Appendix A

Record of Decision Documents

DECLARATION STATEMENT - RECORD OF DECISION

ICI AMERICAS, INC. (STAUFFER CHEMICAL) SITE
TOWN OF SKANEATELES (T), ONONADAGA COUNTY, NEW YORK
SITE NO. 7-34-010

Statement of Purpose and Basis

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

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Stauffer Chemical Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

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

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Stauffer Chemical Site and the criteria identified for evaluation of alternatives the NYSDEC has selected Sitewide Alternative-6 (SWA-6). The components of the remedy are as follows:

- Mobilization and construction of on-site haul roads, materials handling facility, and a water treatment system.
- Construction of an on-site, engineered treatment and disposal cell, hereby designated as a Corrective Action Management Unit for hazardous waste management.
- Temporary dewatering and treatment of water from the existing Landfill, AEC 1.
- Excavation and processing of contaminated soils and waste from AEC 1 (est. 45,000 CY), followed by treatment and disposal in the on-site, engineered cell.

- Excavation and processing of organics contaminated soils from AEC 2 (est. 4,100 CY), followed by treatment and disposal in the on-site, engineered cell.

- Construction of a 5 acre clay cap over AEC 2 after excavation, and construction of a vertical cutoff wall between AEC 2 and the creek to isolate residual metals contaminated soils.

- Construction and operation of a Soil Vapor Extraction and Bioventing system within the treatment cell as wastes are placed. Construction and operation of supporting equipment and air treatment systems needed to operate the SVE/Bio treatment system.

- Dredging and processing of contaminated sediments from AEC 5, Skaneateles Creek, (est. 2,700 CY) followed by treatment and disposal in the on-site, engineered cell.

- Design, installation and operation of a shallow groundwater pump and treatment system comprised of extraction wells in the vicinity of AEC 1 and a collection trench at AEC 2.

- No action for deep groundwater, but with monitoring to assess improvements expected to accrue from removing site source areas and natural attenuation.

- Contingency for future pump and treat action on AEC 4 should source removal and natural attenuation not promote adequate improvements to the deep bedrock groundwater.

- Institutional Controls

New York State Department of Health Acceptance

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

Declaration

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

3/28/96
Date

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

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RECORD OF DECISION

ICI - AMERICAS, INC. (STAUFFER CHEMICAL) SITE

Town of Skaneateles
Onondaga County, New York
Site No. 7-34-010
March 1996

SECTION 1: PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) has selected **Site Wide Remedial Alternative SWA-6.** This remedy is selected to address the potential threat to human health and the environment created by the presence of hazardous waste at the site.

The selected remedy is a composite of no action, containment, removal, treatment and on-site disposal. It includes: an aggressive removal action for the landfill source area with treatment and disposal of wastes in an on-site engineered cell; a similar removal, treatment and disposal action for organic contaminated soil from the source area north of the Main Plant Building; containment for residual metal contaminated soils; dredging of sediments from Skaneateles Creek with treatment and disposal in the on-site cell; a groundwater extraction and treatment option for shallow groundwater affected by the source areas; and no action with natural attenuation for deep groundwater. **SWA-6** will also include groundwater monitoring both on-site and off-site to evaluate the progress of cleanup efforts and natural attenuation. A deep bedrock extraction and treatment action may be required contingent upon the performance of the other remedial actions (source removals and shallow groundwater extraction and treatment). This remedy also includes a treatment and disposal cell, hereby designated as a Corrective Action Management Unit (CAMU) under the regulations governing hazardous waste facilities.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Stauffer Management Company (SMC) site is in the Town of Skaneateles, Onondaga County and is located at 4512 Jordan Road three miles north of Skaneateles Lake and 20 miles west of the City of Syracuse. The SMC facility is approximately 120 acres in size, of which about 20 acres were used for industrial operations. Skaneateles Creek, the outlet of Skaneateles Lake, flows in a northerly direction through the western portion of the site. The site is bounded by residential

and commercial areas to the west and north, with undeveloped land immediately to the east and south. Jordan Road runs along the west boundary of the site. The site location is shown on Figure 1.

The SMC site has been subdivided into five Areas of Environmental Concern (AEC) that include the significant source areas and migration pathways. The five AECs are:

AEC 1- Landfill
AEC 2 - Area North of the Main Plant Building (former Organics Plant)
AEC 3 - Shallow Groundwater (overburden and upper bedrock)
AEC 4 - Deep Groundwater
AEC 5 - Skaneateles Creek (seeps, surface water and sediments)

The AECs are shown on Figures 2 and 3.

SECTION 3: SITE HISTORY

3.1 Operational/Disposal History:

The site was used for the manufacture of organic chemicals and detergents for over 30 years. From the mid-1920's to mid-1940's Draycott Mills used the site as a rug and pulp paper mill for manufacture of felt roofing materials. Cowles Chemical Company initiated the manufacture of detergents in the mid-1940's after it assumed ownership of the facility. Organic compounds (mainly toluic acid) were also manufactured at the facility from the late 1950's until 1981. The toluic acid manufacturing process used xylene, one of the major site contaminants, as a raw product. Product formulation of industrial cleaners, cleaning compounds and powders, lubricants, metal finishing compounds, and water softeners was also performed.

An on-site landfill was used by both Cowles and the Stauffer Chemical Company for disposal from the late-1940's until 1973. The landfill reportedly received general plant wastes, including silicate sludges and spent carbons from plant manufacturing processes.

Stauffer Chemical Company purchased the facility from Cowles Chemical Company in 1968, and continued operations until 1985. Stauffer discontinued the manufacture of toluic acid in 1972, however, they continued the manufacture of various organic products until 1981 and inorganic compounds until 1985. Currently, there are no manufacturing activities conducted at the site. A full-time site caretaker is present to maintain the security of the facility and monitor the operation of the on-site leachate treatment facility.

3.2 Remedial History:

Leachate seeps were observed discharging into Skaneateles Creek from the northwest corner of the landfill in 1986. As a result, NYSDEC's Region 7 office required Stauffer to implement immediate actions to intercept and treat the leachate from the landfill seeps and from building seeps and implement a field investigation of the landfill area.

Based on the results of these preliminary investigations, the NYSDEC entered into an Order on Consent with Stauffer Management Company (SMC) on March 28, 1991 that required SMC to conduct a Remedial Investigation/Feasibility Study (RI/FS). The purpose of the Remedial Investigation (RI) was to fully characterize the site, determine the nature and extent of any contamination present in the soil, groundwater, and air, and to evaluate any potential threats to human health and the environment. The Feasibility Study (FS) identified and evaluated remedial alternatives that could be implemented for remedial action at this site. The New York State Departments of Health and Environmental Conservation provided direct oversight of these activities to ensure compliance with the Consent Order.

SECTION 4: CURRENT STATUS

The NYSDEC and NYSDOH have determined that the presence of hazardous waste at the site presents a significant threat to human health and the environment. In response to this determination, Stauffer Management Company has completed the Remedial Investigation/ Feasibility Study (RI/FS) for this site. A report entitled **Final Remedial Investigation Report, Stauffer Management Company Site, Skaneateles Falls, New York,** dated August 1994, has been prepared describing the field activities and findings of the RI in detail. A second report entitled **Final Feasibility Study, Stauffer Management Company Site, Skaneateles Falls, New York**, dated December 1995, has also been prepared to identify and evaluate possible site clean up activities.

4.1 Summary of the Remedial Investigation:

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted in two phases. The first phase was conducted between October 1991 and March 1992 and the second phase between September 1992 and October 1993. The RI activities consisted of the following:

Remedial Investigation Activities	Date Performed Phase I	Phase II
Magnetometer Survey of Landfill	Oct. 1991	------
Landfill Test Pit Excavation	Oct. 1991	------
Landfill Test Borings	Oct. 1991	------
Landfill Perimeter Test Borings	Oct. 1991	------
Test Boring Program North of Main Plant Building	Apr. 1991	Nov. 1992 & Jul. 1993
Baseline Air Sampling	------	Nov. 1992
Air Sampling During Well Installation	------	Dec. 1992
Monitoring Well Installation	Oct. 1991-Apr. 1992	Dec. 1992-Jan 1993 Jul, Aug, Sep. 1993
Piezometer Installation	Nov.-Dec. 1991	------
Continuous Water Level Elevations Monitoring	------	May-Jul 1993
Ground-Water Sampling	Mar-May 1992	Aug-Oct. 1993
Landfill Leachate Sampling	------	Sep 1993
Basement Seep Sampling	Apr 1992	Sep 1993
Skaneateles Creek Seep Sampling	Apr 1992	Oct 1993
Former Raceway Sampling	------	Sep 1993
Creek Surface Water and Sediment Sampling	Apr 1992	Oct 1993
Soil Vapor Contaminant Assessment	------	Jul 1992
Seismic Refraction Survey	------	Jan 1993
Sanitary Sewage System Sampling	------	Sep 1993
Private Well Survey	------	Oct 1993

The Remedial Investigation results identified two principal source areas of environmental contamination, the landfill (AEC 1), and the area of the former Organics Plant (AEC 2). The landfill, which was used from the mid-1940s until 1973, is located southeast of the Main Plant Building across Skaneateles Creek. Analytical samples of the landfill waste showed the presence of very high levels of organic chemicals and metals. Organic compounds were present at up to 20,000 times higher than soil cleanup criteria, with the highest compounds being xylenes. Chlorinated organics and Polynuclear Aromatic Hydrocarbons (PAHs) were also detected in landfill piezometers and seeps downgradient from the landfill. Metals found in the landfill included mercury, chromium, lead, cobalt and arsenic. Chemicals from the landfill were found in groundwater in the overburden and upper bedrock (AEC 3) and, to a lesser extent, in deep bedrock groundwater (AEC 4) beneath the landfill.

Chemical analyses of soils from AEC 2, the former Organics Plant area, showed the presence of xylene at levels about 1,800 times higher than its respective soil cleanup criteria. Several metals were also observed at concentrations greater than the typical background concentrations for metals found in New York State. The overburden and upper bedrock groundwater is contaminated in this area, although at generally lower concentrations than observed near the landfill.

Analyses of monitoring well samples revealed contamination consistently above applicable standards in overburden, upper bedrock and deep bedrock groundwater in areas near the landfill and the former Organics Plant.

Site contaminants were not found in any off-site deep bedrock wells and with one exception, no off-site contamination was found in any of the upper bedrock wells. Low level contamination was detected in one off-site upper bedrock well (MW-16I) at a location about 500 ft. west of the site (800 ft. west of the landfill). Deep bedrock groundwater was not contaminated at this location.

A human health risk assessment was performed as part of the RI, using the analytical data collected from the two-phased field investigation. Conclusions drawn from the risk assessment are that there is a potential health risk through human contact with site wastes and through the potential for use of contaminated groundwater as a drinking water supply. Since nearby residents are obtaining their water from a public system with a remote source, there are no immediate health threats from this exposure pathway. However, concerns remain regarding possible future well installations by individual residents as well as the potential for future migration of contaminants from the site to existing private wells if the site is left uncontrolled.

The analytical data obtained from the RI were compared to applicable Standards, Criteria, and Guidance (SCGs) to determine which areas of the site, if any, warrant remedial action. Groundwater, drinking water and surface water SCGs identified for the Stauffer Management Company site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of the NYS Sanitary Code. SCG's for the soil and sediment were developed using available background conditions, NYSDEC soil cleanup guidelines, risk-based remediation criteria and NYSDEC aquatic sediment guidelines.

Based upon the comparison of remedial investigation results to the SCGs and also considering potential public health and environmental exposure routes, certain areas and media of the site require remediation.

4.1.1 Site Geology:

The overburden overlying the site consist of unstratified glacial deposits and recent aged alluvial deposits. Two types of glacial deposits were present at the site. Over most of the site area, a red clay till was present consisting of a sticky reddish clay with no visible stratification. A brown till consisting of a poorly sorted mixture of clay, silt, sand, gravel, and boulders was present below the southern portion of the landfill and the areas immediately to the south and southwest of the landfill.

A layer of coarse sand, angular gravel, and cobbles, ranging in thickness from 4 to 7 ft., was present directly overlying bedrock south, southwest, and west of the landfill. This layer appears to be associated with a bedrock surface low in this portion of the site.

Soils at the site are underlain by Onondaga Limestone bedrock which is characterized as gray to dark gray, massive to medium bedded, and hard. The limestone is fractured, has an east-west strike, and a gentle southerly dip (<0.5 degrees) across the site. The majority of the fractures are horizontal (parallel to bedding). The bedrock surface is near ground surface in the center of the 120-acre site (at the former rock dam) and slopes downward towards both the south and north. This bedrock high extends under the northern portion of the landfill where very little, if any, soil separates the waste from contacting the bedrock. Bedrock lows are aligned in east-west oriented valleys and are located approximately 800 ft. to the north and south of the former rock dam.

4.1.2 Site Hydrogeology:

There are three distinct zones of groundwater at the SMC site: a shallow zone present in the overburden, an intermediate zone present in the upper bedrock just below the overburden, and a deep groundwater zone present some 60 to 80 feet below ground surface. The shallow overburden and upper bedrock zones together comprise AEC 3. The deep bedrock zone comprises AEC 4.

Lateral migration of groundwater through the overburden is through pore spaces in the soil and is controlled by horizontal hydraulic gradients across the site. These gradients are influenced by both the local topography and surface water drainage.

A general downward vertical hydraulic gradient between the overburden and upper bedrock persists across most of the site. Hydraulic communication between overlying soils and the upper bedrock exists via fractures and/or joints in the upper rock. Groundwater movement from the upper zone bedrock to the deep zone is controlled by the southerly dip of the bedrock strata, with some deviation along the east-west strike.

4.1.3 Extent of Contamination:

4.1.3.1 Landfill Contamination - AEC 1:

Landfill Interior Soil Borings

Samples of soil and waste from within the landfill were collected to help characterize the nature of landfill contents. The analytical results are summarized in Table 1. Thirteen soil samples, from 10 borings, were taken to evaluate the existing soil cover, clay cap, waste fill, and underlying clay layers. Samples of black and white waste found in the landfill were also collected for chemical analyses.

The chemical analyses of landfill samples showed low or Non Detect (ND) levels of organic contamination in the soil cover and clay cap. Conversely, the fill and waste contained very high levels of both Volatile Organic Compound (VOC) and semi-VOC contamination that were up to 20,000 times higher than applicable soil cleanup criteria [toluene, ND to 1,000,000 ppb; total

xylene, ND to 25,000,000 ppb; toluic acid isomers, 81,000 to 1,600,000 ppb]. Very high levels of VOCs and semi-VOCs were also present in samples of the black and white wastes [total xylene, 1,200,000 to 21,000,000 ppb; toluene, 27,000 to 330,000 ppb; toluic acid isomers, 500,000 to 8,500,000 ppb; Polynuclear Aromatic Hydrocarbons (PAHs), 76 to 2300 ppb]. The clay underlying the landfill contained organic contamination derived from the fill but at significantly lower levels [total xylene, 10 to 700 ppb; toluene, 16 ppb; toluic acid isomers, 62 to 1300 ppb].

Two pesticides and one Poly Chlorinated Biphenyl (PCB) were detected in the fill at levels well below their respective soil cleanup criteria [4,4'-DDE, 4,4' DDT, 6.1 to 22 ppb; Arochlor 1254, ND to 230 ppb]. There were no pesticides or PCBs detected in the black or white waste that was sampled. The sporadic presence of these compounds in the landfill and the low concentrations, when found, indicates that these compounds were not disposed in the landfill as waste products and that the landfill is not a significant source of these particular chemicals.

Some inorganic metals were present at elevated concentrations in the fill [cobalt, 8 to 1260 ppm; chromium, 15 to 164 ppm; mercury, 0.1 to 17 ppm]. The black and white waste also contained metals above typical background concentrations [cobalt, 1,020 to 4,230 ppm; mercury, 0.2 to 0.8 ppm; lead, 2 to 160 ppm].

Landfill Perimeter Soil Borings

Samples were collected from around the landfill perimeter area to define the lateral extent of landfill and associated contamination. A total of 15 soil samples were collected for chemical analysis from 14 locations on the perimeter. Sampling depths ranged from 1 to 7 ft. The analytical results are summarized in Table 1.

Results from most perimeter soil samples were either Not Detected (ND) or showed low concentrations of Volatile Organic Compounds (VOCs) and semi-VOCs. Three soil samples taken from the very edge of the landfill contained levels of VOCs and semi-VOCs that were elevated but below soil cleanup criteria [total xylene, ND to 670 ppb; Polynuclear Aromatic Hydrocarbons (PAHs), ND to 2300 ppb; toluic acid isomers, 48 to 170 ppb]. No pesticides were detected in these three samples. However, low levels of two pesticides were detected in other samples [4,4' DDE and 4,4' DDD, 6 to 36 ppb]. Poly Chlorinated Biphenyls (PCBs) were not found in any of the perimeter soil samples. The observed concentrations of inorganic metals were generally consistent with typical background levels.

Landfill Piezometers

Two landfill piezometers, wells used to measure groundwater elevations, were installed into the landfill waste. The piezometers were also sampled and analyzed to characterize landfill leachate. The analytical results are summarized in Table 2. Three VOCs were found in these samples at

levels up to 14,600 times applicable groundwater standards [ethylbenzene, ND to 160 ppb; toluene, 140 to 1,600 ppb; total xylene, 7,900 to 73,000 ppb]. A review of the data indicated that the leachate showed higher concentrations of VOCs on the southern side of the landfill. The only semi-VOCs identified were the toluic acid isomers [range 23,000 to 100,000 ppb]. There were no PCBs detected in the landfill piezometers. However, one pesticide [4,4'-DDE, 0.053 to 0.19 ppb] was detected.

Several inorganic analytes were identified in the piezometer samples at levels above applicable groundwater samples. See Table 2. A comparison of this data to the organics results revealed that where high xylene and toluic acid concentrations were present, cobalt concentrations were also elevated [Range 50.6 to 992 ppb]. This may be attributed to cobalt being used as a catalyst in the production of toluic acid.

4.1.3.2 Former Organics Plant Area Soil Borings - AEC 2:

The purpose of collecting soil samples from seventeen soil borings in the former Organics Plant Area was to delineate the extent of soil contamination initially discovered during installation of MW-5. These samples were taken from around well cluster MW-5, from around a nearby sanitary sewage leachfield, and from near Jordan Road. Analysis of these soil samples showed the presence of VOCs and semi-VOCs at several locations. The analytical results are summarized in Table 1. Total xylene [range 320,000 to 2,200,000 ppb] was found with the greatest frequency and at levels up to 1,800 times applicable cleanup criteria. This is consistent with the history of the former Organics Plant, which used xylene as a raw product in the production of toluic acid.

Semi-VOCs found in these samples were predominately PAHs. The most commonly found PAH, benzo(a)pyrene, also showed the highest concentration [max of 7,900 ppb]. The three toluic acid isomers were identified in four of the samples, with the maximum concentrations of the o-, m-, and p- toluic acid isomers being 19,000 ppb, 46,000 ppb and 14,000 ppb respectively.

One soil sample exhibited low levels of one pesticide [4,4'-DDD at 8.7 ppb] and one PCB [Arochlor 1248 at 59 ppb], both well below applicable soil cleanup criteria. This sample was located adjacent to the former railroad spur. The sparse presence of pesticides or PCBs and the low concentrations indicates that these compounds were not disposed on-site as waste products and that AEC-2 is not a significant source area for these chemicals.

Several inorganic metals were identified in the soil samples at levels above soil criteria. See Table 1. Comparison of the range and average concentrations showed that arsenic, cadmium, lead, mercury, nickel, and zinc exceeded typical background levels for the eastern United States and New York State. A review of the soil boring logs and historic logs show that the area was filled with metals and demolition debris over a seven year period.

Basement Seep

Seeps are entering the basement of the Main Plant Building from the area near the former Organics Plant Area. A basement seep sample was obtained during both sampling rounds and analyzed.

The basement seep samples showed up to 7 VOCs, with total xylene [range, 220 to 2,500 ppb] the predominant VOC and being found at levels up to 500 times applicable groundwater standards. Toluic acid [max of 4,100 ppb] was also present in the basement seep but did not exceed its respective standard. There were no pesticides or PCBs detected in Round 1 or Round 2 seep samples. Inorganic analytes were found in both rounds of sampling elevated above typical background concentrations for groundwater [arsenic, 57.7 ppb; lead, 173.5 ppb].

Raceway and Holding Tank Liquid

A portion of the raceway which connected the former mill pond to the old section of the Main Plant Building can still be accessed. This raceway periodically collects liquids and may serve as a conduit for leachate migration within the building. Samples of liquid from the raceway and from a sanitary sewage holding tank were collected and analyzed. Organic compounds were identified in both the raceway fluid and holding tank liquid with toluene [180 ppb] being the prevalent compound in the holding tank liquid. The raceway fluid contained concentrations below groundwater standards for toluic acid [6 ppb] as did the holding tank liquid [4,100 ppb].

The raceway sample showed concentrations of two inorganic metals [arsenic, 79.2 ppb; lead, 102 ppb] that were elevated above typical background concentrations for groundwater. Analysis of the holding tank liquid also revealed inorganic metals [mercury, 2.0 ppb; zinc, 47.1 ppb] at levels above typical background concentrations for groundwater.

Stormwater Collection Pit Sample

A stormwater collection pit is located east of the Main Plant Building. This pit, which is actually remnants of the former mill discharge pipe, intermittently contains infiltrated groundwater and surface runoff.

Six VOCs were detected in the pit sample [1,1-dichloroethane, 28 ppb; 1,2-dichloro-ethene, 9 ppb, 1,1,1-trichloroethane, 1 ppb; trichloroethane, 2 ppb; tetrachloroethene, 5 ppb; xylene, 3 ppb]. There were no semi-VOCs or toluic acid isomers detected.

Two inorganic analytes identified in this sample [mercury, 0.30 ppb; zinc, 93.7 ppb] were found at concentrations greater than typical background groundwater concentration but lower than levels

observed in nearby overburden water (e.g. MW-5S). Other inorganics were generally at or below typical background levels.

4.1.3.3 Shallow Groundwater - AEC 3:

Overburden Groundwater

Six wells installed as part of the Phase I Investigation, and four additional wells installed as part of the Phase II Investigation, were used to characterize the overburden groundwater. Wells installed as part of Phase I were subject to two rounds of analytical sampling, those installed in Phase II had one round of sampling. The analytical results are summarized in Table 3.

Xylene was present above New York State groundwater standards in five overburden monitoring wells in at least one round of sampling. One Phase II well, MW-5S, was found to have elevated levels of several VOCs and semi-VOCs [total xylene, 28,000 ppb; toluene, 270 ppb; toluic acid isomers, 14,000 ppb] with xylenes being at levels up to 5,600 times higher than its respective groundwater standard. PAHs were detected at lower levels in two Phase II wells located at the former Organics Plant and north of the former Organics Plant, [Range ND to 19 ppb]. Neither pesticides nor PCBs were detected in Round 1 or Round 2 samples.

Inorganic analytes were identified in both the Round 1 and Round 2 samples of overburden groundwater. Comparison of the observed concentrations to Class GA groundwater standards or guidance values showed that the concentrations of six (6) inorganics [aluminum, 885 to 42,800 ppb; arsenic, ND to 46 ppb; chromium, ND to 6870 ppb; copper, 15 to 1320 ppb; lead, ND to 1370 ppb; zinc, 26 to 1140 ppb] were above their respective standard or guidance values. Comparison of the Round 1 and Round 2 results showed that concentrations were generally consistent between rounds, although zinc concentrations increased in Round 2.

Upper Bedrock Groundwater

Eleven wells installed as part of the Phase I Investigation, and seven additional wells installed as part of the Phase II Investigation, were used to characterize the upper bedrock groundwater. Wells installed as part of Phase I had two rounds of analytical sampling, while the Phase II wells had one round of sampling. The analytical results are summarized in Table 4.

In Rounds 1 and 2 the upper bedrock wells in the immediate vicinity of the landfill and former Organics Plant Area were found to be contaminated with VOCs [total xylene, ND to 2,100 ppb; trichloroethene, 54 to 180 ppb; tetracholorethene, 190 to 2,100 ppb; 1,2 dichloroethene, 160 to 1,500 ppb]. High levels of toluic acid isomers [32,000 to 690,000 ppb] were also found in the upper bedrock groundwater samples. Several inorganic metals [aluminum, 107 to 32,500 ppb; arsenic, ND to 910 ppb; chromium, ND to 60 ppb; cobalt, ND to 42 ppb; lead, ND to 128 ppb]

were found at levels exceeding NYSDEC Class GA groundwater standards in both rounds of sampling.

Spatial evaluation of the Round 1 and Round 2 results showed that significant levels of VOC and semi-VOC contamination is occurring in the upper bedrock in the vicinity of the Landfill (AEC 1) and near the former Organics Plant (AEC 2). Conversely, VOCs, semi-VOCs, pesticides and PCBs were all ND in the upper bedrock wells along the northwest and northern boundary of the property and in all off-site upper bedrock wells except well MW-16I. MW-16I is located about 500 feet west of the site and was found to have slightly elevated levels of several compounds [toluic acid isomers, 1,200 to 4,500 ppb; toluene, 2 ppb; 1,2-dichloroethene, 8 ppb; ethylbenzene, 9 ppb]. There were no pesticides or PCB's detected in the upper bedrock wells in Round 1, however, Round 2 results from two on-site wells showed low level presence of one pesticide [4,4'-DDE, 0.2 to 0.6 ppb].

Groundwater User Survey

A survey of private well usage in the vicinity of the site was performed in support of the human health risk assessment. The initial evaluation involved contacting local municipalities and public water systems to determine which residences may be on private and/or public water. A private well usage questionnaire was later developed and sent to property owners near the site.

The survey showed that there are private wells in the vicinity of the site. Most of these wells are no longer used, however some were reported as being used for non-potable water. There were also some wells reported as a drinking water source, but these are located greater than 1/2 mile from the site. Following the survey, it was determined that some private wells should be sampled as a matter of prudence to assess whether any have been impacted by the site. Ten private wells were sampled and analyzed by SMC in July-August 1994. The results showed no site related chemicals in the any of the wells. Property owners were notified of the results.

4.1.3.4 Deep Groundwater - AEC 4:

Nine deep wells installed as part of the Phase I Investigation, and six additional deep wells installed as part of the Phase II Investigation, were used to characterize the deep bedrock groundwater. Phase I wells received two rounds of analytical sampling, while the Phase II wells had one round of sampling. The analytical results are summarized in Table 5.

Six of the nine Phase I deep bedrock wells contained VOCs, with two of the nine wells having concentrations above the NYSDEC standards or guidance values for these compounds [1,2 dichloroethene, ND to 94 ppb; toluene, ND to 23 ppb; total xylene, ND to 520 ppb]. Four of the nine Phase I wells contained semi-VOCs, with two of the nine wells having concentrations above the NYSDEC Class GA standards or guidance values [phenol, ND to 22 ppb; toluic acid isomers, ND to 47,000 ppb].

Only one of the six Phase II deep bedrock wells sampled contained concentrations above the NYSDEC groundwater quality standards for several compounds [total xylene, ND to 330 ppb; phenolic compounds, ND to 35 ppb].

Spatial evaluation of the Round 1 results showed that elevated VOC contamination in the deep bedrock is occurring in the immediate vicinity of the landfill. Spatial evaluation of the Round 2 results showed that lower, but still elevated VOC contamination is also occurring in the deep bedrock west of the landfill. Deep bedrock wells which are immediately adjacent to the landfill on the south, west, and north sides, were all dry during Round 2. There were no VOCs detected along the east, northwest, and northern boundaries of the property, nor in any deep bedrock well located off-site. No PCBs or pesticides were detected in any deep bedrock wells.

In both sampling rounds inorganic metals were found in deep bedrock wells near the landfill at levels above their respective NYSDEC Class GA groundwater quality standards [arsenic, ND to 149 ppb; cobalt, ND to 16 ppb; nickel, ND to 134 ppb].

4.1.3.5 Skaneateles Creek - AEC 5:

Four samples each of Skaneateles Creek water and creek sediments were obtained in two rounds of sampling. Leachate from four seeps along the creek bank and associated seep sediments were also sampled.

Creek Water

Two rounds of creek water sampling showed that the surface water was free of VOCs and semi-VOCs at the time of sampling. Similarly, the inorganic results showed no current significant effects from the site on the water quality of the stream. This is not surprising given the fairly high flow rates in the creek that could act to dilute small, ongoing contaminant inflows to below detection levels. Generally, sediments that act to accumulate certain contaminants from the water column are a better indication of past and present contaminant contributions.

Creek Sediments

Four creek sediment samples were collected in each of two sampling rounds at the same locations as the surface water samples. Analytical results for the creek sediments are summarized in Table 6. Sediments adjacent to and downstream from the site were found to contain PAHs and some metals significantly above levels of concern for aquatic sediments. In several instances, metals were found above the Severe Effects Levels for aquatic organisms. Sediment samples taken from upstream of the site were significantly lower and did not exceed aquatic sediment guidelines. Although PAHs and metals are very common contaminants wherever human activities occur, the distribution and levels of these compounds near the site strongly point to the site as a significant source of the sediment contaminant problems.

Following completion of the RI, 11 additional sediment samples were taken by SMC downstream of the site in the mill pond area behind the dam at the P&S Filtration facility. Also taken were two samples from a spoil area next to the pond where sediments had been deposited during past mill pond cleaning activities. These samples were taken to determine if creek sediments further downstream warrant remediation. Results from these samples indicate that the site has also impacted the mill pond sediments at levels above aquatic sediment guidelines.

Six pesticides and associated breakdown products were sporadically detected at low levels in creek sediment samples. Several of these compounds were not detected elsewhere on the site. The pesticides are likely derived from use elsewhere in the Skaneateles Creek watershed.

Creek Seeps and Seep Sediment

The purpose of analyzing creek seep and seep sediment samples was to determine if the seeps are ongoing sources of contamination to the creek. The analytical results are summarized in Table 7. Four creek seep samples and one sample of seep sediment were collected during the first round of creek sampling. Three seeps were located in the vicinity of the landfill and one was located near the sanitary sewage leachfield. A second sampling round was attempted but did not provide useful information because of drought conditions.

Creek seeps located adjacent to the landfill were found to be contributing elevated levels of numerous VOC and semi-VOC compounds to the creek [1,2-dichloroethene, 670 ppb; trichloroethene, 260 ppb; tetrachloroethene, 560 ppb; toluene, 20 ppb; and total xylene 570 ppb]. Semi-VOCs included toluic acid isomers [Range 71,000 to 510,000 ppb]. The creek seep collected near the sanitary sewage leachfield showed no detectable VOC or semi-VOC compounds.

There were no detectable pesticide or PCBs in the creek seep samples.

Creek seep samples were also found to contain elevated concentrations of several inorganic metals [arsenic, max 170 ppb; chromium, max 92 ppb; cobalt, max 28 ppb; and zinc, max 244 ppb].

The creek seep sediment sample contained several landfill related compounds [1,2-dichloroethene, 84 ppb; trichloroethene, 54 ppb; tetrachlorethane, 34 ppb; toluene, 13 ppb; and total xylene, 200 ppb]. There were no pesticides or PCBs in the creek seep sediment sample.

The creek seep sediment sample also contained inorganic metals, including several that have been found at excessive levels in creek sediments. However, the observed concentrations were within those anticipated as background in New York State soils.

4.1.3.6 Inorganic Sludge Disposal Area:

Samples were collected and analyzed from each of three monitoring wells located east of the landfill in a former inorganic sludge disposal area. These wells were installed in the early 1980s as part of a RCRA closure of the on-site sludge disposal area basins. The wells were free of detectable VOCs, semi-VOCs, and pesticide or PCB compounds. Inorganic concentrations were fairly consistent between the three wells. Comparison to both NYSDEC Class A surface water and Class GA groundwater standards showed that only aluminum [252 ppb] and nickel [37 ppb], were above their respective standard or guidance values.

4.2 Interim Remedial Measures:

No Interim Remedial Measures were implemented during the RI activities. However, the earlier interim actions taken to collect and treat contaminated seeps from the landfill and the basement seep have been partially effective in reducing site impacts.

4.3 Summary of Human Exposure Pathways:

A baseline human health risk assessment evaluated both present and potential future exposure scenarios for nearby residents and on-site workers. The average and plausible maximum carcinogenic and non-carcinogenic risks were calculated. The calculated risks are conservative estimates of current or potential risks based upon the scenarios that were developed. Conclusions drawn from the risk assessment are that, while there are potential health risks from direct exposure to site wastes and to contaminated groundwater, there are no immediate health threats. The site is currently subject to reasonable site access restrictions and residents are either obtaining their water from a public system with a remote source or from private wells not in proximity to the contaminated source. However, concerns remain regarding possible future human exposure to site wastes and contaminated groundwater resulting from new well installations by individual residents as well as possible future migration of contaminants from the site to existing private wells if the site is left uncontrolled.

4.4 Summary of Environmental Exposure Pathways:

The predominant environmental threat from the site is to groundwater resources and to Skaneateles Creek.

Groundwater resources at the site were found to be contaminated at levels up to 5,600 times higher than applicable standards and guidelines. The levels observed and conditions on and around the site provide significant concerns for the groundwater resource and its usage. Substantial sources of uncontrolled contaminants (AEC 1 and AEC 2) are present at the site that are in direct hydraulic communication with groundwater. These source areas are acting to "refresh" contaminant levels in AEC 3, the shallow groundwater, ensuring that groundwater

exceedences will persist. AEC 3 is in turn acting to "refresh" contaminant levels in AEC 4, the deeper groundwater.

The environmental risk assessment identified risks to aquatic biota from exposure to contaminated sediments within the stream. Sediment chemical results were compared to NYSDEC sediment screening criteria and to toxicity values reported in literature. The concentrations of PAHs in some of the sediment samples were significantly higher than both the NYSDEC screening criteria and EPA chronic toxicity criteria. There were also site related accedences of NYSDEC screening criteria for metals, including some accedences of the Severe Effects Levels. The sediment contamination may be attributable to several sources: past site activities, seeps from the landfill, general site runoff, inflow of contaminated site groundwater, and human activities elsewhere in the watershed.

A habitat assessment was performed that included a qualitative survey of the aquatic community within Skaneateles Creek and the terrestrial community on the site property. This provided a basis for identifying any environmental impacts caused by the site.

The field survey of the stream did not indicate that the site conditions were significantly affecting the stream community on a wide scale basis. This was consistent with the quantitative stream-wide survey performed by NYSDEC in 1992 (Novack et al. 1993) which showed that the aquatic community was only slightly stressed within the stream. This suggests that the sediment contaminant problem remains localized.

There was no apparent vegetation stress within the fields or hedge rows. Combined with a review of species expected to use the site and observed levels of surface soil contaminants, this does not suggest that there is any ongoing, significant impacts to terrestrial organisms using the site.

SECTION 5: ENFORCEMENT STATUS

The NYSDEC and the Stauffer Management Company entered into a Consent Order on March 28, 1991. The Order obligates Stauffer to implement a RI/FS. Upon issuance of the Record of Decision the NYSDEC will approach Stauffer Management Company to implement the selected remedy under an Order on Consent.

The following is the chronological enforcement history of this site.

Date	Index No.	Subject of Order
3/28/91	A701018612	RI/FS

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6NYCRR 375-1.10. The overall remedial goal is to meet all Standards, Criteria and Guidance (SCGs) and be protective of human health and the environment.

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

The goals established for this site are as follows:

- *Eliminate to the extent practicable the potential for direct human or animal contact with site related contaminants.*

- *Reduce, control, or eliminate to the extent practicable the contamination within soils and wastes on the site and the generation of leachate from the Landfill, Area of Environmental Concern 1 (AEC 1), and the Area North of the Main Plant, AEC 2.*

- *Mitigate environmental threats to Skaneateles Creek by eliminating to the extent practicable further inflows of any contaminated run-off, contaminated groundwater, and leachate from the contaminated soils and waste.*

- *Mitigate site related contamination within creek sediments to levels that do not threaten long term stream impairment and promote unimpaired use by aquatic organisms.*

- *Prevent, to the extent practicable, migration of contaminants from AEC 1 and AEC 2 to groundwater.*

- *Mitigate the impacts of contaminated groundwater on the environment.*

- *Provide for attainment of SCGs for groundwater quality at the limits of AEC 3, the Shallow Groundwater, and AEC 4, the Deep Groundwater, and to the extent practical, provide for SCG attainment within these AECs.*

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy will be protective of human health and the environment and be cost effective. The selected remedy will also comply with statutory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the extent practicable.

A large number of potential remedial technologies for the Stauffer Management Company site were identified, screened and evaluated in the report entitled **Feasibility Study Report Stauffer Management Company Site**, dated December, 1995. The alternatives presented in this ROD reference SMC Site Wide Alternative (SWA) designations used in the Feasibility Study (FS) report. However, for simpler presentation, the ROD discusses a smaller number of alternatives that represent the range of alternatives evaluated. As such not all Site Wide Alternatives from the FS are repeated within this ROD. SWA-2 was not included because it would simply not meet remedial goals Standards, Criteria and Guidance. SWA-4 was not included because it would not improve compliance with remedial goals over SWA-3, SWA-5 or SWA-6 yet would impose unnecessary short term risks and higher costs than both SWA-5 and SWA-6.

A summary and detailed analysis of site wide alternatives follows. As used in the following text, the time to implement reflects only the time required to construct the remedy. The implementation time does not include time required to design the remedy, procure contracts for design or construction or to negotiate with responsible parties for implementation of the remedy.

7.1 Description of Alternatives:

The SMC site was subdivided into five of Areas of Environmental Concern (AEC) that constitute the significant source areas and pathways of contaminant migration. The potential remedies are intended to address the contaminant problems in these AECs. Dividing the site into these AECs promoted individual evaluation of each area where potential remedial solutions may differ due to physical separation, physical properties, or different contaminant problems. This AEC structure helped to develop strategies to address each AEC and then compile them into site wide alternatives. Based on the findings of the Remedial Investigation, the following five AECs were identified:

AEC 1- Landfill
AEC 2 - Area North of the Main Plant Building (former Organics Plant)
AEC 3 - Shallow Groundwater (overburden and upper bedrock)
AEC 4 - Deep Groundwater
AEC 5 - Skaneateles Creek

The approximate locations of the five AECs are shown on Figures 2 and 3.

Site Wide Alternative 1 (SWA-1): No Further Action

Total Present Worth:	**$5.4 million**
Capital costs:	**$0**
O&M Present Worth Costs:	**$5.4 million**
Time to Implement:	**0 months**

The No Further Action Alternative, SWA-1, was evaluated as a procedural requirement and as a basis for comparison. This is a site wide alternative with no additional action for all five AECs. SWA-1 would include continued operation of the existing on-site leachate treatment system as well as the following ongoing institutional controls: long term monitoring of site conditions; continuing site security and restrictions on site access; and maintenance operations like lawn mowing and fence repairs. Long term monitoring would include continued assessment of groundwater conditions and early identification of any threat to drinking water wells. A contingency included with the Institutional Controls would be a responsibility for SMC to supply safe drinking water should any site related drinking water impacts be identified. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Site Wide Alternative 3 (SWA-3): Removal with Off-site Disposal

Total Present Worth:	**$41.8 million**
Capital costs:	**$39.8 million**
O&M Present Worth Costs:	**$ 2.0 million**
Time to Implement:	**12 to 18 months**

The Removal with Off-site Disposal Alternative, SWA-3, was developed to include full removal actions for the two source areas, AEC 1 and AEC 2, and for Skaneateles Creek, AEC 5. Soils and wastes exceeding NYSDEC soil cleanup guidelines would be removed from AEC 1 and AEC 2, with approximately 45,000 CY to be removed from AEC 1 and 47,200 CY from AEC 2. Approximately 2,700 CY of contaminated sediments would be removed from Skaneateles Creek in the reach from the existing landfill downstream to, and including the mill pond above P&S Filtration. Sediment removal would include the side cast material from previous mill pond cleaning. Removed materials would be processed on-site, then sent off-site for disposal in a permitted solid or hazardous waste landfill. This alternative would include a pump and treat action for the shallow groundwater, AEC 3, and no action with natural attenuation for the deep groundwater, AEC 4. SWA-3 would also include the same institutional controls listed for the No Further Action Alternative, SWA-1. The remedial action activities for site wide alternative SWA-3 would be:

- *Mobilization and construction of on-site haul roads, a materials handling facility, and a water treatment system.*

- *Temporary dewatering and treatment of water from the Landfill, AEC 1.*

- *Excavation and processing of contaminated soils and waste from AEC 1 (est. 45,000 CY), followed by off-site disposal in a permitted, commercial landfill.*

- *Excavation and processing of organics contaminated soils from AEC 2 (est. 47,200 CY), followed by off-site disposal in a solid or hazardous waste landfill.*

- *Dredging and processing of contaminated sediments from Skaneateles Creek, (est. 2,700 CY) followed by off-site disposal in a solid or industrial waste landfill.*

- *Design, installation and operation of a shallow groundwater pump and treatment system comprised of extraction wells in the vicinity of AEC 1 and a collection trench at AEC 2.*

- *No action for deep groundwater, but with monitoring to assess improvements expected to accrue from removing site source areas and natural attenuation.*

- *Institutional Controls.*

Site Wide Alternative 5 (SWA-5): Removal with On-site Disposal

Total Present Worth:	**$10.4 million**
Capital costs:	**$ 7.1 million**
O&M Present Worth Costs:	**$ 3.3 million**
Time to Implement:	**18 to 24 months**

The Removal with On-site Disposal Alternative, SWA-5, was developed to include removal actions for the two source areas, AEC 1 and AEC 2. For AEC 1, removal would include approximately 45,000 CY of landfill wastes and adjacent soils containing contaminants at levels that exceed soils SCGs. For AEC 2, removal of approximately 4,100 CY of soils exceeding SCGs for organic VOCs would be included. Unlike SWA-3 where all organics and metals contaminated soils exceeding SCGs would be removed (est. 47,200 CY), lower level metals contaminated soils would remain and be isolated by construction of an approximately 5 acre clay cap over residual metals contaminated soils and a vertical cutoff wall between the soils and Skaneateles Creek.

Removed materials would be disposed on-site in an engineered landfill that would be constructed on SMC property in the fields east of Skaneateles Creek. The engineered landfill would be about 2 to 3 acres in size and constructed with a liner, cap, leachate collection and leak detection systems that meet current regulatory requirements. Because this landfill would be used for disposal of wastes from a hazardous waste site, the landfill would need to be designated as a Corrective Action Management Unit (CAMU) under the regulations that govern hazardous waste disposal facilities.

SWA-5 would include a pump and treat action for the shallow groundwater, AEC 3, no action with natural attenuation for the deep groundwater, AEC 4, and no action for Skaneateles Creek sediments, AEC 5. The pump and treat for AEC 3 would include extraction wells within AEC 2 as well as in the area near AEC 1 and south of the main plant building. A contingent pump and treat action for AEC 4, deep groundwater, would be included should source removal efforts and natural attenuation fail to adequately reduce contaminants in AEC 4 (i.e. a significant decrease in concentration of target compounds is not observed after three years of operation of the pump and treat system for AEC 3, shallow groundwater). SWA-5 would also include the same institutional controls listed for the No Further Action Alternative, SWA-1, with the addition of long term operation and maintenance for both an upgraded groundwater treatment system and the on-site, engineered landfill.

The remedial actions for site wide alternative SWA-5 would be:

- *Mobilization and construction of on-site haul roads, a materials handling facility and a water treatment system.*
- *Construction of an on-site, engineered landfill as a CAMU for hazardous waste management.*
- *Temporary dewatering and treatment of water from the existing Landfill, AEC 1.*
- *Excavation and processing of contaminated soils and waste from AEC 1 (est. 45,000 CY), followed by disposal in the on-site, engineered landfill.*
- *Excavation and processing of organics contaminated soils from AEC 2 (est. 4,100 CY), followed by disposal in the on-site, engineered landfill.*
- *Construction of a 5 acre clay cap over AEC 2 after excavation, and construction of a vertical cutoff wall between AEC 2 and the creek to isolate residual metals contaminated soils.*
- *No action for AEC 5, Skaneateles Creek sediments.*
- *Design, installation and operation of a shallow groundwater pump and treatment system comprised of extraction wells in the vicinity of AEC 1 and a collection trench at AEC 2.*

- *No action for deep groundwater, but with monitoring to assess improvements expected to accrue from removing site source areas and natural attenuation.*

- *Contingency for future pump and treat action on AEC 4 should source removal and natural attenuation not promote adequate improvements to the deep bedrock.*

- *Institutional Controls.*

Site Wide Alternative 6 (SWA-6): Removal with On-Site Treatment and Disposal

Total Present Worth:	**$11.6 million**
Capital Costs:	**$ 7.9 million**
O&M Present Worth Costs:	**$ 3.7 million**
Time to Implement:	**18 to 24 months**

The Removal with On-site Treatment and Disposal Alternative, *SWA-6, would include all the same actions as SWA-5, with several additions*: removal of sediments from Skaneateles Creek; and on-site treatment of contaminated soil, sediment and wastes.

About 2,700 CY of sediments would be removed from Skaneateles Creek in the reach from the existing Landfill downstream to, and including the mill pond above P&S Filtration. The sediment removal would include the side cast material from previous mill pond cleaning.

Treatment of removed wastes, soils and sediments would occur in a lined landfill cell that would be about 2 to 3 acres in size and constructed on-site in conformance with applicable regulatory requirements for construction of landfills. Because this cell would be used for treatment and disposal of wastes from a hazardous waste site, the landfill would be designated as a Corrective Action Management Unit (CAMU) under the regulations that govern hazardous waste disposal facilities.

The cell would include a combined Soil Vapor Extraction (SVE) and Bio-venting system to permanently remove the high levels of VOCs and semi-VOCs. Operation of the SVE system would continue for as long as VOC's are being effectively removed. Bio-venting would continue after the SVE is done and would continue for as long as semi-VOCs are being effectively removed. The SVE and Bio-venting treatment would be expected to be completed within a 5 year period. Following this treatment period, the cell would serve as a landfill for final disposal of the treated materials and would be the subject of long term, routine operation and maintenance activities.

The remedial actions for site wide Alternative SWA-6 would be:

- *Mobilization and construction of on-site haul roads, materials handling facility, and a water treatment system.*
- *Construction of an on-site, engineered treatment and disposal cell.*
- *Temporary dewatering and treatment of water from the existing Landfill, AEC 1.*
- *Excavation and processing of contaminated soils and waste from AEC 1 (est. 45,000 CY), followed by treatment and disposal in the on-site, engineered cell.*
- *Excavation and processing of organics contaminated soils from AEC 2 (est. 4,100 CY), followed by treatment and disposal in the on-site, engineered cell.*
- *Construction of a 5 acre clay cap over AEC 2 after excavation, and construction of a vertical cutoff wall between AEC 2 and the creek to isolate residual metals contaminated soils.*
- *Construction and operation of a Soil Vapor Extraction and Bioventing system within the treatment cell as wastes are placed. Construction and operation of supporting equipment and air treatment systems needed to operate the SVE/Bio treatment system.*
- *Dredging and processing of contaminated sediments from AEC 5, Skaneateles Creek, (est. 2,700 CY) followed by treatment and disposal in the on-site, engineered cell.*
- *Design, installation and operation of a shallow groundwater pump and treatment system comprised of extraction wells in the vicinity of AEC 1 and a collection trench at AEC 2.*
- *No action for deep groundwater, but with monitoring to assess improvements expected to accrue from removing site source areas and natural attenuation.*
- *Contingency for future pump and treat action on AEC 4 should source removal and natural attenuation not promote adequate improvements to the deep bedrock groundwater.*
- *Institutional Controls*

7.2 Evaluation of Remedial Alternatives:

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the

alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

SWA-1, the No Further Action Alternative, would not be in compliance with SCGs.

Chemical and Action specific SCGs would not be met since no action is taken to remove contaminants exceeding soil, water and sediment criteria from any of the five AECs. Chemical and location specific SCGs regarding treatment and disposal of wastes would not apply since no additional wastes would be generated.

SWA-3, the Off-site Disposal Alternative, would meet SCGs more completely than the other alternatives evaluated.

SWA-3 involves active removal of contaminants from AECs 1, 2, 3 and 5, and would reasonably be expected to achieve full compliance with chemical specific SCGs for water, soil, sediments and wastes. This alternative would not immediately achieve groundwater SCGs for AECs 3 and 4, however, compliance in this area would be anticipated to occur within a reasonable time frame. Chemical specific SCGs regarding treatment and disposal of wastes would be met in two ways: 1.) on-site groundwater treatment would readily meet applicable discharge requirements, and 2.) disposal requirements for soil, sediment and wastes would have to be met by the receiving, off-site facility under its operating permit.

SWA-5, the On-site Disposal Alternative, could meet most SCGs, but not as completely as either SWA-3 or SWA-6.

This alternative involves active removal of contaminants from AECs 1, 2 and 3 and would reasonably be expected to achieve full compliance with chemical-specific SCGs for water, soil and wastes within AEC 1. This alternative would be expected to achieve partial, but substantive compliance with soil SCGs within AEC 2 where high level, organic contaminated soil would be removed, but metals contamination would be capped in place. This alternative would not immediately achieve groundwater SCGs for AECs 3 and 4, but compliance would be anticipated to occur within a reasonable time frame. However, because remaining metals contaminated soils in AEC 2 would continue to contribute low level contaminants to a localized portion of the shallow groundwater, a longer time frame may be required to achieve groundwater SCGs for AEC

3 under SWA-5 than under SWA-3. SWA-5 would not likely achieve compliance with chemical-specific SCGs for AEC 5 within a reasonable time frame.

SCGs for treatment and discharge of collected groundwater could be readily met by the on-site treatment system. Chemical specific SCGs for direct land disposal of hazardous waste would not be met for soils and wastes where high levels of xylene are present. However, location specific SCGs for land disposal could be met for an engineered landfill on-site.

SWA-6, the On-site Treatment and Disposal Alternative, would meet most SCGs and would also offer a substantive improvement over SWA-5 in two areas: chemical criteria for aquatic sediments would be met by SWA-6, and relevant land disposal criteria would be met by SWA-6.

This alternative would involve active removal of contaminants from AECs 1, 2, 3, and 5 and would reasonably be expected to achieve full compliance with chemical specific SCGs for soil and sediments within AEC 1 and 5. This alternative would be expected to achieve partial, but substantive compliance with soil SCGs within AEC 2 where high level, organic contaminated soil would be removed, but metals contamination would be capped in place. This alternative would not immediately achieve groundwater SCGs for AECs 3 and 4, but compliance would be anticipated to occur within a reasonable time frame. Like SWA-5, a longer time frame may be required to achieve groundwater SCGs for AEC 3 under SWA-6 than under SWA-3.

Chemical specific SCGs for treatment and discharge of collected groundwater would be readily met by the on-site treatment system. Chemical specific SCGs for direct land disposal of hazardous waste would be expected to be met for soils and wastes by treatment within the on-site treatment cell. Location specific SCGs for land disposal would be met for an engineered landfill on-site.

2. **Protection of Human Health and the Environment.** This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

SWA-1, the No Further Action Alternative, would provide some overall protection of human health and the environment, but not at a level acceptable for adequate long term protection.

This alternative would continue site monitoring, site security and fencing to provide some protection from incidental human contact with waste, but does not involve any additional active remedial efforts to remove or control contaminants or contaminant migration. As such, SWA-1 would not provide any additional long term projections for human health or the environment.

SWA-3, the Off-site Disposal Alternative, would provide the highest degree of overall protection of human health and the environment of the alternatives evaluated.

This alternative would remove the sources of contaminated material from the site, would mitigate contaminated sediments in Skaneateles Creek and would actively address contaminated shallow

groundwater. The potential for future human exposures at levels of concern would be eliminated by this alternative within a reasonable time frame. Potential short term exposures to workers and nearby residents would be a concern and would require active control measures during construction.

SWA-5, the On-site Disposal Alternative, would provide significantly improved overall protection for human health and the environment than SWA-1, but would not provide as high a level of protection as either SWA-3 or SWA-6.

This alternative would remove the sources of contaminated material from AEC 1, and partially remove contaminated material from AEC 2. SWA-5 would not actively mitigate contaminated sediments in Skaneateles Creek, but would provide some benefit to the creek by removing the ongoing source at AEC 1, partially removing and controlling the source at AEC 2, and actively addressing the shallow groundwater, AEC 3. However, considering the persistent nature of contaminants in the creek, this would not be adequate to fully address the ongoing environmental threat to the creek. The potential for future human exposures at levels of concern would be greatly reduced, but a small long term potential would remain from high level contaminants disposed on-site. Potential short term exposures to workers and nearby residents would be a concern and would require active control measures during construction.

SWA-6, the On-site Treatment and Disposal Alternative, would provide better overall protection of human health and the environment than SWA-5, and nearly the same long term assurances that SWA-3 provides.

This alternative would remove the sources of contaminated material from AEC 1, and partially remove contaminated material from AEC 2. SWA-6 would also mitigate the contaminated sediments in Skaneateles Creek and address the contaminated shallow bedrock. The potential for future human exposures at levels of concern would be eliminated by this alternative within a reasonable time frame. Potential short term exposures to workers and nearby residents would be a concern and would require active control measures during construction.

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

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

SWA-1, the No Further Action Alternative, would present the least risk of short term impacts or exposures.

SWA-1 does not include active remediation efforts and, therefore, does not present any additional short term risk to nearby residents. A small risk to on-site workers would result from short term monitoring activities. This minimal risk can be effectively managed by wearing proper protective equipment.

SWA-3, the Off-site Disposal Alternative, would present the highest potential for short term impacts to the community and site workers of all the alternatives.

Like SWA-5 and SWA-6, this alternative would include excavating and processing contaminated soils on-site. There is a significant risk of human exposures on and next to the site that would be posed by dust and VOC emissions to the air. Prudent excavation procedures, implementation of effective dust and volatilization controls, and real time air monitoring would be required to minimize these risks. Corrective actions to protect nearby residents, including shut down, would also be required if air monitoring levels were exceeded. Site worker safety would require proper training, appropriate safety protocols and proper protection equipment.

Unlike SWA-5 and SWA-6, this alternative would pose significant risks to residents well beyond the site boundaries. SWA-3 would require transporting a large volume of wastes from the site using local roads. The estimated 6,000 dump truck trips needed for this task would increase the risk of traffic accidents for community residents.

The time frame for construction of this alternative would expected to take one full year, however like SWA-5 and SWA-6, the possibility of a second construction season is high. Like SWA-6, this alternative would also cause short term disruption to the creek system with the physical action of sediment dredging.

SWA-5, the On-site Disposal Alternative, would present a high potential for short term impacts to the community and site workers. The potential risks posed by dust and VOC air emissions would be similar to that posed by SWA-3 and SWA-6. The potential risks posed by truck traffic would be significantly lower than SWA-3.

Like SWA-3 and SWA-6, this alternative would involve a high potential for human exposure on or next to the site from dust and VOC emissions during excavation and processing of contaminated soils. A small incremental increase in this risk over SWA-3 would arise from the added step of placing processed wastes and soil into the on-site landfill. These risks could be minimized in the same manner described for SWA-3.

The short term risks to the community from transportation of site wastes present under SWA-3 are eliminated since these materials would remain on-site, however, a short term increase in truck traffic would still be expected due to normal construction activities.

The construction of this alternative would be expected to take between one and two years. Unlike SWA-3 and SWA-6, this alternative would not cause short term disruption to the creek system from sediment dredging.

SWA-6, the On-site Treatment and Disposal Alternative, would present a high potential for short term impacts to nearby residents and site workers. The potential risks posed by dust and VOC air emissions would be similar to that posed by SWA-3 and SWA-5. The potential risks posed by truck traffic would be significantly lower than SWA-3. Short term disruption of the creek system from physical dredging activities would be experienced.

Like SWA-3 and SWA-5, this alternative would involve a high potential for human exposure on or next to the site from dust and VOC emissions during excavation and processing of contaminated soils. A small incremental increase in this risk over SWA-3 would arise from the added step of placing processed wastes and soil into the on-site landfill. These risks would be minimized in the same manner described for SWA-3.

The short term risks to the community from transportation of site wastes present under SWA-3 are eliminated since these materials would remain on-site, however, a short term increase in truck traffic would still be expected due to normal construction activities.

Like SWA-5, the construction of this alternative would be expected to take between one and two years. Like SWA-3, this alternative would also cause short term disruption to the creek system with the physical action of sediment dredging.

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

SWA-1, the No Further Action Alternative, does not include active remediation efforts and would be the least effective and permanent of the alternatives evaluated.

Any long term improvements under this alternative would rely on unassisted natural attenuation processes to reduce contamination. Considering the nature and extent of site contamination, SWA-1 would not likely reduce contaminant levels to acceptable levels within a reasonable time frame. Thus, SWA-1 would not be effective on a long term basis.

SWA-3, the Off-site Disposal Alternative, would provide a high level of long term effectiveness and permanence and would rank higher than of all other alternatives evaluated for this criteria.

Contaminated source areas would be permanently removed and disposed off-site in a secured landfill. This would provide the most effective long term solution for site contaminant sources.

Shallow groundwater would be addressed by a pump and treat system to simultaneously contain and remove groundwater contamination. The combined effect of source removals and pump and treat is expected to permanently reduce groundwater contaminant levels in AEC 3 to acceptable levels within a reasonable time frame. Treatment of the collected groundwater would use reliable methods and would permanently reduce site contaminants. Since AEC 3 is also the source for groundwater contamination in AEC 4, the efforts in AEC 3 will provide significant assistance to natural attenuation processes and AEC 4 would also be expected to reach acceptable levels within a reasonable time frame. SWA-3 would not include a contingent pump and treat for AEC 4 and would therefore lack the added assurance that SWA-5 and SWA-6 have for long term remedy effectiveness.

Like SWA-6, this alternative would include removal of contaminated sediments from Skaneateles Creek and would therefore have significantly better long term effectiveness and permanence for this AEC than AEC 5.

SWA-5, the On-site Disposal Alternative, would provide long term effectiveness and permanence, but would rely on continued engineering controls for *untreated* wastes that would be disposed on-site. This alternative would be ranked far better than SWA-1 for this criteria but below SWA-3 and SWA-6.

Contaminated source areas would be permanently removed from the environment and disposed untreated in an on-site engineered landfill. Landfill design and construction materials would be adequate for effective long term isolation of the type of contaminants at the site, if properly maintained. The operation and maintenance that would be needed is routine but would only be effective if diligently implemented. Should the landfill cap ever be breached from erosion or accidental intrusion, a significant risk of human exposure would be posed by the high level of organic contaminants remaining in the untreated wastes. A potential for renewed contamination of site groundwater would also be posed by the untreated wastes should the landfill liner and cap system develop significant leaks.

Shallow groundwater would be addressed by a pump and treat system to simultaneously contain and remove groundwater contamination. The combined effect of source removals and pump and treat is expected to permanently reduce groundwater contaminant levels in AEC 3 to acceptable levels within a reasonable time frame. Treatment of the collected groundwater would use reliable methods and would permanently reduce site contaminants. Since AEC 3 is also the source for groundwater contamination in AEC 4, the efforts in AEC 3 will provide significant assistance to

natural attenuation processes and AEC 4 would also be expected to reach acceptable levels within a reasonable time frame. Should natural attenuation of AEC 4 not reach acceptable levels, the contingent pump and treat would be implemented to ensure long term remedy effectiveness.

SWA-5 would not include active remediation of creek sediments and would not would not provide an effective solution, either short term or long term, to this problem.

SWA-6, the On-site Treatment and Disposal Alternative, would provide a high level of long term effectiveness and permanence, but would rely on continued engineering controls for *treated* waste residuals that would be disposed on-site. This alternative would be ranked far better than SWA-1 for this criteria and only slightly below SWA-3. This alternative would be ranked significantly better that SWA-5 because treatment proposed for site wastes would remove the high level of organic contaminants that pose the greatest concern to the long term effectiveness and permanence of SWA-5.

Contaminated source areas would be permanently removed from the environment and treated in an on-site engineered treatment and disposal cell. Landfill design and construction materials would be adequate for effective long term isolation of the treated residuals, if properly maintained. The operation and maintenance that would be needed is routine but would only be effective if diligently implemented. Should the landfill cap ever be breached from erosion or accidental intrusion, the risk of human exposure posed by the treated wastes would be significantly less than under SWA-5 and more likely to remain localized since the more mobile organics would be removed from the wastes. The potential for renewed contamination of site groundwater should the landfill develop significant leaks is similarly reduced from that posed under SWA-5.

Shallow and deep groundwater, AEC 3 and AEC 4, would be addressed in the same manner as under SWA-3 and SWA-5 and would be equally as effective and permanent for these AECs. Unlike SWA-5, this alternative would include removal of contaminated sediments from Skaneateles Creek and would therefore have a significantly better long term effectiveness and permanence for this AEC.

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

SWA-1, the No Further Action Alternative, would not reduce the toxicity, mobility, or volume of contaminants at the SMC site.

SWA-3, the Off-Site Disposal Alternative, would reduce the mobility and volume of contaminants at the site more effectively than any of the other alternatives.

SWA-3 would include the most complete removal of contaminants from source areas AEC 1 and AEC 2 and from Skaneateles Creek, AEC 5. This would provide the maximum reduction in

mobility and volume of site contaminants of all the alternatives. Disposal would occur offsite where isolation and elimination of potential contaminant migration would be achieved by the receiving, permitted commercial disposal facility. However, during transport of wastes to this facility, a moderate potential exists for accidental release and remobilization of truck sized volumes of site wastes into the environment.

SWA-3 would significantly reduce the mobility and volume of contaminants dissolved within the shallow groundwater, AEC 3, through operation of the proposed pump and treat system. Treatment of collected groundwater would reduce toxicity through removal and destruction of the dissolved contaminants. Although no action is proposed for deep groundwater under SWA-3, removal of the source areas and operation of pump and treat for AEC 3 will assist natural attenuation processes to significantly reduce contaminant levels and mobility.

SWA-3 would permanently reduce the mobility and volume of contaminants in Skaneateles Creek sediments, however there would be a potential for short term remobilization of contaminants during the dredging operations.

SWA-5, the On-site Disposal Alternative, would meet this criteria far better than SWA-1, but due to the lack of a treatment component and no action for creek sediments, would be ranked well below both SWA-3 and SWA-6.

SWA-5 would include full removal of contaminated soils and waste from AEC 1 and partial removal of contaminated soils from AEC 2. The partial excavation in AEC 2 would remove the majority of the organic contaminants and would effectively isolate the remaining residual organics and subsurface metals contaminated soils. As such, SWA-5 would significantly reduce mobility of contaminants from the source areas. However, because SWA-5 proposes disposal of untreated wastes on-site, there would be no significant reduction in the overall volume of contaminants from the source areas. Because final disposal would be on-site, there would be no potential for releases during transport off-site as there is for SWA-3.

Like SWA-3, this alternative would significantly reduce the mobility and volume of contaminants dissolved within the shallow groundwater, AEC 3, through operation of the proposed pump and treat system. Treatment of collected groundwater would reduce toxicity through removal and destruction of the dissolved contaminants. Although no action is proposed for deep groundwater, removal of the source areas and pump and treat for AEC 3 would assist natural attenuation processes to significantly reduce contaminant levels and mobility.

Because SWA-5 would not include creek sediment removal, there would be no significant reduction of toxicity, mobility or volume of the contaminants already in the sediments.

SWA-6, the On-site Treatment and Disposal Alternative, would meet this criteria far better than SWA-1 and nearly as well as SWA-3. This alternative would also rank significantly better than

SWA-5 because treatment proposed for site wastes would remove the high levels of organic contaminants from the source area wastes and because contaminated creek sediments would also be removed and treated.

SWA-6 would include full removal of contaminated soils and waste from AEC 1, partial removal of contaminated soils from AEC 2, and removal of sediments from AEC 5, Skaneateles Creek. The partial excavation in AEC 2 would remove the majority of the organic contaminants and the cap and slurry wall would effectively isolate the remaining residual organics and subsurface metals contaminated soils. These actions, combined with treatment in the proposed on-site cell, would significantly reduce the toxicity, volume and mobility of contaminants from the site. Because final disposal would be on-site, there would be no potential for releases during transport off-site as there is for SWA-3.

Like SWA-3, this alternative would significantly reduce the mobility and volume of contaminants dissolved within the shallow groundwater, AEC 3, through operation of the proposed pump and treat system. Treatment of collected groundwater would reduce toxicity through removal and destruction of the dissolved contaminants. Although no action is proposed for deep groundwater, removal of the source areas and pump and treat for AEC 3 would assist natural attenuation processes to significantly reduce contaminant levels and mobility.

SWA-6 would permanently reduce the toxicity, mobility and volume of contaminants in Skaneateles Creek sediments, however there would be a potential for short term remobilization of contaminants during the dredging operations.

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

SWA-1, the No Further Action Alternative, would be the most easily implementable of all the alternatives evaluated.

SWA-1 proposes continuation of actions and controls that are already being performed. As such, no additional construction efforts would be required. All necessary services and equipment are readily available.

SWA-3, the Off-Site Disposal Alternative, would be about equally implementable as SWA-6, but somewhat more difficult than SWA-5.

Excavation, sediment dredging and off-site disposal are reliable technologies that are relatively straightforward and readily implemented. The availability of contractors, equipment and administrative approvals would not be expected to impede work. SWA-3 would be more complicated than SWA-5 and SWA-6 by the requirement to move large volumes of soils and wastes off-site, an activity not required under SWA-5 or SWA-6. However in ranking for this criteria, this transport activity is offset by SWA-3 not including construction of an on-site landfill.

Under SWA-3 the implementability and reliability of remediation for AECs 3 and 4 would be the same as for SWA-5 and SWA-6. The proposed pump and treat system would need only routinely available technology, equipment and administrative approvals.

SWA-5, the On-site Disposal Alternative, would be ranked as somewhat easier to implement than SWA-3 or SWA-6, since SWA-5 would not involve dredging Skaneateles Creek.

Excavation of site wastes would use reliable technologies that are relatively straightforward and readily implemented. Construction of an on-site landfill would also be straightforward and readily implemented. The availability of contractors, equipment and administrative approvals would not be expected to impede this work.

Under SWA-5 the implementability and reliability of remediation for AECs 3 and 4 would be the same as for SWA-3 and SWA-6. The proposed pump and treat system for AEC 3 and the potential contingent system for AEC 4 are proven technologies that would require only routinely available, equipment and administrative approvals.

SWA-6, the On-site Treatment and Disposal Alternative, would be about equally implementable as SWA-3, but somewhat more difficult than SWA-5.

Excavation of site wastes would use reliable technologies that are relatively straightforward and readily implemented. Construction of the on-site treatment and disposal cell would be less routine than construction of the landfill cell required under SWA-5. The soil vapor extraction and bioventing treatment technologies would need to be incorporated into the design and construction of the landfill cell. These treatment technologies and the landfill technology are reliable and readily available and would be generally compatible. However, this is an innovative combination of technologies that has not been widely implemented. As such, some design and operating uncertainties would exist. Because each of these technologies are widely used the availability of contractors, equipment and administrative approvals would not be expected to impede this work.

Under SWA-6 the implementability and reliability of remediation for AECs 3 and 4 would be the same as for SWA-3 and SWA-5. The proposed pump and treat system for AEC 3 and the potential contingent system for AEC 4 are proven technologies that would require only routinely available, equipment and administrative approvals.

7. Cost. Capital costs as well as operation and maintenance costs are estimated on a present worth basis for each alternative and then compared. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The estimated costs for each alternative are presented in Table 8.

SWA-1 would be the lowest cost site wide alternative. SWA-5 and SWA-6 would each be about twice as costly as SWA-1, and close in cost to each other, with SWA-5 being lower by about 10.3%, or $1.2 million. Most of the cost difference between SWA-5 and SWA-6 is attributable to the active treatment within the proposed landfill cell. SWA-3, the off-site disposal alternative, would have the highest cost of the four alternatives, and is significantly higher than the next lower alternative, SWA-6.

Alternatives that involve treatment or off-site disposal, significant variations in cost may arise due to unanticipated events, such as longer soil treatment periods, changes in off-site disposal pricing and commercial acceptance of the materials, and larger volumes of materials requiring disposal/treatment, etc. Thus, it is typical for treatment or off-site disposal activities to exhibit larger cost variations than those involving no action or containment only.

SWA-1, the No Further Action Alternative, cost variations would be low since no additional action is required.

SWA-3, the Off-site Disposal Alternative, would require extensive excavation and off-site disposal. Cost variations associated with this portion of the alternative may be large since disposal of the materials requires transport to and acceptance by an off-site facility. Costs of the alternative would increase if commercial landfill market prices increase or if a reasonably close facility is unable to accept the materials and a more distant disposal facility must be found.

SWA-5, the On-site Disposal Alternative, would require extensive excavation and on-site disposal. Unlike SWA-3, this alternative would not require transport to or acceptance by an off-site facility. As such, possible cost variations for Alternative SWA-5 would be lower than for SWA-3. Possible cost variations would be only slightly lower than for SWA-6.

SWA-6, the On-site Treatment and Disposal Alternative, would require extensive excavation and on-site disposal. Unlike SWA-3, this alternative would not require transport to or acceptance by an off-site facility. As such, possible cost variations for Alternative SWA-5 would be lower than for SWA-3. Possible cost variations would be only slightly lower than for SWA-6.

This final criterion is considered a modifying criteria and is taken into account after evaluating the other criteria described above. It is focussed upon after public comments on this PRAP have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan were evaluated as part of the Record of Decision (ROD). A "Responsiveness Summary" is included in the ROD to describe public comments received and how the Department addressed the concerns raised. This is included as Appendix A.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 7, the **NYSDEC has selected Site Wide Alternative 6 (SWA-6) as the remedy for this site.**

This selection is based upon the following factors:

Site Wide Alternative 1 (SWA-1), the No Further Action Alternative would not satisfy SCGs or Remedial Action Objectives and is rejected on that basis.

SWA-3, Removal with Off-site Disposal, would be very effective at meeting SCGs and Remedial Objectives and would have the highest assurance of long term effectiveness and permanence. However, SWA-3 also has a high potential for short term impacts to public health and the environment and is by far the most costly. SWA-3 is rejected on this basis and with consideration that SWA-6 will be very nearly as effective in all regards and superior regarding short term risks and costs.

SWA-5, Removal with On-site Disposal, could effectively meet most SCGs and Remedial Action Objectives, with notable exception being Skaneateles Creek sediments. Since SWA-5 would not address creek sediments or provide treatment for site wastes prior to disposal on-site, this alternative would have a significantly lower assurance of long term effectiveness and permanence than either SWA-3 or SWA-6. Because SWA-5 is nearly as expensive as SWA-6, but not nearly as effective overall, SWA-5 is rejected.

SWA-6, Removal with On-site Treatment and Disposal, will effectively meet SCGs and Remedial Action Objectives. SWA-6 will also reliably provide for long term effectiveness and permanence through removal of creek sediments and treatment of site wastes. Because SWA-6 will be far more effective than SWA-5 at marginally increased costs, and nearly as effective as SWA-3, with lower short term risk and substantially lower costs than SWA-3, SWA-6 is the selected remedial alternative for this site.

The estimated present worth cost to implement the remedy will be $11,600,000 including capital construction costs and O&M costs for a 30 year period.

See Figures 4, 5 and 6 for conceptual drawings of the proposed remedy. The elements of the selected remedy are as follows:

- *Mobilization and construction of on-site haul roads, materials handling facility, and water treatment system.*

- *Construction of an on-site, engineered treatment and disposal cell as a CAMU for hazardous waste management.*

- *Temporary dewatering and treatment of water from the existing Landfill, AEC 1.*

- *Excavation and processing of contaminated soils and waste from AEC 1 (est. 45,000 CY), followed by treatment and disposal in the on-site, engineered cell.*

- *Excavation and processing of organics contaminated soils from AEC 2 (est 4,100 CY), followed by treatment and disposal in the on-site, engineered cell.*

- *Construction of a 5 acre clay cap over AEC 2 after excavation, and construction of a vertical cutoff wall between AEC 2 and the creek to isolate residual metals contaminated soils.*

- *Construction and operation of a Soil Vapor Extraction and Bioventing system within the treatment cell as wastes are placed. Construction and operation of supporting equipment and air treatment systems needed to operate the SVE/Bio treatment system.*

- *Dredging and processing of contaminated sediments from AEC 5, Skaneateles Creek, (est. 2,700 CY) followed by treatment and disposal in the on-site, engineered cell.*

- *Design, installation and operation of a shallow groundwater pump and treatment system comprised of extraction wells in the vicinity of AEC 1 and a collection trench at AEC 2.*

- *No action for deep groundwater, but with monitoring to assess improvements expected to accrue from removing site source areas and natural attenuation.*

- *Contingency for future pump and treat action on AEC 4 should source removal and natural attenuation not promote adequate improvements to the deep bedrock groundwater.*

- *Institutional Controls*

Institutional controls under the proposed remedy will include: deed restrictions to protect remedial features and restrict on-site groundwater use; long term monitoring of site conditions; continued site security and access control; and routine maintenance operations like lawn mowing, fence repairs and cap repairs. Site monitoring will include a periodic survey of groundwater use in the area and efforts for early identification of any future threats to drinking water wells. A

contingency included with the Institutional Controls is the responsibility for SMC to supply a safe drinking water supply should any drinking water impacts be identified.

Because the onsite landfill cell will be used for treatment and disposal of wastes from a hazardous waste site, the cell is to be operated as a Corrective Action Management Unit (CAMU) under the regulations that govern hazardous waste facilities. Based upon the results of the Remedial Investigation and Feasibility Study and expected achievement of the remedial goals by the selected remedy, approximately 3 to 4 acres of the eastern portion of the site (see Figure 6) is hereby designated as a CAMU for site remediation purposes.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the citizen participation process, a notice was sent to residents living near the site and other interested persons to inform them of the proposed plan and advise them of the public meeting to be held to discuss this plan. The public meeting was conducted on March 7, 1996 at the American Legion Post in Skaneateles Falls. The purpose of this meeting was to present the Proposed Remedial Action Plan (PRAP) for the site and obtain public comment on the plan. All comments provided by the public have been evaluated and are addressed in the Responsiveness Summary (Appendix A). There have been no substantive changes made to the remedy proposed in the PRAP as a result of the public comments received.

In general, comments received from the public related to potential risks posed by remedy implementation and to the details of remedy design. Many of the comments received will be used to help guide development of final design details for construction of the remedy and to develop measures needed to assure adequate protection of the public during remedy construction. A summary of public participation efforts follows.

Document Repositories were established at the following locations for public review of project related material:

The Town of Skaneateles Town Hall
24 Jordan Street
Skaneateles, New York 13152
Attn: Town Clerk
(315) 685-3473
Hours: 8:00 a.m. to 4:30 p.m.

NYSDEC - Region 7 Office
615 Erie Boulevard West
Syracuse, New York 13204-2400
Attn: Ms. Sue Miller, (315) 426-7400
or, Mr. Charles Branagh, (315) 426-7551
Hours: 8:30 a.m. to 4:45 p.m.

NYSDEC - Central Office
50 Wolf Road - Room 242
Albany, New York 12233-7010
Attn: Mr. Salvatore F. Priore, P.E.,
Project Manager (518) 457-5636
or, 1-800-342-9296 to leave a message

The following citizen participation activities were conducted:

- Citizen Participation Plan prepared April 1992.
- Fact Sheet and Public Information Meeting on October 7, 1993 to present results of Phase I RI and discuss on-going Phase II RI activities.
- Fact Sheet and Public Informational Meeting on October 20, 1994 to present results on RI Report.
- February 22, 1996 - PRAP issued.
- February 22, 1996 - Fact Sheet describing Proposed Remedy mailed to public.
- February 22, 1996 to March 25, 1996; Public Comment Period on PRAP.
- March 7, 1996; Public availability session and meeting to present PRAP and receive comments.

APPENDIX A
STAUFFER CHEMICAL SITE RESPONSIVENESS SUMMARY

The following are questions raised during the public meeting of March 7, 1996:

Question: What would be the size of the engineered treatment and disposal cell?

Answer: The engineered cell, designated as a Corrective Action Management Unit (CAMU), has been estimated to be on the order of two to three acres laterally and its height would be approximately 15'-20' feet. The final design documents that will be prepared will be more specific on the details of the construction cell and its size. Additionally, the final size and height will be dependent on the final volumes of waste that will be excavated during construction.

Question: Does the Soil Vapor Extraction System (SVE) have a good track record for treatment?

Answer: Soil Vapor Extraction (SVE) has been used extensively and successfully for treatment of volatile organic contamination and is an excellent choice for treatment of the wastes at this site.

Question: What material are the SVE pipes shown in the cell made of and what is their purpose?

Answer: The SVE pipes are typically manufactured of plastics, either PVC or High Density Polyethylene (HDPE), and are 4"-6" in diameter with perforations to facilitate exchange of air and collection of the volatile organic compounds from the waste material. Final selection of material will be made during final design, with strength, chemical compatibility, availability and cost likely to be the determining factors.

Question: How long will the SVE system be operated and what methodologies will be used to treat off-gases, Volatile Organic Compounds (VOCs)?

Answer: The treatment system was estimated to be operational for a period of five (5) years. Initially, the system will be operated as a SVE treatment using higher air exchange rates. SVE operation may last about 2 years, depending on results. The performance of the SVE will be evaluated by monitoring air flow rates, selective Volatile Organic Compounds (VOC) concentrations in the SVE exhaust air, and mass of contaminant removal. Once the operation of the SVE exhibits an asymptotic low concentration of volatiles in the exhaust air, the system operation will be adjusted for lower air exchange rates and will become a bioventing operation. Bioventing will facilitate final treatment of both the VOCs and the Semi-VOCs present in site wastes.

All VOCs captured by the SVE exhaust air will be treated by an off-gas treatment system such as thermal oxidation or a carbon adsorption system. Thermal oxidation destroys the VOC at high temperatures (1,000 degree Celsius). Thermal oxidation is most effective when the VOC concentrations in the off-gas stream are relatively high and the air flow rate is relatively low. The carbon adsorption is most effective when the VOC concentrations are relatively low in the off-gas stream and the air flow rate is relatively high. The final design documents will be more specific in design of the air treatment system. Once the system becomes a bioventing operation, it is possible that off-gas treatment will no longer be needed.

Question: Has SVE been previously used as a remedial technology on such a large scale project and how successful is this technology?

Answer: Soil Vapor Extraction (SVE) Technology has been used extensively on sites across the State of New York and the United States. The USEPA has adopted this remedial technology as a presumptive remedy in its superfund program. SVE is very successful in treating volatile organic compounds (VOCs), which are prevalent at this site. Nearby, the Duva and the GE Farrell Road sites in Onondaga County have insitu SVE systems currently operational and working effectively. The Duva system is treating up to 20,000 CY of soils, the Farrell Road site is treating about 3,000 CY of soils. The Duva system is located very close to residences and there have been no problems with air releases or exposures to residents. In Rensselaer County, the Sterling Site #3 remedial program includes a SVE system that has treated over 70,000 CY of soils in-situ.

Question: How will the SVE and bioventing systems perform in the landfill cell? Have both of these technologies been used by NYSDEC together before in such a large scale landfill cell?

Answer: SVE and bioventing are technologies that complement each other well and are often paired. The NYSDEC believes the combination of the two technologies in sequence will successfully treat the VOCs and SVOCs in site wastes. The SVE system will treat the VOCs while the biovent system will treat the semi-volatile organic compounds (SVOCs) such as toluic acid and Polynuclear Hydrocarbons (PAHs).

These technologies will not remove or treat the inorganic metal compounds. The landfill component has been added to permanently isolate the metals and any organic residuals. The NYSDEC has not previously used the two technologies together within a landfill cell. As such, SMC's design efforts and the State's review will focus on constructability and compatibility issues. Based on preliminary engineering evaluations, the NYSDEC is confident that the combination of technologies will perform as an effective remedy for this site.

Question: How will monitoring of the performance of these systems be conducted within the Corrective Action Management Unit (CAMU) cell and how will it be determined if the wastes have been successfully treated?

Answer: VOC concentrations in the extracted vapors will be monitored during treatment by the SVE system. The biovent operation will have similar monitoring but with other indicators added to monitor biological activity (O_2, CO_2). Once exhaust air monitoring indicates that bioventing activity is slowing or finished, samples of waste and soil taken from the cell will be tested and compared to NYSDEC Standards, Guidance and Criteria (SCGs). The data will then be used in making decisions regarding the overall effectiveness, changes to system operation, and possible shut down of the system.

Question: Are the SVE and Bioventing Technologies successful in treating inorganic compounds?

Answer: No. The SVE and Bioventing Technologies are effective only in VOC and SVOC remediation. The residual inorganics from AEC1 will be permanently contained in the CAMU cell, and the residual inorganics in AEC2 will be permanently capped.

Question: Will capping of the residual inorganic compounds in AEC2 be protective and not be a continuing source of contamination?

Answer: With proper installation and maintenance, isolating the lower level residual inorganics will be protective and will not be a continuing source. The clay cap (approximately 5 acres) greatly reduces infiltration of precipitation and thus decreases the leaching and mobility of residual inorganics into the groundwater. Additionally, AEC2 contains a cut off wall in proximity to the Skaneateles Creek and a collection trench to aid in groundwater treatment, thereby adding further control measures.

Question: Will the air emissions from the CAMU cell meet NYSDEC Standards and if they don't what happens?

Answers: Yes, the air emissions from the CAMU cell from the operation of the SVE and biovent systems will be required to meet the NYSDEC air quality standards. The off-gases will be treated by thermal oxidation, carbon adsorption systems or possible combinations of other applicable treatment technologies. The off-gas treatment technologies have been successful in meeting NYSDEC SCGs. If, however, such systems do not provide adequate treatment during initial operation, the system operation would be adjusted. Air flow rates could be adjusted to allow treatment to meet standards, or the system could be shut down until added controls can be installed to protect the public.

Question: Why didn't NYSDEC attempt to model in-place (in-situ) remedial technologies instead of excavation?

Answer: The Feasibility Study presented an in-depth analysis of in-situ technologies. Both the NYSDEC and SMC had hoped that an effective and economical application of in-situ remediation would have been possible. However, based on the contaminant mix of inorganic metals with volatile organic compounds, the large area of contamination, physical nature of the waste in the landfill, and presence of high water levels in the landfill, they were rejected. In-situ technology would be difficult to implement effectively, would not readily address metals contamination without multiple treatment steps and would not be as protective of the public health and environment as the excavation and treatment alternative (SWA6). Additionally, in-situ treatment would not provide for proper disposal of the solid wastes, (i.e., garbage, C&D material, etc.) that comprise a large portion of the site landfill components.

Question: When construction and excavation activities commence at the site, how will volatile emissions be monitored and controlled? Additionally, how will nearby residents be notified in case of an uncontrolled release of emissions from the site?

Answer: A comprehensive air monitoring plan and system will be designed and reviewed by NYSDEC and NYSDOH prior to any remedial activities occurring at the site. The system will incorporate real time (or instantaneous reading) air monitoring equipment able to detect the VOCs found at this site. The specific details of the air monitoring plan and system will be designed as an integral component of the final design documents. Air monitoring plans usually contain site worker monitoring, perimeter site monitoring and off-site monitoring. Additionally, the plan would incorporate a vapor emission response plan, and an emergency notification and evacuation plan in case of an uncontrolled release.

Technologies to control emissions vary widely, and include the use of dust suppression techniques, the covering of waste piles, foam suppression methodologies and, in extreme cases, isolation of the excavation using a temporary enclosure. No one technology has been selected and final determination of specific technologies to be employed will be dependent on initial air monitoring results. The public health is our primary concern and every attempt will be made to minimize impacts from construction activities.

Question: My grandfather and uncle lived near this site and subsequently died of lung cancer. Now myself and my children live here. Is there a danger from this site?

Answer: In order for someone to be harmed by substances at the Stauffer site, one would have to be exposed to them in some significant amount; in other words, contact them in a sufficient quantity to cause illness. Environmental data gathered during the Remedial Investigation showed significant contamination in soils and groundwater; ambient air was unaffected at the site perimeter. Since the community is not consuming the groundwater, and is not in contact with contaminated soils at the site, the site does not pose a current threat to nearby residents.

Question: When the plant was in operation, there used to be white residue emanating from the plant, that adhered to car windows and house siding and causing surface pitting. Is there information of what this was and can it be tested for toxicity?

Answer: There are no apparent signs of this residue at this time and none were found during the Remedial Investigation. The plant was already shut down and in-active at the time of the Remedial Investigation. However, through verbal communications with former workers, it is believed lye was used at some point in the plant history. This is a corrosive material and may be the substance that is being referred to. It is important to note that there was no confirmation of this substance during the Remedial Investigation. Therefore, it cannot be subjected to toxicity tests.

Question: When the sediments in the Skaneateles Creek are excavated, how will Stauffer and its contractor prevent further mobilization of contaminated sediments down stream from the site?

Answer: Precautions against sediment mobilization will be an important part of the final design. Considerations will be given to conducting dredging activities during low flow periods and to requirements for siltation controls and collection areas to minimize impacts to the stream. Additionally, surgical approaches for sediment removal will be given the highest priority as a means to minimize major disruption to the creek. We believe SMC and its contractor will be able to safely control and confine the contaminated sediments to be dredged and excavated with minimal mobilization of sediments. This remedial activity will commence after the other major components of the remedial system are completed.

Question: Will the site PRP, Stauffer Management Company (SMC), have to post a performance bond?

Answer: No. They are legally bound by a consent order executed between NYSDEC and SMC. Further, there is no indication from SMCs past performance or its fiscal condition that would suggest that bonding is appropriate in this instance.

Question: The area where the CAMU cell is to be located and constructed is not contaminated. Why will the cell be constructed in a clean area?

Answer: Usually, an already contaminated location would be preferable for a CAMU. However, at this site the contaminated areas are within the flood plain of Skaneateles Creek, are closer to residences, and are also in a configuration that would not allow reasonable construction staging or coordination with other site activities. As such, these areas are not good candidates for siting the CAMU treatment and disposal cell. The adjacent, uncontaminated area proposed for the construction on the cell was evaluated and found to meet the siting criteria of NYSDEC's requirements for new landfills. As such, use of the uncontaminated area for the CAMU cell meets regulatory requirements and would be more protective than management of the wastes at contaminated areas of the facility.

Question: Is the subsurface low permeability wall adjacent to the Skaneateles Creek in the vicinity of AEC2 only to be installed for temporary construction measures?

Answer: No. The low permeability wall is intended to minimize the intrusion of surface water from Skaneateles Creek into the shallow groundwater extraction system for AEC2. This wall has been initially designed to be approximately 500 feet long, 3 feet wide and 20 feet deep. This wall is proposed to be an integral part of the shallow groundwater AEC3 remedial system.

Question: What happens after the construction is completed?

Answer: A post-construction monitoring program will be in place to monitor the progress and effectiveness of the remedial program. If necessary, further remedial actions may have to be instituted by SMC based on the results of the monitoring. SMC will be legally bound by a consent order for any post construction remedial activities that may become necessary.

Question: How long will this site have to be monitored?

Answer: There has been no definite time frame set for monitoring at the Stauffer Site. However, the remedial program will be monitored for as long as any consequential amounts of hazardous waste remain at the site.

Question: How can we learn and ask questions during the design and construction periods?

Answer: The NYSDEC will always be available to disseminate information and answer questions during the design and construction periods. Public Availability forums will be scheduled and fact sheets distributed in the future to present the public with more information on the details of design and construction activities. Additionally, the document repositories will have design and construction documents and drawings available for public review. The use of local governmental representatives is also most helpful in communicating concerns to NYSDEC on behalf of the local community.

Question: Will local Police, Fire Departments and Emergency Medical Services be apprised of construction activities at the site?

Answer: Yes. The Health and Safety Plan that was prepared for the Remedial Investigation activities required notification of local authorities during the Remedial Investigation activities. Notification of the local authorities and local residents will be required prior to construction activities that will be occurring at the site.

Question: What are the risks to the community from volatile emissions from construction activities?

Answer: An extensive air monitoring program will be performed during construction activities at the site. Unacceptable levels of emissions will trigger protective measures which may include procedural or engineered controls in order to preclude exposing the community to harmful levels of volatile organic compounds. The welfare of the community will be given the highest priority.

Questions raised per telephone conversation with Craig Jackson on March 11, 1996 from the Syracuse City Water Department representatives Mr. Dan Rubino and Mr. Owen Donovan.

Question: Where is the site? The newspaper article said the site was on a creek that flowed into Skaneateles Lake.

Answer: The site location is in Skaneateles Falls along Skaneateles Creek. The article was in error on the flow direction of the creek.

Question: The City maintains the creek from the lake downstream to a weir in Skaneateles Falls, below the site. Workers occasionally enter the creek, typically wearing waders. What risks to the City's creek maintenance workers are posed by the site?

Answer: Contaminant levels in the water column are generally very low or non-detect. Only the sediments are of concern within the creek. The creek remedy is being driven by site contaminants in sediments that are of concern for aquatic biota, and contaminant concentrations in the sediments do not pose a particular concern for humans from occasional exposure. A separate PCB source is suspected to exist somewhere in the creek in the same general area of the site, although none were detected during the RI sampling. Direct exposure to PCBs could be of concern. As a general precaution any one entering the Creek should wear boots or waders to avoid direct skin contact. Boots and waders should be cleaned off after use.

During the call, Mr. Rubino also supplied some information that should be considered into the design and construction of the creek remediation:

- The City is required by its permit with DEC to maintain a minimum 6MGD flow in the creek, as measured at a weir in Skaneateles Falls downstream of the site. The 6MGD is often met by 4MGD from the lake, supplemented by about 2MGD inflows that exist between the lake and the weir in Skaneateles Falls.

- The 6MGD requirement was based on water quality concerns and was driven by a need to dilute the effluent from the Village of Skaneateles POTW (reportedly discharging on the order of 0.5MGD). Since the requirement was set, the Village POTW has received several improvements.

- Late winter to spring is the highest discharge period (snowmelt, rains and the need to maintain reserve storage in the lake for flood control). The traditional lowest flow period is summer.

- The City would be willing to do what it can to help control flows during sediment removal efforts in the creek, and would be willing reduce flows as far as it can within the constraints of its permit or as otherwise authorized by DEC. Mr. Cliff Creech in the Cortland office is the permit manager for DEC.

Several comments and suggestions were offered by Mr. Martin Hubbard in a March 23, 1996 letter. Some of Mr. Martin's concerns have been addressed by previous questions and responses (above) dealing with the reliability of the proposed technologies, the scale of the proposed application, and uncertainty about the ultimate success of the proposed remedy. Mr. Martin also had the following comments (paraphrased by NYSDEC)

Comment: Some of the remedial components offer no remediation action and merely will contain problem soils via the most outdated methods.

Response: AEC 2 would include isolation of about 43,000 CY of lower level metals contaminants and some residual organics. Containment technologies are not "outdated" as Mr. Martin has suggested. Quite the opposite, over the past 8-10 years there have been significant advances in the application of materials used to isolate contaminated wastes. Reliable containment components continue to be used quite regularly at landfills, hazardous waste facilities, and hazardous waste sites throughout New York and the United States.

Comment: In-situ bioremediation was disregarded in part in the landfill because of air emissions.

Response: See page A3 for a detailed response on the issue of in-situ remediation. Air emissions was not a major factor in the decision to reject any in-situ technology, including bio. The fact is that even if implemented successfully over the significant technical hurdles it faces, in-situ bioremediation would only offer a partial solution to the Landfill problem. Inorganic metals would remain untreated and uncontrolled. Additionally, the other plant solid wastes now in the existing landfill would remain improperly disposed and within the flood plain of Skaneateles Creek thereby making it a continuing source.

Comment: Mr. Martin suggested consideration of ex-situ remediation, with the reuse of remediated soils.

Response: The proposed remedy is an ex-situ remediation. However, because most of the volume to be treated is plant wastes and rubble from the Landfill, the remediation waste would have little usefulness even if also treated for metals removal. This is one of the reasons why a treatment/disposal cell was selected, to permanently isolate remaining wastes following treatment ex-situ.

Comment: Why weren't the options of stabilization of untreated inorganics explored? It seems that a pilot study of stabilization additives should be done before discarding either in-situ or ex-situ remediation.

Response: Stabilization was seriously considered and rejected. When the cost of first treating organics via one technology is added to the cost of a second treatment for stabilization, and then compared to the cost of proper disposal of the solid wastes and rubble, the total cost of remediation became more than exorbitant. It would not be appropriate to delay decision making on this remedy to complete a $20,000 to $30,000 pilot study that would not provide essential information.

Questions and comments were also offered by Mr. Bill Pavlus, Supervisor of the Town of Skaneateles in a March 23, 1996 letter. Some of Mr. Pavlus' concerns have been addressed by previous responses (see above) dealing with details of the proposed remedy and measures for protecting nearby residents. Mr. Pavlus also had the following comments (paraphrased by NYSDEC):

Comment: I am not sure that all possible measures have been put in place to protect human health and the environment. I strongly feel that an Evacuation Plan should be put into place and the residents notified as to how it would work. I would like to feel that you are being absolutely sure that you are doing everything possible to protect the health of residents in the hamlet of Skaneateles Falls.

Response: Protection of community health will be a primary concern to the State agencies involved in this program. SMC has committed to a similar priority for it's forthcoming efforts. At this point in program development, there are no intrusive site activities and no actual measures are in place for community protection. However the type of protective actions available have been discussed. See responses on page A3, A4, A5 and A6 for additional information . Before any intrusive construction will begin, effective community protection measures will be in place to respond to site conditions. The details of these measures, and triggers to activate them, will be developed during the design phase for this project. Design of these contingencies will be based on anticipated site conditions yet with flexibility to deal with unforeseen circumstances. Specific details of air monitoring requirements, community notifications, contractor response actions, emergency response and possible evacuation plans will be developed with community input.

Comment: I think the Disposal Cell and how you will make sure that it is properly maintained needs to be explained further. What alternative measure will be taken if a problem begins to develop? What guarantee do we have that it will be properly maintained?

Response: See responses on pages A1, A2, A5 and A7 for some further explanations of the treatment/disposal cell concept. Again, this feature has not yet been designed to the level of detail needed to answer many of the questions regarding the specifics of the cell. However, the issue of long term maintenance is an important one. SMC will retain responsibility to maintain the cell. Once operation of the SVE and Bioventing technologies has been completed, the long term maintenance activities will be straightforward with the primary concern being to protect the integrity of the cap. This will require routine mowing to control deep rooting vegetation and routine inspection to identify any areas of cap degradation or erosion. SMC will retain responsibility for these activities and any future repairs that may be needed.

Comment: I would like to suggest that another Public Hearing be held to better explain the ramifications of volatile gas escaping into the air and specifically how it would be monitored.

Response: The State fully agrees and is committed to providing detailed design information to the public as part of the design review and approval process. The State will host a public meeting to discuss this important material. Of particular interest for this meeting will be the site Health and Safety Plan and its details for air monitoring, vapor emission response and possible evacuation plans. Design details of the treatment/disposal cell will also be available for discussion at that time.

APPENDIX B
ADMINISTRATIVE RECORD

- September 14, 1990, Site Investigation Work Plan for Stauffer Management Company, Skaneateles Falls, N.Y. prepared by Blasland, Bouck and Lee Engineers P.C. (BBL) Volumes 1-3.
- Addendums to the BBL Site Investigation Plan dated October 24, 1990 and June 11, 1991.
- Order on Consent, Index No. A701018612 dated March 28, 1991.
- July 18, 1991; Submittals prepared by EA Engineering, P.C. for Stauffer Management Company entitled the Field Sampling and Analysis Plan (FSAP); the Quality Assurance Project Plan (QAPP); the Health and Safety Plan (HASP).
- August 7, 1991; Attachments A-C prepared by EA Engineering, P.C. to supplement the QAPP.
- Citizen Participation Plan, 1992.
- October 28, 1993; Work Plan Amendment for Phase II Investigation, prepared by EA Engineering P.C. for Stauffer Management Company.
- Final Remedial Investigation Report for Stauffer Management Company Site, Skaneateles Falls, New York, Volumes 1 and 2 dated August 25,1994.
- Field investigation Results from Supplemental Stream Sediment Sampling, for Stauffer Management Company, Skaneateles Falls, New York, prepared by EA Engineering, P.C. dated September 1995.
- Final Feasibility Study Report for Stauffer Management Company Site, Skaneateles Falls, New York prepared by EA Engineering, P.C. dated December 14, 1995.
- Proposed Remedial Action Plan (PRAP) prepared by NYSDEC for the Stauffer Management Company Site, Skaneateles Falls dated February 22, 1996.
- NYSDOH letter to NYSDEC dated February 12, 1996 G. Anders Carlson to Michael O'Toole, Jr. regarding NYSDOH concurrence on PRAP.
- NYSDEC, Division of Hazardous Waste Remediation Technical and Administrative Guidance Memoranda, (TAGM) 4000-4057.
- NYSDEC, Division of Water Technical and Operational Guidance Series (TOGS) and Water Quality Regulations Parts 700-705, September 1, 1991.
- NYSDEC Division of Water, Biological Steam Assessment, Skaneateles Creek, 1992 Survey.

- NYSDEC, Division of Fish and Wildlife and Division of Marine Resources, Technical Guidance for Screening Contaminated Sediments, November 1993.
- NYSDEC, Division of Hazardous Waste Remediation, Inactive Hazardous Waste Disposal Sites in NYS Volume 7, dated April 1995.
- New York State Environmental Conservation Law 6 NYCRR Part 375, May, 1992.
- National Oil and Hazardous Substance Pollution Contingency Plan, 40 CFR Part 300, 1990.

TABLE 1

ANALYTES IDENTIFIED IN SOILS AND WASTES (AEC 1 & 2)

Contaminant of Concern	Landfill Perimeter and Interior Soil Sample Results (AEC 1) µg/kg (ppb)		Area North of Main Plant Building Soil Sample Results (AEC 2) µg/kg (ppb)		SCG's (ppb)	Number Exceeding SCG's
	Range	Freq.	Range	Freq.		
Volatiles:						
Toluene	ND-1,000,000	15/32	ND-37	3/17	1,500	6/49
Xylenes (total)	ND-25,000,000	21/32	ND-2,200,000	10/17	1,200	15/49
Semi-Volatiles:						
Benzo(a)anthracene	ND-1,500	6/32	ND-6,700	6/17	224	9/49
Chrysene	ND-1,600	6/32	ND-6,600	7/17	400	7/49
Benzo(b)fluoranthene	ND-2,000	7/32	ND-5,600	7/17	1,100	2/49
Benzo(k)fluoranthene	ND-1,000	6/32	ND-7,900	7/17	61	13/49
Benzo(a)pyrene	ND-1,300	6/32	ND-7,900	7/17	61	13/49
o-Toluic Acid	ND-81,000	9/30	ND-19,000	3/17	50,000	2/47
m-Toluic Acid	ND-8,500,000	12/30	ND-46,000	4/17	50,000	3/47
p-Toluic Acid	ND-1,600,000	9/30	ND-14,000	1/17	50,000	1/47
Inorganics:	(ppm)		(ppm)		(ppm)	
Chromium	4.2-164	33/33	9.0-162	17/17	10	47/50
Cobalt	5.7-4,230	33/33	4.2-30.3	17/17	30	13/50
Lead	1.9-160	30/30	5.6-3,030	17/17	37	20/47
Mercury	ND-17.2	17/33	ND-25.2	12/16	0.1	22/49
Nickel	14.0-99.2	33/33	13.5-166	17/17	13	50/50
Zinc	26.4-1,170	18/20	22.5-15,600	17/17	20	35/37

TABLE 2

SUMMARY OF ANALYTES IDENTIFIED IN LANDFILL PIEZOMETERS (AEC 3)

Contaminant of Concern	Round 1 µg/L (ppb)		SCG's (ppb)	Number Exceeding SCG's
	Range	Freq.		
Volatiles:				
Toluene	140-1,600	2/2	5	2/2
Xylenes (total)	7,900-73,000	2/2	5	2/2
Semi-Volatiles:				
o-Toluic Acid	30,000-40,000	2/2	31,000	1/2
m-Toluic Acid	78,000-100,000	2/2	31,000	2/2
p-Toluic Acid	23,000-42,000	2/2	31,000	1/2
4,4'DDE	0.053-0.19	2/2	ND	2/2
Inorganics:				
Arsenic	3.8-33.2	2/2	25	1/2
Chromium	21.3-76.7	2/2	50	1/2
Cobalt	50.6-992	2/2	-----	-----
Zinc	146-747	2/2	300	1/2

* Only one round of data was collected.

TABLE 3

SUMMARY OF ANALYTES IDENTIFIED IN OVERBURDEN GROUNDWATER (AEC 3)

Contaminant of Concern	Round 1 µg/L (ppb)		Round 2 µg/L (ppb)		SCG's (ppb)	Number Exceeding SCG's
	Range	Freq.	Range	Freq.		
Volatiles:						
Toluene	ND-2	1/6	ND-270	2/8	5	2/14
Xylenes (total)	ND-19	3/6	ND-28,000	5/8	5	6/14
Semi-Volatiles:						
Benzo(a)anthracene	ND-2	1/6	ND-14	1/7	-----	-----
Chrysene	ND-2	1/6	ND-13	1/7	-----	-----
Benzo(b)fluoranthene	ND-1	1/6	ND-19	1/7	-----	-----
Benzo(k)fluoranthene	ND-1	1/6	ND	0/8	-----	-----
Benzo(a)pyrene	ND-2	1/6	ND-10	1/7	ND	2/13
o-Toluic acid	ND-11,000	1/6	ND-14,000	5/8	31,000	0/14
m-Toluic acid	ND	0/6	ND-6,500	4/8	31,000	0/14
p-Toluic acid	ND	0/6	ND-700	2/8	31,000	0/14
Inorganics:						
Aluminum	885-19,300	6/6	508-42,800	8/8	-----	-----
Chromium	5.6-2,550	6/6	ND-6,870	7/8	50	5/14
Cobalt	ND-27.3	4/6	ND-57.2	4/8	-----	-----
Lead	ND-15	1/4	3.7-1,370	8/8	25	7/12
Zinc	26.1-643	6/6	23.8-1,140	8/8	300	5/14

TABLE 4

SUMMARY OF ANALYTES IDENTIFIED IN UPPER BEDROCK GROUNDWATER (AEC 3)

Contamintant of Concern	Round 1 µg/L (ppb)		Round 2 µg/L (ppb)		SCG's (ppb)	Number Exceeding SCG's
	Range	Freq.	Range	Freq.		
Volatiles:						
Vinyl choride	ND-3	2/13	ND-21	1/17	2	2/30
1,2-Dichoroethene (total)	ND-160	8/13	ND-1,500	8/17	5	15/30
Trichloroethene	ND-180	7/13	ND-54	5/17	5	8/30
Tetrachloroethene	ND-2,900	6/13	ND-190	3/17	5	7/30
Toluene	ND-63	6/13	ND-37	3/17	5	10/30
Xylenes (total)	ND-2,100	8/13	ND-1,900	10/17	5	17/30
Semi-Volatiles:						
Phenol	ND-140	7/13	ND-2,400	6/17	1	13/30
o-Toluic acid	ND-690,000	9/12	ND-220,000	10/17	31,000	7/29
m-Toluic acid	ND-450,000	9/12	ND-150,000	9/17	31,000	5/29
p-Toluic acid	ND-32,000	6/12	ND-240,000	9/17	31,000	2/29
4,4'-DDE	ND	0/13	ND-0.61	2/17	ND	2/30
Inorganics:						
Aluminum	107-10,700	13/13	36-32,500	17/17	-----	-----
Arsenic	ND-910	7/9	ND-631	11/17	25	12/26
Cobalt	ND-42.4	8/13	ND-73	8/17	-----	-----
Lead	ND-122	5/8	ND-128	15/17	25	8/25

TABLE 5

SUMMARY OF ANALYTES IDENTIFIED IN DEEP BEDROCK GROUNDWATER (AEC 4)

Contaminant of Concern	Round 1 µg/L (ppb)		Round 2 µg/L (ppb)		SCG's (ppb)	Number Exceeding SCG's
	Range	Freq.	Range	Freq.		
Volatiles:						
1,2-Dichoroethene (total)	ND-94	2/9	ND-4	1/6	5	1/15
Toluene	ND-23	2/9	ND-4	1/6	5	3/15
Xylenes (total)	ND-520	2/9	ND-330	1/6	5	3/15
Semi-Volatiles:						
Phenol	ND-22	1/9	ND-35	1/6	1	2/15
o-Toluic acid	ND-47,000	3/9	ND-17,000	1/6	31,000	1/15
m-Toluic acid	ND-37,000	2/9	ND-17,000	1/6	31,000	1/15
p-Toluic acid	ND-3,900	2/9	ND-1,300	1/6	31,000	0/15
4,4'-DDE	ND	0/9	ND-0.14	1/6	ND	1/6
Inorganics:						
Aluminum	ND-289	5/6	789-2,420	6/6	-----	-----
Arsenic	ND-90.5	3/9	ND-149	2/6	25	3/15
Nickel	ND-134	7/9	ND-68	1/6	-----	-----

TABLE 6

SUMMARY OFANALYTES INDENTIFIED IN SKANEATELES CREEK SEDIMENTS (AEC 5)

Contaminant of Concern	Skaneateles Creek Sediments Round 1 μg/kg (ppb)		Skaneateles Creek Sediments Round 2 μg/kg (ppb)		SCG's (ppb)	Number Exceeding SCG's
	Range	Freq	Range	Freq		
Volatiles:						
Tetrachloroethene	ND-16	1/5	ND	0/5	9	1/10
Xylenes (total)	ND-2	1/5	ND-3,600	1/5	-----	-----
Toluene	ND	0/5	ND-48	1/5	-----	-----
1,2 Dichloroethene	ND	0/5	ND-1,100	1/5	-----	-----
Semi-Volatiles:						
Benzo(a)anthracene	ND-4,700	3/5	ND-980	4/5	15	7/10
Chrysene	ND-4,500	3/5	ND-705	4/5	15	7/10
Benzo(b)fluoranthene	ND-3,800	3/5	ND-1,100	4/5	15	7/10
Benzo(k)fluoranthene	ND-3,500	3/5	ND-490	3/5	15	7/10
Benzo(a)pyrene	ND-4,600	3/5	ND-780	4/5	15	7/10
Inorganics:	(ppm)		(ppm)		(ppm)*	
Antimony	60.4-91.7	5/5	ND	0/5	2-25	5/10
Cadmium	1.3-1.9	5/5	1.4-2.2	5/5	0.6-9.0	10/10
Copper	16.7-56.8	5/5	23.2-351	5/5	16-110	10/10
Lead	12.8-293	5/5	28.4-215	5/5	31-110	8/10
Mercury	ND	0/5	0.19-2.0	5/5	0.15-1.3	5/10
Nickel	15.8-23.6	5/5	14.3-48.7	5/5	16-50	6/10
Zinc	44.1-155	5/5	44.5-229	5/5	120-270	4/10

* SCG's for metals lists the range from the Lowest Effects Level to the Severe Effects Level

TABLE 7

SUMMARY OF ANALYTES
IDENTIFIED IN CREEK SEEPS (AEC 5)

Contaminant of Concern	Creek Seeps Round 1 μg/l (ppb)		SCG's (ppb)	Number Exceeding SCG's
	Range	Freq.		
Volatiles:				
1,2 Dichloroethene (total)	ND-880	3/4	5	3/4
Trichloroethene	ND-380	3/4	3	3/4
Tetrachloroethene	ND-560	3/4	0.7	3/4
Toluene	ND-95	3/4	5	3/4
Xylenes (total)	ND-790	3/4	5	3/4
Semi-Volatiles:				
Benzo(a)anthracene	ND-10	1/4	0.002	1/4
Benzo(b)fluoranthene	ND-19	1/4	0.002	1/4
Benzo(k)fluoranthe	ND-19	1/4	0.002	1/4
Benzo(a)pyrene	ND-8	1/4	0.002	1/4
Chrysene	ND-11	1/4	0.002	1/4
o-Toluic Acid	ND-510,000	3/4	31,000	2/4
m-Toluic Acid	ND-250,000	3/4	31,000	2/4
p-Toluic Acid	ND-71,000	3/4	31,000	1/4
Inorganics:				
Antimony	ND-150	3/4	3	3/4
Arsenic	5.7-170	4/4	50	2/4
Chromium	8.0-61	4/4	50	1/4
Cobalt	ND-27	2/4	5	2/4
Lead	87.8-117	4/4	50	4/4
Vanadium	ND-142	3/4	14	3/4

Table Continued - Next Page

TABLE 7 (continued)

SUMMARY OF ANALYTES IDENTIFIED
IN CREEK SEEP SEDIMENT SAMPLE (AEC 5)

Contaminant of Concern	Creek Seep Sediment Sample mg/kg (ppm)		SCG's (ppm)	Number Exceeding SCG's
	Range	Freq.		
Volatiles:				
Tetrachloroethene	54	1/1	9	1/1
Inorganics:			*	
Cadmium	2.2	1/1	0.6-9.0	1/1
Copper	29.8	1/1	16-110	1/1
Nickel	18.8	1/1	16-50	1/1

* SCG's for metals lists the range from the Lowest Effects Level to the Severe Effects Level

TABLE 8

REMEDIAL ALTERNATIVES COSTS

Site Wide Alternative	Area of Environmental Concern (AEC)	Capital Cost	Annual Cost O&M	Present Worth O&M	Total Present Worth
SWA-1	- AEC 1 Landfill	$0	$194,000		
	- AEC 2 North Plant	$0	$3,000		
	- AEC 3 Shallow GW	$0	$66,000		
	- AEC 4 Deep GW	$0	$39,000		
	- AEC 5 Skan Creek	$0	$32,000		
	Total - All AECs	$0		$5.4 M	$5.4 M
SWA-3	- AEC 1 Landfill	$15.9 M	$0		
	- AEC 2 North Plant	$20.7 M	$0		
	- AEC 3 Shallow GW[2]	$1.8 M	Yr 0-10 $160,000		
			Yr 10-11 $66,000		
	- AEC 4 Deep GW	$0	$39,000		
	- AEC 5 Skan Creek	$1.4	$0		
	Total - All AECs	$39.8 M		$2.0 M	$41.8 M
SWA-5[1]	- AEC 1 Landfill	$4.0 M	$26,000		
	- AEC 2 North Plant	$1.3 M	Yr 0-10 $11,000		
			Yr 11-30 $5,000		
	- AEC 3 Shallow GW[2]	$1.8 M	Yr 0-10 $160,000		
			Yr 10-11 $66,000		
	- AEC 4 Deep GW	$0	$39,000		
	- AEC 5 Skan Creek	$0	$32,000		
	Total - All AECs	$7.1 M		$3.3 M	$10.4 M

Table Continued - Next Page

TABLE 8 (continued)

REMEDIAL ALTERNATIVES COSTS

SWA-6[1]	- AEC 1 Landfill	$4.6 M	$71,000		
	- AEC 2 North Plant	$1.3 M	$42,000		
	- AEC 3 Shallow GW	$1.8 M	Yr 0-10 $160,000		
			Yr 10-11 $66,000		
	- AEC 4 Deep GW	$0	$39,000		
	- AEC 5 Skan Creek	$172,000	$32,000		
	Total - All AECs	$7.9 M		$3.7 M	$11.6 M

M = Million

1. SWA 5 and SWA 6 would have additional cost not shown in this table should a contingent pump and treat for AEC 4 be implemented. Increased Capital Costs for this contingency are estimated at $867,000. Increased O&M costs are estimated at $87,000 per year, or $1.58 M Present Worth. The increased Total Present Worth Cost would be $2.45 M.

2. O&M Costs for groundwater systems are based on SMC's estimation of a 10 year operational period. 10 years is not a criteria and as such, actual operational time for the groundwater system(s) would vary as needed to meet remedial objectives and SCGs. The FS includes a detailed cost evaluation for up to 30 years of operation.

USGS Quads (7.5-Minute Series):
Skaneateles (Photoinspected 1976)
Jordan (Photorevised 1973)

SCALE 0 1000 2000 (feet)

North

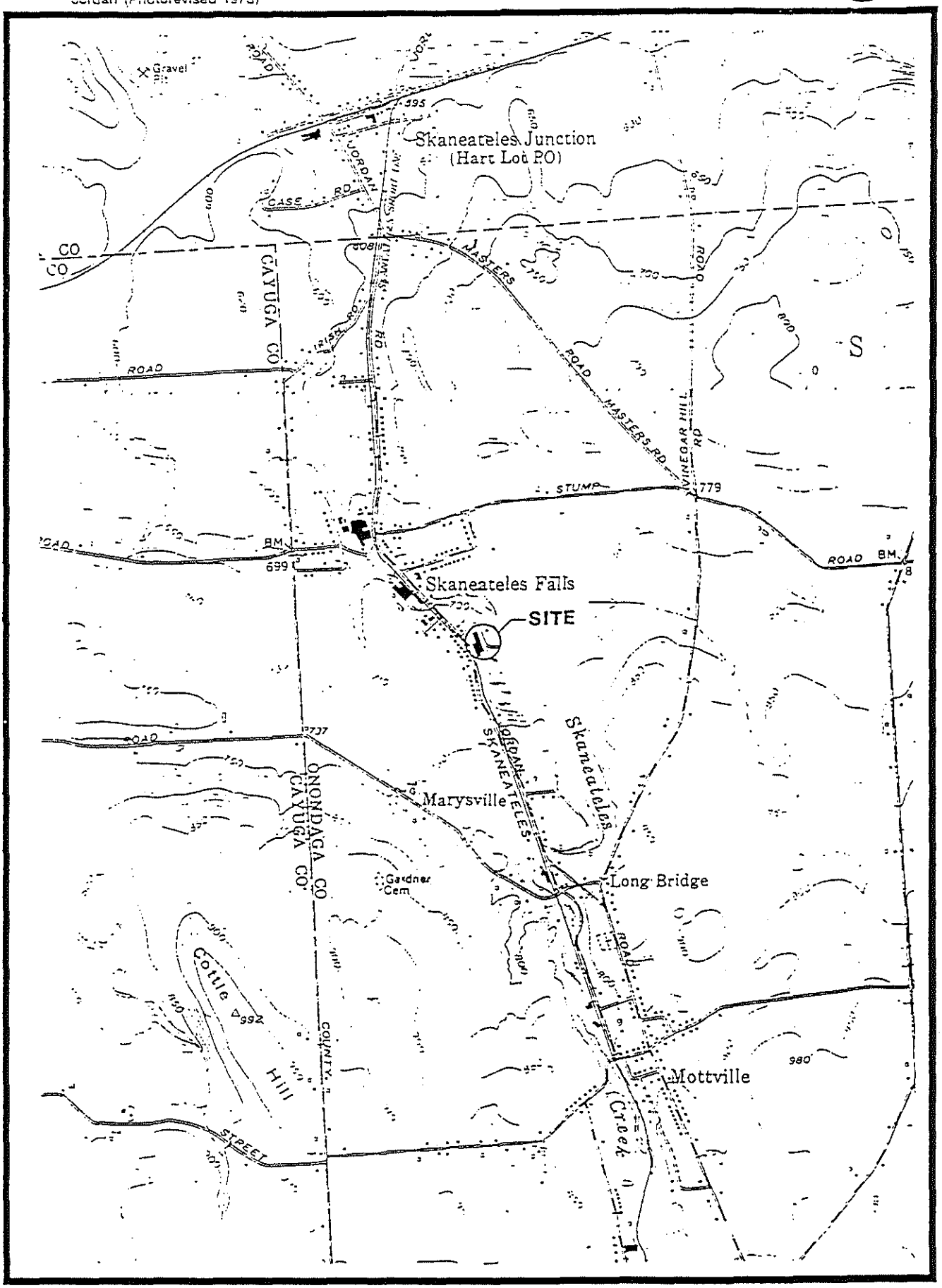


Figure 1 Site location map, Stauffer Management Company facility, Skaneateles Falls, New York.

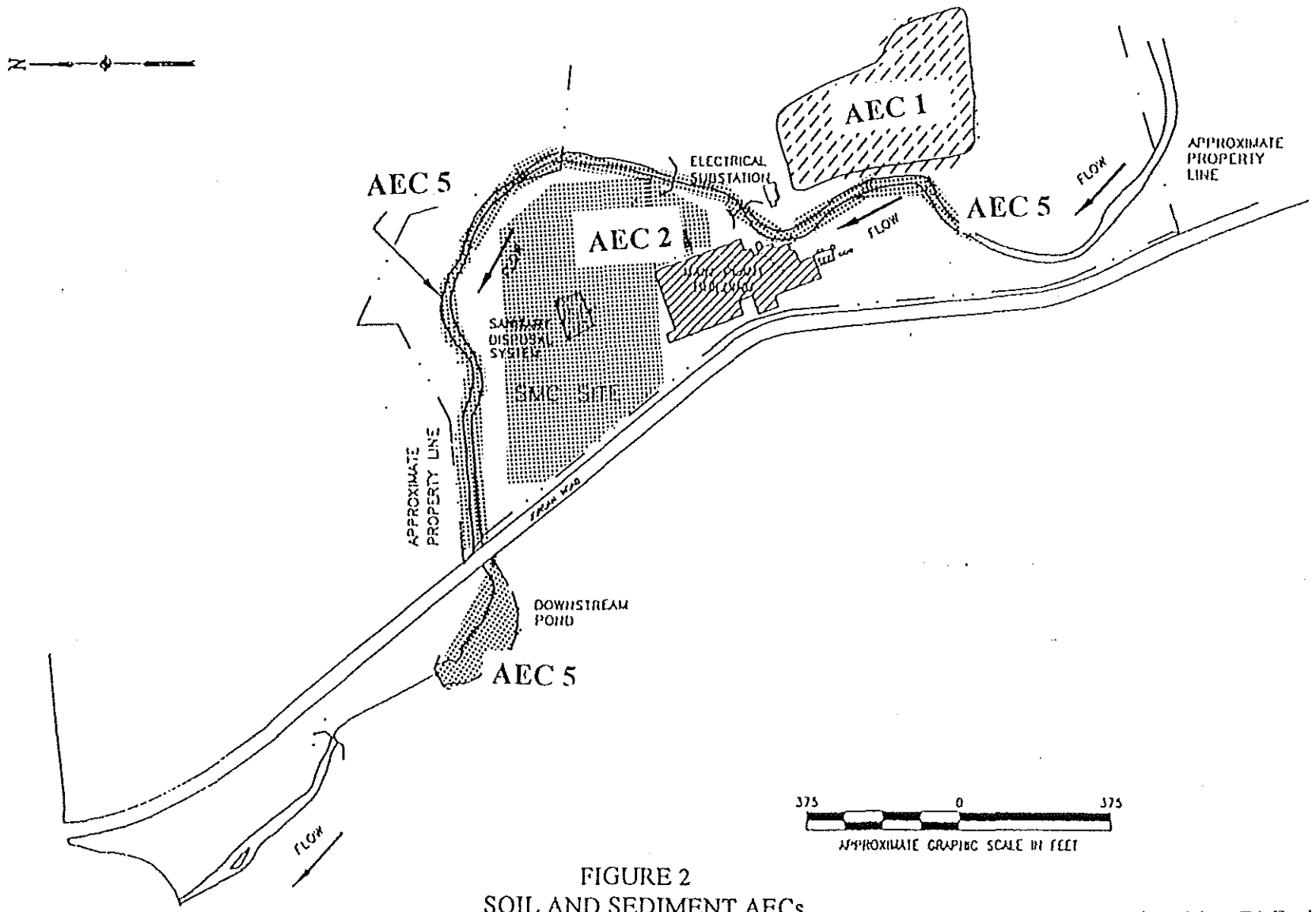


FIGURE 2
SOIL AND SEDIMENT AECs

Adapted from EA Engineering

EA ENGINEERING, SCIENCE, AND TECHNOLOGY	STAUFFER MANAGEMENT COMPANY SCHENECTADY FALLS, NEW YORK		DESIGNED BY LF	DRAWN BY SY	DATE 8-29-95	PROJECT NO. 11932.01
			CHECKED BY LF	PROJECT MGR. LF	SCALE 1"=375'	

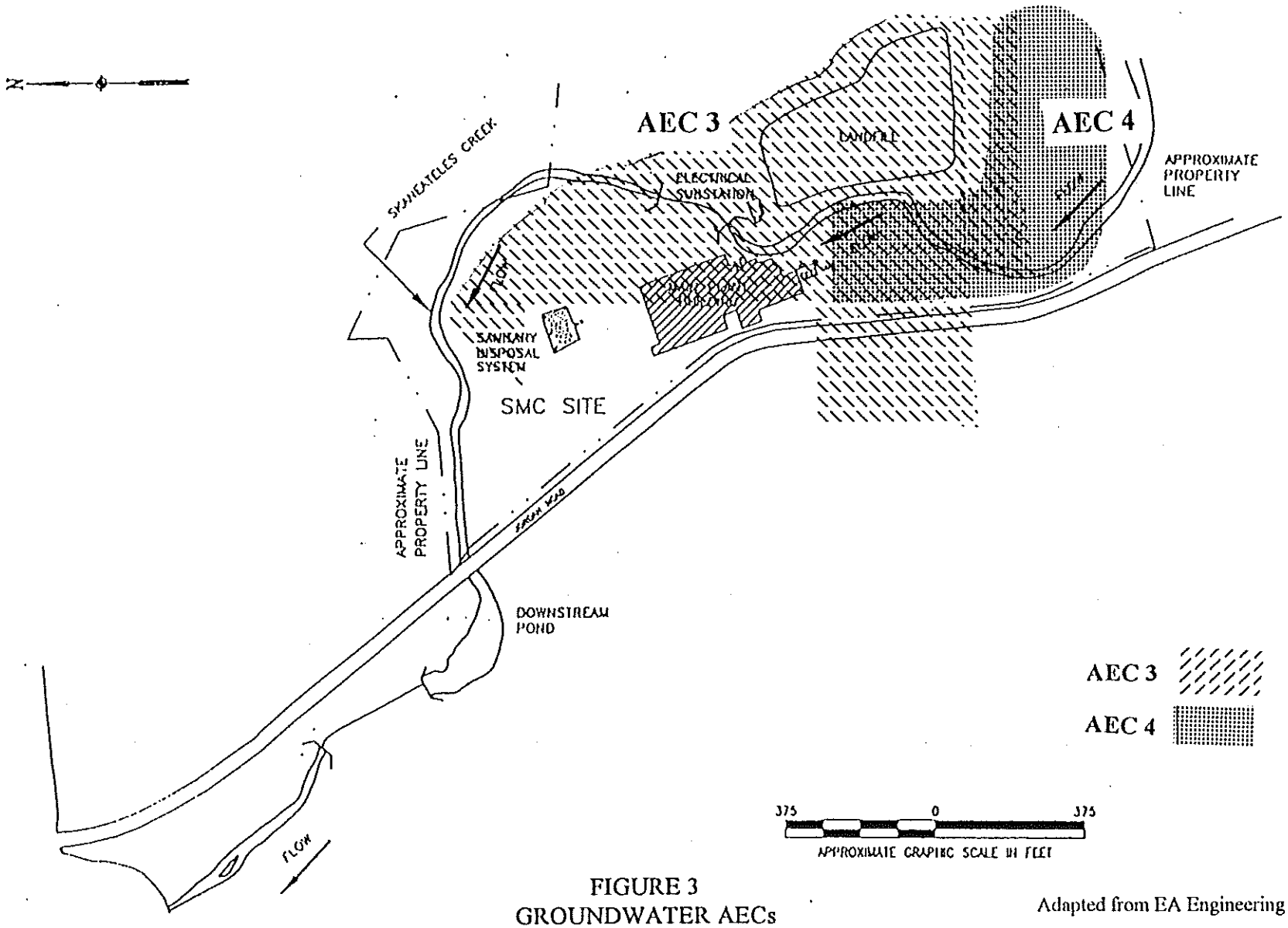


FIGURE 3
GROUNDWATER AECs

Adapted from EA Engineering

EA ENGINEERING, SCIENCE, AND TECHNOLOGY	STAUFFER MANAGEMENT COMPANY SKANEATELES FALLS, NEW YORK		DESIGNED BY LF	DRAWN BY SY	DATE 8-29-95	PROJECT NO. 11932.01
			CHECKED BY LF	PROJECT MGR. LF	SCALE 1"=375'	

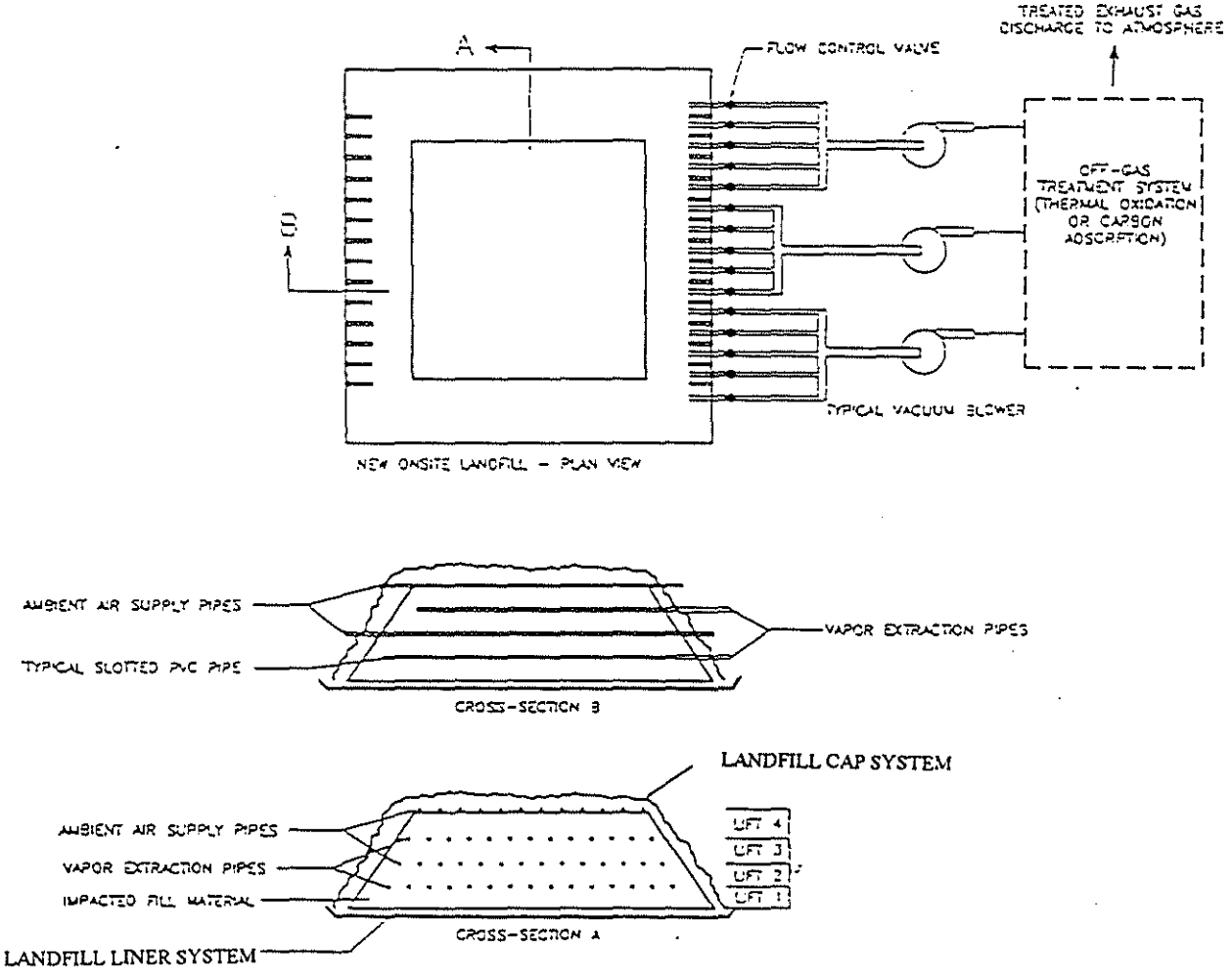
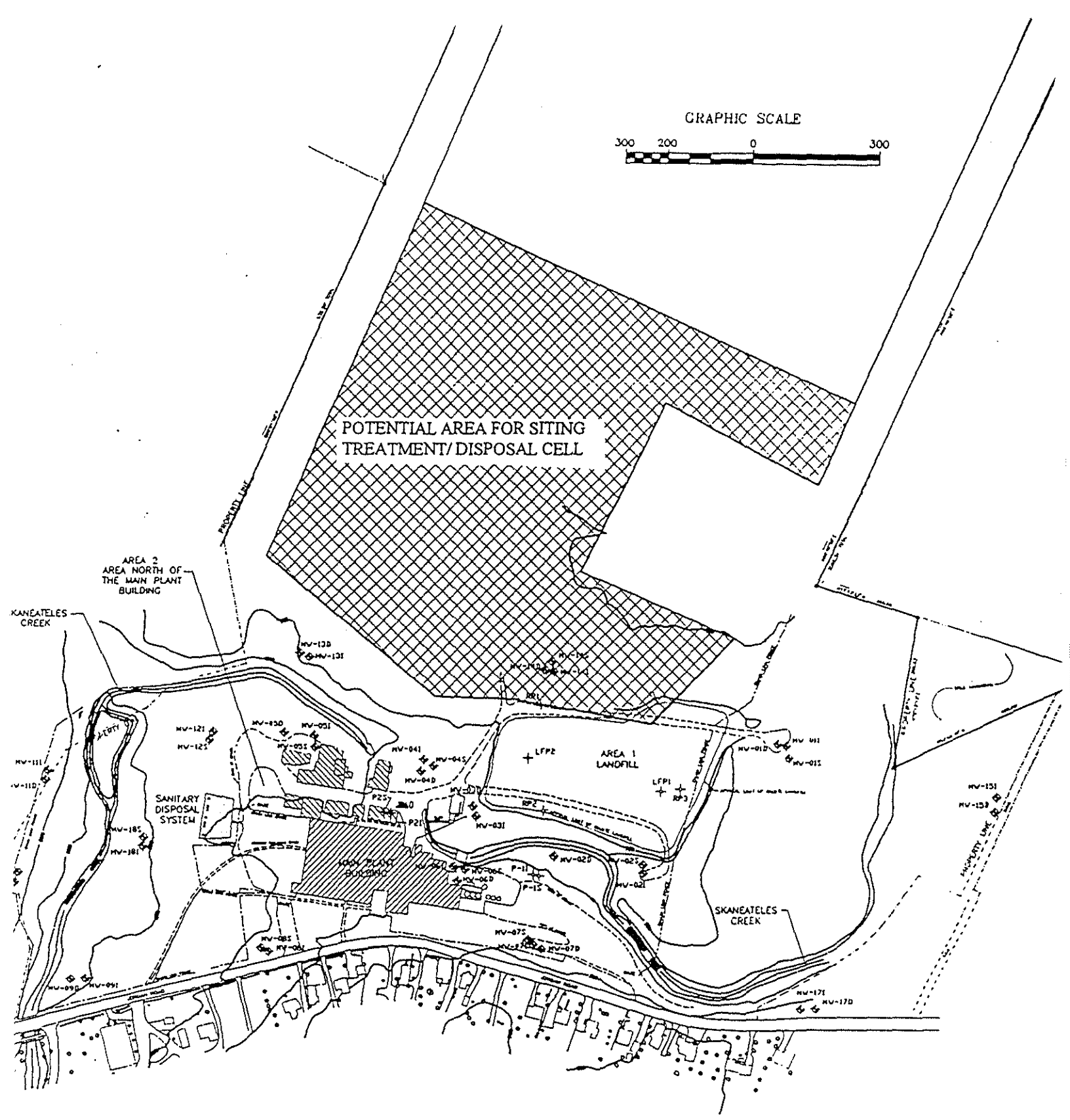


FIGURE 5 - TREATMENT AND DISPOSAL CELL

NOT TO SCALE

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.	STAUFFER MANAGEMENT COMPANY SKANEATELES FALLS, NEW YORK	TYPICAL VAPOR EXTRACTION SYSTEM AND BIOENHANCEMENT FOR NEW ONSITE LANDFILL

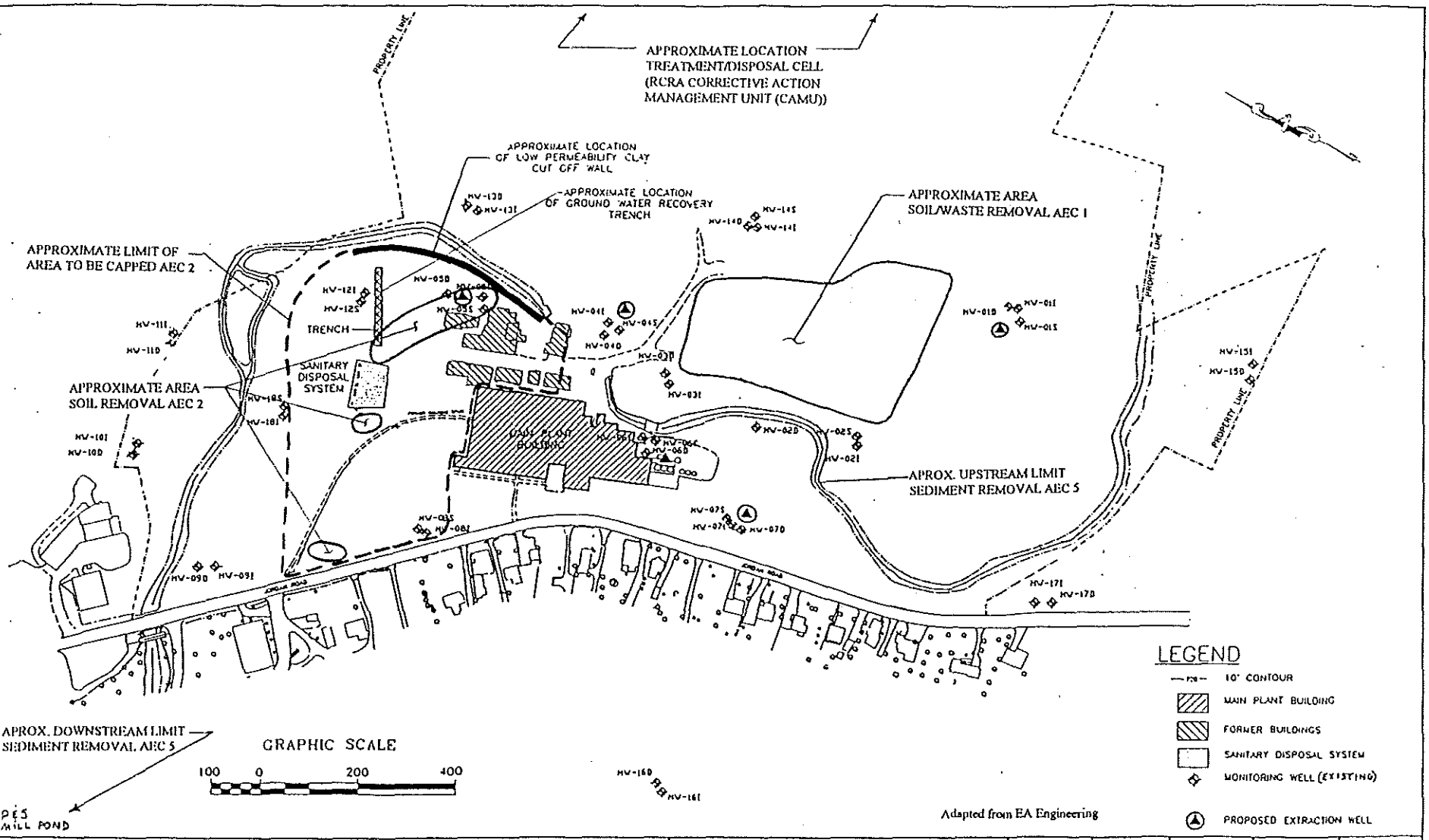
PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO
LF	TG	CAC		NONE	7-11-95	11932.01



Adapted from EA Engineerin

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.	STAUFFER MANAGEMENT COMPANY SKANEATELES FALLS, NEW YORK	FIGURE 6 DISPOSAL CELL LOCATION

DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE	PROJECT NO.	FILE NAME	DRAWING NO.	F
LF	CC	VM	7-11-95	1"=300'	11932.01	SKAN-20	-	



Adapted from EA Engineering

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.	STAUFFER MANAGEMENT COMPANY SCHENECTADY FALLS, NEW YORK	FIGURE 4 SWA6 CONCEPT PLAN	DESIGNED BY VM	DRAWN BY CAC	DATE 7-11-95	PROJECT NO. 11932.01	FILE NAME SKAN-17
			CHECKED BY JR	PROJECT MGR. LF	SCALE 1"=200'	DRAWING NO. -	

3/27/97 q change bill name

New York State Department of Environmental Conservation
Division of Environmental Enforcement
Central Field Unit
50 Wolf Road, Albany, New York 12233-5500
Telephone (518) 457-7938
FAX Number (518) 485-8478

John P. Cahill
Acting Commissioner

April 2, 1997

Michael P. Kelly, Esq.
Stauffer Management Company
1800 Concord Pike
Wilmington, Delaware 19850-5438

RE: ICI Stauffer Inactive Hazardous Waste Site #734010
Order on Consent

Dear Mr. Kelly:

Enclosed please find a copy of a fully executed Order on Consent for the above-referenced inactive hazardous waste site for your records.

Thank you for your courtesy and cooperation throughout the Consent Order negotiation process. Please contact me if you have any further questions.

Very truly yours,

Michael J. Lesser
Senior Attorney

Enclosure

cc: C. Jackson
S. Priore (w/attachment)
C. Sullivan

STATE OF NEW YORK : DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Development and Implementation of a Remedial Program for an Inactive Hazardous Waste Disposal Site, Under Article 27, Title 13 and Article 71, Title 27 of the Environmental Conservation Law of the State of New York by

Stauffer Management Company
Respondent

ORDER
ON
CONSENT
INDEX #A7-0347-9610

Site Code #734010

WHEREAS,

1. The New York State Department of Environmental Conservation (the "Department") is responsible for enforcement of Article 27, Title 13 of the Environmental Conservation Law of the State of New York ("ECL"), entitled "Inactive Hazardous Waste Disposal Sites." This Order is issued pursuant to the Department's authority under, inter alia, ECL Article 27, Title 13 and ECL 3-0301.

2. Stauffer Management Company ("Respondent") is a corporation organized and existing under the laws of the State of Delaware, is doing business in the State of New York and has contractually assumed certain environmental liabilities with respect to Stauffer Chemical Company ("Stauffer"). Stauffer owned and operated a manufacturing plant located in Skaneateles Falls Onondaga County, New York between 1967 and 1985 (the "Site"). Atkemix Thirty-Seven Inc. is a wholly owned subsidiary of Respondent and is the current owner of the Site. A map of the Site is attached and appended hereto as Appendix "A".

3. During the course of Stauffer's operation of the Site, the Department alleges that hazardous wastes including but not limited to volatile organic compounds were released to the Site and underlying groundwater. Respondent denies that allegation.

4. The Department maintains that the Site is an inactive hazardous waste disposal site, as that term is defined at ECL 27-1301.2, and presents a significant threat to the public health or environment. The Site has been listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Site number 734010. The Department has classified the Site as a Classification "2" pursuant to ECL 27-1305.4.b.

5. A. Pursuant to ECL 27-1313.3.a, whenever the Commissioner of Environmental Conservation (the "Commissioner") "finds that hazardous wastes at an inactive hazardous waste disposal site constitute a significant threat to the environment, he may order the owner of such site and/or any person responsible for the disposal of hazardous wastes at such site (i) to develop an inactive hazardous waste disposal site remedial program, subject to the approval of the department, at such site, and (ii) to implement such program within reasonable time limits specified in the order."

B. Any person under order pursuant to ECL 27-1313.3.a has a duty imposed by ECL Article 27, Title 13 to carry out the remedial program committed to under order. ECL 71-2705 provides that any person who fails to perform any duty imposed by ECL Article 27, Title 13 shall be liable for civil, administrative and/or criminal sanctions.

C. The Department also has the power, inter alia, to provide for the prevention and abatement of all water, land, and air pollution. See, e.g., ECL 3-0301.1.i.

6. In March 1991, Respondent and the Department entered into an Order on Consent for the performance of a remedial investigation and feasibility study (Index #A7-0101-8612).

7. Following a period of public comment, the Department selected a final remedial alternative for the Site in a Record of Decision ("ROD). The ROD, attached to this Order as Appendix "B", is incorporated as an enforceable part of this Order.

8. The Department and Respondent agree that the goals of this Order are for Respondent to (i) develop and implement, in accordance with the ROD, a remedial program ("Remedial Program") for the Site that shall include design and implementation, and operation, maintenance and monitoring of the selected remedial alternative; and (ii) reimburse the State's administrative costs.

9. Respondent, having waived Respondent's right to a hearing herein as provided by law, without admitting any wrongdoing or any liability, and having consented to the issuance and entry of this Order, agrees to be bound by its terms. Respondent consents to and agrees not to contest the authority or jurisdiction of the Department to issue or enforce this Order, and agrees not to contest the validity of this Order or its terms.

NOW, having considered this matter and being duly advised, IT IS ORDERED THAT:

I. Remedial Design Contents

A. Within such period of time after the ROD is signed that the Department shall prescribe in writing, Respondent shall submit to the Department a remedial design to implement the remedial alternative for the Site selected by the Department in the ROD (the "Remedial Design"). The Remedial Design shall be prepared by and have the signature and seal of a professional engineer who shall certify that the Remedial Design was prepared in accordance with this Order.

B. The Remedial Design shall include the following:

1. A detailed description of the remedial objectives and the means by which each element of the selected remedial alternative will be implemented to achieve those objectives, including when applicable, but not limited to:

a. the construction and operation of any structures;

b. the collection, destruction, treatment, and/or disposal of hazardous wastes and substances and their constituents and degradation products, and of any soil or other materials contaminated thereby;

c. the collection, destruction, treatment, and/or disposal of contaminated groundwater, leachate, and air;

d. physical security and posting of the Site;

e. quality control and quality assurance procedures and protocols to be applied during implementation of the Remedial Construction; and

f. monitoring which integrates needs which are present on-Site and off-Site during implementation of the Department-selected remedial alternative.

2. "Biddable Quality" documents for the Remedial Design including, but not limited to, documents and specifications prepared, signed, and sealed by a professional engineer. These plans shall satisfy all applicable local, state and federal laws, rules and regulations;

3. A time schedule to implement the Remedial Design;

4. The parameters, conditions, procedures, and protocols to determine the effectiveness of the Remedial Design, including a schedule for periodic sampling of groundwater monitoring wells on-Site and off-Site;

5. A description of operation, maintenance, and monitoring activities to be undertaken after the Department has approved construction of the Remedial Design, including the number of years during which such activities will be performed (where appropriate) and a specific description of the criteria to be used to decide when an operation of the remedy may be discontinued.

6. A contingency plan to be implemented if any element of the Remedial Design fails to achieve any of its objectives or otherwise fails to protect human health or the environment;

7. A health and safety plan for the protection of persons at and in the vicinity of the Site during construction and after completion of construction. This plan shall be prepared in accordance with 29 CFR 1910 by a certified health and safety professional; and

8. A citizen participation plan which incorporates appropriate activities outlined in the Department's publication, "New York State Inactive Hazardous Waste Citizen Participation Plan," dated August 30, 1988, and any subsequent revisions thereto, and 6 NYCRR Part 375.

II. Remedial Construction

A. Within such period of time after the Department's approval of the Remedial Design as the Department shall prescribe, Respondent shall commence construction of the Department-approved Remedial Design.

B. Respondent shall implement the Remedial Design in accordance with the Department-approved Remedial Design.

C. During implementation of al construction activities identified in the Remedial Design, Respondent shall have on-Site a full-time representative who is qualified to supervise the work done.

D. Within 90 days after completion of the construction activities identified in the Department-approved Remedial Design, Respondent shall submit to the Department a detailed post-remedial operation and maintenance plan ("O&M Plan"); "as-built" drawings and a final engineering report (each including all changes made to the Remedial Design during construction); and a certification that the Remedial Design was implemented and that all construction activities were completed in accordance with the Department-approved Remedial Design and were personally witnessed by him or her or by a person under his or her direct supervision. The O&M Plan, "as built" drawings, final engineering report, and certification must be prepared, signed, and sealed by a professional engineer.

Before its acceptance and approval of the engineer's certification that construction was completed in accordance with the approved Remedial Design, the Department may require Respondent to modify the Remedial Design and Construction if the Department determines that such modification is necessary due to:

(1) environmental conditions on-Site or off-Site which are related to the presence of hazardous wastes at the Site and were unknown to the Department at the time of its approval of the Remedial Investigation Report, or

(2) information received, in whole or in part, after the Department's approval of the Remedial Investigation Report, where such unknown environmental conditions or such information indicates that the Remedial Program is not protective of human health or the environment

E. Upon the Department's approval of the O&M Plan, Respondent shall implement the O&M Plan in accordance with the requirements of the Department-approved O&M Plan.

F. After receipt of the "as-built" drawings, final engineering report, and certification, the Department shall notify Respondent in writing whether the Department is satisfied that all construction activities have been completed in compliance with the Department-approved Remedial Design.

G. If the Department concludes that any element of the Department-approved Remedial Program fails to achieve its objectives or otherwise fails to protect human health or the environment, the Department shall promptly notify Respondent as soon as possible and Respondent shall thereafter submit a proposal designed to address the Department's concerns, and to meet the objectives of the Remedial Program.

III. Progress Reports

Respondent shall submit to the parties identified in subparagraph XII.B in the numbers specified therein copies of written monthly progress reports that:

A. describe the actions which have been taken toward achieving compliance with this Order during the previous month;

B. include all results of sampling and tests and all other data received or generated by Respondent or Respondent's contractors or agents in the previous month, a summary of quality assurance/quality control information, whether conducted pursuant to this Order or conducted independently by Respondent;

C. identify all work plans, reports, and other deliverables required by this Order that were completed and submitted during the previous month;

D. describe all actions, including, but not limited to, data collection and implementation of work plans, that are scheduled for the next month and provide other information relating to the progress at the Site;

E. include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of Respondent's obligations under the Order, and efforts made to mitigate those delays or anticipated delays;

F. summarize any modifications to any work plans that Respondent has proposed to the Department or that the Department has approved; and

G. describe all activities undertaken in support of the Citizen Participation Plan durin the previous month and those to be undertaken in the next month. Respondent shall submit these

progress reports to the Department by the fifteenth day of every month following the effective date of this Order.

Respondent also shall allow the Department to attend, and shall provide the Department at least seven days advance notice of, any of the following: prebid meetings, job progress meetings, substantial completion meeting and inspection, and final inspection and meeting.

IV. Review of Submittals

A. 1. The Department shall review each of the submittals Respondent makes pursuant to this Order to determine whether it was prepared, and whether the work done to generate the data and other information in the submittal was done, in accordance with this Order and generally accepted technical and scientific principles. The Department shall notify Respondent in writing of its approval or disapproval of the submittal, except for the submittals discussed in Subparagraph I.B.7. All Department-approved submittals shall be incorporated into and become an enforceable part of this Order.

2. a. If the Department disapproves a submittal, it shall so notify Respondent in writing and shall specify the reasons for its disapproval. Within 30 days after receiving written notice that Respondent's submittal has been disapproved, Respondent shall make best efforts to revise the submittal to the Department that addresses and resolves all of the Department's stated reasons for disapproving the first submittal.

b. After receipt of the revised submittal, the Department shall notify Respondent in writing of its approval or disapproval. If the Department disapproves the revised submittal, Respondent shall revise and submit the submittal in accordance with the Department's comments within 15 business days of the Department's notice unless an alternative time is agreed to by the Department. In the event Respondent disagrees with the Department's objection, the parties shall confer to resolve their differences. If after conferring, there remains a dispute between the Department and respondent, the matter shall be resolved in accordance with the dispute resolution procedures set forth in Paragraph V of this Order. If the Department approves the revised submittal, it shall be incorporated into and become an enforceable part of this Order.

B. Respondent shall modify and/or amplify and expand a submittal upon the Department's direction to do so if the Department determines, as a result of reviewing data generated by an activity required under this Order or as a result of reviewing any other data or facts, that further work is necessary in accordance with Paragraphs IV and V of this Order.

V. Dispute Resolution

If subsequent to the procedures set forth in Subparagraph IV.2.b. herein the Department continues to disapprove a revised submittal, Respondent shall be in violation of this Order unless, within 10 days of receipt of the Department's notice of disapproval Respondent serves on the Department's Director of Hazardous Waste Remediation ("the Director") a written statement of the issues in dispute, the relevant facts upon which the dispute is based, and factual data, analysis

or opinion supporting its position, and all supporting documentation on which Respondent relies (hereinafter called the "Statement of Position"). The Department shall serve its Statement of Position, including supporting documentation no later than ten business (10) days after receipt of Respondent's Statement of Position. Respondent shall have five (5) business days after receipt of the Department's Statement of Position within which to serve upon the Department a reply to the Department's State of Position, and in the event Respondent serves such a reply, the Department shall have five (5) business days after receipt of Respondent's reply to the Department's Statement of Position within which to serve upon Respondent the Department's reply to Respondent's reply to the Department's Statement of Position. In the event that the periods for exchange of Statements of Position and replies may cause a delay in the work being performed under this Order, the time periods may be shortened upon and in accordance with notice by the Department as agreed to be Respondent.

An administrative record of any dispute under this Paragraph shall be maintained by the Department. The record shall include the Statement of Position of each party served pursuant to the preceding Subparagraph, and any relevant information. The record shall be available for review of all parties and the public.

Upon review of the administrative record as developed pursuant to this Paragraph, the Director shall issue a final decision and order resolving the dispute. Respondent shall revise the submittal in accordance with the Department's specific comments, as may be modified by the Director and except for those which have been withdrawn by the Director, and shall submit a revised submittal. The period of time within which the submittal must be revised as specified by the Department in its notice of disapproval shall control unless the Director revised the time frame in the Director's final decision and order resolving the dispute.

After receipt of the revised submittal, the Department shall notify Respondent in writing of its approval or disapproval of the revised submittal.

If the revised submittal fails to address the Department's specific comments, as modified, and the Department disapproves the revised submittal for this reason, Respondent shall be in violation of this Order and the ECL.

In review by the Director of any dispute pursued under this Paragraph, Respondent shall have the burden of providing that there is no rational basis for the Department's position.

The invocation of the procedures stated in this Paragraph shall not extend, postpone, or modify Respondent's obligations under this Order with respect to any disputed items, unless and until the Department agrees or a court determined otherwise. Both parties shall retain all rights regarding the Director's final decision and order pursuant to applicable law, including but not limited to an appeal and/or petitions to a court of competent jurisdiction.

VI. Penalties

A. Respondent's failure to comply with any term of this Order constitutes a violation of this Order and the ECL.

B. Respondent shall not suffer any penalty under this Order or be subject to any proceeding or action if it cannot comply with any requirement hereof because of war, riot, act of God or because of any condition or event demonstrably beyond the control of Respondent or its agent or agents carrying out Respondent's obligations under this Order. Respondent shall, within five days of when it obtains knowledge of any such condition, notify the Department in writing. Respondent shall include in such notice the measures taken and to be taken by Respondent to prevent or minimize any delays and shall request an appropriate extension or modification of this Order. Failure to give such notice within such five-day period constitutes a waiver of any claim that a delay is not subject to penalties. Respondent shall have the burden of providing that an event is a defense to compliance with this Order pursuant to Subparagraph VI.B.

VII. Release

If, after review, the Department accepts and approves the engineer's certification that construction of the Remedial Program was completed in accordance with the approved Remedial Design, then, unless a supplementary remedial program is required pursuant to Subparagraph I.B.6, and except for the provisions of Paragraph XI of this Order, and except for the future Operation and Maintenance of the Site, reimbursement of Department expenditures at the Site, and any Natural Resource Damage claims that may arise, such acceptance shall constitute a release for each and every claim, demand, remedy or action whatsoever Respondent, its directors, officers, employees, agents, successors and assigns, which the Department has or may have pursuant to Article 27, Title 13 of the ECL and CERCLA 42 USC section 9601 et seq. relative to or arising from the disposal of hazardous wastes at the Site; provided, however, that the Department specifically reserves all of its rights concerning, and any such release and satisfaction shall not extend to, any investigation or remediation the Department deems necessary due to:

(1) environmental conditions on-Site or off-Site which are related to the disposal of hazardous wastes at the Site and were unknown to the Department at the time of its approval of the Remedial Investigation Report; or

(2) information received, in whole or in part, after the Department's approval of the Remedial Investigation Report, and such unknown environmental conditions or information indicates that the Remedial Program is not protective of human health or the environment. The Department shall notify Respondent of such environmental conditions or information and its basis for determining that the Remedial Program is not protective of human health and the environment.

This release shall inure only to the benefit of Respondent, its directors, officers, employees, agents, successors and assigns.

Nothing herein shall be construed as barring, diminishing, adjudicating or in any way affecting any legal or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against anyone other than Respondent, its directors, officers, employees, agents, successors and assigns.

VIII. Entry Upon Site

Respondent hereby consents to the entry upon the Site or areas in the vicinity of the Site which may be under the control of Respondent by any duly designated employee, consultant, contractor, or agent of the Department or any State agency for purposes of inspection, sampling, and testing and to ensure Respondent's compliance with this Order. During Remedial Construction, Respondent shall provide the Department with suitable office space at the Site, including access to a telephone, and shall permit the Department full access to all records relating to matters addressed by this Order and job meetings.

IX. Payment of State Costs

Within 60 days after receipt of an itemized invoice from the Department, Respondent sha either object to those expenditures to which if in good faith objects or it shall pay to the Department a sum of money which shall represent reimbursement for the State's expenses including, but not limited to, direct labor, fringe benefits, indirect costs, travel, analytical costs, and contractor costs incurred by the State of New York for work related to the Site to the effective date of this Order, as well as for reviewing and revising submittals made pursuant to thi Order, collecting and analyzing samples, and if Respondent's objections cannot be resolved by th parties within thirty days of receipt of Respondent's written objections, Respondent shall pay the undisputed amount. Disputed costs that are unresolved at the end of the thirty day negotiation period shall be resolved pursuant to the dispute resolution procedures set forth in Paragraph V of this Order. Payments shall be made by certified check payable to the Department of Environmental Conservation and shall be sent to:

Bureau of Program Management
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-7010

Personal service costs shall be documented by reports of Direct Personal Service, which shall identify the employee name, title, biweekly salary, and time spent (in hours) on the project during the billing period, as identified by an assigned time and activity code. Approved agency fringe benefit and indirect cost rates shall be applied. Non-personal service costs shall be summarized b category of expense (e.g., supplies, materials, travel, contractual) and shall be documented by expenditure reports.

X. Department Reservation of Rights

A. Nothing contained in this Order shall be construed as barring, diminishing, adjudicating, or in any way affecting any of the Department's civil, criminal, or administrative rights or authorities.

B. Nothing contained in this Order shall be construed to prohibit the Commissioner or his duly authorized representative from exercising any summary abatement powers.

XI. Indemnification

Respondent shall indemnify and hold the Department, the State of New York, and their representatives and employees harmless for all claims, suits, actions, damages, and costs of every name and description arising out of or resulting from the fulfillment or attempted fulfillment of this Order by Respondent and/or any of Respondent's directors, officers, employees, servants, agents, successors, and assigns.

XII. Public Notice

A. Within 30 days after the effective date of this Order, Respondent shall file a Declaration of Covenants and Restrictions and/or such institutional controls and/or deed restrictions required pursuant to the ROD with the Clerk of the County wherein the Site is located to give all parties who may acquire any interest in the Site notice of this Order.

B. If Respondent proposes to convey the whole or any part of Respondent's ownership interest in the Site, Respondent shall, not fewer than 60 days before the date of conveyance, notify the Department in writing of the identity of the transferee and of the nature and proposed date of the conveyance and shall notify the transferee in writing, with a copy to the Department, of the applicability of this Order.

XIII. Communications

A. All written communications required by this Order shall be transmitted by United States Postal Service, by private courier service, or hand delivered as follows:

1. Communication from Respondent shall be sent to:

Edward Belmore, Bureau Chief, Western Remedial Bureau
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-7010

with copies to:

Director, Bureau of Environmental Exposure Investigation
New York State Department of Health
2 University Place
Albany, NY 12203

Henri Hamel
Public Health Specialist II
New York State Department of Health
Office of Public Health
217 South Salina Street
Syracuse, NY 13202-1380

Charles Branagh
Regional Hazardous Waste Remediation Engineer
Region IV
New York State Department of Environmental Conservation
615 Erie Boulevard West
Syracuse, NY 13204-2400

Michael J. Lesser, Esq.
Central Field Unit
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-5500

2. Communication to be made from the Department to Respondent shall be sent to:

Joseph MacArthur
Stauffer Management Company
ESO - Hanley 1
Wilmington, Delaware 19897

and

Michael P. Kelly, Esq.
Stauffer Management Company
1800 Concord Pike
FOP 3
Wilmington, Delaware 19897

C. The Department and Respondent reserve the right to designate additional or different addresses for communication or written notice to the other.

XIV. Miscellaneous

A. 1. All activities and submittals required by this Order shall address Respondent's legally required obligations to remedy both on-Site and off-Site contamination resulting from the disposal of hazardous wastes at the Site, as alleged by the Department and as set forth in the ROD.

2. All activities Respondent is required to undertake under this Order are ordinary and necessary expenses for the continued operation of Respondent.

B. Respondent shall retain professional consultants, contractors, laboratories, quality assurance/quality control personnel, and third party data validators acceptable to the Department to perform the technical, engineering, and analytical obligations required by this Order. The experience, capabilities, and qualifications of the firms or individuals selected by Respondent shall be submitted to the Department within 30 days after the effective date of this Order. The Department's approval of these firms or individuals shall be obtained before the start of any activities for which Respondent and such firms or individuals will be responsible. The responsibility for the performance of the professionals retained by Respondent shall rest solely with Respondent.

C. The Department shall have the right to obtain split samples, duplicate samples, or both, of all substances and materials sampled by Respondent, and the Department also shall have the right to take its own samples. Respondent shall make available to the Department the results of all sampling and/or tests or other data generated by Respondent with respect to implementation of this Order and shall submit these results in the progress reports required by this Order.

D. Respondent shall notify the Department at least 10 working days in advance of any field activities to be conducted pursuant to this Order.

E. Respondent shall obtain all permits, easements, rights-of-way, rights-of-entry, approvals, or authorizations necessary to perform Respondent's obligations under this Order.

F. Respondent and Respondent's officers, directors agents, servants, employees, successors, and assigns shall be bound by this Order. Any change in ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall in no way alter Respondent's responsibilities under this Order. Respondent's officers, directors, employees, servants, and agents shall be obliged to comply with the relevant provisions of this Order in the performance of their designated duties on behalf of Respondent.

G. Respondent shall provide a copy of this Order to each contractor hired to perform work required by this Order and to each person representing Respondent with respect to the Site and shall condition all contracts reentered into in order to carry out the obligations identified in this Order upon performance in conformity with the terms of this Order. Respondent or

Respondent's contractors shall provide written notice of this Order to all subcontractors hired to perform any portion of the work required by this Order. Respondent shall nonetheless be responsible for ensuring that Respondent's contractors and subcontractors perform the work in satisfaction of the requirements of this Order.

H. The Department agrees that Respondent has satisfactorily complied with all remediation and field obligations undertaken pursuant to the 1991 Order on Consent concerning the conduct of the RI/FS and related activities.

I. Respondent and its affiliates reserve all rights that they may have to assert any claim against their insurers or any third party from matters arising from this action, including, without limitation, claims for breach of contract, contribution, tortious conduct, indemnity and CERCLA Section 113(f)(3).

J. In consideration of, and contingent upon, Respondent's compliance with the provisions of this Order, the Department covenants not to sue, execute judgment, or take any civil,, judicial or administrative action under federal or state law (other than enforcement of this Order) against Respondent arising out of or relating to the past release of any chemical substances at the site, except that the Department will not be precluded form pursuing its claim for oversight costs, or any rights that may accrue pursuant to Paragraphs IV, V, VII, X and XI herein.

K. Upon entry of this Order, and subject only to continued compliance with the material terms of this Order, it shall be deemed that Respondent has resolved its liability to the Department for purposes of contribution protection provided by CERCLA Section 113(f)(2). Specifically, if the material obligations set forth in this Order are met, Respondent shall not be liable for any claim for contribution regarding matters addressed in this Order.

L. None of the Respondent's obligations under this Order shall be deemed to constitute any type of fine or penalty.

M. All references to "professional engineer" in this Order are to an individual registered as a professional engineer in accordance with Article 145 of the New York State Education Law. If such individual is a member of a firm, that firm must be authorized to offer professional engineering services in the State of New York in accordance with Article 145 of the New York State Education Law.

N. All references to "days " in this Order are to calendar days unless otherwise specified.

O. The section headings set forth in this Order are included for convenience of reference only and shall be disregarded in the construction and interpretation of any of the provisions of this Order.

P. 1. The terms of this Order constitute the complete and entire Order concerning the Site's remediation as an inactive hazardous waste disposal site. No term,

condition, understanding, or agreement purporting to modify or vary any term of this Order shall be binding unless made in writing and subscribed by the party to be bound. No informal advice, guidance, suggestion or comment by the Department regarding any report, proposal, plan, specification, schedule, or any other submittal shall be construed as relieving Respondent or Respondent's obligation to obtain such formal approvals as may be required by this Order.

2. If Respondent desires that any provision of this Order be changed, Respondent shall make timely written application, signed by Respondent, to the Commissioner setting forth reasonable grounds for the relief sought. Copies of such written application shall be delivered or mailed to Michael J. Lesser, Central Field Unit, NYSDEC and Edward Belmore, Chief, Western Remedial Bureau, Division of Environmental Remediation, NYSDEC.

Q. The effective date of this Order is the date the Commissioner or his designee signs it.

DATED: 3/27, New York
, 1997

JOHN P. CAHILL
Acting Commissioner
New York State Department of
Environmental Conservation

By:

Michael J. O'Toole, Jr.

CONSENT BY RESPONDENT

Respondent hereby consents to the issuing and entering of this Order, waives Respondent's right to a hearing as provided by law, and agrees to be bound by this Order.

By: Brian A. Spiller
Brian A. Spiller

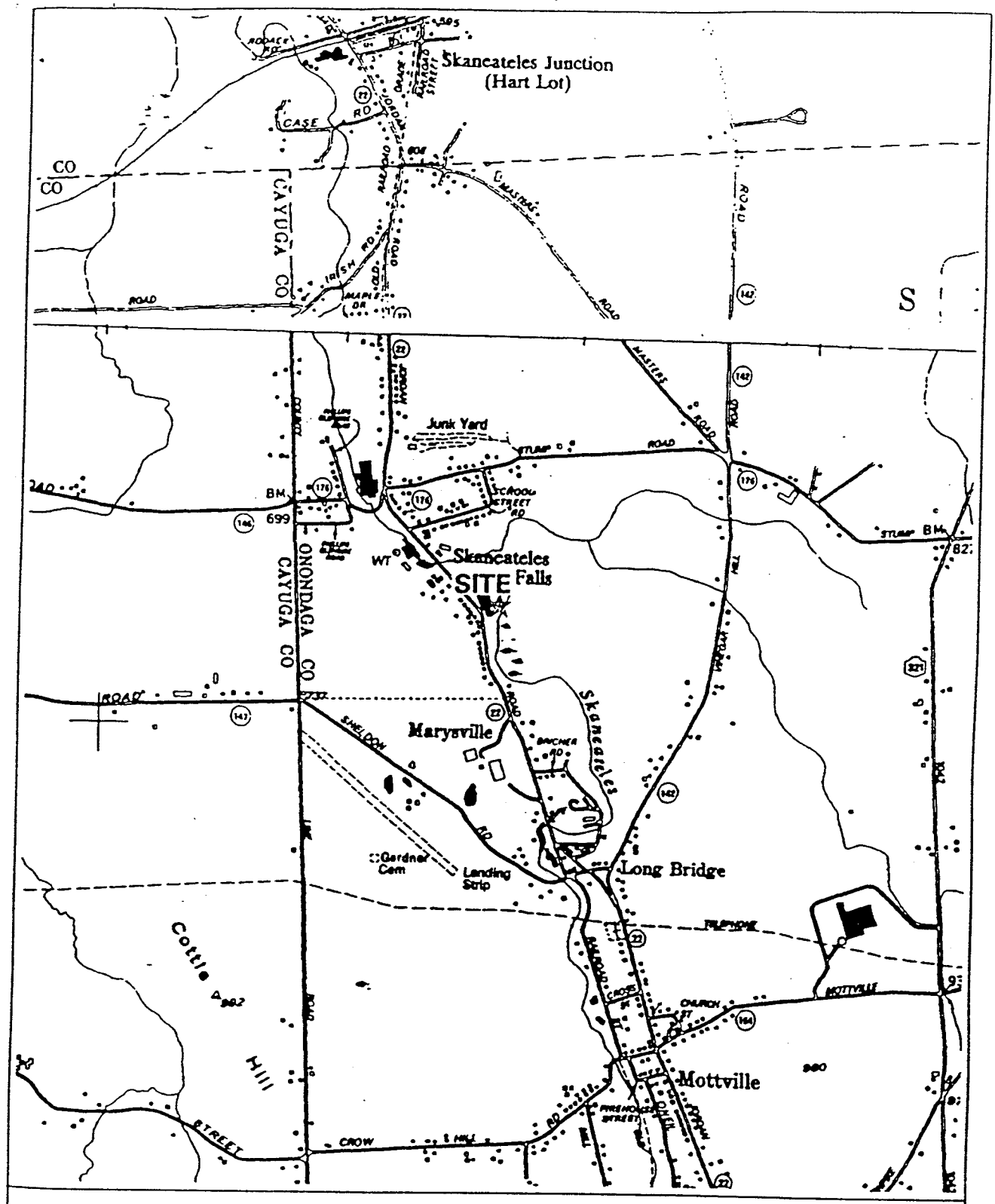
Title: President, Stauffer Management Company

Date: 3/20/97

STATE OF DELAWARE)
) s.s.:
COUNTY OF NEW CASTLE)

On this _____ day of March, 1997, before me personally came Brian A. Spiller, to me known, who being duly sworn, did depose and say that he resides in Chester County, PA: that he is the President of Stauffer Management Company the corporation described in and which executed the foregoing instrument; that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by the order of the Board of Directors of said corporation and that he signed his name thereto by like Order.

Notary Public



Site Location Map

734010 I.C.I.-Americas, Inc. (Stauffer Chemical)

NYSDOT Planimetric Quadrangle(s):
JORDAN, SKANEATELES

N

0 500 1000 1500 2000
FEET

Scale 1:24,000

Department of Environmental Conservation

Division of Environmental Remediation

Amended Record of Decision

Stauffer Management Co.- Skaneateles Falls Site

Skaneateles (T), Onondaga County

Site Number 7-34-010

DECEMBER 2001

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

Amended Record of Decision
Stauffer Management Co. - Skaneateles Falls Site
Town of Skaneateles Falls, Onondaga County, New York
Site No. 7-34-010

Statement of Purpose and Basis

The Amended Record of Decision (ROD) presents the selected remedial action for the Stauffer Management Co. - Skaneateles Falls Site, which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is consistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40 CFR 300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Stauffer Management Co.- Skaneateles Falls Site and upon public input to the Proposed Amended ROD presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the Amended ROD.

Assessment of the Site

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

Description of Amended Remedy

Based upon the evaluation presented in the May 2001, Focused Feasibility Study (FFS) and the Proposed Amended Record of Decision (ROD), the Department has amended the remedy for this site to include excavation of additional volumes of soil and waste, remediation of Areas of Environmental Concern (AECs) 6, 7 and 8, and of off-site disposal instead of excavation with on-site disposal, containment and treatment in a Corrective Action Management Unit (CAMU) cell, as originally specified in the 1996 ROD. The groundwater remediation components will not change.

The 1996 ROD requires that the excavated material exceeding Standards, Criteria and Guidance (SCGs) be encapsulated on-site for treatment in a CAMU cell. The long-term management and maintenance of these materials on-site are not believed to be as cost effective as originally anticipated due to increased long-term operation and maintenance costs and the increased volume of contaminated soils and wastes found at the site.

Implementation of the original ROD may be more difficult to operate and maintain, and also limits the long-term reuse of the property. Consequently, the off-site disposal alternative technology was re-evaluated based upon its' ability to permanently mitigate the observed impacts, limit the degree of post-closure care, promote beneficial re-use of the property, and be equally or more protective of human health and the environment than the original ROD remedy.

The summary for the Amended Remedy is listed below:

1. Excavate contaminated soils and waste from the Landfill Area (AEC-1) that exceed Standards, Criteria and Guidance (SCGs), characterize, then dispose off-site at an appropriate disposal facility.

2. Excavate contaminated soils and waste from the North Plant Area (AEC-2) that exceed SCGs, characterize, then dispose off-site at an appropriate disposal facility.

3. Excavate contaminated sediments from the Skaneateles Creek (AEC-5) that exceed SCGs, characterize, then dispose off-site at an appropriate disposal facility. Excavate and dispose of off-site identified abandoned pipe in the Skaneateles Creek.

4. Excavate contaminated soils and waste from newly identified remedial areas: Main Plant Building as AEC-6, Area in Front of Main Plant Building as AEC-7, and South Plant Area as AEC-8, that exceed SCGs, characterize, then dispose off-site at an appropriate disposal facility.

5. Excavate PCBs that exceed site cleanup SCGs, characterize, then dispose off-site at an appropriate disposal facility.

6. Establish Site Specific Remedial Goals (SSRGs) for confirmatory sampling of metals contaminated soils.

7. Remediate residual metals contaminated soils that exceed SSRGs by excavation with off-site disposal or on-site isolation/treatment technologies.

8. Demolition of Main Plant Building and remediation of impacted soils underneath the building.

9. Design, construct and operate a shallow groundwater extraction and treatment system for AEC-3. Treated water will be discharged to Skaneateles Creek through SPDES permitted outfalls and monitored for compliance by the NYSDEC Division of Water.

10. No action for deep groundwater (AEC-4), but monitoring will be conducted to assess expected improvements.

11. Contingency for future extraction and treatment of deep groundwater (AEC-4), if source removal and natural attenuation fails to promote adequate improvements.

12. De-watering operations and subsequent treatment of water generated from excavation activities.

13. Ensure and implement truck traffic safety protocols as well as implement appropriate decon and emergency spill procedures for disposal trucks along designated transportation route.

14. Institutional controls, including restricting future site use to only Industrial/Commercial purposes and restricting on site groundwater usage.

Institutional controls under the amended remedy will include: deed restrictions to protect remedial features and restrict on-site groundwater use; deed restriction to prohibit the site from ever being used for purposes other than for appropriate industrial or commercial enterprises, as explained below, without the express written waiver of such prohibition by the Department and the NYSDOH ; restricted site access; long term monitoring of site conditions; and routine maintenance operations, such as, fence repairs and lawn mowing. Appropriate industrial or commercial uses of the property would have to be consistent with any applicable zoning ordinances, but would not include enterprises that draw susceptible portions of the community to the property for activities that may lead to exposures to residual site contamination (e.g. day care, child care, medical treatment facilities, some recreational enterprises).
Site monitoring will include a periodic survey of groundwater use in the area and efforts for early identification of any future threats to drinking water wells.

New York State Department of Health Acceptance

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

Declaration

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

_____ _____

Date

Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

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AMENDED
RECORD OF DECISION

Stauffer Management Co.- Skaneateles Falls Site
Town of Skaneateles, Onondaga County, New York
Site No. 7-34-010

December 2001

SUMMARY AND PURPOSE OF THE AMENDMENT

The New York State Department of Environmental Conservation, ("The Department"), in consultation with the New York State Department of Health, is amending the selected remedy for the Stauffer Chemical Inactive Hazardous Waste Disposal Site to address the significant threat to human health and the environment created by the presence of hazardous waste. The site (also known as the Stauffer Skaneateles Falls Site, or, the ICI Americas, Inc. Site), is a Class 2 inactive hazardous waste disposal site located in the Town of Skaneateles, Onondaga County. A Record of Decision (ROD) documenting the site remedy was previously completed in March 1996. Since 1996, a portion of the remedy has been implemented, but the major waste removal effort has not yet commenced.

As more fully described in Sections 2 and 3 of this document, past chemical processing and manufacturing operations at the site have resulted in the disposal of hazardous waste at the site, primarily xylene (F003 and U239 listed waste), some of which was released and has migrated into soils, groundwater and sediments at the site. These disposal activities have resulted in the following threats to human health and the environment:

1. a significant threat to human health associated with potential exposure to: wastes in the landfill and north plant areas, contaminated soils throughout the plant site, and groundwater beneath the site.
2. a significant environmental threat associated with the impact of site contaminants on Skaneateles Creek and the

groundwater.

In order to eliminate or mitigate the significant threats to the public and the environment, the following components of and amendments to the previously selected remedy are:

Retained 1996 ROD Components:

1. Removal of contaminated soil, sediment and waste from the landfill, north plant area, and Skaneateles Creek.
2. Installation, operation and monitoring of a shallow groundwater extraction system, and on-site treatment and discharge of treated water to Skaneateles Creek.
3. On-site treatment of construction water.
4. Monitoring to evaluate remedy effectiveness.
5. A contingency for extraction and treatment of deep groundwater if source removal and natural attenuation fail to reduce contamination.
6. Institutional controls, including restricting future site usage to only Industrial/Commercial purposes and restricting on site groundwater usage.

Components Added to the 1996 ROD:

1. The main plant building will be demolished, and the debris disposed off-site.
2. Additional areas of contaminated soil will be removed: additional volume of soils associated with the landfill and north plant areas; soils around and beneath the main plant building foundation; soils in the area in front of the main plant building; and soils in the south plant area.
3. Cleanup objectives for PCBs added for site soils.
4. Establish site specific remedial goals (SSRG's) to control residual metals contamination in the soils.
5. Excavated contaminated soils and waste exceeding soil cleanup guidance will be disposed at a permitted off-site disposal facility.
6. Sediments to be removed from the Skaneateles Creek will be identified pursuant to a Skaneateles Creek Habitat Assessment and Map prepared by the NYSDEC Fish and Wildlife, and when such sediments are excavated, that they be disposed at a permitted off-site disposal facility. Restoration of the Creek will be guided by the Habitat Assessment and Map.
7. Metals contaminated soils containing residuals above SSRG's will be removed from the site for off-site disposal or be remediated on-site by capping, isolation and/or stabilization technologies.
8. Institutional controls under the amended remedy will include: deed restrictions to protect remedial features and restrict on-site groundwater use; deed restriction to prohibit the site from ever being used for purposes other than for appropriate industrial or commercial enterprises, as explained below, without the express written waiver of such prohibition by the Department and the NYSDOH; restricted site access; long term monitoring of site conditions; and routine maintenance operations, such as fence repairs and lawn mowing. Appropriate industrial or commercial uses of the property would have to be consistent with any applicable zoning ordinances, but would not include enterprises that draw susceptible portions of the community to the property for activities that may lead to exposures to residual site contamination (e.g. day care, child care, medical treatment facilities, some recreational enterprises). Site monitoring will include a periodic survey of groundwater use in the area and efforts for early identification of any future threats to drinking water wells.

Components Deleted from the 1996 ROD:

1. Eliminate the on-site treatment and containment cell (Corrective Action Management Unit, or CAMU, cell).
2. Eliminate the installation of the 5-acre clay cap over the

north plant area and vertical cutoff wall between the north plant area and Skaneateles Creek.

SECTION 1:

INTRODUCTION

In March of 1996, the New York State Department of Environmental Conservation ("the Department") issued a Record of Decision (ROD) which selected a remedy to address contamination in soils, sediments and groundwater associated with the Stauffer Management Co.-Skaneateles Falls Site. The 1996 ROD called for remediation of several areas of environmental concern (AECs), including excavation of the landfill area (AEC-1), the north plant area (AEC-2), and Skaneateles Creek sediments (AEC-5). Contaminated soil and wastes were to be disposed and treated in a permanent, on-site treatment and containment cell (Corrective Action Management Unit, or CAMU, cell). Included in the 1996 ROD remedy was extraction of contaminated groundwater from overburden and shallow bedrock beneath the site (AEC-3), followed by treatment in an on-site facility. The ROD also provided for the continued monitoring of the deep groundwater aquifer (AEC-4).

After the ROD was issued, the Department and Stauffer Management Company (Stauffer) entered into a legal order for designing and implementing the selected remedy. An Order on Consent was signed in March of 1997 and then Stauffer began the remedial design. Stauffer's design was approved by the Department in December 1998. The waste water treatment facility was constructed and became operational in 1999 and is currently operating under a State Pollution Discharge Elimination System (SPDES) Permit with the NYSDEC Division of Water.

Prior to the start of construction of the CAMU cell, Stauffer and the Town of Skaneateles discussed potential future site redevelopment, and the impact that the remedy may have on this activity. The CAMU cell, because of its large size and the on-site area it would need to occupy, was a concern for possible future site redevelopment efforts.

In 1999, Stauffer, approached the Department with a proposal for a Low Temperature Thermal Desorption (LTTD) pilot test program, to see if this technology would be appropriate for the destruction of site contaminants and thus eliminate the need for the CAMU cell. After agreement was reached on the how to evaluate this technology, two separate pilot studies were conducted in late 1999 and early 2000. The pilot tests and the technology were unsuccessful in fully meeting the required Standards, Criteria and Guidance (SCG's) limits established in the 1996 ROD. Therefore, this technology was abandoned.

In 2000, Stauffer again approached the Department and proposed to re-evaluate off-site disposal in lieu of on-site treatment and disposal in the CAMU cell. An off-site disposal option was originally evaluated in Stauffer's 1995 Feasibility Study and rejected, mainly due to cost considerations. However, since 1996, the costs for off-site disposal have dropped significantly.

In early 2000, Stauffer submitted a letter to the Department supporting its contention that the xylene contaminated wastes at the site are solid wastes which should not be regulated as listed hazardous wastes. Based on the Departments' regulatory review, and Federal testing methods approved in 1998, it was determined that, although the xylene was a listed F003 and U239 hazardous waste at the time of disposal, soils and wastes which contain the listed F003 and U239 hazardous wastes but which do not exhibit the characteristic of

ignitability when excavated could be disposed off-site at a Part 360 (Solid Waste) permitted disposal facility as long as they exhibit no other hazardous waste characteristics. Based upon this determination, Stauffer then applied to the Department to amend the 1996 ROD to change the method of disposal of the excavated wastes from the CAMU cell to an appropriate off-site disposal facility. The amendment also included demolition of the main plant building and the excavation of additional areas of contaminated soils. The groundwater extraction and treatment components of the 1996 ROD would remain unchanged and installation of the extraction system would be completed as per the 1998 approved remedial design.

Stauffer submitted a Focused Feasibility Study (FFS) at the end of February 2001 to re-evaluate the off-site disposal alternative and compare it to the selected 1996 ROD remedy. The FFS was revised in April and May 2001 and subsequently approved by the Department in May 2001. Based on the evaluations presented in the FFS, the Department has prepared this Amended ROD.

The Department has issued this Amended ROD as a component of the citizen participation plan developed pursuant to the New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in greater detail in the March 1996 ROD, the approved remedial designs, the approved May 2001 FFS, and other reports and documents which are available for review at the document repositories.

To better understand the site and the investigations conducted, the public is encouraged to review the project documents at the following repositories:

Town of Skaneateles, Town Hall
24 Jordan Street
Attn: Town Clerk
Skaneateles, New York, 13152
Call (315) 685-3473 for hours

NYSDEC - Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7017
Salvatore F. Priore, P.E., Project Manager
(518) 402-9669

NYSDEC - Region 7 Office
615 Erie Boulevard West
Syracuse, New York 13204-2400
Attn: Gina Brown
(315) 851-7220
Mon.-Fri., 8:30 am to 4:45 pm (by appointment)

The Department obtained input from the community on this ROD Amendment. A public comment period was established from August 20, 2001 to September 28, 2001, and provided an opportunity for public participation in the remedy selection process for this site. A public meeting was held on August 30, 2001, at the American Legion Hall, Jordan Road, Skaneateles Falls.

At the meeting, the FFS was presented along with a summary of the remedy. After the presentation, a question-and-answer period was held, during which the public commented on the Amended ROD. A Responsiveness Summary was prepared and a summary of comments received and answers to those

comments are presented in Appendix A. Based on the comments received, the Department is not modifying the preferred alternative remedy presented in this Amended ROD, since no new information was revealed during the public comment period.

SECTION 2:

SITE LOCATION AND DESCRIPTION

The Stauffer Site is located in central New York State in the Town of Skaneateles, Onondaga County, as shown in Figure 1. The Stauffer property encompasses an area of approximately 120 acres, of which the identified site occupies an area of approximately 68 acres and is located at 4512 Jordan Road, approximately three miles north of Skaneateles Lake and approximately 20 miles west of the city of Syracuse. The site is bounded to the west and north by a mix of residential and commercial property. The east and south areas of the site are bounded by undeveloped property.

Stauffer Chemical Company purchased the facility from Cowles Chemical Company in 1968 and continued operations until 1985, when it shut down all operations. There are currently no manufacturing activities conducted at the facility.

The property is divided into two unequal portions by Skaneateles Creek. The focus of this Amended Remedy is the former manufacturing operation areas and the previously closed landfill (AEC-1). The site landfill is located along the east side of Skaneateles Creek and was closed in the early 1980's. There are also several settling ponds and evaporation ponds located on the eastern portion of the property.
The ponds were evaluated and closed under existing permits in the early 1980's. The conditions of these ponds were re-evaluated during design investigations under the site remedial program and no apparent contaminant problems that pose concern for human health or the environment were discovered.

The previous manufacturing areas are located to the west of Skaneateles Creek and include the inactive main plant manufacturing building, which is still present, and the previously removed chemical operations plant which is referred to as the north plant area (AEC-2). The chemical operations plant was previously demolished, although numerous foundations and floor slabs remain in the area.

SECTION 3:

SITE HISTORY AND CONTAMINATION

3.1: Site History

In the March 1996 ROD, a remedy for this site was selected to address site soils contaminated with volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) and contaminated groundwater present beneath the site. Contaminated soils were to be excavated, disposed and treated in an on-site, engineered treatment and disposal cell, designated as a Corrective Action Management Unit (CAMU). Groundwater would be extracted and treated via an on-site groundwater treatment system. Based upon data available at the time, the ROD called for the excavation and treatment/disposal of approximately 60,000 cubic yards (CY) of contaminated soil.

The primary Areas of Environmental Concern (AECs) addressed by the 1996 ROD were delineated in 1991- 1994 Remedial Investigation and 1995 Feasibility Study (RI/FS) reports by EA Engineering, Science and Technology.

Additional AECs were later delineated on the basis of subsequent site investigation activities completed on behalf of Stauffer (EA - 1996; O'Brien and Gere Engineers- 1997; IT Corporation - 1999). The principal areas of environmental concern (AEC) identified in the 1994-5 RI/FS reports and in the 1996 ROD, are as follows:

1. AEC-1 Existing Landfill
2. AEC-2 North Plant Area (former organics plant)
3. AEC-3 Shallow Groundwater (overburden and upper bedrock)
4. AEC-4 Deep Groundwater (deep bedrock)
5. AEC-5 Skaneateles Creek (seeps, surface water and sediments)

The primary Contaminants of Concern (COC) as highlighted in the RI report (EA 1994) and the Hydrogeologic Investigation (OBG 1997) were organic chemicals, primarily xylene and toluic acid isomers. These organic chemicals were found in the highest concentrations at the site. Metals (lead, chromium, cobalt, mercury, et.al.) were also found to be above the anticipated background levels and above the identified Standards Criteria and Guidance (SCG's) levels at several locations across the site. During the Remedial Investigation (RI) phase of the project, the areas of soil and sediment contamination were defined as follows:

1. AEC-1 Existing Landfill
2. AEC-2 North Plant Area (former organics plant)
3. AEC-5 Skaneateles Creek sediments

During the RI, the limits of AEC-1 and AEC-2 were delineated as shown in Figure 2. The landfill (AEC-1) waste was found to consist of a mixture of numerous crushed metal and fiber drums, debris (wood, scrap metal, brick, concrete, etc.), general waste (plastic, paper, glass), manufacturing waste, black soil-like fill (presumably carbon) and soil fill. The black material was less than 2% of the landfill volume (EA 1994). Waste samples collected by EA showed xylene concentrations ranging from non-detect to 25,000 ppm with an average of 2,700 ppm and toluic acid concentrations ranging from non-detect to 8,500 ppm with an average of 500 ppm.

The observed concentrations of metals in the perimeter soil samples of the landfill were generally consistent with typical background concentrations (ROD 1996). Some metal concentrations from the interior landfill samples were above New York State background levels, such as, cobalt 710 to 4,230 ppm, chromium 15.2-164 ppm, mercury 0.2-0.8 ppm, and lead, 2.4 to 160 ppm.

The area north of the main plant building (AEC-2) was found to consist of concrete pads, paved and gravel parking areas, grassy areas, an access road, an entrance gate, and the sanitary sewage leach field (EA 1994). Samples in this area showed xylene concentrations ranging from non-detect to 2,200 ppm with an average of 130 ppm and toluic acid concentrations ranging from non-detect to 46 ppm with an average of 5 ppm. Several metals including: mercury, nickel, zinc, arsenic, cadmium and lead were detected above background concentrations.

Creek seep and landfill seep sediments had elevated levels of VOCs and SVOCs. All the metal concentrations detected in seep sediment samples were within levels anticipated as background in New York State soils. The creek sediments (AEC-5) were found to have some polynuclear aromatic hydrocarbons (PAHs) and metals significantly above levels of concern for aquatic sediment [cadmium max 1.9 ppb; lead max

293 ppb; mercury max 2.0 ppb; nickel max 48.7 ppb].

The analytical data is also summarized in Table(s) 1.1-1.6, and detailed in the Final RI/FS Reports by EA Engineering, Science and Technology dated 1994 and 1995.

The 1996 ROD considers the landfill (AEC-1) and north plant area (AEC-2) to be the predominant contaminant source area(s). These source areas have had impacts on both the shallow and deep groundwater aquifers as well as impacting Skaneateles Creek.

The remedy selected by the 1996 ROD includes a combination of no-action with monitoring, containment, removal, treatment and on-site disposal. The specific components of the ROD Remedy selected in 1996 include:

1. Construction and operation of an on-site, engineered treatment and disposal cell. The cell would be considered a Corrective Action Management Unit (CAMU) under Federal and State regulations that govern hazardous waste disposal. Treatment would consist of Soil Vapor Extraction (SVE) and Bio-venting for treatment of organic contaminants.

2. Removal of waste source areas and contaminated soils from the landfill (AEC-1) and north plant area (AEC-2), with treatment and disposal of the wastes in the on-site engineered treatment cell.
3. Containment of residual metal contaminated soils in the north plant area.

4. Excavation of sediments from Skaneateles Creek (AEC-5), with disposal and treatment in the on-site engineered treatment cell.

5. Extraction and treatment of the shallow groundwater aquifer affected by the source area(s).

6. Groundwater monitoring of both on and off-site wells to evaluate the effectiveness of remedial operations.

7. No action for deep groundwater (AEC-4), with monitoring to assess improvements expected to result from removing site sources areas and natural attenuation.

8. Contingency for future extraction and treatment of deep groundwater (AEC-4) should source removal and natural attenuation not promote adequate improvements to the deep bedrock groundwater aquifer.

9. Institutional controls, including restricting future site usage to only Industrial/Commercial purposes and restricting on-site groundwater usage.

The 1996 ROD remedy was selected based upon the information contained in the 1995 Feasibility Study prepared by EA Engineering, Science and Technology (EA) for Stauffer and took into consideration Stauffer's intention to indefinitely retain the property and main plant building. On-site treatment and long-term management of the waste was considered to be a preferable remedial alternative over off-site disposal. Due primarily to cost, it was determined at the time the FS and ROD were issued that off-site disposal would be a less feasible alternative. Fundamental changes have occurred with regards to intended future property use and cost projections subsequent to issuance of the 1996 ROD. These changes have caused Stauffer to re-evaluate and recommend off-site disposal over the previously selected on-site treatment and disposal in the CAMU cell. As outlined in the May 2001 FFS

report, off-site disposal has now been identified as a remedial alternative that could cost effectively and permanently address the soil contamination at the site.

3.2: Site Geology and Hydrogeology:

The Stauffer site consists of approximately 68 acres located in the Eastern Lakes Plain Forestry sub-region of central New York State Region (Stout. 1958). The former manufacturing area consists of approximately 20 acres and includes a main plant building, former chemical operations area, a former landfill, former tank areas, parking areas, driveways, and lawn areas. The soil types in this area are of the Cazenovia Series (Cfb) or are Made Land (ML). The Cazenovia Series is well suited for all but wetlands habitats (EA 1995).

3.2.1: Site Geology

The overburden soil at the site consists of unstratified glacial deposits and recent aged alluvial deposits. Two types of glacial deposits are present at the site. Over most of the site area, a red clay till is present consisting of a sticky reddish clay with no visible stratification.

A brown till consisting of a poorly sorted mixture of clay, silt, sand, gravel and boulders is present below the southern portion of the landfill and the areas immediately to the south and southwest of the landfill (ROD 1996).

A layer of course sand, angular gravel, and cobbles, ranging in thickness from 4 to 7 ft., is present directly overlying bedrock south, southwest, and west of the landfill. This layer appears to be associated with a low bedrock surface in this portion of the site (ROD 1996). Further details on the site geology are included in the 1996 ROD, RI/FS (EA 1994, 1995), and O'Brien and Gere Engineers (OBG), "Final Remedial Design Report" dated December 1998 (OBG 1998).

3.2.2: Site Hydrogeology

There are three distinct zones of groundwater at the Stauffer site: a shallow zone present in the overburden, an intermediate zone present in the upper bedrock just below the overburden, and a deep groundwater zone present 60 to 70 feet below ground surface. The shallow overburden and upper groundwater zones together comprise AEC-3. The deep bedrock zone comprises AEC-4.

Lateral migration of groundwater through the overburden is through the pore spaces in the soil and is controlled by horizontal hydraulic gradients across the site. These gradients are influenced by both the local topography and surface water drainage.

A general downward vertical hydraulic gradient between the overburden and upper bedrock persists across most of the site. Hydraulic communication between overlying soils and the upper bedrock exists via fractures and/or joints in the upper bedrock. Groundwater movement from the upper zone bedrock to the deep zone is controlled by the southerly dip of the bedrock strata, with some deviation along the east-west strike of the bedrock plane.

SECTION 4:
COMPLETED WORK AND DESIGN ACTIVITIES

Additional site investigations were completed subsequent to the 1996 ROD. In 1997 O'Brien & Gere Engineers (OBG) completed investigations during soil remediation design activities and in 1999 IT Corporation completed investigations as part of the construction phase of the groundwater treatment system. A supplemental field investigation was also conducted by SPEC Consulting in 2000 and is summarized in the "Test Pit Summary Report" dated January 5, 2001.

The work completed by OBG during design activities consisted of the installation of 11 soil borings and the excavation of 73 test pits/trenches. The soil borings were installed along the perimeter of the landfill and north plant areas and along the future location of the groundwater collection trench through the north plant area. The test pits and trenches were excavated in the landfill, north of the landfill and in the north plant area. Soil samples were collected and analyzed for VOCs and SVOCs. The results of the sampling showed xylene concentrations ranging from non-detect to 140 ppm. A detailed summary of the OBG investigation, including the laboratory results, is presented in the OBG "Final Remedial Design Report", dated December 1998 (OBG 1998).

In 1999, the IT Corporation was retained by Stauffer for the purpose of addressing any potential data gaps that would impede the implementation of the 1996 ROD, or an alternative remedy. IT Corporation installed 31 test pits across the property, and collected soil samples from the test pits for laboratory analysis. As a result of this investigation, the limits of contamination were found to be larger than originally delineated in the RI. The new limits of contamination determined by IT Corporation are shown in Figure 2. A summary of the investigation activities and the laboratory results are outlined in IT Corporation's Report titled "Results of Additional Site Assessment Activities", dated January 1999 (IT 1999).

Other work completed since the 1996 ROD includes:

- Groundwater Treatment Facility and SPDES Permit
- Lead and asbestos survey for the main plant building
- Installation of the de-watering system for the landfill
- Installation of staging and decon pads
- Installation of some groundwater extraction wells
- Installation and operation of air monitoring stations
- LTTD Pilot Tests
- Removal and disposal of old tanks from the main plant building and drums from the landfill area and north plant during LTTD Pilot Tests excavations
- Infrastructure work to utilities, roadways and drainage structures
- Additional PCB sampling,(soils and SPDES outfalls)
- Re-sampling of monitoring wells

SECTION 5:

SUMMARY OF NEW INFORMATION

The primary changes in the identified amended remedy include the addition of new areas to be remediated, a significant increase in the volume of contaminated soils requiring excavation and disposal, and the replacement of the on-site treatment and containment cell with off-site disposal in permitted landfills. The newly identified site areas that require remediation and have been added to the amended remedy are located on the west side of Skaneateles Creek and include the main plant building (AEC-6), the area in front of the main plant building (AEC-7), and the south plant area (AEC-8), (See Figure 2).

Subsequent to the 1996 ROD, Stauffer decided that it no longer intended to market or otherwise reuse the main plant building. As such, demolition of the building and evaluation and possible excavation of contaminated soils from beneath and around the building foundation has been included as part of the amended remedy for AEC-6. AECs - 7 and - 8 (the areas in front of the main plant building and south of it) were found to be contaminated in sampling events completed subsequent to the 1996 ROD. AEC-7, the area in front of the main plant building, is the former location of underground oil tanks used for boiler fuel storage during plant operations. AEC-8, the area just south of the main plant building is the location of the former above ground storage tank farm. Excavation and off-site disposal of contaminated soils from these AECs has been added to the amended remedy.

The estimated volume of soils requiring excavation has grown from 60,000 cubic yards to an estimated range of 100,000 to 150,000 cubic yards. The increased volume arises from the newly added areas to be remediated, and from a substantial increase in the volume of waste & soils expected to be excavated from the landfill (AEC-1) and north plant area (AEC-2).

The most significant new information leading to this proposed amendment is not directly related to the site contamination but to the feasibility of off-site disposal. Since the 1996 ROD was issued, changes have taken place to both the testing procedures for disposal purposes, and to the costs of off-site disposal. New Federal testing procedures provide for removing certain solid hazardous wastes from regulation as hazardous waste if the results of this test proves the solids are no longer ignitable. This procedure has been determined to be applicable to the F003 and U239 listed hazardous wastes found in the soils and waste at the Stauffer site. Site waste and soils that pass this testing would be allowed to be disposed in a non-hazardous, but permitted solid waste landfill
(6 NYCRR Part 360). This change in the regulatory status of site wastes containing F003 and U239 listed wastes, combined with the substantial drop in tipping fees for permitted landfills that has occurred since 1996, makes the off-site disposal option much more cost effective than in 1995 when it was rejected because of high costs.

The excavated soils and wastes will also be tested for the remaining hazardous waste characteristics, namely corrosivity, reactivity and toxicity. Soils and wastes must also pass these tests in order to be disposed in a 6 NYCRR Part 360 (Solid Waste) landfill. In all instances, the results of the characteristic testing, including ignitability, will determine the ultimate off-site disposal facility, either a
6 NYCRR Part 360 (Solid Waste) or a 6 NYCRR Part 373 (Hazardous Waste) facility.

SECTION 6:

SUMMARY OF REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to meet all Standards, Criteria and Guidance (SCGs) and be protective of human health and the environment. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment through the proper application of scientific and engineering principles.

The goals established for this site are unchanged from those set forth in the 1996 ROD, except that they are extended to apply to the newly identified AECs 6, 7 and 8. The goals

established for this site are as follows:

- *Eliminate to the extent practicable the potential for direct human or animal contact with site related contaminants.*
- *Reduce, control, or eliminate to the extent practicable the contamination within soils and wastes on the site and the generation of leachate from AECs 1, 2, 6, 7 and 8.*
- *Mitigate environmental threats to Skaneateles Creek by eliminating to the extent practicable further inflows of any contaminated runoff, contaminated groundwater, and leachate from contaminated soils and waste.*
- *Mitigate site related contamination within creek sediments to levels that will not impair aquatic organisms and promote unimpaired use by aquatic organisms.*
- *Prevent to the extent practicable, migration of contaminants from AECs 1, 2, 6, 7, and 8 to groundwater.*
- *Mitigate the impacts of contaminated groundwater on the environment.*
- *Provide for the attainment of SCGs for groundwater quality at the limits of AEC 3, the shallow groundwater, and AEC 4, the deep groundwater, and to the extent practicable, provide for SCG attainment within these AECs.*

6.1: Standards, Criteria and Guidance (SCGs)

SCG's for soils and wastes at this site are based on the recommended soil cleanup guidelines in the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046, and are set forth in Table 1.1 for the volatile, semi-volatile and PCB contaminants found in site soils and waste. SCGs for creek sediments are based on the sediment screening criteria from NYSDEC Technical Guidance for Screening Contaminated Sediments, and are set forth in Table 1.2.

Site Specific Remedial Goals (SSRGs) are guidelines for control of soils that do not exceed SCGs for organic contaminants, but contain metals at residual levels. The SSRGs were proposed by Stauffer to identify soils that contain metals at levels of concern for direct human exposure. The SSRGs were reviewed and accepted on a site specific basis by the Department and the New York State Department of Health, and are to be used to ensure no soils are left where human exposure to residual metal contaminants could be a concern. This acceptance was premised on the fact that any future site usage would be restricted to only Industrial/Commercial purposes. The SSRGs are set forth in Table 1.1.

SCGs for surface water and groundwater quality are based on NYSDEC Ambient Water Quality Standards and Guidance Values and on Part V of the New York State Sanitary Code. SCGs for water quality are set forth in Table 1.4, Table 1.5 and Table 1.6.

SECTION 7:

EVALUATION OF THE AMENDED REMEDY

7.1: Summary of the 1996 ROD Remedy

The remedy selection process leading to the March 1996

Record of Decision (ROD) considered the detailed evaluation of technologies and the six Site Wide Alternatives (SWAs) developed in the final Feasibility Study (FS) submitted by Stauffer (EA 1995). SWA-6, Removal with On-site Treatment and Disposal, was recommended in this Feasibility Study and was ultimately selected by the Department, with some revision, as the remedy for the site. SWA-6 was incorporated into the 1996 ROD for the Stauffer site.

Due primarily to costs, the 1995 FS screened out the off-site disposal alternative. Because of the new information discussed in Section 5, this alternative was re-evaluated in the 2001 Final Focused Feasibility Study (FFS) submitted by Stauffer.

The remedy selected in the 1996 ROD included the following components:

- AEC-1: excavation of approximately 45,000 CY of contaminated soil and waste that exceed soil SCGs from the former landfill and bordering area.
- AEC-2: excavation of approximately 4,100 CY of contaminated soil and waste that exceed soil SCGs, and installing a 5-acre clay cap and slurry wall to isolate the remaining residual metals contaminated soils.
- AEC-3: pump and treat system for shallow groundwater.
- AEC-4: monitoring with contingency to pump and treat deep groundwater if source removal and natural attenuation fails to adequately reduce contaminants in the deep groundwater.
- AEC-5, dredge affected sediments (approximately 2,737 CY).
- All removed soils and waste would be placed into an on-site treatment and disposal cell. The cell would treat VOC and SVOC contaminants via SVE/Bio-venting mechanisms.
- Contaminated groundwater and construction generated water would be treated in on-site treatment system, with discharge of treated water via a permitted outfall to the Skaneateles Creek.

7.2: Explanation of the Amended Remedy

Based upon the new information available for the site and, a reevaluation of the alternatives available, the remedy set forth in the March 1996 Record of Decision (ROD) would be amended to include remediation of additional areas of environmental contamination and to provide for off-site disposal in lieu of on-site treatment and disposal.

The amended remedy will include the excavation of contaminated soils and wastes from the former landfill area (AEC-1), the north plant area (AEC-2), the main plant building (AEC-6), the front of the main plant building (AEC-7), and the area south of the main plant building (AEC-8) as shown in Figure 2. Excavation would include removal of all soils and waste that contain contaminants in excess of the SCGs listed in Table 1.1. Stauffer's current estimate of the volume of soils to be removed and disposed provides a range of from 100,000 to 150,000 cubic yards.

Excavation of site soils and wastes would be based on the presence of SCGs for organic contaminants. However, the site soils also contain several metal contaminants of concern and it is expected that small volumes of soil exceeding site background levels will remain. To ensure that no unacceptable levels of metals contamination remains, the amended remedy will also require confirmatory sampling for metals. Soils containing residual metals that exceed the SSRGs listed in Table 1.1 would pose a concern for long term direct human

exposure in an Industrial/Commercial setting. Depending on the location and volume of soils above SSRG levels that remain following excavation, the Department will direct that the soils either be: removed for off-site disposal; capped in place; placed below finished grade and covered with clean fill; or subject to stabilization treatment prior to capping or isolation on-site. Any metals contaminated soils that fail the required tests for hazardous waste characteristics will be removed for off-site disposal at a permitted facility.

The remedy for Skaneateles Creek (AEC-5) remains unchanged from the 1996 ROD, and will require removal of creek sediments that exceed the SCGs listed in Table 1.2 from the creek bed in the vicinity of the site to the Mill Pond at Madison Filter. Also identified was the discovery of and abandoned pipe in the creek bed that will require excavation and off-site disposal. Removal of the sediments would extend downstream as far as the mill pond west of Jordan Road, adjacent to Madison Filter and would include removal of the side-cast material present on the banks of the mill pond. Where feasible, sediment removal will be completed in a "surgical" manner to minimize disruption to the creek habitat. A Habitat Assessment and map will be prepared by the NYSDEC Fish and Wildlife identifying sediment depositional areas, thereby minimizing impacts to the creek and its' habitat.

Sampling and analyses of soils, waste and sediments will be performed as deemed necessary,during removal to properly characterize the excavated material for off-site disposal. Additional sampling and analyses will be performed after removal to provide confirmation that excavation did not leave behind any material that exceeds the SCGs.

Excavated material originally planned to be disposed of in the on-site treatment cell will be properly characterized and transported to an appropriate off-site disposal facility. It is expected that, using federal testing procedures, the large majority of excavated soils and wastes will be disposed as non-hazardous, solid waste in a 6 NYCRR Part 360 permitted solid waste landfill. It is also expected that the testing procedures will identify some wastes that will have to be disposed as a regulated hazardous waste, either in a 6 NYCRR Part 373 permitted hazardous waste landfill, or at an out of state facility with an equivalent hazardous waste permit.

Because the amended remedy would involve transportation of a large volume of contaminated material off-site, extra care would be taken in planning and implementation to ensure safety on public highways and to ensure that contaminated material is not tracked or inadvertently spilled along the designated transportation route.

The 1996 ROD remedy for AEC-3 (shallow groundwater) and AEC-4 (deep groundwater) will not change and will be implemented according to the approved remedial design. The existing groundwater extraction system installed for AEC-3 will be operated as long as the Department determines it is necessary. Also, the NYSDEC Division of Water will be continuously monitoring the permitted SPDES outfalls to ensure compliance as required by the SPDES Permit issued to SMC. Corrective action may be required as necessary, if SMC is out of compliance. A pump and treatment contingency for AEC-4 would be adopted should source removal efforts and natural attenuation fail to adequately reduce contamination in AEC-4. Evaluation of AEC-4 would be based on the expectation of a significant decrease in the concentration of target compounds after source removal and the continued operation of the pump and treat system for AEC-3, shallow

groundwater.

The amended remedy would also include the demolition of the main plant building (AEC-6) and evaluation of soils around and beneath the building foundation to determine if they exceed the SCGs listed in Table 1.1 and require excavation. Demolition would be preceded by an asbestos abatement and removal program. Debris from the building demolition would be removed from the site for disposal in a permitted 6 NYCRR Part 360 solid waste landfill.

Institutional controls under the amended remedy will include: deed restrictions to protect remedial features and restrict on-site groundwater use; deed restriction to prohibit the site fromever being used for purposes other than for appropriate industrial or commercial enterprises, as explained below, without the express written waiver of such prohibition by the Department and NYSDOH ; restricted site access; long term monitoring of site conditions; and routine maintenance operations, such as, fence repairs and lawn mowing. Appropriate industrial or commercial uses of the property would have to be consistent with any applicable zoning ordinances, but would not include enterprises that draw susceptible portions of the community to the property for activities that may lead to exposures to residual site contamination (e.g. day care, child care, medical treatment facilities, some recreational enterprises). Site monitoring will include a periodic survey of groundwater use in the area and efforts for early identification of any future threats to drinking water wells.

7.3 Evaluation of the Amended Remedy

The criteria used to compare the amended remedy against the remedy selected in the March 1996 Record of Decision (ROD) are defined in the regulation that directs the remediation of inactive hazardous waste disposal sites in New York State (6 NYCRR Part 375).

For each of the criteria, a brief description is provided, followed by an evaluation of the alternative.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

7.3.1 Compliance with New York State Standards, Criteria, and Guidance (SCGs)

Compliance with SCGs addresses whether or not a remedy would meet all Federal and State environmental laws, regulations, standards and guidance.

The most significant SCGs that apply to this remedial program are presented in Section 6.2.1. They are:

- SCGs for soil and waste removal, Table 1.1
- SSRGs for residual metal contaminants in soils, Table 1.1
- Sediment Criteria for creek sediments, Table 1.2
- Ambient Water Quality Standards for surface and ground water quality, Tables 1.3, 1.4, 1.5 & 1.6

In overall comparison, the amended remedy would better meet all the SCGs that are applicable to this site.

The amended remedy provides for soil removal from additional areas in front of the main plant building (AEC-7) and south of the building (AEC-8). As needed, soils from around and beneath the main building foundation would also be removed. This would provide for attainment of soil cleanup SCGs from a significantly larger area than the original remedy.

The amended remedy and the 1996 ROD remedy provide for identical groundwater efforts. However, because of the

additional areas of contaminated soil to be removed under the amended remedy, it is expected that attainment of groundwater quality SCGs would be met more readily under the amended remedy than under the 1996 ROD remedy.

7.3.2: Protection of Human Health and the Environment

This criterion is an overall evaluation of each alternative's ability to protect human health and the environment.

In overall comparison, the amended remedy would be more protective of human health and the environment over the long term.

The amended remedy is considered to be more protective of human health and the environment than the original remedy, in that it permanently removes more contaminated soils from the site. The amended remedy would also permanently remove the high level sources of organic contamination from the site. The original remedy would contain and treat the waste on-site and would be dependent on the long-term maintenance of the CAMU cell and the effectiveness of the SVE/Bio venting system to permanently destroy the contaminants. Disposing of the waste off-site eliminates the need for an on-site CAMU treatment cell, therefore, the amended remedy does not rely on the effectiveness of treatment or long term maintenance of the cell.

The original remedy and the amended remedy would both protect the environment by eliminating uncontrolled sources.

There are no significant difference between the original and amended remedies in the potential short-term exposure of workers and nearby residences to VOCs and dust. Both remedies require invasive construction activities that would increase dust during excavation and material handling and both will require similar control measures to minimize this potential.

The remaining five criteria are considered "primary balancing criteria". These criteria are used to weigh major trade-offs among alternatives and are discussed below.

7.3.3: Short-term Impacts and Effectiveness

The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment are evaluated. The length of time needed to achieve the remedial objectives is estimated.

The original and amended remedies involve the excavation and handling of soils and waste materials with chemical concentrations exceeding the SCGs and SSRGs. The ROD remedy and amended remedy would both present a high potential for short-term impacts to nearby residents and site workers. The site workers involved in the excavation, staging and handling would be exposed to dust and VOC emissions and will be required to wear appropriate personal protective equipment (PPE). Nearby residents would also have a potential to be exposed to dust and VOC emissions. However, extensive air monitoring coupled with the implementation of prudent excavation procedures and corrective measures and engineering controls, including but not limited to, foam suppressants, covers, and structural enclosures with associated treatment and ventilation systems, to control dust and VOC emissions should minimize these risks.

The short-term impact of additional off-site truck traffic, from the amended remedy would be greater than the original remedy due to the transportation of the waste off-site, but result in fewer on-site short-term impacts than the original remedy, due to minimal handling of the waste stream. This is because the excavated soils, after being properly characterized, will be placed directly into trucks, and disposed at an appropriate off-site facility, whereas the original ROD remedy had an incremental increase in the risk of exposure to dust and VOC emissions that would arise from the additional step of placing the soils and waste into the on-site CAMU treatment cell. However, the adoption of appropriate prudent excavation procedures, stringent air monitoring and the implementation of dust and volatilization controls, as described above, will all serve to minimize these impacts.

A traffic study for the amended remedy was conducted for the FFS and entitled "Traffic Impact Analysis SMC Contaminant Transport". This study concluded that there would be no significant impact on adjacent transportation systems during the life of the project. A site generated trip analysis, in the study, had a peak hour Level of Service (LOS) rating of very good (LOS B) to excellent (LOS A) at each intersection approach along the recommended haul route, Jordan Road, with only minor delays anticipated. Although Jordan Road is the primary route from the site, the final haul route to be utilized will be dependent on many factors, including securing required highway permits and assessing roadway conditions prior to the remedy being implemented. If conditions necessitate a change in the recommended haul route, the public will be notified prior to the commencement of the remedy.

In order to mitigate impacts from the on-site and off-site generated truck traffic, it is anticipated that an on-site staging area for truck circulation and waiting periods will be designated. Ground mounted construction signs would also be installed at each approach to all selected driveways and along the haul route to minimize these impacts.

Both the ROD remedy and the Amended ROD remedy would have similar short term impacts on the disruption of the Skaneateles Creek due to the actions of sediment dredging.

The time to implement the amended remedy has been estimated at one and one half to two years. This is approximately the same schedule that was estimated for the construction phase of the original ROD remedy, and therefore they are comparable.

7.3.4: Long-Term Effectiveness and Permanence

This criterion evaluates the long term effectiveness of alternatives after implementation. If wastes or residuals remain at the site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude and nature of the risk presented by the remaining wastes; 2) the adequacy of the controls intended to limit the risk to protective levels; and 3) the reliability of these controls.

The amended remedy will be more effective for the elimination of the high-level organic contamination source areas in that it would permanently remove from the site the contaminated soils and wastes through off-site disposal. The ROD remedy would also provide for long-term effectiveness and permanence, through excavation, containment and treatment of the high-level organic contamination source areas in the CAMU treatment cell, which would remain on-site.

Both remedies would be expected to permanently reduce groundwater contaminants in AEC-3 and AEC-4 in a relatively reasonable time frame. However, the amended remedy will also include the remediation of AEC-6,7& 8, which would help to improve the groundwater remediation of AEC-3 and AEC-4.

The implementation of the original ROD remedy would have potential effects on the future use and development of the site, due primarily to the construction of the CAMU treatment cell. The available area at the site for future development/reuse would be limited. The implementation of the amended remedy will make available more area for possible future beneficial reuse. Also, with the demolition of the Main Plant building, more area of the site could be available for such use. The amended remedy could also possibly generate a greater interest in the use of the site for future light Industrial use and thus have a beneficial social and economic impact on the community.

Deed restrictions limiting the type of reuse are the same for both remedies.

7.3.5: Reduction of Toxicity, Mobility, or Volume

Preference is given to alternatives that permanently, and by treatment, significantly reduce the toxicity, mobility, or volume of the wastes at the site. The evaluation included assessing the fate of the residues generated from treating the wastes at the site.

The amended remedy would reduce the mobility and volume of the contaminants at the site more effectively than the original ROD remedy, due to removal of the wastes off-site, however the toxicity would remain the same because no treatment would occur at the off -site facility. The receiving off-site facility would isolate and eliminate the potential contaminant mobility due to its fundamental design, construction, and operations required under its construction and operations permits.

The original ROD remedy would have the ability to reduce the toxicity of the wastes due to treatment capabilities (SVE/Bio-venting processes)built into the design of the CAMU treatment cell. However, the overall reduction of toxicity, mobility and volume may be effected due to the challenges of implementing a CAMU treatment cell for the increased waste volume, which is estimated to be over 100,000 cubic yards. Also, a significant challenge to the successful operation and effectiveness of the CAMU treatment cell would be the silt-like physical characteristic of some of the waste stream, which could cause problems with the SVE system.

Both remedies would significantly reduce the groundwater contamination in AEC-3 and AEC-4. However, the propo amended remedy would also include the remediation of AEC-6, 7 & 8, thus helping to improve the remediation of the groundwater in AECs 3 & 4.

The amended and original remedy would both reduce the mobility and volume of contaminants in the Skaneateles Creek sediments, and both would pose a similar potential for short-term re-mobilization of contaminants during dredging activities.

7.3.6: Implementability

The technical and administrative feasibility of carrying out the alternative is evaluated. Technical feasibility issues include the difficulties associated with the construction and operation

of the alternative, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personnel and equipment is evaluated along with potential difficulties in obtaining special permits, rights-of-way for construction, etc.

The amended remedy is expected to be more implementable than the original remedy as there are no significant obstacles envisioned during its' implementation. The original remedy would have posed difficulties associated with the construction and operation of the CAMU treatment cell based on the additional information obtained since the 1996 ROD, such as increased volumes and the physical characteristics of the waste stream.

The amended remedy of off-site disposal is a widely used and accepted remedial technology. The waste would be disposed at one of the many appropriate permitted landfills operated in New York State as well as other nearby states. Material and debris handling, processing and disposal would be clearly defined in the revised Remedial Design. Construction water from the excavation activities would be collected and treated through the on-site groundwater treatment system as it was in the original ROD remedy.

The truck traffic will be controlled and maintained to ensure that there are no significant impacts to the community. The amended remedy also may require transportation permits from local municipal and state agencies, however, they should not be difficult to secure since off-site disposal is commonly practiced throughout the state.

The availability of qualified contractors and equipment for both the original and amended remedies is comparable and would not expect to impede the implementation of the remedial construction.

The original remedy requires the construction of the CAMU treatment cell with a SVE/Bio-venting system. The innovative combination of these technologies could pose some design and operations uncertainties. The SVE/Bio-venting system of the CAMU treatment cell are dependent on the ability to maintain air flow through the containment cell

.

Additional information has since been obtained during design activities, that identified increased waste volumes requiring treatment and containment and also defined the consistency of the waste material in the landfill containing a significant amount of silty soils. The additional volume combined with the silt-like material characteristics could create considerable operation and maintenance challenges as well as minimizing the SVE treatment. Also, it could minimize the effectiveness of the bio-remediation of the cell, due to the low porosity of these waste soils, which then could potentially plug up the system and make it ineffective.

A properly constructed CAMU treatment cell has limited flexibility for major expansion for additional capacity and subsequent remediation if increased volumes of waste are identified and thus require treatment. The additional volume of material identified in the FFS report requiring excavation, has the potential to significantly increase the design volume of the cell. The increased waste volumes combined with the physical characteristics of the waste would make the implementation and operation and maintenance of the CAMU treatment cell more difficult than was originally anticipated in the 1996 ROD.

The implementability and reliability of remediation for AECs 3 and 4 would be the same under each remedy, therefore each

would be equally effective in remediation of the groundwater aquifers.

7.3.7: Cost

Capital costs are estimated for the amended and original remedy. Although cost is the last criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for final selection. The estimated costs and comparisons for each remedy are provided in Table 1.7.

The previous estimates presented in Table 1.7 are present worth costs taken from the 1995 Feasibility Study and summarized in the 1996 ROD, include costs associated with AEC-1, AEC-2 and AEC-5. The 1996 ROD estimated the cost to be $11,600,000 (SWA-6). The cost estimates for the 100,000 and 150,000 CY scenarios include all previous AECs, (AEC-1,AEC-2 &AEC-5) plus the newly identified AECs, (AECs 6 through 8).

The amended remedy cost is approximately $16,555,000. This is $21,000,000 less than that was estimated in the FS (EA 1995). This is due to the option of utilizing a 6 NYCRR Part 360 landfill for the off-site disposal for the majority of the soils and waste. Although the amended remedy has a higher capital cost over the original remedy by $2,024,000 and $2,979,000 for 100,000 and 150,000 CY scenarios, respectively, it has a lower Operational and Maintenance (O&M) cost over the original ROD remedy by $775,000 and $822,000 for the 100,000 and 150,000 CY scenarios, respectively. The lower O&M cost savings for the amended remedy is primarily due to not having to maintain and operate the CAMU treatment cell over a long term period of at least 30 years.

The estimated costs presented in Table 1.7, are also based on recent prices obtained for off-site disposal and the inclusion of the revised volumes of soil and sediment expected to be excavated that were identified during pre-design and design activities. As illustrated below, the soil and waste volumes have increased significantly from the original remedy.

- Soil and waste targeted for excavation in original remedy - 60,000 cubic yards (AEC-1,2&5).

- Soil and waste targeted for excavation in amended remedy - > 100,000 cubic yards (AEC-1,2 & AEC 5-8).

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is focused upon after public comments on the Proposed Amended ROD have been received.

7.3.8: Community Acceptance

Concerns of the community regarding the Amended ROD were evaluated. A "Responsiveness Summary" was prepared that summarizes public comments received and addresses the questions and concerns raised. There were no significant differences that were identified in the public comments that would change the Final Amended Remedy.

SECTION 8:

DESCRIPTION OF THE AMENDED REMEDY

Based upon the evaluation presented in Section 7, the Department has amended the Remedy for this site to include excavation of additional volumes of soil and waste, remediation of AECs 6, 7 and 8, and use of off-site disposal

instead of excavation with on-site disposal, containment and treatment in a CAMU cell, as originally specified in the 1996 ROD. The groundwater remediation components will not be amended.

As stated previously, the current 1996 Record of Decision (ROD) requires that the excavated material exceeding SCGs be encapsulated on-site for treatment in the CAMU cell. The long-term management and maintenance of these materials on-site are not believed to be as cost effective as originally anticipated due to increased long-term operation and maintenance costs and increased volume of contaminated soils and wastes found at the site.

Implementation of the original ROD may be more difficult to operate and maintain, and also limits the long-term reuse of the property. Consequently, the off-site disposal alternative technology once evaluated in the FS was re-evaluated based upon its' ability to permanently mitigate the observed impacts, limit the degree of post-closure care, promote beneficial re-use of the property, and be equally or more protective of human health and the environment than the original ROD remedy. Therefore, off-site disposal rather than an on-site CAMU treatment cell is now considered the preferred effective remedial technology for this site.

The summary for the Amended Remedy is listed below:

1. Excavate contaminated soils and waste from the Landfill area (AEC-1) that exceed SCGs and dispose off-site at an appropriate disposal facility.

2. Excavate contaminated soils and waste from the North Plant Area (AEC-2) that exceed SCGs and dispose off-site at an appropriate disposal facility.

3. Excavate contaminated sediments from the Skaneateles Creek (AEC-5) that exceed SCGs and dispose off-site at an appropriate disposal facility. Excavate and dispose of off-site identified abandoned pipe in the Skaneateles Creek..

4. Excavate contaminated soils and waste from newly identified remedial areas: Main Plant Building as AEC-6, Area in Front of Main Plant Building as AEC-7, and South Plant Area as AEC-8 that exceed SCGs and dispose off-site at an appropriate disposal facility.

5. Excavate PCBs that exceed site cleanup SCGs and dispose off-site at an appropriate disposal facility.

6. Establish SSRGs for confirmatory sampling of metals contaminated soils.

7. Remediate residual metals contaminated soils that exceed SSRGs by excavation with off-site disposal or on-site isolation/treatment technologies.

8. Demolition of Main Plant Building and remediation of impacted soils underneath the building.

9. Design, construct and operate a shallow groundwater extraction and treatment system, for AEC-3. Treated water will be discharged to Skaneateles Creek through SPDES permitted outfalls and monitored for compliance by the NYSDEC Division of Water.

10. No action for deep groundwater (AEC-4), but monitoring will be conducted to assess expected improvements.

11. Contingency for future extraction and treatment of deep groundwater (AEC-4), if source removal and natural attenuation fails to promote adequate improvements.

12. De-watering operations and subsequent treatment of water generated from excavation activities.

13. Ensure and implement truck traffic safety protocols as well as implement appropriate decon and emergency spill procedures for disposal trucks along designated transportation route.

14. Institutional controls, including restricting future site use to only Industrial/Commercial purposes and restricting on site groundwater usage.

Institutional controls under the amended remedy will include: deed restrictions to protect remedial features and restrict on-site groundwater use; deed restriction to prohibit the site fromever being used for purposes other than for appropriate industrial or commercial enterprises, as explained below, without the express written waiver of such prohibition by the Department and the NYSDOH ; restricted site access; long term monitoring of site conditions; and routine maintenance operations, such as, fence repairs and lawn mowing. Appropriate industrial or commercial uses of the property would have to be consistent with any applicable zoning ordinances, but would not include enterprises that draw susceptible portions of the community to the property for activities that may lead to exposures to residual site contamination (e.g. day care, child care, medical treatment facilities, some recreational enterprises). Site monitoring will include a periodic survey of groundwater use in the area and efforts for early identification of any future threats to drinking water wells.

SECTION 9:

HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the ROD Amendment process, Citizen Participation activities were undertaken in an effort to keep the public informed as to the status and progress of this process. The following public participation activities were conducted:

- A fact sheet was distributed to the mailing list of the start of LTTD pilot tests.
- Department Staff attended Town Board Meetings to keep the Town Board and public informed on the status of the ROD Amendment process.
- Monthly Progress reports were submitted to the Town Supervisor, regarding status of on-going site activities and ROD Amendment.
- A public meeting notice and fact sheet was distributed to the mailing list upon publication and release of the Proposed Amended ROD.
- A public meeting was held on August 30, 2001and a public comment period was established to present the Proposed Amended ROD, answer the public's questions and receive public comments.
- A Responsiveness Summary was prepared and made available to the public, to address the comments received during the public meeting and public comment period.

Table 1.1

Soils and Wastes
(AEC-1,2,6,7 &8)

Contaminants of Concern	Soils SCG's (ppm)	Cleanup Goals (ppm)	Landfill and Interior Soil Samples Results (AEC-1) ppm	Area North of Main Plant Building Soil Sample Results (AEC-2) ppm
Volatiles:				
Toluene	1.5	1.5	ND-1,000	ND-0.037
Xylenes (total)	1.2	1.2	ND-25,000	ND-2,200
Semi Volatiles:				
Benzo(a)anthracene	0.224	0.224	ND-1.5	ND-6.7
Chrysene	0.4	0.4	ND-1.6	ND-6.6
Benzo(b)fluroanthene	1.1	1.1	ND-2.0	ND-5.6
Benzo(k)fluroanthene	1.1	1.1	ND-1.0	ND-7.9
Benzo(a)pyrene	0.061	0.061	ND-1.3	ND-7.9
o-Toluic Acid	50	50	ND-81	ND-19.0
m-Toluic Acid	50	50	ND-8,500	ND-46.0
p-Toluic Acid	50	50	ND-1,600	ND-14.0
PCBs	1.0 (10)	1.0 (10)	† ND-0.23	† ND-0.059
	SCG's	**SSRG's		
Inorganics:	(ppm)	(ppm)		
Chromium	*	100	4.2-164	9.0-162
Cobalt	*	60	5.7-4,230	4.2-30.3
Lead	*	500	1.9-160	5.6-3,030
Mercury	*	5	ND-17.2	ND-25.2
Nickel	*	100	14.0-99.2	13.5-166
Zinc	*	750	26.4-1,170	22.5-15,600

Notes:

ND- Not Detected

PCBs: 1.0 ppm for surface and 10 ppm for sub-surface.

† PCBs were detected in two of the total 34 samples analyzed.

* Imported soils used for clean backfill will meet NYS Department of Transportation registered quarry standards and approval by NYSDEC.

** Site Specific Remedial Goals (SSRG's).

Table 1.2

Skaneateles Creek Sediments (AEC-5)

Contaminants of Concern	Sediments SCG's (ppb)	Cleanup Goals (ppb)	Skaneateles Creek Sediments Round 1 (ppb)	Skaneateles Creek Sediments Round 2 (ppb)
Volatiles:				
Tetrachloroethene	9	9	ND-16	ND
Xylenes (total)	--	--	ND-2	ND-3,600
Toluene	--	--	ND	ND-48
1,2 Dichloroethene	–	--	ND	ND-1,100
Semi Volatiles:				
Benzo(a)anthracene	15	15	ND-4,700	ND-980
Benzo(b)fluroanthene	15	15	ND-3,800	ND-705
Benzo(k)fluroanthene	15	15	ND-3,500	ND-1,100
Benzo(a)pyrene	15	15	ND-4,600	ND-490
Chrysene	15	15	ND-4,500	ND-780
Inorganics:*	(ppm)	(ppm)		
Antimony	2-25	2-25	60.4-91.7	ND
Cadmium	0.6-9.0	0.6-9.0	1.3-1.9	1.4-2.2
Copper	16-110	16-110	16.7-56.8	23.2-351
Lead	31-110	31-110	12.8-293	28.4-215
Mercury	0.15-1.3	0.15-1.3	ND	0.19-2.0
Nickel	16-50	16-50	15.8-23.6	14.3-48.7
Zinc	120-270	120-270	44.1-155	44.5-229

* SCG's for Metals (Inorganics) lists the range from the Lowest Effects Level to the Severe Effects Level

Table 1.3

Summary of Analytes Identified

In Landfill Piezometers (AEC 3)

Contaminants of Concern	SCG's (ppb)	Round 1 *u*g/L (ppb) Range
Volatiles:		
Toluene	5	140 – 1,600
Xylenes (total)	5	7,900 – 73,000
Semi Volatiles:		
o-Toluic Acid	31,000	30,000 – 40,000
m-Toluic Acid	31,000	78,000 – 100,000
p-Toluic Acid	31,000	23,000 – 42,000
4,4'DDE	ND	0.053 – 0.19
Inorganics:		
Arsenic	25	3.8 – 33.2
Chromium	50	21.3 – 76.7
Cobalt	-----	50.6 – 992
Zinc	2,000	146 – 747

Table 1.4

Summary of Analytes Identified

In Overburden Groundwater (AEC 3)

Contaminants of Concern	SCG's (ppb)	Round 1 *u*g/L (ppb) Range	Round 2 *u*g/L (ppb) Range
Volatiles:			
Toluene	5	ND – 2	ND – 270
Xylenes (total)	5	ND – 19	ND – 28,000

Table 1.5

Summary of Analytes Identified

In Upper Bedrock Groundwater (AEC 3)

Contaminants of Concern	SCG's (ppb)	Round 1 *ug*/L (ppb) Range	Round 2 *ug*/L (ppb) Range
Volatiles:			
Vinyl Chloride	2	ND – 3	ND – 21
1,2-Dichloroethene (total)	5	ND – 160	ND – 1,500
Trichloroethene	5	ND – 180	ND – 54
Tetrachloroethene	5	ND – 2,900	ND – 190
Toluene	5	ND – 63	ND – 37
Xylenes (total)	5	ND – 2,100	ND – 1,900
Semi Volatiles:			
Phenol	1	ND – 140	ND – 2,400
o-Toluic Acid	31,000	ND – 690,000	ND – 220,000
m-Toluic Acid	31,000	ND – 450,000	ND – 150,000
p-Toluic Acid	31,000	ND – 32,000	ND – 240,000
4,4'-DDE	ND	ND	ND – 0.61
Inorganics:			
Aluminum	-----	107 – 10,700	36 – 32,500
Arsenic	25	ND – 910	ND – 631
Cobalt	-----	ND – 42.4	ND – 73
Lead	25	ND – 122	ND – 128

Table 1.6

Summary of Analytes Identified

In Deep Bedrock Groundwater (AEC 4)

Contaminants of Concern	SCG's (ppb)	Round 1 *u*g/L (ppb) Range	Round 2 *u*g/L (ppb) Range
Volatiles:			
1,2-Dichloroethene (total)	5	ND – 94	ND – 4
Toluene	5	ND – 23	ND – 4
Xylenes (total)	5	ND – 520	ND – 330
Semi Volatiles:			
Phenol	1	ND – 22	ND – 35
o-Toluic Acid	31,000	ND – 47,000	ND – 17,000
m-Toluic Acid	31,000	ND – 37,000	ND – 17,000
p-Toluic Acid	31,000	ND – 3,900	ND – 1,300
4,4'-DDE	ND	ND	ND – 0.14
Inorganics:			
Aluminum	-----	ND – 289	789 – 2,240
Arsenic	25	ND – 90.5	ND – 149
Nickel	-----	ND – 134	ND - 68

Table 1.7

Preliminary Cost Analysis of the Amended and Original Remedies.

	1996 ROD	100,000 CY	150,000 CY
Original Remedy (SWA- 6) [On-site Treatment and Disposal]			
Capital Cost	$ 6,072,000	$ 10,138,000	$ 13,504,000
O&M	$ 818,000	$ 847,000	$ 894,000
Present Worth (30 years)	$ 6,890,000	$ 10,985,000	$ 14,398,000
Amended Remedy - [Off-site Disposal]			
Capital Cost	$ 38,018,000 *	$ 12,162,000	$ 16,483,000
O&M	$ 0	$ 72,000	$ 72,000
Present Worth (30 years)	$ 38,018,000 *	$ 12,234,000	$ 16,555,000
Additional Cost for Amended Remedy			
Capital Cost	$ 31,946,000	$ 2,024,000	$ 2,979,000
O&M	$ (818,000)	$ (775,000)	$ (822,000)
Present Worth (30 years)	$ 31,128,000	$ 1,249,000	$ 2,157,000

Notes:

Bracket values ( ) represent a negative amount.

SWA is Site Wide Remedial Alternative.

Costs associated with remedial activities for AEC 3 and AEC 4 were not included in this analysis.

SWA- 3 and OBG values were used for 1996 costs for Proposed amended remedy.

The proposed amended remedy has a slightly higher capital cost with minimum long term operational and maintenance (O&M) costs, demonstrating it is a cost effective remedial alternative.

* 1996 ROD Off-site disposal option (SWA-3) costs does not include the 2 million dollar O&M costs originally included in the ROD for the groundwater treatment component, since it did not change. Additionally, this estimate was based on the assumption that all the wastes would be disposed at a permitted hazardous waste facility.

Appendix A
Stauffer Management Co.- Skaneateles Falls Site #7-34-010
Responsiveness Summary

The Proposed Amended ROD for the Stauffer Management Co. - Skaneateles Falls Site was prepared by the New York State Department of Environmental Conservation and issued to the local document repository on August 15, 2001. This Proposed Amended ROD outlined the preferred off-site disposal alternative over the 1996 remedy of on-site containment and treatment of site wastes that was previously selected.

The release of the Proposed Amended ROD was announced via a notice to the public mailing list, informing the public of the availability of the Proposed Amended ROD. The amended remedy is described in Section 8 of the Amended ROD.

A public meeting was held on August 30, 2001at the American Legion Hall in Skaneateles, which included a presentation of the 1996 remedy as well as a discussion of the proposed amended remedy and newly identified Areas of Environmental Concern. The meeting provided an opportunity for the public to discuss their concerns, ask questions and comment on the Proposed Amended ROD. These comments have become part of the Administrative Record for this site.

Written comments were received from Stauffer Management Company on September 27, 2001. The formal public comment period ended on September 28, 2001.

This Responsiveness Summary responds to all questions and comments raised at the August 30, 2001 public meeting and to the written comments received during the public comment period.

The following are the comments received at the public meeting, with the Department's responses:

1). Question: One of the off-site monitoring wells associated with the Stauffer site is located on the Newton property, where Welch Allyn has proposed that its Hand Held division construct its new plant. Will the groundwater and excavated construction soils be tested at the Newton property as part of the remedy?

Response: The off-site monitoring well located at the Newton property was installed as part of the Remedial Investigation of the Stauffer property, and there was no contamination detected in this well. Groundwater wells installed as part of the Stauffer investigation will be monitored quarterly during implementation of the remedy. Welch Allyn will be responsible for sampling, identification and subsequent disposal of any off-site soils impacted as a result of activities associated with their plant construction at the Newton property. There is no evidence of any activities relating to Stauffer or their predecessors having occurred at the Newton property.

2). Question: Moving a large quantity of material off-site may have a negative impact upon roadways. There is particular concern about impacts to Jordan Road. Have the State Department of Transportation and the County been involved in the project?

Response: A traffic study completed by Stauffer's consultant as part of the Focused Feasibility Study, determined that implementation of the remedy would have little impact on existing traffic patterns. The study also indicated that Jordan Road is currently considered a lightly loaded road, suggesting that it can readily handle the additional traffic. The details of trucking waste from the site will be addressed during the design phase of the project. Stauffer will carry out all activities in accordance with State, County and local regulations. All appropriate Government representatives will be involved in decisions regarding the project. If a government entity decides that there is a problem with the quantity of material being trucked off-site, Stauffer will address the concerns. All of the regulatory agencies will have the opportunity to provide input.

3). Question: Will classification of wastes as hazardous or non-hazardous occur before the removal of soils begins or while the removal is occurring? How will Stauffer know when it hits a "hot spot" of hazardous waste contamination?

Response: Characterization of the wastes as hazardous or non-hazardous will be confirmed as the wastes are generated during excavation of each of the AECs. This issue is more fully explained and addressed in comment Number 10 of this Responsiveness Summary. The specific details will be fully addressed in the revised remedial design for the removal action. The Department's primary objective is to ensure that all wastes are excavated, removed and disposed of in accordance with all State and Federal laws and regulations and in a manner that is protective of public health and the environment. To identify any "hot spot" areas, Stauffer will be required to have continuous volatile organic monitors on-site, have ongoing laboratory testing and maintain constant visual observations for any changes to the waste stream as excavation activities progress.

4). Question: From a planning point of view, what does the State envision to be the "worst case scenario" of problems that could occur which could affect the health and safety of residents in the vicinity of the site?

Response: When parties are excavating, shifting and moving around waste materials that have been in place for a long time, the State's primary concern is that the contamination could migrate into the air and groundwater. The first objective is to protect air quality at and around the site. Appropriate steps will be taken to ensure that no volatile organic vapors and/or air particulates are leaving the site and that there are no releases into the air that can pose a threat to workers or nearby residents. Air monitoring is undertaken to quickly identify any air quality problems. If such problems were to occur, steps identified beforehand in a site health and safety plan, that

includes a community health and safety component, would be implemented to eliminate the threat. The second objective is to ensure that there is minimal release of contaminants from the waste materials into the existing groundwater. If, however, there should be a release, it will not pose a risk to residents. Stauffer has groundwater extraction wells in place which collect contaminated groundwater and keep it from leaving the site. Additionally, the majority of the community in the vicinity of the site is served by a public water supply with a remote source and do not consume the local groundwater.

5). Question: How can sediment be removed from Skaneateles Creek in a safe manner? Is there a way to de-water the Creek?

Response: A design workplan which will provide the specifics of how sediment will be removed from the Creek still needs to be developed. The safe and effective removal of sediment is an important concern for the Department. Stauffer will undertake a habitat study before developing the design workplan in order to ensure that Creek habitat will be returned to a status comparable to its condition before implementation of the workplan. Other issues of concern are erosion control and evaluating flow levels to determine the optimal time of year to carry out the sediment removal. The specifics of how and when sediment removal will be done will be contained in the revised remedial design for the Amended ROD.

6). Question: Regarding the excavation of the Skaneateles Creek sediments, how are these contaminated sediments to be removed without spreading the contamination further downstream?

Response: The Department's Divisions of Water, Remediation, and Fish, Wildlife and Marine Resources will require Stauffer to implement all necessary precautions and engineering controls, such as silt curtains, hay bales and careful excavation techniques, to protect the fish, wildlife and other organisms in the Creek. The excavation of the sediments should occur during a low flow period in the Creek to minimize sediment transport.

7). Question: Homeowners adjacent to the site are concerned that they may be affected by the volatile organic vapors and air particulates generated during excavation activities. How is this going to be monitored and if necessary, controlled?

Response: The Department will require Stauffer to continuously monitor the air quality on-site as well as off-site during construction activities. Should air monitoring detect elevated air particulates and/or volatile organic vapors in the air, contingency measures to protect site workers and the community will be immediately implemented. Health and safety measures may include, but will not be limited to, the shutdown of operations, and the initiation of engineering controls such as dust and vapor suppression methods, using water, foam or other approved technologies.

8). Question: The main transport route planned for the trucks leaving and entering the Stauffer site is Jordan Road. How will the conditions of the roadway be monitored and maintained in order to prevent damage or deterioration of the pavement? Will the trucks with fully loaded waste material be covered and cleaned prior to leaving the site, in order to prevent spillage on the roadway?

Response: Stauffer will be required to obtain a highway permit from the County Highway Department and the New York State Department of Transportation. Conditions of the roadway will be evaluated prior to start of construction and will be continuously monitored by these agencies as well as the Department. Stauffer will be required to clean and repair the pavement as necessary, in accordance with its permit conditions, if any damage to the roadway is caused by the truck traffic. Further, all trucks leaving the site will be properly covered with tarps and the truck wheels and body will be cleaned prior to the trucks leaving the site. In case of any spillage, Stauffer will be required to contain and clean it promptly.

9). Question: How are the limits of the excavation determined in each of the Areas of Environmental Concern (AECs)?

Response: The revised remedial design will contain a comprehensive confirmation sampling program that will ensure that when excavation of each AEC is completed the confirmation samples taken from the sides and bottom of the excavation are within the Standards, Criteria and Guidance(SCGs) and Site Specific Remedial Goals (SSRGs) prescribed in the Amended ROD.

10). **The following comment was submitted by Stauffer Management Co. in a letter transmitted by facsimile on September 27, 2001, authored by Mr. Lee Erickson of Stauffer Management Co.,**

Comment (Summarized): Stauffer Management Co. (SMC) is proposing to perform in -situ testing of soils to determine whether they are hazardous wastes before they are excavated rather than at the time of excavation.

Response: Stauffer's proposed approach is not in compliance with State and Federal regulations, and the Department has determined it is not protective of human health and the environment.

The Department's position on this issue was outlined as follows in letter dated October 13, 2000 to SMC and authored by Ms. Dolores Tuohy Esq., NYSDEC DEE Attorney:

"Hazardous Waste Determination

*After evaluating Stauffer's arguments that listed wastes were not disposed of at the site, the Division of Environmental Remediation and Solid and Hazardous Materials have determined that xylene used in the toluic acid manufacturing process and disposed of at the site by Stauffer was listed hazardous waste at the time the wastes were generated by Stauffer's predecessor, Cowles Chemical Company, and disposed of at the site. However, since the listings that apply (U239 and F003) are based upon ignitability characteristic of xylene, solid wastes containing the listed xylene wastes can be excluded from the hazardous waste listing and, therefore, handled as other than hazardous waste, upon demonstration by Stauffer that the wastes do not exhibit the characteristic of ignitability "**at the time they are generated for off-site disposal." (Emphasis Added)***

In making its determination, the Department considered process information supplied to the Department by Stauffer on December 20,1994, including United States Patent #3,607,902, dated September 21, 1971, entitled "Process For The Preparation of High Purity Isomers of Toluic Acid," assigned to Cowles Chemical Company, to be a particularly relevant to the question of the nature of the wastes generated for disposal. According to the patent, the process used xylene (a Commercial Chemical Product) as an initial feedstock. When discarded as defined in 40 CFR Part 261.33 [6NYCRR Part 371.4(d)], such xylene would properly be considered a U239 listed waste. Of greater importance is the fact that later in the process fresh xylene was introduced into the centrifuge as a wash for the toluic acid crystals. Since the xylene was utilized solely for its solvent properties, it was a "spent solvent" when it exited the process. Wastes from this application of xylene constitute an F003 listed waste under 6NYCRR Part 371.4(a). (See steps 5-6 of the 9/21/71 patent process diagram and patent description examples for ortho, meta & para-toluic acid process.)

Spent xylene, and discarded xylene that is a Commercial Chemical Product (CCP), as described above, were disposed of at the site, constituting hazardous waste disposal. The hazardous waste disposal occurred primarily in the Landfill and North Plant areas, but as site data indicated, is not necessarily limited to these areas.

Disposal of Site's Waste

The Department also evaluated whether xylene contaminated remedial wastes can be disposed of in a Subtitle D (6 NYCRR Part 360) facility, if they are no longer ignitable. Both Divisions' staff have reviewed Federal and State regulations in this regard and have concluded that if, ***"at the time remedial wastes are generated during excavation activities", (Emphasis Added),*** *Stauffer can satisfactorily demonstrates to the Department that solid media contamination with the listed xylene wastes no longer exhibit the characteristic of Ignitability, then the tested remedial wastes would no longer be considered a U239 or F003 hazardous waste and therefore, outside the scope of the matters addressed by New York State Department of Environmental Conservation Technical Assistance Guidance Memorandum 3028 (TAGM 3028) and the Land Disposal Restrictions (LDR) Treatment Standards require under those specifics listings. The testing that Stauffer must conduct in order to demonstrate that xylene contamination remedial wastes are not a U239 or F003 listed hazardous waste is contained in 40CFR 261.21 [6NYCRR 371.3(b)] (Ignitability) , and includes the required testing methodology for solids set forth in EPA SW-846 Method 1030, entitled "Ignitability of Solids." If, however, the xylene contaminated media retain the characteristic of Ignitability, then TAGM 3028 and the LDR Treatment Standard's remain applicable.*

Because xylene is not the only potential contaminant of concern at this site, at the time of excavation and prior to disposal, remedial wastes (liquids and solids) must also be tested for Corrosivity (C), contained in 40 CFR 261.22 [6NYCRR 371.3(c)]; Reactivity (R), contained in 40 CFR 261.23 [6NYCRR 371.3(d)]; and Toxicity(T) contained in 40 CFR 261.24 [6NYCRR 371.3(e)]. The required testing methodology for Toxicity is specified by EPA SW-846, Method 1311, entitled "Toxicity Characteristic Leaching procedure" (TCLP).

In addition to the hazardous waste characteristic testing set forth above, Stauffer must adequately test suspect source areas for levels for PCB's. A waste plan for identification of possible PCB sources at the site is currently being developed by Stauffer. Any Remedial wastes containing PCB's at levels of 50 ppm or above would be considered a listed hazardous waste under 6 NYCRR 371.4(e) and would have to be disposed off-site at a Subtitle C (6NYCRR Part 373) hazardous waste facility.

"If at the time remedial wastes are generated during the excavation activities at the site", Stauffer is able to demonstrate, by testing to the Department's satisfaction, that the hazardous waste listing and the LDR Treatment Standards , (Emphasis Added), *for xylene do not apply, and that the contaminated media does not exhibit any of the other hazardous waste characteristics listed above then the wastes may be disposed off-site at a permitted Subtitle D (6 NYCRR Part 360) facility willing to accept the wastes rather than a Subtitle C (6NYCRR Part 373) facility. "Should any portion of the remedial waste (liquid or solid) fail the required tests for any of all hazardous characteristics, then such portion of the remedial wastes will be considered a hazardous waste and will have to be segregated for off-site disposal as a regulated hazardous waste."*

To support Stauffer's proposed fundamental change to the ROD and to enable the Department

to comply with TAGM 4059, Stauffer must prepare, and submit for the Department's approval as part of its application for modification of the Order, a Focused Feasibility Study which compares the proposed off-site disposal alternative to the remedy set forth in the 1996 ROD using the criteria for remedy selection set forth in 6 NYCRR Part 375. An issue of particular concern to Department is the impact that off-site disposal of the site's wastes will have upon the local community. The Focused Feasibility Study must evaluate and present in detail information regarding any impacts to the personal safety of community residents foreseen to be a consequence for the removal action and if potential impacts are identified, methods of mitigating such, as well as information regarding the impact of the disposal process on the local transportation infrastructure. ***The Focused Feasibility Study must also include a proposed remedial waste sampling, handling and disposal plan that sets forth, inter alia Stauffer's proposal regarding frequency of sampling, types of analyses, "staging of remedial wastes," and disposal contingencies in the event any portion of the wastes fail any of the tests for hazardous waste characteristics." (Emphasis Added).***

11). The September 27, 2001, letter submitted by Stauffer during the public comment period also had comments relating to a Draft Remedial Design Report Outline that Stauffer contends address the waste characterization issue. Stauffer also commented on community risk and public health and safety during the characterization process.

The following are responses by the Department that address these issues:

In response to Stauffer's contention that its Draft Remedial Design Report Outline submitted on February 23, 2001, contains an adequate and acceptable sampling and analysis plan to meet all the requirements of 40 CFR 261 and the Land Disposal Restrictions (40 CFR Part 268), it is important to note that the Department has neither reviewed nor approved this submittal since review of any revisions to the approved Remedial Design were held in abeyance until the Focused Feasibility Study and Proposed Amended ROD were available for public review and comment. Moreover, this submittal is incomplete since the required elements that needed revision in the approved December 1998 Remedial Design were not specified nor included. However, a cursory review of the testing requirements proposed by Stauffer in the submittal, indicates that they are far from adequate to meet the rigorous requirements of 40 CFR 261 and 40 CFR Part 268 and the specific requirements of the Department's October 13, 2000 decision regarding the Determination and Characterization of Site wastes.

In regards to Stauffer's reference to community acceptance of its proposal and concerns about subjecting the community to any risk associated with testing materials during the removal process, the Amended ROD along with appropriate revisions to the approved Remedial Design will protect the public by requiring Stauffer to provide all necessary air monitoring, and all necessary and required engineering controls to abate odors, including, but not limited to, foam suppressants, covers, and structural enclosures with treatment and ventilation systems. Transporting hazardous wastes through the community which have not been properly identified and handled as such(the likely result of Stauffer's proposal) will provide a far greater threat to the community.

The public health of the community is of paramount concern to the Department and the New York State Department of Health. In accordance with federal and state regulations, the sampling frequency for site generated wastes will be defined during the development of the revised remedial design. Potential impacts to the project schedule as a result of the required sampling protocol will also be further evaluated during the development of the revised remedial design. The public will be notified if it is determined that there will be major changes to the currently anticipated project schedule.

12). After the conclusion of the public comment portion of the meeting for the Proposed Amended ROD, a presentation was made by the Department's Region 7 Division of Water, regarding the Stauffer SPDES water discharge permit and the discovery of PCB discharges from the permitted outfalls to Skaneateles Creek.

The highlights of that presentation are summarized below:

- In 1998 the Department's Division of Water modified Stauffers' SPDES Permit, and included a requirement for short term high intensity monitoring for PCBs of its permitted discharges to the Skaneateles Creek. The revised permit also required Stauffer to test the effluent for its wastewater plant and the leachate from the old landfill.

- As a result of this sampling, PCB discharges were discovered in 1999. An investigation as to the source(s) of these discharges was initiated.

- In 2000, the Division of Water issued a new SPDES Permit, which required Stauffer to implement control measures for storm runoff to the Creek, identify probable source areas for the PCBs, monitor and eliminate the PCB discharges to the Creek from the permitted outfalls and from landfill seeps. The permit required Stauffer to submit a PCB Minimization workplan, which will include remedial measures to be implemented to eliminate the PCB discharges to the Creek.

- During remedial construction, there may be impacts to Skaneateles Creek. Stauffer will be required to protect the Skaneateles Creek by implementing controls that will be specified in a storm-water general permit, which is issued by the Division of Water. The Department's goals are to protect the bottom of the Creek and the fish and their habitat.

Following the presentation there was a question regarding PCB discharges into the Creek. The question and related response are:

Question:

What level of PCBs are you finding in that water?

Response:

Most of the PCB levels are in the low parts per billion range (0.4 ppb). The carbon filters located in the groundwater treatment plant should be effective in treating these levels.

APPENDIX B
ADMINISTRATIVE RECORD

September 14, 1990, Site Investigation Work Plan for Stauffer Management Company, Skaneateles Falls, N.Y. prepared by Blasland, Bouck and Lee Engineers P.C. (BBL) Volumes 1-3.

National Oil and Hazardous Substance Pollution Contingency Plan, 40 CFR Part 300, 1990.

Addendums to the BBL Site Investigation Plan dated October 24, 1990, and June 11, l991.

NYSDEC 1991.Order on Consent, Index No. A701018612, dated March 28, 1991.

July 18, 1991; Submittals prepared by EA Engineering, P.C. for Stauffer Management Company entitled the Field Sampling and Analysis Plan (FSAP); the Quality Assurance Project Plan (QAPP); the Health and Safety Plan (HASP).

EA1991. Attachments A-C prepared by EA Engineering, P.C. to supplement the QAPP.

Citizen Participation Plan, 1992.

NYSDEC Division of Water, Biological Steam Assessment, Skaneateles Creek, 1992 Survey.

October 28, 1993; Work Plan Amendment for Phase II Investigation, prepared by EA Engineering P.C. for Stauffer Management Company.

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NYSDEC, New York State Environmental Conservation Law 6 NYCRR Part 371.

NYSDEC, New York State Environmental Conservation Law 6 NYCRR Part 373.

NYSDEC, New York State Environmental Conservation Law 6 NYCRR Part 375.

United States Code of Federal Regulations, 40 CFR Parts 260 to 268

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B, 12th Floor
625 Broadway, Albany, New York 12233-7016
Phone: (518) 402-9768 • **Fax:** (518) 402-9773
Website: www.dec.ny.gov

Joe Martens
Commissioner

May 31, 2012

Gianna Aiezza, Principal Engineer
Envirospec Engineering, PLLC
16 Computer Drive West
Albany, NY 12205

Dear Ms. Aiezza:

RE: Site Code 734010
SMC-Skaneateles Falls
Onondaga County

The Department reviewed the Supplemental Remedial Activities Work Plan as revised on May 31, 2012 for the site referenced above and approves this document as written.

Based on Figure 1 of the work plan, Schedule, and assuming that SMC executes a second amendment to the Order on Consent, SMC will begin site work with AOI-3/AOI-4 sampling on June 11, 2012. Per prior requests that SMC provide the Department with ten (10) day notice when mobilizing to the site, please confirm the planned fieldwork start date with the Department as soon as possible.

If you have any questions, please contact me at (518) 402-9767 or via e-mail at jcgrathw@gw.dec.state.ny.us

Sincerely,

John Grathwol

John Grathwol
Environmental Engineer 2
Remedial Section C, Remedial Bureau B
Division of Environmental Remediation

ec: C. Elmendorf, SMC
M. Kelly, McCarter & English
J. Wylie Donald, McCarter & English
R. Schick, NYSDEC
R. Cozzy, NYSDEC
J. Moras, NYSDEC
B. Conlon, NYSDEC
D. Tuohy, NYSDEC
K. Barone, NYSDEC
S. Lislovs, NYSDEC
D. Lemon, NYSDEC
H. Warner, NYSDEC
R. Jones, NYSDOH
T. Roney, Town of Skaneateles Supervisor

STATE OF NEW YORK: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Development and Implementation of a Remedial Program for an Inactive Hazardous Waste Disposal Site, Under Article 27, Title 13 and Article 71, Title 27, of the Environmental Conservation Law of the State of New York by:

SECOND AMENDMENT TO ORDER ON CONSENT

Index # A7-0347-9610

Stauffer Management Company LLC,

Respondent

Site Code # 734010

WHEREAS,

1. Stauffer Management Company consented to the issuance of a Remedial Program Order on Consent Index # A7-0347-9610 (the "Order"), signed by a representative of the Department of Environmental Conservation (the "Department") on March 27, 1997.

2. The Order committed Stauffer Management Company to develop and implement a remedial program for the Stauffer - Skaneateles Falls inactive hazardous waste disposal site (the "Site") in accordance with a Record of Decision (the "ROD") issued by the Department in March of 1996.

3. Stauffer Management Company, a corporation, merged into Stauffer Management Company LLC ("Respondent") on December 8, 2000. Respondent, a limited liability company, was formed pursuant to the laws of the State of Delaware and is located at 1800 Concord Pike, Wilmington, Delaware 19850. Respondent is doing business in the State of New York. By virtue of the merger, Respondent acquired the liabilities .of Stauffer Management Company, including its consent to the issuance of the Order and its commitment to be bound by the Order's terms.

4. The Department issued an Amended Record of Decision for the Site in December 2001 ("First AROD"). Respondent consented to the issuance of an Amendment to the Order requiring Respondent to implement a remedial program for the site in accordance with the First AROD ("First Amendment"). The First Amendment was signed by a representative of the Department on June 6, 2002.

5.a. The Department has approved Respondent's submittal entitled "Supplemental Remedial Activities Work Plan, NYSDEC Site # 7-34-010, Revised May 2012" as revised on May 31, 2012, and approved by the Department the same day (the "Work Plan.")

5.b. The Department is preparing a Fact Sheet notifying the public of the Department's proposal to further amend the ROD. The Department intends to issue a second Amended Record of Decision for the Site ("Second AROD") following issuance of the Fact Sheet and a period of public comment.

5.c. The Department and Respondent desire to further amend the Order by this Amendment ("Second Amendment") to provide for Respondent to develop and implement a Remedial Program for the Site that will include (i) the remediation of Skaneateles Creek in accordance with the ROD, the First AROD, and the Work Plan; and (ii) remediation of other areas of the Site in accordance with the ROD, First AROD, Second AROD and the Work Plan The Work Plan is attached to and incorporated as an enforceable part of this Second Amendment. It is the intention of the parties that upon the Department's issuance of the Second AROD, it is to be attached to and incorporated as an enforceable part of a third amendment to the Order, which will be proposed, reviewed, and issued in accordance with the requirements of law.

6. Respondent, having waived Respondent's right to a hearing herein as provided by law, without admitting any wrongdoing or liability, and having consented to the issuance and entry of this Second Amendment, agrees to be bound by its terms. Respondent consents to and agrees not to contest the authority or jurisdiction of the Department to issue and enforce this Second Amendment, and agrees not to contest the validity of this Second Amendment or its terms.

NOW, having considered this matter and being duly advised, IT IS ORDERED THAT:

I. The above-referenced Order shall be amended as indicated herein effective on the date this Second Amendment is signed by the Commissioner of Environmental Conservation or his designee.

II. For the purposes of construing the provisions of the Order which are not modified by the Second Amendment, the provisions of the Order modified by the Second Amendment, and the Second Amendment, the term "Respondent" shall mean Stauffer Management Company LLC.

III. Paragraph 8 of the Order is hereby amended to read as follows:

> The Department and Respondent agree that the goals of this Second Amendment are for Respondent to (i) develop and implement a Remedial Program for Skaneateles Creek in accordance with the ROD, the First AROD, and the Work Plan; and (ii) develop and implement a Remedial Program for other areas of the Site in accordance with the ROD, the First AROD, the Second AROD, and the Work Plan, which Remedial Programs for the Site shall include design and implementation, and operation, maintenance and monitoring of the selected remedial alternative; and (ii) reimburse the State's administrative costs.

IV. The first sentence of Paragraph I.A of the Order is hereby amended to read as follows:

Within ten days after the execution of this Second Amendment, Respondent shall commence implementation of the activities described in Section 3 of the Work Plan (AEC-5: Remaining Impacted Soils and Sediments) and thereafter carry out the Section 3 Activities in accordance with the Schedule set forth in the Work Plan. Within thirty days after the Department's issuance of the Second AROD, Respondent shall commence the implementation of the other activities described in the Work Plan and shall thereafter carry out the Work Plan in accordance with the Schedule set forth therein.

V. Paragraph VII of the Order is hereby amended to read as follows:

If, after review, the Department accepts and approves the engineer's certification that construction of the Remedial Program was completed in accordance with the Work Plan, then, unless a supplementary remedial program is required pursuant to Subparagraph I.B.6, and except for the provisions of Paragraph XI of this Order, and except for the future operation and maintenance of the Site, reimbursement of Department expenditures at the Site, and any Natural Resource Damage claims that may arise, such acceptance shall constitute a release for each and every claim, demand, remedy or action whatsoever against Respondent, its directors, officers, employees, agents, successors and assigns, which the Department has or may have pursuant to Article 27, Title 13 of the ECL and CERCLA 42 USC section 9601 et seq. relative to or arising from the disposal of hazardous wastes at the Site; provided, however, that the Department specifically reserves all of its rights concerning, and any such release and satisfaction shall not extend to, any investigation or remediation the Department deems necessary due to:

(1) environmental conditions on-Site or off-Site which are related to the disposal of hazardous wastes at the Site and were unknown to the Department at the time of its approval of the Work Plan; or

(2) information received, in whole or in part, after the Department's approval of the Work Plan,

and such unknown environmental conditions or information indicates that the Remedial Program is not protective of human health or the environment.

The Department shall notify Respondent of such environmental conditions or information and its basis for determining that the Remedial Program is not protective of human health and the environment.

This release shall inure only to the benefit of Respondent, its directors, officers, employees, agents, successors and assigns.

Nothing herein shall be construed as barring, diminishing, adjudicating or in any way affecting any legal or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against anyone other than Respondent, its directors, officers, employees, agents, successors and assigns.

Nothing herein shall be construed as barring, diminishing, adjudicating or in any way affecting any legal or equitable rights or claims, actions, suits, causes of action or demands whatsoever that Respondent or its directors, officers, employees, agents, successors and assigns may have against any party other than the Department.

VI. Paragraph XIII of the Order is hereby amended to read as follows:

A. All written communications required by this Order shall be transmitted by United States Postal Service, by private courier service, or hand delivered as follows:

1. Communication from Respondent shall be sent to:

John Grathwol, P. E.
Remedial Section C, Remedial Bureau B
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7016
jcgrathwol@gw.dec.state.ny.us

With copies to:

James Moras, P. E., Section Chief
Remedial Section C, Remedial Bureau B
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7016
jamoras@gw.dec.state.ny.us

Director, Bureau of Environmental Exposure Investigation
New York State Department of Health
547 River Street
Troy, New York 12180-2216

Richard Jones
Public Health Specialist
New York State Department of Health
Office of Public Health
217 South Salina Street
Syracuse, New York 13202-1380
rej05@health.state.ny.us

Kenneth Lynch, Esq.
Region VII Regional Director
New York State Department of Environmental Conservation
615 Erie Boulevard West
Syracuse, New York 13204-2400
kplynch@gw.dec.state.ny.us

Dolores A. Tuohy, Esq.
New York State Department of Environmental Conservation
Office of General Counsel
625 Broadway, 14th Floor
Albany, New York 12233-1500
datuohy@gw.dec.state.ny.us

2. Communication to be made from the Department to Respondent shall be sent to:

Chuck Elmendorf
Senior Director, Environmental Remediation
Stauffer Management Company LLC
1800 Concord Pike
PO Box 15437
FOP 2-311
Wilmington, DE 19850-5437
charles.elmendorf@astrazeneca.com

With copies to:

Michael P. Kelly, Esq.
McCarter and English, LLP
Renaissance Centre
405 N. King Street, 8th Floor
Wilmington, Delaware 19801

MKelly@McCarter.com

B. The Department and Respondent reserve the right to designate additional or different addressees for communication or written notice to the other.

VII. All other provisions of the Order remain in full force and effect and shall be binding on Respondent.

DATED: Albany, New York

JUN 21 , 2012

Joseph Martens
Commissioner
New York State Department
of Environmental Conservation

By: _____

Robert W. Schick, Acting Director
Division of Environmental Remediation

CONSENT BY RESPONDENT

Respondent hereby consents to the issuing and entering of this Order, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Order.

By: _____
[Insert name]

Title: [Insert], Stauffer Management Company LLC
Senior Director, Environmental Remediation

Date: 6-18-12

STATE OF Delaware)
) s.s.:
COUNTY OF New Castle)

On the 18th day of June, in the year 2012, before me, the undersigned, personally appeared Chuck Elmendorf, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Susan E. Martin
Signature and Office of individual taking acknowledgment

EDMS 434282v.3

SUSAN E. MARTIN
NOTARY PUBLIC
STATE OF DELAWARE
My Commission Expires November 16, 2012

SUSAN E. MARTIN · NOTARY PUBLIC · STATE OF DELAWARE · MY COMMISSION EXPIRES NOV. 16, 2012

STATE OF NEW YORK: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Development and Implementation of a Remedial Program for an Inactive Hazardous Waste Disposal Site, Under Article 27, Title 13 and Article 71, Title 27, of the Environmental Conservation Law of the State of New York by:

SECOND AMENDMENT TO ORDER ON CONSENT

Index # A7-0347-9610

Stauffer Management Company LLC,

Respondent

Site Code # 734010

WHEREAS,

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3. Stauffer Management Company, a corporation, merged into Stauffer Management Company LLC ("Respondent") on December 8, 2000. Respondent, a limited liability company, was formed pursuant to the laws of the State of Delaware and is located at 1800 Concord Pike, Wilmington, Delaware 19850. Respondent is doing business in the State of New York. By virtue of the merger, Respondent acquired the liabilities .of Stauffer Management Company, including its consent to the issuance of the Order and its commitment to be bound by the Order's terms.

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5.a. The Department has approved Respondent's submittal entitled "Supplemental Remedial Activities Work Plan, NYSDEC Site # 7-34-010, Revised May 2012" as revised on May 31, 2012, and approved by the Department the same day (the "Work Plan.")

5.b. The Department is preparing a Fact Sheet notifying the public of the Department's proposal to further amend the ROD. The Department intends to issue a second Amended Record of Decision for the Site ("Second AROD") following issuance of the Fact Sheet and a period of public comment.

5.c. The Department and Respondent desire to further amend the Order by this Amendment ("Second Amendment") to provide for Respondent to develop and implement a Remedial Program for the Site that will include (i) the remediation of Skaneateles Creek in accordance with the ROD, the First AROD, and the Work Plan; and (ii) remediation of other areas of the Site in accordance with the ROD, First AROD, Second AROD and the Work Plan The Work Plan is attached to and incorporated as an enforceable part of this Second Amendment. It is the intention of the parties that upon the Department's issuance of the Second AROD, it is to be attached to and incorporated as an enforceable part of a third amendment to the Order, which will be proposed, reviewed, and issued in accordance with the requirements of law.

6. Respondent, having waived Respondent's right to a hearing herein as provided by law, without admitting any wrongdoing or liability, and having consented to the issuance and entry of this Second Amendment, agrees to be bound by its terms. Respondent consents to and agrees not to contest the authority or jurisdiction of the Department to issue and enforce this Second Amendment, and agrees not to contest the validity of this Second Amendment or its terms.

NOW, having considered this matter and being duly advised, IT IS ORDERED THAT:

I. The above-referenced Order shall be amended as indicated herein effective on the date this Second Amendment is signed by the Commissioner of Environmental Conservation or his designee.

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(1) environmental conditions on-Site or off-Site which are related to the disposal of hazardous wastes at the Site and were unknown to the Department at the time of its approval of the Work Plan; or

(2) information received, in whole or in part, after the Department's approval of the Work Plan,

and such unknown environmental conditions or information indicates that the Remedial Program is not protective of human health or the environment.

The Department shall notify Respondent of such environmental conditions or information and its basis for determining that the Remedial Program is not protective of human health and the environment.

This release shall inure only to the benefit of Respondent, its directors, officers, employees, agents, successors and assigns.

Nothing herein shall be construed as barring, diminishing, adjudicating or in any way affecting any legal or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against anyone other than Respondent, its directors, officers, employees, agents, successors and assigns.

Nothing herein shall be construed as barring, diminishing, adjudicating or in any way affecting any legal or equitable rights or claims, actions, suits, causes of action or demands whatsoever that Respondent or its directors, officers, employees, agents, successors and assigns may have against any party other than the Department.

VI. Paragraph XIII of the Order is hereby amended to read as follows:

A. All written communications required by this Order shall be transmitted by United States Postal Service, by private courier service, or hand delivered as follows:

1. Communication from Respondent shall be sent to:

John Grathwol, P. E.
Remedial Section C, Remedial Bureau B
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7016
jcgrathwol@gw.dec.state.ny.us

With copies to:

James Moras, P. E., Section Chief
Remedial Section C, Remedial Bureau B
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7016
jamoras@gw.dec.state.ny.us

Director, Bureau of Environmental Exposure Investigation
New York State Department of Health
547 River Street
Troy, New York 12180-2216

Richard Jones
Public Health Specialist
New York State Department of Health
Office of Public Health
217 South Salina Street
Syracuse, New York 13202-1380
rej05@health.state.ny.us

Kenneth Lynch, Esq.
Region VII Regional Director
New York State Department of Environmental Conservation
615 Erie Boulevard West
Syracuse, New York 13204-2400
kplynch@gw.dec.state.ny.us

Dolores A. Tuohy, Esq.
New York State Department of Environmental Conservation
Office of General Counsel
625 Broadway, 14th Floor
Albany, New York 12233-1500
datuohy@gw.dec.state.ny.us

2. Communication to be made from the Department to Respondent shall be sent to:

Chuck Elmendorf
Senior Director, Environmental Remediation
Stauffer Management Company LLC
1800 Concord Pike
PO Box 15437
FOP 2-311
Wilmington, DE 19850-5437
charles.elmendorf@astrazeneca.com

With copies to:

Michael P. Kelly, Esq.
McCarter and English, LLP
Renaissance Centre
405 N. King Street, 8th Floor
Wilmington, Delaware 19801

MKelly@McCarter.com

B. The Department and Respondent reserve the right to designate additional or different addressees for communication or written notice to the other.

VII. All other provisions of the Order remain in full force and effect and shall be binding on Respondent.

DATED: Albany, New York

JUN 21 , 2012

Joseph Martens
Commissioner
New York State Department
of Environmental Conservation

By: _____

Robert W. Schick, Acting Director
Division of Environmental Remediation

CONSENT BY RESPONDENT

Respondent hereby consents to the issuing and entering of this Order, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Order.

By: _____
[Insert name]

Title: [Insert], Stauffer Management Company LLC
Senior Director, Environmental Remediation

Date: 6-18-12

STATE OF Delaware)
) s.s.:
COUNTY OF New Castle)

On the 18th day of June, in the year 2012, before me, the undersigned, personally appeared Chuck Elmendorf, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Susan E. Martin
Signature and Office of individual taking acknowledgment

EDMS 434282v.3

SUSAN E. MARTIN
NOTARY PUBLIC
STATE OF DELAWARE
My Commission Expires November 16, 2012

SUSAN E. MARTIN · NOTARY PUBLIC · STATE OF DELAWARE · MY COMMISSION EXPIRES NOV. 16, 2012

RECORD OF DECISION AMENDMENT

Stauffer Management - Skaneateles Falls
Operable Units 5 through 8
State Superfund Project
Skaneateles, Onondaga County
Site No. 734010
March 2013

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

DECLARATION STATEMENT – AMENDED RECORD OF DECISION

Stauffer Management - Skaneateles Falls
Operable Units 5 through 8
State Superfund Project
Skaneateles, Onondaga County
Site No. 734010
March 2013

Statement of Purpose and Basis

This document presents the remedy for Operable Unit Numbers: 05: Skaneateles Creek - Area of Environmental Concern 5 (AEC-5), 06: Soil Remediation, 07: Phase 2 RA: AEC-2, AEC-6, AEC-7, AEC-8, and 08: Additional Groundwater Remediation (AEC-3 and AEC-4) of the Stauffer Mgt. - Skaneateles Falls site, a Class 2 inactive hazardous waste disposal site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for Operable Unit Numbers: 05, 06, 07, and 08 of the Stauffer Mgt. - Skaneateles Falls site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

The elements of the amended remedy listed below are identified as unchanged, modified or new when compared to the 2001 AROD remedy:

1. Established commercial use and industrial use SCOs for the soil remedial action activities at the site. (modified)

2. Reduce, control, or eliminate to the extent practicable the contamination within soils and wastes on the site from AEC-1 (Landfill), AEC-2 (North Plant Area), AEC-6 (Main Plant Building), AEC-7 (Area in Front of Main Plant Building) and AEC-8 (South Plant Area). The soil contamination from these areas will be excavated and properly disposed off-site. (modified)

3. Mitigate via excavation and off-site disposal environmental threats to Skaneateles Creek (AEC-5) by eliminating to the extent practicable further inflows of any contaminated runoff, and contaminated groundwater from contaminated soils and waste. Modify the sediment clean up objectives from pre-release conditions to Ecological SCOs. Excavate creek sediments and contaminated soils within 25' of the creek to levels that will not impair aquatic organisms and promote unimpaired use by aquatic organisms. The soils and creek sediment will be properly disposed off-site. (modified)

4. Attain to the extent practicable of Ecological SCOs within 25' buffer of Skaneateles Creek. (new)

5. Mitigate via treatment with activated carbon the impacts of contaminated groundwater on the environment. Provide for the attainment of SCGs for groundwater quality at the limits of AEC-3, the shallow groundwater, and AEC-4, the deep groundwater, and to the extent practicable, provide for SCG attainment within these AECs. Perform one additional year of quarterly groundwater sampling in the northeast quadrant of the site and if the Department deems it necessary, additional monitoring wells will be installed in that area of localized xylene contamination. (modified)

6. Certification of 2003 closure of the former drum storage area, former waste storage tank, and former acid neutralization tank following the requirements of the Resource Conservation and Recovery Act (RCRA). (new)

7. Repair an existing clay cap with a two (2) foot clay cap, as necessary, in former Sludge Lagoons 2, 3, and 4 to complete a 6 NYCRR Part 360 closure. Install a one (1) foot soil cover in areas not covered by a building or pavement and the appropriate demarcation layer over the two (2) former Settling Ponds to complete the remedy. (new)

8. Dewatering operations and subsequent treatment of water generated from excavation activities. Ensure and implement truck traffic safety protocols as well as implement appropriate decontamination and emergency spill procedures for disposal trucks along designated transportation routes. (unchanged)

9. A soil cover and the appropriate demarcation layer will be required to isolate metals contamination soils in AOI-3 and AOI-4 exceeding applicable SCOs and to isolate contaminated soils in other areas of the site. Applying appropriate environmental easements and institutional controls will allow for future commercial use of the site. For AOI-3 and AOI-4, an excavation will be performed before the soil cover and the appropriate demarcation layer is placed so that contaminated surface soils are shipped off-site for proper disposal and flood plain elevations remain constant. Where the soil cover is required it will be a minimum of *two feet* of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d). A two-foot excavation was required because the depth of the contaminated soil exceeding commercial SCOs between the 0' and 2' depth was unknown. The soil cover and the appropriate demarcation layer

will be placed in the locations illustrated on Figure 4, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. (modified)

10. Conduct an evaluation for the potential inhalation of site contaminants due to soil vapor intrusion prior to redevelopment and occupancy of the property. (new)

11. Imposition of institutional controls in the form of environmental easements for the controlled property, that will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);
- allow the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g) which are consistent with the remedial elements. This land usage is consistent with current local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or Onondaga County DOH; and
- require compliance with the Department approved Site Management Plan. (modified)

12. A Site Management Plan will be required, which includes the following:

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

  Institutional Controls: The Environmental Easement discussed in Paragraph 11 above.

  Engineering Controls: The soil cover and the appropriate demarcation layer discussed in Paragraph 9 of this section; and the groundwater treatment system discussed in Section 7.1.

  This plan includes, but may not be limited to:

  i. an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination summarized by Table 2;

  ii. descriptions of the provisions of the environmental easement including any land use and/or groundwater use restrictions;

  iii. provisions for the management and inspection of the identified engineering controls;

  iv. maintaining site access controls and Department notification;

v. maintaining long-term flood protection for the site;

vi. the steps necessary for the periodic reviews and certification of the institutional and engineering controls.

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

  i. monitoring groundwater quality and elevation to assess the performance and effectiveness of the remedy;

  ii. soil cover system inspection and maintenance as necessary to ensure its function is not impaired by erosion or activities at the site;

  iii. creek restoration efforts will be monitored to ensure its function is not impaired by erosion or activities at the site; and

  iv. a schedule of monitoring and frequency of submittals to the Department.

- an Operation and Maintenance Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of for any mechanical or physical components of the remedy. The plan includes, but is not limited to:

  i. compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;

  ii. maintaining site access controls and Department notification; and

  iii. providing the Department access to the site and O&M records. (new)

New York State Department of Health Acceptance

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

Declaration

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

March 21,2013

Date

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

RECORD OF DECISION AMENDMENT
STAUFFER MANAGEMENT – SKANEATELES FALLS SITE
OPERABLE UNITS 5 THRU 8 – ON-SITE CONTAMINATION

Town of Skaneateles / Onondaga County / Site No. 734010 March 2013

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

SECTION 1: PURPOSE AND SUMMARY OF THE RECORD OF DECISION AMENDMENT

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the Stauffer Management – Skaneateles Falls Site as presented in this Amendment to the Record of Decision (AROD). The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that will be addressed by the modification to the remedy identified by this AROD. The disposal of hazardous wastes at this site, as more fully described in the original Record of Decision (ROD), the December 2001 AROD, and Section 6 of this document, has contaminated various environmental media. The selected remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This AROD identifies the new information which led to this selected remedy and discusses the reasons for the selection of the remedy.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York; (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repositories identified below.

On March 28, 1996, the Department signed a Record of Decision (ROD) which selected a Corrective Action Management Unit (CAMU) cell and clay cap remedy for on-site soil contamination and shallow pump and treatment system for groundwater contamination. The Division of Environmental Remediation's Technical Assistance Guidance Memorandum 4046 was used for the soil cleanup objectives (SCOs). On December 13, 2001, the Department signed an Amended Record of Decision (AROD) which modified this remedy to clean up the Stauffer Management Company (SMC) – Skaneateles Falls site, Operable Units 3 thru 7 (OU3 and OU7), via excavation and proper off-site disposal of contaminated soils and sediment (see Section 3 of this document for a description of the operable units at this site).

The December 2001 AROD outlined a set of remedial actions for the site that addressed each area of concern and reiterated the original ROD's requirements for groundwater treatment and site restoration. Following the issuance of the December 2001 AROD, remedial actions were performed in the landfill area, the main plant building and surrounding areas, and Skaneateles Creek. From 2006 through 2009, supplemental remedial investigations were performed to determine the nature and extent of contamination remaining on-site and remedial activities (additional excavation and off-site disposal) were performed to address on-site soil contamination. These supplemental investigations covered the entire site including areas not sampled in the original Remediation Investigation. These new areas of sampling are called Areas of Investigation (AOIs). Conclusions derived from these supplemental remedial investigations and analytical data obtained during the remedial action activities identified uncertainties with the December 2001 AROD's selected remedy.

The supplemental remedial investigations concluded that there was a need to again reassess the remedy, taking into consideration the current zoning, the future end use of the site and the Department's subsequently issued regulations (6 NYCRR Subpart 375-6). Those regulations define soil cleanup objectives which have been applied to inactive hazardous waste sites throughout New York State since December 14, 2006.

The Department is proposing a second amendment to the ROD for OUs 5 thru 8 of the SMC-Skaneateles Falls Site. The changes, and the reasons for the changes are summarized in section 7.3 below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held from October 2 through November 1, 2012, during which the public was encouraged to submit comments on the selected remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following repositories:

Town of Skaneateles
Town Hall
24 Jordan Street
Skaneateles, NY 13152
Mon - Fri: 8:30 - 4:00
Phone (315) 685-3473

NYSDEC Region 7 Office
615 Erie Boulevard West
Syracuse, NY 13204
Attention: Stephanie Harrington
Monday - Friday: 8:30 - 4:30
Phone: (315) 426-7500

A public meeting was also conducted on October 16, 2012 at Mottville Fire House, 4149 Frost Street, Mottville, NY 13119. At the meeting, a description of the original ROD, the first AROD and the circumstances that have led to selected changes in this AROD were presented. After the presentation, a question and answer period was held, during which verbal or written comments were accepted on the selected remedy.

Comments on the remedy received during the comment period are summarized and addressed in the Responsiveness Summary section of the AROD. This second AROD is the Department's final selection of the remedy for this site.

Receive Site Citizen Participation Information By Email

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

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:
The site is located at 4512 Jordan Road in the Town of Skaneateles, Onondaga County.

Site Features:
The site is vacant land, bounded on the west and north by a mix of residential and commercial property. To the east and south the site is bounded by undeveloped land. The site is located approximately three miles north of Skaneateles Lake on 68 acres of a parcel approximately 120 acres in size.

Current Zoning:
This site is inactive and the zoning is labeled as Industrial/Research/Office District (IRO). The purpose of this district is to allow areas for light manufacturing, office and research facilities on large tracts of land. Such areas may also include housing and limited commercial development intended to support the primary uses.

Historic Uses:
The liquid waste stream from this former Stauffer Chemical Company's operation contained organics and was processed through packed carbon adsorption towers. Sludge was generated from the manufacture of potassium and sodium silicates, and dumped into two settling ponds on the site. Groundwater samples taken in March of 1986 showed contamination by volatile organic compounds (VOCs). Currently groundwater is being collected, treated and discharged to Skaneateles Creek under a SPDES permit.

Operable Units:

The site was divided into nine operable units.

An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.

Operable Unit 01 (OU01) pertains to the groundwater treatment plant.

Operable Unit 02 (OU02) pertains to the groundwater recovery system that transports the

contaminated groundwater to the treatment plant.

OU03 consists of a Corrective Action Management Unit landfill cell required by the initial Record of Decision. The Record of Decision was amended in December 2001 to delete this remedy from the project.

OU04 pertains to the excavation and off-site disposal of the Area of Concern No. 1 (AEC-1) landfill.

OU05 pertains to the remediation of Skaneateles Creek soils, sediment and creek banks.

OU06 pertains to the soil remediation for the site. This Operable Unit includes, but is not limited to, the six Areas of Investigation (AOI). OU06A consists of a pilot test to determine the effectiveness of low temperature thermal desorption to remediate on-site soils. OU06B also includes the excavation and off-site disposal of Lagoon 1, part of the Resource Conservation and Recovery Act-(RCRA) permitted landfills on the site.

OU07 pertains to the soil/debris remediation in AEC-2, AEC-6, AEC-7, AEC-8A. AEC-8B, and AEC-8C. OU07A consists of the AEC-6 demolition of the Stauffer Chemical plant facility, soil excavation to bedrock and off-site disposal of these materials. OU07B consists of the Petroleum Spill remediation (Spill #0911456).

OU08 pertains to additional groundwater recovery and treatment remediation determined necessary in the supplemental remedial investigation after OU01 and OU02 were completed.

OU09 pertains to the soil vapor intrusion evaluation. This evaluation determined that this site is not an SVI threat to off-site structures.

Site Geology and Hydrogeology:

The overburden soil at the site consists of unstratified (not layered) glacial deposits and recent aged deposits. Two types of glacial deposits are present at the site. For most of the site, a red clay till is present, consisting of a sticky reddish clay with no visible layering. A brown till consisting of a poorly sorted mixture of clay, silt, sand, gravel and boulders is present below the southern portion of the landfill and the areas immediately to the south and southwest of the landfill. A layer of sand, gravel, and cobbles, ranging in thickness from 4 to 7 ft., is present directly overlying the bedrock south, southwest, and west of the landfill. This layer appears to be associated with a low bedrock surface in this portion of the site.

As for the site hydrogeology, there are three distinct zones of groundwater at the Stauffer site: a shallow zone present in the overburden, an intermediate zone present in the upper bedrock just below the overburden, and a deep groundwater zone present 60 to 70 feet below ground surface. The shallow overburden and intermediate groundwater zones together comprise AEC-3. The deep bedrock zone comprises AEC-4. A general downward vertical hydraulic gradient between the overburden and upper bedrock persists across most of the site. The groundwater's movement between overlying soils and the upper bedrock exists via fractures and/or joints in the upper bedrock. Groundwater movement from the upper zone bedrock to the deep zone bedrock is generally controlled by the southerly dip of the bedrock.

Operable Unit (OU) Numbers 05, 06, 07 and 08 are the subjects of this document.

A Record of Decision was issued previously in March 1996. The first Amended Record of Decision was issued previously in December 2001.

A site location map is attached as Figure 1. Figure 2 illustrates the detailed site plan. Figure 3 illustrates the AECs and the AOIs on a site map. Table 1 illustrates the remedy description from the December 2001 AROD and the selected remedy.

SECTION 4: LAND USE AND PHYSICAL SETTING

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

SECTION 5: ENFORCEMENT STATUS

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

The Department and Stauffer Management Company entered into Consent Orders in 1991 and 1997 (modified June 2002 and June 2012). These Orders obligate SMC to implement a RI/FS and RD/RA for the site.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

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

The following general activities are conducted during an RI:

- Research of historical information,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that

are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in the March 1996 ROD and December 2001 AROD for OU5 through OU8, list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Information

The analytical data collected on this site includes data for:

- groundwater
- surface water
- soil
- sediment
- surface soil
- soil vapor

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in the March 1996 ROD and December 2001 AROD. Additionally, the RI Reports contain a full discussion of the data. The contaminant(s) of concern identified for these Operable Units at this site is/are:

xylene
polychlorinated biphenyls (PCB)
toluic acid
lead
mercury
chromium

As illustrated in the original 1996 ROD and 2001 AROD for this site, the contaminant(s) of concern exceed the applicable SCGs for:

soil
groundwater
sediment

Since the issuance of the Feasibility Study (FS), ROD, and the first AROD, significant new information about the site has been obtained. The most significant findings are the nature, areal extent, and contaminant concentrations for site-wide soils which lead to implementation and cost issues. The additional cost for the soil excavation and off-site disposal to allow for unrestricted use of the site as specified in the 2001 AROD is prohibitive ($41.4 Million). The locations where soil contamination exceeds Commercial and Industrial SCOs are illustrated on Figure 5 and are summarized in Table 2.

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

During the 2006 Supplemental Remedial Investigation, soil heavily contaminated with xylene (up to 25,000 ppm) was discovered in Lagoon 1 in Area of Investigation 6 (AOI-6). Excavation of the contaminated soil to bedrock, and proper disposal of this soil off-site, was the Lagoon 1 remedy. The IRM commenced in May 2007 and was completed in May 2008. Approximately 47,871 tons of impacted soil was removed off-site.

6.3: Summary of Human Exposure Pathways

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

People are not drinking contaminated groundwater because the area is served by a public water supply that is not affected by site-related contamination. Unless they dig below the ground surface, people are not likely to come into contact with site-related soil or groundwater contamination because large portions of the site have been excavated and backfilled with clean soil. People are also denied access to the site because the site is fenced and the waste water treatment plant workers patrol the property. People are also not expected to contact contaminated creek sediments because impacted areas of the creek have been excavated down to bedrock and backfilled with clean soils.

Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for people to inhale site contaminants in indoor air due to soil vapor intrusion for any future on-site redevelopment and occupancy. Sampling has indicated that no further actions are necessary to address soil vapor intrusion concerns at off-site properties.

6.4: Summary of Environmental Assessment

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

The soil and creek sediment contaminants of concern listed in the December 2001 AROD and this AROD are xylene, lead (maximum concentration detected was 25,000 ppm), mercury (at concentrations above 5 ppm), chromium (at concentrations above 5,000 ppm), and PCBs (maximum concentration detected was 17 ppm). This soil and creek sediment contamination was excavated in the summer of 2012 and was properly disposed off-site. Over the past ten years, approximately 380,000 tons of contaminated soil was excavated and properly disposed off-site. Removal of the contaminated soil has significantly reduced the threat to public health and the environment.

Since SMC excavated and properly disposed of the chromium-contaminated soil between the landfill

known as AEC-1 and AEC-8C South in July 2012, AEC-1 soil remediation is complete. In addition, SMC's source removal across the site has contributed to decreasing concentrations of contaminants of concern in the groundwater.

A pump and treat system collects and treats the groundwater before it reaches the creek. Groundwater quality has improved via the pump and treat system. Further groundwater monitoring well sampling is needed at the site due to xylene contamination in the northeastern section of the site and to insure the selected remedy continues to be protective of public health and the environment.

SECTION 7: SUMMARY OF ORIGINAL REMEDY AND ROD AMENDMENT

7.1 Original Remedy

In the December 2001 AROD, the NYSDEC selected excavation, groundwater pump and treatment, and deed restrictions. The components of this remedy were as follows:

- Excavate contaminated soils and waste from the Landfill Area (AEC-1) that exceed Standards, Criteria and Guidance (SCGs), characterize, then dispose off-site at an appropriate disposal facility.

- Excavate contaminated soils and waste from the North Plant Area (AEC-2) that exceed SCGs, characterize, then dispose off-site at an appropriate disposal facility.

- Excavate contaminated sediments from the Skaneateles Creek (AEC-5) that exceed SCGs, characterize, then dispose off-site at an appropriate disposal facility. Excavate and dispose of off-site identified abandoned pipe in the Skaneateles Creek.

- Demolition of Main Plant Building (AEC-6) and remediation of impacted soils underneath the building.

- Excavate contaminated soils and waste from identified remedial areas: Area in Front of Main Plant Building as AEC-7, and South Plant Area as AEC-8, that exceed SCGs, characterize, then dispose off-site at an appropriate disposal facility.

- Excavate PCBs that exceed site cleanup SCGs, characterize, then dispose off-site at an appropriate disposal facility.

- Establish Site Specific Remedial Goals (SSRGs) for confirmatory sampling of metals contaminated soils.

- Remediate residual metals contaminated soils that exceed SSRGs by excavation with off-site disposal or on-site isolation/treatment technologies.

- Design, construct and operate a shallow groundwater extraction and treatment system for AEC-3. Treated water will be discharged to Skaneateles Creek through SPDES permitted outfalls and monitored for compliance by the NYSDEC Division of Water.

- No action for deep groundwater (AEC-4), but monitoring will be conducted to assess expected improvements.

- Contingency for future extraction and treatment of deep groundwater (AEC-4), if source removal and natural attenuation fails to promote adequate improvements.

- De-watering operations and subsequent treatment of water generated from excavation activities.

- Ensure and implement truck traffic safety protocols as well as implement appropriate decon and emergency spill procedures for disposal trucks along designated transportation route.

- Institutional controls, including restricting future site use to only Industrial/Commercial purposes and restricting on site groundwater usage.

7.2 New Information

Since the issuance of the FS, the ROD and the AROD, significant new information about the site has been obtained. The most significant findings are the nature, areal extent, and contaminant concentrations for site-wide soils and significant xylene groundwater contamination in the intermediate aquifer localized in the northeast quadrant of the site.

Supplemental remedial investigations concluded that there are implementability and cost-effectiveness issues with the December 2001 AROD's selected remedy and the need to integrate a revised remedy with the current zoning and future end use of the site. The implementability issues are related to the proximity of the excavation to underground utilities, the retaining wall along Skaneateles Creek, and the east side of Jordan Road. The Site Management Plan and an environmental easement will document these areas of residual contamination so if these structures and/or utilities are removed in the future, then the soil contamination can be remediated. In addition, the cost ($41.4 Million) to excavate soils to allow for unrestricted use of this commercially-zoned property is prohibitive. Therefore, based on the new information submitted, the Department is proposing to amend the Record of Decision (ROD) for Operable Unit Nos. 5, 6, 7 and 8.

7.3 Selected Changes

The selected changes include:

- The soil remediation component of the remedy will be revised to achieve commercial SCOs for the surface soils (0 to 2 foot depth) and industrial SCOs for subsurface soils. The excavation and proper off-site disposal of contaminated soils and waste exceeding applicable SCOs, as described above, is consistent with commercial and industrial use of this site property after the remedy is complete.

  Approximately 380,000 tons of contaminated soil and sediment have been excavated and shipped off-site for proper disposal. An additional excavation exceeding 150,000 tons would be necessary to achieve the cleanup objectives for unrestricted use of the site;

- Another selected change to the soil remediation component pertains to the isolation of metals contaminated soils (for example, mercury) in AOI-3 and AOI-4 exceeding applicable SCOs by placing a soil cover and the appropriate demarcation layer and applying appropriate environmental easements and institutional controls. The surface soils (0 to 2-foot depth) will be excavated and replaced with clean fill to maintain flood plain elevations. The two-foot excavation was required because the depth of the contaminated soil exceeding commercial SCOs between the 0' and 2' depth was unknown;

- Soil containing heavy metals and Semi-Volatile Organic Compounds (for example, polycyclic aromatic hydrocarbons – PAHs) exceeding commercial SCOs are present on site. These areas will be documented in the Excavation Plan section of the Site Management Plan as discussed in Section 9, Item 12 of this Record of Decision Amendment. Existing soils meeting commercial SCOs cover these areas preventing human exposure to this contamination;

- As stated in the first AROD, the four (4) sludge lagoons located in the southeast corner of the site were properly closed. The remediation of these lagoons was apparently completed, but a report documenting this work, with a NYS professional engineer's certification was not completed. Since there was no documentation in the project files to confirm this closure, a supplemental investigation was performed in this area. Although not part of the USEPA RCRA component of the site, two settling ponds located in the northeast corner of the site were also part of the supplemental investigations. Only the westernmost sludge lagoon (labeled Lagoon 1) contained soil contamination above the first AROD SCOs. As an Interim Remedial Measure (IRM) before this second AROD, Lagoon 1 was completely excavated and disposed off-site in 2007. Additional work will be required as follows: the repair of the two foot clay cap in former Sludge Lagoons 2, 3, and 4 where the supplemental investigation identified the clay cap had been damaged will complete a 6 NYCRR Part 360 closure of these areas, and the installation of a one foot soil cover in areas not covered by a building or pavement and the appropriate demarcation layer on the two (2) former Settling Ponds is the selected remedy for this section of the site;

- The former drum storage area, the former waste storage tank, and the former acid neutralization tank are units regulated by the Resource Conservation and Recovery Act. The remedial action work plans specified the complete removal of these areas including the soil adjacent to each location. This work was completed in 2003. Certification of this work will be submitted to the Department and USEPA to complete the USEPA RCRA closure of these regulated units;

- Modifying the sediment cleanup objectives for Skaneateles Creek from pre-release conditions to achieving ecological soil cleanup objectives.

- In accordance with the Site Management Plan, conduct an evaluation for the potential inhalation of site contaminants due to soil vapor intrusion prior to the redevelopment and occupancy of the property, and;

- Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH, and;
- requires compliance with the Department approved Site Management Plan.

- A Site Management plan is required, which includes the following:
  - an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

    Institutional Controls: The Environmental Easement discussed above.

    Engineering Controls: The clay cap, soil cover and the appropriate demarcation layer discussed above, and the groundwater treatment system discussed below.

    This plan includes, but may not be limited to:

    - an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
    - descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
    - evaluation of the potential for soil vapor intrusion for any buildings constructed on the site, including provisions for implementing actions recommended to address exposures related to soil vapor intrusion;
    - provisions for the management and inspection of the identified engineering controls;
    - maintaining site access controls and Department notification;
    - maintaining long-term flood protection for the site; and
    - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
  - a Monitoring Plan to assess the performance and effectiveness of the remedy.

The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any buildings occupied or developed on the site, as may be required by the Institutional and Engineering Control Plan discussed in item this paragraph above.

- an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
  - compliance monitoring of the groundwater treatment system to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
  - maintaining site access controls and Department notification; and
  - providing the Department access to the site and O&M records.

Although there are no changes to the groundwater portion of the final remedy, there will be work performed to expedite the remedy specified in the 2001 AROD. The groundwater sample results from the 2009-2010 supplemental investigation illustrated high levels of xylene contamination in the intermediate and deep bedrock aquifers. One year of quarterly groundwater sampling (four rounds) will be performed (the final round of samples to be collected in August 2013); the samples will be collected from monitoring wells located in the northeast quadrant of the site. After the year of sampling, additional monitoring and extraction wells will be installed in this area of the site, if deemed necessary by the Department.

SECTION 8: EVALUATION OF SELECTED CHANGES

8.1 Remedial Goals

Goals for the cleanup of the site were established in the original ROD and in the first AROD. The goals selected for this site are:

- Eliminate to the extent practicable the potential for direct human or animal contact with site related contaminants.
- Reduce, control, or eliminate to the extent practicable the contamination within soils and wastes on the site from AEC-1 (Landfill), AEC-2 (North Plant Area), AEC-6 (Main Plant Building), AEC-7 (Area in Front of Main Plant Building) and AEC-8 (South Plant Area).
- Mitigate environmental threats to Skaneateles Creek (AEC-5) by eliminating to the extent practicable further inflows of any contaminated runoff and contaminated groundwater from

contaminated soils and waste.

- Prevent to the extent practicable, migration of contaminants from AECs 1, 2, 5, 6, 7, and 8 to groundwater.

- Mitigate the impacts of contaminated groundwater (AEC-3) on the environment.

- Provide for the attainment of SCGs for groundwater quality at the limits of AEC-3, the shallow groundwater, and AEC-4, the deep groundwater, and to the extent practicable, provide for SCG attainment within these AECs.

- Dewatering operations and subsequent treatment of water generated from excavation activities.

- Implement Institutional Controls.

8.2 Evaluation Criteria

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

The first two evaluation criteria are called threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The selected ROD Amendment remedy was evaluated and is protective of public health and the environment. This remedy is consistent with the future use and the current zoning for the site. Groundwater treatment and Skaneateles Creek remediation will be equally protective of the environment compared to the original remedy. In addition, the groundwater will be periodically monitored as originally planned.

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

From the 2001 AROD, the unrestricted use remedy proposed active removal of contaminants from impacted areas to a level consistent with unrestricted SCOs, thus allowing a future unrestricted use of the Site. The selected commercial use remedy maintains active removal of contaminants from those same impacted areas, but to levels that allow a commercial and industrial use of the site. A change in the soil cleanup objectives and future use is permissible under New York State regulations and the selected change is compliant with applicable Federal and State laws and regulations. Engineering controls (i.e., capping, soil cover and the appropriate demarcation layer) and

institutional controls (i.e., environmental easements) will be imposed on the Site to ensure continued long-term compliance with applicable standards, criteria and guidance.

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

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

The unrestricted use and selected commercial use remedies both involve the excavation and handling of soils with chemical concentrations exceeding established SCOs. Workers involved in the excavation, staging and handling will be required to wear appropriate personal protective equipment (PPE). The potential short-term off-site impacts of the unrestricted use remedy are higher than the commercial use remedy due to the significant volume of excavation required and the level of off-site waste transportation required for the unrestricted use remedy.

Under both the unrestricted use and the commercial use remedies, the excavated soils will be placed directly into trucks, to the maximum extent possible, and disposed at an appropriate offsite facility.

Under the unrestricted use remedy, there is a higher potential for exposure to dust and VOC emissions from the additional soil excavation volumes and the required time needed to complete the excavation. Regardless of the remedy chosen, the implementation of appropriate engineering controls, including dust and volatilization monitoring and control will be implemented to minimize these risks.

Both remedies have short-term impacts on the community such as noise and truck traffic from construction activities. An additional 6,100 truckloads of soils exceeding unrestricted SCOs would be sent off-site to achieve the unrestricted use remedy for the site.

The unrestricted use remedy would have a higher potential for short term impacts to the community based on the increased length of time required to implement the remedy. It is expected that the unrestricted use remedy would require approximately 3 additional years to complete while the selected commercial use remedy will be completed within 3 additional months.

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

The unrestricted use remedy would be permanent and effective for elimination of the contamination source areas from the Site through off-site disposal. This remedy would provide a high level of effectiveness and permanence and would not leave soil contamination on-site. The selected commercial use remedy will also provide a high level of long-term effectiveness and permanence, by excavating levels of contamination above applicable SCOs and placing engineering controls (ECs) (soil covers) and institutional controls (ICs) (use restrictions) on the Site. The placement of use

restrictions will limit the Site to commercial and industrial uses and therefore provide an adequate level of protection to future occupants.

Remaining on-site contamination from the commercial use remedy will not pose a risk to humans based on the Site use restrictions and placement of a soil cover over subsurface soils with remaining metals concentrations above the commercial criteria to eliminate exposure pathways. The Creek and the creek banks will be fully remediated to ecological SCOs and therefore, exposure of ecological or human receptors will be minimized. For a majority of the site, groundwater sampling has shown the remaining levels of contaminants on-site are not negatively impacting the environment and continued groundwater monitoring will be instituted to insure no future impacts. In the northeast section of the site, significant groundwater contamination still exists. After one additional year of monitoring in this area, the need for groundwater extraction and treatment will be evaluated by the Department.

While the unrestricted use remedy and the selected commercial use remedy are effective in the long term, the selected remedy will rely on ECs/ICs to remain effective.

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

The unrestricted use remedy would provide a higher reduction in toxicity, mobility, and volume of contaminated soils and sediments at the Site. This is evident through the sheer volume of contaminated material that would be required to be excavated and disposed of under the remedy. Since the unrestricted use remedy would leave no residual contamination in soils above associated SCOs, remaining toxicity levels and mobility of residual contaminants would be minimal.

The selected commercial use remedy will also provide a high degree of reduction in toxicity, mobility, and volume of contaminated soil and sediments at the Site. This is also evident through the additional volume of material that will be excavated and disposed of under this alternative (approximately 10,000 tons).

Toxicity will be reduced by removing impacted soils to a concentration sufficient for the intended future commercial use of the site. Toxicity will be further controlled through the implementation of ICs for the Site and mobility will be adequately controlled through ECs and continued groundwater monitoring. The unrestricted use remedy would result in a greater reduction of toxicity, mobility, and volume than the selected remedy, but the selected remedy will result in a significant reduction of these factors.

6. Implementability. The technical feasibility and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

The unrestricted use remedy and the selected commercial use remedy are both technically feasible to implement, although the former remedy would have very challenging implementability issues in some areas due to existing utilities and structures. Both remedies mainly consist of excavation and

off-site disposal and are implementable. Soil excavation has been demonstrated to be effective and has previously been implemented at the majority of the Site. The Site is accessible for truck access and the topography is generally level so the equipment can be used at the Site.

Installation of a soil cover is a component of the selected remedy and is also technically feasible. A soil cover is a common means of isolating on-site contamination. For the area north of Skaneateles Creek, access is obtainable from a neighboring property and although the topography will be modified, a soil cover is a technically feasible remedial action. For the other areas of the site that will have a soil cover, access and topography are not an issue. The effectiveness of the selected remedy will be monitored through periodic site inspections and groundwater monitoring.

Each remedy is also administratively feasible to implement. The unrestricted use remedy and the selected remedy will require similar administrative activities and approvals as both remedies entail the same type of remedial activity. The selected remedy will require additional administrative measures to institute EC/ICs associated with the soil cover and restricted future use of the property. However, these types of controls are common and feasible to implement.

Each remedy requires obtaining permits and approvals from state and local agencies for storm water and erosion, sediment control and Skaneateles Creek bypass activities. Administrative approvals will not differ between the two remedies for construction. Both remedies will involve institutional controls to limit groundwater use.

The unrestricted use remedy has some very challenging implementability issues while the selected remedy has some additional administrative issues. Overall, the selected remedy will satisfy this criterion better than the former remedy.

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

The estimated present worth cost to carry out the selected remedy is an additional $6,562,000, including annual costs for 30 years. The estimated present worth to complete the December 2001 remedy is an additional $41,436,000 including annual costs for 30 years. The additional cost to construct the selected remedy is estimated to be $6,304,000 and the estimated average annual cost is $33,900 per year for 30 years.

The cost analysis demonstrates that the selected remedy is a cost effective remedial alternative and is approximately $35,000,000 less than the unrestricted use remedy. The cost differential is due to the large volume of material that would require excavation and off-site disposal. The Commercial Use Remedy has a higher operational and maintenance (O&M) cost associated with periodic inspections and maintenance of the ECs and groundwater monitoring while the O&M costs associated with the unrestricted use soil remedy are negligible. Both the former and selected remedy do not include the $2,000,000 O&M costs for the groundwater treatment component, since it has not changed from the original ROD and the December 2001 AROD remedies.

The costs presented in Table 3 are based on recent prices obtained for off-site disposal and revised volumes of soil and sediment to be excavated that were identified during pre-design and design

activities. Table 3 does not include costs for the groundwater phase of the project because the selected remedy remains unchanged from the December 2001 AROD.

This final criterion is considered a modifying criterion and is considered after evaluating those above. It is focused upon after public comments on this ROD amendment have been received.

8. Community Acceptance. Concerns of the community regarding the selected changes were evaluated. A responsiveness summary was prepared that describes public comments received and the manner in which the Department addressed the concerns raised.

SECTION 9: SUMMARY OF ROD AMENDMENT

The Department has amended the Record of Decision (ROD) for the SMC-Skaneateles Falls Site for OU 5 thru 8. The estimated additional present worth cost to carry out the selected remedy is $6,562,000, including annual costs for 30 years. The estimated additional present worth to complete the December 2001 remedy was $41,436,000 including annual costs for 30 years. The additional cost to construct the selected remedy is estimated to be $6,304,000 and the estimated average annual cost for 30 years is $33,900.

The elements of the amended remedy listed below are identified as unchanged, modified or new when compared to the 2001 AROD remedy and are illustrated on Figure 4:

1. Established commercial use and industrial use SCOs for the soil remedial action activities at the site. (modified)

2. Reduce, control, or eliminate to the extent practicable the contamination within soils and wastes on the site from AEC-1 (Landfill), AEC-2 (North Plant Area), AEC-6 (Main Plant Building), AEC-7 (Area in Front of Main Plant Building) and AEC-8 (South Plant Area). The soil contamination from these areas will be excavated and properly disposed off-site. (modified)

3. Mitigate via excavation and off-site disposal environmental threats to Skaneateles Creek (AEC-5) by eliminating to the extent practicable further inflows of any contaminated runoff from on site, and contaminated groundwater from contaminated soils and waste. Modify the sediment clean up objectives from pre-release conditions to Ecological SCOs. Excavate creek sediments and contaminated soils within 25' of the creek to levels that will not impair aquatic organisms and promote unimpaired use by aquatic organisms. The soils and creek sediment will be properly disposed off-site. (modified)

4. Attain to the extent practicable of Ecological SCOs within 25' buffer of Skaneateles Creek. (new)

5. Mitigate via treatment with activated carbon the impacts of contaminated groundwater on the environment. The contaminated groundwater will continue to be treated, as needed, to meet the requirements of SPDES permit for the site. Provide for the attainment of SCGs for groundwater quality at the limits of AEC-3, the shallow and intermediate groundwater, and AEC-4, the deep groundwater, and to the extent practicable, provide for SCG attainment within these AECs. Perform one year of quarterly groundwater sampling in the northeast

quadrant of the site and if the Department deems it necessary, additional monitoring wells will be installed in that area of localized xylene contamination. (modified)

6. Certification of 2003 closure of the former drum storage area, former waste storage tank, and former acid neutralization tank following the requirements of the Resource Conservation and Recovery Act (RCRA). (new)

7. Repair an existing clay cap with a two (2) foot clay cap, as necessary, in former Sludge Lagoons 2, 3, and 4 to complete a 6 NYCRR Part 360 closure. Install a one (1) foot soil cover in areas not covered by a building or pavement and the appropriate demarcation layer over the two (2) former Settling Ponds to complete the remedy. (new)

8. Dewatering operations and subsequent treatment of water generated from excavation activities. Ensure and implement truck traffic safety protocols as well as implement appropriate decontamination and emergency spill procedures for disposal trucks along designated transportation routes. (unchanged)

9. A soil cover and the appropriate demarcation layer will be required to isolate metals contamination soils in AOI-3 and AOI-4 exceeding applicable SCOs and to isolate contaminated soils in other areas of the site. Applying appropriate environmental easements and institutional controls will allow for future commercial use of the site. For AOI-3 and AOI-4, an excavation will be performed before the soil cover and the appropriate demarcation layer is placed so that contaminated surface soils are shipped off-site for proper disposal and flood plain elevations remain constant. Where the soil cover is required it will be a minimum of *two feet* of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d). A two-foot excavation was required because the depth of the contaminated soil exceeding commercial SCOs between the 0' and 2' depth was unknown. The soil cover and the appropriate demarcation layer will be placed in the locations illustrated on Figure 4, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. (modified)

10. In accordance with the Site Management Plan, conduct an evaluation for the potential inhalation of site contaminants due to soil vapor intrusion prior to redevelopment and occupancy of the property. (new)

11. Imposition of institutional controls in the form of environmental easements for the controlled property, that will:

    a. require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);

    b. allow the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g) which are consistent with the remedial elements. This land usage is consistent with current local zoning laws;

c. restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or Onondaga County DOH; and

d. require compliance with the Department approved Site Management Plan. (modified)

12. A Site Management Plan will be required, which includes the following:

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

Institutional Controls: The Environmental Easement discussed in Paragraph 11 above.

Engineering Controls: The soil cover and the appropriate demarcation layer discussed in Paragraph 9 of this section; and the groundwater treatment system discussed in Section 7.1.

This plan includes, but may not be limited to:

i. an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination summarized by Table 2;

ii. descriptions of the provisions of the environmental easement including any land use and/or groundwater use restrictions;

iii. evaluation of the potential for soil vapor intrusion for any buildings constructed on the site, including provisions for implementing actions recommended to address exposures related to soil vapor intrusion;

iv. provisions for the management and inspection of the identified engineering controls;

v. maintaining site access controls and Department notification;

vi. maintaining long-term flood protection for the site;

vii. the steps necessary for the periodic reviews and certification of the institutional and engineering controls.

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

i. monitoring groundwater quality and elevation to assess the performance and

effectiveness of the remedy;

ii. soil cover system inspection and maintenance as necessary to ensure its function is not impaired by erosion or activities at the site;

iii. creek restoration efforts will be monitored to ensure its function is not impaired by erosion or activities at the site; and

iv. a schedule of monitoring and frequency of submittals to the Department.

c. an Operation and Maintenance Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of for any mechanical or physical components of the remedy. The plan includes, but is not limited to:

i. compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;

ii. maintaining site access controls and Department notification; and

iii. providing the Department access to the site and O&M records. (new)

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Stauffer Management – Skaneateles Falls
Operable Unit No. 05 through 08
State Superfund Project
Skaneateles (T), Onondaga County, New York
Site No. 734010

The Proposed Record of Decision (ROD) Amendment for the Stauffer Management – Skaneateles Falls site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on October 2, 2012. The Proposed ROD Amendment outlined the remedial measure proposed for the contaminated soil, sediment, and groundwater at the Stauffer Management – Skaneateles Falls site.

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

A public meeting was held on October 16, 2012, which included a presentation of the remedial investigation/feasibility study (RI/FS) for the Stauffer Management – Skaneateles Falls as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the Proposed ROD Amendment ended on November 2, 2012.

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

A. Comments received at October 16, 2012 Public Meeting

COMMENT 1: When the Department performed the off-site soil vapor intrusion evaluation did you find any level of contamination? How about low levels of contamination?

RESPONSE 1: The Department performed several rounds of soil vapor sampling west of the site property along Jordan Road. The New York State Department of Health's review of the soil vapor sample results concluded that while certain contaminants were detected, the concentrations detected were very low. Therefore, it was determined that the site is not a significant source of soil vapor and that no further investigation was warranted. An August 17, 2006 letter report, including the soil vapor sample results, is located in the document repositories.

COMMENT 2: What contamination remains at the site?

RESPONSE 2: There are elevated concentrations of groundwater contamination in the northeast quadrant of the site. Xylene is the primary contaminant of concern. Four rounds of quarterly sampling will be performed in this area. The first round of sampling the groundwater monitoring

wells was completed in October 2012. After the sampling rounds are completed, the Department will determine if additional action is warranted.

Table 2 of this Amended Record of Decision lists the concentration and the depth below ground surface of the remaining on-site soil contamination. This remaining soil contamination does not warrant further action but can be managed by the Site Management Plan (SMP), since it is located at a depth well below ground surface and it is not impacting the groundwater.

COMMENT 3: How much longer will you be on site and when will you be done? Does that include the water treatment plan?

RESPONSE 3: Since the soil remediation was completed in October 2012, site restoration is the sole task necessary in the 2013 construction season to complete this phase of the project (Operable Unit 06). The open petroleum spill (#0607942) is expected to be closed by September 2013, if the remaining three rounds of groundwater sample results are similar to the October 2012 which supported that the spill has been remediated.

As for the water treatment plant, the Department will re-evaluate this phase of the project (Operable Unit 08) after the groundwater monitoring is complete. Also see Response 2.

COMMENT 4: Is Stauffer still footing the bill for this?

RESPONSE 4: Stauffer Management Company (SMC) of Wilmington, DE is paying for the remediation of this site.

COMMENT 5: Who currently holds title to the property? Is Stauffer still a viable entity?

RESPONSE 5: Stauffer Management Company, LLC is a viable entity and currently holds title to the property.

COMMENT 6: What is the total acreage of the entire property? What is the acreage of the area of concern?

RESPONSE 6: The acreage of the entire property is 118.4 acres. On May 7, 2011, the Department approved a boundary modification and delisted a 50-acre parcel from the site description. Therefore, the area of the site currently listed on the New York State Registry of Inactive Hazardous Waste Disposal sites is 68.4 acres.

COMMENT 7: Was all of the property investigated?

RESPONSE 7: Yes.

COMMENT 8: When done, there will still be eight to ten feet of contaminated soil left onsite?

RESPONSE 8: The soil covers over the AOI-3 and AOI-4 areas of the site are covering much less

than eight to ten feet of contaminated soil. The average amount of contaminated soil between the demarcation and competent bedrock layers is approximately three feet.

In addition, ten of the 13 excavation areas removed all contaminated soil down to competent bedrock. Therefore, there is no contamination left behind at the bottom of these excavations and post-excavation bottom samples were not needed. The Department used post-excavation sample results to determine when the AEC-1 landfill removal was completed.

COMMENT 9: Ballpark, how much has this cleanup cost to date?

RESPONSE 9: As this is a responsible party-funded remediation projects, the Department does not require SMC to provide their cleanup costs. However, to date, SMC claims to have spent between $60 and $70 million on this project.

COMMENT 10: What's the makeup of the soil cover?

RESPONSE 10: The soil cover includes a demarcation layer made of a woven geotextile fabric between the remaining site soil and a minimum of two feet of clean fill placed atop the demarcation layer.

COMMENT 11: How do you know if you've hit the demarcation layer?

RESPONSE 11: It is easy to observe when one reaches the demarcation layer as it made of a woven geotextile fabric and is very different in color than the clean fill placed above it.

COMMENT 12: Is clay part of this cleanup?

RESPONSE 12: Clay was generally placed on top of the competent bedrock layer after excavations to that depth were completed. Clay was also used as a soil cover for the four lagoons located in the southeast corner of the site. Lagoon 1, the only lagoon containing high levels of xylene contamination, was completely excavated including its clay cover and disposed off-site. SMC repaired the clay covers over Lagoon 2, 3, and 4 as part of the Department's NYCRR Part 360 requirements.

COMMENT 13: What type of clay was used in the excavation part of the remedy? Where did you get the clay from?

RESPONSE 13: The clay is a soil with low permeability that SMC obtained from the Valley Bottom pit in Marcellus, NY. This source of clay was approved prior to its use on site by the Department.

COMMENT 14: Are you going to do anything aesthetically at the site?

RESPONSE 14: Site restoration activities (backfill, grading, seeding, etc.) following the 2012 soil remediation activities were started in 2012, but will be completed in 2013. Also, since nuisance dust

is no longer an issue at this site, the fabric placed along the western fence line will be removed. Stockpiles of stone and other materials will be moved behind the groundwater treatment facility and therefore, away from the front gate.

COMMENT 15: Will this remedial action clear or change the title? What restrictions will there be in terms of future use? If Stauffer sells the property, will they be "off the hook" so to speak??

RESPONSE 15: The remedial actions described in this Amended Record of Decision will not change the title for this property and it will remain a site on the New York State Registry of Inactive Hazardous Waste sites.

In addition, an environmental easement will be placed on this property that will run with the land. The environment easement sets forth the groundwater and site use (commercial) restrictions and/or any prohibitions on the use of land in a manner inconsistent with the engineering controls. The Town of Skaneateles has zoned this property as commercial/light industrial. Along with this zoning, the easement will prohibit residential use for this property.

Since this site remains on the New York State registry of inactive hazardous waste disposal sites and since it is also specified by the environmental easement, the owner must notify the Department regarding any change of use for this property. Should the site be sold and with the environmental easement in place, the Department can insure that SMC and/or the new owner will perform all necessary operation, maintenance, and/or monitoring of the remedy as required by this Amended Record of Decision.

B. Comments received during Public Comment Period

Gianna Aiezza, P. E. of EnviroSpec Engineering, PLLC (SMC's consultant) submitted a letter dated November 1, 2012 which included the following comments:

COMMENT 16: From Section 3, Page 4: Leachate is not currently being collected and treated as the source area was removed and therefore no leachate is being generated. However, groundwater from the former landfill area is being collected from three (3) collection points down gradient from the former landfill area. Please change "leachate" to "groundwater".

RESPONSE 16: Since SMC excavated and properly disposed of the chromium-contaminated soil between the landfill known as AEC-1 and AEC-8C South in July 2012, the Department agrees that the AEC-1 soil remediation is complete. The Department has changed "leachate" to "groundwater" in the final AROD.

COMMENT 17: From the list found in Section 6.1.2, Page 7:

The contaminant(s) of concern identified for these Operable Units at this site is/are:

xylene	*lead*	*toluic acid*
polychlorinated biphenyls (PCB)	*mercury*	*zinc*

Zinc was not identified as a contaminant of concern during the remedial activities and did not drive

excavation during the work. SMC does not agree that it was a contaminant of concern and requests that zinc be eliminated from the list to accurately reflect the contaminants of concern for the site.

RESPONSE 17: Zinc will be deleted from the contaminants of concern (COC) list because this contaminant did not drive the extent of the excavation, but chromium will be added to the COC list. Chromium was a driving force for an excavation between the AEC-1 landfill and the AEC-8C South excavation.

COMMENT 18: From Section 7.2, "New Information", page 9, first paragraph;

Since the issuance of the FS, the ROD and the AROD, significant new information about the site has been obtained. The most significant findings are the nature, areal extent, and contaminant concentrations for site-wide soils and significant xylene groundwater contamination in the intermediate aquifer localized in the northeast quadrant of the site.

The levels of xylene in the intermediate aquifer are not significant and SMC does not agree that there is "significant" groundwater contamination. The levels have been significantly reduced since initiation of the remedial action in 2001 and completion of the source removal activities. Please strike the word 'significant' in front of the word xylene, as it may be misleading.

RESPONSE 18: No change will be made, as the detection of 3 parts per million found in Monitoring Well #41D is 600 times higher than the drinking water standard for xylene. This Amended Record of Decision properly addresses this contamination by the requirement for continued monitoring and an evaluation of the groundwater sample results by the Department in 2013.

COMMENT 19: From Section 6.4, "Summary of Environmental Assessment", page 8, second paragraph:

Leachate from the on-site landfill has the potential to impact Skaneateles Creek and the groundwater beneath and beyond the site. A groundwater pump and treat system collects and treats the leachate before it reaches the creek. Groundwater quality has improved via the pump and treat system. Further groundwater monitoring well sampling is needed at the site due to xylene contamination in the northeastern section of the site and to insure the proposed remedy continues to be protective of public health and the environment.

Impacted soil from the former on-site landfill (AEC-1) was removed during remediation of AEC-1 and this former area of concern is no longer a threat to Skaneateles Creek. Furthermore, historic leachate originating from AEC-1 has been eliminated through source removal and not from the operation of the pump and treat system. Leachate no longer exists since the source of contamination has been removed. Groundwater quality has improved at the site due to the extensive source removal actions completed. The groundwater treatment system provides a secondary level of remediation for the site via continuously pumping and treatment of groundwater. However, pump and treatment was not the primary remedy for the groundwater. In order to more accurately reflect site conditions and remedial actions, please replace the word 'leachate' with the word groundwater

in the second sentence. Also please modify the first sentence to reflect the fact that the source area has been removed, thereby eliminating the generation of leachate.

RESPONSE 19: See Response 16. The fourth paragraph of Section 6.4 has been revised as follows:

"Since SMC excavated and properly disposed of the chromium-contaminated soil between the landfill known as AEC-1 and AEC-8C South in July 2012, AEC-1 soil remediation is complete. In addition, SMC's source removal across the site has contributed to decreasing concentrations of contaminants of concern in the groundwater."

COMMENT 20: From Section 9, "Proposed Changes", page 18, item 3:

Mitigate via excavation and off-site disposal environmental threats to Skaneateles Creek (AEC-5) by eliminating to the extent practicable further inflows of any contaminated runoff, contaminated groundwater, and leachate from contaminated soils and waste. Modify the sediment clean up objectives from pre-release conditions to Ecological SCOs. Excavate creek sediments and contaminated soils within 25' of the creek to levels that would not impair aquatic organisms and promote unimpaired use by aquatic organisms. The soils and creek sediment will be properly disposed off-site. (modified)

In the first sentence, please add "from onsite" after contaminated run off (as it is impractable to control runoff from upstream, offsite areas). In addition, please delete the word "leachate" in this sentence since contaminated groundwater is already stated and is more accurate.

RESPONSE 20: The Department has added "from on-site" as requested.

COMMENT 21: From Section 9, "Proposed Changes", page 18, item 5:

Mitigate via treatment with activated carbon the impacts of contaminated groundwater on the environment. Provide for the attainment of SCGs for groundwater quality at the limits of AEC-3, the shallow groundwater, and AEC-4, the deep groundwater, and to the extent practicable, provide for SCG attainment within these AECs. Perform one additional year of quarterly groundwater sampling in the northeast quadrant of the site and if the Department deems it necessary, additional monitoring wells would be installed in that area of localized xylene contamination. (modified)

Please add at the end of the first sentence "as necessary to achieve permit limits" since groundwater is treated and discharged in accordance with the SPDES permit for the site. In the second sentence, please remove "additional" from before "year of quarterly groundwater sampling".

RESPONSE 21: The Department has added the following language after the first sentence, "The contaminated groundwater will continue to be treated, as needed, to meet the requirements of the SPDES permit for the site."

COMMENT 22: From Section 9, "Proposed Changes", page 18, item 6:

Certification of the 2003 closure of the former drum storage area, former waste storage tank, and former acid neutralization tank following the requirements of the Resource Conservation and Recovery Act (RCRA). Repair an existing clay cap with a two (2) foot clay cap, as necessary, in former Sludge Lagoons 2, 3, and 4 to complete a 6 NYCRR Part 360 closure.

Installation of a one (1) foot soil cover and the appropriate demarcation layer over the two (2) former Settling Ponds to complete the remedy. (new)

This provision accurately designates some activities as subject to RCRA and other activities as subject to 6 NYCRR Part 360. SMC believes that the Part 360 requirements should be explicitly extended to the settling ponds. (Note also that other parts of this ROD state incorrectly that RCRA applies to the activities at the lagoons and settling ponds (pages 4, 10). SMC assumes this is holdover language from the previous AROD. However, RCRA never applied to the lagoons and ponds. Please add "under 6 NYCRR Part 360" to end of last sentence of the second paragraph. On Page 4, under OU06, please delete the reference to RCRA since RCRA did not apply to the lagoons.

RESPONSE 22: The Department reviewed page 18, item 6 and agrees that this item concerns two separate issues. The Department has separated each issue in a different item number in this Section. In the first paragraph, the former drum storage area, former waste storage tank, and former acid neutralization tank are now discussed in USEPA RCRA.

The Department now discusses the Part 360 requirements for the sludge lagoons and the settling ponds. SMC completed the repair of the sludge lagoon clay caps in July 2012. For the settling ponds, the Department will require a cover system, consisting of one foot of soil in areas not covered by a building or pavement.

COMMENT 23: From Section 9, "Proposed Changes", page 19, item 8:

A soil cover and the appropriate demarcation layer would be required to isolate metals contamination soils in AOI-3 and AOI-4 exceeding applicable SCOs and to isolate contaminated soils in other areas of the site. Applying appropriate environmental easements and institutional controls would allow for future commercial use of the site. For AOI-3 and AOI-4, an excavation would be performed before the soil cover and the appropriate demarcation layer is placed so that contaminated surface soils are shipped offsite for proper disposal and flood plain elevations remain constant. This remedy will consist a soil cover and the appropriate demarcation layer of minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d). A two-foot excavation was required because the depth of the contaminated soil exceeding commercial SCOs between the 0' and 2' depth was unknown. The soil cover and the appropriate demarcation layer would be placed in the locations illustrated on Figure 4, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. (modified)

Modify the following sentence: "This remedy will consist a soil cover and the appropriate demarcation layer of minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375- 6.7(d)." to state "This remedy will consist of a demarcation layer and a minimum of two feet of clean soil meeting SCOs as set forth in 6 NYCRR Part 375-6.7(d)."

RESPONSE 23: The Department has revised the text in the AROD as follows:
Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

COMMENT 24: From Section 9, "Proposed Changes", page 19, item 9:

Conduct an evaluation for the potential inhalation of site contaminants due to soil vapor intrusion prior to redevelopment and occupancy of the property. (new)

This item should note that this provision will be included in the Site Management Plan. Please add "in accordance with the SMP".

RESPONSE 24: The Department has added "in accordance with the SMP" to the sentence referenced above.

Barbara S. Rivette, Chair, Onondaga County Council on Environmental Health submitted a letter dated November 2, 2012, which included the following comment:

COMMENT 25: "To our knowledge, the proposed remedy does not include post-restoration monitoring to assess contamination of the stream biota (macroinvertebrates) or of any fish species. It is also unclear who is responsible for conducting the agreed upon monitoring requirements.

The Council recommends that post-remediation monitoring include macroinvertebrate and fish contaminant analysis as well as specific performance standards and a defined responsible party."

RESPONSE 25: During the 2005 and 2012 Skaneateles Creek remediation contaminated sediments were removed from all on-site sections of Skaneateles Creek and as far downstream as Mill Pond. Therefore, all sediment in the remediated stretch meets the sediment criteria specified by the Department. To prevent the possibility of contaminated groundwater discharging up through a zone of fractured bedrock beneath the stream bed, SMC lined the completed excavation with 18" or more of clay.

From the New York State Department of Environmental Conservation's January 1999 Technical Guidance for Screening Contaminated Sediments, if sediment concentrations of a compound are less than all of the sediment criteria for that substance, aquatic resources can be considered to be not at risk (from that compound). Therefore, since the post-remediation sediment is clean, the Department will not include requirements for post-remediation contaminant sampling of

macroinvertabrates and fish or issue performance standards for the Stauffer Management Company to achieve in the Site Management Plan.

APPENDIX B

Administrative Record

Administrative Record

Stauffer Management – Skaneateles Falls
Operable Unit Nos. 05 through 08
State Superfund Project
Skaneateles (T), Onondaga County, New York
Site No. 734010

Proposed Remedial Action Plan for the ICI-Americas, Inc. (Stauffer Chemical) site, dated February 1996, prepared by the Department

Record of Decision for the ICI-Americas, Inc. (Stauffer Chemical) site, dated March 1996, prepared by the Department

Proposed Amended Record of Decision for the Stauffer Management – Skaneateles Falls site, dated August 2001, prepared by the Department

Record of Decision Amendment for the Stauffer Management – Skaneateles Falls site, dated December 2001, prepared by the Department

"Lagoon 1 Construction Certification Report", May 2012, prepared by Envirospec Engineering, PLLC

"Skaneateles Creek Restoration Plan", July 2012, prepared by Terrestrial Environmental Specialists, Inc. and Envirospec Engineering, PLLC

Proposed Record of Decision Amendment for the Stauffer Management – Skaneateles Falls site, Operable Unit Nos. 05 through 08, dated October 2012, prepared by the Department.

Order on Consent, Index No. A7-0347-9610, between the Department and Stauffer Management Company LLC, executed on June 21, 2012

"Supplemental Remedial Activities Work Plan", June 1, 2012, prepared by Envirospec Engineering, PLLC

"Focused Feasibility Study", July 2012, revised March 2013, prepared by Envirospec Engineering, PLLC

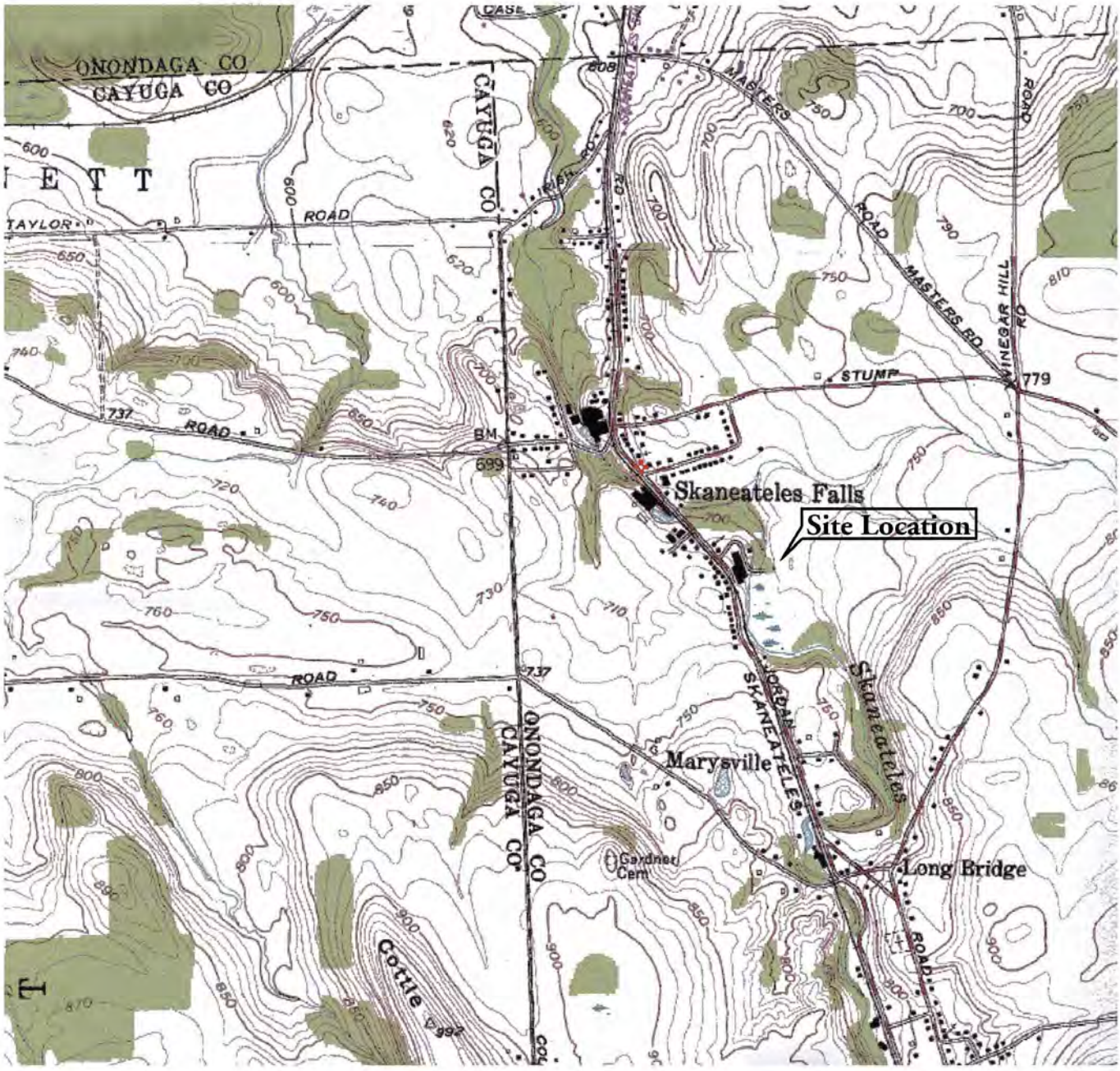
Letter dated November 1, 2012 from Gianna Aiezza, P. E. of Envirospec Engineering, PLLC

Letter dated November 2, 2012 from Barbara S. Rivette, Chair, Onondaga County Council on Environmental Health

SITE: SKANEATELES FALLS, NY
CLIENT: STAUFFER MANAGEMENT COMPANY, LLC
FIGURE 1: SITE LOCATION
ORIGIN OF FIGURE: JULY 2012 DRAFT FFS

enviroSPEC ENGINEERING, PLLC
16 COMPUTER DRIVE WEST
ALBANY, NY 12205
P:518.453.2203
F:518.689.4800

PREPARED BY: N. BROWER
DATE: 8/31/12
REVIEWED BY: G AIEZZA
DATE: 8/31/12
SOURCE: USGS QUADS (7.5 MIN SERIES)



MATCH LINE A–A

10" PVC OUTFALL
INV = 720.38

AOI–6

LAGOON 1 (IRM)
(REMEDIATED & BACKFILLED)

SW NOTCH
LG–1

MW1D MW1I MW1S

MW24S MW24I

MW14S MW14I MW14D

CONDUIT CLUSTER

AOI–6

MW32D MW32S MW32I

FORMER SETTLING PONDS

HOLDING TANK

(2) 8.5' DIA SWDS

LOADOUT PAD

DECON PAD

LTD PAD

DRUM PAD

GRAVEL DRIVE

MW31S MW31D MW31I

GRAVEL

(2) STEEL TANKS

WWTP

SMH

SMH

GRAVEL

TRAILER

TRAILER

TRAILER

TANK

TANKS

AEC–1

MW33S MW33D MW33I

MW13D MW13I

MW41I MW41D MW41S

AREA A

AOI–1

AEC–5

MW26I MW26D

MW4D MW4I

AREA B

AOI–2

MW27S MW27D MW27I

MW5I

MW5D

AEC–8C

MW3S MW3I

AEC–8B

AEC–5

MW12I MW12S

AEC–2

GRAVEL DRIVE

MW21

MW6D

AEC–8A

MW28I MW28D MW28S

FORMER MAIN PLANT BLDG. (AEC–6)

AEC–6

AEC–7

MW40D MW40I MW40S

AEC–7
(OIL SPILL
IRM)

MW39S

MW37I MW37S MW37D

MW11I MW11D

MW18S MW18I

AOI–3

MW30I MW30D

MW43D MW43I

MW29D MW29S MW29I

MW10I MW10D

AOI–4

MW8I MW8S

MW38S

AEC–2

MW23D MW23S MW23I

MW9I MW9D

JORDAN ROAD

AEC–5

AEC–5

MW22S MW22I MW22D

MW2S MW2I

MW2D

AOI–5

MW25S MW25D MW25I

MW7S MW7I MW7D

JORDAN ROAD

66' RIGHT OF WAY AS PER "HIGHWAY BY USE" ASSOCIATION LAW OF 1836

MW–15I MW–15D

CREEK

SKANEATELES

SKANEATELES CREEK

MW17I MW17D

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 80 ft.

LEGEND

EXCAVATED AND BACKFILLED WITH CLEAN MATERIAL

EXCAVATED FOR INVESTIGATION (BACKFILLED WITH SAME MATERIAL AFTER SAMPLING)

EXISTING MONITORING WELL

FORMER SLUDGE LAGOON #4

MW35D MW35I MW35S

FORMER SLUDGE LAGOON #3

MW36I MW36D MW36S

FORMER SLUDGE LAGOON #2

MW34D MW34I MW34S

MATCH LINE A–A

ENVIROSPEC PROJECT #E12–623

enviroSPEC ENGINEERING, PLLC
16 COMPUTER DRIVE WEST
ALBANY, NY 12205
P:518.453.2205
F:518.689.4800

W.O. No.	REVISION	DATE	APR.
2	REVISED FOR AROD	9/12	
1	REVISED WORK PLAN	5/12	

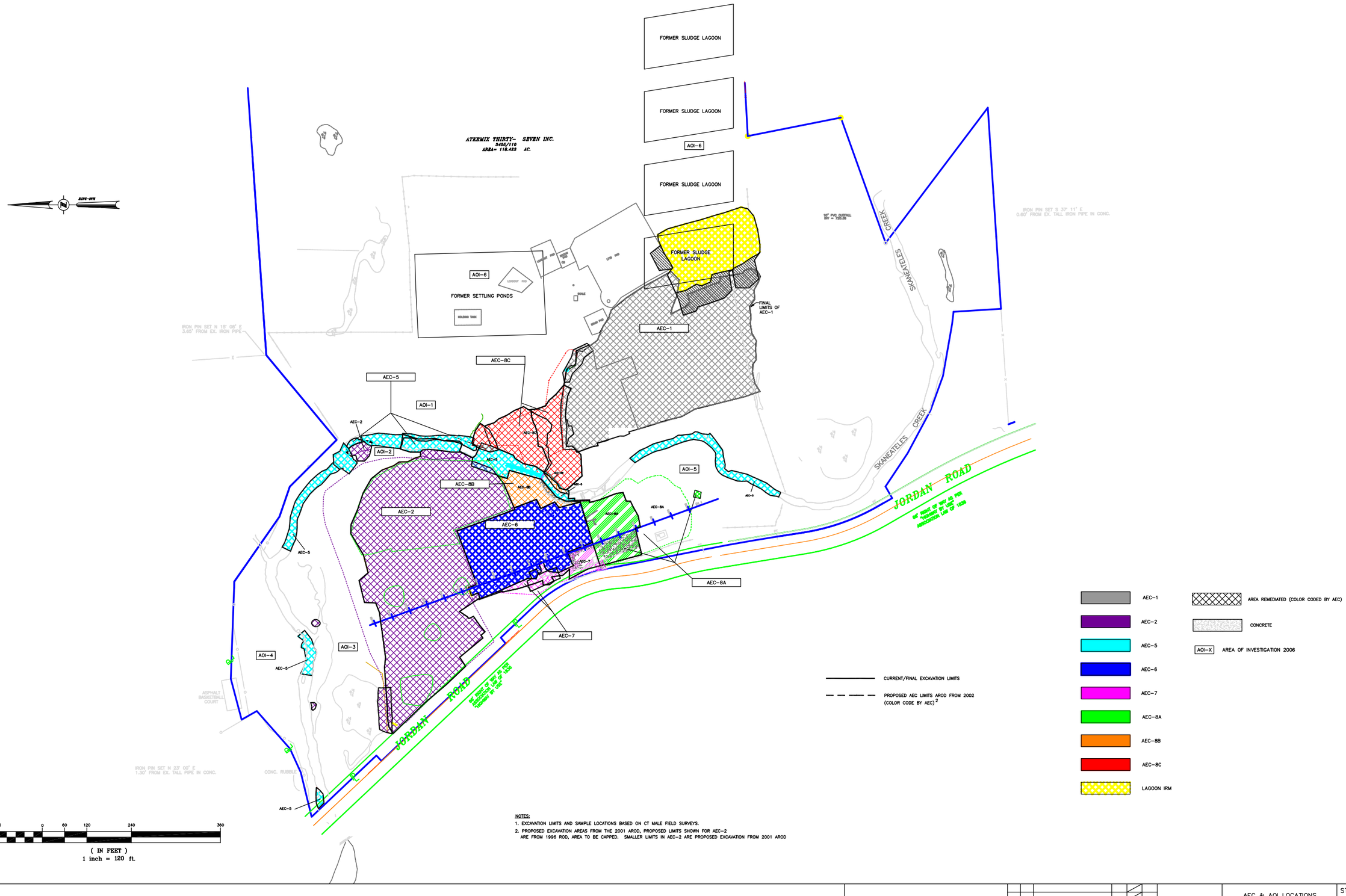
DRAWING STATUS: FOR REFERENCE ONLY

SITE PLAN

DRAWN RA 2/28/13
DESIGN
DRAWING CHECK RA 2/28/13

STAUFFER MANAGEMENT COMPANY SITE
SKANEATELES FALLS, NEW YORK

SCALE 1"=80' | DRAWING No. FIGURE 2 | SHEET 1 of 1 | REV. No. –



NOTES:

1. EXCAVATION LIMITS AND SAMPLE LOCATIONS BASED ON CT MALE FIELD SURVEYS.
2. PROPOSED EXCAVATION AREAS FROM THE 2001 AROD, PROPOSED LIMITS SHOWN FOR AEC-2 ARE FROM 1996 ROD, AREA TO BE CAPPED. SMALLER LIMITS IN AEC-2 ARE PROPOSED EXCAVATION FROM 2001 AROD

ENVIROSPEC PROJECT #E12-623

enviroSPEC ENGINEERING, PLLC
15 COMPUTER DRIVE WEST
ALBANY, NY 12205
P:518.453.2555
F:518.689.4800

W.O. No.	REVISION	DATE	BY	CHK	APR.

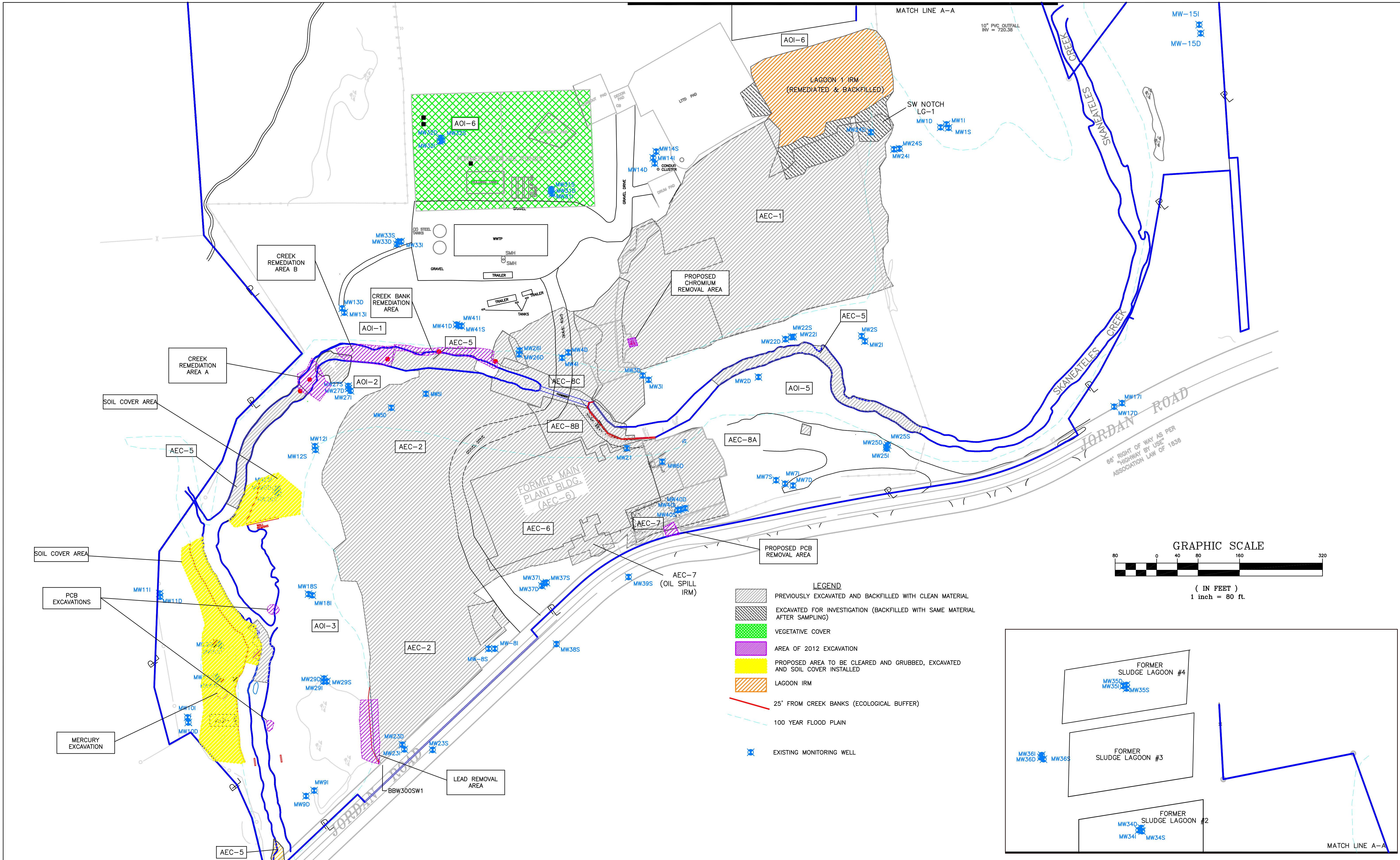
DRAWING STATUS: FOR REFERENCE ONLY

AEC & AOI LOCATIONS

DESIGNED	D.A.	5/08	APPROVED
DRAWN	JB	5/08	
CHECKED	D.A.	5/08	
APPROVED	B.A.	5/08	
DRAWING COPY	D.A.	5/08	DATE

STAUFFER MANAGEMENT COMPANY SITE
SKANEATELES FALLS, NEW YORK
SOILS REMEDIATION

SCALE	DRAWING No.	SHEET	REV. No.
1" = 120'	FIGURE 3	1 of 1	—



MATCH LINE A–A
AOI–6
LAGOON 1 IRM (REMEDIATED & BACKFILLED)
SW NOTCH LG–1
AEC–1
PROPOSED CHROMIUM REMOVAL AREA
AEC–5
CREEK REMEDIATION AREA B
CREEK BANK REMEDIATION AREA
AOI–1
CREEK REMEDIATION AREA A
AOI–2
AEC–8C
SOIL COVER AREA
AOI–5
AEC–8B
AEC–8A
AEC–2
FORMER MAIN PLANT BLDG. (AEC–6)
AEC–6
AEC–7
PROPOSED PCB REMOVAL AREA
AEC–7 (OIL SPILL IRM)
PCB EXCAVATIONS
AOI–3
MERCURY EXCAVATION
LEAD REMOVAL AREA
BBW300SW1
JORDAN ROAD
SKANEATELES CREEK
66' RIGHT OF WAY AS PER "HIGHWAY BY USE" ASSOCIATION LAW OF 1838
GRAPHIC SCALE
(IN FEET)
1 inch = 80 ft.
LEGEND
PREVIOUSLY EXCAVATED AND BACKFILLED WITH CLEAN MATERIAL
EXCAVATED FOR INVESTIGATION (BACKFILLED WITH SAME MATERIAL AFTER SAMPLING)
VEGETATIVE COVER
AREA OF 2012 EXCAVATION
PROPOSED AREA TO BE CLEARED AND GRUBBED, EXCAVATED AND SOIL COVER INSTALLED
LAGOON IRM
25' FROM CREEK BANKS (ECOLOGICAL BUFFER)
100 YEAR FLOOD PLAIN
EXISTING MONITORING WELL
FORMER SLUDGE LAGOON #4
FORMER SLUDGE LAGOON #3
FORMER SLUDGE LAGOON #2

ENVIROSPEC PROJECT #E12–623

enviroSPEC ENGINEERING, PLLC — 16 COMPUTER DRIVE WEST, ALBANY, NY 12205, P:518.453.2203, F:518.689.4800

W.O.	No.	REVISION	DATE	DRN./CHK.	APR.
	3	REVISED FOR AROD	3/13		
	2	REVISED FOR AROD	8/12		
	1	REVISED WORK PLAN	5/12		

DRAWING STATUS: FOR REFERENCE ONLY

SELECTED REMEDIATION AREAS

DRAWN BY: R.W. 2/28/12 — DRAWING CHECK: G.A. 2/28/12

STAUFFER MANAGEMENT COMPANY SITE
SKANEATELES FALLS, NEW YORK

SCALE: 1"=80' — DRAWING No.: FIGURE 4 — SHEET: 1 of 1 — REV. No.: –

MATCH LINE A–A

10" PVC OUTFALL
INV = 720.38

AOI–6

LAGOON 1 (IRM)
(REMEDIATED & BACKFILLED)

SW NOTCH
LG–1

MW24D
MW24S
MW24I

CREEK

SKANEATELES

AOI–6

MW32D
MW32S
MW32I

FORMER SETTLING PONDS

AOI6 TP–4

LOADOUT PAD

DESIGN PAD

LTD PAD

CONDUIT CLUSTER

DRUM PAD

HOLDING TANK

(2) 8.5' DIA TANKS

MW31S
MW31D
MW31I

GRAVEL DRIVE

GRAVEL

AEC–1

(2) STEEL TANKS

WWTP

MW33S
MW33D
MW33I

SMH

SMH

GRAVEL

TRAILER

TRAILER

TRAILER

TANK

TANKS

MW41I
MW41D
MW41S

AREA A

AOI–1

AEC–5

MW26I
MW26D

GRAVEL DRIVE

AREA B

MW27S
MW27D
MW27I

AOI–2

AEC–8C

AEC–8B

AEC–8A

AEC–5

AOI–5

MW22S
MW22D
MW22I

AEC–5

SKANEATELES CREEK

AEC–2

GRAVEL DRIVE

FORMER MAIN PLANT BLDG. (AEC–6)

AEC–6

AEC–7

MW40D
MW40I
MW40S

AEC–7
(OIL SPILL
IRM)

MW39S

MW37I
MW37S
MW37D

MW38S

MW25S
MW25D
MW25I

JORDAN ROAD

66' RIGHT OF WAY AS PER "HIGHWAY BY USE" ASSOCIATION LAW OF 1838

AEC–5

MW28I
MW28D
MW28S

AOI–3

AEC–2

MW30I
MW30D

MW43D
MW43I

MW29D
MW29S
MW29I

AOI–4

MW23D
MW23S
MW23I

AEC–5

1 2 3 4 5 6 7,8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

LEGEND

- PREVIOUSLY EXCAVATED AND BACKFILLED WITH CLEAN MATERIAL
- EXCAVATED FOR INVESTIGATION (BACKFILLED WITH SAME MATERIAL AFTER SAMPLING)
- MONITORING WELL
- SOIL BORING LOCATION
- TEST PIT LOCATION
- CONFIRMATORY SAMPLE LOCATION
- OTHER SAMPLE LOCATION

FORMER SLUDGE LAGOON #4

FORMER SLUDGE LAGOON #3

FORMER SLUDGE LAGOON #2

MATCH LINE A–A

ENVIROSPEC PROJECT #E12–623

enviroSPEC ENGINEERING, PLLC
16 COMPUTER DRIVE WEST
ALBANY, NY 12205
P:518.453.2200
F:518.689.2800

W.O. No.	REVISION	DATE	APR.
2	REVISED FOR ROD	3/13	
1	REVISED WORK PLAN	5/12	

DRAWING STATUS
FOR REFERENCE ONLY

SOIL BORING LOCATIONS EXCEEDING COMMERCIAL AND INDUSTRIAL SCOs

	INIT.	DATE
DRAWN BY	RR	2/28/12
DRAWING CHECK	D.A.	2/28/12

STAUFFER MANAGEMENT COMPANY SITE
SKANEATELES FALLS, NEW YORK

SCALE	DRAWING No.	SHEET	REV. No.
1"=80'	FIGURE 5	1 of 1	—

TABLE 1 - COMPARISON OF DECEMBER 2001 REMEDY with MODIFIED REMEDY

COMPONENT OF REMEDY INCLUDED IN 2001 ROD	MODIFIED COMPONENT OF REMEDY
Operable Units #5: • Excavation and off-site disposal of contaminated sediment/soils • Pre-release soil cleanup objectives (SCOs)	**Operable Units #5:** • Excavation and off-site disposal of contaminated sediment/soils • Part 375 Ecological SCOs for 0' – 2' depth and Commercial SCOs for below 2' depth
Operable Unit #6: • Excavated contaminated soils and waste exceeding soil cleanup guidance will be disposed at a permitted off-site disposal facility. • Establish site specific remedial goals (SSRGs) to control residual metals contamination in soils. • Cleanup objectives for PCBs were established, excavate PCBs that exceed these cleanup objectives.	**Operable Unit #6:** • Excavation and off-site disposal of contaminated soils using Part 375 commercial soil cleanup objectives • Site Management Plan will document all known exceedances of commercial soil cleanup objectives
Operable Unit #7: • Deed restrictions to address residual soil and groundwater contamination	**Operable Unit #7** • Institutional/engineering controls (environmental easement), cover and Site Management Plan to address residual soil contamination
Operable Unit #8: • Design, construct and operate a shallow groundwater extraction and treatment system for AEC-3 (shallow & intermediate groundwater). Treated water will be discharged to Skaneateles Creek through SPDES permitted outfalls and monitored for compliance by the NYSDEC Division of Water.	**Operable Unit #8:** • Institutional/engineering controls (environmental easement), cover and Site Management Plan to address residual groundwater contamination • Additional year of quarterly groundwater monitoring – First round in October 2012 • Four (4) monitoring wells to be installed, if required by the Department

TABLE 2: SOIL SAMPLE RESULTS THAT EXCEED COMMERCIAL OR INDUSTRIAL SCOs

Sample Number (from Figure 5)	Sample ID	AEC / AOI	Approximate Sample Depth (ft.)	Contaminant	Detected Level (ppm)	6 NYCRR Part 375-6.8 (b) Exceedance
1	BBW300SW1	AEC-2	6	Benzo(a)pyrene	1.04	CSCO
2	AAW275SW1	AEC-2	6	Lead	1597	CSCO
				Mercury	4.91	CSCO
3	AAW250SW1	AEC-2	7	Lead	1954	CSCO
				Mercury	5.69	CSCO
	AAW250SW1 (DUP)	AEC-2	7	Lead	3332	CSCO
				Mercury	7.2	ISCO
4	BBW225SW1	AEC-2	7	Lead	1479	CSCO
5	ABL1SW-2 (DUP)	AEC-2	5	Benzo(a)pyrene	1.01	CSCO
6	SB94	AEC-2	0-2	Copper	1046	CSCO
7	AEC2-TP1	AEC-2	10	Lead	1600	CSCO
8	AEC2-TP1S	AEC-2	10	Lead	1280	CSCO
9	SB96	AEC-2	0-2.5	Copper	823	CSCO
				Lead	1109	CSCO
10	S-Headwall	AEC-5	13	Benzo(a)pyrene	1.42	ISCO
11	WWNGWL30	AEC-5	13	Xylene	830	CSCO
12	Retaining Wall-2	AEC-5	13	Benzo(a)pyrene	1.74	ISCO
13	Retaining Wall-1	AEC-5	13	Benzo(a)pyrene	4.22	ISCO
				Lead	2954	CSCO
14	K-WESTSW	AEC-7	3	Benzo(a)pyrene	1.05	CSCO
15	L-WESTSW	AEC-7	3	Benzo(a)pyrene	1.13	ISCO
16	ESW2	AEC-8A	10	Benzo(a)pyrene	2.3	ISCO
				Mercury	4.9	ISCO
17	SB104	AEC-8A	3-4	Benzo (a) pyrene	5.4	ISCO
18	FDTP-14	AEC-8A	3	Benzo (a) pyrene	1.8	ISCO
19	8ASSW5	AEC-8A	4	Benzo(a)pyrene	1.4	ISCO
				Mercury	9	ISCO
20	SB108	AEC-8A	4-6	Copper	978	CSCO
21	7A-EASTSW	AEC-8A	16	Benzo (a) pyrene	6.3	ISCO
22	7A-BTM	AEC-8A	24	Benzo (a) pyrene	4.42	ISCO
23	7A-SOUTHSW	AEC-8A	16	Benzo(a)anthracene	11.5	ISCO
				Benzo(b)fluroanthene	16.40	ISCO
				Benzo(a)pyrene	15	ISCO
24	7A-WESTSW	AEC-8A	16	Benzo (a) pyrene	1.7	ISCO
25	7A-NORTHSW	AEC-8A	16	Benzo (a) pyrene	5.3	ISCO
26	O-SOUTHSW	AEC-8A	5	Benzo(a)pyrene	3.15	ISCO
27	O-WESTSW	AEC-8A	6	Benzo(a)pyrene	1.6	ISCO
28	SB64	AOI-2	3-4	Copper	387	CSCO
				Lead	2661	CSCO
				Mercury	3.44	CSCO
29	SB63	AOI-2	0-2	Benzo (a) pyrene	1.7	ISCO
			6-8	Lead	1008	CSCO
30	SB62	AOI-2	2-4	Mercury	4.63	CSCO
			4-6	Lead	1004	CSCO
				Mercury	4.37	CSCO
31	SB66	AOI-2	8-10	Mercury	7.85	ISCO
32	SB65	AOI-3	2-4	Lead	1673	CSCO
				Mercury	5.35	CSCO
33	AOI3-TP3	AOI-3	8	Benzo (a) pyrene	2.4	ISCO
				Mercury	4.1	CSCO
34	SB72	AOI-3	0-2	Benzo (a) pyrene	3	ISCO
35	NA-2	AOI-3	0-0.5	Benzo (a) pyrene	1.1	ISCO
36	SB82	AOI-3	6-7.4	Arsenic	41	ISCO
37	NA-1	AOI-3	0-0.5	Lead	1610	CSCO
				Mercury	3.3	CSCO
38	SB90	AOI-3	0-2	PCBs	1.2	CSCO
39	ALLW270SW1B	AOI-3	2	Copper	343	CSCO
				Benzo (a) pyrene	2467	ISCO
40	SB71	AOI-4	4-6	Mercury	3.89	CSCO
41	AOI4-TP2 (DEC)	AOI-4	4	Mercury	7.4	ISCO
	AOI4-TP2	AOI-4	3	Lead	1295	CSCO
				Mercury	5.45	CSCO
42	AOI4-TP3	AOI-4	3	Mercury	6.35	ISCO
43	SB105	AOI-5	2-4	Mercury	3.11	CSCO
44	SB109	AOI-5	2-3	Benzo (a) pyrene	1.9	ISCO
45	SB114	AOI-5	4-6	Copper	354	CSCO
46	SB3	AOI-6	9-10	Arsenic	19	ISCO

Table 3: Cost Analysis

Original Remedy		
Capital Cost	$	41,436,000
O&M - Present Worth (30 years)	$	-
TOTAL:	$	41,436,000
Selected Remedy		
Capital Cost	$	6,304,000
O&M - Present Worth (30 years)	$	258,000
TOTAL:	$	6,562,000
Additional Cost for Selected Remedy verses Original Remedy		
Capital Cost	$	(35,132,000)
O&M - Present Worth (30 years)	$	258,000
TOTAL:	$	(34,874,000)

Note:
Values in brackets represent a negative value