RCRA Corrective Action
Environmental Indicator (EI) RCRIS Code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: Safety-Kleen Service Center
Facility Address: 123 Red Lion Road, Vincentown,
Southampton Township, New Jersey 08088
Facility EPA ID#: NJD000768101

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

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

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

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.

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

The Safety-Kleen Southampton service center is situated at 121-123 Red Lion Road in Vincentown, New Jersey. The subject site reportedly consists of two parcels:

- 123 Red Lion Road (Block 2202, Lot 4E) – owned by Safety-Kleen (1.24 acres); and
- 121 Red Lion Road (Block 2202, Lot 4I) – leased by Safety-Kleen (2.60 acres)

The parcel owned by Safety-Kleen contains or contained at some time during its history a one-story cinder block building (6,000 square feet), a return/fill shelter, several underground storage tanks (USTs) and aboveground storage tanks (ASTs) and associated and secondary containment, concrete pads, asphalt parking areas, open stone-covered areas, and an earthen detention basin. The parcel leased by Safety-Kleen originally contained a one-story masonry building (5,000 square feet; warehouse and office areas associated with previous silk-screening and other commercial/light industrial operations) and associated parking areas; the parcel was subsequently developed with additional asphalt parking and truck turnaround areas, a large detention basin and ASTs with concrete secondary containment pads and walls. Both properties were reportedly each developed with a private supply well and septic system/leach field that served that parcel only. Prior to development, each of the parcels was used for agricultural purposes. Throughout the remainder of this document, these combined parcels will be referred to as the site. The area immediately abutting the site to the south and north is primarily used for light industrial and commercial purposes, Red Lion Road runs adjacent to the eastern site boundary, and the area to the west is used for agriculture. Figure 1 is an aerial photograph that shows the location of the site.

The site has been reportedly in operation since 1976 and is currently an active transfer station for the distribution of fresh solvent products and the collection and temporary storage of used solvent wastes (prior to subsequent transportation to and recycling/disposal by one of Safety-Kleen's licensed recycle centers). The ongoing waste management activities are governed by a RCRA Operating Permit that expires in 2018.

The site consists of two single-story buildings, several existing aboveground storage tanks (ASTs) and a return/fill area. Although a portion of the site is used as a local sales/service office, the majority of the site consists of an accumulation/distribution warehouse and associated tanks for spent solvents, anti-freeze, used oil, and products (including small parts-cleaning equipment, solvents, anti-freeze, hand cleaner, floor soap, and other allied products). Safety-Kleen collects the spent solvent, anti-freeze, and used oil from its customers on a periodic basis and temporarily stores it, either in a storage tank (which is surrounded by secondary containment) or in an indoor container storage area, on the site. Once a sufficient amount of spent material is collected, a tanker truck or box trailer truck is

dispatched to collect the waste and transport it to a licensed Safety-Kleen reclamation facility. No hazardous waste/material treatment or disposal is conducted on the site. Given that the site remains active and handles various hazardous wastes and materials on a regular basis, the federal Occupational Safety and Health Administration (OSHA) rules apply to all operations performed on the site.

Numerous documents were obtained from Safety-Kleen's site files and reviewed in preparing the CA 725 and CA 750 forms. These documents related specifically to previous site assessment, Resource Conservation Recovery Act (RCRA) closure, remedial investigation, quarterly groundwater monitoring reports/forms, and interaction/communications with the New Jersey Department of Environmental Protection (NJDEP) and United States Environmental Protection Agency (USEPA), including Administrative Consent Orders, work plans and reports, comment/approval letters. These documents are summarized below and are appended to the forms as electronic attachments – refer to the enclosed CD containing Attachments 1 through 25. The analyses presented in the remainder of the CA 725 and CA 750 forms is based upon review and evaluation of the attached documents; individual attachments are referenced throughout each form, as necessary, to provide support/rationale for conclusions presented.

RCRA Administrative Order, NJDEP (May 1983)

The NJDEP issued an Administrative Order (Attachment 1) to Safety-Kleen in May 1983 as a follow-up to a January 12, 1983 site inspection performed by NJDEP alleging that Safety-Kleen:

- Utilized an unpermitted 12,000-gallon UST to store hazardous waste; and
- Collected or hauled hazardous waste without being properly registered as a hauler.

The Administrative Order further stipulated that Safety-Kleen immediately contact NJDEP for a pre-application conference to initiate RCRA permitting procedures, and register with NJDEP any and all vehicles used to collect and/or haul hazardous waste. As documented below, Safety-Kleen applied for and received a RCRA Part B Permit for hazardous waste operations.

Preliminary Assessment for RCRA Corrective Action, USEPA (June 1986)

The USEPA performed a Preliminary Assessment (PA) in June 1986 at the Safety-Kleen service center at 123 Red Lion Road in Vincentown, New Jersey (Attachment 2). The site began industrial operations in 1976; the land was previously used for farming cranberries. The site is located in rural section of Vincentown, New Jersey, where there exist approximately 80 residential homes within a two-mile radius of the site, all of which utilize private potable water supply wells. The site is underlain by the unconsolidated Miocene-aged Kirkwood Formation.

In December 1984, Safety-Kleen submitted a RCRA Part B Permit application to perform hazardous waste storage and transfer operations at the facility, involving spent mineral spirits (Safety-Kleen 105 Solvent); spent "immersion cleaner" and mineral spirit tank bottom sludge and wet dumpster mud. Used mineral spirits are delivered to the site in 16- and 30-gallon drums and are transferred into two wet dumpsters, located in the return/fill area, with a total capacity of 750 gallons (or 375 gallons each). The used mineral spirits are filtered and transferred to a 1,000-gallon steel UST for particulate settling, where the spent solvent overflows into an adjacent 12,000-gallon UST for storage prior to transport to and reclamation at a Safety-Kleen recycle center. Spent immersion cleaner arrives in 16-gallon drums and is stored temporarily prior to transport to and reclamation at a Safety-Kleen recycle center.

The USEPA PA stated that two permits for the site were in the process of being finalized by the NJDEP:

- RCRA Part B Permit for a hazardous TSD Facility by the Division of Waste Management; and
- New Jersey Pollutant Discharge Elimination System (NJPDES) ground water monitoring permit by the Division of Water Resources.

The Part B Permit specified removal of all existing USTs and the construction of an aboveground tank farm with a concrete pad and secondary containment walls; the UST areas would be addressed through groundwater monitoring via the NJPDES permit.

The USEPA PA concluded that the potential existed for releases to occur but there was insufficient evidence to conclude that releases had occurred. They also noted that no data or information was available regarding soil/groundwater quality in the UST area(s). In addition, the potential for air releases was identified in association with wet dumpster operations in the return/fill area. The PA further stated that there were no documented releases at the site. The USEPA indicated that the site was a "medium priority" in terms of site investigation.

Based on these conclusions, the PA recommended that further investigation be conducted to determine whether a prior release occurred in the UST area(s); the PA acknowledged that soil investigation in the UST area(s) was stipulated in the RCRA Part B Permit application and groundwater monitoring would be performed pursuant to the NJPDES permit. USEPA indicated that a comprehensive remedial investigation could be required to confirm the nature and delineate the extent of any releases, and suggested that these activities be integrated into ongoing activities required by the NJDEP pursuant to the two above-mentioned permits.

RCRA Partial Closure Plan and Tank Approval, NJDEP (October 1987)

In an October 14, 1987 letter to Safety-Kleen (Attachment 3), NJDEP issued its conditional approval of the Safety-Kleen's August 8, 1986 Partial Closure Plan (including additions in a January 6, 1987 letter to NJDEP) for hazardous waste USTs and the two wet dumpsters in the return/fill area. The letter also conditionally approved the construction of a 15,000-gallon aboveground storage tank (AST) to store waste mineral spirits at the site.

Environmental Site Assessment Report, Dunn Geoscience, Corp. (December 1988)

Dunn Geoscience Corp. (Dunn) performed an environmental site assessment on behalf of Safety-Kleen for the 2.6-acre lease/parcel located at 121 Red Lion Road in Vincentown, New Jersey (Attachment 4); the subject property was owned by Mr. Melvin Black. Dunn's site assessment included interviews with state/local government staff, review of available, relevant documents, site reconnaissance, and limited subsurface investigation (test pits) to qualitatively evaluate soil and groundwater conditions. No samples were collected for laboratory analysis.

A vacant one-story building, covering an area of 5,000 square feet and containing both warehouse and office areas related to former silk-screen printing operations, carpet sales, and picture framing, is located near the eastern perimeter of the property. Silk screening operations were discontinued in 1988. No evidence of hazardous materials/drums, waste disposal, sumps/drains, stressed vegetation, seeps or stained soil was observed on the property during Dunn's site inspection. The building was serviced by private well/sewer and heated with natural gas. No reported spills/releases or other information regarding enforcement actions were found during the file reviews and interviews.

Dunn excavated a series of eleven (11) test pits to: 1) evaluate the type, composition and heterogeneity of on-site fill material; 2) visually evaluate subsurface conditions for evidence of waste disposal

(including an evaluation of the on-site septic system/leach field) and/or stained soil/odors indicative of the presence of petroleum hydrocarbons and/or volatile organic compounds (VOCs). The subsurface geology consisted primarily of sand and clay with no brick, glass, or other debris. No stained soil or odors were observed during the test pit program, and no odors or sheen were observed in association with a sample of the septic tank contents. Dunn concluded that no further action was warranted at the property located at 121 Red Lion Road in Vincentown, New Jersey.

ECRA Administrative Consent Order (ACO) – Case #85550, NJDEP (November 1987)

In relation to ECRA (precursor to current ISRA) Case #85550, the NJDEP issued an Administrative Consent Order (ACO), executed on November 6, 1987 (Attachment 5), to Safety-Kleen in response to Safety-Kleen's May 18, 1987 application to the NJDEP for an ACO to allow the sale of Block 2202, Lot 4E (1.24 acre) to Safety-Kleen prior to satisfying all administrative ECRA requirements for the site. The ACO specified that a Sampling Plan be prepared and submitted to NJDEP to complete the delineation of on-site and off-site contamination resulting from discharges of hazardous wastes or substances on or from the site. It further stipulated that a Negative Declaration or a Cleanup Plan be submitted to NJDEP.

ECRA Sampling Plan Approval – Case #8550, NJDEP (July 1989)

The NJDEP approved of Safety-Kleen's May 15, 1987 Sampling Plan in a letter, dated July 28, 1989 (Attachment 6). The NJDEP acknowledged that areas subject to RCRA closure did not fall under the ECRA case. The letter mentioned a "mineral spirit spill event" that allegedly occurred at the site and suggested that the spill area comprised a new area of concern (AOC) at the site. NJDEP requested specific information regarding the spill and inferred that Safety-Kleen should plan on incorporating this area into the Sampling Plan. It also provided comments regarding the proposed scopes of work for the 8,000-gallon mineral spirits UST, septic tank sampling, septic system disposal field sampling, and list of required actions regarding floor drains and associated plumbing, contaminated soil in a dumpster, and construction details for the septic system. The letter also provided their requirements for the submittal of a Cleanup Plan detailing remedial actions to address on-site and off-site contamination, as warranted, to comply with applicable regulations.

RCRA Closure Plan Comments, NJDEP (January 1990)

In a January 10, 1990 letter (Attachment 7), the NJDEP informed Safety-Kleen that their October 14, 1987 RCRA closure approval was null and void because the closure plan was considered outdated and did not meet the then-current standards for closure of RCRA hazardous waste units. The RCRA closure plan was not implemented because of delays in receiving approval for the construction of new ASTs on the site from the New Jersey Department of Community Affairs. The January 1990 letter further stated that the following revisions must be made to the RCRA closure plan be revised to include:

- An updated soil sampling plan to comply with then-current guidelines and parameter lists; and
- Method(s) to verify completeness of tank, wet dumpster and return/fill dock decontamination.

Revised RCRA Partial Closure Plan, Groundwater Technology, Inc. (September 1990)

Groundwater Technology, Inc. (GTI) prepared a revised Partial Closure Plan (Attachment 8) for the Resource Conservation and Recovery Act (RCRA) closure of the following units at the site consistent with applicable NJDEP regulations and guidance:

- 12,000- gallon used mineral spirits steel underground storage tank (UST);
- 1,000-gallon mineral spirits sludge steel UST; and
- Return/fill station (two wet dumpsters).

Prior to excavation and RCRA closure, GTI proposed that pre-closure soil sampling to characterize soil in association with these units be performed using a split-spoon sampler (as opposed to post-excavation samples) because the water table was expected to be encountered during excavation of the USTs. GTI proposed that the soil samples be analyzed for Target Compound List (TCL) and Target Analyte List (TAL) parameters, except pesticides and herbicides. The plan stated that soil samples for all TCL and TAL parameters would be homogenized prior to filling laboratory bottles. In addition, the plan specified that rinse water verification samples be collected after the RCRA units (including the USTs and the wet dumpsters in the return/fill area) had been decontaminated. A third UST (8,000-gallon fresh mineral spirits steel UST) was also mentioned but not addressed in the September 1990 revised Partial Closure Plan because it was not regulated under RCRA, but rather the NJDEP Bureau of Underground Storage Tanks (BUST). All three USTs were proposed for removal and replacement with aboveground storage tanks.

Final RCRA Closure Plan, Groundwater Technology, Inc. (November 1990)

GTI prepared the Final Closure Plan (Attachment 9) for the BUST-regulated 8,000-gallon fresh mineral spirits steel UST. Because Safety-Kleen had established a groundwater monitoring program pursuant to their NJPDES permit (Permit #NJ0063240), GTI stated that the closure plan was exempt from site assessment (i.e., post-excavation soil sampling) per applicable BUST guidelines (NJDEP's Interim Closure Requirements for USTs, September 1990). The closure plan indicated that a report would be prepared to document the UST closure, including photo-documentation, soil disposal paperwork, scaled site plan, and cross-section of the UST area.

Final RCRA Part B Permit – EPA ID# NJD000768101/Permit #0333C1HP01 (December 1990)

The NJDEP issued the Final RCRA Part B Permit (Attachment 10) to Safety-Kleen for the operation of a hazardous waste storage and transfer facility. The RCRA Part B Permit authorized Safety-Kleen to accept off-site hazardous wastes for storage, prior to waste transport to an authorized recycling facility. The RCRA Part B Permit further specified that the facility could:

- Store waste oil in three 15,000-gallon USTs;
- Store spent Safety-Kleen 105 Solvent (mineral spirits) in one 15,000-gallon UST;
- Utilize two wet dumpsters to transfer spent Safety-Kleen 105 solvent to the appropriate UST; and
- Store smaller quantities of paint waste, dry cleaning waste, immersion cleaner (mixture of halogenated and non-halogenated solvents), and tank sediment in containers in two areas (warehouse and metal shelter) with a total capacity of 8,576 gallons.

The RCRA Part B Permit specified construction/installation, inspection, and maintenance provisions for the various RCRA units and required that Safety-Kleen submit a soil sampling and analysis plan to NJDEP for the waste oil USTs; it did not authorize hazardous waste disposal on the site.

Letter to Safety-Kleen re: Partial RCRA Closure Plan Approval, NJDEP (December 1990)

In a December 21, 1990 letter (Attachment 11), the NJDEP issued approval of GTI's Partial Closure Plan for the hazardous waste USTs and the wet dumpsters in the return/fill area. The NJDEP letter also provided additional conditions for soil and rinse water sampling and removal of the USTs.

Letter to NJDEP re: RCRA Closure Plan Deficiencies, Safety-Kleen (February 1991)

Safety-Kleen prepared this letter to address two deficiencies identified by the NJDEP in their Closure Plan Approval Letter, dated January 31, 1991 (Attachment 12):

- Site map does not show piping, pumps, location of existing monitoring wells, and is not drawn to scale. Please resubmit. Indicate groundwater direction, if known.
- Please provide names of NJDEP RCRA and NJPDES case managers, as well as your NJPDES permit and analytes.

The letter provided NJDEP with the revised site map and requested site details; the RCRA and NJPDES case manager contact information; and a listing of the NJPDES permit analytes. Safety-Kleen also mentioned that they had requested exemption from BUST site assessment requirements for the 8,000-gallon fresh mineral spirits UST, because they would be satisfied during RCRA closure activities, as outlined in the approved Partial Closure Plan.

Implementation Summary Report (ISR) - Partial RCRA Closure, GTI (April 1991)

GTI prepared the ISR (Attachment 13) to provide a summary of the RCRA closure activities and results of post-closure soil sampling performed in conjunction with the closure of three RCRA waste management units and one non-permitted tank on the subject site, including:

- 12,000- gallon used mineral spirits steel UST;
- 550-gallon mineral spirits sludge steel UST (originally thought to have a 1,000-gallon capacity);
- 8,000-gallon fresh mineral spirits steel UST (non-permitted tank); and
- Return/fill station (two wet dumpsters).

A pre-closure assessment was performed to characterize surface and subsurface soil quality in the vicinity of these RCRA units; soil samples were analyzed for TCL and TAL parameters. Split-spoon sampling was performed in the UST area to a depth of 12 feet (approximate depth to the base of 12,000-gallon used mineral spirits UST); samples for laboratory analysis were obtained from the depth interval spanning 11.5 feet to 12.0 feet below ground surface (bgs). Soil samples associated with the wet dumpsters were collected and analyzed from the 6-inch to 12-inch bgs depth interval for VOCs and the 0-inch to 6-inch bgs for all other parameters. Samples for VOCs were transferred directly into laboratory bottles; samples for all other parameters were homogenized in a steel bowl prior to placing the sample into laboratory bottles. Rinse water verification sample results indicated that the various waste management units (USTs and wet dumpsters) had been cleaned to specifications.

During the pre-closure assessment, a total of six VOCs (not attributed to laboratory contamination) were detected at relatively low concentrations (estimated below laboratory reporting limits) in between one and three soil samples, including: 1,2-dichloroethene (1,2-DCE), tetrachloroethene (PCE), toluene, chlorobenzene, ethylbenzene, and xylenes. In addition, a total of seven SVOCs (not attributed to laboratory contamination) were observed in between one and three soil samples,

including: 1,2-dichlorobenzene (1,2-DCB), 1,3-DCB, naphthalene, 2-methylnaphthalene, pyrene, butyl benzyl phthalate, chrysene, and di-n-octyl phthalate. TAL metals concentrations were below applicable NJDEP cleanup criteria and PCBs were not detected above laboratory reporting limits.

Upon removal, all three USTs were inspected for evidence of corrosion or other indications of breached integrity, including cracks, holes, and pitting. Small areas of corrosion were noted, but perforations of the tank shell were not observed. Immediate corrective action was implemented to mitigate the discharge of a limited amount of separate phase hydrocarbon (SPH) observed floating on the water table within the excavation; SPH and groundwater were pumped directly from the excavation to tanker trailers for subsequent disposal. Post-excavation samples were then collected and analyzed for TCL and TAL parameters; samples for VOCs were placed directly into laboratory bottles and samples for all other parameters were homogenized in a steel bowl prior to being placed in laboratory bottles. Only one VOC (xylenes) was detected in the post-excavation soil samples at a concentration of 1.3 milligrams per kilogram (mg/Kg), which only slightly exceeded the then-current NJDEP action level of 1 mg/Kg for total VOCs in soil. The SVOCs 1,2-DCB, 1,4-DCB, naphthalene, 2-methylnaphthalene, phenanthrene, and di-n-butyl phthalate were detected at concentrations below the then-current NJDEP action level of 20 mg/Kg for total SVOCs in soil. TAL metals concentrations were below applicable NJDEP cleanup criteria and PCBs were not detected.

The UST excavation was backfilled to grade using two-inch-diameter stone, and two vertical, soil vapor extraction (SVE) points were installed within the excavation to facilitate soil remediation, if warranted.

Report of Findings – Pre-Construction Soil Sampling and Analysis, GTI (May 1991)

GTI prepared the Report of Findings of Soil Sampling and Analysis Implementation (Attachment 14) to document soil investigation, performed consistent with GTI's January 1991 Soil Sampling and Analysis Plan, to characterize pre-construction soil quality in the area of the three planned 15,000-gallon aboveground waste oil storage tanks and secondary containment. A total of three soil borings were drilled and sampled and analyzed for TCL and TAL parameters: samples for VOCs were collected from the 6-inch to 12-inch bgs depth interval and placed directly into laboratory bottles; all other parameters were collected from the 0-inch to 6-inch depth interval and homogenized prior to filing sample bottles. Other than methylene chloride and acetone (which were both attributed to laboratory contamination), no target VOCs were detected; the only SVOC detected was benzoic acid at estimated concentrations below laboratory reporting limits; TAL metals were below applicable NJDEP cleanup criteria and PCBs were not detected.

Letter to NJDEP – BUST Closure Approval, Safety-Kleen (July 1991)

In a July 19, 1991 letter to NJDEP (Attachment 15), Safety-Kleen provided NJDEP BUST with a report of UST closure activities. Due to the duplicative nature of the project (both RCRA and BUST sections overseeing the UST closure activities), Safety-Kleen requested that NJDEP BUST issue a no further action (NFA) letter for the 8,000-gallon fresh mineral spirits UST.

RCRA Closure Approval – RCRA Implementation Summary Report (ISR), NJDEP (July/Dec 1991)

NJDEP issued a July 22, 1991 letter (Attachment 16) in response to GTI's Implementation Summary Report (ISR) documenting the closure of two RCRA and one non-RCRA USTs and two RCRA wet dumpsters. The letter stated that soil sample analytical results were still under review by the NJDEP and they would determine whether additional sampling/analysis or remediation were required. The

letter also revealed that the certification requirements were not satisfied and requested that Safety-Kleen provide an original, sealed Professional Engineer (PE) certification and the two-part owner/operator certification.

In a December 16, 1991 letter (Attachment 16), NJDEP acknowledged receipt of the PE certification and the Safety-Kleen branch manager and vice president certifications, and stated that the hazardous waste USTs and wet dumpsters in the return/fill area had been closed in accordance with the NJDEP Partial Closure Plan approval. The NJDEP again provided a caveat to their closure approval, stating that soil sample analytical results were still under review and NJDEP would determine whether additional sampling and analysis and/or remediation were warranted and notify Safety-Kleen.

Letter to Safety-Kleen – Well Search Results, GTI (August 1991)

GTI prepared the referenced letter (Attachment 17) to report the results of a well search performed to evaluate local groundwater usage and identify/plot potable wells within one-half mile of the site. A total of 17 wells were identified during the well search within a one-half mile radius of the site; these wells were each summarized on table enclosed with the letter. In addition, based on information provided by the Southampton Township tax assessor's office, a scaled map was prepared and the locations of seven of the 17 wells were plotted in reference to the site; three of the wells were reportedly used for domestic purposes; three for irrigation/commercial purposes, and one well record did not specify a use.

Based on communication with Southampton Township officials and two local water purveyors, the area within a one-half mile radius of the site is serviced by the Mount Holly Water Company (MHWC); it was confirmed that MHWC does not provide potable water to any of the well owners identified with one-half mile of the site. In summary, a total of 17 private wells (13 reportedly used for domestic purposes) were identified, but only seven of the 17 wells could be accurately plotted. Based on groundwater elevation data for the site, GTI concluded that only one of the seven wells (owned by the US Post Office and situated approximately 900 feet to the east/northeast of the site) is located downgradient of the site; the use of the US Post Office well was not specified.

Letter to Safety-Kleen – Soil Contamination, NJDEP (May 1992)

In a May 11, 1992 letter to Safety-Kleen (Attachment 18), the NJDEP indicated that it had reviewed soil analytical results for samples collected from soil surrounding the USTs that were submitted by Safety-Kleen on April 25, 1991 and May 7, 1991. Based on their review, the NJDEP expressed its concern regarding the soil in the UST area and indicated that it was transferring the case to a group within NJDEP other than the group that was managing the case in May 1992. The letter concluded by stating that, if further action were required, Safety-Kleen would be contacted by the other group assigned to oversee the case.

Letter to Safety-Kleen – Termination of NJPDES Permit, NJDEP (April 1993)

In an April 7, 1993 letter to Safety-Kleen (Attachment 19), the NJDEP indicated that it had provided public notice of its intent to terminate the permit and formally terminated Safety-Kleen NJPDES Permit #NJ0063240. The NJDEP's decision to terminate the site's NJPDES permit was based on the following factors: USTs for which permit was issued were removed; closure certification has been approved by NJDEP; and ground water quality has not been impaired by the former USTs. The letter further concluded that closure requirements had been satisfied.

BUST Remedial Investigation Report (RIR) Addendum, GTI (April 1994)

In response to a November 12, 1993 letter from NJDEP to Safety-Kleen, GTI prepared an RIR Addendum (Attachment 20) for the closure of the 8,000-gallon fresh mineral spirits UST and the two wet dumpsters. In response to NJDEP requirements, as outlined in their February 25, 1994 correspondence to Safety-Kleen, Safety-Kleen performed additional soil quality assessment (i.e., drilling and sampling of five soil borings using direct-push drilling technology). Depth to water was approximately 3 feet bgs; all soil samples were collected from the six-inch depth interval (2.5-feet to 3.0-feet bgs) immediately above the water table; samples for VOCs were placed directly into laboratory bottles and samples for lead were homogenized in a steel bowl prior to being placed in laboratory containers. None of the five subsurface soil samples contained VOCs or lead at concentrations that exceeded the then-current NJDEP soil cleanup criteria.

Letter to Safety-Kleen – Closure Activities, NJDEP (June 1994)

In a June 14, 1994 letter to Safety-Kleen (Attachment 21), the NJDEP provided input regarding reports, dated July 19, 1991 and April 25, 1994, which documented that remedial investigation (RI) and remedial action (RA) activities were performed in response to a discharge from the site's UST system. The NJDEP found that Safety-Kleen had complied with existing RI and RA requirements for UST systems and recommended no further action for the site UST system. The letter specifically omitted environmental conditions of other areas of the site from its approval, but specified that Safety-Kleen retain a NJDEP-licensed well driller to properly seal/abandon all site monitoring wells.

Well Abandonment Reports, John Vogt, Well Driller (September 1994)

As indicated above, Safety-Kleen was tasked with retaining a NJDEP-licensed well driller to properly abandon the four site monitoring wells. Based on the NJDEP Bureau of Water Allocation (BWA) Well Abandonment Reports (Attachment 22) completed by John Vogt (License #J-1544), all four site monitoring wells were abandoned on September 1, 1994 by grouting the wells in place (i.e., the well casing was not removed).

RCRA Used Oil AST - Polychlorinated Biphenyls (PCBs) (March - December 1997)

In March 1997, Safety-Kleen collected samples of the contents from three ASTs and analyzed the sludge samples for PCBs; only one of the samples, collected from the used mineral spirits AST, contained PCBs (Aroclor-1248) at a concentration of 3.0 mg/Kg. Based on these results, Safety-Kleen retained a contractor to remove the 5,285 gallons of PCB-containing waste oil/sludge and transport/dispose of this material using licensed contractors in accordance with applicable regulations. In addition to removing and disposing of the used oil/sludge, the AST was decontaminated and rinse water samples were collected to verify the completeness of the decontamination procedure. Prior to the above-mentioned work, laboratory analysis performed by Pedneault Associates, Inc. of Bohemia, New York, concluded that the used oil AST sludge contained about 754 mg/Kg of Aroclor-1248; therefore, this material warranted handling and disposed in accordance with applicable Toxic Substances Control Act (TSCA) requirements. PCBs were not detected at the laboratory reporting limit (0.2 mg/Kg) in rinse water verification samples collected after the PCB-containing sludge was removed from the AST. Information/data compiled in relation to PCBs in used oil AST sludge are contained in Attachment 23.

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?

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

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

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

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

Rationale and Reference(s):

The site is underlain by the unconsolidated Miocene-aged Kirkwood Formation, which (depending on geographic location) is classified by NJDEP as Class IIA (potable water using conventional treatment). The GWQS are therefore the applicable remediation standards for groundwater at the site.

The NJDEP issued to Safety-Kleen on February 9, 1987, NJPDES Discharge to Groundwater Permit (Permit #NJ0063240). A total of four monitoring wells (MW-1 through MW-4) were installed on site and used for ground water sampling and analysis pursuant to the NJPDES permit. As shown on the graphs in Attachment 24, groundwater elevations ranged typically between 54 feet above mean sea level (msl) and 58 feet above msl, and during the majority of groundwater sampling events, the relative groundwater elevations changes over time were consistent in both direction (up/down) and magnitude within the four on-site monitoring wells.

Based on groundwater elevation data collected regularly during the NJPDES permit monitoring between 1987 and 1992, site groundwater is inferred to flow generally to the north/northeast toward a tributary of Beaver Dam Creek (located approximately 1,000 feet downgradient of the site). Figure 2 contains a groundwater elevation contour map for August 5, 1992 (which is the most recent date for which reliable water level and surveying data are available), and depicts the locations of all former/closed monitoring wells (note: no monitoring wells currently exist on the site). The inferred groundwater flow direction (north/northeast) depicted on Figure 2 is generally consistent with previous groundwater sampling events (i.e., prior to August 1992). Some deviations were noted during some sampling events, where groundwater was inferred to flow to

the northwest and southwest; these variations are attributed to potential pumping effects by nearby supply wells or differential infiltration after precipitation events.

Assuming a primary groundwater flow direction to the north/northeast (Figure 2), the well search (Attachment 17) identified only one well between the site and the nearest discharge point (an unnamed tributary to Beaver Dam Creek); the well was owned by the US Post Office (well use unknown).

Groundwater was sampled and analyzed on an annual basis for VOCs in accordance with NJPDES Permit #NJ0063240 and on several other occasions that were not required for permit compliance. Based on these data, with the exception of methylene chloride sporadically in MW-1, no VOCs were observed in either MW-1 or MW-2 between 1989 and 1992 (the period for which groundwater data was available). In addition, benzene, toluene and xylenes (BTX) compounds were observed in MW-1 at low concentrations during the February 1991 sampling event, but were not detected during any other sampling event either before or after the February 1991 event. Several compounds were observed in MW-3 at elevated concentrations above GWQS, including: tetrachloroethene (PCE), 1,1,1-trichloroethane (1,1,1-TCA), and 1,1-dichloroethane (1,1,-DCA). Based on review of concentration over time graphs for these constituents in groundwater in MW-3 (Attachment 25), the following conclusions were reached:

- 1,1-DCA concentrations decreased during the period graphed and 1,1-DCA was not detected in MW-3 groundwater for the last six consecutive sampling rounds from February 1991 through August 1992;

- 1,1,1-TCA concentrations decreased during the period graphed and 1,1,1-TCA was not detected in MW-3 groundwater for the last four consecutive sampling rounds from November 1991 through August 1992; and

- PCE concentrations decreased during the period graphed and PCE was not detected in MW-3 groundwater for the last four consecutive sampling rounds from November 1991 through August 1992.

Overall, the concentration versus time graphs for MW-3 support a conclusion that concentrations of 1,1-DCA, 1,1,1-TCA and PCE decreased to non-detect during the time period from February 1989 through August 1992.

In addition, PCE was also observed at elevated concentrations above GWQS in MW-4 (based on the limited groundwater quality data available for MW-4 between August 1991 and August 1992). Groundwater in MW-4 contained only PCE during the reporting period at relatively low concentrations about equal to the federal Maximum Contaminant Level (MCL) for PCE (5 µg/L) but above the NJDEP GWQS (1 µg/L); during two sampling events (November 1991 and

February 1992), PCE was not detected in MW-4 groundwater. A stable to slightly decreasing trend in PCE concentrations is evident in MW-4 over time (Attachment 25).

As documented in Attachment 19, the NJDEP terminated NJPDES Permit #NJ0063240 in 1993 because the USTs for which permit was issued were removed; RCRA closure certification had been approved by NJDEP; and ground water quality had not been impaired by the former USTs. The letter further concluded that closure requirements had been satisfied. The NJDEP approved of NFA for the site UST system in a June 14, 1994 letter to Safety-Kleen (Attachment 21), which also specified that Safety-Kleen retain a NJDEP-licensed well driller to properly seal/abandon all site monitoring wells, which were no longer needed per the NDJEP, because the USTs had not impaired site groundwater quality.

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)?

    _____ 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.

Footnotes:

[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.

   _____ 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.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration3 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 concentration3 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 concentrations3 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 the amount of discharging contaminants is increasing.

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

Footnotes:

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

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.

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

Footnotes: [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.

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?"

    ____ 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.

8. Check the appropriate RCRIS 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 the Safety-Kleen Service Center facility, EPA ID # NJD000768101, located at 123 Red Lion Road, Vincentown, New Jersey. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted 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.

CURRENT MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL (CA 750)

Completed by: Original signed by: **Date: September 11, 2012**

Jean Robert Jean, Project Manager
Base Program Management Section
Hazardous Waste Programs Branch
USEPA Region 2

Reviewed by: Original signed by: **Date: September 14, 2012**

Acting Chief, Base Program
Management Section
Hazardous Waste Programs Branch
USEPA Region 2

Approved by: Original signed by: **Date: September 14, 2012**

Adolph Everett, Chief
Hazardous Waste Programs Branch
USEPA Region 2

References:
Figure 1 – Aerial Site Map
Figure 2 – Groundwater Elevation Contour Map (August 5, 1992)
Attachment 1 – RCRA Administrative Order, NJDEP (May 1983)
Attachment 2 – Preliminary Assessment for RCRA Corrective Action, USEPA (June 1986)
Attachment 3 – RCRA Partial Closure Plan and Tank Approval, NJDEP (October 1987)
Attachment 4 – Environmental Site Assessment Report, Dunn (December 1988)
Attachment 5 – ECRA Administrative Consent Order – Case #85550, NJDEP (November 1987)
Attachment 6 – ECRA Sampling Plan Approval – Case #855550, NJDEP (July 1989)
Attachment 7 – RCRA Closure Plan Documents, NJDEP (January 1990)
Attachment 8 – Revised RCRA Partial Closure Plan, GTI (September 1990)
Attachment 9 – Final RCRA Closure Plan, GTI (November 1990)
Attachment 10 – Final RCRA Part B Permit – EPA ID #000768101/Permit #0333C1HP01 (December 1990)
Attachment 11 – Letter to SK re: RCRA Partial Closure Plan Approval, NJDEP (December 1990)
Attachment 12 – Letter to NJDEP re: RCRA Closure Plan Deficiencies, SK (February 1991)
Attachment 13 – Implementation Summary Report – Partial RCRA Closure, GTI (April 1991)
Attachment 14 – Report of Findings – Pre-Construction Soil Sampling and Analysis, GTI (May 1991)
Attachment 15 – Letter to NJDEP re: BUST Closure Approval, SK (July 1991)
Attachment 16 – RCRA Closure Approval – Implementation Summary Report, NJDEP (July/December 1991)
Attachment 17 – Letter to SK re: Well Search Results, GTI (August 1991)
Attachment 18 – Letter to SK re: Soil Contamination, NJDEP (May 1992)
Attachment 19 – Letter to SK re: Termination of NJPDES Permit, NJDEP (April 1993)
Attachment 20 – BUST Remedial Investigation Report Addendum, GTI (April 1994)
Attachment 21 – Letter to SK re: RCRA Closure Activities, NJDEP (June 1994)
Attachment 22 – Well Abandonment Reports, John Vogt – Well Driller (September 1994)
Attachment 23 – RCRA Used Oil AST, Polychlorinated Biphenyls (PCBs), SK (March – December 1997)
Attachment 24 – Graphs of Groundwater Elevations over Time, Golder (July 2012)
Attachment 25 – Graphs of Groundwater Constituent Concentrations Over Time, Golder (July 2012)
Attachment 26 – Final RCRA– EPA ID #NJD000768101/Permit #HWP050001 (December 2008)

Location where references may be found:

Reference materials are available at the USEPA Region 2, RCRA Record Center, located at 290 Broadway, 15th Floor, New York, New York.

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