Record of Decision
Ramco Steel
Site #915046B

Department of Environmental Conservation

Division of Hazardous Waste Remediation

Record of Decision

Ramco Steel
City of Buffalo, Erie County
Site Number 915046B

March 1996

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* MICHAEL D. ZAGATA, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

RAMCO STEEL
Inactive Hazardous Waste Site
Erie County, New York
Site No. 915046B

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Ramco Steel inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Ramco Steel Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography 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 release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Ramco Steel site and the criteria identified for evaluation of alternatives, the NYSDEC has selected a remedy which consists of removing contaminated soil and sediment from the site and restoration of a pond as a wetland. The components of the remedy are as follows:

- A remedial design program to provide details necessary for the excavation and disposal operations and construction of the wetland.
- Dewatering the pond.
- Excavation of contaminated sediments from the pond.
- Excavation of contaminated soils from the fill area.

- (a) Consolidation of the excavated soils and sediments from Ramco site into the adjacent Alltift Landfill. These contaminated materials will be covered during capping of the Alltift Landfill (Alternative 5).

  (b) If consolidation of contaminated materials could not be implemented due to negotiations breakdown between the responsible parties for Ramco Steel and Alltift Landfill, then the excavated soils and sediments will be disposed off-site at a permitted landfill (Alternative 6).

- Restoration of pond as a productive wetland.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being 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.

3/21/96
Date

Michael J. O'Toole, Jr., *Director*
Division of Hazardous Waste Remediation

TABLE OF CONTENTS

SECTION

RECORD OF DECISION

RAMCO STEEL

Buffalo, Erie County, New York
Site No. 915046B

SECTION 1: SITE LOCATION AND DESCRIPTION

The Ramco Steel site is approximately 8.5 acres in size and is located in an urban industrial area behind the Niagara Cold Drawn building at 110 Hopkins Street (Figure 1). The site is bounded by Alltift Landfill (Site #915054) and Skyway Junkyard on the north, Niagara Cold Drawn on the east, Conrail Railroad tracks on the west and the abandoned building of Sloan Auto Parts and Republic Steel or LTV (site #915047) on the south.

One third of the site consists of a large pond. The Ramco pond is listed on the national wetlands inventory compiled by the US Fish & Wildlife Service. Based upon the wetland delineation of the site, the pond area and a smaller parcel of land onsite are considered wetland areas. Also, NYSDEC designated wetland areas have been identified adjacent to the site.

The site geology consists of glacial lacustrine sediments. Near the surface, deposits are predominantly fine grained sand, silt, and clay. These are separated from the bedrock by a thin layer of compacted glacial till. Bedrock occurring below the till consists of a sequence of shale and limestones.

The groundwater flows west toward Lake Erie in the shallow aquifer and west northwest in the deep aquifer. Due to marsh conditions of the area, surface water in the area is believed to be interconnected with shallow groundwater above the silty clay confining unit overlaying bedrock. The surface water in the pond drains to another pond west of the Alltift Landfill site.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

This site was owned and operated by several companies from 1929 to present. Bliss and Laughlin owned and operated the plant site from 1929 to 1972. Ramco/Fitzsimmons Steel purchased this property in 1972 and operated on this property until 1986. In 1986, the site was subdivided into two parcels, the main building

structure Site # 915046A (owned by Niagara Cold Drawn) and the western pond area behind the building-Site #915046B (owned by Hopkins-Tifft Realty). As shown in Figure 2, the western property containing the pond is the current Ramco Steel site.

During manufacture of steel products, a sulfuric acid bath (also known as a pickling operation) was used to clean the steel. The spent acid, or pickle liquor, (designated as hazardous waste-K062) and washwater from this operation were disposed into the onsite pond until 1979. The acidic water in the pond was periodically neutralized. From 1979 to 1986, industrial wastewater was directed to the Buffalo Sewer Authority for treatment and spent pickle liquor waste was shipped off-site.

The pond was sometimes dredged and the dredged sediments were disposed on-site in the fill area (shown in Fig. 2).

2.2: Remedial History

Initially the site was listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as a Class 2a. Based upon the evidence of disposal of hazardous waste and determination of the significance of the impacts of the environment, the Ramco site was reclassified to Class 2 in 1990. The classification 2 means that the site is considered a significant threat to human health and/or environment and an action is required.

In 1991, NYSDEC contacted the Potential Responsible Parties (PRPs) to undertake the Remedial Investigation and Feasibility Study (RI/FS) of the site. Only Axia, Inc., the alleged successor to Bliss and Laughlin, agreed to perform a Remedial Investigation and the Feasibility Study.

SECTION 3: ENFORCEMENT STATUS

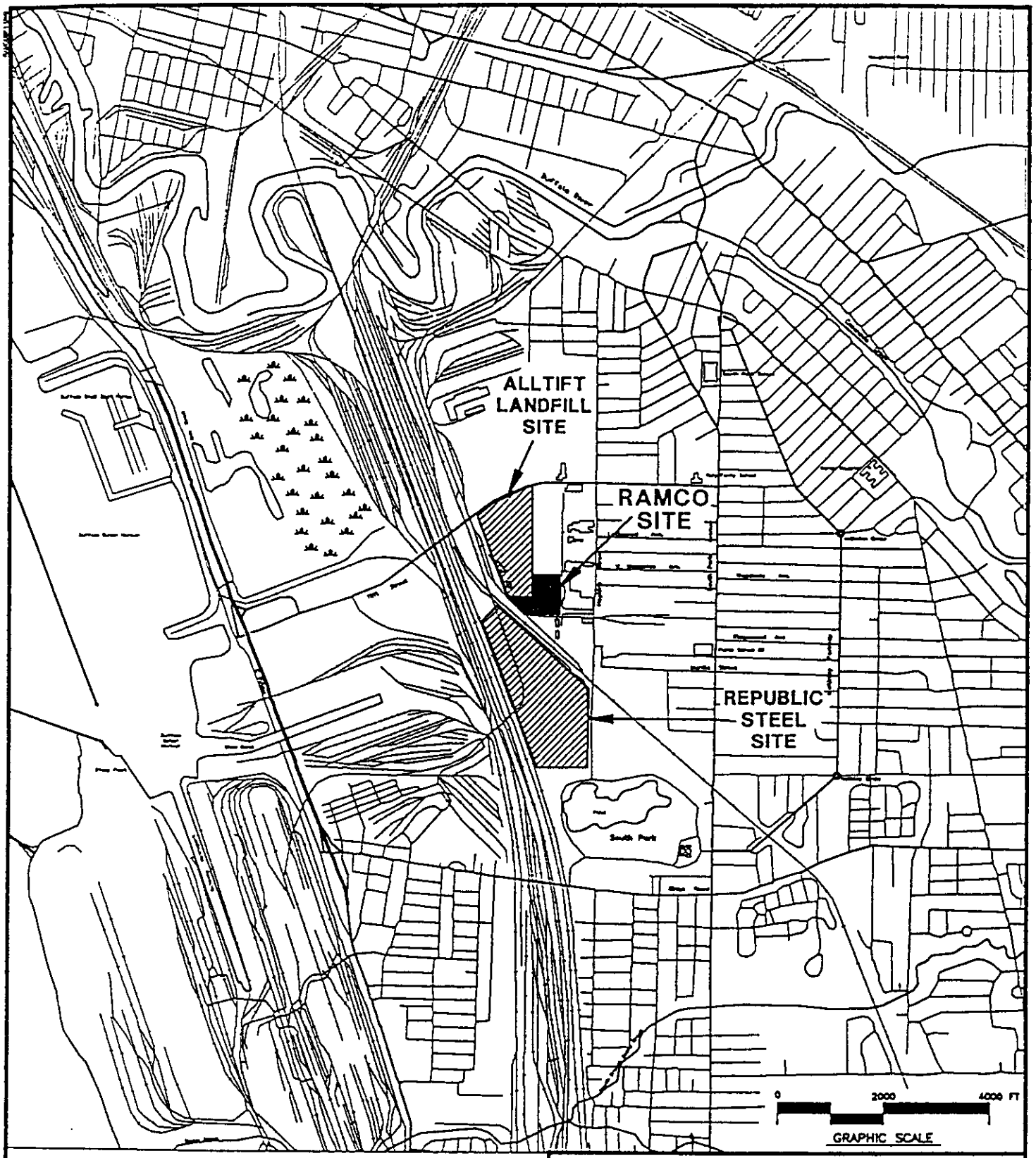
Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

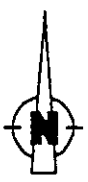
The NYSDEC and Axia (a PRP), entered into a Consent Order in November 1992 to conduct a Remedial Investigation. After completing the Remedial Investigation, Axia entered into a second Consent Order in December 1994 to carry out a Feasibility Study. The Order obligates the responsible parties to carry out an RI/FS. Upon issuance of the Record of Decision, the NYSDEC will request that the PRP implement the selected remedy under a Remedial Design/ Remedial Action (RD/RA) Consent Order.

SECTION 4: CURRENT STATUS

4.1: Summary of the Site Investigations

To determine the nature and extent of environmental problems at the Ramco Steel site, several site investigations were completed.





SOURCE:
USGS 7.5 MIN. QUADRANGLE
BUFFALO SE, NEW YORK 1965.

SCALE AS NOTED

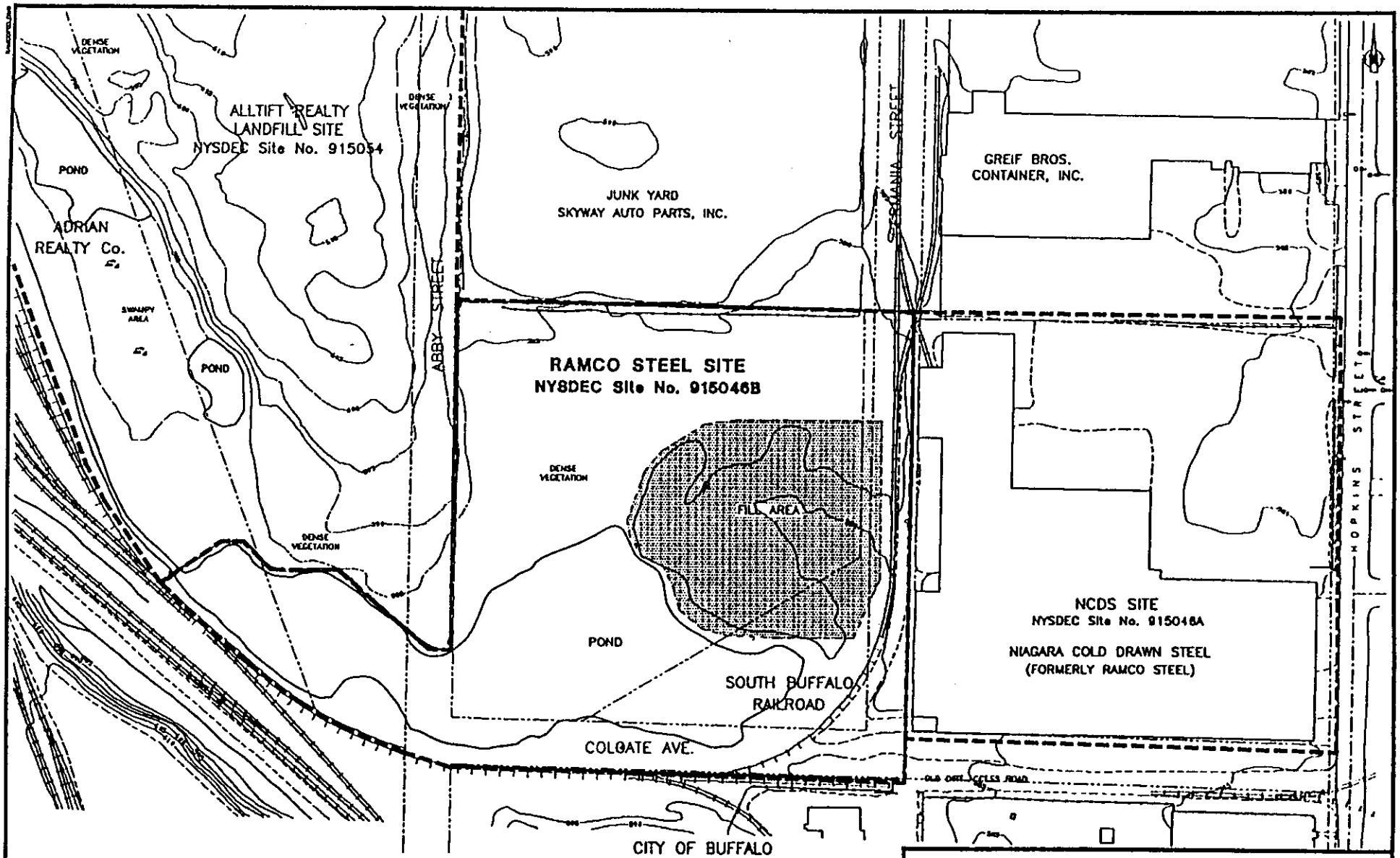
RAMCO STEEL BUFFALO, NEW YORK
NYSDEC Site No. 9150468

FIGURE 1

SITE LOCATION MAP

DAMES & MOORE

JOB No.: 25848-001-152



KEY:

APPROXIMATE PROPOERTY BUONDARIES

NYSDEC SITE AREA BOUNDARIES

BASE MAP SOURCE:
CONTOUR INTERVAL: 5 FOOT
MAPPING COMPILED BY PHOTOGRAMMETRIC METHODS
FROM 1"=500' PHOTOGRAPHY TAKEN 04/14/68.
COMPLETED BY: ERDMAN ANTHONY, CONSULTING ENGINEERS.

0 50 100 200 FT
GRAPHIC SCALE

RAMCO STEEL BUFFALO, NEW YORK
NYSDEC Site No. 915046B

FIGURE 2

SITE LAYOUT PLAN

DAMES & MOORE JOB No.: 25848-001-152

The levels of contaminants found during site investigations were compared to environmental Standards, Criteria and Guidance (SCGs). Groundwater and surface water SCGs identified for this site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of the NYS Sanitary Codes. For the evaluation and interpretation of pond sediment and on-site soil analytical results, NYSDEC Fish & Wildlife Technical Guidance for Screening Contaminated Sediment and Soil Cleanup Guidelines (NYSDEC TAGM-4046) were used.

The site investigations conducted at this site are summarized below:

Phase I Investigation (NYSDEC) July 1989:

To collect preliminary information on this site, a State Funded Phase I Investigation was conducted. The report contains test results from previous sampling events by Recra Research (1978), Erie County Department of Environmental Planning (1981), United States Geological Survey (1982), United States Environmental Protection Agency-NUS (1984), and Dames & Moore (1986). The sampling locations for these investigations are shown in Fig. 3. No field work was done during the Phase I investigation.

Remedial Investigation (RI) (Dames & Moore) August 1994:

This study was undertaken by Axia. Axia contracted Dames and Moore to perform a Remedial Investigation. The field work for this investigation started in December 1992 and was completed in 1994. The purpose of the RI was to determine the nature and extent of contamination at this site. Fig.4 shows the locations of samples collected during RI. The RI consisted of the following activities:

1. Eight test pits were excavated. Two surface and 12 subsurface soil samples were collected.

2. Fifteen sediment samples were collected from the site pond in February 1993. Additional sampling of the on-site pond and pond outfall took place during a Supplemental Remedial Investigation in April 1994.

3. Three surface water samples were collected from the on-site pond and two samples from the off-site ponds.

4. Three on-site overburden monitoring wells were installed and tested. In addition, three Alltift Landfill site wells were also sampled.

5. Ten soil and 17 sediment samples were tested for radioactive materials related to uranium and thorium.

Based upon the results of the RI in comparison to the SCGs and potential public health and environmental exposure rates, certain areas and media of the site were determined to require remediation.

Nature and Extent of Contamination

On-site pond and soil in the fill area (Fig 4) were tested during several preliminary site investigations and the Remedial Investigation. The analytical testing of the environmental media of sediment, soil, groundwater and surface water showed that the major contamination at this site is due to metals which resulted from the steel manufacturing operations. The testing also showed low-level organics contamination. The conclusion of these investigations was that on-site pond sediment and soil in the fill area are largely contaminated with elevated levels of metals.

The evaluation of the media tested during remedial investigations is as follows:

Sediment

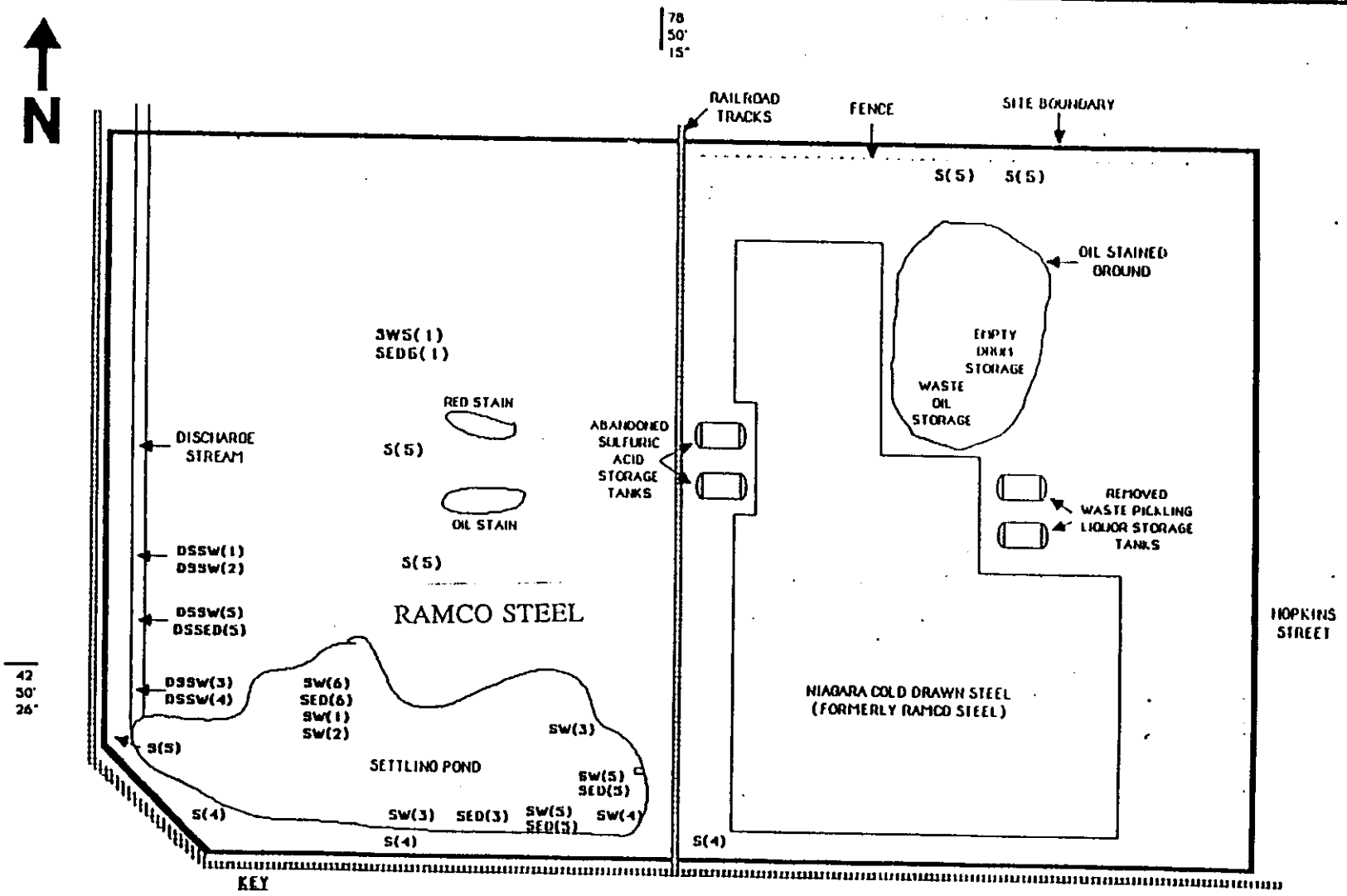
Sediment samples collected from on site and the pond outfall area were tested for volatiles and semivolatile organics, inorganics and radioactive elements. Samples were also tested for toxicity characteristic leaching procedure (TCLP) to determine the hazardous characteristics of the pond sediments.

The sediment from the on-site pond and the outfall were found to be contaminated with metals (aluminum, arsenic, chromium, hexavalent chromium, copper, iron, lead, manganese, mercury, nickel, and zinc) when compared with the SCGs. As shown in Table 1, the concentrations of these metals are well above the NYSDEC Sediment Criteria. The elevated levels of metals in sediment are toxic to the benthic (bottom) organisms and prevent the establishment of aquatic plant communities, which are vital for the productivity of a wetland. For this project, the PRP has elected to use the sediment screening criteria to determine the volume of sediment requiring remediation. The level of contamination was higher in the outfall area than in the pond area. The increase in contamination in outfall area is believed to be due to the Alltift Landfill.

Several volatiles such as trichloroethane, chlorobenzene and 1-2,- dichloroethane and semivolatile organic compounds such as Polycyclic Aromatic Hydrocarbons (PAHs), were detected at low levels in samples collected close to the Alltift Landfill. These organic contaminants are believed to be contributed by Alltift Landfill site. One pond sample also showed 810 ppb Poly Chlorinated Biphenyls (PCBs- Aroclor 1248) which was perhaps due to oily material in the pond sediment.

The TCLP testing data did not show the pond sediment to be characteristic hazardous waste. The average pH of the pond sediment was 5.7.

No radioactive contamination was identified in sediment as Radiological testing showed the activities for Uranium (U-238), and Thorium (Th-232) below action levels set by the Nuclear Regulatory Commission.



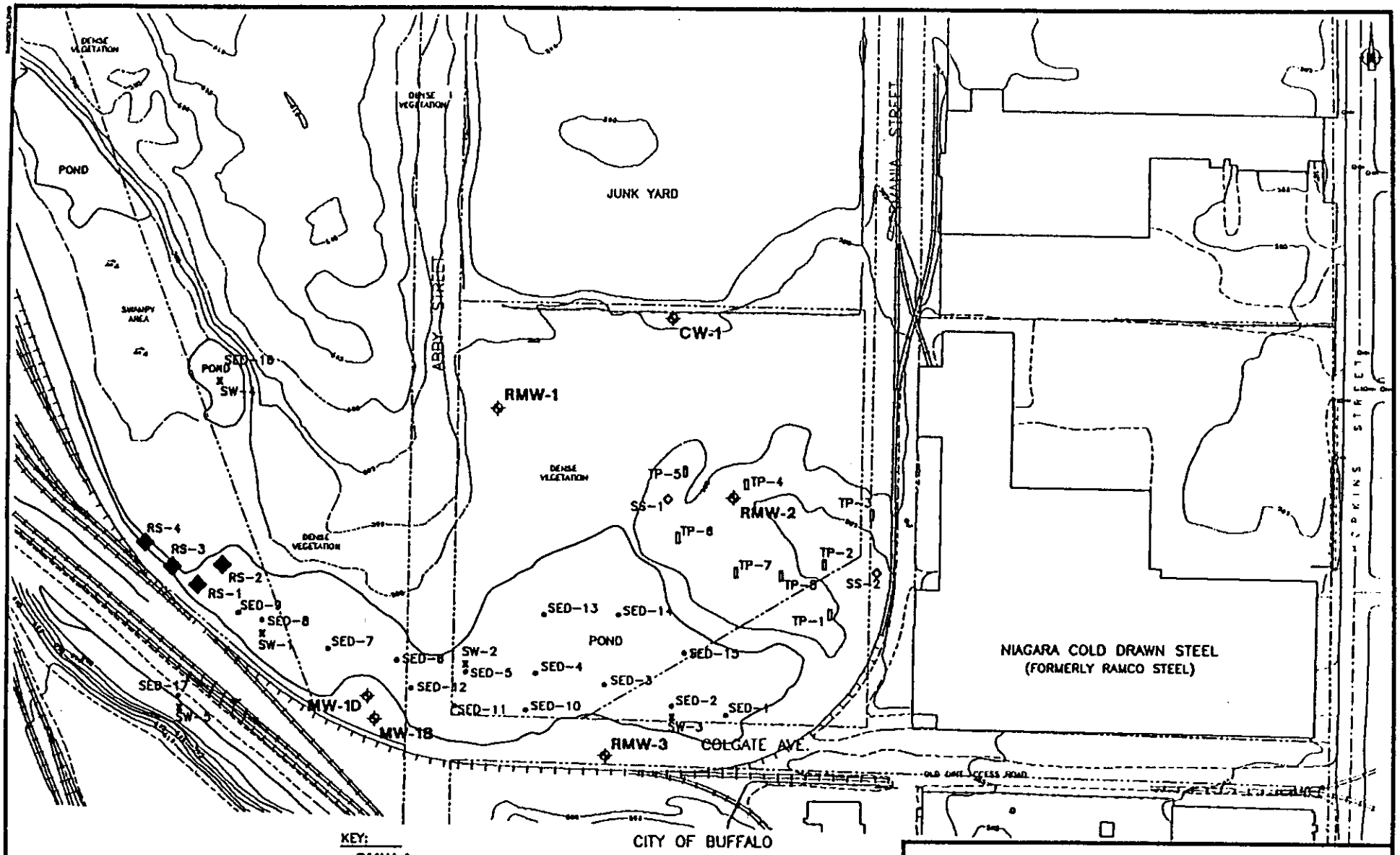
KEY

SAMPLE TYPE:
SED = SEDIMENT S = SOIL SW = SURFACE WATER
DSSW = DISCHARGE STREAM SURFACE WATER
DSSED = DISCHARGE STREAM SEDIMENT

SAMPLING EVENT:
(1) = 7/5/78, REF. 1; (2) = 7/17/78, REF. 1; (3) = 7/8, REF. 15; (4) = 7/82, REF. 2;
(5) = 7/84, REF. 3; (6) = 4/85, REF 1.

Note: Figure Not Drawn to Scale

Pecra Environmental, Inc.	SCALE: N.T.S.			NYSDEC PHASE I INVESTIGATION RAMCO STEEL SITE # 915046	LOCATIONS OF PREVIOUS SAMPLING EVENTS
		BY	DATE		
	DWN.	LMM	7/89		
	CKD.				
	APPVD.				
	REV.			PROJECT NO: 8C1301DD	FIGURE 3 A



RAMCO STEEL BUFFALO, NEW YORK

NYSDEC Site No. 915046B

FIGURE 4

REMEDIAL INVESTIGATION SAMPLING POINT

DAMES & MOORE JOB No.: 25848-001-152

TABLE 1
Remedial Investigation Analytical Data

Subsurface Soil (ppm)					
Contaminant	Concentration		RSCO/SB	Samples Tested	Samples Exceeded RSCO
	Min.	Max.			
Aluminum	3080	19800	30	15	15
Chromium	6.3	115	50	15	6
Copper	2.5	245	25	15	3
Iron	10400	161000	2000	15	15
Lead	5.3	734	400	15	2
Manganese	691	21800	50	15	15
Mercury	ND	0.17	0.1	15	1
Nickel	5.2	112	13	15	3

Sediment (ppm)					
Contaminant	Concentration		Sediment Criteria	Samples Tested	Samples Exceeded Sediment Criteria
	Min.	Max.			
Aluminum	4500	10900	-	15	-
Arsenic	9.4	50.3	5	15	15
Chromium	30.8	213	26	15	15
Copper	23.9	221	19	15	15
Iron	12600	46800	24000	15	4
Lead	34.3	242	27	15	15
Manganese	944	2490	428	15	15
Mercury	ND	3.9	0.11	15	2
Nickel	16.3	46.3	22	15	1
Zinc	31.5	211	85	15	9

SB- Soil Background ppb-Parts Per Billion ppm- Parts Per Million

Groundwater (ppb)					
Contaminant	Concentration		NYS Groundwater Standard	Samples Tested	Sample Exceed GWStd
	Min.	Max.			
Chromium	10	208	50	6	3
Iron	48500	246000	300	6	6
Lead	18	240	25	6	5
Manganese	1990	119000	300	6	6
Zinc	73	598	300	6	3
Phenol	10	25	1	6	1

Surface Water (ppb)					
Contaminant	Concentration		NYS SW Std.	Samples Tested	Samples Exceeded SW Std.
	Min.	Max.			
Iron	771	6230	300	3	3
Magnesium	19800	37100	35000	3	1
Manganese	833	1100	300	3	3

Surface Soil/ Waste Pile (ppm)			
Contaminant	Surface Soil Concentration	Waste Pile Concentration	RSCO/SB
Aluminum	3080	335	30
Arsenic	11	<1	7.5
Chromium	10.4	643	50
Copper	<3	540	25
Iron	24600	589000	2000
Manganese	470	<47	50
Zinc	37.1	<233	20

RSCO- Recommended Soil Cleanup Objectives

Soil

Subsurface soil samples were collected from the fill area (Fig. 4) and were tested for TCLP, volatile and semivolatile organic compounds and inorganics. As shown in Table 1, the levels of chromium, copper, iron, lead, manganese and mercury were found above the Recommended Soil Cleanup Objectives (RSCO).

Among the organics, traces of acetone, 2-butanone, ethylbenzene, toluene, xylene, tetrachloroethane, and Polycyclic Aromatic Hydrocarbons (PAHs) were detected. PCBs were also detected in a few samples at concentrations less than 1 ppm.

The soil samples did not fail in TCLP tests. Radiological testing also showed activities of radionuclides below the regulatory action level.

Elevated levels of metals such as aluminum, chromium, copper, iron and nickel (Table 1) were found in surface soil and waste pile samples. Traces of PAHs and Phenol (470 ppb) were also detected in the waste pile.

Groundwater

During the RI, one bedrock, three overburden and two interface wells were sampled and tested for inorganics, volatiles and semivolatile organics. The levels of metals such as chromium, iron, lead, manganese, and zinc exceeded NYS Groundwater Standards (Table 1). The levels of lead exceeded in two wells while zinc only in one well. The monitoring well RMW-1, which is close to the Alltift Landfill site (Fig. 4) showed 1 ppb of 1,1-dichloroethane. RMW-3 showed 25 ppb of phenol which exceeds the NYS Groundwater Standards.

Surface Water

Surface water samples from the on-site and off-site ponds (near Alltift and Republic Steel Landfill) were tested for volatiles, semivolatiles and metals.

The on-site pond showed traces of benzoic acid (<8 ppb) Di-n-butyl phthalate (<0.8 ppb) and Butyl benzene phthalate (<0.6 ppb). Among the metals, only iron, magnesium and manganese were found above the NYS Surfacewater Standards (Table 1).

The off-site ponds showed trichloroethane (1 ppb), benzene (2 ppb), phenol (3 ppb) and traces of several other organics. The concentrations of metals were found above the NYS Surface Water Standards in these ponds.

4.2 Summary of Human Exposure Pathways:

An exposure pathway is the process by which an individual is exposed to a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media (e.g., soil,

groundwater) and transport mechanisms; 3) the point of exposure; 4) the route of exposure (e.g., ingestion, inhalation); and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Completed pathways known to or that may exist at the site include:

- ingestion of contaminated soil, surface water, or sediments by trespassers or on-site workers.
- dermal contact with contaminated soils, sediment, or surface water by trespassers and on-site workers.
- ingestion of contaminated groundwater through the use and consumption of water from shallow wells (Note: Currently, there is no indication that shallow groundwater is being used as a source of potable water; all local residents are served by public water).

4.3 Summary of Environmental Exposure Pathways:

Currently a variety of wildlife may come in contact with contamination at the site. Some specific examples are:

- migratory birds which may use the ponds at the site as rest or feeding locations.
- any of a variety of mammals which may come into contact with contaminated site soils.
- aquatic life (benthic organisms) in the site pond which would be in direct contact with contaminated sediments.
- plants growing at the site may uptake contamination and incorporate it into the plant material; higher fauna may then be exposed to contamination through the ingestion of plant matter.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR 375-1.10. These goals are established under the overall goal of protecting human health and the environment and meeting all Standards, Criteria, and Guidance (SCGs).

At a minimum, the remedy selected should eliminate or mitigate all significant threats to public health and the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The remedial goals selected for this site are: (Note: Cleanup goals for the different media are given in Table 1)

- Reduce, control, or eliminate to the extent practical the contamination present in the on-site soils and the pond sediment.

- Eliminate the threat to surface waters by eliminating any future contaminated surface runoff from the contaminated on-site soils and waste materials.

- Eliminate the potential for direct human or wildlife contact with the contaminated soils and waste materials on-site.

- Mitigate the impacts of contaminated groundwater to the environment.

- Prevent, to the extent practicable, migration of contaminants in the contaminated soil to groundwater.

- To the extent practicable, provide for attainment of SCGs for groundwater quality at the site.

- Restore the wetland to conditions which are beneficial to wildlife.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the Ramco Steel site were identified, screened and evaluated in the January 1995 Feasibility Study Report. A summary of the detailed analysis is as follows.

6.1: Description of Alternatives:

The potential remedies are intended to address the contaminated sediment, soil, groundwater and surface water and the restoration of the pond as a wetland.

Alternative 1: No Action:

The no action alternative is evaluated as a procedural requirement and is a basis for comparison. This alternative would not require any remediation or any environmental monitoring. Under this alternative, the site would remain in its present condition.

Alternative 2: Institutional Controls (Access and Land Use Restrictions & Monitoring & Site Maintenance)

The institutional controls in this alternative would incorporate fencing and land deed restrictions to limit the public access and future use of this site. This alternative would also require long-term environmental monitoring. The institutional controls would not change the current site conditions.

Present Worth	$686,094
Capital Cost	$51,744
Annual O&M	$51,120
Time to Construct	Less than 6 months

Alternative 3: Covering: (Capping Pond & Excavation/Disposal of Soil)

Present Worth	$2,199,100
Capital Cost	$1,537,900
Annual O&M	$ 53,300
Time to Construct	Less than 6 months

According to this alternative, sediment would be covered with structural backfill followed by two feet compacted soil and 6 inches topsoil (Fig.5). Long-term environmental monitoring would be instituted. An estimated 370 cubic yards of contaminated soil from the fill area would be excavated and disposed at an off-site facility.

Alternative 4: In Place Solidification/ Stabilization of Sediment and Excavation/Disposal of Soil

Present Worth	$1,156,000
Capital Cost	$ 947,000
O&M Cost	$ 51,000
Time to Construct	Less than 6 months

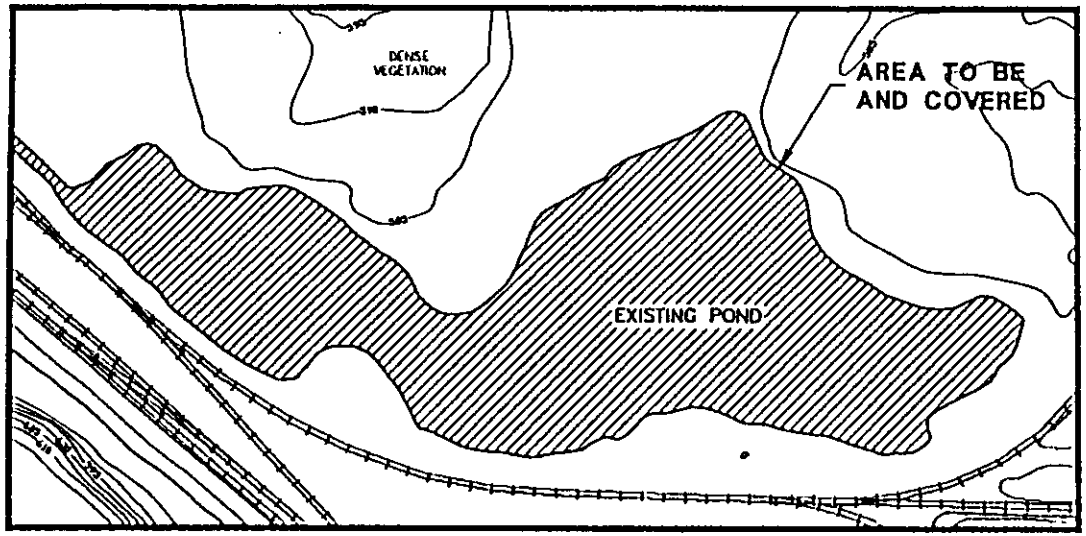
Under this alternative, pond water would be drained and the contaminated sediment would be solidified and stabilized through the use of lime, cement, kiln dust or other suitable materials. The additives would bind the contaminants and reduce their migration (Fig. 6).

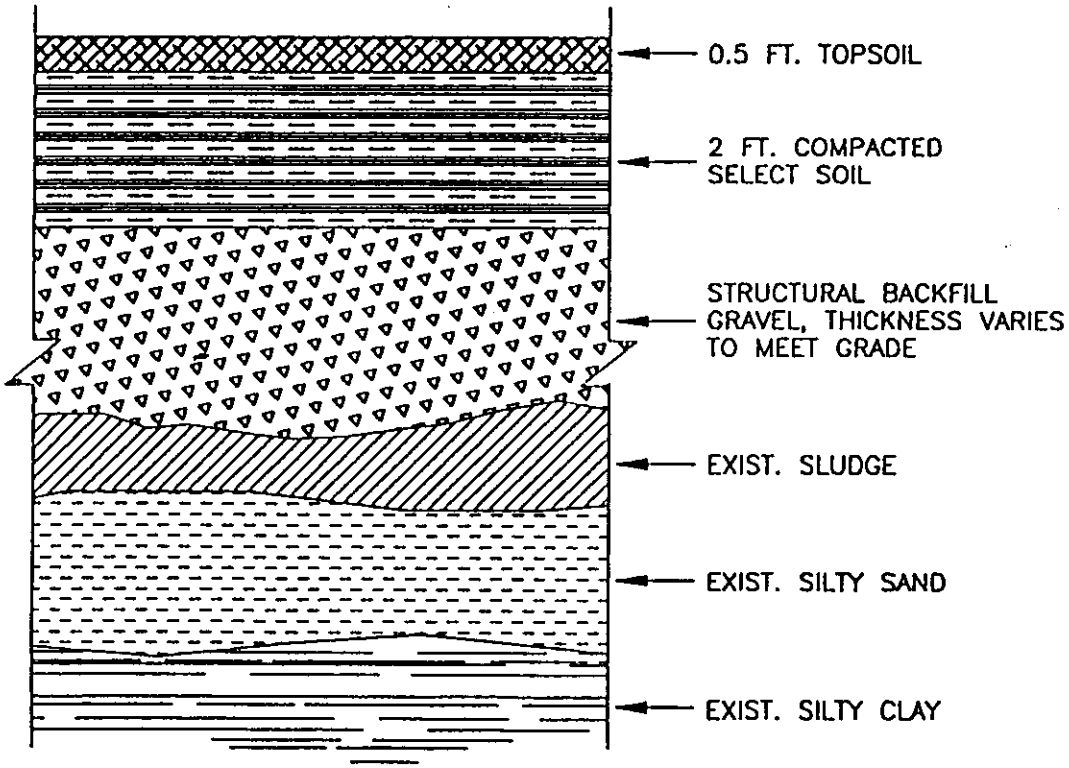
The contaminated soil from the fill area (Estimated to be 370 cubic yards) would be excavated and disposed off site.

Alternative 5: Excavation/Consolidation (Excavation of Soil and Pond Sediment & Disposal at Alltift Landfill)

Present Worth	$878,000
Capital Cost	$878,000
Annual O&M Cost	0
Time to Construct	Less than 6 months

This alternative consists of draining the pond water followed by excavation of approximately 15,000 cubic yards of sediment. The sediment would be consolidated within the adjacent Alltift Landfill. Sediment control barriers would be instituted while draining pond water to prevent sediment migration. To facilitate hauling of sediment, stabilizing agents would be mixed prior to disposal. The cleaned pond would be converted into a productive wetland according to NYSDEC Fish and Wildlife and US Army Corps of Engineers guidance. The soils from the fill area contaminated above the cleanup levels (estimated to be 370 cubic yards) would also be excavated and consolidated within Alltift Landfill. The Alltift Landfill would then be capped according to the March, 1995 Record of Decision for that site. The cap design for the Alltift Landfill is shown in Fig. 7.





NOT TO SCALE

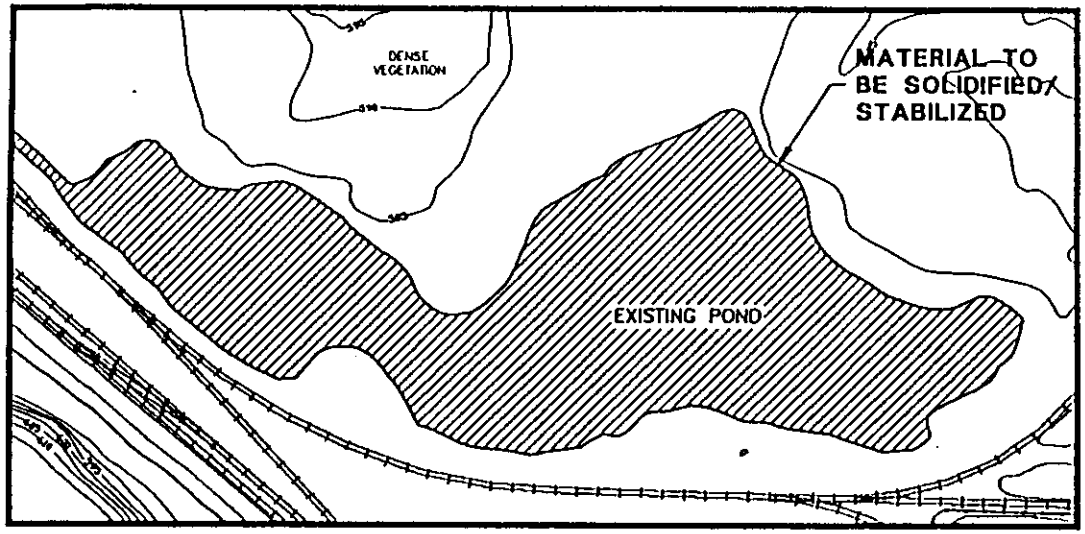
FIGURE 5

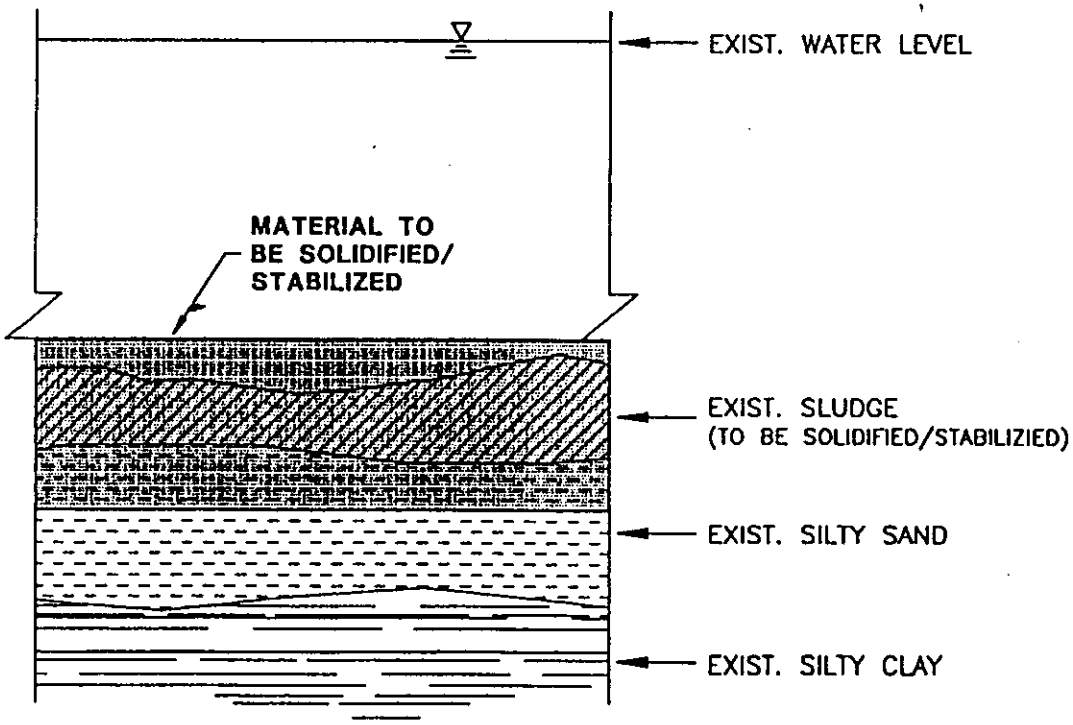
RAMCO STEEL BUFFALO, NEW YORK
NYSDEC Site No. 915046B

Alternative 3

TYPICAL SECTION OF COVERING

DAMES & MOORE JOB No.: 25848-001-152





NOT TO SCALE

FIGURE 6

RAMCO STEEL BUFFALO, NEW YORK
NYSDEC Site No. 915046B

Alternative 4

TYPICAL SECTION OF IN-PLACE SOLIDFICATION/STABILIZATION

DAMES & MOORE JOB No.: 25848-001-152

Alternative 6: Excavation, Off-Site Disposal (Excavation of Soil and Pond Sediment & Off-Site Disposal)

Present Worth	$2,886,800
Capital Cost	$2,886,800
Annual O&M Cost	0
Time to Construct	Less than 6 months

Under this alternative, pond water would be drained. Sediment control barriers would be placed during removal of pond water. Sediment and contaminated soil would be excavated and disposed at an off-site permitted facility. The cleaned pond would be restored as a wetland according to NYSDEC Fish and Wildlife and US Army Corps of Engineers guidance.

6.2 Evaluation of Remedial Alternatives:

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each criterion, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

The following 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 the health and environmental impacts to assess whether each alternative is protective.

Alternative 1 is unacceptable because it would not be protective of human health or the environment. It would contain no remediation to alter the current condition at the site. There would be no control over exposures to the contaminated sediment, soil, surface water, and groundwater and no reduction in risk associated with this site.

Alternative 2 would reduce the public contact pathway with the site contaminants through the use of access restrictions by fencing the site and land use restrictions, however, it would not eliminate the ecological pathway. This alternative would not provide a permanent remedy and would not achieve Remedial Action Objectives (RAOs). The wetland would not be restored under this alternative.

Covering sediment in Alternative 3 would provide protection of human health by isolating the contaminated sediment from direct contact exposure pathway. The contaminated soil and sediment would remain on-site and would act as constant source for ground water contamination. The wetland would not be restored.

In-place stabilization in Alternative 4 would provide protection of human health and the environment by isolating and reducing the availability of contaminants within sediment for ecologic uptake and exposures. The potential for contaminant migration would be minimized. Long-term monitoring would be instituted to assess the effectiveness of this remedy. The wetland would be reconstructed. The removal of contaminated soil would also result in reduction of groundwater contamination.

Alternative 5- Consolidation would provide protection of human health and the environment through the complete removal of the sources of contamination (i.e.: sediment and soil in fill area.) The contaminated sediment and soil would be contained within Alltift Landfill. The source of groundwater contamination would be removed. The wetland would be restored by replacing contaminated sediment with clean soil and planting wetland vegetation.

Alternative 6 is similar to Alternative 5 and would provide protection of human health and the environment through complete removal of contaminated sediment and soil. The contaminated sediment and soil would be hauled to permitted landfills. The source of groundwater contamination would be removed and the wetland would be restored as discussed in Alternative 5.

2. <u>Compliance with New York State Standards, Criteria and Guidance (SCGs).</u>

Compliance with SCGs addresses whether a remedy would meet applicable environmental laws, regulations, standards, and guidance. The Feasibility Study report lists the SCGs for the site. The most significant of the SCGs include the following:

6 NYCRR Part 375 - Regulations directing the investigation/cleanup of inactive hazardous waste sites.

6 NYCRR Parts 700-705 - Water Quality Regulations for surface water and groundwater.

TAGM HWR-92-4046 - Guidance regarding soil cleanup objectives and cleanup levels.

Cleanup Guidance For Aquatic Sediments- December 1989.

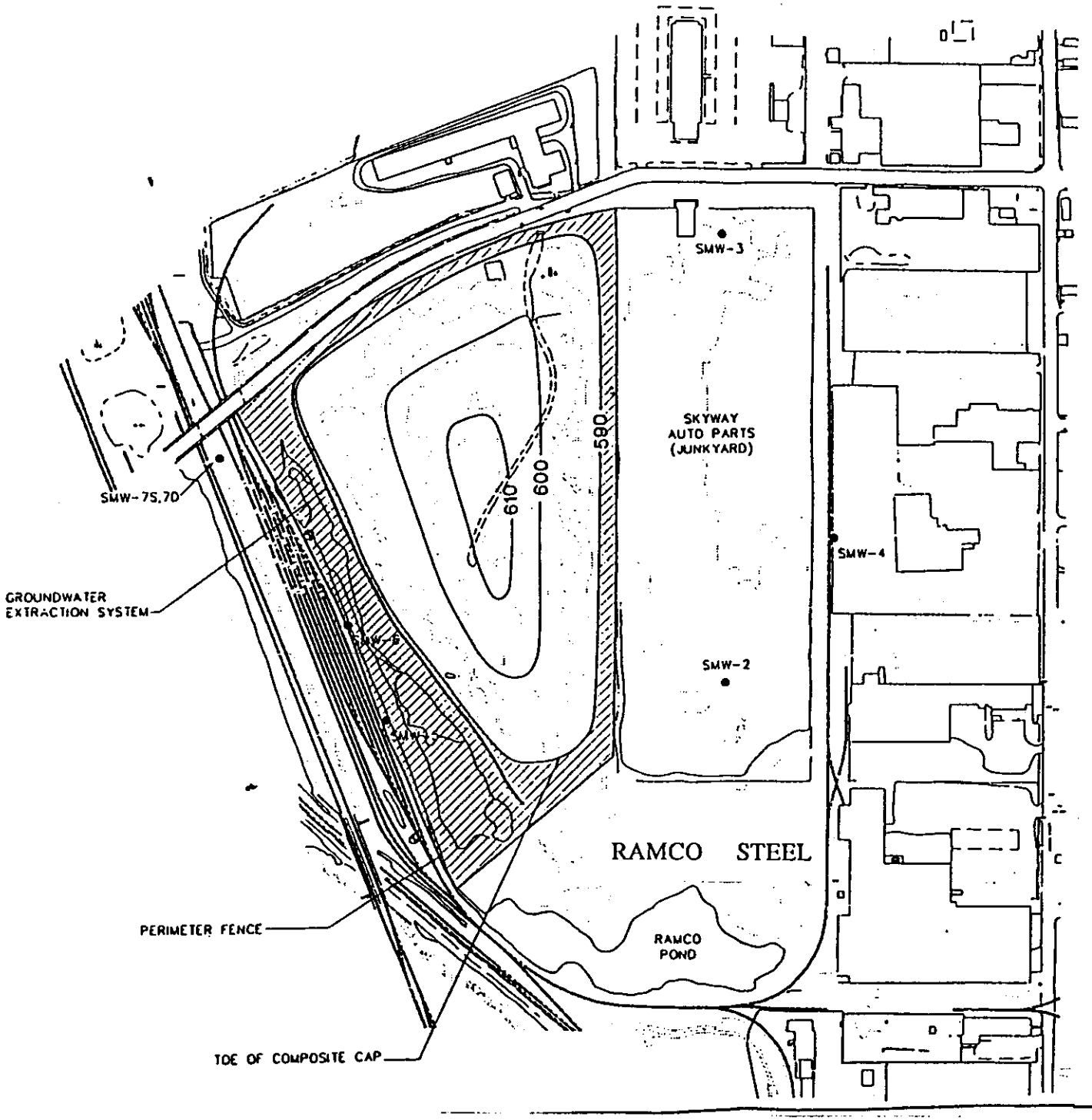
6NYCRR Part 372- Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities.

6NYCRR Part 373-Regulation governing the management of hazardous waste.

Fish & Wildlife Impact Analysis for Inactive Hazardous Waste Sites (FWIA).

ECL Article 24 & Article 71, Title 23 - Freshwater Wetlands Act.

TAGM HWR-89-4031 - Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.



NOTES:
1. SITE BASE MAP PROVIDED BY AFI ENVIRONMENTAL, INC., LOCKPORT, NY.
2. LOCATIONS OF PROPOSED REMEDIAL ACTIONS ARE APPROXIMATE.
3. FINAL TOPOGRAPHY OF LANDFILL CAP MAY VARY.

LEGEND:

- PROPOSED MONITORING WELL
- SMW-2 EXISTING MONITORING WELL
- EXISTING CONTOUR
- PROPOSED FINAL CONTOUR
- AREA FOR ACCESS ROAD, SURFACE WATER COLLECTION CHANNEL(S), AND MISCELLANEOUS STRUCTURES

FIGURE 7

ALTERNATIVE 3B
FEASIBILITY STUDY, PHASE 3
ALLTIFT LANDFILL SITE
BUFFALO, NY

PREPARED FOR
ALLIED SIGNAL, INC., MORRISTOWN, NJ

ERM-Northeast

SCALE 1"=40'

DATE 09/1

In Alternative 1, no action would be taken to alter current conditions at the site. The contaminated soils, sediment, and groundwater which exceed SCGs would not be addressed, hence the No Action alternative would not comply with this criterion.

Alternative 2, Limited Action, would not meet SCGs for the site. The institutional controls which would be enacted would reduce contact with contaminants in soil, sediment, and groundwater. They would not, however, directly address the respective contaminants.

Alternative 3, covering the contaminated sediment and soil would meet SCGs for these media, but would not achieve groundwater SCGs. The pond would be filled and would result in loss of the wetland, thus this alternative would not comply with SCGs for wetland restoration.

Alternative 4, In-Place Solidification would meet SCGs for soil and sediment. With reduction of leachability of contaminants under this alternative, the groundwater SCGs may be achieved over a long period of time. The wetland would be reconstructed under this alternative.

The pond sediments were found to be impacted by the adjacent Alltift Landfill. The soil in the fill area also received the dredged pond sediment. Therefore, excavation and disposal of pond sediment and soil from fill area and disposal or consolidation of these at Alltift Landfill would meet SCGs for sediment and soil. Alternative 6- Excavation/Off-Site Disposal would also meet SCGs for soil and sediment. The wetland would be restored in Alternative 5 or 6. By removal of the source of contaminants from the site, it is expected that groundwater SCGs would eventually be achieved in both these alternatives.

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

3. Short-Term Impacts:

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.

Alternatives 3,4,5 and 6 would present higher short-term risk to the workers than Alternatives 1 and 2, since workers would be in proximity or contact with contaminated sediment and soil during covering, solidification or removal activities. In Alternative 2, the only risk to workers would be incurred during installation of fencing. These risks would be mitigated through the use of engineering controls, personal protective equipment, and trained personnel. All work would be done according to a site specific Health and Safety Plan. There could be short-term impacts caused by contaminated dust from soil excavation. The dust monitoring and dust controls would be done according to the Health and Safety Plan to protect the workers and public. Under Alternative 6, there would be slight increased risk to the public due to transport of soil and sediment for off-site disposal. This would also be mitigated through the use of trained personnel and transportation by licensed haulers. These alternatives would have some short-term impacts on the wildlife.

4. Long-Term Effectiveness

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 controls intended to limit the risk, and (3) the reliability of these controls.

Alternative 1, No Action, would not provide a permanent reduction of environmental risk nor long-term control of human health risks.

Alternative 2, Institutional Controls such as deed restrictions would prevent development of the site but the contaminated sediment and soil would remain on site. By fencing, the direct contact with contaminants by public would be minimized. The ecological risk would not be reduced.

Under Alternative 3, Covering, the contaminated sediment would remain on site and would continue impacting groundwater. This alternative would also require a long-term monitoring and periodic evaluation of the site. The wetland would not be restored.

Alternative 4, In-Place stabilization would reduce the mobility of contaminants but its long-term effectiveness at this site would need to be verified in a pilot test.

Alternative 5- Excavation/Consolidation and Alternative 6- Excavation/Off-Site Disposal would completely remove contaminated sediment and soil from the site and would be a permanent remedy. These alternatives would offer the highest degree of long-term effectiveness.
With the removal of source of contaminants, i.e. sediment and soil, the restoration of wetland would be provide long-term benefits to wildlife.

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 site.

Alternatives 1 and 2 would not provide for reduction in toxicity, mobility or volume of contaminated soil or sediment.

Alternative 3, Covering, would provide some reduction in the surface erosion of contaminants through containment. However, this alternative would not provide any reduction in the toxicity or volume of contaminants in the sediment.

In-place Stabilization in Alternative 4 would significantly reduce leaching of contaminants from the sediment. This would substantially reduce the introduction of contaminants to ground water. The toxicity may be reduced but the volume of contaminated sediment might increase.

Alternatives 5 and 6 would provide permanent reduction in mobility, toxicity and volume of contaminated soil and sediment relative to this site because of removal of these media. With the removal of the source of contaminants from the site, groundwater standards are expected to be achieved through attenuation.

6. Implementability

The technical and administrative feasibility of implementing each alternative is evaluated. Technically, this includes the difficulties associated with the construction, the ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

Alternative 1, No Action, would not require any effort to implement.

Alternative 2, is easy to implement as construction and maintenance of fencing does not require special techniques. The deed restrictions may provide some administrative difficulty.

Alternative 3 would require approval from US Army Corps of Engineers (ACOE) to fill the wetland. Under this alternative the wetland would be lost, therefore, approval by ACOE is unlikely making this alternative impossible to implement.

Alternative 4 would require pilot scale treatability study to evaluate the effectiveness of various stabilization technologies. This alternative would require major construction activities and would partially fill the pond. This alternative would be more difficult to implement than alternatives 1,2,5 or 6.

Implementation requirements for Alternatives 5 and 6 are similar. No major construction difficulties are anticipated to implement excavation and hauling of sediment and soil. These alternatives could be completed over a relatively short period of time. The time to implement Alternative 5 would be dependent upon the remediation of the Alltift Realty site because under this alternative, soil and sediment from Ramco would be disposed of at the Alltift Realty Landfill. At this time, the schedule for construction has not been established and is contingent upon on-going negotiations with PRPs for the Alltift site.

7. Cost

Capital and O&M costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for final decision.

As presented in Section 6.1, no costs are associated with Alternative 1. Alternative 5, which provides a permanent remedy for the site, is one of the low cost alternatives with a capital cost $878,500. Alternative 6 is similar to Alternative 5 but has the highest capital cost of all the alternatives at $2,886,800.

8. Community Acceptance:

Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary" included as Appendix A presents the public comments received and Department's response to the concerns raised.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 7, the NYSDEC is selecting Alternative 5 - Excavation/Consolidation to Alltift Landfill as the preferred remedy. Alternative 5 involves negotiations with PRPs for the adjacent Alltift Landfill site. If the negotiations are not successful, then Alternative 6 - Excavation and Off-Site Disposal will be considered the preferred remedy.

This proposal is based upon the conclusion that remedies described both in Alternatives 5 and 6 will meet all the remedial goals for this site and will achieve the threshold and balancing criteria described in Section 6. Both alternatives 5 and 6 will be protective of human health and the environment through removal of contaminated soil and sediment. It is anticipated that all site SCGs will be met through implementation of alternative 5 or 6. The short-term risks involved with excavation/consolidation or excavation/off-site disposal to the workers or community will be minimal. Both alternatives 5 and 6 will involve much lower long-term risk as compared to alternatives 1,2,3, and 4.

Following completion of a remedy through Alternatives 5 or 6, there will not be any restrictions on future use of the site and the wetland will be restored to an uncontaminated condition.

No groundwater remediation is considered in alternatives 5 or 6. It is anticipated that with removal of the source of contamination from the site, the groundwater contamination levels will decrease with time. Alternative 5 is preferred over Alternative 6 as the capital cost for Alternative 6 ($2,886,800) is three times more than that of Alternative 5 ($878,500).

The elements of the selected remedy are as follows:

- A remedial design program to provide details necessary for the excavation and disposal operations and construction of the wetland.
- Dewatering the pond.
- Excavation of contaminated sediments from the pond.
- Excavation of contaminated soils from the fill area.
- (a) Consolidation of the excavated soils and sediments from Ramco site into the adjacent Alltift Landfill. These contaminated materials will be covered during capping of the Alltift Landfill (Alternative 5).

(b) If consolidation of contaminated materials could not be implemented due to negotiations breakdown between the responsible parties for Ramco Steel and Alltift Landfill, then the excavated soils and sediments will be disposed off-site at a permitted landfill (Alternative 6).

- Restoration of pond as a productive wetland.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of citizen Participation (CP) activities were undertaken in an effort 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:

- A repository for documents pertaining to the site was established.

- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.

- Fact Sheets were sent to the public in April 1993, January 1994, and December 1995.

- A public meeting was held on January 10, 1996 at the New York State Department of Environmental Conservation Region 9 office, Buffalo, New York to describe the Proposed Remedial Action Plan. Prior to the meeting, an invitation/fact sheet was mailed to those persons on the mailing list. The public comment period extended from December 20,1995 to February 2,1996. Comments received regarding the Proposed Remedial Action Plan have been addressed and are documented in the Responsiveness Summary (Appendix A).

- In March 1996 a Responsiveness summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

The remedy selected in the ROD is the same as the proposed remedy described in the PRAP.

APPENDIX A

Responsiveness Summary

RAMCO STEEL SITE

Erie County
915046B

This document summarizes the comments and questions received by the New York State Department of Environmental Conservation (NYSDEC) regarding the Proposed Remedial Action Plan (PRAP) for the subject site. A public meeting was held on January 10, 1996 at the NYSDEC Region 9 office in Buffalo, New York to present the results of the site investigations and to describe the PRAP. The public comment period on the PRAP lasted from December 20, 1995 to February 2, 1996. The information below summarizes a description of the selected remedy, questions received from the public and the Department's responses to the questions.

Description of the Selected Remedy

The selected remedy (Alternatives 5 or 6) is the same as was proposed in the PRAP. The major elements of the selected remedy include:

1. A remedial design program to provide details necessary for the excavation and disposal operations and construction of the wetland.

2. Dewatering the pond.

3. Excavation of contaminated sediments from the pond.

4. Excavation of contaminated soils from the fill area.

5(a) Consolidation of the excavated soils and sediments from Ramco site into the adjacent Alltift Landfill. These contaminated materials will be covered during capping of the Alltift Landfill (Alternative 5).

(b) If consolidation of contaminated materials could not be implemented due to negotiations breakdown between the responsible parties for Ramco Steel and Alltift Landfill, then the excavated soils and sediments will be disposed off-site at a permitted landfill (Alternative 6).

6. Restoration of pond as a productive wetland.

Responses to Public Comments and Concerns:

The questions raised during the public meeting and Department's responses are given below. No written comments from the public were received during the comment period.

1.Q. What is the benefit of Alternative 5? Why is this alternative preferred over Alternative 6?

A. During implementation of Alternative 5, waste hauling trucks won't go on the public roads, thereby reducing the possibility of tracking contaminants on the roads hence reducing general exposure to community. Any outside landfill space will not be used. Alternative 5 is also easier to implement and will cost approximately one third (1/3) of the cost for Alternative 6, which calls for off-site disposal.

2.Q. Would the consolidated waste leach back into the site?

A. After the contaminated soils and sediment are consolidated into the Alltift Landfill, the Alltift Landfill will be capped. There will be a collection system to collect any leachate from the Alltift Landfill. This system would prevent any waste from leaching back into the Ramco Steel site. The integrity of the cap will be maintained and any off-site migration through groundwater from the Alltift Landfill will be monitored for a long period of time.

3.Q. Is restoration of a wetland a major concern to NYSDEC?

A. The Ramco Steel pond is listed on the national wetlands inventory compiled by the U.S. Fish & Wildlife Service. At present this pond is sterile due to contaminants in its sediments. The ponds in the area are vital habitats for several species of birds and wildlife and are used as resting places for the migrating birds. Therefore, it is important to this Department that the pond be restored as a productive wetland.

4.Q. Have any conversations begun with the PRPs for Alltift Landfill? Is there any action underway at the Alltift project yet?

A. Currently, the PRPs for Ramco Steel (Axia) and Alltift Landfill are privately negotiating to implement Alternative 5 (i.e. consolidation of waste materials into the Alltift Landfill).

Regarding the Alltift Landfill site, the Record of Decision (ROD) was issued in March 1995. At present NYSDEC is negotiating with PRPs for Alltift Landfill site to implement this ROD.

5.Q. When you do excavation projects like this, are any contaminants left behind?

A. For this project, the PRP has elected to use the sediment screening criteria as the goal for sediment and the Recommended Soil Cleanup Objectives or soil background levels (see Table 1) for soils. Every attempt will be made to meet these goals. Although there is a possibility that these goals may not be accomplished in every instance, it is recognized that the bulk of the contaminated soils and sediment will be removed from site. Any small amounts of contamination remaining in the pond will be covered with soil during restoration of the wetland and would not significantly impact the quality of the wetland.

6.Q. Are there any health concerns from this site?

A. The site is not completely fenced in and is located behind the Niagara Cold Drawn Building. At present, potential health impacts could occur by ingestion of pond sediment, water and contaminated soil.

Once the site is cleaned up, the chemical exposure threat to public would be eliminated.

7.Q. Why were samples at the Ramco site tested for radioactivity?

A. During 1940's, uranium rods were machined in the plant building. The United States Department of Energy has reported that all the wastes from that machining operations were shipped to their disposal facility. Soil and sediment samples at Ramco Steel property were tested for radioactive materials to rule out any accidental disposal. No radiation above background was found.

APPENDIX B

ADMINISTRATIVE RECORD

RAMCO STEEL SITE

Site I.D. No. 915046B

1.	Record of Decision	March 1996
2.	Proposed Remedial Action Plan	December 1995
3.	Revision to Feasibility Study Report (Letter from Jaspal S. Walia to Peter Smith)	May 1995
4.	Feasibility Study Report (Dames & Moore)	January 1995
5.	Remedial Investigation Report (Dames & Moore)	August 1994
6.	Orders on Consent - Remedial Investigation -Feasibility Study	November 1992 December 1994
7.	Work Plan for Radiological Survey	March 1993
8.	Remedial Investigation Work Plan	June 1992
9.	Phase I Investigation Report (NYSDEC)	July 1989

10. Relevant Correspondence:

G.A. Carlson to M. J. O'Toole, NYSDOH concurrence letter for Record of Decision, 3/5/96.

G.A. Carlson to M. J. O'Toole, NYSDOH concurrence letter for Proposed Remedial Action Plan, 2/22/96.

Peter smith (Dames & Moore) to Jaspal S. Walia (NYSDEC)
Response to RI comments, 12/17/93.

Jaspal S. Walia to Peter Smith, Comments on RI, 10/14/93.

Jaspal S. Walia to Peter Smith, Testing for radioactive materials, 3/9/93.