Appendix F

PHASE II WORKPLAN

for

ATLANTIC STEEL INDUSTRIES, INC. PROPERTY

Atlanta, Georgia

August 15, 1997

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1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

Law Engineering and Environmental Services, Inc. (LAW) has prepared this *Phase II Workplan* for the Atlantic Steel property in Atlanta, Georgia. LAW has prepared this *Phase II Workplan* in connection with a proposed transaction involving the property, under a contract between Atlantic Steel Industries, Inc. (the current owner) and Atlantis 16th, L.L.C. (the potential purchaser).

This *Phase II Workplan* includes a description of LAW's non-invasive Phase I assessment of the property, existing data and background information (hereinafter "Phase I Assessment"). The Phase I Assessment concludes upon issuance of a final *Phase II Workplan.*

This *Phase II Workplan* presents the general objectives and specific scope of work for upcoming investigative activities (hereinafter "Phase II Investigation"). This *Phase II Workplan* contains the following sections:

- a description of current conditions at the property (including site history, operations, and permit issues)
- a description of the conceptual approach to performing the Phase II Investigation
- detailed strategies and procedures for investigating the facility environmental setting, potential migration pathways and receptors, and potential (suspected) contaminant releases
- risk assessment methodologies
- quality assurance/quality control, and sampling and analysis procedures (Appendix A)
- data management and reporting procedures
- a summary schedule for implementation of this plan

1.2 THE PHASE I ASSESSMENT

LAW initially performed and has completed a non-invasive assessment of environmental conditions at the property. The objectives of this Phase I Assessment were to:

- Identify potentially impacted areas (PIAs) of the property where known or suspected activities may have resulted in soil or groundwater contamination.
- Prepare a report and *Phase II Workplan* that describes the Phase I Assessment results and proposes Phase II investigation activities.

The Phase I Assessment was performed in general accordance with the ASTM *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Standard E1527)*, modified as appropriate based on engineering judgment to account for the nature of site operations and the availability of existing environmental information. The Phase I Assessment consisted of reviewing existing environmental reports for the property, reviewing historical records, performing a property and property area reconnaissance, conducting interviews with cognizant Atlantic Steel personnel, and preparing this report/workplan.

LAW performed a reconnaissance of the property and interviewed Atlantic Steel personnel regarding past and present operations over the period beginning June 4 and continuing through June 11, 1997. The primary source of interview information was Mr. Neil A. Harmon, Principal Environmental Engineer, representing Atlantic Steel. LAW also sent a written environmental-related questionnaire to each current occupant of the residential properties which are part of the proposed transaction. The questionnaires were completed, returned to LAW, and reviewed for environmental significance (e.g., as evidenced by underground heating oil tanks, substantial releases of oil from automobiles, or "industrial" type uses of the properties). LAW conducted a verbal interview with one occupant and toured one residence.

LAW reviewed available historical information for the property to assess prior land use, as identified below:

- Aerial photographs dating to the early 1900s
- Property-related drawings dating to the early 1900s (e.g., sewer plan drawings, site plans, location of outparcels owned by Atlantic Steel, property-specific topographic map)
- U.S. Geological Survey 7.5-minute Topographic Quadrangle Map of Northwest Atlanta, Georgia (dated 1993)
- Sanborn Fire Insurance Maps dated 1911, 1950, and 1978
- Existing environmental-related information, which generally included a RCRA post-closure permit and permit application, RCRA Facility Investigation workplan, historical groundwater monitoring data, soil and groundwater assessment data, waste stream characterization information, operations process flow charts, Hazardous Waste Disposal Reports for various years, permits (air, solid waste, storm water, and wastewater), aboveground and underground tank information, and spill-related reports and remediation documentation.

1.3 THE *PHASE II WORKPLAN*

This *Phase II Workplan* has been developed to assess the nature and extent of environmental concerns at the property in anticipation of the proposed transaction and future property redevelopment. This *Phase II Workplan* presents a multi-phased, multi-media approach designed to:

- characterize the nature of groundwater flow in the area
- characterize the present "baseline" concentrations of specific constituents in surficial and sub-surficial in-situ materials (e.g., fill, soil), and evaluate the potential human health and ecological risk associated with these constituents
- characterize the profile of fill materials (e.g., slag, non-native soils, construction debris, railroad track ballast) based on the sampling grid and other pertinent sampling activities
- characterize the nature of known and suspected releases to air, soil, groundwater, and surface water at PIAs identified during the Phase I Assessment, and evaluate the human health and ecological risk associated with releases

It is anticipated that the Phase II Investigation may be an iterative process, and this Workplan describes the first iteration. Subsequent soil, sediment, or groundwater sampling may be necessary to fill data gaps or gather supplemental data based on the results of this first iteration. As examples, the results of the first iteration of groundwater monitoring in 8 overburden wells will be used to establish the location and analytical parameters for a bedrock groundwater monitoring well, and the results of the analyses of the ten samples collected from sub-surficial materials using a grid pattern will be used to establish the analytical suite to be applied to the remaining grid samples.

The overall Phase II Investigation activities will include:

1) Installing groundwater piezometers and groundwater quality monitoring wells; measuring groundwater characteristics in the piezometers; sampling and analyzing groundwater from the groundwater quality monitoring wells; and developing a groundwater potentiometric surface map (described in detail in Section 4.1)
2) Sampling and analyzing surficial and sub-surficial, in-situ materials to profile the concentrations of selected constituents in those materials (described in detail in Section 4.2)
3) Drilling soil borings as necessary to prepare a topographic map describing the vertical and horizontal presence of fill materials (described in Section 4.2)
4) Sampling and analyzing soils and/or sediments in discrete PIAs (described in detail in Section 4.3)
5) Evaluating the data from activities 1) through 4) to :

- Evaluate the presence and concentration of contaminants in the soil, sediment, and groundwater
- Assess human health and ecological risk for intended property uses
- Establish the direction for remediation activities, as necessary, based on future uses and the results of the human health and ecological risk assessment

1.4 OUTCOMES OF THE PHASE II INVESTIGATION

Upon completion of the investigation described in this *Phase II Workplan*, sufficient information will be available to:

- understand the nature of groundwater flow beneath the property to aid in the development of engineering and institutional controls, if necessary
- distinguish areas of environmental impact requiring remediation or exposure controls from those for which no further action is required
- develop a *Phase II Report and Remediation Plan* that addresses areas of environmental impact requiring remediation or exposure controls

2.0 DESCRIPTION OF CURRENT CONDITIONS

2.1 FACILITY DESCRIPTION

The Atlantic Steel facility is located on Mecaslin Street in Atlanta, Georgia, as indicated in Figure 1. The property, as that term is used in this workplan, actually is made up of a number of parcels of land:

- The 130-acre parcel that includes all former steel-making and manufacturing operations
- A 1.7-acre parcel that is occupied by Tri Chem Corporation
- 43 outparcels located in the area southeast of Sixteenth Street and Mecaslin Street, and now used for either vehicle parking or single-family dwellings. The outparcels range in size from 0.07 acres to 1.61 acres.

2.2 OPERATIONAL HISTORY AND PERMITS

Atlantic Steel began steel and iron working operations in the early 1900's. Prior to that, the land on which the Atlantic Steel facility, the Tri Chem facility, and the outparcels exist was undeveloped.

In its present configuration (Figure 2), the plant made finished steel from scrap that was melted, rolled and drawn into steel merchant bar, wire rod, and wire products. Steel billets from the steelmaking operation were also reheated in furnaces and rolled into finished products such as merchant bar and wire rod. Selected product runs of wire rod were acid pickled in sulfuric acid (rod cleaning) and lime coated in preparation for wire drawing. Other products were galvanized for durability.

The property currently maintains permits for solid waste disposal, wastewater pretreatment discharges, air emissions, and post-closure care of a former hazardous waste dust pile (described below).

Process water has always been delivered to the plant from the city via one of several holding ponds on the property. One pond has been closed, the other two remain active. Contact and non-contact cooling water was regularly channeled from the production areas and discharged to the ponds. Stormwater and sanitary wastewater have always been discharged to the City of Atlanta sewer system.

Steel making was converted from open hearth furnace to electric arc furnace (EAF) in 1953, when Atlantic Steel purchased an inactive foundry operation (Southern Iron and Equipment Co.) located at the current western portion of the property. EAF operations were discontinued in 1991. The wire drawing operation was closed in 1995 and the rod cleaning operation was permanently shut down in 1996.

Galvanizing operations ceased in 1993. Only steel rolling in the Rod Mill and 13" Mill currently remains active at the property.

The former steelmaking operation used four dust collectors for capturing air emissions. The dust collected from the EAF was listed as a hazardous waste (K061) under the provisions of RCRA.

For a number of years, Atlantic Steel accumulated (for off-site recycling) EAF dust on the ground in a specified pile area at the western end of the direct evacuation dust collector. Following the closure of the former waste pile, Atlantic Steel installed a silo for temporary storage of the dust generated until it could be shipped to an off-site recycling facility.

After closure of the EAF steel-making operation in 1991, Atlantic Steel removed all remaining dust from the dust collectors and the storage silo. The unit is regulated under a RCRA Post-Closure Permit, and groundwater in the area is being monitored using 15 active groundwater monitoring wells, and withdrawn using a groundwater recovery system that discharges to the City of Atlanta sewer.

One noteworthy past support operation at the plant was the manufacturing of fuel (gas) from coal. This operation took place until approximately 1930, when use of natural gas as the primary fuel began. It is believed by plant personnel that the coal gasification took place in up to three buildings (shown on Figure 2), all of which remain in place but have subsequently been used for other plant operations.

The steel manufacturing process requires the substantial use of contact cooling water. In the process, the contact cooling water is impacted by scale, the primary constituents of which are base metals and heavy petroleum fractions. Historically, the contact cooling water has been discharged to in-ground pits or surface impoundments, where physical settling of the solids occurred, and from which the supernatant would be discharged and recycled into process water supply ponds on site. The western ponds were periodically dredged of the settled mill scale and deposited in several areas on site.

In the past, Atlantic Steel has deposited solid waste on the property, most notably at its eastern end. The area in which the solid waste was routinely deposited has since been sold to the Georgia DOT and developed as interstate and substantial excavation occurred during this construction; consequently, the solid waste deposition areas no longer exist. In addition, the City of Atlanta performed removal operations in that area (1995 to 1996) during reconstruction of the Orme Street sewer.

The Tri Chem facility has been used for manufacturing for at least 40 years. Operations have included recycling EAF dust into fertilizer, and manufacturing of burial vaults.

The outparcels have been used either for vehicle parking and/or residential uses. Based on the survey of current occupants, no environmental issues are known or suspected to exist at any outparcel. Consequently, no Phase II Investigation activities are proposed for the outparcels. It may be appropriate, however, to locate groundwater piezometers on selected outparcels.

2.3 SUMMARY OF PRIOR ASSESSMENT

The following chronology of documents and reports present a summary of significant monitoring, assessment, and corrective action activities at the facility. Most RCRA activities cited relate to the former K061 dust pile at the western end of the property. Other, PIA-specific assessment results are discussed in Section 4.3.

November 8, 1985	—	Initial submittal of the Part B - Closure and Post-Closure Permit Application (for former K061 Waste Pile)
May 8, 1986	—	Revision 1 to the Part B Application
February 6, 1987	—	Groundwater Quality Assessment Report (rate and extent of hazardous constituents in groundwater from former Waste Pile)
June 29, 1987	—	Issuance of Permit No. HW - 044(D) by Georgia Department of Natural Resources Environmental Protection Division (GA EPD) and approval of Closure Plan in Part B Permit Application
March 3, 1987	—	Corrective Action Plan for Ground Water
September 25, 1987	—	RCRA Facility Investigation Plan (indicating the former container storage area required further assessment)
October 15, 1987	—	Closure Certification for Former Waste Pile
January 15, 1988 to January 14, 1997	—	Semi-Annual Corrective Action Reports (for former Waste Pile)
July 29, 1988	—	Phase II Contamination Assessment Report for Former Container Storage Area (showing no further action required)
September 30, 1988	—	Groundwater Recovery System Installation and Start-Up Report

September 8, 1989	—	Groundwater Sampling and Analysis Plan
September 28, 1992	—	Amendment to Hazardous Waste Facility Permit No. HW-044(D)
October 28, 1992	—	Revision 2 to Part B Application
March 11, 1993	—	Revision 3 to Part B Application
November 11, 1994	—	Third Quarter Analytical Results
July 24, 1995	—	Report for Lateral (Side-Gradient) Groundwater Quality Assessment (for former Waste Pile)
July 17, 1996	—	Cleaning House Preliminary Contamination Assessment Plan
August 8, 1996	—	Atlantic Steel Application for Class 3 Permit Modification and Revision 4 to Part B Application
September 30, 1996	—	Amendment to Hazardous Waste Facility Permit No. HW-044(D)
January 14, 1997	—	Most recent Semi-Annual Corrective Action Report (for former Waste Pile)
March 13, 1997	—	Application for Renewal of Hazardous Waste Facility Permit No. HW-044(D)
July 2, 1997	—	Consent Order regarding the extension of terms and conditions for Hazardous Waste Facility Permit

In addition, a survey to identify drinking water wells in the site area was performed in 1997. The survey included reviewing U.S. Geologic Survey records and Georgia Geological Survey Information Circular 63; conducting telephone interviews with owners of wells and with government agencies (e.g., county public works administration and health department); and on-site observations of wells for which other conclusive information was not available. The results of the survey indicate that no drinking water wells exist within a three-mile radius of the property.

2.3.1 Geology and Hydrogeology

The geology and hydrogeology of the Atlantic Steel property are discussed below, and are based on data obtained from the studies listed above and from published geologic literature.

The property is located in the Piedmont Physiographic Province. The Piedmont Province parallels the eastern edge of the North American continent south of New England and east of the Blue Ridge Province. The Piedmont is the non-mountainous part of the Appalachians, and general slope is from the mountains toward the Coastal Plain. The northwestern, or inner, boundary of the Piedmont is at the foot of the mountains, and the southeastern, or outer, boundary (known as the Fall Line) occurs where older, crystalline rocks of the Piedmont pass beneath the Cretaceous and younger sediments of the Coastal Plain.

Typical Piedmont landscape is a rolling surface of gentle slope, cut or bounded by valleys of steeper slope and greater depth, often several hundred feet deep. The Southern Section of the Piedmont Province in Georgia and Alabama differs in altitude, extent of erosion, and relative abundance of monadnocks from the rest of the Piedmont Province (Fenneman, 1938). The rolling areas are largest in the Southern Section, especially in Georgia, where such topography is dominant and deep valleys are relatively rare. Similar areas to the north are smaller in area.

In Georgia, the Southern Section of the Piedmont consists of the Upland Georgia Subsection and the Midland Georgia Subsection. The Atlantic Steel property is located in the Gainesville Ridges District of the Upland Georgia Subsection. The Gainesville Ridges occur along the border of the Upland Georgia Subsection and the Midland Georgia Subsection, and consist of a series of northeast-trending, low, linear, parallel ridges separated by narrow valleys (Clark and Zisa, 1976). The courses of the Chattahoochee River and its tributaries are strongly controlled by the ridges in the district, and exhibit a rectangular drainage pattern.

The Atlantic Steel property occupies a narrow, east-sloping valley, typical of the surrounding portion of the Gainesville Ridges District. At the eastern property boundary near Interstate Highway I-75/I-85, the valley turns abruptly to the north. The valley floor ranges in elevation from about 865 feet above mean sea level (msl) at its outlet, to about 915 feet at the upslope, western end. Surrounding ridge tops reach off-site elevations of approximately 1,000 feet msl. Surface runoff from most of the site flows to the east, with discharge at the northeast property corner to an unnamed, north-flowing tributary to Peachtree Creek, a west-flowing tributary to the Chattahoochee River. The rectangular drainage pattern of the unnamed, north-flowing tributary, Peachtree Creek and the Chattahoochee River is typical of the Gainesville Ridges District.

Streams exhibiting rectangular drainage patterns flow in strongly angular courses that follow the rectangular pattern of brittle structures (e.g., joints and fractures) in the underlying bedrock (Cressler, Thurmond and Hester, 1983). Such streams show the influence of geologic control, and their drainage style reflects the different lithologies present, the geologic structure, and the hydrogeology of the underlying bedrock. Therefore, in order to understand the pattern of surface-water flow and to characterize surface water/groundwater interaction, the geologic structure and native lithologies need to be identified.

The property is located along the northwest flank of the Newnan-Tucker synform, a down-folded bedrock structure that contains much of the greater Atlanta region. From closure to closure, the synform is more than 56 miles long and more than 25 miles wide at its widest point (Higgins and Atkins, 1981). The synform has been locally modified by several generations of later folds. Near the Atlantic Steel property, bedrock units on the northwest flank of the Newnan-Tucker synform area are (from northwest to southeast) the Norcross Gneiss, the Clairmont Formation and the Wahoo Creek Formation (McConnell and Abrams, 1984).

The Atlantic Steel property is underlain by Late Precambrian to Early Paleozoic bedrock of the Clairmont Formation. The Clairmont Formation was named by Higgins and Atkins (1981) for exposures around the intersection of Clairmont Road and Interstate 85 in Dekalb County. Typically, the Clairmont is a well-foliated, medium-grained, locally scaly, light- to dark-gray biotite-plagioclase gneiss intimately interlayered with fine- to medium-grained hornblende-plagioclase amphibolite (Higgins and Atkins, 1981). Locally, amphibolite makes up entire outcrop areas with little or no gneiss present, while other areas have only sparse amphibolite and consist of thinly banded gneiss. Epidote and garnet are locally present as accessory minerals in the gneiss. The gneiss generally has thin bluish-gray bands alternating with whitish-gray bands and with amphibolite. The layering is on the order of a few centimeters and commonly is very distorted. Even in saprolite outcrops, the distinctive, finely banded character of the Clairmont is preserved. On further weathering, the Clairmont forms a dark-red soil containing ocherous bands derived from the amphibolite. The Clairmont Formation was interpreted by Higgins et al. (1988) to be the preserved remnants of a subduction melange, based on the variety of clast lithologies in the Clairmont and its extremely complex deformational history.

The Clairmont Formation is bordered on the northwest by the Norcross Gneiss, a well-foliated, light-gray, epidote-biotite-muscovite-plagioclase gneiss (Higgins and Atkins, 1981). To the southeast, the Clairmont Formation is bordered by the Wahoo Creek Formation, a distinctively slabby, nearly white, fine- to medium-grained muscovite-plagioclase-quartz gneiss (Higgins and Atkins, 1981).

No evidence from previous mapping suggests the local existence of major folds or faults in the bedrock units in the site area. However, brittle structures, such as joints and fractures, generally oriented at high angles, often overprint earlier structural features within the Atlanta region, and may exist within the bedrock beneath the property.

Because original grain boundaries and pore-space relationships within rocks of the Atlanta area have been altered through metamorphic recrystallization, permeability of the Clairmont Formation bedrock is relatively low. However, groundwater in the greater Atlanta region occupies joints, fractures and other secondary openings in bedrock, and occupies pore spaces in the overlying mantle of residual material (Cressler, Thurmond and Hester, 1983). Brittle structures (e.g., fractures and joints) extend through the bedrock in intersecting patterns. At shallow levels, these structures may act as conduits for groundwater circulation beneath the mantle of residual material.

Former process-water supply wells have been identified at the Atlantic Steel property (Cressler, Thurmond and Hester, 1983). The wells ranged in depth from 350 to 508 feet, and yields ranged from 70 to 130 gallons per minute (gpm). The Atlantic Steel property is located in Hydrologic Unit D of Cressler, Thurmond and Hester (1983). In Hydrologic Unit D, the greatest well yields are encountered where the following conditions occur:

- small-scale structures localize drainage development
- contact zones exist between rocks of contrasting character
- favorable topographic conditions and soil thickness occur
- fault zones are present
- stress-relief fractures are present.

Contact zones between rocks of contrasting character and fault zones are not known to occur in the site area. The criteria listed by Cressler, Thurmond and Hester (1983) to identify stress-relief fractures are not present in the area. However, the narrow, east-sloping valley occupied by the Atlantic Steel property may be the result of small-scale structures that localize drainage development, and, in turn, create favorable topographic conditions for well yield. Therefore, the yield of the former process-water supply wells at the Atlantic Steel property may be the result of the small-scale brittle structures (e.g., joints and fractures) that created the narrow, east-sloping valley.

Groundwater recharge to the fractured bedrock occurs through seepage of precipitation through the overlying mantle of residual material, or by flowing directly into openings in the exposed rock (outcrops). Depth to bedrock and thickness of the overlying residual material varies in the area. Thin soil intervals above the Clairmont Formation may be observed in outcrop near the northern end of Spring Street, at Brookwood interchange, along Northside Drive, and in the type locality around the intersection of Clairmont Road and Interstate 85 in Dekalb County. However, deep weathering (30 to 80 feet) of the Clairmont Formation has also been observed.

Groundwater beneath the Atlantic Steel property occurs under water-table conditions. The water-table surface is generally a subdued replica of the topographic surface. Therefore, groundwater is expected to flow inward to the valley where the property is located and from west to east beneath the property along the valley slope. Groundwater discharge is expected to occur to creeks or impoundments that lie in topographically low areas. Groundwater beneath the property would either discharge to these topographically low surface-water bodies, or exit the site at the northeast property corner. There are no obvious variations in on-site geologic conditions that would cause changes to the groundwater flow directions in the area. Monitoring of the groundwater aquifer at the western end of the property has been ongoing since 1987. Based on the monitoring, groundwater in this area flows in a southeasterly direction toward the ponds and sedimentation basins at a rate of approximately 70 feet per year.

However, a six-foot diameter combined sewer main occupying the course of a former natural drainage ditch along the length of the valley is expected to influence local groundwater flow direction and to act as a conduit for groundwater migration. North of the sewer, groundwater is expected to locally flow in a southeasterly direction, and south of the sewer, groundwater is expected to locally flow in a northeasterly direction. Discharge of site groundwater may occur to the sewer, or groundwater may leave the site through the backfill material around the sewer.

In water-table aquifers, groundwater discharge areas are usually located in topographical lows where the water table is located close to or at the land surface (Fetter, 1988). The narrow, east-sloping valley occupied by the Atlantic Steel facility is one such discharge area. In discharge areas, the vertical hydraulic gradient is upward; that is, groundwater flows from areas of greater depth to the discharge points at shallow depth. Therefore, groundwater in the brittle structures (e.g., fractures and joints) and in the overlying mantle of residual material flows to the discharge areas identified above (i.e., the creeks or impoundments that lie in topographically low areas and the northeast property corner). Recharge of groundwater beneath the Atlantic Steel property to the regional system of joints and fractures in the Clairmont Formation is not likely to occur.

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3.0 PHASE II INVESTIGATION APPROACH

3.1 PURPOSE / OBJECTIVES

The purpose of this Phase II Investigation is to investigate site groundwater, conduct a baseline contamination assessment of surficial and sub-surficial materials, and further investigate PIAs identified in the Phase I activities. These investigations will include sampling and analysis of soils, fill materials, sediments, and groundwater to understand the environmental setting of the property. Potential human and ecological receptors will be identified, and the generated data will be used to conduct a risk assessment to establish subsequent remedial activities and control measures that may be necessary to support the intended future development and use of the property.

3.2 TECHNICAL APPROACH

The technical approach for this Phase II Investigation is that of a phased and potentially iterative investigation, with each phase of the investigation building upon previous phases, as appropriate. Media investigated will include soil, sediment, fill materials and groundwater.

This *Phase II Workplan* sets out an approach to complete an investigation of the environmental setting of the facility, investigate potential contaminant-migration pathways and receptors, initiate contamination identification activities for each PIA identified, and provide a baseline contamination assessment across the property. Additional phases of investigation will be performed at any PIAs where data generated during this investigation supports further investigations, and at any new PIAs identified as a result of this investigation.

A contaminant-focused approach will be used for the groundwater investigation, baseline assessment of in-situ materials, and each PIA investigation area. The analytical suite chosen is based on those constituents that are expected to be present based on historical operations, chemical usage, and analytical results from previous investigations. The multi-media approach justifies this focused strategy.

Each specific PIA will be identified in the following section, along with the investigative strategy to be utilized for each area. The investigative strategies for groundwater and the baseline assessment of surficial materials will also be discussed in detail in the following section.

3.3 ALTERNATE DELINEATION APPROACH

Introduction

The Atlantic Steel property is to be rehabilitated and fully redeveloped for multi-unit residential, office, hotel, entertainment and retail trade uses. The rehabilitation program consists of four parts: (1) property-wide assessment of contamination; (2) evaluation of potential health or environmental risks posed by such contamination; (3) selection of appropriate remedies; and (4) implementation of the remediation activities necessary to protect public health and the environment consistent with future uses of the property.

As a regulated industrial facility, activities on the Atlantic Steel property have long been subject to various environmental regulations administered by the Georgia Environmental Protection Division (EPD). This regulation includes a Resource Conservation Recovery Act (RCRA) post-closure permit for a former furnace dust (hazardous waste) handling unit. Because the Atlantic Steel facility is already subject to the RCRA regulatory program, the planned rehabilitation will also be consistant with RCRA corrective action requirements as administered by EPD. In particular, the requirements for assessment of contamination, evaluation of potential risks and remediation activities will be established consistent with the November 1996 *Georgia EPD Guidance For Selecting Media Remediation Levels at RCRA SWMUs* ("SWMU Guidance").

Timing is a critical factor for successful redevelopment of the property. Commitments for redevelopment are contingent on a six-month period for completion of contamination assessment, risk evaluation and establishment of specific remediation requirements and associated cost estimates. If the redevelopment is to proceed, timely review and approval of this work plan is essential. With limited time available for investigations, it is necessary to schedule and conduct some elements of the investigation in parallel with limited opportunity for iterative approaches.

The contamination assessment portion of the overall property rehabilitation program includes detailed sampling and laboratory analyses to determine what specific contaminants are present in soil and groundwater and to delineate how far contamination may have spread across the property. The resulting data will be used to evaluate the potential for risks to human health and the environment and to establish specific remediation requirements consistent with redevelopment and future use of the property.

EPD ordinarily requires that soil and groundwater contaminant plumes for SWMUs be delineated to background/detection limit concentrations. In most instances such delineation involves an iterative process of stepwise sampling, outward from each SWMU, until background/detection limit concentrations are confirmed in all directions. EPD considers the "sample to background" regimen a useful generic approach so as not to underestimate the extent of a SWMU contaminate plume on a property. The objective is to first define the SWMU plume extent relative to background concentrations and then to determine which portion of the plume may exceed potential exposure limits for protection of public health or sensitive ecological systems.

Difficulties with the sample-to-background approach are that it presupposes the need to establish background distributions and the ability to distinguish non-regulated human-caused contamination from those SWMU releases that are subject to RCRA corrective action requirements. In congested urban areas it is often impossible to reliably determine background concentrations especially for metals and fuel combustion products. This is because normal human activities such as transportation, fuel burning and historic commercial, residential and industrial property uses have contributed to the area background. In congested urban areas, such as the Atlantic Steel industrial area, contaminant concentrations elevated above naturally occurring background are not solely the result of releases from SWMUs.

A SWMU-by-SWMU approach to delineation for the Atlantic Steel property would not adequately characterize the entire property for redevelopment and could leave substantial information gaps because not all contamination present is necessarily associated with SWMUs. A comprehensive property-wide approach to contaminant characterization and delineation is needed; an approach that will quickly provide a reliable understanding of those environmental factors which might affect the results of a risk evaluation considering redevelopment and specific future uses of the property. Fortunately, EPD's SWMU guidance recognizes that under certain well-defined site-specific circumstances an alternate delineation (AD) approach may be warranted. The EPD guidance outlines both general concepts and media-specific factors to be considered for AD proposals.

Unique Property Setting and Features

An AD approach is embodied in the Phase II Workplan for the Atlantic Steel property. This AD approach is highly specific to the Atlantic Steel setting and is based upon a number of unique natural and man-made site conditions and features which warrant application of this approach, including the following:

1. Piedmont Bedrock Location - The property is located in the Piedmont Physiographic Providence and is underlain by the Clairmont Formation bedrock. There is no evidence from previous mapping of the local existence of major folds or faults in the bedrock in the property area.

2. Property Situated in Well-Defined Narrow Valley - The property lays within a narrow, west-to-east sloping valley. The valley floor elevations range from about 915 feet above mean sea level (msl) at the western end of the property to about 865 feet at the down slope (eastern) property boundary. The surrounding ridge tops reach off-property elevations of approximately 1000 feet msl. At the eastern property boundary the valley turns abruptly to the north along Interstate Highway I-75/I-85.

3. Area Drainage Naturally Converges Into The Property - As a result of the natural valley setting, drainage from the surrounding area converges into the Atlantic Steel property. This means that contaminant releases to soil on the Atlantic Steel property would not impact upgradient (offsite) properties. This natural control feature limits the consideration of potential off site delineation to the downslope property boundary along the I-75/I-85 highway corridor that acts as an exposure-limiting control boundary.

4. Property and Area Groundwater Is Not A Potential Source of Drinking Water - Based upon a recent Law Engineering and Environmental Services well survey of the surrounding area (3 mile radius from the property) there are no wells used for drinking water purposes in the area. This is consistent with the fact that this highly developed area has long been served by the municipal water distribution system. Considering the high density development in the surrounding urban area it would not be prudent sanitary practice to directly use the water table aquifer for drinking

water due to the inherent potential for leaky sewers and urban non-point sources of bacterial and chemical contamination to impact the water table.

5. Transportation Features Bordering Property Limit Potential Exposure Scenario - The property is bordered to the north by a railroad corridor, to the west by Northside Drive, to the south by Sixteenth Street and to the east by the I-75/I-85 highway corridor which is approximately 400 feet in width. Each of these permanent features has acted as a soil exposure buffer between the property and adjoining properties. These engineered features coupled with the natural valley configuration of the property further appear to obviate the need for off-property soil sampling.

6. Combined Sewers Intercept Area Drainage - A six-foot diameter combined sewer main follows along the original valley occupied by the Atlantic Steel facility. This sewer joins with the larger north flowing (Orme Street) sewer located along the eastern property boundary and leading to Atlanta's R.M. Clayton wastewater treatment plant. These combined sewers intercept surface drainage in the area and likely also intercepts groundwater in deeper segments.

7. Future Use Established - Plans have been prepared indicating the specific use for each area of the property. Based upon this knowledge the characterization and delineation activities can be tailored consistent with these uses and associated exposure scenarios. A large portion of the property will be covered with buildings, streets and parking facilities. These engineered features will be designed to also serve as barriers to eliminate the potential for direct exposure to any contamination. In areas that will not be covered, the known future use will be used to develop exposure scenarios and to select appropriate depths of sampling in each area. For example, an area that will require construction excavation or "cut" will be sampled to at least the estimated depth of the cut. Conversely, an area that will require several feet of construction "fill" will generally limit the depth of soil sampling to surficial materials.

Key Features of AD Approach

The AD approach has been crafted to rapidly provide a reliable property-wide data set to support a rehabilitation and redevelopment program that can be accepted with confidence for the anticipated future use of the property. Details of the sampling program are provided in the Phase II Workplan document.

Key features of the groundwater AD and management strategy are as follows:

1. Anticipated future use of the property includes a prohibition on use of groundwater and a commitment to intercept groundwater discharge before exiting the property. The intercepted groundwater will be treated as necessary to allow discharge to the City of Atlanta sewer system. This commitment to groundwater use prohibition and interception and the fact that groundwater is not a potential source of drinking water in the area, effectively eliminates the potential for a future groundwater exposure pathway.

2. Groundwater is expected to flow into the property from the south, west and north perimeter with a discharge zone to the east where the property is bordered by I-75/85 and the combined sewer interceptor. This favorable groundwater configuration facilitates control and interception of groundwater. A series of at least 16 piezometers will initially be installed to map groundwater levels and flow directions across the entire property. This will be followed by installation of at least eight additional water quality monitoring wells installed in areas which have the highest potential to be impacted by specific PIAs. This PIA sampling is designed to identify high-end ("worst case") contaminant concentrations in groundwater underlying the property. Three of these well samples will also be analyzed for RCRA Appendix IX constituents to broadly look for otherwise unanticipated constituents that might be present in groundwater.

3. At least one additional monitoring well will be installed into bedrock at a strategically selected location to evaluate vertical flow potential and associated bedrock water quality.

4. Additional monitoring wells will subsequently be installed in the property groundwater discharge zone to characterize groundwater flow and quality for design of groundwater boundary interception and any necessary treatment.

The key features of the proposed AD Soil approach are as follows:

1. The final rehabilitation of the site includes the use of engineering and/or institutional controls for soil. This institutional control will require that any future modification of the final engineering

controls must be supervised by a professional engineer. Upon completion of the modification, the professional engineer must certify to the owner (or future owner(s)) and the Georgia Environmental Protection Division that the modification is consistent with the originally approved engineering controls for soils.

2. The entire property will be subject to a baseline soil sampling grid program on a 200 foot grid spacing in the future residential area and a 300 foot spacing on the remainder of the property. Additionally, the sampling grid may be extended across Sixteenth Street in the southeast (downslope) corner of the property onto lots (outparcels) owned by Atlantic Steel if grid sample data obtained along the north side of Sixteenth Street appear to indicate the potential for offsite contamination in this downgradient corner of the Atlantic Steel property. This site-wide baseline grid will provide both grid-specific data points and probability distribution plots for the entire property from which appropriate estimates of potential soil exposure concentrations can be selected for all areas of the property. Grid sampling depths are selected on the basis of the potential for future exposure to soil at each location considering both the site development plan and future construction grade.

3. At least ten (10) randomly chosen soil grid locations will initially be sampled and analyzed for RCRA Appendix IX constituents to confirm the appropriate analyte list for the property-wide sampling.

4. In addition to the property-wide soil baseline grid, specific "worst-case" samples will also be analyzed from internal Potentially Impacted Areas (PIAs) where recent and historic activities have likely contributed to localized soil contamination. These PIA samples are expected to represent high-end ("worst case") concentrations on the property over and above the baseline distribution of contaminants.

5. In combination, the property-wide soil baseline grid distribution and the PIA concentrations will provide a sufficient data base for evaluation of various soil exposure scenarios anywhere across the property.

4.0 INVESTIGATIVE STRATEGY

The Phase II Investigative strategy will focus on groundwater quality, surficial soil and/or fill material, and PIAs identified in the Phase I Assessment. Specific sampling and analysis details for each of the activities to be completed are described in the Sampling and Analysis Plan (Appendix A).

4.1 GROUNDWATER INVESTIGATIONS

The groundwater flow rate and extent of contamination in the former K061 Dust Pile Area have been identified in previous investigations completed in that area. Groundwater flow direction and potential impact at other areas on site will be identified during this investigation. Secondarily, this investigation will generate information that will be useful in profiling the vertical and horizontal locations of fill on site.

The groundwater flow direction at the property will be evaluated by installing 18 piezometers, 8 overburden groundwater quality monitoring wells, and 1 bedrock groundwater monitoring well. The approximate locations of these peizometers and monitoring wells are shown on Figure 3 (note that the location of the bedrock groundwater quality monitoring well is not shown on Figure 3 - its location will depend on the results of the monitoring of the 8 overburden groundwater quality monitoring wells). The piezometers have been located based on topographic map information to help identify hydraulic gradient(s) present, while the monitoring wells have been located to assess potential groundwater impacts from PIAs identified throughout the property. The proposed groundwater monitoring well locations were selected based on assumed direction of groundwater flow as described in Section 2.3.1. Some of the proposed groundwater quality monitoring wells have been located directly in or presumably hydraulically downgradient of significant PIAs. The remaining groundwater monitoring wells have been located presumably hydraulically downgradient of areas that are considered to have the potential for impact from Plant operations in the local area.

The investigative strategy will include a sequential approach for groundwater investigations:

1) The piezometers will be installed, developed, and subsequent water level measurements will be obtained. An initial potentiometric surface map will then be constructed. Lithologic information will be gathered from each boring.

2) The proposed 8 overburden Type II groundwater quality monitoring wells will be installed using the data from the piezometers to select locations for monitoring wells downgradient from each targeted area. Continuous split spoon sampling will be performed to obtain lithologic information from each boring.
3) Groundwater levels will be obtained in existing groundwater monitoring wells, the newly installed piezometers, and the 8 newly installed overburden groundwater monitoring wells and a revised potentiometric surface map will be constructed.
4) The groundwater monitoring wells will be developed and one round of sampling performed based on the specific PIA investigation strategies. Three monitoring wells (MW-102, MW-103, and MW-106 on Figure 3) will be sampled for analysis of the RCRA Appendix IX compound list (40 CFR 264). The other groundwater monitoring wells will be sampled for analysis of the constituents that are reasonably expected to exist at those locations, as follows:

   MW-101: RCRA metals, to assess the impact from past and present operations at the Tri Chem property

   MW-104: RCRA metals, VOCs, Polynuclear Aromatic Hydrocarbons (PAHs), and cyanide to assess the impact of known releases from within and around the Cleaning House and the nearby former coal gasification building

   MW-107: RCRA metals, Volatile Organic Compounds (VOCs), and Semi-volatile Organic Compounds (SVOCs), to assess the impact of releases from the 13" Bar Mill and surrounding area

   MW-105: RCRA metals, VOCs, and SVOCs, to assess the impact of historical discharges to the Old Lower Pond

   MW-108: RCRA metals and PAHs, to assess the impact from the active Mill Scale Pit operations

5) The groundwater chemistry data will be compared to the analytical suites chosen for the other media to determine if any additional parameters in the "Appendix IX" monitoring wells should be included in subsequent analyses.
6) Based on the results of the monitoring of the overburden wells, one Type III groundwater monitoring well will be constructed into bedrock (see Appendix A for construction details). The bedrock well may be "nested" near one of the piezometers or overburden wells, at a location which appears to represent the "worst case" groundwater quality.
7) One groundwater sample will be collected from the bedrock groundwater monitoring well and analyzed for Appendix IX parameters.

8) The vertical component of groundwater flow will be estimated using the bedrock well and its nested shallow well/peizometer.
9) The results of the groundwater quality investigation will be used to conduct the risk assessment described in Section 5.0.

4.2 BASELINE ASSESSMENT AND PROFILING OF IN-SITU MATERIAL

Surface soil and/or fill materials will be collected across the property based on a 300-foot-square sampling grid, except in areas that, after redevelopment, will be residential in use. In the area scheduled to be residential, a 200-foot-square grid will be used. This grid size will result in the sampling of approximately 70 locations in future non-residential areas and 45 samples in future residential areas. Where a grid-determined sampling point lies within an existing building, we will use engineering judgement to either core through the slab of that building to collect a sample of the underlying material, or relocate that sampling point to the external location nearest the sampling point.

The Baseline Assessment of in-situ material will proceed sequentially, and the assessment approach will be a function of the local conditions and the engineering/construction issues (e.g., cut or fill) at each sampling point. The sequence is described below:

1) Lay out 300-foot-square or 200-foot-square grid, as appropriate (Note: the redevelopment scheme proposes that the residences will be situated in the central portion of the property, extending from the property's southern boundary to its northern boundary. This location will in effect create three grid zones: a non-residential zone at the western end of the property that will be assessed using a 300-foot-square grid; a residential zone at the center of the property that will be assessed using a 200-foot-square grid, and a non-residential zone occupying the eastern portion of the property that will be assessed using a 300-foot-square grid).
2) Based on the relative area of each of the three zones, randomly select 4 grid intersection locations in the eastern zone, 3 locations in the central zone, and 3 locations in the western zone. Advance a hand auger boring or soil test boring, as necessary, through all fill materials in each of the locations. Collect one sample of the "first soil" beneath the fill materials, and analyze the sample for VOCs, SVOCs, Appendix IX metals (40 CFR 264), PCBs, and pesticides.
3) Assess the surficial and sub-surficial materials in the balance of the grid intersection locations. The assessment strategy for the balance of the grid samples will be based on whether the area is expected

(based on current estimates of grading plans) to be in a cut or fill area. For areas that are expected to receive fill materials above the existing land surface, the strategy below will be used.

Surficial Conditions	**Sampling Strategy**
Soil only (no slag)	Advance hand auger borings to 6 inches, collect 0-6 inch soil composite sample.
8 feet or less layer of surficial cover or fill	Use pavement breaker and/or backhoe to remove cementitious surficial slag layer (if present). Excavate through fill to the underlying soil using a backhoe. Collect one composite sample from test pit wall at a depth of 0-6 inches below ground surface, and one six inch composite sample collected in the first soil zone encountered directly below fill.
Over 8 feet of surficial fill	Advance boring through cementitious surficial slag layer using a truck-mounted drill rig. Collect a split spoon composite sample at the first 0-6 inch depth. Continue boring through fill layer until underlying soil is encountered. Collect a split spoon composite soil sample at 0-6 inch depth of soil encountered below the fill.

For any grid intersection location that is expected to be in an area to be cut during redevelopment, the following strategy will be used:

- Advance hand auger borings to 6 inches and collect a 0-6 inch soil sample
- Excavate using a backhoe or advance a soil test boring through fill, collecting samples at 2-foot intervals. Due to the consolidated nature, the sampling methodologies may need to deviate from the standard protocols described in Appendix A. Where practicable, we will follow the sampling methodologies described in Appendix A, and note locations and situations where in-situ materials precluded such sampling.

At selected locations, the borings will be advanced through all fill materials to determine the vertical and horizontal extent of existing fill materials. The borings for this "baseline" assessment will supplement those for the groundwater investigation (Section 4.1) and PIA investigation (Section 4.3). Additionally, the sampling grid may be extended across Sixteenth Street onto outparcels owned by Atlantic Steel if the data obtained on grid samples from the facility appear to indicate a potential for offsite migration of contamination in this area.

All of the surficial grid samples (soil and fill) will be analyzed for RCRA metals and zinc. One-half of these samples will also be analyzed for polynuclear aromatic hydrocarbons (PAHs) and PCBs. The selection criteria for samples to be analyzed will be based on field judgement, considering the location of the baseline grid point with respect to PIAs.

The grid samples collected from non-surficial depths (e.g., from beneath the excavation or deep locations within the soil borings) will be held in storage, and may later be analyzed on a case-by-case basis based on the results of other Phase II Investigation activities and/or actual cut/fill depths. Note that in some cases, EPA-specified maximum holding items may be exceeded using this approach. It is not anticipated that exceeding the holding times will compromise the integrity of the analytical results because the samples will be collected and stored using appropriate techniques (see Appendix A), and the samples will represent sub-surficial materials that do not appear to have been impacted.

4.3 PIA ASSESSMENT

This section describes each PIA shown on Figures 4 through 10, and pertinent information about each. Following the background information, an investigation strategy is proposed, including sample location, number of samples, sampling methodology, and analytical suite. Details on the sampling methodology are in Appendix A. The results of the investigations described in this Section will be used to conduct the risk assessment described in Section 5.0.

4.3.1 Middle Upper Pond

Location: On southwestern end of the property, northwest of Administration Building (Detail "A", Figure 4).

Time of Use: Early 1900s to current.

Physical Description and Observations: Man-made surface impoundment with a soil bottom. Water in the Middle Upper Pond was approximately 8 feet deep. Vegetation surrounded the pond. Some septic-like odor was evident, primarily at the eastern end of the pond (at the discharge weir) near the Eastern Upper Pond.

Use and Potential Impact: This process water storage pond (surface impoundment) was used to supply non-contact and contact cooling water to plant operations, and historically has received or is suspected to have received the following discharges:

- Filter backwash from City of Atlanta Water Works (drinking water treatment plant)

- Stormwater runoff from the Electric Melt Shop area, caster scale pile, caster process water overflow, the northwestern end of the plant (including a former scrap metal storage yard), and from an off-site drainage basin north of the property
- Application of herbicides to control growth of vegetation
- Groundwater that may have been impacted by the K061 Dust Pile (recovery wells now intercept this groundwater)

Results of Previous Assessment Activities: Sampling of accumulated materials (sediment) at bottom of the Middle Upper Pond in 1993 identified the presence of the following constituents and concentrations: 7,400 mg/kg Oil and Grease, 1.2 mg/kg PCBs, 2.7 mg/kg Arsenic, 3.5 mg/kg Cadmium, 25 mg/kg Chromium, 220 mg/kg Lead, 2.5 mg/kg Mercury, 8.9 mg/kg Silver.

Investigation Approach:

The proposed investigation approach includes sampling accumulated sediments in the Middle Upper Pond to characterize the materials and sampling the underlying soils.

Investigation of sediments: Collect 3 sediment samples at varying depths. One sample will be collected at the approximate location where stormwater discharges into the pond; all other samples will be identified in the field. Analyze the samples for D-listed waste constituents (Table 1 of 40 CFR Section 261.24) using the toxicity characteristic leaching procedure (TCLP).

Investigation of underlying soils: Collect 2 soil samples at depths below the bottom of identifiable sediment. All sample locations to be field identified. Analyze the samples for RCRA metals, VOCs, and SVOCs.

4.3.2 Eastern Upper Pond

Location: On southwestern end of the property, bordered on the east by Mecaslin Street (Detail "A", Figure 4).

Time of Use: Early 1900s to current.

Physical Description and Observations: Man-made surface impoundment with a soil bottom. Water in the Eastern Upper Pond was approximately 5 feet deep. Vegetation surrounded the pond.

Use and Potential Impact: This process water storage pond (surface impoundment) was used to supply non-contact and contact cooling water to plant operations, and historically has received or is suspected to have received the following discharges:

- Process water overflow from Middle Upper Pond
- Stormwater runoff from center of plant (including the scrap metal storage yard) and from the Bishop Street (off-site) drainage basin. This drainage basin includes the inactive (closed) National Lead battery reclamation facility to the north, and releases from National Lead to the Eastern Upper Pond are known to have included oily discharges.
- Application of herbicides to control growth of vegetation
- Overflow of wastewater from a scale pit at central portion of the plant

Results of Previous Assessment Activities: Sampling of accumulated sludge at bottom of the Middle Upper Pond in 1993 (assumed to approximate the character of the Eastern Upper Pond) identified the presence of the following constituents and concentrations: 7,400 mg/kg Oil and Grease, 1.2 mg/kg PCBs, 2.7 mg/kg Arsenic, 3.5 mg/kg Cadmium, 25 mg/kg Chromium, 220 mg/kg Lead, 2.5 mg/kg Mercury, 8.9 mg/kg Silver.

Investigation Approach:

The proposed investigation approach includes sampling accumulated sediments in the Eastern Upper Pond to characterize the materials and sampling the underlying soils.

Investigation of sediments: Collect 5 sediment samples at varying depths. At least one sample will be collected at the approximate location where stormwater discharges into the pond; all other samples will be identified in the field. Analyze the samples for D-listed waste constituents (Table 1 of 40 CFR Section 261.24) using the toxicity characteristic leaching procedure (TCLP).

Investigation of underlying soils: Collect 2 soil samples at depths below the bottom of identifiable sediment. All sample locations to be field identified. Analyze the samples for RCRA metals, VOCs, and SVOCs.

4.3.3 Western Sedimentation Basins

Location: Near the southwestern corner of the property (Detail "B", Figure 5).

Time of Use: Pre-1900s to current.

Physical Description and Observations: A former drainage feature that traversed the property prior to its development. Water in the Western Sedimentation Basins was approximately 2 feet deep. Vegetation surrounded the basins.

Use and Potential Impact: This serial arrangement of basins was used for physical settling of process water introduced onto the property from the nearby City of Atlanta Water Works. From the Western Sedimentation Basins, water fed the Middle Upper Pond and Eastern Upper Pond. Historically, the basins have received or are suspected to have received the following discharges:

- Filter backwash from City of Atlanta Water Works (drinking water treatment plant)
- Stormwater runoff from properties to the west

Results of Previous Assessment Activities: No known prior assessment.

Investigation Approach:

The proposed investigation approach includes sampling accumulated soil/sediments in the Western Sedimentation Basins to characterize the materials.

Investigation of soil/sediment: Collect 2 soil/sediment samples at varying depths. Location of samples will be identified in the field. Analyze the samples for D-listed waste constituents (Table 1 of 40 CFR Section 261.24) using the toxicity characteristic leaching procedure (TCLP).

4.3.4 Tricholoroethylene (TCE) Degreaser in Nail Mill

Location: At western end of and within inactive Nail Mill (Detail "C", Figure 6).

Time of Use: 1964 to early 1990s.

Physical Description and Observations: TCE degreaser was situated on the concrete floor within the Nail Mill. No evidence of releases to the soil beneath the concrete slab are known to exist or were observed.

Use and Potential Impact: TCE was used in the nail cleaning operation. The process involved a closed-loop unit into which nails were placed for vapor degreasing. TCE was continuously recirculated within the unit until evaporated.

Results of Previous Assessment Activities: No known prior assessment.

Investigation Approach:

The proposed investigation approach includes sampling the soils underlying the concrete floor of the degreaser area of the Nail Mill.

Investigation of underlying soils: Core through the concrete slab in 2 to 3 field-identified locations beneath and around the degreaser. Advance a hand auger boring in each of the core holes to a depth of up to 10 feet. Screen the soil using a PID or FID, and collect 1 "worst case" sample from underlying soils based on the field screening. Analyze the soil samples for VOCs.

<u>4.3.5 Old Lower Pond</u>

Location: In eastern half of property, south of the 10" Mill (Detail "D", Figure 7).

Time of Use: 1903 to 1982.

Physical Description and Observations: Closed, 0.5-acre pond with a soil bottom. Water within the Old Lower Pond was approximately 15 feet deep. Pond was abandoned and filled with plant-generated slag in 1982. Pond is no longer discernible from the surrounding grade. Additional closure details are not available.

Use and Potential Impact: Historically received or is suspected to have received the following discharges:

- Contact and non-contact process water from the 8" Mill (now demolished) and 10" Mill
- Stormwater runoff from exposed manufacturing areas at the northeastern end of plant
- Process water overflow from mill scale pits at Original Blooming Mill and Billet Mill
- Contact and non-contact cooling water from the Merchant Mill

Results of Previous Assessment Activities: No known prior assessment.

Investigation Approach:

The proposed investigation approach includes sampling the soil within the estimated boundary of the Old Lower Pond.

Investigation of soils: Advance 3 to 5 soil borings to approximately two feet below the former pond floor using a truck-mounted drill rig. Locations of the borings will be field-identified, with the attempt to provide reasonable areal coverage over the Old Lower Pond. Screen the soil cuttings using a PID or FID, and collect 1 "worst case" sample from each boring based on the field screening. Analyze the soil samples for RCRA metals, zinc, VOCs, PAHs, and PCBs.

<u>4.3.6 Galvanizing Pan Service Area</u>

Location: South of the Former Wire Galvanizing Building (Detail "C", Figure 6).

Time of Use: 1920 to 1993.

Physical Description and Observations: The Galvanizing Pan Service Area measures approximately 20 feet by 200 feet. Some evidence of the presence of residual material remains on the soil in this area in the form of sheets and pieces.

Use and Potential Impact: Lead-based galvanizing of wire was performed in the Former Wire Galvanizing Building. Galvanizing tanks were periodically repaired and stored outside the southern side of that building.

Results of Previous Assessment Activities: No known prior assessment.

Investigation Approach:

The proposed investigation approach includes sampling the soils in a grid pattern within the estimated boundary of the Galvanizing Pan Service Area. Groundwater near the Galvanizing Pan Service Area will also be investigated.

Investigation of soils: Establish a grid pattern of 8 locations to provide reasonable spacing and areal coverage over the visually impacted area. Advance 1 soil boring at each of the 8 locations using a truck-mounted drill rig. At each boring, collect one soil sample at a depth of 0-6 inches, one at a depth of 4 feet, and one at a depth of 8 feet. Analyze the soil samples for RCRA metals and zinc.

Investigation of groundwater: One groundwater monitoring well (MW-102 on Figure 3) will be installed in the vicinity of the Galvanizing Pan Service Area and Former TCE Tank. Details regarding this groundwater monitoring well are discussed in Section 4.1.

<u>4.3.7 Former TCE Tank</u>

Location: South of the Former Wire Galvanizing Building (Detail "C", Figure 6).

Time of Use: 1964 to 1995.

Physical Description and Observations: TCE Tank was steel and situated outside on a concrete footing. The tank has been removed, however the concrete footing for the tank remains in place. No evidence of releases to the soil beneath the concrete slab are known to exist or were observed.

Use and Potential Impact: TCE was used in the nail cleaning operation. Product TCE was stored in the TCE Tank, and delivered to the point of use by above-ground steel piping.

Results of Previous Assessment Activities: No known prior assessment.

Investigation Approach:
The proposed investigation approach includes sampling the soil beneath and around the former TCE Tank. Groundwater near the former TCE Tank will also be investigated.

Investigation of soils: Advance 3 to 4 soil borings to the depth at which groundwater is encountered using a truck-mounted drill rig. Locations of the borings will be field identified and located near the existing footing for the TCE Tank. Screen the soil cuttings using a PID or FID, and collect 1 "worst case" sample from each boring based on the field screening. Analyze the soil samples for VOCs.

Investigation of groundwater: One groundwater monitoring well (MW-102 on Figure 3) will be installed in the vicinity of the Galvanizing Pan Service Area and Former TCE Tank. Details regarding this groundwater monitoring well are discussed in Section 4.1.

4.3.8 Three Closed Underground Storage Tanks (USTs)

Location: Three former USTs will be investigated. USTs A1 and A2 were co-located west of the Plant Garage (Detail "E", Figure 8). UST A3 was located near the southeastern corner of the Fence Warehouse (Detail "C", Figure 6).

Time of Use: circa 1960 to 1992.

Physical Description and Observations:

- UST A1 contained gasoline used to fuel on-site vehicles. The tank was constructed of uncoated steel and had a capacity of 8,100 gallons.
- UST A2 contained gasoline used to fuel on-site vehicles. The tank was constructed of uncoated steel and had a capacity of 3,000 gallons.

- UST A3 contained diesel fuel used in on-site vehicles. The tank was constructed of uncoated steel and had a capacity of 1,000 gallons.

Use and Potential Impact: The three USTs were closed by removal between 1989 and 1992.

Results of Previous Assessment Activities:

- UST A1: At closure, a leak was observed at a pipe joint and petroleum odor was observed in the excavation pit. Based on laboratory analyses, the concentration of total benzene, toluene, ethylbenzene, and xylene (BTEX) in soil was detected as high as 61 mg/kg, and total petroleum hydrocarbons (TPH) as high as 231 mg/kg. Impacted soil was excavated, and soil and groundwater samples were collected. No targeted constituents (PAHs, BTEX, and gasoline-range organics) were detected. The results of the closure were transmitted to Georgia EPD in 1996.
- UST A2: Details regarding closure of UST A2 are expected to be the same as for UST A1, with which it shared one tank pit.
- UST A3: At closure, based on laboratory analyses, the concentration of TPH was found in soil as high as 50 mg/kg.

Investigation Approach:

The proposed investigation approach includes sampling the soil within and beneath the former UST pits.

Investigation of soils: Advance 2 to 3 soil borings in each of the former UST pits to the depth at which groundwater is encountered using a truck-mounted drill rig. Locations of the borings will be field identified. Screen the soil cuttings using a PID or FID, and collect 1 "worst case" sample from each boring based on the field screening. Analyze the soil samples for BTEX (for the pit that contained UST A1 and UST A2) and PAHs (for the pit that contained UST A3).

4.3.9 Mill and Caster Scale Management Areas

Location: Four on-site mill and caster scale deposition locations will be investigated. All piles were/are on soil.

- One active mill scale pile is currently located near the northeastern corner of the property, north of the active Scale Pit (Detail "F", Figure 9). The pile measures approximately 200 feet by 200 feet by up to 6 feet deep. The operation commenced in 1979. Soil staining exists around the pile as a result of runoff.
- One former mill scale pile was located in the billet yard east of the Merchant Mill (Detail "D", Figure 7). The pile was active from an unknown date until 1982, when the pit was

filled and the pile removed. The pile measured approximately 30 feet in diameter. No visual evidence of the pile remains.

- A second former mill scale pile was located outside the southern wall of the Blooming Mill (Detail "C", Figure 6). The pile was active between 1962 and 1982, and a scale pit exists to the east of this location. The pile measured approximately 20 feet in diameter. No visual evidence of the pile remains.
- A third former caster scale pile was located south of the Electric Melt Shop, northwest of the Middle Upper Pond (Detail "A", Figure 4). The pile was active between 1982 and 1990, and measured approximately 150 feet by 50 feet. Isolated areas of mill scale were observed on the surface in this area.

Time of Use: As described above.

Physical Description and Observations: As described above.

Use and Potential Impact: Mill scale is generated when solids settle from contact cooling water used to quench hot steel. Chemically, the mill scale is similar to the base steel, with additional impurities, primarily petroleum-related compounds. In 1997, mill scale samples were found to contain as much as 77,000 mg/kg Oil & Grease. In 1991 and 1995, two mill scale samples were analyzed for RCRA metals using TCLP analyses; no concentrations exceeded the concentrations that would make the mill scale a hazardous waste.

Results of Previous Assessment Activities: No known prior assessment of soil has been performed in any of the four areas.

The proposed investigation approach includes sampling the soils in and around the estimated boundary of each of the four Mill Scale Management Areas. Groundwater near the active mill scale pile will also be investigated.

Investigation of soils: Advance 2 to 5 soil borings using a truck-mounted drill rig at each of the four Mill Scale Management Areas, depending on size. Collect 1 to 2 "worst case" samples from each boring based on visual observations. Analyze the samples for PAHs, VOCs, and RCRA Metals.

Investigation of groundwater: One groundwater monitoring well (MW-108 on Figure 3) will be installed in the vicinity of the active mill scale pile at the northeastern corner of the property. Details regarding this groundwater monitoring well are discussed in Section 4.1.

4.3.10 Historical Releases at Former Cleaning House

Location: East of the Nail Mill (Detail "C", Figure 6).

Time of Use: 1940 to 1996.

Physical Description and Observations: The Cleaning House consisted of a series of above-ground acid tanks, rinse tanks, coating vessels, and wastewater treatment systems. The main coating vessels were located within an in-ground pit that is constructed of concrete walls and floor, and the floor is overlain by 8-inch-thick brick.

Use and Potential Impact: Pickling operations involved submerging steel wire in vessels of heated sulfuric acid, rinsing, then drying the steel. Known releases of spent sulfuric acid from in and around the Cleaning House have occurred. Spent acids may also be contaminated with lead from sinkers (lead weights).

Results of Previous Assessment Activities: Three borings were advanced and three soil samples collected from beneath and around the in-floor pit in 1997. Constituents of concern included cadmium, chromium, and lead. Concentrations of these constituents ranged up to 0.93 mg/kg cadmium, 22 mg/kg chromium, and 81.2 mg/kg lead. Soil pH was found to range between 2.1 and 6.8.

Investigation Approach:
The 1997 soil assessment was adequate to characterize contaminants in soil. The proposed investigation approach includes the installation of one groundwater monitoring well (MW-104) near the in-floor pit in the Cleaning House and sampling the groundwater. Details are discussed in Section 4.1.

4.3.11 Stained Soil from Maintenance-Related Activities

Location: Three locations of stained soil related to maintenance-type activities on site will be investigated. The areas are shown on the figures as 4.3.11.A, 4.3.11.B, and 4.3.11.C.

A. Visibly stained soil was observed along the western side of the maintenance building attached to the western wall of the Rod Mill (Detail "F", Figure 9). The areal extent of the stained soil is approximately 150 square feet; the depth of the impact is unknown. Two sources of the staining exist: leakage of oil used in the maintenance area, and releases of Safety Kleen solvent (SK 105, a mineral spirits-based product) from the exhaust associated with a degreaser used within the building.

B. Visibly stained soil was observed outside the maintenance building located east of 13" Bar Mill (Detail "F", Figure 9). The areal extent of the stained soil is approximately 100 square feet; the depth of the impact is unknown. The source of the staining appears to be maintenance-related activities.

C. Visibly stained soil was observed along the eastern side of the Plant Garage (Detail "E", Figure 8). The areal extent of the stained soil is approximately 100 square feet; the depth of the impact is unknown. The source of the staining appears to be the discharge of oil and grease from maintenance activities.

Time of Use: The Rod Mill and 13" Bar Mill have been operational since 1964 and 1955, respectively.

Physical Description and Observations: As described above.

Use and Potential Impact: As described above.

Results of Previous Assessment Activities: No known assessment of these impacted areas has been performed.

Investigation Approach:

The proposed investigation approach includes sampling the soils within each of the three Stained Soil Areas.

Investigation of soils: Advance 2 to 3 hand auger borings in each of the three Stained Soil Areas. Locations of borings to be field identified. Screen the soil visually and using a PID or FID, and collect 2 "worst case" samples from each area based on the field screening. Analyze the soil samples for VOCs and PAHs.

4.3.12 Stained Soil from Surficial Petroleum Releases

Location: Four areas (and seven distinct locations) of stained soil related to petroleum-type releases on site will be investigated. The areas are shown on the figures as 4.3.12.A, 4.3.12.B, and so on.

A. Visibly stained soil was observed beneath and around the air compressor located east of the Power House (Detail "C", Figure 6). The areal extent of the stained soil is approximately 80 square feet; the depth of the impact is unknown. The staining appears to result from oil in the blowdown. The Power House has been operational since 1916.

B. Visibly stained soil was observed in three areas along the eastern side of the 13" Bar Mill (Detail "F", Figure 9). The areal extent of the stained soil is approximately 200 square feet; the depth of the impact is unknown. The source of the staining appears to be oil from air compressor blowdown and miscellaneous releases. The 13" Bar Mill has been operational since 1955.

C. Visibly stained soil was observed south and southeast of the Cooling Bed Conveyor building (Detail "F", Figure 9). The areal extent of the stained soil is approximately 100 square feet; the depth of the impact is unknown. The source of the staining appears to be petroleum related. The Cooling Bed Conveyor building has been operational since 1966.

D. Visibly stained soil and/or pooled petroleum product was observed along the southern wall of the Old Store Room Building and along the former rail spur that parallels the western wall of the Rod Mill (Detail "F", Figure 9). The areal extent of the stained soil is approximately 750 square feet; the depth of the impact is unknown. Beneath the soil in the rail spur is reportedly concrete. The source of the staining appears to be petroleum related. The buildings in the area have been operational since 1966.

Time of Use: As described above.

Physical Description and Observations: As described above.

Use and Potential Impact: As described above.

Results of Previous Assessment Activities: No known assessment of these impacted areas has been performed.

Investigation Approach:

The proposed investigation approach includes sampling the near-surficial soils within each of the seven locations of the four Stained Soil Areas.

Investigation of soils: Advance 1 to 3 hand auger borings in each of the seven locations, depending on size. Locations of borings to be field identified. Screen the soil visually and using a PID or FID, and collect 2 "worst case" samples from each area based on the field screening. Analyze the soil samples for PAHs.

<u>4.3.13 Stained Soil from Sub-surficial Petroleum Releases</u>

Location: Two areas of potentially impacted soil related to petroleum-type releases on site will be investigated. The areas are shown on the figures as 4.3.13.A and 4.3.13.B.

A. A fuel oil release was reported in 1995 upon discovery of a loss of pressure from an in-ground fuel transfer piping servicing the Fuel Oil ASTs (Detail "C", Figure 6). The underground piping was replaced, and during that process no contaminated soil was reportedly encountered. However, fuel-type odors have been detected in an adjacent building. The fuel oil ASTs were placed into service in 1938.

B. Incidental releases from fueling operations at the diesel fuel AST located north of the Eastern Upper Pond were observed and reportedly have occurred periodically (Detail "A", Figure 4). The areal extent of the stained soil is approximately 160 square feet. The depth of the impact is unknown, and subsurface impact is suspected. The source of the staining appears to be related to the fueling operations. The diesel fuel AST has been in place since circa 1980.

Time of Use: As described above.

Physical Description and Observations: As described above.

Use and Potential Impact: As described above.

Results of Previous Assessment Activities: No known assessment in these areas.

Investigation Approach:

The proposed investigation approach includes sampling soils in and around the estimated boundary of each of the two Subsurface Petroleum Release Areas. Groundwater near the fuel oil ASTs will also be investigated.

Investigation of soils: Advance 2 to 4 soil borings (depending on size) in each area using a truck-mounted drill rig. Locations of borings to be field identified. Screen the soil using a PID or FID, and collect 3 "worst case" samples from PIA 4.3.13.A and 1 "worst case" sample from PIA 4.3.13.B based on the field screening. Analyze the samples for PAHs.

Investigation of groundwater: One groundwater monitoring well (MW-103 on Figure 3) will be installed in the vicinity of the Fuel Oil tank farm located at the northern end of the property. The groundwater in the area will be sampled and analyzed for potential impact. Details regarding this groundwater monitoring well are discussed in Section 4.1.

4.3.14 Babbitt Rework Area

Location: In the area between the Intermediate Mill and the Merchant Mill (Detail "C", Figure 6).

Time of Use: 1906 to 1982.

Physical Description and Observations: Babbitt reworking was reportedly performed outside. A babbitt is the lining within an iron bearing, commonly made of either tin, lead, cadmium alloys, or copper-lead mixtures. Babbitt reworking includes melting the babbitt out of its housing, preparing the housing using physical machining, casting a new babbitt in its place, then machining the new bearing to proper dimensions. No visibly stained soil was observed in this area.

Use and Potential Impact: Potential releases may have occurred from the reworking operations.

Results of Previous Assessment Activities: No known assessment has been performed in this area.

Investigation Approach:
The proposed investigation approach includes sampling the near-surficial soils within the Babbitt Rework Area.

Investigation of soils: Advance hand auger borings in 3 locations to provide reasonable spacing and areal coverage over the area, selected based on field observations. Screen the soil from each boring using a PID or FID, and collect 1 "worst case" sample from the area; analyze the sample for VOCs. Collect 1 soil sample from each boring, and analyze the soil samples for RCRA metals, zinc, and PAHs.

4.3.15 Stained Soil from Mill Scale Pit Operations

Location: East of the active Scale Pit (Detail "F", Figure 9).

Time of Use: 1979 to current.

Physical Description and Observations: Visibly impacted soil exists around the Water Recirculating Control System and the Scale Pit. The source of the oily staining appears to be from scale removal operations in the pit. The areal extent of the stained soil is approximately 1,000 square feet; the depth of the impact is unknown.

Use and Potential Impact: As described above.

Results of Previous Assessment Activities: No known assessment has been performed in this area.

Investigation Approach:

The proposed investigation approach includes sampling the near-surficial soils within the Stained Soil Area.

Investigation of soils: Advance a hand auger boring in 3 locations, selected based on field observations. Collect 1 soil sample from each boring, and analyze the soil samples for PAHs.

4.3.16 Accumulated Oily Liquids in Sumps

Location: Two areas (and three distinct locations) of accumulated oily liquid will be investigated. The areas are shown on the figures as 4.3.16.A and 4.3.16.B.

A. Accumulated liquid was observed in two sumps within the Plant Garage (Detail "E", Figure 8). This active facility has been used for servicing automobiles and train engines since 1940. The sumps are reportedly constructed of concrete, and it is unknown whether an outlet from either sump exists.

B. Accumulated liquid was observed in a sump located at the northern end of the Rod Mill (Detail "F", Figure 9). The sump is reportedly constructed of concrete, and it is unknown whether an outlet from the sump exists. The source of the oily liquid is the rinsing of oily mill stands.

Time of Use: 1940 to present.

Physical Description and Observations: As described above.

Use and Potential Impact: As described above.

Results of Previous Assessment Activities: No known assessment has been performed in these areas.

Investigation Approach:

The proposed investigation approach includes sampling the near-surficial soils beneath the Sumps.

Investigation of underlying soils: Evacuate the contents from and steam clean the inside of the sumps. Visually inspect the sumps for structural integrity and outlets. Core through the base of the sumps and advance a hand auger boring in 2 to 3 locations, selected based on field observations. Screen the soil using a PID or FID, and collect 1 "worst case" sample from each boring based on the field screening. Analyze the samples for PAHs, VOCs, and SVOCs.

4.3.17 Apparent Former Coal Gasification Operations

Location: Coal gasification operations appear to have been conducted in three buildings on site. The three areas will be investigated and are shown on Detail "C", Figure 6 as 4.3.17.A, .B, and .C.

A. The building located south of the Fuel Oil ASTs on the northern end of the property
B. The building located between the Open Hearth Building and the Boiler House
C. The building located contiguous to and south of the Merchant Mill

Time of Use: Circa 1906 to 1930.

Physical Description and Observations: The buildings and adjacent grounds currently bear no outward evidence of coal gasification operations. Documentary evidence suggests the use of the buildings for coal gasification.

Use and Potential Impact: The facility is believed to have manufactured gas from coal for use as fuel in the open hearth furnace. In 1930, the facility converted the fuel supply to natural gas. Remnants of the operations may exist but which are not visually identifiable.

Results of Previous Assessment Activities: No known assessment has been performed in these areas.

Investigation Approach:
The proposed investigation approach includes an invasive investigation and visually assessing the areas around the three buildings, with sampling of soil.

Investigation of underlying soils: Perform test pits around the perimeter of the three buildings to expose potentially buried materials. Depths of the test pits will be field determined based on visual observations and soil screening. Visually inspect the test pits for evidence of coal gasification residues. Screen the soil using a PID or FID. Collect 4 to 8 "worst case" samples from around each building based on the field screening and visual observations. Analyze the samples for RCRA metals plus cyanide, PAHs, and VOCs.

4.3.18 Former Container Storage Area

Location: Northeast of the Intermediate Mill and Billet Mill (Detail "D", Figure 7).

Time of Use: 1912 to 1980 as maintenance area; 1983 to 1985 as Container Storage Area.

Physical Description and Observations: Named as SWMU-1 in facility's RCRA Post-Closure Permit. Areal extent of the Container Storage Area was estimated to be 1,000 square feet. When used as a lube oil and grease Container Storage Area, the containment area was a covered, concrete pad. Previously, the area was neither sheltered nor covered with concrete.

Use and Potential Impact: Maintenance activities were reportedly performed in the area for the 70 years prior to the mid-1980s. The maintenance activities may have included use of solvents, storage of spent solvents in drums, and babbitt reworking. Drums of lube oil and grease stored in the area (covered, on concrete) for two years.

Results of Previous Assessment Activities:
In 1987 and 1988, soil samples were collected at both shallow and deep (up to 17.5 feet below ground surface) in the Container Storage Area. The near-surficial samples contained metals, oil & grease, VOCs, SVOCs, pesticides, and TPH. The deep soil samples contained metals and significantly lower concentrations of VOCs; SVOCs and pesticides were not detected. The Phase II Contamination Assessment Report for the area was dated July 29, 1988.

Investigation Approach:
The proposed investigation approach includes sampling the soils in and around the Former Container Storage Area. Groundwater near the Former Container Storage Area will also be investigated.

Investigation of soils: Advance 4 to 6 soil borings to the depth at which groundwater is encountered using a truck-mounted drill rig. Collect soil samples for screening purposes at 2-foot intervals. Locations of the borings will be field identified, with the attempt to provide reasonable areal coverage over the Former Container Storage Area. Screen the soil using a PID or FID, and collect 1 to 2 "worst case" samples from each boring based on the field screening. Analyze the soil samples for VOCs, PAHs, PCBs, and RCRA metals.

Investigation of groundwater: One groundwater monitoring well (MW-105 on Figure 3) will be installed in the vicinity of the Former Container Storage Area. Details regarding this groundwater monitoring well are discussed in Section 4.1.

4.3.19 Mill (Fence) Galvanizing Operations

Location: Near the northeastern corner of the property (Detail "F", Figure 9).

Time of Use: 1926 to 1985.

Physical Description and Observations: A portion of the original building remains, although that portion of the building used primarily for galvanizing has been demolished, and the area is open to the atmosphere.

Use and Potential Impact: Zinc galvanizing was performed in above ground vessels until the 1980s. The process involved heavy use of hydrochloric acids and zinc, and resulted in infrequent releases within the building. Soil on the western side of the former Galvanizing Building has potentially been impacted. The areal and vertical extent of any impact is unknown.

Results of Previous Assessment Activities: No known assessment has been performed in this area.

Investigation Approach:
The proposed investigation approach includes sampling the near-surficial soils within and around the estimated boundary of potentially impacted soil along the western side of the former Galvanizing Building.

Investigation of underlying soils: Advance a hand auger boring in 3 to 4 locations, selected based on field observations, with the attempt to provide reasonable areal coverage over the potentially impacted area. Collect 1 soil sample from each boring, and analyze the soil samples for RCRA metals and zinc.

<u>4.3.20 Electrical Transformers</u>

Location: Approximately 15 electrical transformers exist or previously existed in approximately 14 locations on site, and are shown on the figures as 4.3.20.A, 4.3.20.B, and so on. Each outside, pad-mounted electrical transformer location (active and inactive) will be investigated.

A. One electrical transformer is located outside the eastern side of the Plant Garage (Detail "E", Figure 8)
B. One electrical transformer substation is located outside the eastern side of the 13" Mill (Detail "F", Figure 9)
C. Two electrical transformers are located in separate locations outside the northern side of the Machine Shop (Detail "F", Figure 9)

D. One electrical transformer is located outside the eastern side of the Control Building for the active Scale Pit (Detail "F", Figure 9)

E. One electrical transformer experienced a leak of dielectric fluid and was removed. This transformer was located outside the northern side of the Power House (Detail "C", Figure 6)

F. One electrical transformer is located outside the northern side of the Intermediate Mill (Detail "C", Figure 6)

G. One electrical transformer is located outside the southern side of the Billet Mill (Detail "C", Figure 6)

H. One electrical transformer is located outside the northeastern corner of the Billet Mill (Detail "C", Figure 6)

I. One electrical transformer is located outside the southern side of the 10" Mill (Detail "D", Figure 7)

J. One electrical transformer is located in a below-grade substation on the southern side of the Operations Building (Detail "E", Figure 8)

K. One former (since removed) electrical transformer was located outside the northeastern corner of the Original Blooming Mill (Detail "C", Figure 6)

L. One electrical transformer that has experienced a leak of dielectric fluid is located within the propane yard at the northern end of the property (Detail "G", Figure 10)

M. One electrical transformer is located on the western side of the Control Building for the Electric Melt Shop (Detail "B", Figure 5). This transformer was removed in 1996.

N. One former electrical transformer was located north of the Caster Building (Detail "B", Figure 5)

Time of Use: Unknown. Many of the electrical transformers are original equipment.

Physical Description and Observations: As described above. The dielectric fluid in each electrical transformer has been sampled and analyzed and found no PCBs at concentrations above the regulatory threshold of 50 parts per million.

Use and Potential Impact: As described above.

Results of Previous Assessment Activities: No known assessment has been performed in these areas.

Investigation Approach:

The current owner will remove all transformers. The proposed investigation approach includes an inventory of all outside, pad-mounted transformer locations, and sampling the near-surficial soils within and around each transformer pad.

Investigation of soils: Advance a hand auger boring in 2 to 4 locations around each existing and former transformer pad, at locations selected based on field observations. Collect 1 to 2 soil samples from each electrical transformer location based on visual observations. Analyze the soil samples for PCBs, VOCs, and PAHs.

4.3.21 Oily Liquids in Secondary Containment Structures

Location: Two areas of accumulated oily liquid in secondary containment structures exist and will be investigated. The areas are shown on the figures as 4.3.21.A and 4.3.21.B.

A. Accumulated oily liquid was observed in the secondary containment for the two lube oil tanks located west of the Rod Mill (Detail "F", Figure 9). The containment bottom and walls are constructed of concrete, and the containment is not covered. Potential releases to soil from the bottom of the secondary containment structure, although not evident, may have occurred. These tanks have been present at this location since 1982.

B. Accumulated oily liquid was observed in the secondary containment for the four fuel oil tanks located near the northern property line (Detail "C", Figure 6). The containment bottom and walls are constructed of concrete, and the containment is not covered. Potential releases to soil from the bottom of the secondary containment structure, although not evident, may have occurred. These tanks have been present at this location since 1922.

Time of Use: As described above.

Physical Description and Observations: As described above.

Use and Potential Impact: As described above.

Results of Previous Assessment Activities: No known assessment has been performed in these areas.

Investigation Approach:

The proposed investigation approach includes sampling the near-surficial soils beneath the secondary containment structures.

Investigation of underlying soils: Evacuate the contents from and steam clean the inside surfaces of the secondary containment structures. Visually inspect for structural integrity. Core through the base of the structures and advance a hand auger boring in 3 to 5 locations, selected based on field observations.

Screen the soil using a PID or FID, and collect 1 "worst case" sample from each boring based on the field screening. Analyze the samples for PAHs.

4.3.22 Shed and Stained Soil

Location: West of the Power House (Detail "C", Figure 6).

Time of Use: 1926 to 1985.

Physical Description and Observations: The one-story shed covered approximately 400 square feet. Darkened staining resembling oil was observed on the soil around and within the shed and on the walls of the shed.

Use and Potential Impact: Historical use of the shed is unknown.

Results of Previous Assessment Activities: No known assessment has been performed in this area.

Investigation Approach:
The proposed investigation approach includes sampling the near-surficial soils within and around the shed.

Investigation of soils: Advance a hand auger boring in 3 to 5 locations, selected based on field observations, with the attempt to provide reasonable areal coverage over the potentially impacted area. Screen the soil using a PID or FID, and collect 1 "worst case" sample from each boring based on the field screening. Analyze the soil samples for PAHs, PCBs, and RCRA metals.

4.3.23 Paint Storage Shed

Location: In the eastern half of the property, south of the former Old Lower Pond (Detail "D", Figure 7).

Time of Use: 1926 to 1985. The shed still exists.

Physical Description and Observations: The one-story shed covered approximately 300 square feet. No obvious impacted soil was observed around or within the Paint Storage Shed.

Use and Potential Impact: Storage of paint was performed in the shed.

Results of Previous Assessment Activities: No known assessment has been performed in this area.

Investigation Approach:

The proposed investigation approach includes sampling the near-surficial soils within and around the shed.

Investigation of soils: Advance a hand auger boring in 4 to 6 locations, selected based on field observations, with the attempt to provide reasonable areal coverage over the perimeter of the Paint Storage Shed. Screen the soil using a PID or FID, and collect 1 "worst case" sample from each boring based on the field screening. Analyze the soil samples for VOCs, SVOCs, and RCRA metals.

4.3.24 Abandoned Process Supply Wells

Location:

- Well No. 1 is located slightly beyond the northern property line, north of the 10" Mill (Detail "D", Figure 7)
- Well No. 2 is located approximately 218 feet north of the center line of Sixteenth Street and 107 feet east of the center line of State Street (Figure 2)

Time of Use: 1905 to 1930.

Physical Description and Observations: No visual evidence exists regarding either Abandoned Process Supply Well. Available information shows that the wells were up to 508 feet deep.

Use and Potential Impact: Both wells were available to supply back-up process water to plant operations, and may have done so since circa 1930. Reportedly, the wells have not been used since that time. Neither well appears to have been properly closed.

Results of Previous Assessment Activities: No contemporary groundwater sampling data are available for the wells.

Investigation Approach:

Identify the location of each well using visual observations, excavation, and/or geophysical survey techniques, as appropriate. Once identified, properly close both wells by removing the well casing(s) to the extent practicable and filling the bore hole with a neat cement/bentonite grout.

4.3.25 Slag Fines and Dust Around Electric Melt Shop

Location: Around Electric Melt Shop (Detail "B", Figure 5).

Time of Use: 1955 to 1986.

Physical Description and Observations: Some areas of stray slag fines and/or dust from plant operations remain in and around the Electric Melt Shop and dust collectors.

Use and Potential Impact: As described above.

Results of Previous Assessment Activities: In connection with closure of the K061 waste pile, a groundwater monitoring and recovery well network has been installed and groundwater in the area has been monitored semiannually since 1987. The K061 waste pile will be clean closed by the current owner.

Investigation Approach:

The proposed investigation approach includes visually delineating residual fines and dust and sampling the surficial soils.

Investigation of soils: Collect 3 to 6 potentially impacted surficial soil samples, with an attempt to provide reasonable spacing and areal coverage over the area(s) identified. Analyze the soil samples for RCRA metals using TCLP methodology. Analyze soil samples from the adjacent area where the "portable diesel tank" was previously located for PAHs.

4.3.26 Former Oil House

Location: Near the northwestern corner inside the Flat Warehouse (Detail "C", Figure 6).

Time of Use: Unknown. The Oil House was evident in a drawing dated 1908.

Physical Description and Observations: Oil House appeared to cover approximately 400 square feet.

Use and Potential Impact: As described above.

Results of Previous Assessment Activities: No known assessment has been performed in this area.

Investigation Approach:

The proposed investigation approach includes sampling the soil in and around the former Oil House.

Investigation of soils: Core through the concrete floor of the Flat Warehouse in 2 to 4 field-identified locations. Advance 1 soil boring in each of the core holes to the depth at which groundwater is encountered using a truck-mounted drill rig. Collect soil samples at 2-foot intervals for screening purposes. Screen the soil using a PID or FID, and collect 1 "worst case" sample from each boring based on the field screening and visual observations. Analyze the samples for PAHs and PCBs.

4.3.27 Former Spalding Foundry

Location: At the northern-most portion of the property (Detail "G", Figure 10).

Time of Use: Early 1900s to circa 1970s.

Physical Description and Observations: The foundry consisted of three main buildings (a foundry, a machine shop, and a supply building) and other small, unidentified buildings. The buildings were concentrated on the western portion of the property, near Mecaslin Street. Indications of this prior use no longer exist.

Use and Potential Impact: An iron foundry and related machine shop were formerly located on the northern end of the property (now occupied by the propane tank storage area).

Results of Previous Assessment Activities: No known assessment has been performed in this area.

Investigation Approach:

The proposed investigation approach includes sampling the soil in and around the former Spalding Foundry.

Investigation of soils: Advance 5 to 6 soil borings at field-identified locations on the western portion of the propane yard. Continue the borings to the depth at which groundwater is encountered using a truck-mounted drill rig. Collect soil samples at 2-foot intervals for screening purposes. Screen the soil using a PID or FID, and collect 1 "worst case" sample from each boring based on the field screening and visual observations. Analyze the samples for RCRA metals, PAHs and VOCs. Collect one surficial soil sample from one field-determined boring and analyze that sample for RCRA metals.

4.3.28 Stormwater Sewer from Bishop Street Area

Location: In the western half of the property, east of the former scrap metal storage yard (Detail "A", Figure 4).

Time of Use: 1900s to the present.

Physical Description and Observations: A sewer main traverses the property in a north-south direction. The 36-inch diameter sewer main is constructed of sections of vitrified clay and reinforced concrete.

Use and Potential Impact: The sewer discharges stormwater from the Bishop Street drainage basin to the Eastern Upper Pond. On one occasion in the past, a portion of the sewer pipe near the northern end of the property collapsed and was repaired.

Results of Previous Assessment Activities: No known assessment has been performed in this area.

Investigation Approach:
The proposed investigation approach includes sampling the soil in and around that portion of the sewer pipe that collapsed and in one other location south of the point of collapse.

Investigation of soils: Advance 4 to 6 soil borings at 2 field-identified locations around the sewer pipe. Continue the borings to the depth at which groundwater is encountered using a truck-mounted drill rig. Collect soil samples at 2-foot intervals for screening purposes. Screen the soil visually, and collect 1 sample from each boring for analysis based on the visual observations. Analyze the samples for RCRA metals, PAHs and VOCs.

4.3.29 Tri Chem Facility

Location: At the southeastern corner of Sixteenth Street and Mecaslin Street (Detail "E", Figure 8).

Time of Use: 1900s to June 30, 1997.

Physical Description and Observations: The facility occupied approximately 1.7 acres of land. Tri Chem produced commercial fertilizer since 1977, and prior to that the facility was used in some capacity for the manufacturing of burial vaults.

Use and Potential Impact: Tri Chem recycled K061 dust into a pelletized product for incorporation into commercial fertilizer. The facility operated under authority of a RCRA Storage Permit. Potential sources of impact at the Tri Chem property include two outside stormwater drains, one outside dust storage silo (which is being closed under the RCRA Storage Permit), one scrubber sump located within the Tri Chem building, and one outside sulfuric acid tank.

Results of Previous Assessment Activities: Georgia EPD performed a RCRA Facility Assessment in 1995. Subsequently, a draft RCRA Facility Investigation Plan was prepared in 1997. It has not been implemented in anticipation of this Phase II Investigation.

Investigation Approach:

The proposed investigation approach includes sampling the soil and groundwater in and around the potential sources of impact.

Investigation of soil: Core through the pavement in 2 field-identified locations around or within each sulfuric acid tank, storm drain, and scrubber sump, and 3 locations around the silo. Advance a hand auger boring in each of the core holes. Screen the soil visually, and collect 1 "worst case" sample from the underlying soil in each boring based on the visual screening. Analyze the samples for RCRA metals.

Investigation of groundwater: One groundwater monitoring well (MW-101 on Figure 3) will be installed on the Tri Chem property. Details regarding this groundwater monitoring well are discussed in Section 4.1.

5.0 RISK ASSESSMENT

A risk assessment will be conducted for the property based on the results of the Phase II Investigation activities. The purpose of the risk assessment will be to evaluate any potential risks to human and ecological receptors resulting from potential exposure to site-related constituents in environmental media at the property. Risk-based remediation or control levels, will be developed for any chemical where potential exposure may result in risk to future human and/or ecological receptors at the property. The risk assessment will be conducted in accordance with the Georgia EPD's *Guidance For Selecting Media Remediation Levels at RCRA Solid Waste Management Units* (MRL Guidance) dated November 1996 (Georgia EPD, 1996).

The Agreement for Purchase and Sale between Atlantic Steel Industries, Inc. and Atlantis 16th calls for Atlantic Steel Industries, Inc. to demolish all the buildings at the property and transfer the property to Atlantis 16th at grade. Concrete slabs will be left in place and no significant grading will be performed prior to transfer of the property. Atlantis 16th plans to develop the property as a mixed-use area which will contain a community of apartment homes, a hotel, office buildings, and commercial retail areas such as a shopping center (a conceptual master plan is shown on Figure 11). The exposure scenarios to be evaluated in the risk assessment will be those anticipated based on the future development and use of the property. Current exposure scenarios associated with the use of the property as a steel rolling mill will not be evaluated because, upon transfer of the property, they will no longer exist. The following sections briefly summarize the tasks which will be performed.

5.1 ASSESSMENT OF RISK TO HUMAN RECEPTORS

The assessment of risk to human receptors will be performed using the MRL Guidance which incorporates by reference the following risk assessment methodology guidance documents:

- *Supplemental Guidance to RAGS, Region 4 Bulletins, Human Health Risk Assessment (Interim) and Ecological Risk Assessment (Draft)*, U.S. Environmental Protection Agency (USEPA) Region 4 Office of Health Assessment, November 1995.
- *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A), Interim Final,* USEPA (EPA/540/1-89/002), December 1989.
- *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals), Interim Final*, USEPA (EPA/540/R-92/003), December 1991.

Potential risk to human receptors from exposure to constituents in environmental media at the property will be evaluated through the following four-step process:

1) Data Evaluation and Identification of Constituents of Potential Concern
2) Exposure Assessment
3) Toxicity Assessment
4) Risk Characterization

5.1.1 Data Evaluation and Identification of Constituents of Potential Concern

In the first step of the process, the existing site conditions will be described and the constituents of potential concern (COPCs) will be identified. Data compatibility for the purposes of risk assessment will be evaluated in accordance with the USEPA's *Guidance for Data Usability for Risk Assessment (USEPA, 1992).*

The identification of COPCs will include an evaluation of the frequency of detection, the range of detection limits, the arithmetic average of detected concentrations, the range of detected concentrations, and risk-based screening values. For groundwater, a constituent will be identified as a COPC if the maximum detected concentration exceeds the USEPA Region 3's risk-based tap-water screening value calculated at a risk level of 1×10^{-6} or a hazard quotient level of 0.1 (USEPA, 1996). For soils, a constituent will be identified as a COPC if the maximum detected concentration exceeds the USEPA Region 3's risk-based residential soil screening value calculated at a risk level of 1×10^{-6} or a hazard quotient level of 0.1 (USEPA, 1996). Constituents which do not exceed the risk-based screening values will not be identified as COPCs. In accordance with the Georgia EPD's MRL Guidance, only those constituents which are identified as COPCs will be carried through the quantitative risk assessment.

5.1.2 Exposure Assessment

For purposes of application of its risk based analysis, the EPD Guidance assumes that certain exposure pathways exist. Therefore, this risk assessment will assume an exposure pathway and that development and use of the Property will occur consistent with the Site Plan described in the Purchase Agreement.

Surface soils are defined as the upper six inches of material at the property (USEPA, 1992). The Region 4 guidance defines surface soils available for direct human contact as the top 12 inches; the guidance also states that soil samples should be collected from the "most contaminated portion of the surface soil" (USEPA, 1995). Because the primary contaminants of concern in the surficial materials at the Atlantic Steel property are RCRA metals and SVOCs, which do not tend to migrate vertically because they bind tightly with the soil matrix, the top 6 inches of materials are most likely to be the "most contaminated portion of the surface soil". If soil samples are collected at soil depths between 6 inches and 12 inches, they will be included in the surface soil data set. Potential surface soil exposure pathways include incidental ingestion, dermal contact, and inhalation of fugitive dusts.

Subsurface soils are considered to be from 1 foot to the underlying water table; the shallow groundwater at this property is expected to be encountered from 6 to 18 feet below ground surface. Therefore, it is conceivable that excavations associated with utility or construction work may extend to the water table. Potential soil exposure pathways include incidental ingestion, dermal contact, and inhalation of fugitive dusts.

Groundwater is not a source of drinking water at the Atlantic Steel property and surrounding areas extending at least three miles in all directions. The property and surrounding area is fully served by the public water distribution system and there are no reasonable prospects or need for the use of groundwater as a drinking water source in the area. For these reasons, the exposure receptor stage of the human health risk assessment is not expected to identify any groundwater-based drinking water receptors. This will be confirmed during the Phase II Investigation and documented in the risk assessment.

The only surface water features present at the property are the Western Sediment Basins, Middle Upper Pond, and Eastern Upper Pond. These surface water impoundments were constructed by Atlantic Steel to receive and control storm-water runoff from different areas of the plant and process water. The Middle Upper Pond also receives filter backwash from the City of Atlanta Water Works. The development plans call for the ponds to be closed. Therefore, no surface water or sediment exposure pathways are envisioned under the future use exposure scenarios.

<u>Exposure Point Concentrations</u>

Exposure point concentrations will be calculated for the groundwater beneath the property and the surface and subsurface soils. The exposure point concentrations in the groundwater beneath the property will initially be calculated as the mean of the wells in the concentrated area of any plume (if a plume is identified). If no coherent single plume is identified, the groundwater concentration will be calculated as the 95 percent upper confidence limit of the mean. The exposure point concentrations for the soils will be calculated as the 95 percent upper confidence limit of the mean of soil concentrations at the property. The statistical distribution of soil and groundwater data may be examined to establish representative exposure concentrations.

Exposure point concentrations will be calculated separately for both surface and subsurface soils. The surface soil database is expected to include the results from the near-surficial material sampled to profile the "baseline" levels at the property. The subsurface soil database is expected to include the results from the near-surficial materials and the results from deeper soils sampled from PIAs as described in Section 4.3. Based on the results of the Phase II Investigation, a location-specific analysis may be incorporated into the development of the exposure point concentrations for different receptors.

<u>Daily Intake Values</u>

Daily intake values for each relevant exposure pathway will be determined for potential receptors using the equations and exposure parameters provided in the USEPA Region 4 guidance (USEPA, 1995). Site-specific exposure parameters associated with potential exposure scenarios not covered by this guidance (i.e., a commercial shopping area) will be developed, if appropriate.

5.1.3 Toxicity Assessment

In the third step of the process, the toxicity of the COPCs will be evaluated. Toxicity values for both carcinogenic and non-carcinogenic effects will be compiled from the USEPA's Integrated Risk Information System (IRIS) and other sources approved by Georgia EPD.

5.1.4 Risk Characterization

Finally, the potential risks associated with the identified COPCs will be characterized. During this step, the results of the site-specific exposure assessment will be integrated with the results of the chemical-specific toxicity assessment. Risks will be calculated separately for each media (i.e., exposure to groundwater, surface soils and subsurface soils). Constituent-specific risks will be summed, as described in the USEPA guidance, to yield a cumulative estimate of the risks for each exposure scenario.

5.2 DEVELOPMENT OF MEDIA REMEDIATION LEVELS FOR HUMAN RECEPTORS

Media remediation levels (MRLs) will be calculated for each Constituent of Concern (COC) identified in the human-health risk assessment. The MRL Guidance defines COCs as those COPCs that significantly contribute to a pathway in a use scenario for a receptor that either exceed a cumulative cancer risk of 1×10^{-6} or a non-carcinogenic hazard index of 1. The risk-based MRLs will be developed by back-calculating from acceptable levels at the point of exposure using the same assumptions that will be used in developing the exposure assessment. The risk-based remediation levels may be used as clean-up levels or action levels for future remediation. The *Phase II Report and Remediation Plan* will present options for the property including engineering and institutional controls and risk-based remediation levels.

5.3 PRELIMINARY RISK EVALUATION FOR ECOLOGICAL RECEPTORS

According to the MRL Guidance, the preliminary risk evaluation for ecological receptors consists of five steps:

1) Ecological screening value comparison (Selection of COPCs)
2) Preliminary problem formulation
3) Preliminary ecological effects evaluation
4) Preliminary exposure estimate, and
5) Preliminary risk calculation.

The maximum concentrations of constituents detected in the surficial materials at the property will be compared to the toxicological benchmarks for wildlife developed by Opresko et.al. (1994). These benchmarks represent concentrations of constituents in environmental media that are presumed to be non-hazardous to the biota. Although exceedance of these benchmarks does not necessarily indicate any particular level or type of risk, concentrations below the benchmarks should not result in adverse effects and thus may be excluded from further consideration. Only those constituents which exceed the benchmarks will be identified as COPCs for the ecological risk evaluation.

If COPCs for ecological receptors are identified, the preliminary problem formulation step will be completed. The purpose of the preliminary problem formulation is to identify categories of potential ecological receptors that may exist at the property and identify those contaminants which may pose unacceptable risks to those receptors. The Atlantic Steel property, which is located in an industrialized area of downtown Atlanta, has been used since the early 1900s as a steel mill. Because of its location, there is very little or no desirable ecological habitat due to the high level of disturbance from industrial activities including vehicular and pedestrian traffic. Any future habitat at the property resulting from the redevelopment of the property is expected to be entirely man-made. Such artificially created and highly maintained areas do not provide a desirable ecological habitat because there is a typically high level of human activity associated with maintaining these areas, such as mowing.

Due to the lack of desirable ecological habitat at this property, the problem formulation stage of the preliminary risk evaluation is not expected to identify any ecological receptors. This will be confirmed by a biologist during the Phase II Investigation and documented in the risk assessment for this property. If potential ecological receptors are identified, the final three steps of the preliminary risk evaluation will be completed.

REFERENCES

Georgia EPD, 1996, *Georgia Environmental Protection Division, Guidance for Selecting Media Remediation Levels at RCRA Solid Waste Management Units,* Georgia Environmental Division, Hazardous Waste Management Branch, Atlanta, Georgia, November 1996.

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USEPA, 1989, *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A), Interim Final,* (EPA/540/1-89/002), U.S. Environmental Protection Agency , Office of Emergency and Remedial Response, Washington, DC, December 1989.

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USEPA, 1992, *Guidance for Data Usability for Risk Assessment (Part A),* Publication 9285.7-09A, U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC, April 1992.

USEPA, 1995, *Supplemental Guidance to RAGS, Region 4 Bulletins, Human Health Risk Assessment (Interim) and Ecological Risk Assessment (Draft)*, U.S. Environmental Protection Agency, Region 4 Office of Health Assessment, Atlanta, Georgia, November 1995.

USEPA, 1996, *Risk-Based Concentration Table, January-June, 1996,* Memorandum from Roy L. Smith, U.S. Environmental Protection Agency, Region 3, Office of RCRA Technical & Program Support Branch, Philadelphia, PA, April 1996.

6.0 QUALITY ASSURANCE / QUALITY CONTROL

6.1 GENERAL QA/QC PLAN AND OBJECTIVES

The objective of quality assurance for this investigation is to ensure that information, data, calculations, and decisions resulting from this investigation are technically sound and properly documented. This Phase II Investigation will be performed under a Quality Assurance/Quality Control (QA/QC) program that is modeled after 10 CFR 50, Appendix B.

As appropriate, each component of this investigation will be performed under the direction of a Principal Engineer/Scientist who is responsible for maintaining the required professional quality from beginning to completion of that component. This procedure will match project requirements with the proper personnel expertise. Every report must be reviewed and signed by two people and at least one will be a certified Principal Engineer/Scientist with credentials and expertise relevant to the area of work. Certifications will be included, if required.

6.2 SAMPLING AND ANALYSIS TECHNIQUES

Proper sampling and analysis techniques are considered critical during the implementation of this investigation. Consequently, only qualified and trained personnel that understand the importance of sample representativeness and sample integrity will be allowed to perform sample collection activities. The sampling and analysis procedures for this *Phase II Workplan* are presented in Appendix A. These procedures include field equipment, calibration, and decontamination requirements in addition to sampling techniques for all medias of concern.

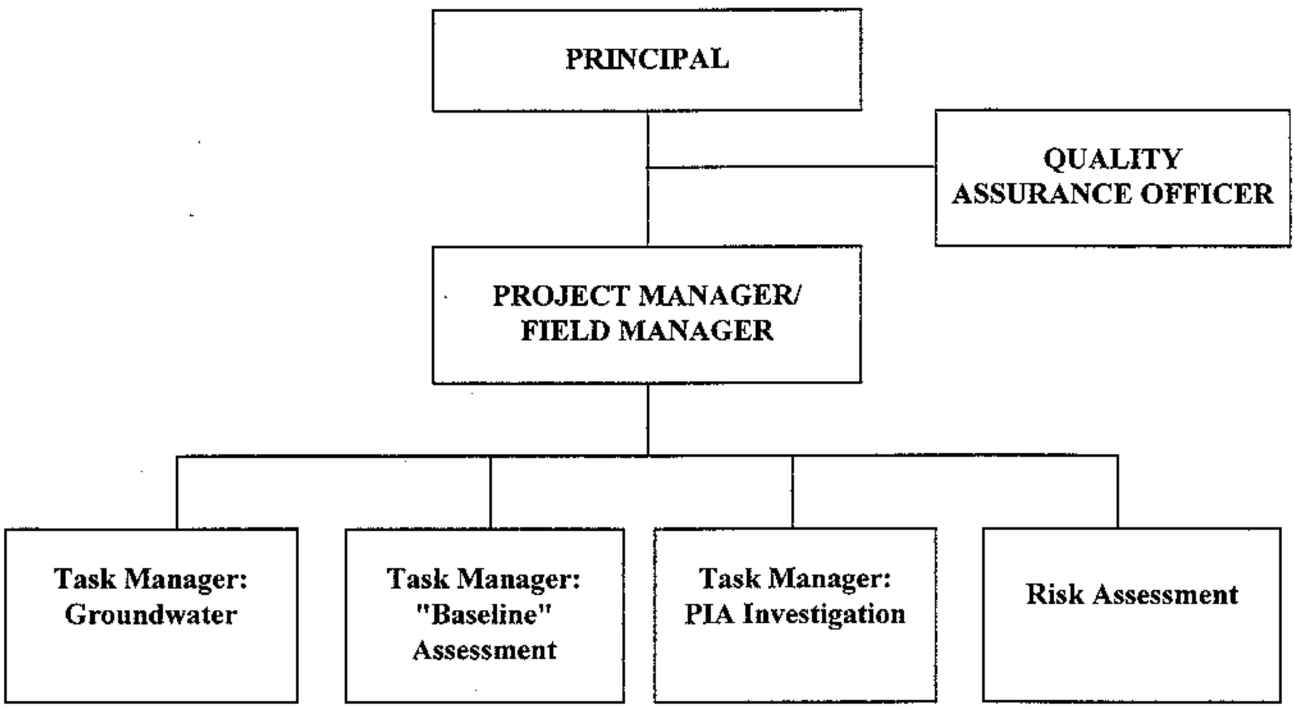
6.3 SAMPLE IDENTIFICATION AND TRACKING

The sample identification and tracking procedures are discussed in Appendix A. Each sampling and measurement location will be marked in the field on a map, sequentially, according to type. Each sample container will be marked with the type, number, a unique project number (used for all samples), project name, time collected and date. The chain-of-custody records will reflect these identifiers and the number of sample containers from each location. These same identifiers will be shown on laboratory data reports. The identifiers will be traceable from the time of sampling to completion of the final data summary reports.

6.4 PERSONNEL/PROJECT TEAM

The primary investigation team will consist of a Field Manager/Coordinator to facilitate assessment activities and information gathering by the team, Project Principals/Managers to ensure QA/QC procedures are followed, and Task Coordinators to oversee day-to-day activities. Additional support personnel will also include Senior Scientists/Geologists to interpret contaminant migration in soils, sediment and groundwater.

A conceptual internal organization structure for the project is shown below:



7.0 DATA MANAGEMENT AND REPORTING

Laboratory analytical data will be entered into a computer-based data management system. As a part of the QA/QC Program, the field sampling records and laboratory data will be reviewed for correct protocol and reasonableness of values. Following data entry, the output will be reviewed and double checked to minimize transcription errors and sample mis-identification. This data will then be used for the creation of summary tables, graphs and maps typical of assessment reports. All data will be reported including outliers and suspect values.

Typical data management tables will include summaries of laboratory results, field measurements, and well-construction data. Investigation report maps may include contaminant source location(s), topography, land use, sampling locations, potentiometric surface, concentration isopleths, depths and location of fill materials, and estimates and projections of the vertical extent of a release. Various line and bar graphs may be used to graphically illustrate particular trends or other points of interest. Soil/rock boring log schematics will be presented to illustrate soil and bedrock lithology.

The results of the human health risk assessment and preliminary risk evaluation for ecological receptors will be presented in the *Phase II Report and Remediation Plan*. A *Phase II Report and Remediation Plan* will be submitted to Georgia EPD. The final report will include discussion of each phase of the assessment activities, evaluation of data collected, and discussion of the impact of releases. The report will also document the rationale and justification for any activity described in this Workplan that is dependent upon engineering judgement, field observations, or the results of analyses, including but not limited to:

- the location of the bedrock groundwater monitoring well and the analytical suite selected (see Section 4.1) when monitoring the groundwater in that well
- the specific depth/location of borings and samples at PIAs (for example, the number and location of borings advanced to investigate PIA 4.3.7 - Former TCE Tank)
- any modifications to any analytical suite
- further activities pursued at an area of environmental interest (for example, if the results of the test pit excavations indicate the need for further investigation associated with PIA 4.3.17 - Apparent Former Coal Gasification Building)
- decision to <u>not</u> pursue further activities at an area of environmental interest

8.0 HEALTH AND SAFETY

A Health and Safety Plan will be developed for use while performing field activities at this property. Prior to initiation of the investigation field activities, each property investigator or worker will be required to sign as having read and understood the Health and Safety Plan. The purpose of the Plan will be to establish requirements and procedures for the health and safety of the investigative team throughout the investigation. Only personnel that have received the minimum 40-hour OSHA training (29 CFR 1910.120) and comply with applicable medical surveillance requirements will perform field investigation activities.

9.0 SCHEDULE

An estimated schedule for the major activities associated with this *Phase II Workplan* is shown on the attached page.

TENTATIVE SCHEDULE OF IMPLEMENTATION