For Routing To Other Than The Addressee	
To:	Location:
To:	Location:
To:	Location:
From:	Date:

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

To: Diane Trommer, Supervisor, Tampa
Groundwater Cleanup/Remediation
Waste Management

Thru: Gary Santti, Professional Engineer II, Tampa
Hazardous Waste Regulation

From: Lynne R. Milanian, District Permitting Engineer, Tampa
Hazardous Waste Regulation Lynne 10/16

Date: October 16, 1992

Re: Safety-Kleen Corp., FLD 980 847 271
North Building Possible Contamination Assessment
Tampa Service Center, 24th Avenue and 54th Street

The RCRA permitting staff is requesting your assistance in determining what type of investigative work Safety-Kleen should perform to demonstrate that a release from their new facility has not occurred. During the certification of construction inspection, we observed that a floor drain, hand sink and open grated manhole existed in the hazardous waste storage area in the North building and that each of these units discharged to the on-site septic system.

Safety-Kleen had been operating the facility since 1986 and this was discovered in 1990. As such, any spills or other such type incidents would allow a release directly from the North storage facility to the septic system.

I have managed to obtain some EPA guidance concerning this issue, however, subsequent reviews were ceased as this was deemed a non HSWA unit. The RCRA permitting staff would greatly appreciate your guidance in this matter.

In the attached file folder (6-l) you will find the following documents:

1. Confirmatory sampling workplan dated Jan 1992.
2. Notice of technical inadequacy from EPA dated Jan 1992.
3. Response from ERM to EPA dated Feb 1992 having Attachment A and a revised confirmatory sampling workplan (Feb 1992).

4. Response form ERM to FDER dated March 16, 1992 having a north building sampling plan dated March 1992.

During a meeting conducted October 16, 1990, after the warning notice was issued, the RCRA permitting staff informed Safety-Kleen that at a minimum they would have to prepare a document detailing plans to sample the groundwater in the surficial aquifer and possibly the soils that were in direct proximity of the discharge pipes. Also it would be necessary to first determine if each pipe had its respective discharge or if the pipes commingled, entered a septic container and then were released to the environment via a drainfield septic arrangement. Sampling methodology, parameters to be analyzed and quality assurance and control would have to be presented for Department review prior to conducting actual field work.

lrm

dtrommem.doc

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date Mar 20, 1992

Time 9:30, 10:30, 2:45

Subject Workplan North Bldg Issue

Permit No. BFI

County Hillsborough

Mr. Hugh Hazen & John Hodges

Telephone No. ____

Representing EPA / ERM

[ ] Phoned Me [✓] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting Bill C.

Summary of Conversation/Meeting why has ERM separated SWMU #1 workplan from FDER N Bldg workplan? EPA did not require this - John said thought it best to provide EPA only the HSWA SWMU stuff and give FDER only our N Bldg issue stuff. Perhaps looking for a better review. I told John & Hugh that I want to con't the review initiated by the EPA hydrogeolist. John said would discuss issue w/ Deborah Green of Safety-K. and get back w/me. Hugh thinks this issue (i.e. N bldg) probably should never have been incorporated into the WORKPLAN. oh well live & learn - if don't here from either John or Hugh by Wed Mar 26 will call for their decisions. If gets dropped from EPA workplan will have to be reviewed by Merlin's group

(continue on another sheet, if necessary)

Signature L. Milanian

Title Perm Eng / Compl. Eng

TPA-01
09/78
/jdj

Florida Department of Environmental Regulation
Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347
Lawton Chiles, Governor 813-623-5561 Carol M. Browner, Secretary

September 5, 1991

Ms. Ellen Jurczak, P.E.
Environmental Permits Manager
Safety-Kleen Corp.
777 Big Timber Road
Elgin, ILL 60123

Re: Possible Contamination Assessment
Tampa Service Center, FLD 980 847 271
24th Avenue and 54th Street

Dear Ms. Jurczak:

As you will recall, during a meeting held in our offices on October 16, 1990, numerous discussions occurred referring to possible releasements of hazardous waste to the environment due to the design of the service center.

Briefly, we examined the grated manhole and floor drain found in the north building (which conveyed contents to the on-site septic system) and the two open containment trenches located in the south building (which discharges to the on-site stormwater retention pond).

In view of this scenario, the Department proposes the following solution which we believe may establish assurances that contamination has not occurred.

North Building

Safety-Kleen must prepare a document detailing plans to sample the groundwater in the surficial aquifer and possibly the soils that were in direct proximity of the two discharge pipes. It will be necessary to first determine if each pipe had its respective discharge or if the two pipes comingled, entered a septic container and then were released to the environment via a drainfield septic arrangement. Sampling methodology, parameters to be analyzed and quality assurance and control must be presented for Department review prior to conducting actual field work.

South Building

7 1991
S HWEST DISTRICT
TAMPA

Milanian
Engineer
Hazardous Waste Section
Division of Waste Management
Florida Department of
Environmental Regulation
4520 Oak Fair Boulevard
Tampa, FL 33610-7347

RE: Safety-Kleen Tampa Service Center, EPA ID # FLD 980 847 271, 24th Avenue and 54th Street

Dear Ms. Milanian:

The following letter serves to confirm your October 8, 1991 conversation with Cynthia Norton of Environmental Resources Management-South, Inc. (ERM) regarding Florida Department of Environmental Regulation's (FDER's) September 5, 1991 letter to Safety-Kleen Corp. (Safety-Kleen) concerning the above-referenced facility. To summarize your conversation, Safety-Kleen will prepare a plan to sample the ground water in the surficial aquifer, and the soils that were in direct proximity to the two discharge pipes in the North Building. However, rather than submitting this plan as a separate document, the plan will be included as part of the Confirmatory Sampling (CS) Work Plan required by the draft Hazardous and Solid Waste Amendments (HSWA) permit for the facility.

Concerning the South Building, Safety-Kleen will exercise Option 2, as referenced in the September 5, 1991 letter. Safety-Kleen will provide a signed and notarized statement confirming that a release to the environment via one of the two open trenches in the South Building has never occurred. This statement will be submitted at the same time as the CS Work Plan is submitted.

13112.19B/TSK10/LM101491.LTR/3

777 BIG TIMBER ROAD ELGIN, ILLINOIS 60123 PHONE 708/697-8460 FAX 708/697-4295

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347

Lawton Chiles, Governor 813-620-6100 Carol M. Browner, Secretary

May 12, 1992

John Hodges, Project Manager
Environmental Resources
Management-South, Inc.
9501 Princess Palm Avenue
Suite 100
Tampa, FL 33619

Re: Safety-Kleen Corp., FLD 980 847 271
North Building possible Contamination Assessment
Tampa Service Center, 24th Avenue and 54th Street

Dear Mr. Hodges:

The Florida Department of Environmental Regulation (FDER) has held numerous conversations with the U.S. Environmental Protection Agency (EPA) concerning the issues raised in your letter of March 13, 1992 which discussed the HSWA Confirmatory Sampling Work Plan.

As discussed in your letter, the FDER is in agreement that a separation of EPA's workplan (for investigation into possible solid waste management units) from the FDER's concerns is warranted.

The FDER is requiring assurances that a releasement from the North Building has not occurred. There appeared to be three possible ways for liquids containing hazardous constituents to have been discharged from the North Building to the on-site septic system. These three possibilities included the floor drain, the grated manhole and the hand wash sink.

As such, all the information that you have provided thus far, addressing the workplan, will be forwarded (for review) to our Tallahassee groundwater staff. Should you have any concerns, do not hesitate to contact me.

Sincerely,

Lynne R. Milanian
Permitting Engineer
Hazardous Waste Section
Division of Waste Management

LRM/ab

cc: Alan Farmer, EPA Region IV
Merlin Russell, FDER/Tallahassee
Deborah Green, Safety-Kleen

safety-kleen

March 13, 1992

D. E. R.

MAR 16 1992

SOUTHWEST DISTRICT
TAMPA

Ms. Lynne R. Milanian
Permitting Engineer
Division of Waste Management
Hazardous Waste Section
Florida Department of
Environmental Regulation
4520 Oak Fair Boulevard
Tampa, FL 33610-7347

RE: Safety-Kleen Corp. Tampa Service Center, 24th Avenue and 54th Street, EPA ID #FLD980847271

Dear Ms. Milanian:

Enclosed herewith is the sampling plan requested in Florida Department of Environmental Regulation's (FDER's) September 5, 1991 letter to Safety-Kleen. This plan was incorporated into the Confirmatory Sampling (CS) Work Plan required by the HSWA portion of the RCRA permit that was submitted to EPA and you on January 6, 1991. However, because the EPA apparently has different requirements for sample collection and analysis, the FDER-requested work element was removed from the CS Work Plan Revision submitted to EPA on February 21, 1992. The separation of the two plans was made to more specifically address each agencies' concerns and avoid further confusion in the confirmatory sampling process.

Our consultant, Mr. John Hodges of Environmental Resources Management-South, Inc. (ERM), accompanied me to the site in January 1992 in an attempt to determine the location of the discharge point(s) of the pipes related to the floor drains in the north building. The location of the exit of the pipe from the building, shown on two sets of engineering plans, is contradictory and a cursory inspection of the area did not show any evidence of the whereabouts of these pipes. Determination of the discharge point(s) may require more extensive investigation than originally thought. Accordingly, the schedule presented in the sampling plan may require modification to allow sufficient time to determine the location of the discharge point(s).

13112.19/01/LM031192.LTR/2

We are prepared to implement the work scope detailed in the sampling plan upon your written approval. Should you have any questions or comments, please feel free to contact John Hodges at 813/622-8727 or me at 919/274-5073.

Sincerely,

John Hodges for

Deborah J. Green, P.G.
Senior Project Manager, Remediation

ksc/mmm

Enclosure

c: John Hodges - ERM
James Kutman, EPA (letter only)
Gary Long - S-K, Elgin
Victor San Agustin - S-K

NORTH BUILDING SAMPLING PLAN
SAFETY-KLEEN CORP. FACILITY
5309 24th AVENUE SOUTH
TAMPA, FLORIDA

MARCH 1992

Prepared for:

Safety-Kleen Corp.
777 Big Timber Road
Elgin, Illinois 60123

Prepared by:

Environmental Resources Management-South, Inc.
9501 Princess Palm Avenue, Suite 100
Tampa, Florida 33619
(813) 622-8727

The ERM Group

NORTH BUILDING SAMPLING PLAN

GEOLOGIC DESCRIPTION

The Safety-Kleen facility is located in Hillsborough County on the southwest corner of the intersection of 24th Avenue and 54th Street (Figure 1). The facility is situated within the 7.5-minute series Tampa Quadrangle Map in west-central Florida. The following briefly summarizes the geology and hydrogeology in the area of the site.

In Hillsborough County, Pliocene to recent-age sands of variable thickness overlie thicker sequences of Tertiary limestones, dolomites, and evaporites that were deposited on an ancient carbonate platform. This sequence of rocks is part of the Florida plateau which thickens and dips to the south and southwest in the Hillsborough County area (Menke and others, 1961). The major hydrogeologic units contained within this sequence of rocks, in descending order, are the surficial aquifer system, the intermediate aquifer system, and the upper Floridan aquifer. These units are described below.

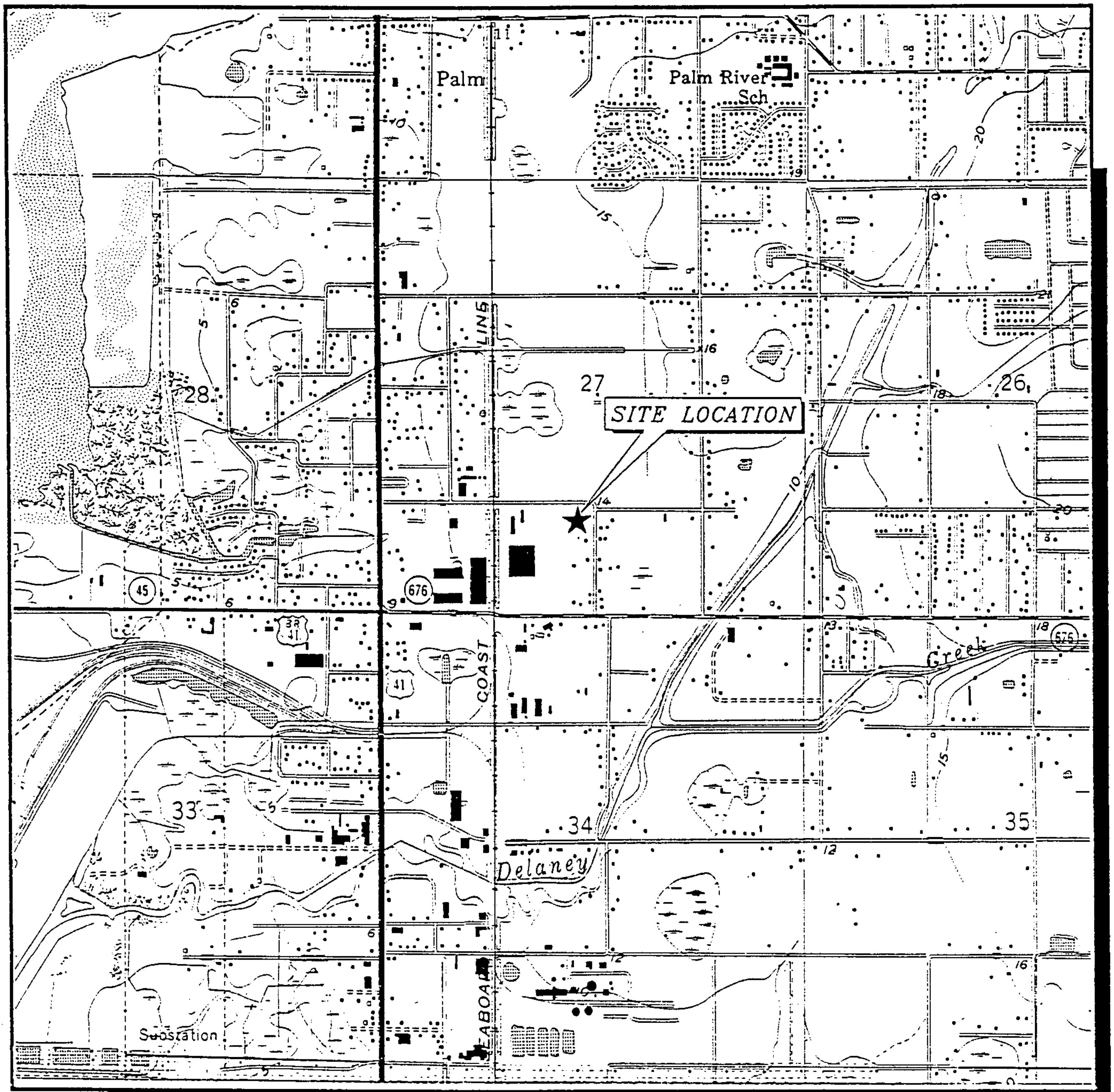
Surficial Aquifer System

The surficial aquifer system is Quaternary Age and consists of predominantly unconsolidated fine sands with interbedded clays, marl, shell, and limestone. This unit varies in thickness from approximately 25 to 50 feet in the county (Southwest Florida Water Management District (SWFWMD), 1988). Beneath the Safety-Kleen facility, the surficial sediments are approximately 8 to 25 feet thick, are continuous beneath the site, and consist of fine silty quartz sand with a layer of clayey silt to clay on top of a weathered limestone.

The surficial aquifer system is generally unconfined in Hillsborough County. The water table is relatively shallow and generally mimics the topography. Water table fluctuations are normally less than five feet during the year (SWFWMD, 1988). Although ground

Figure 1
Site Location Map
Safety-Kleen Corp. Facility
24th Avenue
Tampa, Florida

TAMPA QUADRANGLE
FLORIDA–HILLSBOROUGH CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
1956
PHOTOREVISED 1981



T. 29 S.
T. 30 S.

R. 19 E.

0 2000
FEET

QUADRANGLE LOCATION

The ERM Group

13112.19/31119LOC/010692-2

water flow direction in the surficial aquifer is affected by local topography, the general ground water flow direction is to the south and west (SWFWMD, 1988). Transmissivity varies from 200 ft^2/day to greater than 1,600 ft^2/day and the storage coefficient varies from 0.05 to 0.2 in Hillsborough County (SWFWMD, 1988). Reported horizontal hydraulic conductivity values for the surficial aquifer in west-central Florida vary from 0.0028 ft/day to greater than 1,000 ft/day, whereas reported values for vertical hydraulic conductivity vary from 0.12×10^{-5} ft/day to 13 ft/day (SWFWMD, 1988).

Intermediate Aquifer System

According to SWFWMD (1988), the intermediate aquifer system includes all water-bearing units and confining units between the overlying surficial aquifer system and the underlying Floridan aquifer system. Units comprising the intermediate aquifer system in west-central Florida range in age from Pleistocene to Miocene. Where present in Hillsborough County, the intermediate aquifer system is comprised of sandy clay, clay, and marl with discontinuous interbedded permeable sand, gravel, shell, and limestone (SWFWMD, 1988). The Hawthorn Formation (Miocene Age) is the main water-bearing unit of the intermediate aquifer system. Thickness of the intermediate aquifer system in Hillsborough County varies from zero in the north to 300 feet in the southeast. The northern and eastern extent of the intermediate aquifer system are not clearly defined (SWFWMD, 1988), but the northern boundary apparently occurs near the facility.

Upper Floridan Aquifer

The upper Floridan aquifer is principally middle Miocene to middle Eocene in age and consists primarily of limestone and dolomite. Stratigraphic units represented within this unit include, in descending order, the Tampa, Suwannee, Ocala, and Avon Park Formations. The base of the upper Floridan is marked by the upper limit of an evaporite unit in the Lake City Formation. The aquifer varies in thickness in Hillsborough County from less than 1,000 feet in the north to over 1,200 feet in the south (SWFWMD, 1988).

The upper Floridan is approximately 1,100 feet thick beneath the Safety-Kleen facility (SWFWMD, 1988).

Ground water flow within the upper Floridan in the vicinity of the site varies seasonally and with pumping conditions. Reported transmissivity values in the upper Floridan in Hillsborough County range from approximately 15,000 ft^2/day to 500,000 ft^2/day (SWFWMD, 1988). Reported storage coefficients for the upper Floridan in Hillsborough County range from 1×10^{-5} to 1×10^{-3} (SWFWMD, 1988). In the vicinity of the site, a transmissivity value of 160,000 ft^2/day has been reported (SWFWMD, 1988).

REGIONAL AND LOCAL TOPOGRAPHY

The facility is located at an elevation of 14 to 15 feet above mean sea level (MSL) in an area of very little topographic relief. In general, the regional land surface slopes gently to the west-southwest toward East Bay. At the site, the undisturbed land surface slopes gently toward the west-northwest. Thus, ground water in the surficial sediments beneath the site most likely flows in a westerly direction.

Surface run-off is directed to a ditch in the southern part of the site. The ditch is connected to a retention pond. Together, the retention pond and southern drainage ditch direct stormwater to the east where the drainage system is connected to a roadside drainage ditch.

NORTH BUILDING (SERVICE CENTER)

As requested in FDER's September 5, 1991 letter to Safety-Kleen, ERM will determine the point(s) of discharge from the two pipes exiting from the North Building. Based on where the discharge point(s) are located, ERM will sample the soil and ground water at these locations. For the purposes of this work plan, ERM assumes that the discharge point(s) of these two pipes is the old septic tank field as suspected by Safety-Kleen; if there were two discharge locations, these locations are within 20 feet of one another. Sampling procedures are discussed below.

Installation of Monitoring Well

ERM proposes to install one shallow ground water monitoring well designed to bracket the water table beneath the site in the area where the pipe(s) discharged. The well will be constructed of two-inch-inner-diameter, schedule 40, flush-jointed PVC, and will have ten feet of screened section with 0.010-inch wide slots. All downhole equipment, including the well construction materials and PVC pipe, will be decontaminated, prior to use, in accordance with ERM's FDER-approved quality assurance/quality control (QA/QC) Plan.

The well will be installed using the hollow stem auger (HSA) drilling technique. When the desired drilling depth is reached, the PVC well will be installed within the augers. A 20/30 silica sand filter pack will be emplaced within the annular space between the borehole and the screen to approximately one foot above the top of the screen. A one-foot thick bentonite seal will be placed on top of the filter pack and at least one gallon of deionized water will be poured on top of the bentonite to ensure that it swells and provides a good seal between the surface and the top of the filter pack. A bentonite/cement grout will be placed on top of the bentonite plug up to land surface. The monitoring well will be completed just below grade with a locking, watertight cap and lock, enclosed within a steel manhole cover and set in concrete. Following installation, the well will be developed by overpumping.

Sampling of Monitoring Well

A ground water sample will be collected from the monitoring well by ERM using the procedures referenced in ERM's Generic QA/QC Plan. Sampling procedures are as follows: To the extent practicable, a minimum of three well volumes will be purged from the monitoring well prior to collecting the ground water sample. Conductivity, temperature, and pH of the pumped water will be monitored during well purging which will be considered complete when these three parameters (pH, conductivity, and temperature) have stabilized. Final field measurements of these parameters will be taken at the time of sample collection. These data will be reported in a North Building Sampling Report. A Teflon® bailer will be used to collect the ground water samples. All downhole equipment will be decontaminated prior to use, according to ERM's Generic QA/QC plan.

The ground water sample will be analyzed by EPA Methods 8010, 8020, 8015 (modified for mineral spirits), and 3050/6010 for cadmium, chromium, and lead. These analyses detect the major constituents of Safety-Kleen wastes such that results will confirm whether or not a release has occurred. In accordance with ERM's FDER-approved Generic QA/QC Plan, one QC sample (an equipment blank) will be collected and analyzed by the above-cited EPA Methods.

Soil Sampling

Soil samples will be collected at each of the two locations where the two pipes from the North Building used to discharge (assuming there are two discharge points). Fixed-interval (grab) soil samples will be collected at each location with a hand auger from the top six inches and from 2.5 to 3.0 feet below land surface. Each soil sample will be split in half, and one half will be placed immediately in a laboratory sample container and the other half will be placed in a pint-size jar (half-filled with soil). The laboratory sample will be placed on ice immediately to minimize losses of volatile compounds. Head space concentrations in the pint-size jar will be measured with an onsite portable gas chromatograph (GC). The GC will be calibrated to quantitate benzene, toluene, ethylbenzene, total xylenes (BTEX), and naphthalene concentrations. In addition, a mineral spirits standard will be analyzed on the GC to qualitatively estimate the mineral spirits concentration in each sample on the basis of chromatographic "finger print" comparisons.

The sample exhibiting the highest concentration of chemical constituents as measured by the GC at each location (either the top six-inch sample or the 2.5 to 3.0 foot sample) will be noted and the corresponding laboratory sample container will be shipped to Savannah Laboratories & Environmental Services, Inc. (SL) of Savannah, Georgia. Each sample(s) will be analyzed by SW-846 Methods 8010, 8020, 8015 (modified for mineral spirits), and 3050/6010 for cadmium, chromium, and lead. These analyses detect the major constituents of Safety-Kleen wastes such that results will confirm whether or not a release has occurred.

Hand auger sampling will be conducted in accordance with ERM's Generic Quality Assurance/Quality Control (QA/QC) Plan. Prior to sampling at each location, sampling equipment will be decontaminated following guidelines presented in ERM's Generic QA/QC Plan. Sample containers will be provided by SL. In order to minimize possible loss of volatile compounds, containers for volatile organic samples will be filled immediately after sampling and will be left with as little head space as possible. The laboratory samples will then be placed immediately into a cooler with ice for shipment to the laboratory.

SCHEDULE

Following receipt of written approval of this sampling plan from FDER, 14 days will be required for site mobilization. Location of the point(s) of discharge may require several days. Site work will require three days and laboratory analyses will require approximately 21 days. Laboratory data review and report preparation will be completed in 21 days. The total time required to complete the sampling and prepare the report is expected to take approximately 63 days.

The report of findings will contain all data, including raw data, and an analysis of the data which will be used to evaluate whether or not a release into the environment has occurred. The report will include a signed and notarized statement confirming that a release to the environment through either of the two open trenches in the south building has never occurred.

REFERENCES CITED

Menke, C.G., E.W. Meridith, and W.S. Wetterhall. 1961. Water Resources of Hillsborough County, Florida. Florida Geological Survey RI-25.

SWFWMD. 1988. Ground Water Resource Availability Inventory: Hillsborough County, Florida.

J. Milanian

ERM-South, inc.

9501 Princess Palm Avenue, Suite 100 • Tampa, Florida 33619 • (813) 622-8727 • Fax (813) 621-8504
8181 N. W. 36th Street, Suite 20 • Miami, Florida 33166 • (305) 591-3076
777 Yamato Road, Suite 130 • Boca Raton, Florida 33487 • (407) 241-1752

H029-158820

February 20, 1992

Reply To: Tampa Office

AI, 6-2

Project No. 13112.19, Task 30

Mr. James Kutzman
Associate Director
Office of RCRA and Federal Facilities
EPA Region IV
345 Courtland Street, NE
Atlanta, GA 30365

RE: Response to Notice of Technical Inadequacy and Revision to Confirmatory Sampling Workplan - Safety-Kleen Corp., Tampa, Florida Facility - EPA ID No. FLD 980 847 271

Dear Mr. Kutzman:

Enclosed are responses to EPA's January 28, 1992 comments on the above-referenced workplan (Attachment A) and the revised Confirmatory Sampling (CS) Workplan prepared by Environmental Resources Management-South, Inc. (ERM) on behalf of Safety-Kleen Corp.

The CS Workplan submitted to EPA January 6, 1992 contained plans for sampling that was requested by the Florida Department of Environmental Regulation (FDER), in addition to the confirmatory sampling required by the HSWA portion of the RCRA permit. Please note that the revised CS Workplan only addresses confirmatory sampling of SWMU 11, as required by Condition II.D.1 of the HSWA permit. A separate workplan, containing FDER-requested sampling, will be submitted to FDER under separate cover for review. The separation of the two plans has been made to more specifically address each agencies concerns and avoid further confusion in the confirmatory sampling process.

I trust the enclosed responses and revisions to the workplan are acceptable. Should you have any questions or comments, please contact Ms. Deborah J. Green, P.G., Senior Project Manager of Remediation for Safety-Kleen Corp. at 919/274-5073, or me.

Sincerely,

John G. Hodges, Jr.
Project Manager

D. E. R.

FEB 24 1992

SOUTHWEST DISTRICT
TAMPA

JGH/jh

Enclosure(s)

c: Deborah Green - SK, Greensboro
Gary Long - SK, Elgin
Lynne Milanian - FDER

ATTACHMENT A
RESPONSES TO NOTICE OF TECHNICAL INADEQUACY
SAFETY-KLEEN CORP., TAMPA, FLORIDA FACILITY
CONFIRMATORY SAMPLING WORKPLAN
EPA I.D. NUMBER FLD 980 847 271

EPA COMMENTS 2, 3, 4, 5, 6, 7, 8, 12, and 13
These comments address sampling requested by the Florida Department of Environmental Regulation (FDER) that is not required by the HSWA permit. Because the HSWA permit only requires a Confirmatory Sampling (CS) Workplan addressing SWMU 11, reference to the FDER-required sampling has been removed from the CS Workplan submitted to EPA.

COMMENT 1
Page 3: The sediment in the retention pond (near the inlet), and the ditch leading to the retention pond, must be sampled for the TCL/TAL constituents. This would indicate if contamination from surface runoff has exited the facility via the retention pond discharge.

RESPONSE
The stormwater retention pond (SWMU 12) and the stormwater ditch (SWMU 7) are identified in the RFA, prepared by A.T. Kearney, Inc., Chicago, Illinois, as SWMUs requiring no further action. In addition, these SWMUs (stormwater retention pond and stormwater ditch) appear in Appendix A-2 of the HSWA portion of the RCRA permit, listing SWMUs requiring no further action.

It will not be necessary to collect sediment samples from SWMU 7 or SWMU 12 unless confirmatory sampling of SWMU 11 indicates that a release has occurred.

COMMENT 9
Page 6: Considering the size of the "old dumping ground" (approximately 45,000 square feet) and the uncertainty concerning wastes that may have been disposed of in this area, the number of soil samples proposed is inadequate. The proposal to analyze only one sample for VOAs (highest PID reading) and composite all five for metals (TAL) and extractable organic compounds is inadequate. The collection of composite samples could result in significant dilution, and would not be appropriate due to the distance between sampling locations.

Due to uncertainty concerning waste disposal at this site, an increased sampling density is required (e.g. 10 locations), with discrete samples collected at depths of 2 feet and 6 feet (depending on the water table) below surface. These samples must be analyzed for the full TCL/TAL.

The use of the PID would be helpful in identifying locations with the significant organic compound contamination; however, the instrumentation may not detect all organic compounds and is not appropriate for determining the presence of metals.

RESPONSE

The investigative approach presented in the CS Workplan is designed to evaluate whether a significant release of hazardous waste or hazardous constituents has occurred in SWMU 11. The CS Workplan does not attempt to delineate or characterize contamination in the soil or ground water, nor does it attempt to delimit all of the 40 CFR 261 Appendix VIII constituents that may or may not be detected in the soil or ground water. This Workplan proposes a program that fulfills the intent of confirmatory sampling, to determine if there has been a significant release of hazardous waste or hazardous constituents from SWMU 11. If a significant release is confirmed, additional investigations may be required to characterize and delineate the extent of contaminated soil and ground water. Accordingly, the additional sampling and analysis requirements described under Comment 9 of the Notice of Technical Inadequacy, dated January 28, 1992, are unnecessary for the following reasons:

1. Although not promulgated as of today's date, the proposed Subpart S of the RCRA part 264 regulations (55 FR 30796) establishes EPA's goals for corrective action for releases from SWMUs. The preamble to this proposed rule clearly defines EPA's goal in RCRA corrective action to eliminate significant releases from SWMUs that pose threats to human health and the environment.

2. The RFA, prepared by A.T. Kearney, Inc., Chicago, Illinois, states that, prior to 1986, SWMU 11 was used for dumping of household and office trash and that no evidence of release was noted in the file material or observed during the visual site inspection (VSI). Moreover, a copy of the field notes taken during the VSI describes the area identified as SWMU 11 as "some dumping of tires and trash[;] basically an open field." The testimony presented in the RFA suggests that the likelihood of a significant release of hazardous waste or hazardous constituents in this area is unlikely.

2. The use of field screening instruments to identify areas where releases may have occurred is a valid and accepted procedure. The CS Workplan has been modified to remove reference to a PID and introduce the use of a Sentex portable gas chromatograph (GC) for screening purposes. This GC, which is equipped with an Argon Ionization Detector/Electron Capture Detector (AID/ECD) and a Tenax preconcentrator, will allow the detection and identification many more chemicals than can be detected by the PID. As an example, the GC can detect saturated halocarbons such as 1,1-dichloroethane and 1,1,1-trichloroethane which the PID can not detect.

3. Compositing five samples for laboratory TAL analyses will result in effectively raising the PQL by a factor of five. However, as shown in Table 1, comparison of the "diluted" PQLs versus the action levels presented in proposed Subpart S and the RFI Guidance Document (EPA 530/SW-89-031, May 1989) demonstrates that, except for beryllium, the "diluted" PQLs fall below listed action levels. In the case of beryllium, the action level is below the laboratory PQL for a single, non-diluted sample. Compositing five samples for laboratory

analysis for the TCL semivolatiles and pesticide/PCBs will also effectively raise the PQLs by a factor of five. However, as shown in Table 2, comparison of the "diluted" PQLs versus the Action Levels presented in proposed Subpart S demonstrates that "diluted" PQLs fall below, or very close to, listed action levels. Hence, although compositing samples will dilute the results, the dilution is not critical when compared to the concentrations considered by EPA to be significant.

4. The anticipated depth to ground water is approximately two to three feet. Analysis of soil samples from the upper two feet of sediment is sufficient to evaluate if a significant release has occurred in SWMU 11.

COMMENT 10
EPA will be reviewing and approving this workplan, not FDER. Comments from FDER will be included but this workplan has been submitted to EPA as required by Safety-Kleen's HSWA portion of the RCRA Permit. Please revise the workplan to reflect this.

RESPONSE
The CS Workplan has been revised to state that EPA will be reviewing and approving the workplan.

COMMENT 11
The schedule states that the Confirmatory Sampling Report will be submitted ninety (90) days after receiving approval of the workplan. As required by condition II.D.4 and Appendix D of the HSWA portion of the RCRA permit, the Confirmatory Sampling Report is due sixty (60) days after approval of the Confirmatory Sampling Workplan.

RESPONSE
The CS Workplan schedule has been revised to conform to the compliance schedule presented in Appendix D of the HSWA portion of the RCRA permit.

COMMENT 14
Page 2-2: A stainless steel spoon or similarly decontaminated device must always be used to transfer a sample from the auger to the sample container.

RESPONSE
The CS Workplan has been revised to state that a stainless steel spoon will be used to transfer samples from the auger to the sample containers.

COMMENT 15
Page 3-1: The workplan must address the management of "investigation derived wastes", such as the solvent used during decontamination.

RESPONSE
The CS Workplan has been revised to address management of investigation derived wastes.

COMMENT 16
Only deionized water should be used in Step C of the decontamination procedure.

RESPONSE
This comment requests a different procedure than that in the equipment decontamination procedures detailed in the RCRA Ground-Water Monitoring Technical Enforcement Guidance Document (TEGD) (OSWER-9950.1, September, 1986). The TEGD prescribes distilled water as the rinsate. However, the CS Workplan has been revised to state that deionized water will be used in Step C of the decontamination procedure.

TABLE 1
COMPARISON OF TAL PQLs AND ACTION LEVELS

TAL CONSTITUENT[a]	PQL[b]	"DILUTED" PQL	SUBPART S ACTION LEVEL	RFI GUIDANCE ACTION LEVEL
Aluminum	20	100	NL[c]	30
Antimony	5	25	30	30
Arsenic	1	5	80	NL
Barium	1	5	4000	4000
Beryllium	0.5	2.5	0.2	400
Cadmium	0.5	2.5	40	NL
Chromium	1	5	400	400
Cobalt	1	5	NL	NL
Copper	2.5	12.5	NL	400
Cyanide		0	2000	2000
Iron	5	25	NL	NL
Lead	0.5	2.5	NL	NL
Magnesium	50	250	NL	NL
Manganese	1	5	NL	NL
Mercury	0.03	0.15	20	NL
Nickel	4	20	2000	2000
Phenolics		0	50000	3000
Potassium	100	500	NL	4000
Selenium	1	5	NL	NL
Silver	1	5	200	600
Sodium	50	250	3000	3000
Thallium	1	5	NL	20
Vanadium	1	5	NL	2000
Zinc	2	10	NL	20

Notes:

[a] Target Analyte List (TAL) metals.

[b] Practical Quantitation Limit listed in Savannah Laboratories Generic Quality Assurance Plan.

[c] NL = Not Listed

TABLE 2
COMPARISON OF TCL PQLs AND ACTION LEVELS

TCL Semivolatiles, mg/kg[a]	PQL[b]	"Diluted" PQL	Subpart S Action Level	RFI Guidance Action Level
Bis(2-ethylhexyl)phthalate	0.2	1	50	2000
Butyl benzyl phthalate	0.2	1	20000	NL[c]
2-Chlorphenol	0.2	1	400	NL
o-Cresol	0.33	1.65	4000	4000[d]
p-Cresol	0.33	1.65	4000	4000[d]
3-3'-Dichlorobenzidine	0.66	3.3	2	NL
2,4-Dichlorophenol	0.33	1.65	200	200
Diethyl phthalate	0.33	1.65	60000	60000
2,4-Dinitrophenol	1.7	8.5	200	200
2,6-Dinitrotoluene	0.33	1.65	1	NL
Hexachlorocyclopentadiene	0.33	1.65	600	600
Hexachloroethane	0.33	1.65	80	80
Isophorone	0.33	1.65	2000	20000
Nitrobenzene	0.33	1.65	40	40
n-Nitrosodiphenylamine	0.33	1.65	100	NL
n-Nitrosodi-n-propylamine	0.33	1.65	0.1	NL
Pentachlorophenol	1.7	8.5	2000	2000
Phenol	0.33	1.65	50000	3000
1,2,4-Trichlorobenzene	0.33	1.65	2000	2000
2,4,5-Trichlorophenol	1.7	8.5	8000	8000
2,4,6-Trichlorophenol	0.33	1.65	40	NL

TABLE 2 (Continued)
COMPARISON OF TCL PQLs AND ACTION LEVELS

TCL Pesticides/PCBs, mg/kg[a]	PQL[b]	"Diluted" PQL	Subpart S Action Level	RFI Guidance Action Level
Aldrin	0.002	0.01	0.04	2
alpha-BHC	0.002	0.01	0.1	NL[c]
beta-BHC	0.002	0.01	4	NL
gamma-BHC (Lindane)	0.002	0.01	0.5	20
Chlordane	0.02	0.1	0.5	4
4,4'-DDT	0.01	0.05	2	40
4,4'-DDE	0.004	0.02	2	NL
4,4'-DDD	0.004	0.02	3	NL
Dieldrin	0.004	0.02	0.04	4
Endosulfan	0.01	0.05	4	4
Endrin	0.004	0.02	20	20
Heptachlor	0.002	0.01	0.2	40
Heptachlor epoxide	0.004	0.02	0.08	.8
Toxaphene	0.16	0.8	0.6	NL

Notes:

[a] Only those Target Compound List (TCL) constituents with action levels listed in Appendix A of Subpart S are included.

[b] Practical Quantitation Limit listed in Savannah Laboratories Generic Quality Assurance Plan.

[c] NL = Not Listed

[d] RFI Guidance action level for total cresols listed.

13112.19/02/CSWP/MMM/KSC/6/022092

CONFIRMATORY SAMPLING WORK PLAN SAFETY-KLEEN CORP. FACILITY 5309 24th AVENUE SOUTH TAMPA, FLORIDA

JANUARY 1992

REVISED FEBRUARY 1992

Prepared for:

Safety-Kleen Corp.
777 Big Timber Road
Elgin, Illinois 60123

Prepared by:

Environmental Resources Management-South, Inc.
9501 Princess Palm Avenue, Suite 100
Tampa, Florida 33619
(813) 622-8727

The ERM Group

CONFIRMATORY SAMPLING WORK PLAN

GEOLOGIC DESCRIPTION

The Safety-Kleen facility is located in Hillsborough County on the southwest corner of the intersection of 24th Avenue and 54th Street (Figure 1). The facility is situated within the 7.5-minute series Tampa Quadrangle Map in west-central Florida. The following briefly summarizes the geology and hydrogeology in the area of the site.

In Hillsborough County, Pliocene to recent-age sands of variable thickness overlie thicker sequences of Tertiary limestones, dolomites, and evaporites that were deposited on an ancient carbonate platform. This sequence of rocks is part of the Florida plateau which thickens and dips to the south and southwest in the Hillsborough County area (Menke et al., 1961). The major hydrogeologic units contained within this sequence of rocks, in descending order, are the surficial aquifer system, the intermediate aquifer system, and the upper Floridan aquifer. These units are described below.

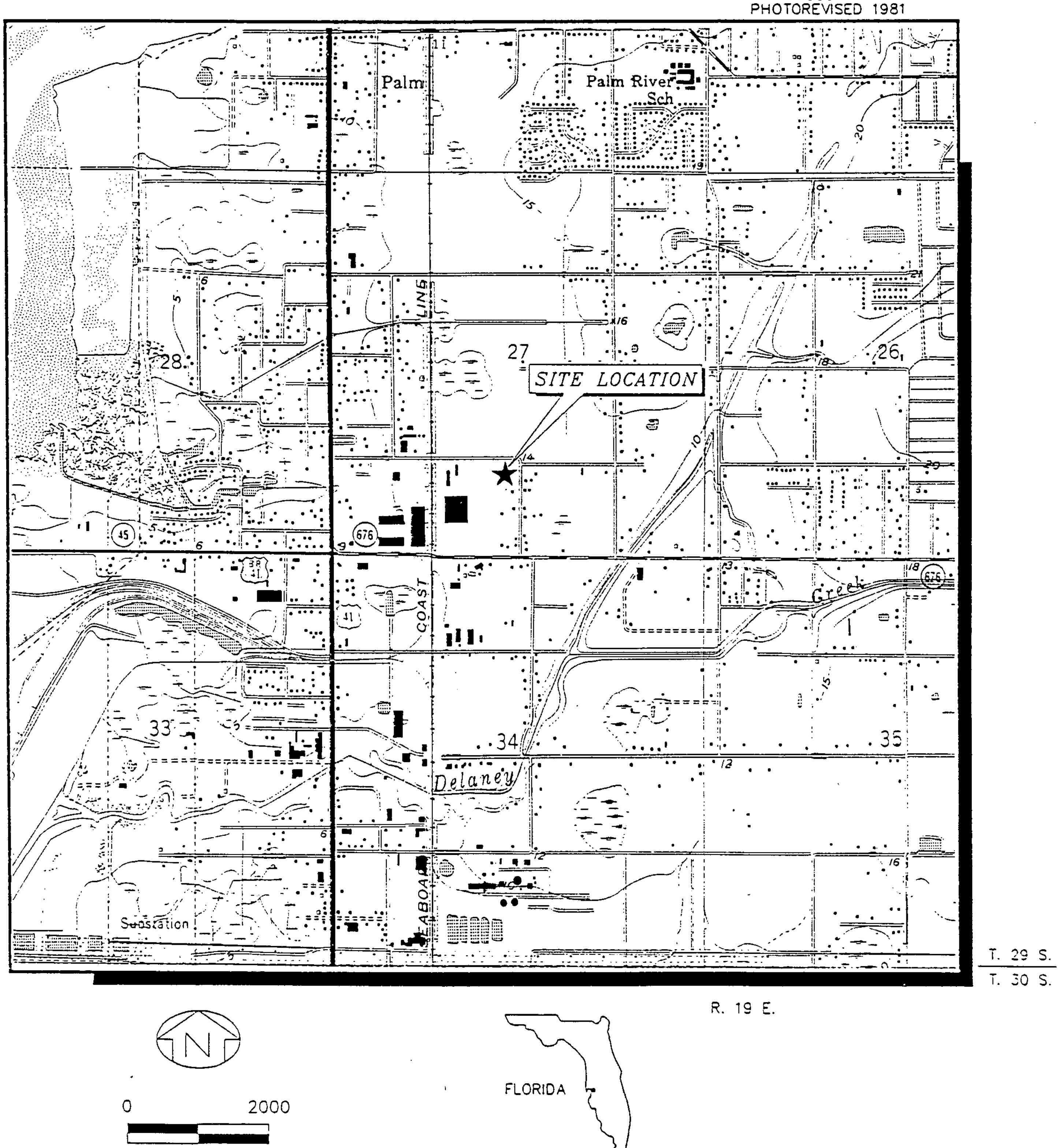
Surficial Aquifer System

The surficial aquifer system is Quaternary Age and consists of predominantly unconsolidated fine sands with interbedded clays, marl, shell, and limestone. This unit varies in thickness from approximately 25 to 50 feet in the county (SWFWMD, 1988). Beneath the Safety-Kleen facility, the surficial sediments are approximately 8 to 25 feet thick, are continuous beneath the site, and consist of fine silty quartz sand with a layer of clayey silt to clay on top of a weathered limestone.

The surficial aquifer system is generally unconfined in Hillsborough County. The water table is relatively shallow and generally mimics the topography. Water table fluctuations are normally less than five feet during the year (SWFWMD, 1988). Although ground water flow direction in the surficial aquifer is affected by local topography, the general

Figure 1
Site Location Map
Safety-Kleen Corp. Facility
24th Avenue
Tampa, Florida

TAMPA QUADRANGLE
FLORIDA-HILLSBOROUGH CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
1956
PHOTOREVISED 1981



The ERM

13112.19/31119LOC/010692-2

ground water flow direction is to the south and west (SWFWMD, 1988). Transmissivity varies from 200 ft^2/day to greater than 1,600 ft^2/day and the storage coefficient varies from 0.05 to 0.2 in Hillsborough County (SWFWMD, 1988). Reported horizontal hydraulic conductivity values for the surficial aquifer in west-central Florida vary from 0.0028 ft/day to greater than 1,000 ft/day, whereas reported values for vertical hydraulic conductivity vary from 0.12×10^{-5} ft/day to 13 ft/day (SWFWMD, 1988).

Intermediate Aquifer System

According to SWFWMD (1988), the intermediate aquifer system includes all water-bearing units and confining units between the overlying surficial aquifer system and the underlying Floridan aquifer system. Units comprising the intermediate aquifer system in west-central Florida range in age from Pleistocene to Miocene. Where present in Hillsborough County, the intermediate aquifer system is comprised of sandy clay, clay, and marl with discontinuous interbedded permeable sand, gravel, shell, and limestone (SWFWMD, 1988). The Hawthorn Formation (Miocene Age) is the main water-bearing unit of the intermediate aquifer system. Thickness of the intermediate aquifer system in Hillsborough County varies from zero in the north to 300 feet in the southeast. The northern and eastern extent of the intermediate aquifer system are not clearly defined (SWFWMD, 1988), but the northern boundary apparently occurs near the facility.

Upper Floridan Aquifer

The upper Floridan aquifer is principally middle Miocene to middle Eocene in age and consists primarily of limestone and dolomite. Stratigraphic units represented within this unit include, in descending order, the Tampa, Suwannee, Ocala, and Avon Park Formations. The base of the upper Floridan is marked by the upper limit of an evaporite unit in the Lake City Formation. The aquifer varies in thickness in Hillsborough County from less than 1,000 feet in the north to over 1,200 feet in the south (SWFWMD, 1988). The upper Floridan is approximately 1,100 feet thick beneath the Safety-Kleen facility (SWFWMD, 1988).

Ground water flow within the upper Floridan in the vicinity of the site varies seasonally and with pumping conditions. Reported transmissivity values in the upper Floridan in Hillsborough County range from approximately 15,000 ft^2/day to 500,000 ft^2/day (SWFWMD, 1988). Reported storage coefficients for the upper Floridan in Hillsborough County range from 1 x 10^{-5} to 1 x 10^{-3} (SWFWMD, 1988). In the vicinity of the site, a transmissivity value of 160,000 ft^2/day has been reported (SWFWMD, 1988).

REGIONAL AND LOCAL TOPOGRAPHY

The facility is located at an elevation of 14 to 15 feet above mean sea level (MSL) in an area of very little topographic relief. In general, the regional land surface slopes gently to the west-southwest toward East Bay. At the site, the undisturbed land surface slopes gently toward the west-northwest. Thus, ground water in the surficial sediments beneath the site most likely flows in a westerly direction.

Surface run-off is directed to a ditch in the southern part of the site. The ditch is connected to a retention pond. Together, the retention pond and southern drainage ditch direct stormwater to the east where the drainage system is connected to a roadside drainage ditch. Figure 2 illustrates the anticipated flow direction of surface run-off.

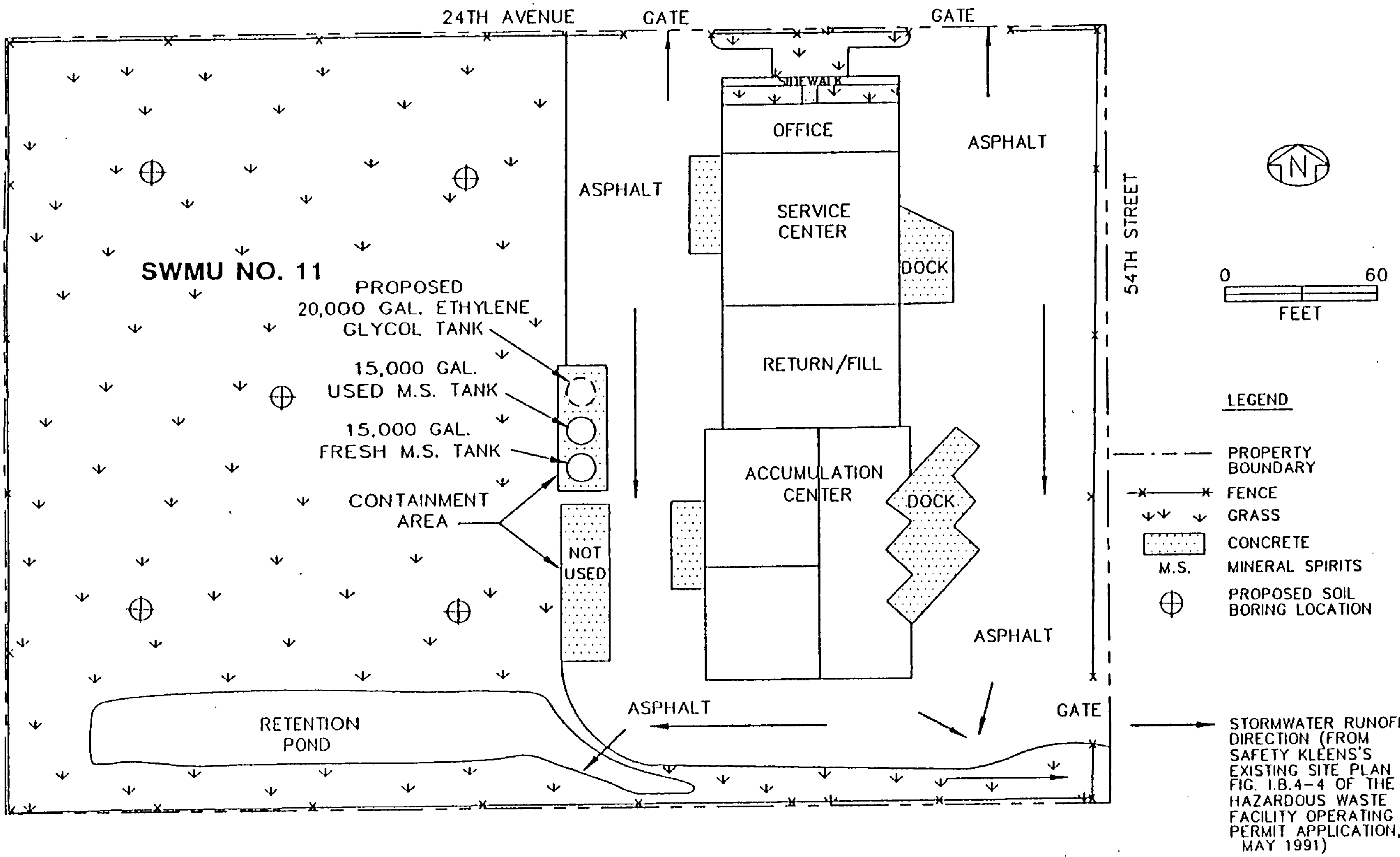
SWMU NO. 11

Soil samples will be collected at five different locations in the old dumping ground area (SWMU No. 11). The objective is to evaluate the presence or absence of a broad range of regulated constituents (Target Compound List (TCL) and Target Analyte (TAL) List) in a limited number of soil samples collected in the old dumping ground area. Procedures for accomplishing this objective are discussed below.

FIGURE 2

PROPOSED SOIL BORING LOCATIONS

Safety-Kleen Corp. Facility
24th Avenue
Tampa, Florida



The ERM

Soil Sampling

Grab soil samples will be collected from the top two feet at each location with a hand auger. Each sample will be split in thirds, one-third will be placed immediately in a laboratory sample container for volatiles, one-third will be composited with the other four samples into a laboratory container for semivolatiles and TAL metals, and one-third will be placed into a pint-sized jar (half-filled with soil). The laboratory samples will be placed on ice immediately to minimize losses of volatile compounds. Headspace concentrations in the pint-size jar will be measured with an onsite portable gas chromatograph (GC). The GC will be calibrated to quantitate benzene, toluene, ethylbenzene, total xylenes (BTEX), and naphthalene concentrations. Peaks other than those of the target list will be noted, and tentative identification will be attempted based on their relative retention times.

The one sample exhibiting the highest concentration of chemical constituents as measured by the GC will be noted and the corresponding laboratory sample container will be shipped to Savannah Laboratories & Environmental Services, Inc. (SL) of Savannah, Georgia. The sample will be analyzed for the TCL volatiles. The composite of five samples will be sent to the laboratory for analysis of the TAL (metals) and TCL semivolatiles. This approach will enable ERM to evaluate whether a chemical release to the soil has occurred.

Hand auger sampling will be conducted in accordance with ERM's Generic Quality Assurance/Quality Control (QA/QC) Plan, from which applicable sections of this Plan are presented in Attachment 1. Prior to sampling at each location, sampling equipment will be decontaminated following guidelines presented in ERM's Generic QA/QC Plan and Attachment 2. Sample containers will be provided by SL. In order to minimize possible loss of volatile compounds, containers for volatile organic samples will be filled with as little head space as possible. The laboratory samples will then be placed immediately into a cooler with ice for shipment to the laboratory.

Wastes generated during confirmatory sampling will be containerized in steel drums for disposal by the client. All containers will be properly labeled and stored. The types of wastes which are anticipated for disposal include, but are not limited to, equipment decontamination fluids and soil cuttings.

Liquid wastes will be placed into the wet dumpsters at the facility where they will be processed along with other Safety-Kleen wastes. Solid wastes will be stored onsite until analytical results are received. Once analytical results are evaluated, the wastes will be properly disposed of by Safety-Kleen.

SCHEDULE

Following receipt of written approval of the Confirmatory Sampling Work Plan from FDER, 14 days will be required for site mobilization. Site work will take two days and laboratory analysis will require approximately 7 days. Laboratory data review and draft report preparation will be completed in 14 days. Safety-Kleen report review and preparation of the final report will take approximately 14 days. The total time required to complete the sampling and prepare the report is expected to take approximately 58 calendar days, which is within the 60-day time frame required in the permit.

The Confirmatory Sampling Report (CSR) will contain all data, including raw data, and an analysis of the data which will be used to evaluate whether or not a hazardous waste release into the environment has occurred. The certification required by 40 CFR 270.11(b) will be included with the CSR.

ATTACHMENT 1

QUALITY CONTROL PROCEDURES FOR HAND AUGER SAMPLING AND COMPOSITE SAMPLING

(EXCERPT FROM ERM'S GENERIC QA/QC PLAN)

6.1.1.2 Composite Sample

Composite samples are collected when average waste concentrations are of interest. Composite sampling may be used when the water or wastewater stream is continuous, when it is necessary to calculate mass/unit time loadings, or analytical capabilities are limited. Composite sampling will often be used when collecting soil samples because of the spacial variability of soil.

A. Timed Composite: A sample containing a minimum of eight equal volume, discrete samples collected at equal time intervals over the compositing period. (A time composite may be collected continuously.) Timed composites may be collected where water or wastewater flows vary widely and are not dampened by wastewater treatment units. A timed composite shall be collected continuously or by collecting a constant sample volume with a constant time interval between samples.

B. Flow Proportional Composite: A sample containing a minimum of eight discrete samples collected proportional to the flow rate over the compositing period. Flow proportional samples may be collected where water or wastewater flows vary widely and are not dampened by wastewater treatment units. A flow proportional composite shall be collected continuously, proportional to stream flow, with constant sample volume and the time between samples proportional to stream flow; or with a constant time interval between samples and the sample volume proportional to flow at the time of sampling.

C. Areal Composite: A sample composited from individual grab samples collected on an areal or cross sectional basis. Areal composites shall be made up of equal volumes of grab samples; each grab sample shall be collected in an identical manner. Examples include sediment composites made up of quarter-point grab samples from a stream, soil samples from grid points on a grid system, water samples collected at various depths at the same point or from quarter points in a stream, etc.

6.5.3.4 Subsurface Soil Sampling Techniques

Subsurface soil samples can be collected either as grab or composite samples. The same precautions for composite sampling or surface soils apply to the compositing of subsurface soils. Depending upon the depth and type of samples to be collected, a variety of methods are available for sampling subsurface soils. Generally, subsurface samples can be obtained by three methods: shallow subsurface sampling by hand-operated equipment and deep subsurface samples by use of a drilling rig or a backhoe.

6.5.3.4.1 Hand Auger Sampling

The hand auger will be used to collect subsurface soil samples above the water table. The samples are collected by screwing the auger into the ground at predetermined sampling intervals (usually every six inches or every foot). At each interval the sample is removed from the auger, by using a stainless steel spoon, and, if appropriate, its lithologic characteristics are recorded on a field log. If a particular study involves assessment of volatile organic vapors in soil, the selected samples will be placed in clean glass jars, covered with aluminum foil, allowed to equilibrate with ambient air temperatures and then screened with a photoionization detector (PID) or flame ionization detector (FID). The results of the PID or FID screening will also be recorded in the field log. When using this technique to collect soil samples for laboratory analysis, sample containers will be filled per laboratory instructions. At the completion of each boring, the hole will usually be backfilled with formation material removed from the hole during sampling.

ATTACHMENT 2

DECONTAMINATION PROCEDURES (EXCERPT FROM ERM'S GENERIC QA/QC PLAN)

6.10.1 Equipment Decontamination

All nondisposable equipment used for the collection, preparation, preservation, and storage of environmental samples must be cleaned prior to their use and after each subsequent use. Unless the equipment and materials being used are disposable or are of sufficient number so as not to be reused during any one sampling period, decontamination will be conducted in the field. In order to prevent cross-contamination among ground water, surface water, and soil sampling locations, all sampling equipment will be decontaminated properly.

Before any equipment decontamination is conducted, a cleaning and decontamination area will be set up on the site. Ideally, the cleaning area will be away from sources of contamination (such as exhaust fumes or dust, for example) and out of direct sunlight, if possible. If necessary, a sheet of plastic or visqueen will be laid down, and equipment decontamination will be completed on the plastic sheet. Equipment that will be in contact with samples (such as bailers, split spoon samplers, core barrel samplers, hand augers, and trowel soil samplers) will be decontaminated.

6.10.1.1 Procedure for Decontaminantion of Sampling Equipment

The standard decontamination procedure will be as follows:

a. Rinse equipment with clean water;

b. Scrub equipment thoroughly using a phosphate free detergent (Alconox® or Liquinox®);

c. Rinse equipment with deionized water to remove detergent;

d. Rinse equipment with an appropriate solvent in which any potentially adhering and/or undesirable parameters are soluble. Pesticide-grade isopropanol will be the most commonly used solvent for equipment decontamination. Allow equipment to air dry as long as possible; and

e. If organic free water is available, rinse equipment three times. If organic free water is not available, allow equipment to air dry as long as possible.

Each soil and water sampling device will be decontaminated before the first sample, between samples, and after the last sample is taken. The split-spoon soil sampler will be decontaminated between each boring, but not between each sample if samples will not be subjected to chemical analysis.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

H029-158820
AI, 6-i

D.E.R.

JAN 31 1992
SOUTHWEST DISTRICT
TAMPA

4WD-RCRAFFB
JAN 28 1992
CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Ellen Jurczak
Environmental Permits Manager
Safety-Kleen Corporation
777 Big Timber Road
Elgin, Illinois 60123

RE: Notice of Technical Inadequacy
Safety-Kleen Corporation, Tampa, Florida Facility
Confirmatory Sampling Workplan
EPA I.D. Number FLD 980 847 271

Dear Ms. Jurczak:

The United States Environmental Protection Agency (EPA) has reviewed Safety-Kleen Corporation's Confirmatory Sampling Workplan for the Tampa facility dated January 6, 1992, and has determined it to be inadequate. Enclosed please find EPA's comments on the workplan.

Please submit a revised workplan no later than February 21, 1992. Note that until the workplan is approved, Safety-Kleen has not fulfilled the requirements for permit condition II.D.1 of the Hazardous and Solid Waste Amendments (HSWA) portion of your Resource Conservation and Recovery Act (RCRA) permit dated October 30, 1991. A copy of the revised workplan should be mailed to:

Mr. James S. Kutzman, P.E.
Associate Director
Office of RCRA & Federal Facilities
Waste Management Division
U.S. Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30365

ATTN: RCRA Permitting Section

Failure to comply with any permit condition may result in enforcement actions initiated by EPA pursuant to Section 3008 of RCRA, 42 U.S.C. 6928, under which EPA may seek the imposition of penalties of up to $25,000 per day of continued noncompliance.

Should you have any questions on the review comments or are still unclear as to how to appropriately respond, please contact Ms. Susan Zazzali of the RCRA Permitting Section at (404) 347-3433. For questions regarding compliance and enforcement, please contact Mr. Javier Garcia of the RCRA Compliance Section at (404) 347-7603.

Sincerely yours,

James S. Kutzman, P.E.
Associate Director
Office of RCRA & Federal Facilities
Waste Management Division

Enclosure

cc: Satish Kastury, FDER, Tallahassee
Lynn Milanian, FDER, Tampa
John G. Hodges, ERM-South

Safety-Kleen Corporation, Tampa, Florida Facility
EPA I.D. Number FLD 980 847 271
Comments on Confirmatory Sampling Workplan

REGIONAL AND LOCAL TOPOGRAPHY

1. Page 3: The sediment in the retention pond (near the inlet), and the ditch leading to the retention pond, must be sampled for TCL/TAL constituents. This would indicate if contamination from surface runoff has exited the facility via the retention pond discharge.

NORTH BUILDING (SERVICE CENTER)

2. Page 3: The document states that Safety-Kleen "will determine the point of discharge from the two pipes exiting the north building" and then locate the sampling points. The Confirmatory Sampling Workplan must be definitive about the location of the two discharges and include a specific protocol for collecting representative groundwater samples. The location of the discharge pipes and sample locations must be depicted on Figure 2.

3. Page 4, Installation of Monitoring Well: Safety-Kleen should consider the following recommendations concerning monitoring well construction:

   EPA recommends the use of stainless steel for well construction when samples will be analyzed for organic compounds. Safety-Kleen must be aware that compounds detected during the monitoring phase will be attributed to the samples collected and not the well construction material.

   The screen slot size and filter pack material should be determined following a soil sieve analysis.

   The filter pack must extend two feet above the well screen.

   The hydration time of the bentonite grout must be 24 hours or per the manufacturer's recommendation.

   The density of the bentonite/grout mixture must be listed.

4. Page 5, Sampling of Monitoring Well: The groundwater sample must be analyzed for extractable organic compounds in addition to the volatile organic compounds (VOAs) and metals.

5. Page 5: VOA trip blanks must be included in the study in addition to the equipment rinse blanks.

6. Page 5, Soil Sampling: The two discharge locations have not been identified, so the soil sampling plan can not be adequately evaluated. The proposed sampling locations must be depicted on Figure 2.

7. Page 5, Soil Sampling: Following identification of the two discharges, discrete soil samples must be collected at the end of each discharge pipe, possibly 2 feet and 6 feet (depending on the water table) below the point of discharge. The use of the field GC would be helpful for identifying significant levels of contamination from certain organic compounds; however, the samples must be analyzed regardless of the GC results. The samples must be analyzed for extractable organic compounds in addition to the VOAs and metals.

8. The sample containers for VOAs, extractable organic compounds and metals must be stipulated.

SWMU No. 11

9. Page 6: Considering the size of the "old dumping ground" (approximately 45,000 square feet) and the uncertainty concerning wastes that may have been disposed of in this area, the number of soil samples proposed is inadequate. The proposal to analyze only one sample for VOAs (highest PID reading) and composite all five for metals (TAL) and extractable organic compounds is inadequate. The collection of composite samples could result in significant dilution, and would not be appropriate due to the distance between sampling locations.

   Due to uncertainty concerning waste disposal at this site, an increased sampling density is required (e.g. 10 locations), with discrete samples collected at depths of 2 feet and 6 feet (depending on the water table) below surface. These samples must be analyzed for the full TCL/TAL.

   The use of a PID would be helpful in identifying locations with the significant organic compound contamination; however, the instrumentation may not detect all organic compounds and is not appropriate for determining the presence of metals.

SCHEDULE

10. EPA will be reviewing and approving this workplan, not FDER. Comments from FDER will be included but this workplan has been submitted to EPA as required by Safety-Kleen's HSWA portion of the RCRA Permit. Please revise the workplan to reflect this.

11. The schedule states that the Confirmatory Sampling Report will be submitted ninety (90) days after receiving approval of the workplan. As required by condition II.D.4. and Appendix D of the HSWA portion of the RCRA permit, the Confirmatory Sampling Report is due sixty (60) days after approval of the Confirmatory Sampling Workplan.

ATTACHMENT 1 - QUALITY CONTROL PROCEDURES FOR GROUNDWATER SAMPLING

12. Page 1, General: The method of water level measurement must be described (type of device, reading interval, etc.)

13. Page 2, Groundwater Sample Collection: Following purging, the sample must be collected as soon as enough volume is available. The listed procedure of waiting for a return to the pre-purging water level is unacceptable.

ATTACHMENT 2 - QUALITY CONTROL PROCEDURES FOR HAND AUGER SAMPLING

14. Page 2-2: A stainless steel spoon or similarly decontaminated device must always be used to transfer a sample from the auger to the sample container.

ATTACHMENT 3 - DECONTAMINATION PROCEDURES

15. Page 3-1: The workplan must address the management of "investigation derived wastes", such as the solvent used during decontamination.

16. Page 3-1: Only deionized water should be used in Step C of the decontamination procedure.

131112.19/02/CSWP/KSC/MMM/5/010692

CONFIRMATORY SAMPLING WORK PLAN SAFETY-KLEEN CORP. FACILITY 5309 24th AVENUE SOUTH TAMPA, FLORIDA

JANUARY 1992

Prepared for:

Safety-Kleen Corp.
777 Big Timber Road
Elgin, Illinois 60123

Prepared by:

Environmental Resources Management-South, Inc.
9501 Princess Palm Avenue, Suite 100
Tampa, Florida 33619
(813) 622-8727

ERM-South, inc.

9501 Princess Palm Avenue, Suite 100 • Tampa, Florida 33619 • (813) 622-8727 • Fax (813) 621-8504
8181 N. W. 36th Street, Suite 20 • Miami, Florida 33166 • (305) 591-3076
777 Yamato Road, Suite 130 • Boca Raton, Florida 33487 • (407) 241-1752

Reply To: Tampa Office

January 6, 1992

Project No. 13112.19, Task 30

Mr. James Kutznan
Associate Director
Office of RCRA and Federal Facilities
EPA Region IV
345 Courtland Street, NE
Atlanta, GA 30365

RE: Confirmatory Sampling Work Plan for the Safety-Kleen Corp. Facility located at 5309 24th Avenue South, Tampa, Florida; EPA Permit No. FLD 980 847 271

Dear Mr. Kutznan:

Condition II.D.1 of the Hazardous and Solid Waste Amendments (HSWA) portion of the above-referenced permit issued by the Environmental Protection Agency (EPA) Region IV, requires that a Confirmatory Sampling (CS) Work Plan be prepared and submitted to EPA for the above-referenced Safety-Kleen facility. The CS Work Plan is required for solid waste management unit SWMU No. 11 which was identified in Appendix A-3 of the Hazardous Waste Facility Operating Permit to require confirmatory sampling. The CS Work Plan also includes plans to sample the ground water and the soils that were in direct proximity to the two discharge pipes which originated from the North Building (Service Center) as requested in FDER's September 5, 1991 letter to Safety-Kleen. Safety-Kleen has authorized Environmental Resources Management-South, Inc. (ERM) to prepare and submit the enclosed Work Plan.

If you have any questions, please feel free to contact Ms. Deborah J. Green, P.G., Senior Project Manager - Remediation, Safety-Kleen Corp., (919) 274-5073, or me.

Sincerely,

John G. Hodges, Jr.
Project Manager

JGH/mmm/ksc

D. E. R.
JAN - 7 1992
SOUTHWEST DISTRICT
TAMPA

Enclosure

c: Deborah Green - SK, Greensboro
Paul Gruber - ERM
Thomas W. Hastings - ERM
Gary Long - SK, Elgin
Lynne R. Milanian - FDER

13112.19/TSK30/01/JK010692.LTR/4

CONFIRMATORY SAMPLING WORK PLAN

GEOLOGIC DESCRIPTION

The Safety-Kleen facility is located in Hillsborough County on the southwest corner of the intersection of 24th Avenue and 54th Street (Figure 1). The facility is situated within the 7.5-minute series Tampa Quadrangle Map in west-central Florida. The following briefly summarizes the geology and hydrogeology in the area of the site.

In Hillsborough County, Pliocene to recent-age sands of variable thickness overlie thicker sequences of Tertiary limestones, dolomites, and evaporites that were deposited on an ancient carbonate platform. This sequence of rocks is part of the Florida plateau which thickens and dips to the south and southwest in the Hillsborough County area (Menke et al., 1961). The major hydrogeologic units contained within this sequence of rocks, in descending order, are the surficial aquifer system, the intermediate aquifer system, and the upper Floridan aquifer. These units are described below.

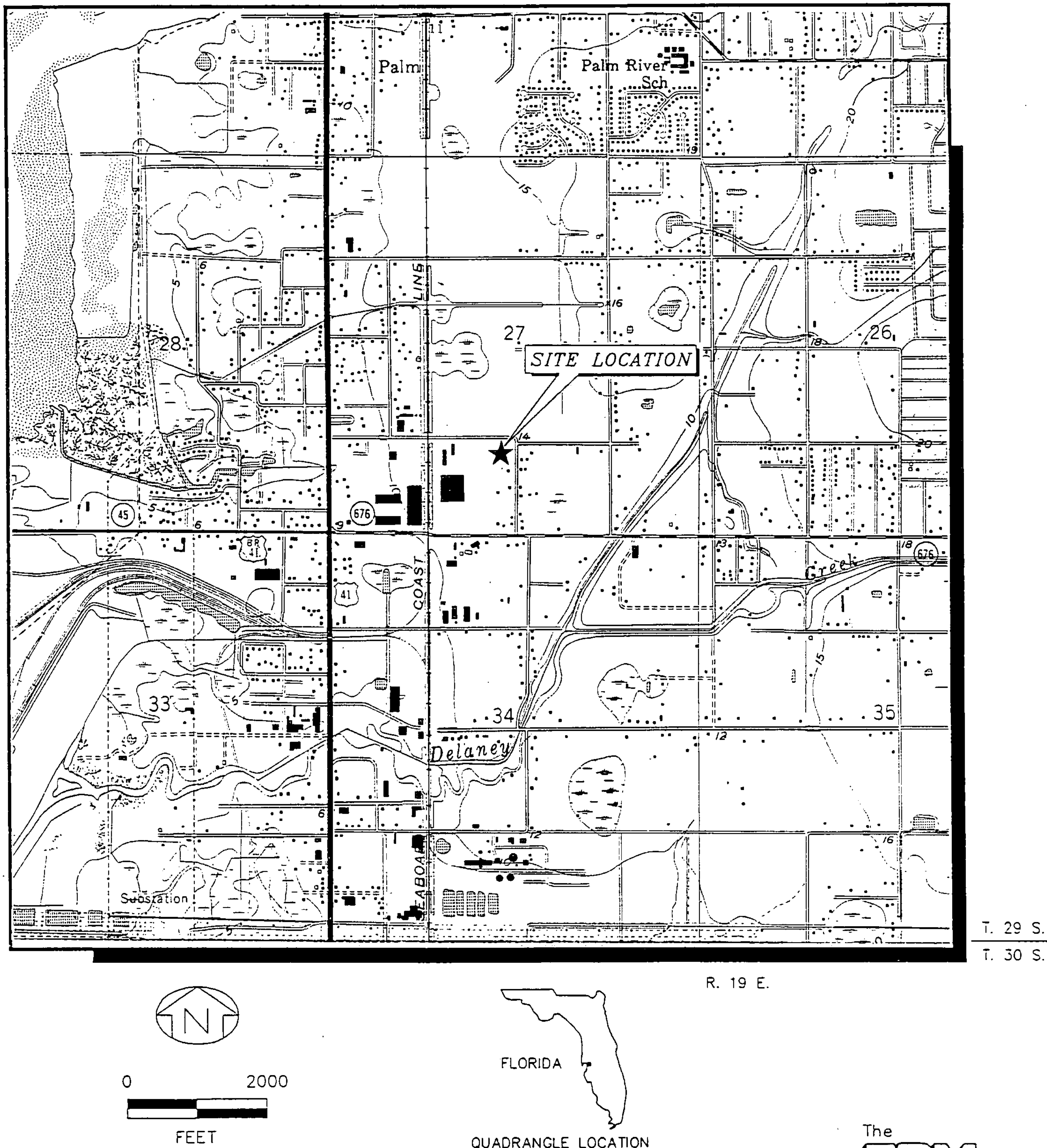
Surficial Aquifer System

The surficial aquifer system is Quaternary Age and consists of predominantly unconsolidated fine sands with interbedded clays, marl, shell, and limestone. This unit varies in thickness from approximately 25 to 50 feet in the county (SWFWMD, 1988). Beneath the Safety-Kleen facility, the surficial sediments are approximately 8 to 25 feet thick, are continuous beneath the site, and consist of fine silty quartz sand with a layer of clayey silt to clay on top of a weathered limestone.

The surficial aquifer system is generally unconfined in Hillsborough County. The water table is relatively shallow and generally mimics the topography. Water table fluctuations are normally less than five feet during the year (SWFWMD, 1988). Although ground water flow direction in the surficial aquifer is affected by local topography, the general

Figure 1
Site Location Map
Safety-Kleen Corp. Facility
24th Avenue
Tampa, Florida

TAMPA QUADRANGLE
FLORIDA–HILLSBOROUGH CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
1956
PHOTOREVISED 1981



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ground water flow direction is to the south and west (SWFWMD, 1988). Transmissivity varies from 200 ft^2/day to greater than 1,600 ft^2/day and the storage coefficient varies from 0.05 to 0.2 in Hillsborough County (SWFWMD, 1988). Reported horizontal hydraulic conductivity values for the surficial aquifer in west-central Florida vary from 0.0028 ft/day to greater than 1,000 ft/day, whereas reported values for vertical hydraulic conductivity vary from 0.12×10^{-5} ft/day to 13 ft/day (SWFWMD, 1988).

Intermediate Aquifer System

According to SWFWMD (1988), the intermediate aquifer system includes all water-bearing units and confining units between the overlying surficial aquifer system and the underlying Floridan aquifer system. Units comprising the intermediate aquifer system in west-central Florida range in age from Pleistocene to Miocene. Where present in Hillsborough County, the intermediate aquifer system is comprised of sandy clay, clay, and marl with discontinuous interbedded permeable sand, gravel, shell, and limestone (SWFWMD, 1988). The Hawthorn Formation (Miocene Age) is the main water-bearing unit of the intermediate aquifer system. Thickness of the intermediate aquifer system in Hillsborough County varies from zero in the north to 300 feet in the southeast. The northern and eastern extent of the intermediate aquifer system are not clearly defined (SWFWMD, 1988), but the northern boundary apparently occurs near the facility.

Upper Floridan Aquifer

The upper Floridan aquifer is principally middle Miocene to middle Eocene in age and consists primarily of limestone and dolomite. Stratigraphic units represented within this unit include, in descending order, the Tampa, Suwannee, Ocala, and Avon Park Formations. The base of the upper Floridan is marked by the upper limit of an evaporite unit in the Lake City Formation. The aquifer varies in thickness in Hillsborough County from less than 1,000 feet in the north to over 1,200 feet in the south (SWFWMD, 1988). The upper Floridan is approximately 1,100 feet thick beneath the Safety-Kleen facility (SWFWMD, 1988).

Ground water flow within the upper Floridan in the vicinity of the site varies seasonally and with pumping conditions. Reported transmissivity values in the upper Floridan in Hillsborough County range from approximately 15,000 ft^2/day to 500,000 ft^2/day (SWFWMD, 1988). Reported storage coefficients for the upper Floridan in Hillsborough County range from 1×10^{-5} to 1×10^{-3} (SWFWMD, 1988). In the vicinity of the site, a transmissivity value of 160,000 ft^2/day has been reported (SWFWMD, 1988).

REGIONAL AND LOCAL TOPOGRAPHY

The facility is located at an elevation of 14 to 15 feet above mean sea level (MSL) in an area of very little topographic relief. In general, the regional land surface slopes gently to the west-southwest toward East Bay. At the site, the undisturbed land surface slopes gently toward the west-northwest. Thus, ground water in the surficial sediments beneath the site most likely flows in a westerly direction.

Surface run-off is directed to a ditch in the southern part of the site. The ditch is connected to a retention pond. Together, the retention pond and southern drainage ditch direct stormwater to the east where the drainage system is connected to a roadside drainage ditch. Figure 2 illustrates the anticipated flow direction of surface run-off.

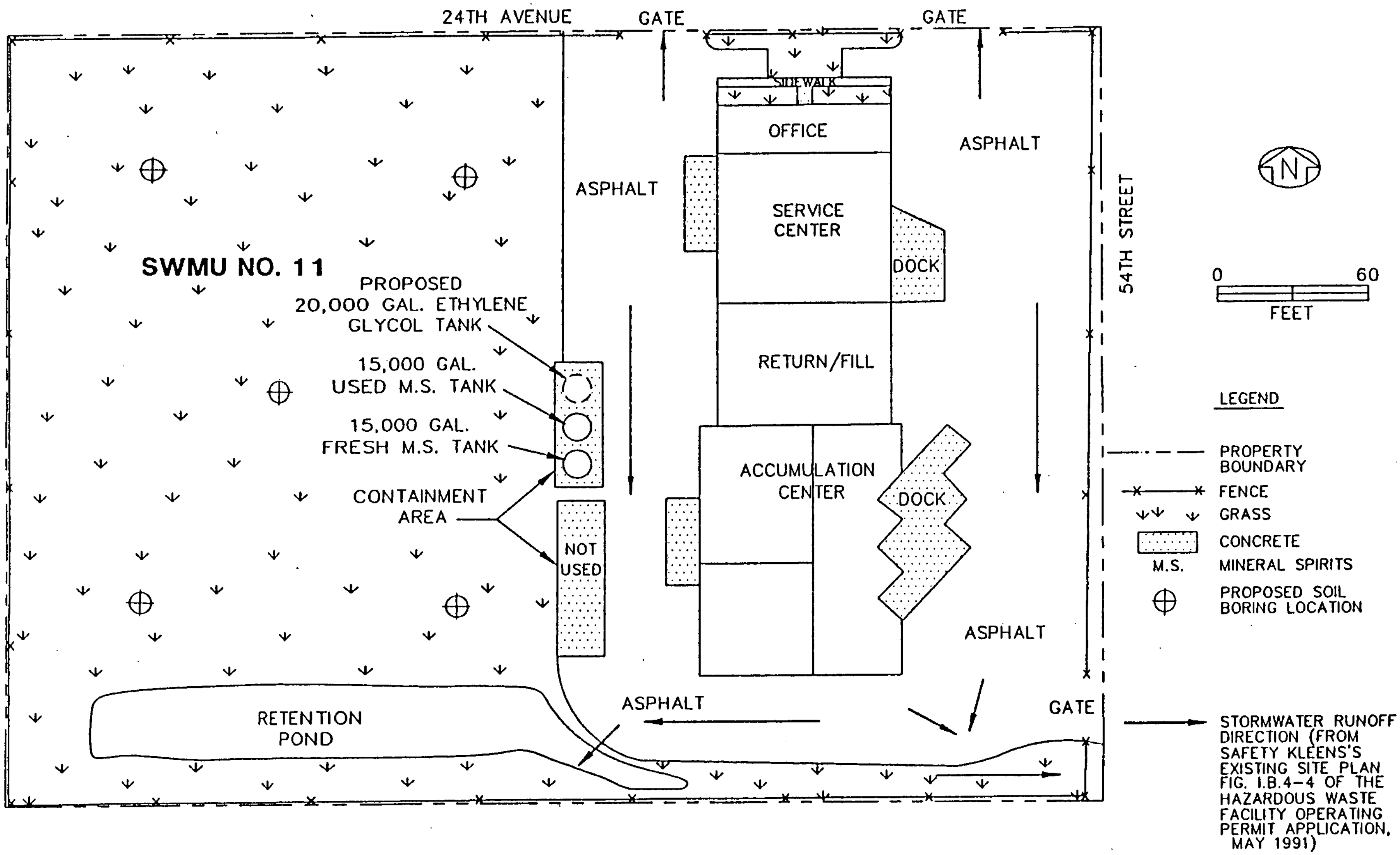
NORTH BUILDING (SERVICE CENTER)

As requested in FDER's September 5, 1991 letter to Safety-Kleen, ERM will determine the point(s) of discharge from the two pipes exiting from the North Building. Based on where the discharge point(s) are located, ERM will sample the soil and ground water at these locations. For the purposes of this work plan, ERM assumes that the discharge point(s) of these two pipes is the old septic tank field as suspected by Safety-Kleen; if there were two discharge locations, these locations are within 20 feet of one another. Sampling procedures are discussed below.

FIGURE 2

PROPOSED SOIL BORING LOCATIONS

Safety-Kleen Corp. Facility
24th Avenue
Tampa, Florida



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Installation of Monitoring Well

ERM proposes to install one shallow ground water monitoring well designed to bracket the water table beneath the site in the area where the pipe(s) discharged. The well will be constructed of two-inch-inner-diameter, schedule 40, flush-jointed PVC, and will have ten feet of screened section with 0.010-inch wide slots. All downhole equipment, including the well construction materials and PVC pipe, will be decontaminated, prior to use, in accordance with ERM's FDER-approved quality assurance/quality control (QA/QC) Plan.

The well will be installed using the hollow stem auger (HSA) drilling technique. When the desired drilling depth is reached, the PVC well will be installed within the augers. A 20/30 silica sand filter pack will be emplaced within the annular space between the borehole and the screen to approximately one foot above the top of the screen. A one-foot thick bentonite seal will be placed on top of the filter pack and at least one gallon of deionized water will be poured on top of the bentonite to ensure that it swells and provides a good seal between the surface and the top of the filter pack. A bentonite/cement grout will be placed on top of the bentonite plug up to land surface. The monitoring well will be completed just below grade with a locking, watertight cap and lock, enclosed within a steel manhole cover and set in concrete. Following installation, the well will be developed by overpumping.

Sampling of Monitoring Well

A ground water sample will be collected from the monitoring well by ERM using the procedures referenced in ERM's Generic QA/QC Plan and Attachment 1. Sampling procedures are as follows: To the extent practicable, a minimum of three well volumes will be purged from the monitoring well prior to collecting the ground water sample. Conductivity, temperature, and pH of the pumped water will be monitored during well purging which will be considered complete when these three parameters (pH, conductivity, and temperature) have stabilized. Final field measurements of these parameters will be taken at the time of sample collection. These data will be reported in the Confirmatory Sampling Report (CSR). A Teflon® bailer will be used to collect the ground water samples. All downhole equipment will be decontaminated prior to use, according to ERM's Generic QA/QC plan.

The ground water sample will be analyzed by EPA Methods 8010, 8020, 8015 (modified for mineral spirits), and 3050/6010 for cadmium, chromium, and lead. These analyses detect the major constituents of Safety-Kleen wastes such that results will confirm whether or not a release has occurred. In accordance with ERM's FDER-approved Generic QA/QC Plan, one QC sample (an equipment blank) will be collected and analyzed by the above-cited EPA Methods.

Soil Sampling

Soil samples will be collected at each of the two locations where the two pipes from the North Building used to discharge (assuming there are two discharge points). Fixed-interval (grab) soil samples will be collected at each location with a hand auger from the top six inches and from 2.5 to 3.0 feet below land surface. Each soil sample will be split in half, and one half will be placed immediately in a laboratory sample container and the other half will be placed in a pint-size jar (half-filled with soil). The laboratory sample will be placed on ice immediately to minimize losses of volatile compounds. Head space concentrations in the pint-size jar will be measured with an onsite portable gas chromatograph (GC). The GC will be calibrated to quantitate benzene, toluene, ethylbenzene, total xylenes (BTEX), and naphthalene concentrations. In addition, a mineral spirits standard will be analyzed on the GC to qualitatively estimate the mineral spirits concentration in each sample on the basis of chromatographic "finger print" comparisons.

The sample exhibiting the highest concentration of chemical constituents as measured by the GC at each location (either the top six-inch sample or the 2.5 to 3.0 foot sample) will be noted and the corresponding laboratory sample container will be shipped to Savannah Laboratories & Environmental Services, Inc. (SL) of Savannah, Georgia. Each sample(s) will be analyzed by SW-846 Methods 8010, 8020, 8015 (modified for mineral spirits), and 3050/6010 for cadmium, chromium, and lead. These analyses detect the major constituents of Safety-Kleen wastes such that results will confirm whether or not a release has occurred.

Hand auger sampling will be conducted in accordance with ERM's Generic Quality Assurance/Quality Control (QA/QC) Plan, from which applicable sections of this Plan are presented in Attachment 2. Prior to sampling at each location, sampling equipment will be decontaminated following guidelines presented in ERM's Generic QA/QC Plan and Attachment 3. Sample containers will be provided by SL. In order to minimize possible loss of volatile compounds, containers for volatile organic samples will be filled immediately after sampling and will be left with as little head space as possible. The laboratory samples will then be placed immediately into a cooler with ice for shipment to the laboratory.

SWMU NO. 11

Soil samples will be collected at five different locations in the old dumping ground area (SWMU No. 11). The objective is to evaluate the presence or absence of a broad range of regulated constituents (Target Compound List (TCL) and Target Analyte (TAL) List) in a limited number of soil samples collected in the old dumping ground area. Procedures for accomplishing this objective are discussed below.

Soil Sampling

Grab soil samples will be collected from the top two feet at each location with a hand auger. Each soil sample will be split in half, and one half will be placed immediately in a laboratory sample container and the other half will be placed in a pint-size jar (half-filled with soil). The laboratory sample will be placed on ice immediately to minimize losses of volatile compounds. The total organic vapor concentration (TOVC) in the pint-size jar will be measured with an organic vapor analyzer (OVA) equipped with a photoionization detector (PID). Procedures for calibrating the PID are contained in Attachment 4.

The one sample exhibiting the highest PID reading will be noted and the corresponding laboratory sample container will be shipped to Savannah Laboratories & Environmental Services, Inc. (SL) of Savannah, Georgia. The sample will be analyzed for the TCL volatiles. The five samples analyzed by the PID will be composited into one sample which will be sent to the laboratory for analysis of the TAL (metals) and TCL semivolatiles. This approach will enable ERM to evaluate whether a chemical release to the soil has occurred.

Hand auger sampling will be conducted in accordance with ERM's Generic Quality Assurance/Quality Control (QA/QC) Plan, from which applicable sections of this Plan are presented in Attachment 2. Prior to sampling at each location, sampling equipment will be decontaminated following guidelines presented in ERM's Generic QA/QC Plan and Attachment 3. Sample containers will be provided by SL. In order to minimize possible loss of volatile compounds, containers for volatile organic samples will be filled with as little head space as possible. The laboratory samples will then be placed immediately into a cooler with ice for shipment to the laboratory.

SCHEDULE

Following receipt of written approval of the Confirmatory Sampling Work Plan from FDER, 30 days will be required for site mobilization. Site work will take two days and laboratory analysis will require approximately 21 days. Laboratory data review and draft report preparation will be completed in 14 days. Safety-Kleen report review and preparation of the final report will take approximately 14 days. The total time required to complete the sampling and prepare the report is expected to take approximately 87 calendar days, which is within the 90-day time frame required in the permit.

The Confirmatory Sampling Report (CSR) will contain all data, including raw data, and an analysis of the data which will be used to evaluate whether or not a hazardous waste release into the environment has occurred. The certification required by 40 CFR 270.11(b) will be included with the CSR.

ATTACHMENT 1

QUALITY CONTROL PROCEDURES FOR GROUND WATER SAMPLING

(EXCERPT FROM ERM'S GENERIC QA/QC PLAN)

D. Bailer

A bailer that will sink rapidly through the water can be raised and lowered adjacent to the well screen. The resulting agitating action of the water is similar to that caused by a surge block. The bailer, however, has the added advantage of removing the fines each time it is brought to the surface and dumped. Bailers can be made for small diameter wells and can be hand operated in shallow wells.

6.2.7 Ground Water Sampling Procedures

6.2.7.1 General

Before selecting a sampling methodology, several factors require consideration nd include the following:

1. Monitoring well characteristics, including well diameter, screened interval, well depth, and well construction materials;

2. Depth to ground water;

3. Water-yielding capability of the aquifer and well; and

4. Type of analyses to be performed, both in the field and laboratory.

Standard activities involved with ground water sampling include water level measurements, removal of standing water in wells (i.e., well evacuation or purging), and retrieval of a sample of fresh formation water.

Prior to leaving for a site at which ground water is to be sampled, a check of equipment needed to perform these activities will be conducted. This equipment check will include the items listed in Figure 6.2.4. Generally, no all of the items listed in the Figure 6.2.4 checklist will be needed for any particular ground water sampling event.

6.2.7.3.6 Well Stabilization

In addition to keeping track of the volume of water pumped from a well, the pH, conductivity, and temperature of discharge water will be monitored. When these parameters stabilize, a well may be considered to be sufficiently purged, provided that a minimum of three casing volumes have been purged. Temperature will be considered to be stabilized when three consecutive temperature readings are within 0.5 degrees Celsius of one another. When three consecutive pH readings are within 0.05 pH units of one another, pH will be considered stabilized. Conductivity will be considered stabilized when each of the three most recent conductivity values are within two percent of the mean of the three most recent conductivity values. Temperature, pH, and conductivity values obtained during well purging will be recorded on either a well stabilization data sheet (of which Figure 6.2.6 is an example) or in field notebooks. High-yielding wells capable of producing large quantities of water will be pumped slowly for a period of time sufficient to record stabilized pH, conductivity, and temperature readings. ERM prefers this technique to collect representative formation samples in lieu of automatically purging three casing volumes, then sampling.

6.2.8 Ground Water Sample Collection

After a well has been properly purged, the well will be allowed to recharge to approximately the pre-purging or "static" water level before samples are collected. This may require waiting a few minutes, a few hours, or one day before sample collection. Temperature, pH, and conductivity of water will be measured in the field at the time of sample collection. The sample used to measure these parameters will be collected from the Teflon® bailer. These values will be recorded in a field notebook and on field data sheets. An example of a field data sheet used by ERM for well purging during ground water sample collection is shown in Figure 6.2.7.

6.2.8.1 Procedures for Sampling Ground Water for Volatile Organic Compounds

When sampling monitoring wells for volatile organic compounds, the following procedure will be used:

a. After properly purging a well, rinse a decontaminated Teflon® bailer (see Section 6.10.1 for decontamination procedures) at least three times with sample water;

b. Lower the bailer into the well slowly so that as the bailer contacts the water table there is as little agitation of the water column as possible;

c. Collect sample near the top of the water column;

d. Carefully pour sample water directly out of the bailer into a pre-cleaned 40-ml glass vial[1] with a Teflon®-lined septum, taking care to minimize turbulence, bubbling, and exposure to air;

e. Fill the vial until water stands above the top of the vial (i.e., there should be a convex meniscus above the neck of the vial);

f. Carefully, but quickly, slip the cap with septum onto the vial with the Teflon® face of the septum toward the water. Tighten the cap securely, invert the vial, and tap the vial and cap against your hand to assure that there are no bubbles inside. If

[1]As a general rule, samples for volatile organics analysis will be preserved with acid, unless storage of samples at the analyzing laboratory is not expected to exceed seven days (such as may occur when a large number of samples are collected or when the analyzing laboratory has a backlog of samples). When ordering sampling kits and scheduling sample analyses, it will be determined whether or not samples should be preserved with acid. If it is decided that samples will require acid preservation, the analyzing laboratory will be directed to place one to four drops of concentrated hydrochloric acid into the vials before shipment. Acid will not be carried in the field by sampling personnel. If water is expected to contain excessive chlorine, 40-ml vials ordered from the analyzing laboratory will contain sodium thiosulfate to reduce the residual chlorine.

bubbles are present, open the vial, add a few more drops of sample water and reseal;

g. Collect a duplicate sample;

h. Label the sample vials with the following information:
   1. Sample I.D. number;
   2. Date and time of sample collection;
   3. Name or initials of sampler;
   4. Type of analysis requested; and
   5. Any pertinent comments or remarks.

i. Immediately place the samples on ice;

j. Fill out chain-of-custody form (see Section 7.0);

k. Fill out field data sheet (Figure 6.2.7) and record information in field notebook; and

l. Decontaminate sampling equipment (see Section 6.10.1).

Prior to sample collection, the vial and the Teflon®-lined septum will be checked to make sure the septum was installed with the Teflon® side facing toward the vial. If the septum was installed incorrectly then the vial will not be filled. Also, if the septum fails out of the cap during sampling, the vial should not be filled for analysis. Note ont he chain-of-custody form if septums were installed incorrectly or dropped during sampling.

ATTACHMENT 2

QUALITY CONTROL PROCEDURES FOR HAND AUGER SAMPLING AND COMPOSITE SAMPLING

(EXCERPT FROM ERM'S GENERIC QA/QC PLAN)

6.1.1.2 Composite Sample

Composite samples are collected when average waste concentrations are of interest. Composite sampling may be used when the water or wastewater stream is continuous, when it is necessary to calculate mass/unit time loadings, or analytical capabilities are limited. Composite sampling will often be used when collecting soil samples because of the spacial variability of soil.

A. Timed Composite: A sample containing a minimum of eight equal volume, discrete samples collected at equal time intervals over the compositing period. (A time composite may be collected continuously.) Timed composites may be collected where water or wastewater flows vary widely and are not dampened by wastewater treatment units. A timed composite shall be collected continuously or by collecting a constant sample volume with a constant time interval between samples.

B. Flow Proportional Composite: A sample containing a minimum of eight discrete samples collected proportional to the flow rate over the compositing period. Flow proportional samples may be collected where water or wastewater flows vary widely and are not dampened by wastewater treatment units. A flow proportional composite shall be collected continuously, proportional to stream flow, with constant sample volume and the time between samples proportional to stream flow; or with a constant time interval between samples and the sample volume proportional to flow at the time of sampling.

C. Areal Composite: A sample composited from individual grab samples collected on an areal or cross sectional basis. Areal composites shall be made up of equal volumes of grab samples; each grab sample shall be collected in an identical manner. Examples include sediment composites made up of quarter-point grab samples from a stream, soil samples from grid points on a grid system, water samples collected at various depths at the same point or from quarter points in a stream, etc.

6.5.3.4 Subsurface Soil Sampling Techniques

Subsurface soil samples can be collected either as grab or composite samples. The same precautions for composite sampling or surface soils apply to the compositing of subsurface soils. Depending upon the depth and type of samples to be collected, a variety of methods are available for sampling subsurface soils. Generally, subsurface samples can be obtained by three methods: shallow subsurface sampling by hand-operated equipment and deep subsurface samples by use of a drilling rig or a backhoe.

6.5.3.4.1 Hand Auger Sampling

The hand auger will be used to collect subsurface soil samples above the water table. The samples are collected by screwing the auger into the ground at predetermined sampling intervals (usually every six inches or every foot). At each interval the sample is removed from the auger, generally by using a stainless steel spoon, and, if appropriate, its lithologic characteristics are recorded on a field log. If a particular study involves assessment of volatile organic vapors in soil, the selected samples will be placed in clean glass jars, covered with aluminum foil, allowed to equilibrate with ambient air temperatures and then screened with a photoionization detector (PID) or flame ionization detector (FID). The results of the PID or FID screening will also be recorded in the field log. When using this technique to collect soil samples for laboratory analysis, sample containers will be filled per laboratory instructions. At the completion of each boring, the hole will usually be backfilled with formation material removed from the hole during sampling.

ATTACHMENT 3

DECONTAMINATION PROCEDURES (EXCERPT FROM ERM'S GENERIC QA/QC PLAN)

6.10.1 Equipment Decontamination

All nondisposable equipment used for the collection, preparation, preservation, and storage of environmental samples must be cleaned prior to their use and after each subsequent use. Unless the equipment and materials being used are disposable or are of sufficient number so as not to be reused during any one sampling period, decontamination will be conducted in the field. In order to prevent cross-contamination among ground water, surface water, and soil sampling locations, all sampling equipment will be decontaminated properly.

Before any equipment decontamination is conducted, a cleaning and decontamination area will be set up on the site. Ideally, the cleaning area will be away from sources of contamination (such as exhaust fumes or dust, for example) and out of direct sunlight, if possible. If necessary, a sheet of plastic or visqueen will be laid down, and equipment decontamination will be completed on the plastic sheet. Equipment that will be in contact with samples (such as bailers, split spoon samplers, core barrel samplers, hand augers, and trowel soil samplers) will be decontaminated.

6.10.1.1 Procedure for Decontaminantion of Sampling Equipment

The standard decontamination procedure will be as follows:

a. Rinse equipment with clean water;

b. Scrub equipment thoroughly using a phosphate free detergent (Alconox® or Liquinox®);

c. Rinse equipment with distilled or deionized water to remove detergent;

d. Rinse equipment with an appropriate solvent in which any potentially adhering and/or undesirable parameters are soluble. Pesticide-grade isopropanol will be the most commonly used solvent for equipment decontamination. Allow equipment to air dry as long as possible; and

e. If organic free water is available, rinse equipment three times. If organic free water is not available, allow equipment to air dry as long as possible.

Each soil and water sampling device will be decontaminated before the first sample, between samples, and after the last sample is taken. The split-spoon soil sampler will be decontaminated between each boring, but not between each sample if samples will not be subjected to chemical analysis.

ATTACHMENT 4

CALIBRATION PROCEDURE FOR PHOTOVAC TIP I

(EXCERPT FROM ERM'S GENERIC QA/QC PLAN)

4.1 HOW TO USE TIP I--DIRECT READING

TIP I is used as a direct-reading instrument in conjunction with the Span Kit (Part No. TA103).

1. Press POWER switch to run on TIP I.
2. Unlock ZERO and SPAN controls by turning locking rings clockwise.
3. Set SPAN control to 5.
4. Allow TIP I to sample clean air.
5. Adjust ZERO control until LCD reads 0.00.
6. Connect bag of Span Gas to TIP I inlet.
7. Adjust SPAN control until LCD indicates the Span Gas concentration (nominal--100 ppm isobutylene (2-methyl-1-propene)). Disconnect Span Gas Bag.
8. Sample clean air again and readjust ZERO control until LCD reads 0.00, if necessary.
9. Lock ZERO control by turning locking ring counterclockwise.
10. Sample Span Gas again and readjust SPAN control until LCD indicates the Span Gas concentration, if necessary.
11. Lock SPAN control by turning locking ring counterclockwise.
12. Observe sample concentration changes on LCD. Concentration of total ionizables is displayed in Span Gas equivalent units.
13. Do not allow TIP I to draw in any liquid.
14. Press POWER switch after use to turn off TIP I.