DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: **Safety-Kleen Corporation, North Amityville Service Center**
Facility Address: **60 Seabro Avenue, North Amityville, New York**
Facility EPA ID #: **NYD000708198**

Definition of Environmental Indicators (for the RCRA Corrective Action)

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

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

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

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

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

   _____ If no - re-evaluate existing data, or

   _____ If data is not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

The North Amityville Service center is an operating facility involved in the collection and storage of virgin and waste solvents. The facility contains above ground storage tanks, drum storage areas and fluid transfer facilities. During facility tank system upgrades in December 1995, impacted soils were discovered to be present beneath the then existing concrete containment to the two above ground waste mineral spirits tanks. Corrective action, consisting of limited soils excavation, was initiated. As part of a RCRA Facility investigation, groundwater contamination in the vicinity of the waste tanks was identified. Subsequent to the RFI, passive remedial measures consisting of injection of oxygen releasing compounds into the subsurface were implemented. In February 2002, groundwater sampling results indicated a 100 fold increase on mineral spirits concentrations at well GT-1. This event triggered additional investigation and remedial efforts. Investigations determined the increase was related to spills at the facility. Additional investigations of the facility have been conducted as part of closure of the hazardous waste storage and handling areas. An additional area of contamination was identified in the vicinity of the waste loading dock. In response, the facility corrective action system was modified and expanded in the fall of 2009.

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

   _X_ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

   _____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not known or reasonably suspected to be "contaminated."

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[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

Mineral Spirits: 10 – 20 ppm
Dichlorobenzene 30 – 40 ppb

References:

Groundwater Monitoring Report, 4th quarter 2010, January 2011

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

__X__ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale:
Remedial action has been initiated for contaminated groundwater at the facility. The remediation has recently consisted of injection of ozone and oxygen releasing compounds into the subsurface. These efforts have reduced the magnitude and extent of contamination. The remedial system was recently expanded in an effort to accelerate clean-up of the groundwater and quarterly monitoring of groundwater continues to assess conditions.

References:

Groundwater Monitoring Report, 4th quarter 2010, January 2011

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[2]"existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

__X__ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

There are no surface water drainageways in the vicinity of the facility.

References:

Suburface Assessment Report, Safety-Kleen Service Center, North Amityville NY, 10/3/03

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

the amount of discharging contaminants is increasing.

_____ If unknown - enter "IN" status code in #8.

Rationale:

References:

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR
2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

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[4]Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5]The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale:

References:

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

__X__ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale:

As required by the facility permit and corrective action program, groundwater monitoring wells are sampled on a quarterly basis. In addition, a groundwater remedial system has been installed to address impacted media.

8. Check the appropriate RCRAInfo status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

__X__ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at Safety-Kleen Service Center EPA ID# NYD000708198, Located at 60 Seabro Avenue, North Amityville New York Specifically, this determination indicates that the migration of known or reasonably suspected to be "contaminated" groundwater is under control, and that monitoring will be conducted, as necessary, to confirm that contaminated groundwater remains within the

"existing area of contaminated groundwater". This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

_____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

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

Completed by: _____ Date: 3-28-2011
Kent D. Johnson
Engineering Geologist 2

Supervisor: Denise M. Radtke Digitally signed by Denise Radtke Date: 2011.03.31 08:05:05 -04'00' Date: 3-29-2011
Denise Radtke
Engineering Geologist 3

Director: _____ Date: 3-29-2011
Michael Cruden, P.E. - Director
Remedial Bureau E
Division of Environmental Remediation

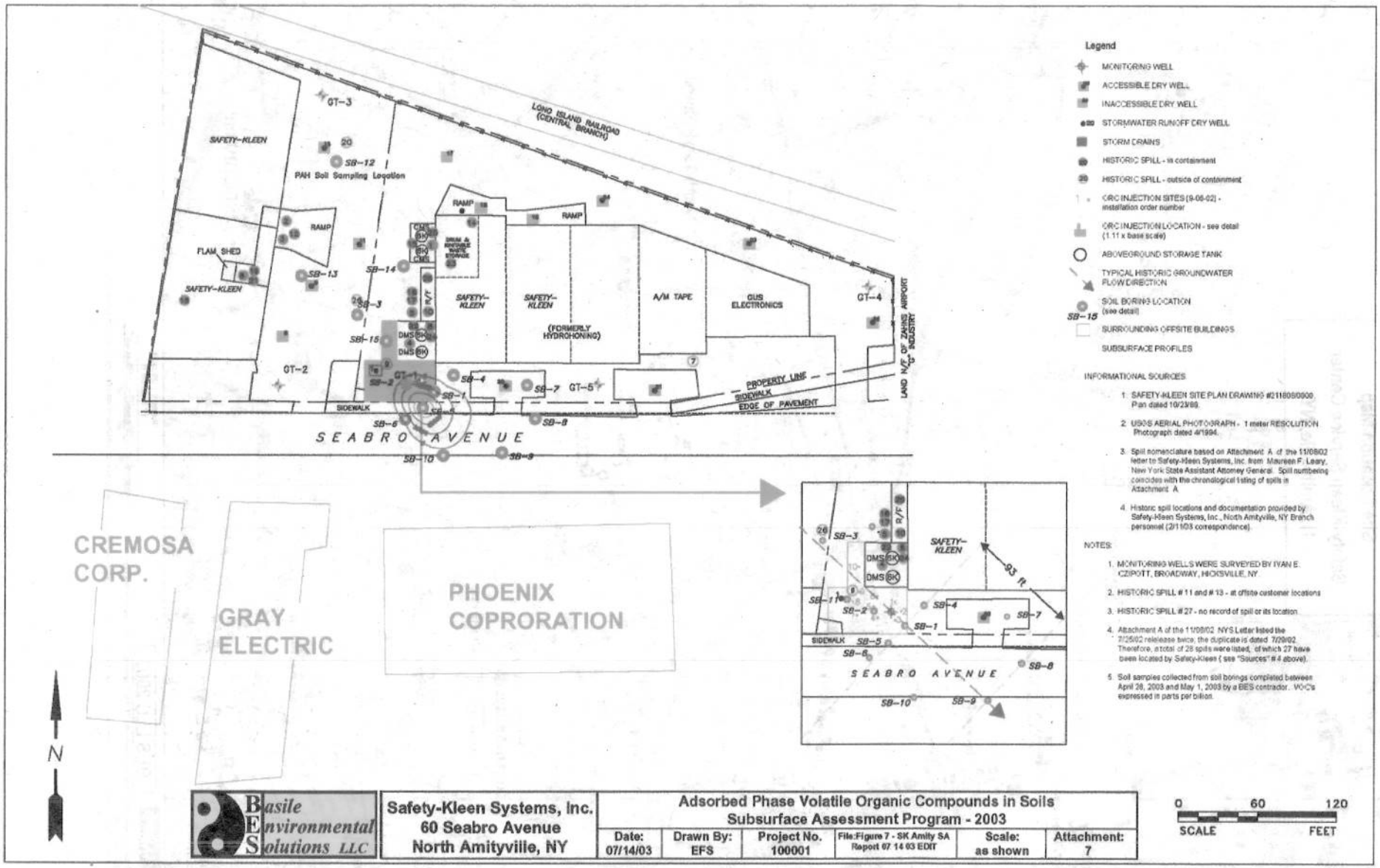
Locations where References may be found:

New York State Department of Environmental Conservation, Central Office
Division of Environmental Remediation
625 Broadway 12th Floor
Albany, New York 12233-7252

Contact, telephone number and e-mail:

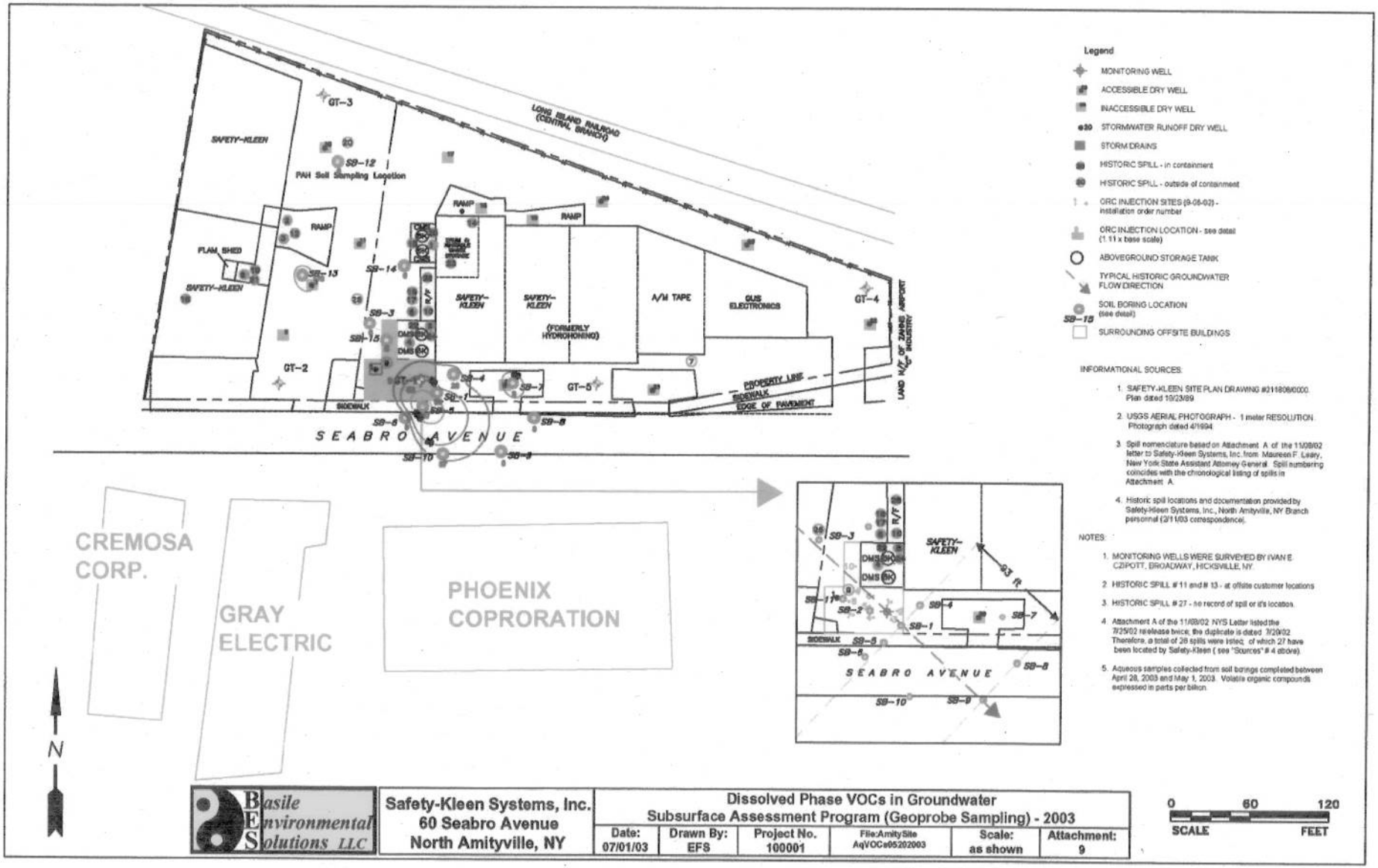
Mr. Kent Johnson
(518) 402-9813
kdjohnso@gw.dec.state.ny.us

Figure 1
Site Location Map
Safety-Kleen Service Center
N. Amityville, NY



Basile Environmental Solutions LLC	Safety-Kleen Systems, Inc. 60 Seabro Avenue North Amityville, NY	Adsorbed Phase Volatile Organic Compounds in Soils Subsurface Assessment Program - 2003				
		Date: 07/14/03	Drawn By: EFS	Project No. 100001	File:Figure 7 - SK Amity SA Report 07 14 03 EDIT	Scale: as shown	Attachment: 7

0 60 120
SCALE FEET



Basile Environmental Solutions LLC	Safety-Kleen Systems, Inc. 60 Seabro Avenue North Amityville, NY	Dissolved Phase VOCs in Groundwater Subsurface Assessment Program (Geoprobe Sampling) - 2003			
		Date: 07/01/03	Drawn By: EFS	Project No. 100001	File:AmitySite AqVOCs05202003	Scale: as shown	Attachment: 9