**DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION**
Interim Final 2/5/99
**RCRA Corrective Action**
**Environmental Indicator (EI) RCRIS code (CA750)**

**Migration of Contaminated Groundwater Under Control**

Facility Name: **Safety-Kleen Systems, Inc.**
Facility Address: **77 Towpath Road (77 Canal Road), Fairless Hills, PA 19030**
Facility EPA ID #: **PAD987266715**

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

## BACKGROUND

### Definition of Environmental Indicators (for the RCRA Corrective Action)

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

### Definition of "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).

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, thefacility?

____ 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.

**Rationale and Reference(s)**:

Safety-Kleen Systems, Inc. (Safety-Kleen or facility) owns and operates a treatment, storage, and disposal (TSD) facility (USEPA ID No. PAD987266715) located in Fairless Hills, Falls Township, Bucks County, Pennsylvania. According to the Bucks County Assessors Records the property is located at 77 Canal Road, Fairless Hills, Pennsylvania and is 2.379 acres.

The facility consists of a 10,000-square foot warehouse building which includes office space,a return/fill area used for processing waste mineral spirits, and a container storage area. Additionally, there are six ASTs located in an exterior tank farm (two covered AST containment areas). A paved parking lot is also present. A six-foot high chain link fence surrounds the active area of the facility. Access to the active areas is through gates which remain locked, except when trucks or other business-related vehicles are entering or exiting the facility.

On April 27, 1993, Safety-Kleen notified PADEP of a waste antifreeze leak from the AST piping into secondary containment. The waste was managed as USEPA hazardous waste codes D008 (lead) and D039 (PCE). The antifreeze AST was observed to be leaking on April 23, 1993; approximately 500 to 1,000 gallons of waste was estimated to have been released. Safety-Kleen's Spill/Release Inventory Spreadsheet indicates the quantity was 2,500 gallons (revision January 4, 2012). The waste antifreeze was removed from the AST and placed into a wastewater AST. Safety-Kleen decontaminated the AST and analyzed the residual liquid for PCE. The secondary containment was pressure washed and the rinsate analyzed for lead and PCE. On May 5, 1993, Safety-Kleen sent a full report of the spill incident to PADEP. Following removal of the waste antifreeze from the AST, the AST and piping was pressurized for a pressure test, certified by a Professional Engineer, and placed back into service on April 30, 1993. After cleaning the wastewater AST with 500 gallons of water, the AST was analyzed and found to be clean (<5 ppb PCE). No waste antifreeze was released to the soil or groundwater.

Ten contained spills involving ten gallons or more were noted in the October 28, 1994 NPDES Notice of Intent (NOI). Eighteen (18) other contained releases that were greater than or equal to ten gallons that occurred at the facility subsequent to July 1994 were identified on the Safety-Kleen Spill/Release Inventory Spreadsheet (Rev. January 4, 2012). These spills occurred during routine operations in the Solid Waste Management Units and other general facility locations. All of these small quantity spills and releases were immediately cleaned up with vacuum trucks and/or absorbents.

On September 8, 2011, a stationary tanker truck that is used to store ethylene glycol on-site tipped over and released a portion of its contents (3,029 gallons) impacting the drainage swale of the adjacent business (ISC) according to a report by Shaw Environmental & Infrastructure, Inc. (Shaw), dated December 8, 2011. Approximately 729 gallons of waste ethylene glycol was recovered. The area of impacted soil was approximately 75 feet in length and ranged from 3 feet to 12 feet in width. The excavation was advanced until approximately six inches deep, when the soil was observed to be dry and

[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).

without odor. The sediment in the storm drain traps and drain pipes were cleaned with absorbents. Confirmation soil samples were collected from 0 to six inches deep along the center of the excavation in the drainage swale; additional excavation was required. The initial concentrations of ethylene glycol in the upper six inches of soil ranged from below laboratory detection limits up to 80,900 milligrams per kilogram (mg/kg), with the highest concentrations near the center of the affected area. The subsequent sampling result for the 6 to 12-inch deep interval within the excavation was below detection levels for ethylene glycol. This sample was collected at the location where the maximum concentration for the shallow interval had been previously observed. Approximately 22-tons of soil were removed and disposed at an offsite landfill. Groundwater was not encountered during the remedial activities and is not reasonably suspected to have been impacted from this release.

There are no other records of releases at the facility nor any known hydrogeological investigations conducted at the facility that allow EPA to know whether or not groundwater has been impacted from releases subject to RCRA Corrective Action. However, all available relevant/significant information has been considered in this EI determination and groundwater is not reasonably suspected to be contaminated from releases subject to RCRA Corrective Action.

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.

**Rationale and Reference(s):**

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.

**Rationale and Reference(s):**

[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.

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 the amount of discharging contaminants is increasing.

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

**Rationale and Reference(s):**

[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.

**Rationale and Reference(s):**

[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.

**Rationale and Reference(s):**

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 Systems, Inc.** facility, EPA ID # **PAD987266715**, located at **77 Towpath Road (77 Canal Road), Fairless Hills, PA 19030**. 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 reevaluated 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.

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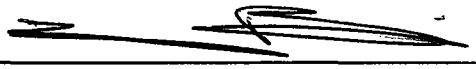
| Completed by | (signature) |  | Date 8/14/12 |
| | (print) | Kevin Bilash | |
| | (title) | RPM | |
| Supervisor | (signature) | Paul Gotthold | Date 8-14-12 |
| | (print) | PAUL GOTTHOLD | |
| | (title) | ASSOCIATE DIRECTOR, LCD | |
| | (EPA Region or State) | EPA REG 3 | |

Locations where References may be found:

USEPA Region III
Land and Chemicals Division
1650 Arch Street
Philadelphia, PA 19103

PADEP
South East Regional Office
2 E Main Street
Norristown, PA 19401

Contact telephone and e-mail numbers

(name) _____
(phone#) _____
(e-mail) _____