57	41	25 of 57
Toluene	ND – 1,030	0.7	42 of 58	100	13 of 58
Xylene	ND – 13,700	0.26	44 of 58	100	34 of 58
SVOCs					
Naphthalene	0.0139 – 408	12	19 of 58	100	5 of 58
Phenol	ND – 7.62	0.33	1 of 58	100	0 of 58
Inorganics					
Barium	5,720 – 11,600	350	4 of 4	400	4 of 4
Cadmium	2.2 – 4.6	2.5	3 of 4	4.3	2 of 4
Copper	38.9 – 335	50	3 of 4	270	1 of 4
Lead	603 – 2,160	63	4 of 4	400	4 of 4
Mercury	0.044 – 0.96	0.18	1 of 4	0.81	1 of 4
Nickel	15.9 – 439	30	3 of 4	310	1 of 4
Zinc	265 – 2,010	109	4 of 4	10,000	0 of 4

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives;
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Restricted-Residential Use, unless otherwise noted.

Table 2 – Paint Sludge (Characteristic Hazardous Waste Testing)

Detected Constituents	Concentration Range Detected (mg/l)[a]	TCLP Threshold[b]	Frequency Exceeding TCLP
Inorganics			
Barium	ND – 484	100	1 of 62
Lead	ND – 417	5	34 of 62

a – mg/l: milligrams per liter;
b – TCLP: Part 371-3(e), Table 1, Maximum Concentration of Contaminants for the Toxicity Characteristic Leaching Procedure
ND – Not detected

The waste/source areas identified will be addressed in the remedy selection process.

Groundwater

Groundwater samples were collected as part of the RI from six overburden monitoring wells to assess groundwater conditions on-site. Locations of monitoring wells sampled and the elevation of the shallow groundwater table are shown on Figure 4. Groundwater samples were analyzed for VOCs, SVOCs, and metals. The only exceedences of groundwater SCGs were for the metals iron, manganese and sodium. Table 3 includes a summary of groundwater data for constituents which exceed SCGs. These metals are not typically associated with paint sludge and are commonly associated with naturally-occurring groundwater conditions. As such these elements are considered to represent background conditions, and are not considered to be site-specific contaminants of concern.

Table 3 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
Inorganics			
Iron	ND – 1,960	300	2 of 6
Manganese	ND – 2,040	300	4 of 6
Sodium	ND – 56,200	20,000	3 of 6

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

No site-related groundwater contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for groundwater.

Soil

Soil samples were collected at the site during the RI. Samples were collected from 0 to 2 feet in depth to locate source material (paint sludge) in the subsurface and determine if source material had impacted site soils. Soil samples were analyzed for VOCs, SVOCs, PCBs/Pesticides, and inorganics. Locations of soil sampling are shown on Figure 5 and analytical results of soil sampling are summarized in Table 4. Table 4 compares analytical results to unrestricted SCOs and restricted-residential SCOs for constituents exceeding unrestricted SCOs. As shown on Table 4, VOCs, PCBs/Pesticides, and inorganics exceed unrestricted SCOs. However, there are no exceedences of restricted-residential SCOs for any constituents.

Table 4 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
VOCs					
Acetone	ND – 0.3	0.05	6 of 56	100	0 of 56

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
Inorganics					
Cadmium	ND – 2.7	2.5	1 of 56	4.3	0 of 56
Chromium	10.7 – 44.3	30	6 of 56	180	0 of 56
Copper	ND – 101	50	1 of 56	270	0 of 56
Lead	3.2 – 165	63	11 of 56	400	0 of 56
Mercury	ND – 0.3	0.18	3 of 56	0.81	0 of 56
Nickel	ND – 30.7	30	1 of 56	310	0 of 56
Silver	ND – 2.4	2	1 of 56	150	0 of 56
Zinc	22.2 – 273	109	5 of 56	10,000	0 of 56
Pesticides/PCBs					
4-4-DDE	ND – 0.16	0.0033	3 of 6	8.9	0 of 6
4-4-DDT	ND – 0.076	0.0033	2 of 6	7.9	0 of 6
Dieldrin	ND – 0.128	0.005	2 of 6	0.2	0 of 6

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives;
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Restricted-Residential Use, unless otherwise noted.

The primary contaminants exceeding unrestricted SCOs are inorganics and pesticides. These exceedences are not consistent with contaminants of concern found in paint sludge. Further, no contaminant concentrations were observed above restricted-residential SCOs. The exceedences of unrestricted SCOs are likely attributable to historic uses of the site associated with the adjacent Ramapo Landfill and not disposal of paint sludge. Analysis suggests that the migration of chemicals/contaminants in paint sludge into surrounding soil is minimal and likely limited to soil immediately surrounding or in contact with paint sludge.

No site-related soil contamination of concern was identified during the RI. Remedial alternatives will be considered for soil in the context that soil in the immediate vicinity of source material (paint sludge) may be impacted and/or must be addressed to access the source material (paint sludge).

Sediments

Three sediment samples were collected during the RI from the Torne Brook which is adjacent to OU-2. The locations of samples were selected based on the findings of the field reconnaissance survey and the previous presence of paint sludge (removed during the IRM) in the Torne Brook. The location of sediment samples is given on Figure 5. Analytical results of samples are summarized in Table 5.

Sediments exceeded Department SCGs for several SVOCs in one sample (TP-05), including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene. The SVOCs

which exceeded sediment criteria here are not typically associated with paint sludge, but are often associated with street runoff and products of incomplete combustion. Sediments exceeded Department SCGs for several metals in one sample (TP-02), including arsenic, copper, lead, and manganese. These exceedences are likely attributable to historic use of the site associated with the adjacent Ramapo Landfill and not disposal of paint sludge.

Table 5 - Sediment

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)	Frequency Exceeding SCG	Site Derived Value (ppm)	Frequency Exceeding Site Derived Value
SVOCs					
Benzo(a)anthracene	ND - .0832	N/A	N/A	.0052	1 of 3
Benzo(a)pyrene	ND - .0828	N/A	N/A	.0052	1 of 3
Benzo(b)fluoranthene	ND - .064	N/A	N/A	.0052	1 of 3
Benzo(k)fluoranthene	ND - .0968	N/A	N/A	.005	1 of 3
Chrysene	ND - .096	N/A	N/A	.0052	1 of 3
Inorganics					
Arsenic	ND – 6.2	LEL = 6	1 of 3	N/A	N/A
		SEL = 33	0 of 3		
Copper	6.3 – 25.3	LEL = 16	1 of 3	N/A	N/A
		SEL = 110	0 of 3		
Lead	7.7 – 67.4	LEL = 31	1 of 3	N/A	N/A
		SEL = 110	0 of 3		
Manganese	191 - 626	LEL = 460	1 of 3	N/A	N/A
		SEL = 110	0 of 3		

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment;
b - SCG: The Department=s ATechnical Guidance for Screening Contaminated Sediments.

No site-related sediment contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for sediment.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2. This alternative leaves the site in its present condition and does not provide any additional protection of the environment.

Alternative 2: Institutional Controls with Permeable Engineered Cap

Engineering controls (ECs) in the form of a permeable soil cap composed of certified clean soil at least two feet in thickness would be installed. This alternative also includes the implementation of an institutional control (IC) in the form of an environmental easement and associated Site Management Plan for the entire OU-2 area to prevent potential exposure to paint sludge by controlling land use and ensuring that the soil cover is properly maintained.

Present Worth: *$2,393,000*
Capital Cost: *$2,019,000*
Annual Costs:(Years 1-30) *$24,000*

Alternative 3: Shallow Removal and Disposal of Paint Sludge

This alternative includes the excavation and removal of visible paint sludge and impacted soil from the northern area of OU-2 to a maximum depth of two feet below ground surface (bgs) to meet restricted residential SCOs, followed by placement of clean soil to bring the excavated areas back to grade and restore the surface with vegetation to protect against contact with subsurface contamination. Contamination in the southern portion of OU-2 would be excavated to one foot bgs where bedrock is shallow and in this area only one foot of clean fill material would be placed to bring the excavation to grade meeting unrestricted SCOs. Excavated materials will be disposed off-site at an appropriate facility. ICs, as described in Alternative 1 (i.e., environmental easement), will be implemented as well as ECs.

Present Worth: *$6,053,000*
Capital Cost: *$5,679,000*
Annual Costs:(Years 1-30) *$24,000*

Alternative 4: Deep Removal and Disposal of Paint Sludge, with Embankment Excavation

This alternative would excavate and remove visible paint sludge and impacted soil in the northern area of OU-2 to a depth of two feet bgs meeting restricted residential SCOs. The southern portion of OU-2 would be excavated to one foot bgs (i.e., bedrock surface) meeting unrestricted SCOs. Continuous occurrences of paint sludge below two feet bgs would also be excavated to a depth of approximately eight feet bgs to the extent practicable. Additional excavation would also be conducted to remove paint sludge and impacted soil up to ten

feet laterally into embankments and to a depth of approximately eight feet bgs to the extent practicable. Paint sludge and impacted soil excavation would be followed by the placement of clean soil to bring the excavated areas back to grade and restore the surface with vegetation to protect against contact with subsurface contamination. Surface restoration would be required (i.e. vegetation) to protect against contact with subsurface areas. Paint sludge will be disposed off-site at an appropriate facility. ICs, as described in Alternatives 2 and 3 (i.e. environmental easement), will be implemented as well as ECs.

Present Worth:.....*$7,514,000*
Capital Cost:.....*$7,140,000*
Annual Costs:(Years 1-30).....*$24,000*

Alternative 5: Restoration to Pre-Disposal or Unrestricted Conditions

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative would include: T the excavation and disposal at an off-site permitted facility of all paint sludge and impacted soil from OU-2 to a maximum depth of fifteen feet bgs or to bedrock whichever comes first. The excavated areas would be backfilled with clean fill material, and vegetation would be established. ICs would not be required to restrict land use after this remedy is completed.

Capital Cost:.....*$94,724,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
No Further Action	$0	$0	$0
Institutional Controls With Permeable Engineered Cap	$2,019,000	$24,000	$2,393,000
Shallow Removal and Disposal of Paint Sludge	$5,679,000	$24,000	$6,053,000
Deep Removal and Disposal of Paint Sludge, with Embankment Excavation	$7,140,000	$24,000	$7,514,000
Restoration to Pre-Disposal or Unrestricted Conditions	$94,724,000	$0	$94,724,000

Exhibit D

SUMMARY OF THE SELECTED REMEDY

The Department is selecting Alternative 4, Deep Removal and Disposal of Paint Sludge, with Embankment Excavation as the remedy for this site. Alternative 4 would achieve the remediation goals for the site by removing all paint sludge from OU-2 to the extent practicable. The elements of this remedy are described in Section 7. The selected remedy is depicted in Figure 6.

Basis for Selection

The selected remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. 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.

The proposed remedy Alternative 4 would satisfy this criterion by removing all paint sludge and impacted soil from OU-2 to the extent practicable and implementing institutional controls to prevent exposure to remaining contamination. Because it leaves all contamination in place, Alternative 1 (No Further Action) does not provide sufficient protection to public health and the environment and will not be evaluated further. Alternative 2 uses institutional controls (ICs) with physical barriers (site cover) to restrict access to areas of the site which contain paint sludge to protect human health and the environment. Alternative 3 provides a similar degree of human health and environmental protection by removing paint sludge and impacted soil from the top two feet of the site and replacing it with clean soil. Alternative 5 satisfies this criterion by the complete elimination of contamination from the site.

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

SCGs establish concentration limits for specific hazardous substances in environmental media. Alternatives 2 through 5 meet SCGs. Alternatives 2 and 3 meet SCGs by capping (Alternative 2) or removing (Alternative 3) paint sludge in the top two feet of soils to meet restricted-residential SCOs. Alternative 4 meets SCGs by removing all paint sludge from soils to the extent practicable meeting restricted-residential SCOs and meeting additional subsurface SCGs. Alternative 5 meets all SCGs by complete removal of all environmental media from the site exceeding SCGs.

The next six “primary balancing criteria” are used to compare the positive and negative aspects of each of the remedial strategies.

3. 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.

Alternative 5 has the greatest long term effectiveness and permanence because all waste is permanently removed from the site. Alternative 4 has the second highest level of long term effectiveness and permanence because all but the most inaccessible paint sludge is removed from the site thus, the risk of future exposure to paint sludge if minimal. Alternative 3 has lower levels of permanence because more paint sludge below 2 feet remains on site, thus requiring more long term management. Alternative 2 satisfies this criterion the least because the engineered soil cap allows for all paint sludge to be left on site creating the largest risk for future exposure.

4. 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.

The volume and mobility of contaminant reduction for each of the alternatives is proportional to the amount of paint sludge waste removed from the site and disposed in a permitted landfill. Alternative 2 does not contribute to the reduction in the toxicity, mobility, or volume of wastes present in OU-2 because under this alternative all paint sludge remains in place. Alternative 3 reduces the volume and mobility of paint sludge in OU-2 surface soils by removing waste from the upper two feet. Alternative 4 further reduces the volume and mobility of waste further removing waste to the extent practicable. Alternative 5 provides for the most reduction of mobility and volume by the complete removal of waste from the site.

5. Short-term Impacts and 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.

Alternative 2 would minimize exposure to workers, surrounding communities, and the environment by placing a barrier of clean soil over paint sludge although there would be some disturbance associated with trucking of clean soil to the site. Alternatives 3, 4, and 5 which consist of increasing degrees of paint sludge excavation, followed by placement of clean backfill, would have increasing degrees of short term impacts. However these short term impacts can be controlled with proper construction and site management.

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.

Alternative 2 is somewhat easier to implement, because the alternative only involves placement of the soil cover. Alternatives 3 and 4 can also be implemented using mostly standard construction techniques along with proper construction site management. Alternative 3 only addresses paint sludge to two feet below grade, which is more implementable than Alternative 4 which requires excavation into steep banks to remove paint sludge to the extent feasible. Alternative 5 is the most difficult to implement due to the large volume of overburden soil that must be removed, the large size boulders throughout OU-2 that will need to be relocated during removal activities, and the excessive amount of site disturbance including geotechnical stability and dewatering.

7. Cost-Effectiveness. Capital costs and annual 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 of the alternatives vary significantly. Alternative 2 has a low cost, but the contamination would not be removed from the site. Alternatives 3 and 4 are similar in cost, with Alternative 4 being slightly more expensive than Alternative 3 due to the extra excavation it requires to address paint sludge located at depth and beneath berms. Alternative 5 is the least cost-effective because it requires the removal of all overburden to a depth of 15 feet over the entire site, including a large volume of clean soil to reach small amounts of contamination present at depth.

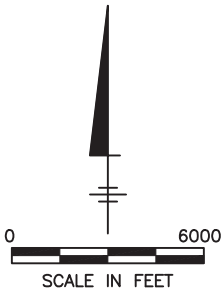
8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

Alternatives 2, 3, and 4 provide a protective remedy for restricted-residential use of the northern area of the site, which also allows for active recreational. Alternatives 2, 3 and 4 allow unrestricted use of the southern area of the site. This is consistent with the zoning of the site. Alternative 5 would allow unrestricted use of the entire site, which is a higher use than current zoning provides.

The final criterion, Community Acceptance, 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.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP were evaluated. A responsiveness summary has been prepared that describes public comments received and the manner in which the Department addressed the concerns raised.

Alternative 4 has been selected because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.



SOURCE:
USGS 7.5 MIN.:
SLOATSBURG QUADRANGLE, SLOATSBURG, NY–NJ. 1952,
PARK RIDGE QUADRANGLE, PARK RIDGE, NJ–NY, 1955,
RAMSEY QUADRANGLE, RAMSEY, NJ–NY, 1955,
THIELS QUADRANGLE, THIELS, NJ–NY, 1955

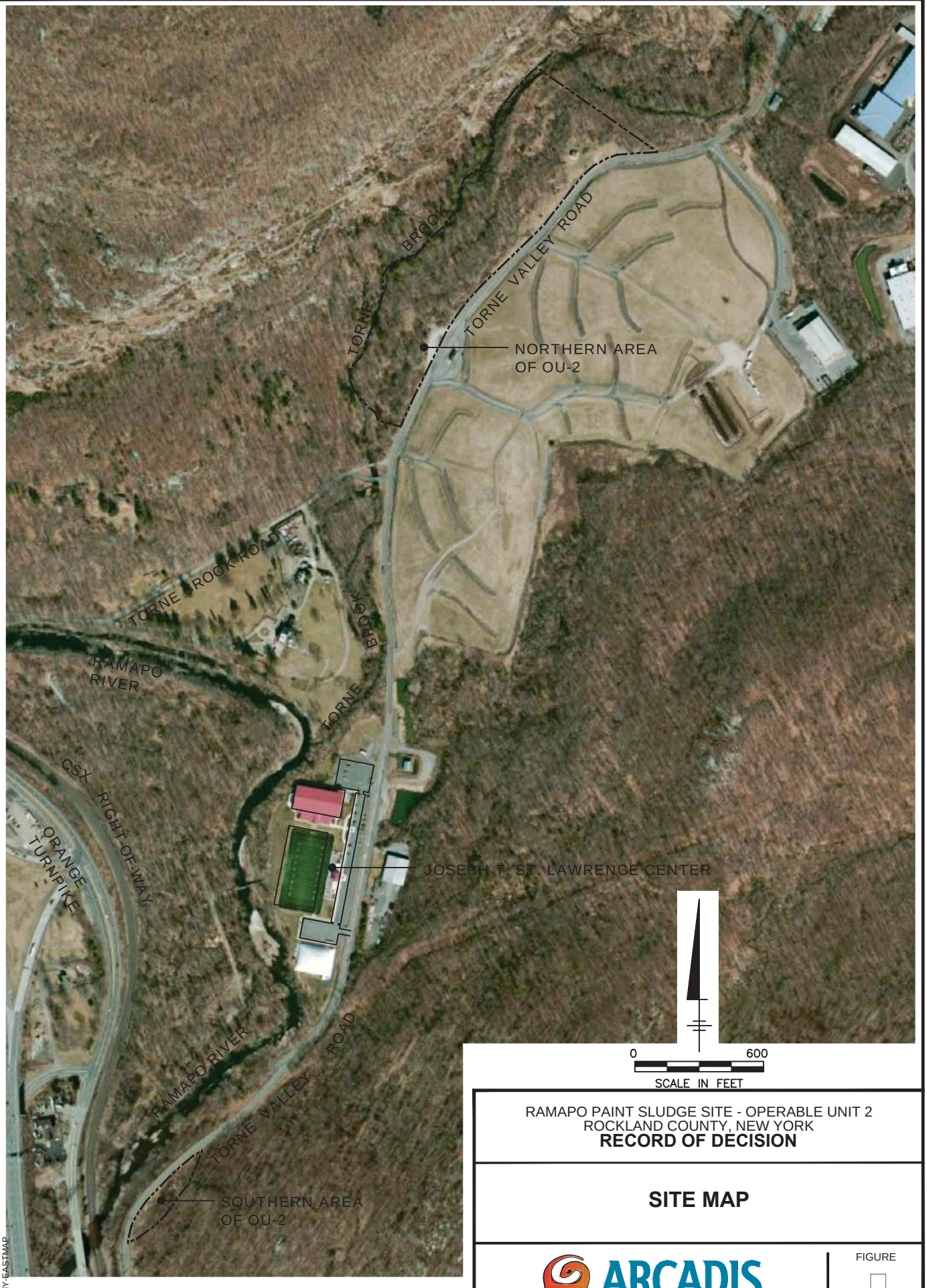
RAMAPO PAINT SLUDGE SITE - OPERABLE UNIT 2
ROCKLAND COUNTY, NEW YORK
RECORD OF DECISION

SITE LOCATION MAP

ARCADIS

FIGURE

CITY:MAHWAH DIV/GROUP:ENVCAD DB:J.GONZALEZ LD:J. SIOCHI PIC:E.CARMAN PM:E.ZIMMERMAN TM:J. SIOCHI LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Fairlawn\ACTNJ000602\0005\000312014-03\PRAP\FIG 01-SITE LOCATION.dwg LAYOUT: 1 SAVED: 3/26/2014 9:32 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 3/26/2014 9:33 AM BY: GONZALEZ, JAMES
XREFS:
IMAGES: PROJECTNAME: ---
O41074A1.tif
O41074A2.tif
O41074B1.tif
O41074B2.tif



RAMAPO PAINT SLUDGE SITE - OPERABLE UNIT 2
ROCKLAND COUNTY, NEW YORK
RECORD OF DECISION

SITE MAP

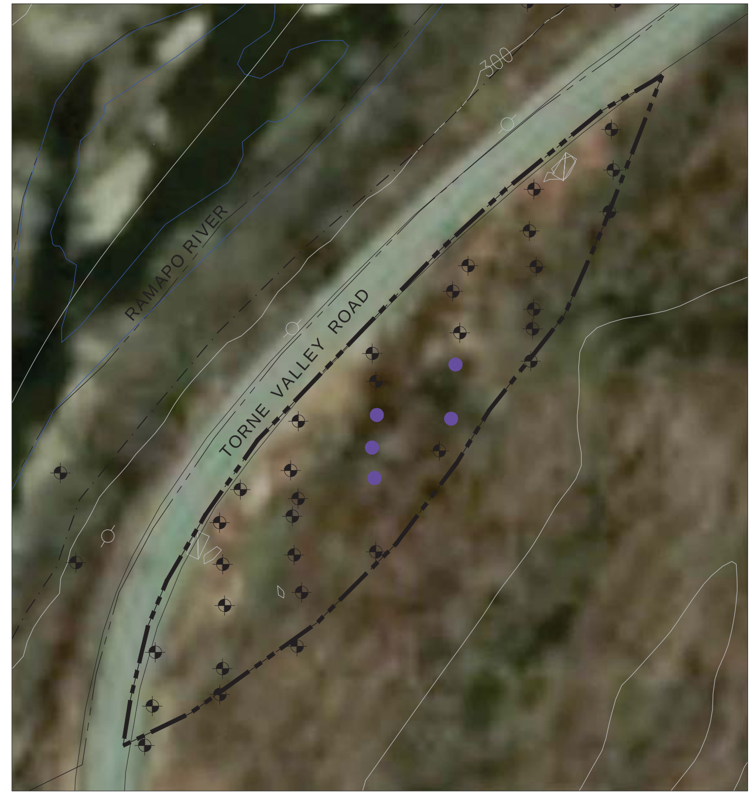
ARCADIS

FIGURE

CITY:MAHWAH DIV/GROUP:ENVCAD DB:J.GONZALEZ LD:J. SIOCHI PIC:E.CARMAN PM:E.ZIMMERMAN TM:J. SIOCHI LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Fairlawn\ACTIVE\NJ000602\0005\00003\2014-03\PRAP\FIG 02-SITE MAP.dwg LAYOUT: 2 SAVED: 3/26/2014 9:26 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 3/26/2014 9:26 AM BY: GONZALEZ, JAMES
XREFS: IMAGES: PROJECTNAME: ----
NJ602X01 ny_eastmap.jpg
NY-EASTMAP

NORTHERN AREA OF OU-□

SCALE: 1"=100'



NOTE: THIS AREA IS OUTSIDE OF THE 100-YEAR FLOOD PLAIN

SOUTHERN AREA OF OU-□

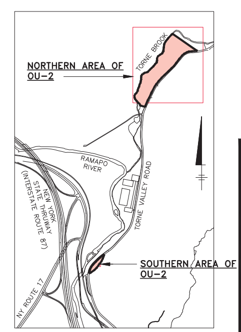
SCALE: 1"=40'

NOTES:

APPROXIMATELY 85 SURVEY NOTEDS WERE OBSERVED TO HAVE IMPACTED MATERIAL.

LEGEND

- PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF 100 YR FLOOD PLAIN
- OU-2 LIMITS
- SURVEY NODE WHERE IMPACTED MATERIAL WAS OBSERVED
- SURVEY WHERE NO PAINT SLUDGE WAS OBSERVED



KEY MAP
NOT TO SCALE

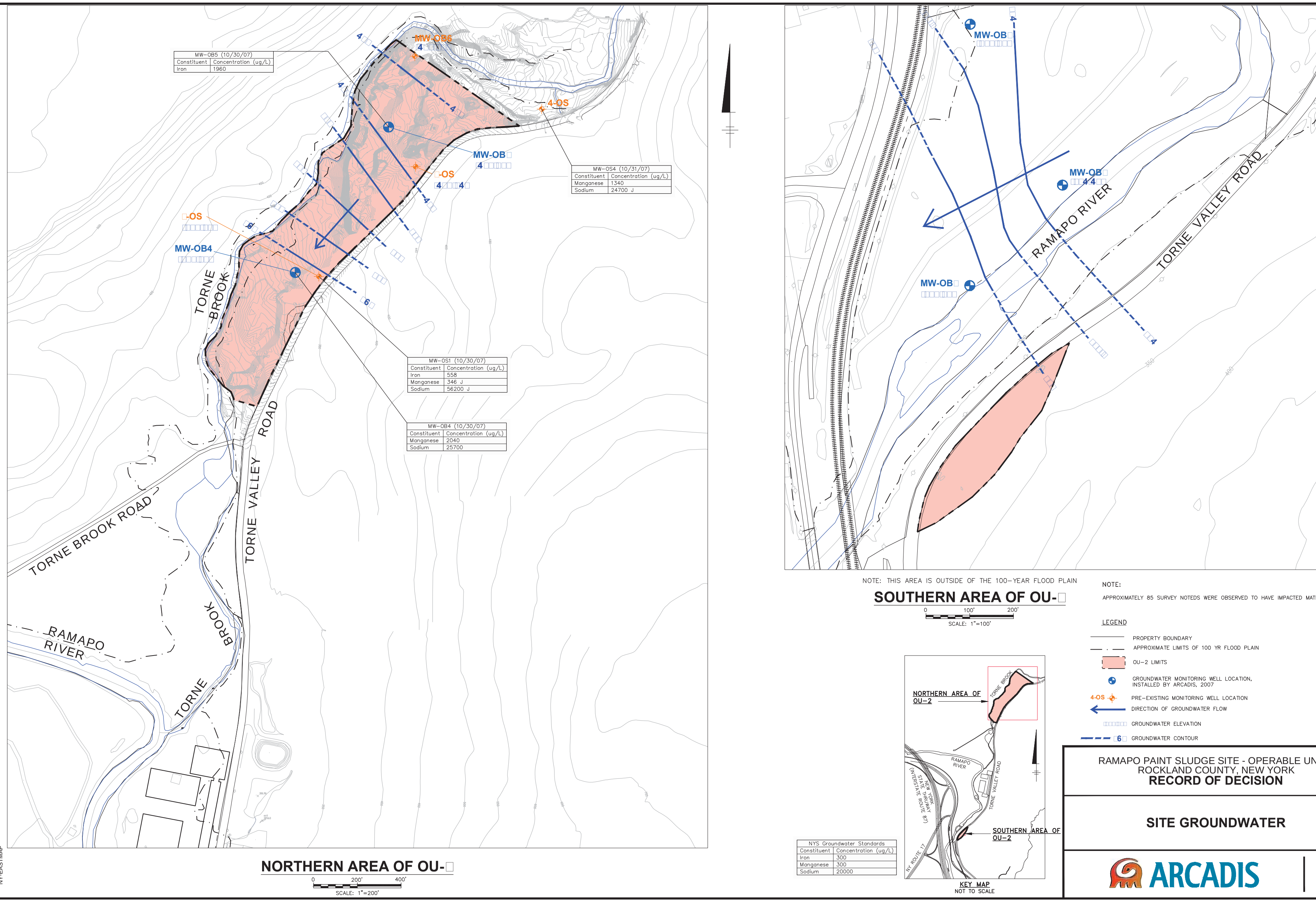
RAMAPO PAINT SLUDGE SITE - OPERABLE UNIT 2
ROCKLAND COUNTY, NEW YORK
RECORD OF DECISION

SITE RECONNAISSANCE

ARCADIS

FIGURE □

CITY:MAHWAH-NJ DIV/GROUP:ENVCAD DB:G.STEINBERGER, S.BELL LD:J.GONZALEZ PIC:R.ELLIS PM:E.ZIMMERMAN TM:J.ROCKLIN LYR:ON=*;OFF=*REF*
G:\ENVCAD\Fairlawn\ACT\NJ000602\0005\00003\2014-03\PRAP\FIG 03-SITE RECON.dwg LAYOUT: 3 SAVED: 3/26/2014 10:05 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS-MAHWAH.CTB PLOTTED: 3/26/2014 10:06 AM BY: GONZALEZ, JAMES
XREFS: IMAGES:
NJ602X01
NY-EASTMAP
FIG. 2 Ramapo-Recon-Nodes-05_07-Inset



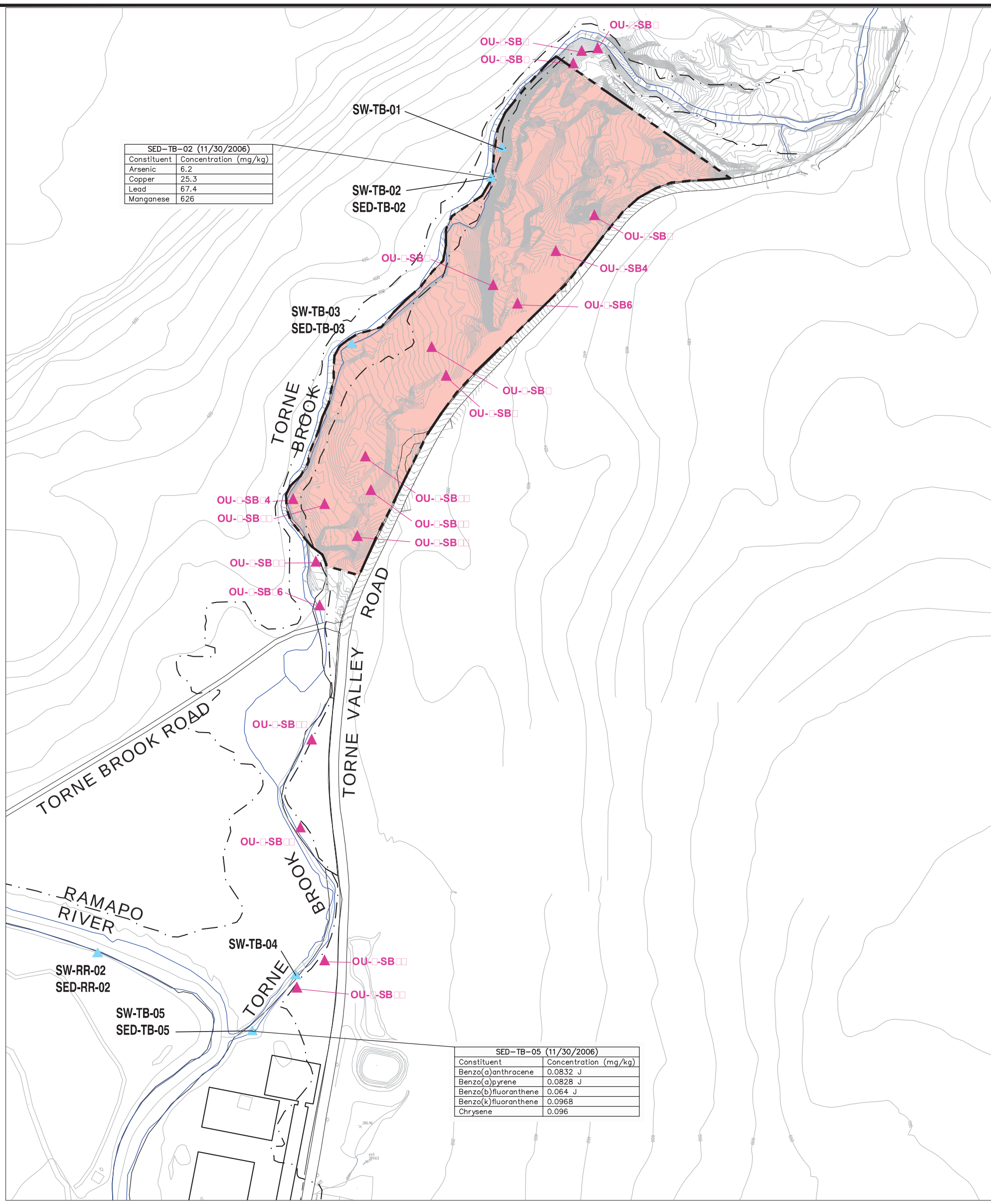
RAMAPO PAINT SLUDGE SITE - OPERABLE UNIT 2
ROCKLAND COUNTY, NEW YORK
RECORD OF DECISION

SITE GROUNDWATER

ARCADIS

FIGURE 4

CITY:MAHWAH-NJ DIV/GROUP:ENVCAD DB:G.STEINBERGER, S.BELL LD:J.GONZALEZ PIC:R.ELLIS PM:E.ZIMMERMAN TM:J.ROCKLIN LYR:ON=*;OFF=*REF* G:\ENVCAD\Fairlawn\ACT\NJ000602\0005\00003\2014-03\RAP\FIG 04-SITE GROUNDWATER.dwg LAYOUT: 4 SAVED: 3/26/2014 9:55 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS-MAHWAH.CTB PLOTTED: 3/26/2014 9:56 AM BY: GONZALEZ, JAMES
XREFS: IMAGES:
NJ602X01
NY-EASTMAP

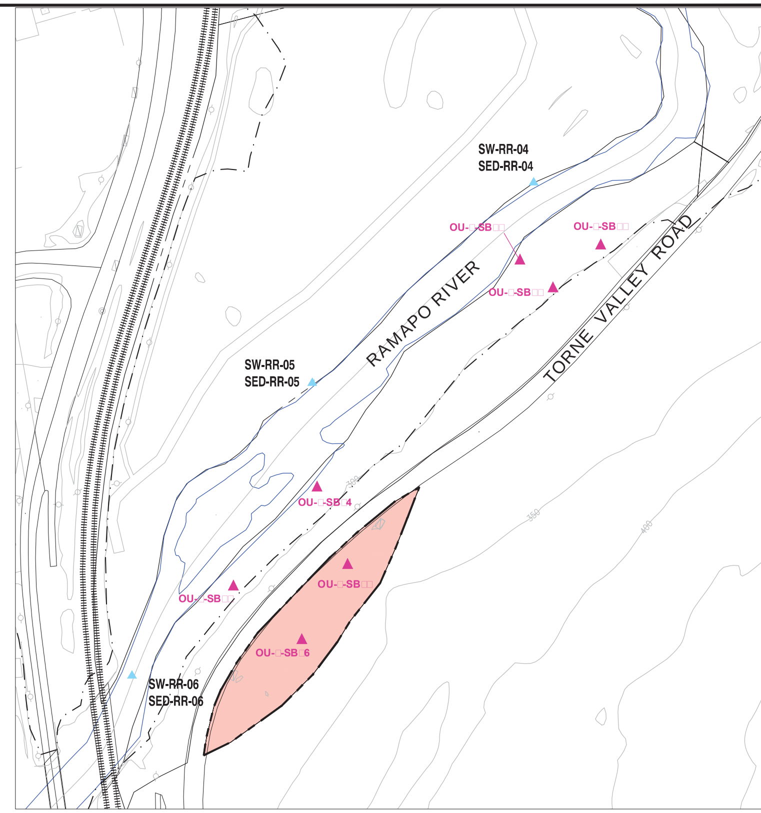


SED-TB-02 (11/30/2006)	
Constituent	Concentration (mg/kg)
Arsenic	6.2
Copper	25.3
Lead	67.4
Manganese	626

SED-TB-05 (11/30/2006)	
Constituent	Concentration (mg/kg)
Benzo(a)anthracene	0.0832 J
Benzo(a)pyrene	0.0828 J
Benzo(b)fluoranthene	0.064 J
Benzo(k)fluoranthene	0.0968
Chrysene	0.096

NORTHERN AREA OF OU-

0 200' 400'
SCALE: 1"=200'



NOTE: THIS AREA IS OUTSIDE OF THE 100-YEAR FLOOD PLAIN

SOUTHERN AREA OF OU-

0 100' 200'
SCALE: 1"=100'

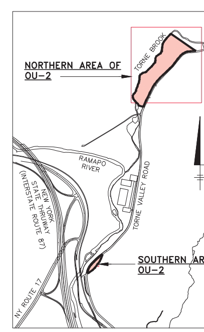
NOTE:

APPROXIMATELY 85 SURVEY NOTEDS WERE OBSERVED TO HAVE IMPACTED MATERIAL.

LEGEND

- PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF 100 YR FLOOD PLAIN
- OU-2 LIMITS
- SURFACE WATER OR SEDIMENT SAMPLE LOCATIONS
- SOIL SAMPLE LOCATION (2012)
- SED-RR-01 – SEDIMENT SAMPLE ID

NYSDEC Sediment Standards	
Constituent	Concentration (mg/kg)
Arsenic	6
Copper	16
Lead	31
Manganese	460
Benzo(a)anthracene	0.052
Benzo(a)pyrene	0.052
Benzo(b)fluoranthene	0.052
Benzo(k)fluoranthene	0.05
Chrysene	0.052



KEY MAP
NOT TO SCALE

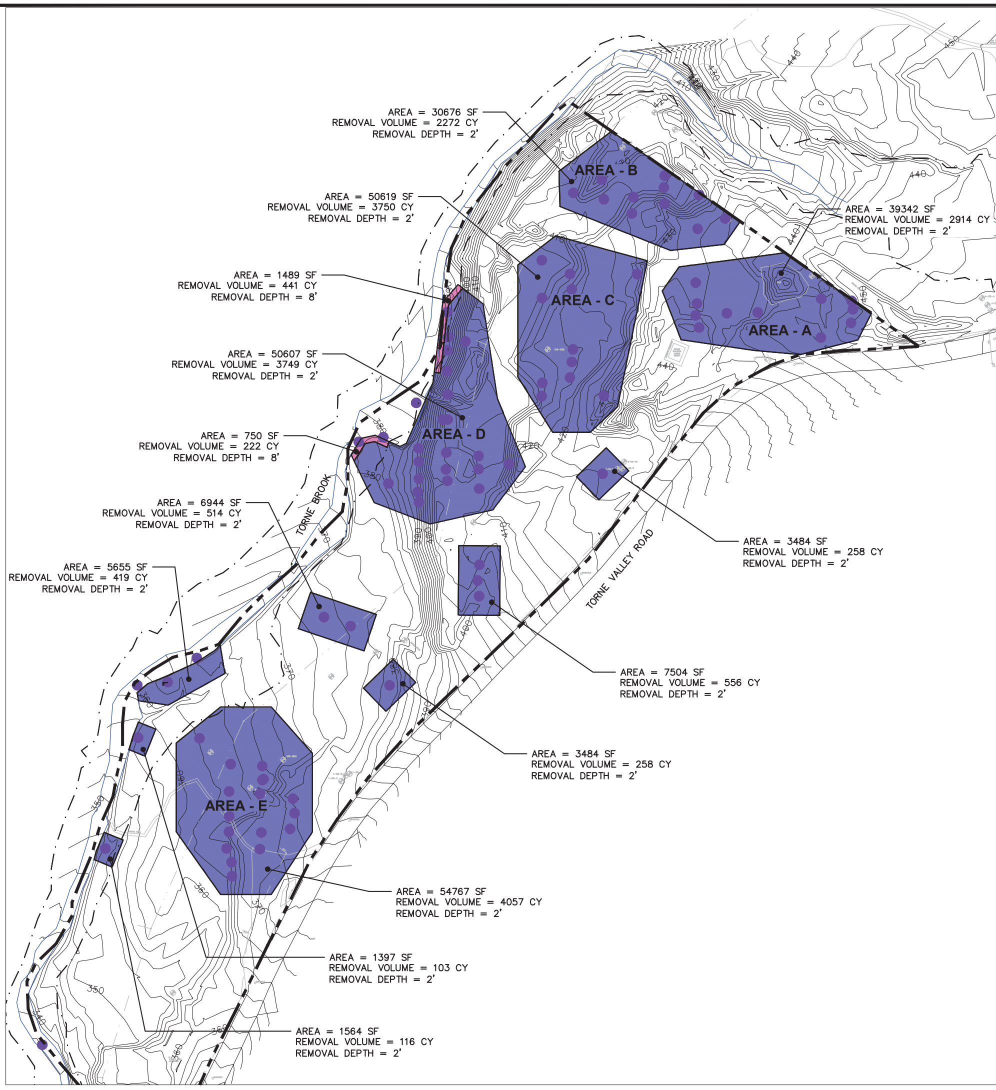
RAMAPO PAINT SLUDGE SITE - OPERABLE UNIT 2
ROCKLAND COUNTY, NEW YORK
RECORD OF DECISION

SITE SOIL SEDIMENT

ARCADIS

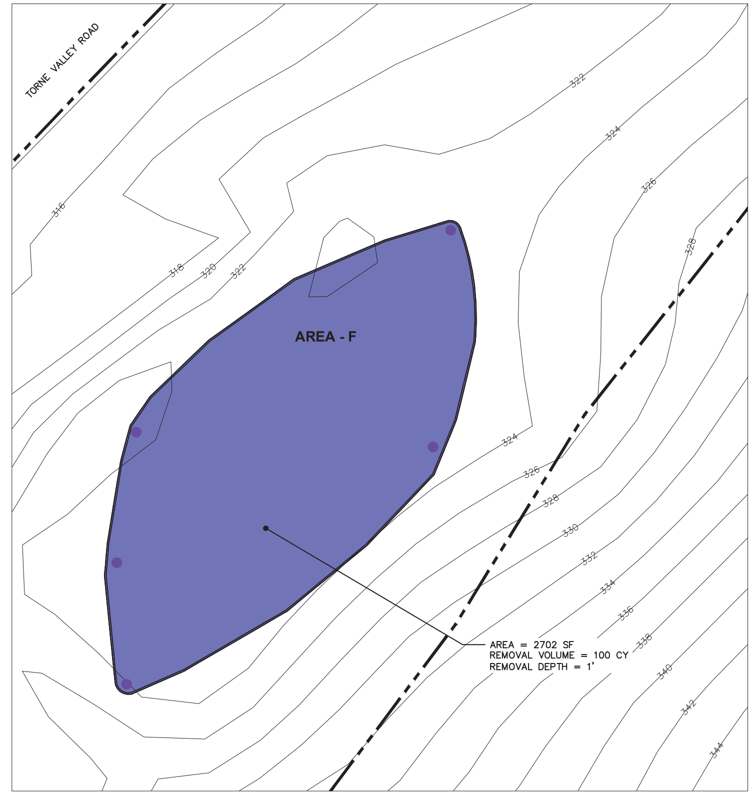
FIGURE

CITY:MAHWAH-NJ DIV/GROUP:ENVCAD DB:G.STEINBERGER, S.BELL LD:J.GONZALEZ PIC:R.ELLIS PM:E.ZIMMERMAN TM:J.ROCKLIN LYR:ON=*;OFF=*REF*
G:\ENVCAD\Fairlawn\ACT\NJ000602\0005\00003\2014-03\PRAP\FIG 05.1-SITE SOIL SEDIMENT.dwg LAYOUT: 5 SAVED: 3/26/2014 9:59 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS-MAHWAH.CTB PLOTTED: 3/26/2014 9:59 AM BY: GONZALEZ, JAMES
XREFS: IMAGES:
NJ602X01
NY-EASTMAP



AREAS A THROUGH E

0 100' 200'
SCALE: 1"=100'



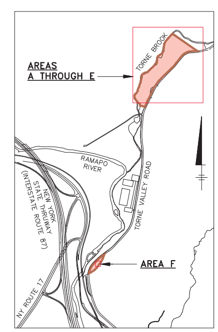
NOTE: THIS AREA IS OUTSIDE OF THE 100-YEAR FLOOD PLAIN

AREA F

0 10' 20'
SCALE: 1"=10'

LEGEND:

- FOCUS AREA
- EXISTING CONTOUR
- APPROXIMATE LIMITS OF 100 YR FLOOD PLAIN
- LIMITS OF TARGETED REMOVAL
- LIMITS OF EMBANKMENT EXCAVATION
- SURVEY NODE WHERE IMPACTED MATERIAL WAS OBSERVED



KEY MAP
NOT TO SCALE

NOTES:

1. TARGETED REMOVAL AND EMBANKMENT EXCAVATION AREAS WERE CALCULATED USING AUTOCAD CIVIL 3D 2011 SOFTWARE.
2. EXTENT OF TARGETED REMOVAL AND EMBANKMENT EXCAVATION AREAS ARE SHOWN AS APPROXIMATE. A DETAILED TARGETED REMOVAL AND EMBANKMENT EXCAVATION DESIGN WILL BE PERFORMED DURING THE REMEDIAL DESIGN PHASE.

RAMAPO PAINT SLUDGE SITE - OPERABLE UNIT 2
ROCKLAND COUNTY, NEW YORK
RECORD OF DECISION

ALTERNATIVE 4 – TARGETED REMOVAL AND DISPOSAL OF PAINT SLUDGE, WITH EMBANKMENT EXCAVATION

ARCADIS

FIGURE
6

CITY:MAHWAH-NJ DIV/GROUP:ENVCAD DB:G.STEINBERGER, S.BELL LD:J.GONZALEZ PIC:R.ELLIS PM:E.ZIMMERMAN TM:J.ROCKLIN LYR:ON=*;OFF=*REF* G:\ENVCAD\Fairlawn\ACT\NJ000602\0005\00003\2014-03\PRAP\FIG 06-ALT4-TARGETED REMOVAL WITH EMBANKMENTS.dwg LAYOUT: 6 SAVED: 3/26/2014 10:01 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS-MAHWAH.CTB PLOTTED: 3/26/2014 10:01 AM BY: GONZALEZ, JAMES
XREFS: IMAGES:
NJ602X02
NJ602X05
NJ602X01

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Ramapo Paint Sludge Site
Operable Unit No. 2: Torne Valley Road Area
State Superfund Project
Town of Ramapo, Rockland County, New York
Site No. 344064

The Proposed Remedial Action Plan (PRAP) for the Ramapo Paint Sludge site (Operable Unit 2) was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 27, 2014. The PRAP outlined the remedial measure proposed for the contaminated soil at the Ramapo Paint Sludge site (Operable Unit 2).

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on March 12, 2014, which included a presentation of the remedial investigation/feasibility study (RI/FS) for the Ramapo Paint Sludge Site (Operable Unit 2) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 30, 2014.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1: What does restricted-residential land use mean?

RESPONSE 1: Restricted-residential land use is defined by 6 NYCRR Part 375-1.8(g)(2)(ii) as a residential land use category where there is common ownership or a single owner/manager entity for the property, such as condominiums, apartments and dormitories. This does not include single family housing or vegetable gardens, although community vegetable gardens may be considered with Department approval. Restricted-residential land use also includes active recreational uses, which are public uses with a reasonable potential for soil contact.

COMMENT 2: Observation of the site by students from Ramapo College has encountered paint sludge at depths of up to 3 feet in the operable unit 2 (OU-2) area. Paint sludge can migrate horizontally as well as vertically and has been found to migrate to a depth of 18 feet.

RESPONSE 2: The remedial investigation (RI) completed for the site indicated a depth of paint sludge to approximately 2 feet below grade, however it is possible paint sludge extends to greater depths. During the remediation of OU-1, paint sludge was observed in some isolated areas to be deeper than was found during the RI. The goal of the OU-2 remedy is to remove all visible paint sludge to the extent feasible, including contingencies for the removal of paint sludge at greater

depths. For a restricted-residential remedy, achieving the soil cleanup objectives (SCOs) is applicable to the upper two feet of soil.

COMMENT 3: Where will the contaminated soil be processed? Where will the excavated paint sludge and soils be disposed? Can the Department guarantee it won't be dumped near areas inhabited by the Ramapo Lenape Nation?

RESPONSE 3: The excavated paint sludge and impacted soil will be characterized on-site to determine where the material will be disposed of off-site. It is anticipated that the waste streams for off-site disposal from OU-2 will be similar to those identified for the interim remedial measure (IRM) of OU-1. This is expected to include both solid and hazardous waste landfills, and, if needed, off-site hazardous waste incineration facilities.

COMMENT 4: Who is responsible for the collection of confirmation samples to ensure that the remedial objectives are met? When confirmation samples are taken, both the Town of Ramapo and the Department should have personnel on site to monitor the collection and assure proper handling of the samples.

RESPONSE 4: Ford will be responsible for the collection of confirmation samples in accordance with the remedial design, which will be reviewed and approved by the Department. The remedial design will include a Quality Assurance Project Plan that outlines all analytical sampling activities including strict chain of custody procedures. Ford will use qualified environmental professionals to collect the confirmation samples and the Department will provide oversight of the sampling efforts, as appropriate. Ford will be required to use a New York State Department of Health (NYSDOH) certified laboratory. The Department and NYSDOH will review all the results of confirmation sampling with Ford as results become available. The Town of Ramapo can request to be involved in the remedial action if they desire.

Following the completion of the remedial action, Ford must provide the results of all confirmation sampling in the Final Engineering Report for the remedial action at OU-2. The Final Engineering Report will document that confirmation samples were collected properly and in accordance with the remedial design, and will include certification by a licensed Professional Engineer.

COMMENT 5: Torne Valley is considered a primary aquifer in the State of New York. This should be considered when determining the future use of the site under the remedy.

RESPONSE 5: The RI/FS of OU-2 included an evaluation of the impacts of paint sludge on groundwater. The RI concluded that paint sludge in OU-2 was not impacting groundwater. The removal of paint sludge and impacted soil from OU-2 to the extent feasible will ensure protection of the aquifer beneath OU-2.

COMMENT 6: For the IRM completed in OU-1, the size of the trees planted as part of the restoration of the site were too small to shade the brook trout that spawn in the Ramapo River. The remedy for OU-2 should take into consideration during restoration the appropriate size of trees that will provide shade for the trout in the Torne Brook.

RESPONSE 6: During the IRM for OU-1, only a small area of the bank of the Ramapo River was excavated to remove paint sludge. Therefore, the trees adjacent to the Ramapo River that provide shade for the trout in the Ramapo River remained in place.

Similar to OU-1, there is only a small area of paint sludge along the bank of the Torne Brook, therefore the tree removal along the bank of the Torne Brook in OU-2 is expected to be minimal. Prior to clearing and excavation of OU-2, a restoration plan will be established and reviewed by the Department's Division of Fish & Wildlife Marine Resources (DFW&MR), which will take into consideration appropriate shading of Torne Brook.

COMMENT 7: Was there a deer, flora, and fauna study done during the RI of the site? Has ecological testing been considered to confirm that impacts have not extended to wildlife? We request biota testing of deer in the area to evaluate the potential for exposure to people.

RESPONSE 7: A Fish and Wildlife Impact Analysis (FWIA) was conducted as part of the RI for OU-2. The FWIA is conducted in a step-wise process. For OU-2, Steps 1 through 2B were completed, which consisted of identification and description of fish and wildlife resources and conclusions regarding actual or potential adverse impacts to fish and wildlife resources. The FWIA, approved by the Department's DFW&MR, concluded the there were no exposure pathways to contaminants in paint sludge for ecological receptors. The remedy has been determined to be protective of ecological resources and the restoration is expected to enhance the environmental setting of the site.

COMMENT 8: Several years ago, the area north of OU-2 was the subject of studies for a proposed power plant. The studies identified rattlesnake habitat. Rattlesnake habitat needs to be considered in both the remedial design and the remedial action.

RESPONSE 8: The Department will require Ford to develop plans to protect rattlesnake habitat during the remedial action for OU-2. This will include contingencies in the remedial design for procedures to be followed in the event that rattlesnake habitat is disturbed during the remedial action.

COMMENT 9: In the event that the remedy leaves contamination at the site, how will this contamination be managed in the future when there is erosion at the site? Can paint sludge breakdown by natural erosive forces?

RESPONSE 9: Following completion of the remedial action an environmental easement will be placed on the site which will require adherence to a site management plan. The site management plan will include periodic inspections of the site to ensure that the two foot site cover remains in place. Inspections will be required after extreme weather events and corrective actions will be required of Ford in the event that erosion has compromised the site cover or if paint sludge is encountered at the site in the future. Paint sludge does not migrate through environmental media, as demonstrated by the RI findings, in which paint sludge constituents were not found in soil, sediment, surface water, or groundwater samples taken from the site.

COMMENT 10: We request signage to warn future generations about the site in case paint sludge is encountered in the future and mistaken for a "pretty rock", and to inform the public of the history of the site.

RESPONSE 10: The remedy will not leave any paint sludge near the surface that could be mistaken for a rock.

COMMENT 11: Reference to the Torne Valley Recreational Center is incorrect. The facility is now called the Joseph T. St. Lawrence Center.

RESPONSE 11: Figure 2 has been corrected to indicate the correct name.

COMMENT 12: The Town of Ramapo would like to thank the Department and Ford Motor Company (Ford) for their efforts on the Ramapo Paint Sludge site. Ford is setting the corporate standard through the remediation of this site.

RESPONSE 12: The comment is noted.

COMMENT 13: The Department must locate all deposits of paint sludge originating from Ford Motor Company in the Town of Ramapo and Rockland County.

RESPONSE 13: The Consent Order between Ford and the Department obligates Ford to perform a remedial program in the Town of Ramapo, Rockland County or anywhere else in New York State where paint sludge originating from their past industrial processes is discovered. On several occasions the Department has been contacted by public and private entities which have observed paint sludge in the Town of Ramapo, Rockland County. Each of these reports has been inspected by the Department and the three areas where paint sludge was confirmed are OU-1, OU-2, and OU-3 as defined by this ROD. The Department will continue to investigate any suspected paint sludge disposal site that is brought to our attention in the future to determine if it should be subject to the Consent Order.

COMMENT 14: During the RI how was the 25 foot grid pattern associated with the site reconnaissance established? Is this grid pattern the standard Ford should be using at New Jersey sites as well?

RESPONSE 14: The purpose of the field reconnaissance completed in OU-2 was to identify visible paint sludge on the surface of the OU-2 area. The scope of the field reconnaissance of OU-2 was a site specific determination based on the site dimensions and terrain. Ford and the Department agreed that a reconnaissance on 25-foot transect lines was necessary to ensure that OU-2 was adequately investigated. Further, as survey crews walked transect lines on the 25-foot grid throughout the site they also were tasked to observe areas outside of the grid points for signs of paint sludge. The survey crews Ford hired were able to find extremely small pieces of paint sludge using this approach.

The Department is not involved with, and cannot comment on, the remedial programs being completed by Ford in New Jersey. Specific information on such projects in New Jersey should be requested from the New Jersey Department of Environmental Protection and the Environmental Protection Agency.

COMMENT 15: The estimated cost of Alternative 5 seems high and unreasonable. Ford spent approximately this much for all of the Ringwood sites.

RESPONSE 15: As required by the Superfund regulations, the FS evaluated a remedy which includes clean-up to pre-disposal or unrestricted conditions. Ford prepared this alternative to include the complete removal, backfill and restoration of the top 15 feet of overburden soil from the entire site as proposed in Alternative 5. The cost provided for such an extensive remedy appears to be reasonable.

COMMENT 16: A health assessment for the Village of Hillburn that addresses exposure to paint sludge needs to be completed.

RESPONSE 16: The NYSDOH will evaluate this request.

COMMENT 17: Health assessments from the Ringwood site in New Jersey as well as the Federal Congressional hearing report for waste management in New Jersey should be taken into consideration in determining the remedy for this site.

RESPONSE 17: Comment noted.

Alden H. Wolfe, Chairman, Rockland County Legislature, submitted a written statement during the March 12, 2014 public meeting, and a letter dated March 27, 2014 which included the following comments:

COMMENT 18: The remedy for OU-2 should be equally as comprehensive as the Interim Remedial Measure (IRM) conducted for OU-1 which included the complete removal of Volatile Organic Compounds (VOCs). The remedy states, "Excavation of paint sludge beyond eight feet (if any) will be completed only to the extent feasible, subject to approval by the Department." I request that the final remedy is modified to include the approval of the Town of Ramapo, and that the Town of Ramapo in concert with the Department determines what is meant by the term "feasible".

RESPONSE 18: The goal of the remedial action for OU-2 is the same as the goal of the IRM for OU-1, which is to remove all paint sludge and impacted soil from the site to the extent feasible. During the removal for the OU-1 IRM, excavations were completed to remove all visible paint sludge and this was confirmed by the samples taken in each excavation which indicated removal of VOCs to Department SCOs.

The terrain of OU-2 differs from that of OU-1 with the presence of large boulders up to 20 feet in diameter and soil berms up to 30 feet high rising above Torne Brook. Due to the terrain, the remedy

for OU-2 includes the provision to allow for paint sludge to be left in place if it is determined by the Department that is not feasible to remove. The goal of the remedy for OU-2 is achieve to removal of all paint sludge and impacted soil from the site.

COMMENT 19: I ask that you define bedrock to mean unbroken solid rock and not the weathered bedrock (which can include soil and bedrock fragments) that sits on top of the competent bedrock.

RESPONSE 19: Section 3 of the Record of Decision includes a modified definition of bedrock as competent bedrock, which will allow for excavation of any paint sludge found in the weathered bedrock region.

COMMENT 20: The remedy states, "excavated soil that does not contain paint sludge will be stockpiled and characterized and then either re-used as backfill on site or disposed off-site at a permitted facility." It seems near impossible to determine, without intensive sampling, if the excavated soil could ever be entirely free of paint sludge. The Department should not allow re-use of site soil and require backfill to be uncontaminated. This is particularly important given the potency of the VOCs emitted by paint sludge and the danger of its seepage into Torne Brook and groundwater.

RESPONSE 20: The OU-2 RI identified paint sludge in isolated areas, and soil sampling indicated that the surrounding soil was not impacted by paint sludge contaminants. To remove these pockets of sludge, clean soil will have to be excavated to allow for excavation of the paint sludge. To determine if the soil can be reused, it will first be examined visually by field staff, which has been proven to be an effective means of identifying paint sludge impacts. Then the soil considered for re-use will be subject to sampling as outlined in the Department's Technical Guidance for Site Investigation and Remediation (DER-10).

COMMENT 21: The extent of the floodplain of the Torne Book in OU-2 has not been evaluated since it was obtained by the Town of Ramapo from a private entity owner in 2007. The floodplain needs to be defined prior to the onset of remediation.

RESPONSE 21: The terrain of OU-2 is such that the majority of the paint sludge present in OU-2 is well outside the Torne Brook floodplain so work in the floodplain is expected to be minimal. However where work in the floodplain is required, Ford will be required to comply with all federal permitting requirements, and meet the substantive technical requirements of Department-issued permits for work within the Torne Brook floodplain.

COMMENT 22: A complete removal of paint sludge from the site is the only way to address the serious, legitimate concerns about public health and ensure the protection of future generations.

RESPONSE 22: The selected remedy is protective of public health as set forth in the discussion in Exhibit D, by removing all paint sludge and impacted soil from OU-2 to the extent practicable and implementing institutional controls to prevent exposure to remaining contamination.

COMMENT 23: Please clarify what is meant regarding the demarcation layer. My concern is that such a layer could allow paint sludge remnants to exist below any such barrier. Creating a demarcation layer poses risks to future generations that might not possess sufficient information about this project and the possible existence of high toxic materials. Monitoring of the erosion of backfill to ensure the demarcation layer is not feasible.

RESPONSE 23: The purpose of the demarcation layer is to document the extent of removal and backfill of material at the site. The environmental easement and site management plan for the site will identify the purpose of this layer to ensure that future generations so not come in contact with any paint sludge that may left in place by the remedy.

APPENDIX B

Administrative Record

Administrative Record

Ramapo Paint Sludge Site
Operable Unit No. 2: Torne Valley Road Area
State Superfund Project
Town of Ramapo, Rockland County, New York
Site No. 3-44-064

1. Proposed Remedial Action Plan for the Ramapo Paint Sludge site, Operable Unit No. 2, dated February 2014, prepared by the Department.

2. Order on Consent, Index No. A3-0536-1205, between the Department and Ford Motor Company, executed on March 16, 2014.

3. Citizen Participation Plan – Ramapo Paint Sludge Site, dated August 9, 2006, prepared by Ford Motor Company.

4. Remedial Investigation Report – Ramapo Paint Sludge Site - Operable Units 1 & 2, dated September 1, 2010, prepared by ARCADIS.

5. Soil Sampling Report – Ramapo Paint Sludge Site - Operable Unit 2, dated August 27, 2012, prepared by ARCADIS.

6. Feasibility Study – Ramapo Paint Sludge Site – Operable Unit 2, dated June 2013, prepared by ARCADIS.

7. Letter dated March 12, 2014 from Alden H. Wolfe, Chairman, Rockland County Legislature.

8. Letter dated March 27, 2014 from Alden H. Wolfe, Chairman, Rockland County Legislature.