DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: RealCo Inc. (formerly AL Tech Speciality Steel Corporation)
Facility Address: Spring Street Road, Watervliet, New York
Facility EPA ID #: NYD060545209

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

_X_ If yes - check here and continue with #2 below.

_____ If no - re-evaluate existing data, or

_____ If data are not available, skip to #6 and enter"IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)
Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI
A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies
While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	X			Monitoring results for total metals (arsenic, chromium, nickel, lead,molybdenum), hexavalent chromium, PCBs, petroleum hydrocarbons (free product-semi-volatile organic compounds (SVOCs)) & fluoride.
Air (indoors)[2]		X		All buildings at the site, with the exception of the Extrusion Bldg. and a small office building are vacant at this time. The office building does not have a basement and is well ventilated. No VOC subsurface contamination at the Extrusion Bldg.
Surface Soil (e.g., <2 ft)	X			Soil sampling results for total metals (chromium, cadmium, molybdenum, nickel, lead, vanadium, zinc), PCBs, hexavalent chromium, & petroleum hydrocarbons (SVOCs).
Surface Water	X			Monitoring results for total chromium and hexavalent chromium.
Sediment	X			Sediment sampling results for total metals (nickel, chromium, nickel, lead, copper & molybdenum) PCBs, & petroleum hydrocarbons (SVOCs).
Subsurf. Soil (e.g., >2 ft)	X			Soil sampling results for total metals (chromium, cadmium, lead, molybdenum, nickel), hexavalent chromium, PCBs, petroleum hydrocarbons (SVOCs) & fluoride.
Air (outdoors)		X		Air monitoring for metals & particulate matter during remediation.

____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

_X_ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and References:

Facility and Release Sources.

RealCo Inc. (formerly AL Tech Speciality Steel Corporation) is not operating at this time, with the exception of the Extrusion/Pickling and Wastewater Treatment Plant (WWTP). The former Plant is leased to and operated by ALTX where extrusion and pickling still occurs. RealCo operates a WWTP that employs chemical precipitation, settling and filtration for treating both landfill leachate and wastewater from the pickling operation. RealCo also uses an API/Oil Water Separators to treat the facility's stormwater and fuel oil contaminated groundwater. The parent company of Al Tech, SAMMI Steel of Korea, went bankrupt several years ago, but through litigation several million dollars was recovered from former facility owners by NYSDEC and placed in a trust fund. Currently

RCRA corrective action is being implemented at this facility and the one located in Dunkirk, NY using the limited recovered funds placed in the trust.

As shown in Figure 1, the facility is located in the town of Colonie, Albany County, New York and occupies approximately 120 acres. The facility is adjacent to industrial, commercial operations and some private residences. The facility consists of two separate areas located across Spring Street from each other: the 50 acre waste management area (WMA), shown in Figure 2, which included an approximately 30 acre uncovered landfill and a closed surface impoundment; and the 70 acre main plant area (MPA) shown in Figure 3, which includes several vacant buildings once used for the production of speciality stainless steel and the operating Extrusion and Wastewater Treatment Plant. Steel making began in 1907 by Ludlum Steel. Historically, operations at the MPA, consisted of stainless steelmaking employing electric arc furnaces, decarbonization, casting pickling and finishing operations, led to inorganic metal contamination of buildings, surficial soils and groundwater. Spillage during the loading and unloading of transformer oil and leaks from stored transformers resulted in the contamination of soil with PCBs. Fuel oil, once transported by underground pipeline, leaked resulting in extensive light non-aqueous phase liquid (LNAPL) fuel oil contamination floating on the site's groundwater. Fuel oil contamination was also detected in the deep subsurface soils at the MPA and in sediments of Kromma Kill Creek flowing adjacent to the MPA. Releases from the landfill and the impoundment have contaminated the WMA groundwater; the surface water of primary tributary flowing through the WMA to Kromma Kill Creek; and the sediment in the Creek itself with the key contaminant being chromium. The surface impoundment, which is a "regulated unit" located adjacent to the landfill, was the primary mechanism used for the collection of leachate generated by the landfill. The impoundment was closed in 1988 and a post-closure permit issued by NYSDEC in 1992. The post-closure permit and several orders on consent form the basis for corrective action requirements at both the WMA and MPA.

Geology and Surface Water Hydrology.

Subsurface geology underlying the WMA and MPA includes, in descending sequence, fill, alluvial sediments, clay till and shale bedrock. At the WMA, the fill consists of materials disposed of in the landfill. Fine-grained soil, deposited as alluvial sediments and consisting of soil and clay, represent the uppermost soil in the eastern-most portion of this area where the thickness ranges from 10-18 feet. Clay till with very low permeability is the uppermost natural material within the central and western portions of the WMA reaching recorded depths of 95 feet. Shale bedrock underlays the clay and alluvial sediments at the WMA and is exposed to heights of 40 feet along the Kromma Kill Creek. Within the MPA bedrock is present at depths ranging from 1 foot to 42 feet below ground surface (ft-bgs) and gradually decreases toward the western portion of the plant forming a 20 foot embankment west of the Melt Shop. Clay till ranging in thickness from 1 foot to 6 feet underlies the predominant course grained alluvial sediment found throughout the MPA. Fill material is extremely variable (i.e., slag, concrete, metal fragments, sand, gravel and brick) and present across most of the MPA ranging in thickness from 4 to 8 feet; however, thinner zones of fill (1 to 2 feet) and thicker zones of fill (9 to 12 feet) have been observed at the facility.

The Kromma Kill Creek, Class D intermittent stream, is the principal water body in the vicinity of the facility, as shown in Figures 2 and 3. This perennial stream forms part of the eastern boundary of the northern -most portion of the MPA and the northern and eastern boundaries of the WMA. The upper reaches of the stream (near the WMA) flow on the bedrock surface. Along the WMA's eastern boundary and throughout the MPA, the flow is along a sediment covered bottom. The Creek has several small intermittent unnamed tributaries within the WMA. The most significant unnamed tributary flows east out from under the southern section of the WMA in the vicinity of closed surface impoundment. An unnamed western tributary at the WMA meets an unnamed tributary forming the southern boundary of the MPA and the confluence of these streams discharges to the Hudson River about one mile east of the plant.

Groundwater Hydrogeology.

MPA is underlain by two water-bearing zones: the overburden and bedrock. The first continuous water-bearing zone is typically within the alluvium at depths of 10 to 14 ft-bgs. This saturated interval generally extends into bedrock, although in some locations the clay till overlying the bedrock may act as a semi-confining layer. Bedrock is a significant water-bearing zone in the WMA with perched water believed to be present within the fill in areas underlain by till. Shallow (overburden) groundwater at the MPA and WMA generally discharges to the Kromma

Kill Creek although under some conditions the Creek recharges the overburden at the MPA. At the WMA some portion of the overburden groundwater discharges to bedrock along the upper reaches of the Creek and the unnamed tributary. The estimated velocity in the overburden at the MPA ranges from about 0.5 to 2.5 ft/day, and the estimated velocity at the WMA is 0.15 ft/day. Groundwater flow in the bedrock from both areas appears to be generally to the east, except in the northern portion of the WMA. Localized variations in the direction of flow are likely, as the flow is controlled locally by fractures in the bedrock. Regional discharge is anticipated to be to the Hudson River. Based on the fact that bedrock porosity is believed to be secondary and a lack of other data on bedrock flow conditions, the bedrock porosity cannot be estimated. Consequently, the velocity of the groundwater flow through bedrock cannot be calculated.

Contamination and Corrective Action

Waste Management Area (WMA) Contamination And Corrective Action

Inorganic contamination is found in the soil and waste located at the WMA. The key contaminants are total metals, including cadmium, chromium, lead, molybdenum and nickel, and fluoride. Lime-neutralized waste pickle liquor sludge, a K062 listed hazardous waste and a source of heavy metal contamination, was generated at the MPA WWTP and then subsequently placed in the WMA prior to July 26, 1982. EAF emission control dust, a K061listed hazardous waste and source of metal contamination including hexavalent chromium, was generated at the Melt Shop" Bag House and then disposed of in the landfill prior to July 26, 1982. Leachate from the landfill containing metal contamination, including hexavalent chromium generated by EAF dust, was managed in the surface impoundment and generated a hazardous waste sludge. At closure the impoundment was dewatered, the sludge stabilized in-place and the unit covered with clay from the surrounding area. Plant operations from the late 1950's until 1996 generated solid wastes such as stainless steel slag, other metal scraps, casting sand, and demolition debris, which was also disposed of in the land fill. Given the site's sloping topography closing the landfill with an appropriate cover requires reconsolidating much of the WMA. An ICM has been implemented to reconsolidate the waste into a section of the WMA where highly impermeable natural clay resides and at the same time recover for sale scrap stainless steel. This ICM includes: (1) recovering and selling scrap stainless steel slag; (2) removing for off-site hazardous waste disposal isolated pockets of EAF dust; (3) opening the impoundment and consolidating co-mingled solid waste and EAF dust found in the WMA with the impoundment's sludge; (3) collecting storm water run-off during construction in a newly constructed temporary detention pond; (4) consolidating the waste into a landfill area about 10 acres in size and underlined with very low permeable clay; and (5) the subsequent placement of low permeable covers over the new landfill and closed surface impoundment. Completion of the ICM is projected for the 2002 construction season and will be followed by the installation of the final covers. Approval has been given to the conceptional impermeable cover designs which will be finalized after final landfill contours are determined.

WMA Groundwater Contamination

Leachate generated by the landfill and surface impoundment is collected at the WMA, transported to an accumulation tank and then sent to the chemical WWTP at the MPA for treatment. Some leachate has migrated to the subsurface and contaminated the groundwater with heavy metals and other key inorganic constituents identified in the table below. Eight years of groundwater monitoring completed at the WMA indicates that most key contaminant levels have decreased over time, but some continue to exceed groundwater cleanup levels protective of drinking water.

Cleanup Level (ug//)	Constituent	Range (ug/l)	Highest Concentration In Year 8 (ug/l)	Highest Concentration In Year 7 (ug/l)	Highest Concentration In Year 6 (ug/l)
25.0*	Arsenic	1.3 to 370.	8.	67.	210.
50.0*	Chromium	3.8 to 4,000.	65.	510.	3,700.

Cleanup Level (ug//)	Constituent	Range (ug/l)	Highest Concentration In Year 8 (ug/l)	Highest Concentration In Year 7 (ug/l)	Highest Concentration In Year 6 (ug/l)
50.0*	Hexavalent Chromium	10. to 90.	20.	90.	70.
300.0*	Iron	118. to 221,000.	11,800.	55,000.	140,000.
15.0*	Lead	1.3 to 300.	1.	300.	55.
180.0**	Molybdenum	2.7 to 2,600.	2,120.	2,500.	1,200.
<1,500.0*	Fluoride	100. to 9,600.	9,600.	7,000.	3,600.

* NYS Groundwater Quality Standard For Drinking Water.
**USEPA Health Risk Based Drinking Water Value

After the waste at the landfill and impoundment is consolidated into newly constructed units and capped with impermeable covers, leachate generation will be significantly reduced, if not eliminated, and the groundwater will be further protected from contamination by the impermeable natural clay underlying the units.

Main Plant Area (MPA) Soil-Building Contamination And Corrective Action
Melt Shop Region.

This region includes: the Melt Shop where stainless steel was produced; the Baghouse used for the collection of dust generated by the steel making process; and the Caster Building where a continuous strand of billet was formed from molten steel. Contaminated fill was not encountered in this region. However, the deeper subsurface soils (3.0 to 8.0 feet), located north of the Melt Shop and in the vicinity of an underground fuel oil storage tank, are contaminated with SVOCs (ranging from 0.2 to 100.0 mg/kg) and benzene compounds (ranging from 9.2 to 78.0 mg/kg). The nature of the latter compounds suggest that releases of gasoline and fuel oil took place at this location. Also, these soils have a strong petroleum odor, dark stains and TPH levels up to 890 mg/kg that can be associated with fuel oil. Surface soils (0 to 12 inches) located in this region are contaminated with metal constituents. Cadmium TCLP concentrations (3.1 mg/l) exceeded the regulatory level and the range of total metal concentrations detected in this area are as follows : arsenic (0.18 to 12.0 mg/kg); cadmium (4.5 to 100.0 mg/kg); chromium (105.0 to 12,000.0 mg/kg); lead (26.0 to 770.0 mg/kg); molybdenum (11.4 to 810.0 mg/kg); nickel (63.9 to 5,800.0 mg/kg);vanadium (23.0 to 829.0 mg/kg); and zinc (73.8 to 7,000.0 mg/kg). Metal concentrations fall off significantly in the subsurface soils below one foot. EAF dust generated in the Melt Shop's two electric arc furnaces and collected in the adjacent Baghouse contributed to this soil contamination. Since EAF dust, a hazardous waste, contaminates the Baghouse and Melt Shop an ICM has been implemented to decontaminate and close both buildings. This ICM is expected to be completed during the summer of 2001 and involves the following actions: (1) removal of bags containing EAF dust in the Baghouse and lime in adjacent storage bins; (2) the application of vacuum decontamination procedures to remove residual dust from the structures of both buildings; (3) removing for off-site disposal asbestos; (4) demolition of both buildings including the adjacent Castor Building and the two lime storage bins; (5) removing and selling the two caster machines; and (6)salvaging all structural steel and other steel equipment. All bags of EAF dust and vacuumed materials is disposed of off-site as hazardous waste. During demolition all overhanging concrete will be dropped in place on top of the soil/concrete floor. After demolition of the buildings a work plan will be developed for remediating the surrounding surficial soil contamination and for managing the residual concrete debris and contaminated soil floor of the demolished Melt Shop.

Rolling Mill Region.

This region contains five vacant buildings associated with stainless steel cold and hot finishing operations (i.e., rolling, barturning, anneling, grinding, forging, pressing and vacuum arc remelting). The Rolling Mill and Forge Press Buildings have large, open, deep pits that were used for collecting cooling water/lub oils and housing equipment respectively. These pits which now collect infiltrating groundwater will need to be closed in the future. Fill material in this region, containing metal contamination just above background levels, was encountered between 2.0 to 4.0 feet below the surface. However, the surficial soils (<2.0 feet) around the region and in the floors of most buildings contain elevated levels of total metals that are found in stainless steel (e.g., chromium and nickel). Very small pieces of fragmented stainless steel metal generated by past finishing operations appear on both the soil and floor surfaces. The high end of the concentration range is about one half that found in the Melt Shop region. Staining by petroleum hydrocarbon contamination is present in many of the vacant buildings caused by leaks and spills of lubricating oil, quenching oil and heat transfer oil, but not PCBs. This contamination is focused around equipment that used and areas that stored petroleum hydrocarbons. The deeper subsurface soils (6.0 to 10.0 feet) located in this region, especially around the two underground fuel oil tank locations, are contaminated with SVOCs ranging from 0.5 to 277.0 mg/kg. These soils have a strong petroleum odor, dark stains and TPH levels up to 20,000.0 mg/kg that can be associated with fuel oil. The remediation work plan for these buildings, including the inside and outside contamination will be developed at a latter date.

Transformer Areas.

After the facility ceased operations, fourteen transformers remained throughout the MPA. Three remain operational at the Extrusion Plant. An ICM was implemented that removed eleven of the transformers, including the oils containing PCBs. Surface soils around these transformers are presently contaminated with PCBs, with concentrations ranging from 1 to 170 mg/kg. Also, these surficial soils contain residual metal contamination that is similar both in contaminants and concentrations to those detected in the regions where the transformers are located. Mush of this contamination appears on the surface as very small pieces of fragmented stainless steel. The work plan addressing the remediation of Baghouse/Melt Shop soil contamination will also address remediating PCB and metal contaminated surface soil around the transformers.

Scrap Metal Storage Region.

This region consists of a large parcel of property located at the southwestern section of the MPA. Fill material located 3.0 to 8.0 feet below the surface south of the Barturning Building and west of the Extrusion Building contains metal contaminants at levels just above background. Fill material located 3.0 to 8.0 feet below the surface south of the Extrusion Building contains elevated metal contamination similar in constituents and concentrations found in this region's surficial soils (down to 2.0 feet). This contamination is consistent with metal constituents found in stainless steel. The high end of the concentration range is about one half that found in the Melt Shop region and appear to be stainless steel fines and very small pieces of fragmented metal. In the southern section of this region used equipment, including transformers and about 1,100 tons of metal was stored prior to being scraped. Residual lubricant was present on much of the scrap metal and contributed to the surficial soil contamination. Rail cars carrying raw materials, finished products and fuel oil traveled through the area when the facility was in full operation. All the rails have been removed and sold as scrap steel. After equipment and scrap metal removal both large and small pieces of stainless steel remained embedded in the surface soils. An ICM was implemented that recovered for sale the larger pieces of embedded stainless steel. Elevated levels of PCBs were focused in deeper soil at two isolated locations at the southern most end of the region south of the Extrusion Building with the highest concentration detected being 190 mg/kg. PCB concentrations detected at other sampling locations in this region were less than 10 mg/kg. The PCB soil contamination will be addressed in the work plan for the transformer soil contamination. The principal organic contamination detected in surficial soils of this region are petroleum related with the highest total petroleum hydrocarbon (TPH) levels (1,100 and 8,600 mg/kg) being present in soils no deeper then two feet. The petroleum and metal contamination in the soils of this region will be addressed at a latter date.

Technical Services, Storage And Transportation Buildings.
Elevated concentrations of lead and vanadium were detected in the soils in front of these buildings. The results of the toxicity characteristic leaching procedure (TCLP) tests (98.0 mg/l of lead) indicated that the soil exhibited a hazardous waste characteristic. During construction of the passive groundwater ICM in the Fall of 2000 this soil was removed and disposed of off-site as hazardous waste.

Extrusion Region.
The Extrusion Plant remains operational along with the chemical WWTP. The in-ground steel Slippery Water Tank (SWT) was part of a system of above and below ground holding tanks, settling tanks, and skimmers which removed oils then recycled the cooling water back to the press. The oily water is now sent to the API Separators for processing. The SWT was decontaminated and closed in-place under an approved NYSDEC closure plan in 1996. Surficial soil sampling around the tank during the Phase II RFI indicated no releases of organic hazardous contaminants, including PCBs from the unit. However, metal constituents consistent with stainless steel were detected at elevated concentrations from the surface down to 6.0 feet. The levels are similar to those found in the Rolling Mill region.

A concrete Extrusion Pit situated under the extrusion press collects process cooling water and any oil that leaks from the equipment. Its location precludes an integrity inspection. Capacitors located in the vicinity of the press had exploded in the past and released PCBs to the Pit and its wastewater. This wastewater was sent to the South Lagoon located at the southeast corner of the MPA. In 1988 the Pit and pipeline leading to the Lagoon were sampled and PCBs were detected ranging from <5.5 to 2,500.0 mg/kg with the highest levels in the pipe. Although the pipe and Lagoon areas were cleaned at that time by removal of contaminated solids and oils there was no confirmation sampling carried-out. Subsequently in 1989 PCBs between 1.0 and 17.0 mg/kg were detected in soil samples taken around the Lagoon. PCBs in sludge samples taken at the same time ranged from 0.0 to 225.0 mg/kg. However, during the Phase II RFI no PCBs were detected in soil borings taken along the west side of the Lagoon or to the south near the underground discharge pipe. Operation of the Lagoon ceased in 1990 when the process wastewater was sent to then newly constructed API Separators. ICMs implemented in 2000 up-graded these Separators and converted a Hudson River water intake line to a new outfall which handles discharges from the API units and the WWTP. A closure plan addressing conformational sampling for the South Lagoon area is expected to be made part of the work plan addressing transformer and Baghouse soil contamination.

The chemical WWTP units, including the in-ground concrete, synthetically lined leach and surge pits, were determined not to be leaking during the RFI but will need to be addressed at closure since their surfaces have been contaminated with hazardous constituents. However, past releases in the vicinity of this WWPT have contaminated the soil and groundwater with the metal contaminants. Both the surface soil (0 to 2.0 feet) and the deeper soils (3.0 to 8.0 feet) contain arsenic, cadmium, chromium, lead, molybdenum and nickel at the elevated concentrations detected in the Melt Shop region soils.

Fuel Oil Storage And Transport
Fuel oil was delivered to the facility by rail in tank cars and then transported by an underground line to seven underground tanks located in the northwest corner of the MPA. These tanks having a capacity of 178,000 gallons leaked and were replaced by a 300,000 gallon above ground storage tank in 1941 located on the west end of the property. Fuel was transported by underground lines to three underground storage tanks in the vicinity of buildings where it was used for heating. Leaks from the piping and old underground tank system over the years contaminated deep subsurface soils and groundwater. Fuel oil constituents were detected in deep subsurface soils with TPH contamination ranging from 19.0 to 7,000.0 mg/kg in test pits constructed at several locations. All three underground tanks and the 300,000 gallon above ground fuel tank have had their contents removed and ICMs have been implemented for the groundwater contamination. Petroleum soil contamination in the vicinity of the underground tanks and piping will be addressed at a later date.

MPA Groundwater Contamination And Corrective Action

During the Phase I RFI completed in 1995, groundwater in the vicinity of the Pickle House and down gradient of this area was found to be significantly impacted with metal contamination in excess of the groundwater action levels both in the overburden and bedrock water bearing zones. The higher contaminant concentrations have been detected in the bedrock groundwater. An ICM consisting of two overburden and two bedrock groundwater recovery wells was subsequently implemented that year. Recovered contaminated groundwater is treated in the chemical WWTP and discharged to the Hudson River via the new outfall. Since the ICMs operation began in 1994 contaminant concentrations in both water bearing zones have significantly decreased over time, but still remain above cleanup levels. Monitoring wells 19 and 19B (bedrock well) located across the street from the MPA on vacant commercial property indicate nickel is exceeding its cleanup level. The table below compares highest concentrations for contaminants indicative of releases from the pickling operation both before and after ICM implementation in overburden and bedrock water bearing zones.

Constituent	Cleanup Level-ug/l	1995-ug/l	2000-ug/l
Beryllium	3.0*	9. to 139.	10.
Cadmium	5.0*	3.4 to 74.2	1.4
Chromium	50.0*	23.5 to 86,500.	70. to 221.
Nickel	100.0*	3,460. to 334,000.	3,350 to 14,300.

* NYS Groundwater Quality Standard For Drinking Water.
**USEPA Health Risk Based Drinking Water Value

During the Phase I RFI PCBs were detected at 21.0 ug/l in the overburden groundwater just west of the South Lagoon. The March 2001 Annual Groundwater Report for February, June, September and December of 2000 shows PCBs present at the same location ranging from 0.29 to 5.2 ug/l. This is above the cleanup concentration of 0.1 ug/l that is protective of drinking water. This same document reported PCBs at concentrations ranging from 0.43 to 1.2 ug/l in overburden MW-14 located in the southeast part of the Scrap Metal Storage Region. During the Phase I RFI PCBs were detected at 1.1 ug/l in the bedrock MW 1B located in the southern most section of this Region.

The most significant groundwater contamination at the MPA is fuel oil which has been detected as LNAPL floating on the surface of the overburden groundwater table. LNAPL thickness varies and fluctuates with the water level. This contaminant plume flows down through the Rolling Mill Region towards Lincoln Avenue and the Kromma Kill Creek. However, groundwater contamination from fuel oil extends throughout the MPA as evidenced by the presence of elevated concentrations of fuel oil SVOCs in many of the MPA monitoring wells. Total SVOC concentrations up to 3,337.0 ug/l have been detected in overburden MW 1 located at the southern most section of the MPA in the Scrap Metal Storage Region.

An ICM recovery well R-3 located on the north side of the Anneling Building has been operating since 1989 and has recovered over 39,000 gallons of LNAPL. Since groundwater flow is to the east towards Lincoln Avenue and the Kromma Kill Creek, a second ICM, a passive recovery trench system with its own oil skimming system, was installed in the Fall of 2000 on RealCo property and parallel to Lincoln Avenue to act as a deterrent for off-site migration of LNAPL contaminated groundwater to the Creek.

Surface Water Contamination And Corrective Action

Prior discharges to the Kromma Kill Creek from the MPA on-site API Oil/Water Separator and chemical WWTP were violating stringent NYS discharge permit effluent limitations set for iron. To mitigate these violations and satisfy a USEPA deadline, an ICM was implemented to construct an outfall to the Hudson River. Since the large Hudson River intake water line was to be abandoned its conversion to an outfall was completed as an ICM in March 2001 and became operational in April 2001. ICMs discussed for the MPA fuel oil groundwater contamination are

expected to mitigate impacts to the Kromma Kill Creek flowing adjacent to the plant.

During the Phase I RFI surface water samples were taken at several locations in the Creek adjacent to the WMA and MPA. Hazardous constituents detected did not exceed their respective NYS Water Quality Standard for a Class D stream. However, the water quality standard for total iron (300.0 ug/l) is continuously exceeded because of its ubiquitous presence in the region's groundwater and from contamination by the WMA. Surface water at the WMA is monitored semi annually for a number of inorganic constituents with water quality standards, including ammonia, arsenic, chloride, chromium, fluoride, hexavalent chromium, copper, iron, sodium, sulfate and lead as part of the WMA's groundwater monitoring program. Concentrations of ammonia, chloride, fluoride, sodium, sulfate and total iron are elevated at the Creek's up-gradient background sampling location. Because opening the landfill and surface impoundment during reclamation activities had the potential to increase contaminant loads to the Creek's surface water and sediments a monthly monitoring program was initiated for the key contaminants total chromium and hexavalent chromium. In order to mitigate impacts to the Creek from erosion during rain events and on going ICM activities a temporary detention pond was constructed. The pond's discharge is piped to the MPA chemical WWTP prior to its discharge to the Hudson River.

Since the first sampling of the Creek began in 1993 contaminant concentrations contributed by the WMA have declined significantly. However, the standards for key contaminants hexavalent chromium (16.0 ug/l), and total chromium (570.0 ug/l) have been periodically exceeded in the unnamed tributary flowing east from the WMA and into Kromma Kill Creek. Since the beginning of ICM activities in April 2000 only three exceedances for total chromium (1,100.0, 957.0 and 843.0 ug/l) have been detected in the unnamed tributary. But in the Creek down-steam of this tributary the water quality standards are not being exceeded for either of those two key constituents. Re-consolidation of the waste material and the installation of final impermeable landfill and surface impoundment covers in 2002 is expected to mitigate impacts to the unnamed tributary and Creek.

Surface Water Sediment Contamination And Corrective Action.

The highest elevated concentrations of metal contamination (e.g., barium-224.0 mg/kg, chromium-2,350.0 mg/kg, molybdenum-364.0 mg/kg and nickel-2,030.0 mg/kg) were detected in the Kromma Kill Creek sediments adjacent to the WMA during the Phase I RFI in 1995. The metal concentrations decreased in the Creek's sediments down-stream and adjacent to the MPA where petroleum hydocarbon concentrations increased up to 61.0 mg/kg due to the fuel oil releases from the MPA. Monthly monitoring during ICM activities continue to detect elevated concentrations of total chromium in the sediments of the unnamed tributary (e.g., ranging from 35.1 to 1,320.0 mg/kg). In the Creek, just down stream from where the unnamed tributary enters the Creek, there have been periodic detections of total chromium in the Creek's sediment that have ranged from 61.6 to 302.0 mg/kg. These levels exceed the NYS severe effect level of 110.0 mg/kg for total chromium.

Air (Outdoors).

The surface soils at the MPA contain elevated levels of metal contamination which is in the form of fine and fragmented pieces of metal. This metal is either embedded into the surface soils or of sufficient weight to preclude it from becoming air bone as fugitive dust. A baseline Air Pathway Analysis was completed for the site as part of the RFI to predict concentrations of constituents at the property boundary and for the nearest off-site receptor(s). Results were compared to the NYSDEC guideline concentrations; and the 24-hour impact of PM_{10} was compared to the federal PM_{10} standard. Analysis concluded that airborne migration of surface soils from the site does not exceed the guideline standards. At the WMA, air is monitored for chromium, hexavalent chromium and particulate matter, as part of the landfill reclamation and closure activities. There have been no exceedances since commencement of the project in March 2000.

References.

1. Semi-Annual Report Quarterly Groundwater Monitoring Program Waste Management Area, February 23, 2001.
2. Semi-Annual Report Surface Water Monitoring Program Waste management Area, February 23, 2001.
3. Annual Report Groundwater Monitoring Program Main Plant Area. March 30, 2001.
4. Phase II RFI Report, AL Tech Speciality Steel Corporation, Watervliet, New York facility, December 30, 1998.
5. Phase I RFI Report, AL Tech Speciality Steel Corporation, Watervliet, New York facility, August 11, 1995.

6. Environmental Summary Report and Preliminary Engineering Evaluation, AL Tech Speciality Steel Corporation, Watervliet, New York facility, November 23, 1998.

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?
Summary Exposure Pathway Evaluation Table

Potential Human Receptors (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	No	No	No	No	No	No	No
~~Air (indoors)~~							
Soil (surface, <2 ft)	No	No	No	No	No	No	No
Surface Water	No	No	No	No	No	No	No
Sediment	No	No	No	No	No	No	No
Soil (subsurface >2 ft)	No	No	No	No	No	No	No
~~Air (outdoors)~~							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_X_ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and References:

Site Conditions.

The WMA is not operational, but under going remedition. The accessible sections of the WMA are secured by fencing to keep-out trespassers. The steep and rugged topography in the vicinity of Kromma Kill Creek to the east of the WMA acts as a natural barrier to trespassers. Therefore, human contact with contamination is limited to remediation workers who adhere to a health and safety plan. At the MPA workers are present at the Extrusion Building, the Administration Offices and periodically at the facility's chemical WWTP and API Separators. VOCs are not present in the subsurface at these locations and indoor air contamination from the subsurface is not an issue. Fencing keeps-out trespassers from both the operational and abandoned sections of the MPA. There is human contact with contamination at the abandoned section of the MPA by remediation workersb who adhere to a health and safety plan.

Groundwater.

Contaminated groundwater is not used for any purpose, including being a source for drinking water onsite or off-site. However, the State considers all its groundwater to be a potential source of potable water and should be remediated to cleanup concentrations which are the NYS GA Groundwater Quality Standards and Guidance Values. There have been periodic exceedances of these cleanup levels at monitoring wells located near the facility boundary. At the WMA and MPA a small portion of the overburden groundwater is intercepted by the Kromma Kill Creek where it is assimilated by the Creek's larger volume of flowing water. Residences and commercial establishments in the vicinity of the facility are connected to the Town's drinking water supply. Therefore, no human exposure exists for groundwater contaminated at concentrations above levels protective of drinking water and that may migrate off-site. Trespassers, who are kept off the facility by fencing and natural barriers, would not be expected to come in contact with contaminated groundwater. Workers sampling and managing contaminated groundwater corrective measures do so following an appropriate health and safety plan.

Soil.

The facility is currently not operating, with the exception of the Extrusion Area. There are no known day care centers in the vicinity of the MPA or the WMA and trespassers are restricted access by fencing and natural barriers. Exposure by inhalation of contaminated fugitive dust by workers or the public living in the vicinity of the MPA is not considered a exposure route under normal conditions. Contamination in the surface soils is either primarily small pieces of fragmented stainless steel metal embedded into the surface soils and not easily transported as dust or run-off. Also, the vegetation covering large sections of the MPA and the asphalt covering the area around the Bag House act to further suppress the transport of surface contaminants. Although remedial activities at the MPA and WMA have the potential to disturb both surface and deep soil contamination and cause human exposure through the inhalation pathway protection is afforded to remediation workers by a health and safety plan. MPA workers and the public located in the vicinity of the MPA and WMA where remediation is taking place are protected from contaminated fugitive dust generated by such activities by an air monitoring network that will trigger the implementation of appropriate corrective measures to mitigate human exposure.

Sediment And Surface Water.

The Kromma Kill Creek in the vicinity of the MPA and WMA is not considered a recreational stream and not used for fishing or swimming. The flow is normally low except in the spring when the snow melts and/or after heavy rains occur. The Creek does not support fish and pools deep enough for swimming are limited to the area adjacent to the WMA. In the Creek's water hazardous constituent concentrations meet NYS intermittent stream standards. But the unnamed tributary that flows through the WMA and then into the Creek has elevated levels of contamination in both its surface water and sediment. However, access through the WMA is restricted by fencing to the north, south and west. To the east the surrounding area's steep and rugged topography offers a natural

restrictive access barrier to the WMA. On the other side of the Creek adjacent to the WMA heavy vegetation and rugged terrain restricts access to the Creek. The Creek narrows down to less then three feet in width as it flows downstream past the WMA and through heavy vegetation until it crosses under Spring Street where it enters the fenced in MPA. The Creek exits the MPA by flowing through a culvert located under Lincoln Avenue. It then discharges from the culvert to a small open area across the avenue that is about six feet below the road's surface. Here the water, which does not form a pool, remains exposed for about thirty feet before entering a underground tunnel which carries the water downstream to the Hudson River. Much of the sediment found in the Creek comes from upstream of the WMA where residential development is under way. In April 2001 a large volume of sediment that washed down the Creek during heavy rain falls and snow melts early in the year had to be removed to keep the Creek flowing. The removed sediment was sampled and found to contain negligible concentrations of metals. The fluid movement of clean up-stream sediment in the Creek during high stream flows has the potential either to cover some of the old contaminated sediment in-place or to cause it to attenuate as it is transported down-stream. The Creek's sediment adjacent to the WMA and the MPA will be sampled after landfill closure to determine residual levels of contaminants and to assess the need for corrective action implementation. Currently human exposure is controlled by restricting accessibility to the Creek and tributary with fencing and natural restrictive barriers.

References.

Refer to the information and references listed under paragraph 2 for details.

Footnotes:

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

Footnotes:

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5 Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

__X__ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the **RealCo Inc. (formerly AL Tech Speciality Steel Corporation)** facility, EPA ID # NYD060545209, located at Watervliet, New York, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

Completed by: Alicia Barraza Date: June 18, 2001

Alicia Barraza
Environmental Engineer 1
New York State Department of Environmental Conservation (NYSDEC)

And

Steve Kaminski Date: June 18, 2001

Steve Kaminski
Chief, Eastern Engineering Section
NYDEC

Supervisor: Paul J. Merges Date: June 18, 2001

Paul J. Merges
Director, Bureau of Radiation and Hazardous Site Management
NYSDEC

Locations where References may be found:

NYSDEC
Division of Solid and Hazardous Materials
625 Broadway
Albany, New York, 12233-7252

Contact telephone and e-mail numbers

Alicia Barraza (518) 402-8592 E-Mail: aabarraz@gw.dec.state.ny.us

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

REFERENCE:

USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, TROY SOUTH, NY, DATED 1953, PHOTOREVISED 1980. SCALE 1:24000.

SCALE, FEET

0 2000 4000

ENVIRONMENTAL STRATEGIES CORPORATION
ESC
Four Penn Center West, Suite 315
Pittsburgh, Pennsylvania 15276
(412) 787-5100

Figure 1

SITE LOCATION MAP

AL TECH SPECIALTY STEEL CORPORATION
WATERVLIET, NEW YORK

PHASE II RFI

Drawn By: pdz 101698
Checked: Approved:
Drawing Number: J3804-A06

Zdinak Z:\D...\48\403804\A06.dwg :10 16, 1998 2:39p

SOLID WASTE MANAGEMENT UNITS

1 WASTE ACID PITS
2 EXTRUSION PIT
3 CONTAINER STORAGE AREAS
4 LIME NEUTRALIZED WASTE PICKLE LIQUOR SLUDGE CONTAINERS
5 WASTE MANAGEMENT AREA (NOT SHOWN, REFER TO FIGURE 2)
6 NORTHEAST QUADRANT FILL AREA
7 SOUTH LAGOON
8 EAF BAGHOUSE
9 SCRAP METAL STORAGE AREAS
10 WASTEWATER TREATMENT PLANT
11 HYDROMATION PLANT
12 13 14 WASTE OIL ACCUMULATION AREAS
15 CALOW UNIT
16 17 LIME STORAGE VESSELS
18 EXTRUSION SLIPPERY WATER
19 STEAM CLEANING PAD
* 20 PROCESS DISCHARGE PIPE

AREAS OF CONCERN

T TRANSFORMERS/CAPACITORS
* 1 PROCESS PITS
2 SEPTIC TANK
3 PICKLING ROOM
4 THOMPSON ETCH ROOM
5 6 7 UNDERGROUND STORAGE TANKS
8 FUEL OIL STORAGE TANKS AND DISTRIBUTION SYSTEM (NOT SHOWN)
9 FORMER COAL STORAGE AREA
10 KROMMA KILL
* 11 OILED ROADS
12 13 COOLING TOWERS

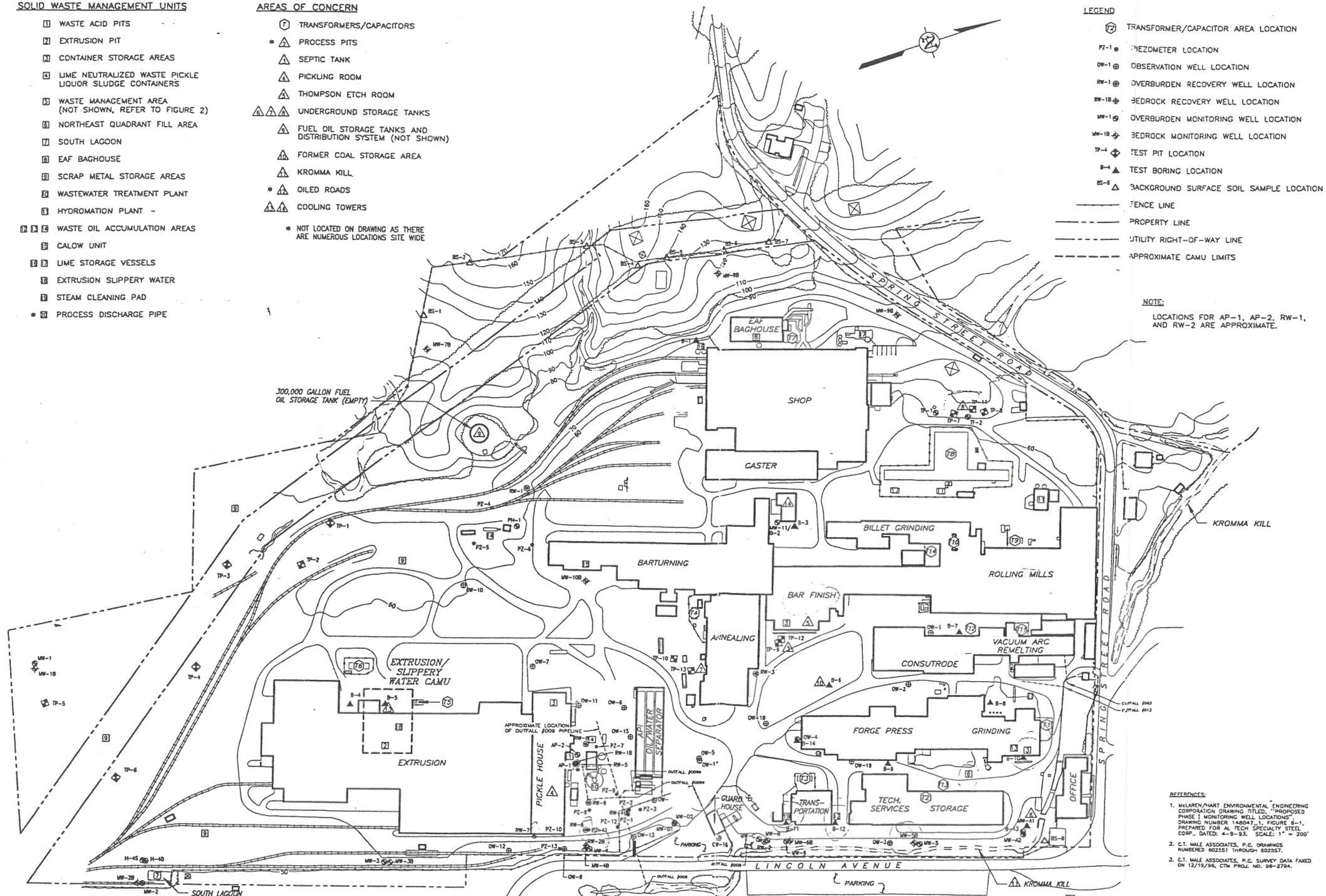
* NOT LOCATED ON DRAWING AS THERE ARE NUMEROUS LOCATIONS SITE WIDE

LEGEND

T2 TRANSFORMER/CAPACITOR AREA LOCATION
PZ-1 PIEZOMETER LOCATION
OW-1 OBSERVATION WELL LOCATION
RW-1 OVERBURDEN RECOVERY WELL LOCATION
RW-1B BEDROCK RECOVERY WELL LOCATION
MW-1 OVERBURDEN MONITORING WELL LOCATION
MW-1B BEDROCK MONITORING WELL LOCATION
TP-4 TEST PIT LOCATION
B-4 TEST BORING LOCATION
BS-6 BACKGROUND SURFACE SOIL SAMPLE LOCATION
FENCE LINE
PROPERTY LINE
UTILITY RIGHT-OF-WAY LINE
APPROXIMATE CAMU LIMITS

NOTE:

LOCATIONS FOR AP-1, AP-2, RW-1, AND RW-2 ARE APPROXIMATE.



REFERENCES:

1. McLAREN/HART ENVIRONMENTAL ENGINEERING CORPORATION DRAWING TITLED, "PROPOSED PHASE I MONITORING WELL LOCATIONS", DRAWING NUMBER 148047_1, FIGURE 6-1, PREPARED FOR AL TECH SPECIALTY STEEL CORP., DATED: 4-9-93. SCALE: 1" = 200'
2. C.T. MALE ASSOCIATES, P.C. DRAWINGS NUMBERED 602551 THROUGH 602557.
3. C.T. MALE ASSOCIATES, P.C. SURVEY DATA FAXED ON 12/19/96, CTM PROJ. NO. 96-2794.

REVISIONS

DATE	DESCRIPTION	BY

SITE LAYOUT – MAIN PLANT AREA (PRE-PHASE II RFI)

ENVIRONMENTAL SUMMARY REPORT AND PRELIMINARY ENGINEERING EVALUATION

PREPARED FOR

AL TECH SPECIALTY STEEL CORPORATION WATERVLIET, NEW YORK

ENVIRONMENTAL STRATEGIES CORPORATION
Four Penn Center West
Suite 315
Pittsburgh, PA 15276
(412) 787-5100

ESC

LEGEND

MW-16 ⊗ OVERBURDEN MONITORING WELL LOCATION AND DESIGNATION

MW-3 ⊗ BEDROCK MONITORING WELL LOCATION AND DESIGNATION

PZ-1 ● PIEZOMETER LOCATION AND DESIGNATION

FENCE LINE

PROPERTY LINE

APPROXIMATE LIMITS OF FORMER WASTE PLACEMENT

CLOSED SURFACE IMPOUNDMENT

NOTE:

ALL WELL LOCATIONS ARE APPROXIMATE.

REFERENCES:

1. C.T. MALE ASSOCIATES, P.C. DRAWINGS NUMBERED 6025S1 THROUGH 6025S7.
2. WESTON GEOPHYSICAL CORPORATION, "SEISMIC REFRACTION SURVEY, AL TECH SPECIALTY STEEL CORPORATION LANDFILL, WATERVLIET, NEW YORK," DATED: DECEMBER 1992, PREPARED FOR: McLAREN/HART ENVIRONMENTAL ENGINEERING CORPORATION, FIGURE 2, DRAWING TITLED "PLAN MAP WITH SURVEY COVERAGE."
3. BLASLAND, BOUCK & LEE, INC. DRAWING TITLED, "SITE DEVELOPMENT PLAN," FROM: RECLAMATION REMEDIAL DESIGN/REMEDIAL ACTION REPORT, DATED: JULY 1996, FILE NO. 024.70.04F, SHEET 3. SCALE: 1" = 100'.

SCALE, FEET

0 200 400

ENVIRONMENTAL SUMMARY REPORT AND PRELIMINARY ENGINEERING EVALUATION

PREPARED FOR

AL TECH SPECIALTY STEEL CORPORATION

WATERVLIET, NEW YORK

Figure 2

WASTE MANAGEMENT AREA

ENVIRONMENTAL STRATEGIES CORPORATION

Four Penn Center West, Suite 315

Pittsburgh, Pennsylvania 15276

(412) 787-5100

Drawn By: 100797

Checked: 11/23/98

Approved:

DWG Number: 483804-B08