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CERTIFIED MAIL
RETURN RECEIPT REQUESTED

May 7, 1993

Joe Herrin, Senior Project Manager
Remediation
Safety-Kleen Corp.
17629 El Camino Real, Suite 400
Houston, Texas 77058

RE: Response to Public Comments and Closure Plan Approval

Dear Mr. Herrin:

The New Mexico Environment Department (NMED) hereby approves the final closure plan for Safety-Kleen Corp. Service Center 2720 Girard NE, Albuquerque, New Mexico (NMD000804294) dated May 18, 1992, with the enclosed Conditions for Closure Plan Approval. The Conditions for Closure Plan Approval is an addendum to the closure plan dated May 18, 1992. The approved plan is for closure of an underground storage tank system located at your Albuquerque facility.

On March 26, 1993, the Hazardous and Radioactive Materials Bureau (HRMB) of the NMED released the proposed closure plan for public notice. The closure plan issued for public comment included draft Conditions for Closure Plan Approval proposed by the HRMB. The HRMB received comments on the proposed closure plan during the public comment period which ended on April 26, 1993. Enclosed is NMED's Response to Comments.

The effective date of the NMED closure plan approval is May 14, 1993. This is the date that the HRMB will begin tracking Safety-Kleen's compliance with the schedule on page VII-2, Figure VII-1 of the approved closure plan. Safety-Kleen shall complete all closure activities and submit the closure certification to NMED by November 10, 1993, unless Safety-Kleen demonstrates to NMED, at least by October 11, 1993, that closure activities will, of necessity, take longer than 180 days to complete.

New Mexico DRUG FREE

Please contact Barbara Hoditschek or Marc Sides of my staff at (505) 827-4308 if you have any questions.

Sincerely,

Kathleen M. Sisneros, Director
Water and Waste Management Division

Enclosures

cc: Benito Garcia, HRMB
Barbara Hoditschek, HRMB
Marc Sides, HRMB
Bob Wachsmuth, Safety-Kleen
Jack Bedessem, Safety-Kleen
Dan Vigil, NMED District I Office
David Neleigh, EPA
File - Red

CONDITIONS FOR CLOSURE PLAN APPROVAL

SAFETY-KLEEN CORP. SERVICE CENTER CLOSURE PLAN
ALBUQUERQUE, NEW MEXICO
DATED MAY 18, 1992

The following Conditions for Closure Plan Approval is an addendum to the Closure Plan Safety-Kleen Corp. Service Center 2720 Girard NE, Albuquerque, New Mexico (NMD000804294) dated May 18, 1992. These conditions take precedence over any less stringent or conflicting requirements found in the above referenced document.

Page #III-7, first paragraph:

1. Any contamination identified during closure activities shall be subject to RCRA hazardous waste management requirements unless Safety-Kleen clearly demonstrates to NMED that the contamination resulted from sources other than a RCRA regulated hazardous waste management unit.

Page #III-7, paragraph 5:

2. All waste residues and decontamination waste water generated during closure activities shall be disposed of as hazardous waste unless laboratory analytical results demonstrate the waste is non-hazardous.

Page III-11, third paragraph:

3. Contaminated soils and concrete that are excavated during closure are subject to HWMR-7, Part VI, Section 40 CFR 265.117(a) and shall be managed and disposed of properly as non-hazardous or hazardous waste. Safety-Kleen shall notify NMED of any materials excavated and allow NMED the opportunity to collect all samples that NMED deems appropriate to confirm the nature of the waste.

Page III-12, second paragraph:

4. Degraded soils and other waste debris excavated during closure activities that are temporarily stored on plastic sheeting shall be kept covered or otherwise managed to minimize wind dispersal and precipitation run-on and run-off.

Page III-12, third paragraph:

5. The HRMB shall be notified at least 10 days prior to the soil sampling events.

Page III-13:

6. Safety-Kleen shall collect and analyze soil samples at a depth of 24" to 30" at the location selected in #1 and #2 in Activity 2.7, pages III-12 and III-13, (8 samples total).

Page III-13, fourth paragraph:

7. A closure plan amendment request will be prepared and submitted to the NMED within 60 days of completion of Phase 3 sample collection or by November 10, 1993, whichever is later. The amendment request shall include a plan to effectively monitor, and remediate any residual subsurface contamination to below NMED-Approved Health-Based Exposure Limit Criteria.

Page III-14, Activity 2.9:

8. Safety-Kleen shall report the location where clean fill was obtained.

Page IV-2, third paragraph:

9. Subsurface soils laboratory analytical results shall demonstrate at least 10 feet of uncontaminated soils underneath the USTs in the vadose zone, or groundwater monitoring shall be conducted to determine impacts to groundwater from releases from the units.

Page IV-4, second paragraph:

10. The Phase 3 assessment report shall be submitted to NMED within 60 days after Phase 3 samples are collected or by November 10, 1993, whichever is later.

Page IV-4, third paragraph:

11. The clean up levels shall be NMED-Approved Health-Based Exposure Limit Criteria. The criteria for clean closure are found in 55 FR No. 145, Appendix A through F, pages 30865-30873, dated July 27, 1990. The EPA Office of Solid Waste at (202) 260-4761 or the Environmental Criteria Assessment Office at (513) 569-7595 shall be consulted for the most current health effects data on any constituent of interest. The Point of Exposure is the location of the highest concentration of contamination released to the subsurface within the excavated unit. Combined health effects of contaminants shall be used to establish clean up concentrations.

Page V-1:

12. Safety-Kleen shall conduct Phase 3 Additional Assessment activities to determine the extent of soil and groundwater degradation and to develop site clean up activities. Within 60 days of completion of Phase 3 activities Safety-Kleen shall submit to NMED a detailed closure plan modification request to remove or decontaminate the site to NMED-Approved Health-Based Exposure Limit Criteria, or Safety-Kleen shall submit the certification report described in Activity 5.2.

Page VI-fourth paragraph:

13. The independent registered professional engineer shall be registered in the State of New Mexico.

NEW MEXICO ENVIRONMENT DEPARTMENT

RESPONSE TO COMMENTS

on the
Safety-Kleen Corp. Service Center Closure Plan
2720 Girard NE, Albuquerque, New Mexico

May 7, 1993

Below are significant public comments received on the proposed closure plan by the New Mexico Environment Department (NMED) during the public comment period which ran from March 26, 1993, through April 26, 1993. Following the comment is NMED's response and any changes made in finalizing the closure plan approval.

1. Comment: Conditions for Closure Plan Approval #1

S-K preformed a preliminary subsurface investigation in January-February 1992 to evaluate the potential impacts in the vicinity of the old USTs and return/fill station (reference Appendix B of Closure Plan). During the 1992 investigation, samples were collected from soil borings constructed as close to the old USTs and return/fill station as possible. The samples were field screened, and the most impacted soil samples were submitted to the laboratory for analyses. In addition, a composite sample (DS-1) of the auger cuttings was submitted for laboratory analysis of the toxicity characteristics.

The results of the analyses indicate that the degraded soils in the vicinity of the units scheduled for closure do not exhibit the characteristics of hazardous waste. Based on the 1992 investigation results and considerable past experience, S-K believes that degradation encountered during the proposed closure activities may be managed as non-hazardous waste. S-K proposes to inspect the material excavated during closure activities. If conditions appear different than anticipated or identified during the 1992 investigation, additional samples will be collected.

NMED Response:

Condition for Closure Plan Approval #1 was proposed to address the following statement on page III-7 of the closure plan: "The mineral spirits product tank and subsurface degradation associated with the product tank, if present, are not subject to RCRA hazardous waste closure regulations." NMED proposed Condition for Closure Plan Approval #1 to clarify that any and all subsurface degradation found during the conduct of approved closure plan activities is subject to RCRA closure regulations unless Safety-Kleen clearly demonstrates to NMED that the subsurface contamination present results from sources other than the RCRA regulated unit (eg. the mineral spirits

product tank or other potential contaminant source). This means that all activities approved in the closure plan are subject to the New Mexico Hazardous Waste Management Regulations (HWMR-7), Part VI, Subpart G closure regulations and any waste material or contaminated soil excavated or removed during closure activities is subject to HWMR-7, Part VI, Section 40 CFR 265.117(a). Likewise, any contamination left in place must meet NMED-Approved Health-Based Exposure Limit Criteria as the closure performance standard applicable to RCRA regulated units in order for NMED to accept a clean closure certification.

Changes Made in Finalizing Closure Plan Approval:

No changes were made to proposed Condition for Closure Plan Approval #1 in finalizing the closure plan approval.

2. Comment: Conditions for Closure Plan Approval #3

The inactive UST and return/fill station were used to manage spent mineral spirits. Spent mineral spirits has the potential to exhibit the characteristics of ignitability and toxicity (reference Table II-1 of Closure Plan). Therefore, soils and concrete degraded with spent mineral spirits would be hazardous only if the material exhibits the characteristics of hazardous waste.

As discussed in the Response to Condition (1), samples collected during the 1992 investigation were analyzed to evaluate the characteristics, degree and extent of degradation. The results of the analyses indicate soils in the vicinity of the old UST and return/fill station do not exhibit the toxicity characteristics of hazardous waste. Therefore, S-K believes that additional sampling and analysis of soils and/or concrete is unnecessary to document/justify appropriate management as a non-hazardous waste.

NMED Response:

Condition for Closure Plan Approval #3 proposes sampling and laboratory analysis of contaminated soils and concrete to determine proper disposal as non-hazardous or hazardous waste. The commentor states that preliminary investigations have not identified contaminated soils that would have to managed as hazardous waste if excavated. NMED is not convinced that Safety-Kleen has demonstrated that the limited investigations conducted in 1992 have identified the highest concentrations of contamination in subsoils. One of the main goals of closure activities is to determine the extent of subsoil contamination and its concentrations in order to make decisions on the amount of any excavation necessary to meet the clean closure performance standards.

NMED recognizes that methods other than sampling and laboratory analysis are available to make a hazardous waste determination. Safety-Kleen is ultimately responsible for making a proper determination of whether or not excavated soils are hazardous, and properly managing the waste. Any excavated soils generated during closure are subject to HWMR-7, Part VI, Section 40 CFR 265.117(a). NMED is not requiring that Safety-Kleen conduct laboratory analysis of excavated soils to make a hazard determination. However, NMED reserves the right to take samples to ensure that they are managed properly.

Changes Made in Finalizing Closure Plan Approval:

Condition for Closure Plan Approval #3 is revised as follows:

Contaminated soils and concrete that are excavated during closure are subject to HWMR-7, Part VI, Section 40 CFR 265.117(a), and shall be managed and disposed of properly as hazardous or non-hazardous waste. Safety-Kleen shall notify NMED of any materials excavated and allow NMED the opportunity to collect all samples that NMED deems appropriate to confirm the nature of the waste.

3. Comment: Conditions for Closure Plan Approval #7

This condition refers to submittal of a closure plan amendment which is referenced under Activity 2.7 (page III-13) and Phase 4 (page V-1). The results of Phase 3 (Additional Assessment Activities) will be necessary to evaluate the extent of potential subsurface impacts and develop an appropriate closure plan amendment/remedial action plan. Therefore, S-K proposes to submit a closure progress report (Phases 1-3) and a closure plan amendment/remedial action plan (Phase 4) within 60 days following receipt of complete and accurate laboratory data from Phases 2 and 3.

NMED Response:

Condition for Closure Plan Approval #7 requires Safety-Kleen to submit a closure plan amendment request to NMED within 60 days of completion of Phase 3 sample collection. Closure regulations stipulate that closure activities be completed within 180 days after closure plan approval by the Department. NMED requires Safety-Kleen to submit a closure plan amendment request or closure certification by November 10, 1993 or within 60 days of completion of Phase 3 sample collection, whichever is later. Safety-Kleen is responsible for ensuring timely receipt of laboratory analytical data. The schedule on Figure VII-1 establishes the time frame for completion of Phase 3 sampling efforts.

Changes Made in Finalizing Closure Plan Approval:

Condition for Closure Plan Approval #7 is revised as follows:

A closure plan amendment request will be prepared and submitted to the NMED within 60 days of completion of Phase 3 sample collection or by November 10, 1993, whichever is later. The amendment request shall include a plan to effectively monitor, and remediate any residual subsurface contamination to below NMED-Approved Health-Based Exposure Limit Criteria.

4. Comment: Conditions for Closure Plan Approval #10

The results of the additional assessment activities (Phase 3) will be necessary to evaluate the extent of subsurface impacts and develop an appropriate remedial action program. S-K intends to prepare the Phase 3 assessment report in conjunction with the closure progress report and closure plan amendment (reference Condition 7). Therefore S-K proposes submittal of this comprehensive document(s) within 60 days following receipt of complete and accurate laboratory data, as opposed to within 60 days after sample collection.

NMED Response:

Condition for Closure Plan Approval #10 requires the Phase 3 assessment report to be submitted to the NMED within 60 days after samples are collected. Since Safety-Kleen intends to prepare this report in conjunction with the closure progress report and closure plan amendment, NMED requires that the Phase 3 assessment report be submitted at the same time as the closure progress report, closure plan amendment, and/or the closure certification. Since closure activities are to be completed within 180 days after closure plan approval by the Department, the Phase 3 assessment report submittal can not extend beyond that time period, unless Safety-Kleen demonstrates to NMED that closure activities will, of necessity, extend beyond 180 days. Therefore, the Phase 3 assessment report is due to be submitted to NMED by November 10, 1993, or within 60 days after Phase 3 samples are collected, whichever is later.

Changes Made in Finalizing Closure Plan Approval:

Condition for Closure Plan Approval #10 is revised as follows:

The Phase 3 assessment report shall be submitted to NMED within 60 days after Phase 3 samples are collected or by November, 10, 1993, whichever is later.

PROJECT: 561

CLOSURE PLAN
SAFETY-KLEEN CORP. SERVICE CENTER
2720 GIRARD NE
ALBUQUERQUE, NEW MEXICO
(NMD 000804294)

May 18, 1992

Submitted to:

Safety-Kleen Corp.
P.O. Box 1429
San Pedro, CA 90733-1429

TriHydro Corporation

920 Sheridan Street
Laramie, Wyoming 82070

(307) 745-7474
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CHAPTER I

INTRODUCTION

Safety-Kleen Corp. (S-K) operates a branch service center at 2720 Girard NE, Albuquerque, New Mexico. The facility functions as a service center for distribution of mineral spirits, and storage of spent mineral spirits, other parts-cleaning solvents, spent dry cleaning waste, and paint waste. The service center is an integral part of a distribution/recycling network and does not include treatment or disposal facilities.

S-K intends to close an inactive underground storage tank system (UST), return/fill station, and associated equipment at the facility. These inactive units were removed from service following installation of a new UST system and return/fill station which operate under an approved RCRA Part B permit. The new units became operational in March 1992, at which time the old units, not included in the Part B permit, were removed from operation. This plan describes the procedures necessary to complete final closure of the inactive hazardous waste storage units. Detailed descriptions of the facility operations, waste management units and waste characteristics are presented in Chapter II. The hazardous waste storage facilities will be closed in accordance with the applicable RCRA interim status regulations (40 CFR 265.110 et seq., 265.140 et seq., and 265.197).

S-K intends to remove or decontaminate all hazardous waste residues at this facility, to remediate any associated impacts to soil or ground water, and perform a clean closure. S-K intends to clean close the hazardous waste facility according to the procedures and schedule in Chapters III through VII.

Due to the lack of secondary containment for the UST, contingent closure and post-closure plans are required under 40 CFR 265.197(c). These contingent plans assume that all of the wastes cannot be removed or decontaminated and the site must be closed in accordance with the closure and post-closure requirements that apply to landfills (40 CFR 265.310). Contingent closure and post-closure procedures are presented in Chapter VIII. S-K intends to avoid the need to implement the contingent closure and post-closure procedures by performing a clean closure.

This plan also describes the procedures necessary to permanently close the product mineral spirits UST at the facility. The product mineral spirits UST is not a hazard-

ous waste management unit. The product UST system will be closed in accordance with this plan, the applicable federal UST regulations (40 CFR 280.70 et seq.) and State of New Mexico regulations.

CHAPTER II

FACILITY DESCRIPTION

The Safety-Kleen (S-K) service center is located in Bernalillo County, New Mexico, at 2720 Girard NE, City of Albuquerque. A site location map is shown on Figure II-1. The site is surrounded by light industrial, commercial and business facilities.

The site occupies an area of approximately 45,000 square feet and lies at an elevation of approximately 5,110 feet above sea level. The site is adjacent to an ephemeral stream located on the east side of the site.

Facility Identification

Name:	Safety-Kleen Corp. 7-008-01 Albuquerque Service Center
Location:	2720 Girard NE Albuquerque, New Mexico 87101 Lat: 35° 06' 44" N Lon: 106° 36' 46"W
EPA ID.:	NMD000804294
Facility Operator:	Safety-Kleen Corp. 777 Big Timber Road Elgin, IL 60123
Contact for Closure:	Anne Lunt Sr. Project Manager-Remediation P.O. Box 1429 San Pedro, CA 90733-1429 (310) 831-3903
Facility Contact:	Ralph Ondatje, Branch Manager (505) 884-2277

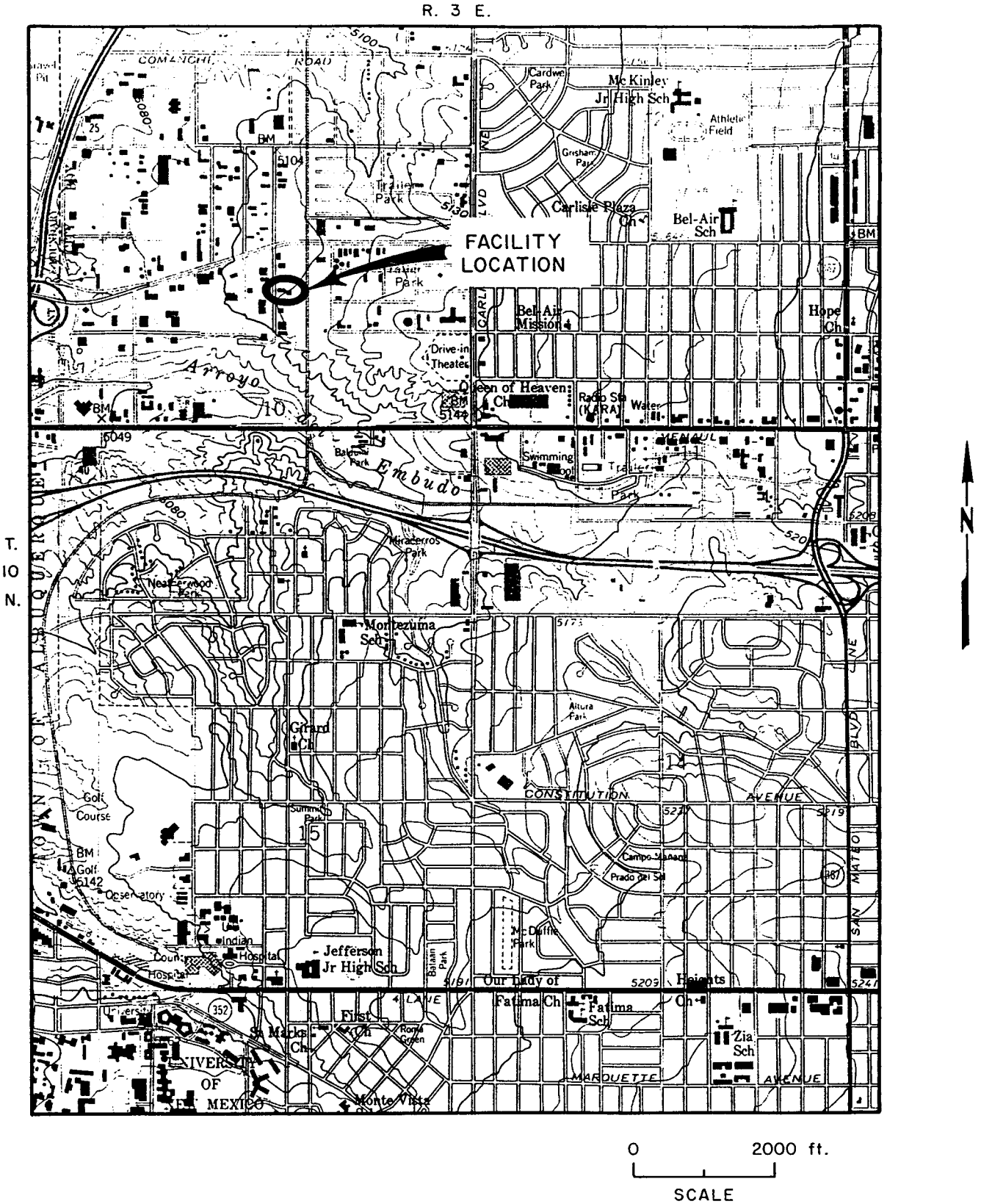

FIGURE II-1 : FACILITY LOCATION, SAFETY-KLEEN CORP. SERVICE CENTER, ALBUQUERQUE, NEW MEXICO

Description of Business Activity

S-K is an international service-oriented company whose customers are primarily engaged in automotive repair, industrial maintenance and dry cleaning. The company has been operating since 1968 offering solvent collection and reclamation services for its 400,000 customers, more than 99% of whom generate less than 1000 kilograms per month.

Currently, S-K offers several services, one of which involves the accumulation and storage of spent mineral spirits solvent at 164 service centers in 46 states, including the Albuquerque, New Mexico facility. These wastes are shipped from the service centers to one of the Safety-Kleen recycle centers and are then returned to customers as usable product. A description of this service follows.

The original service offered by the company, beginning in 1968, was the parts cleaner service, and it remains the primary business activity. This service involves the leasing of a small degreasing unit which consists of a metal sink affixed to a 16 or 30 gallon drum containing Safety-Kleen 105 Solvent (S-K mineral spirits; see MSDS, Appendix A). The solvent consists primarily of C9 through C13 petroleum hydrocarbons in the boiling range of 310 to 400°F. Impurities such as lighter hydrocarbons and chlorinated solvents usually constitute less that 1% of the used solvent.

On a regularly scheduled basis, a S-K representative cleans and inspects the parts washer machine and replaces the drum of used solvent with a clean product. The drums of used solvent, collected from customers, are transferred by S-K personnel to a waste storage tank at the S-K service center. Prior to the waste tank reaching maximum capacity, a tanker truck is dispatched from the regional recycle center to deliver a load of clean solvent and collect the spent solvent at the service center. Two-thirds of the fresh solvent used by S-K customers has been reclaimed by S-K at regional recycle centers, with the remainder being purchased from vendors.

Units to be Closed

A site plan showing the location of the units to be closed is presented on Figure II-2. The underground storage tanks (USTs) and return/fill station are located in the south central part of the site. The entire site is sur-

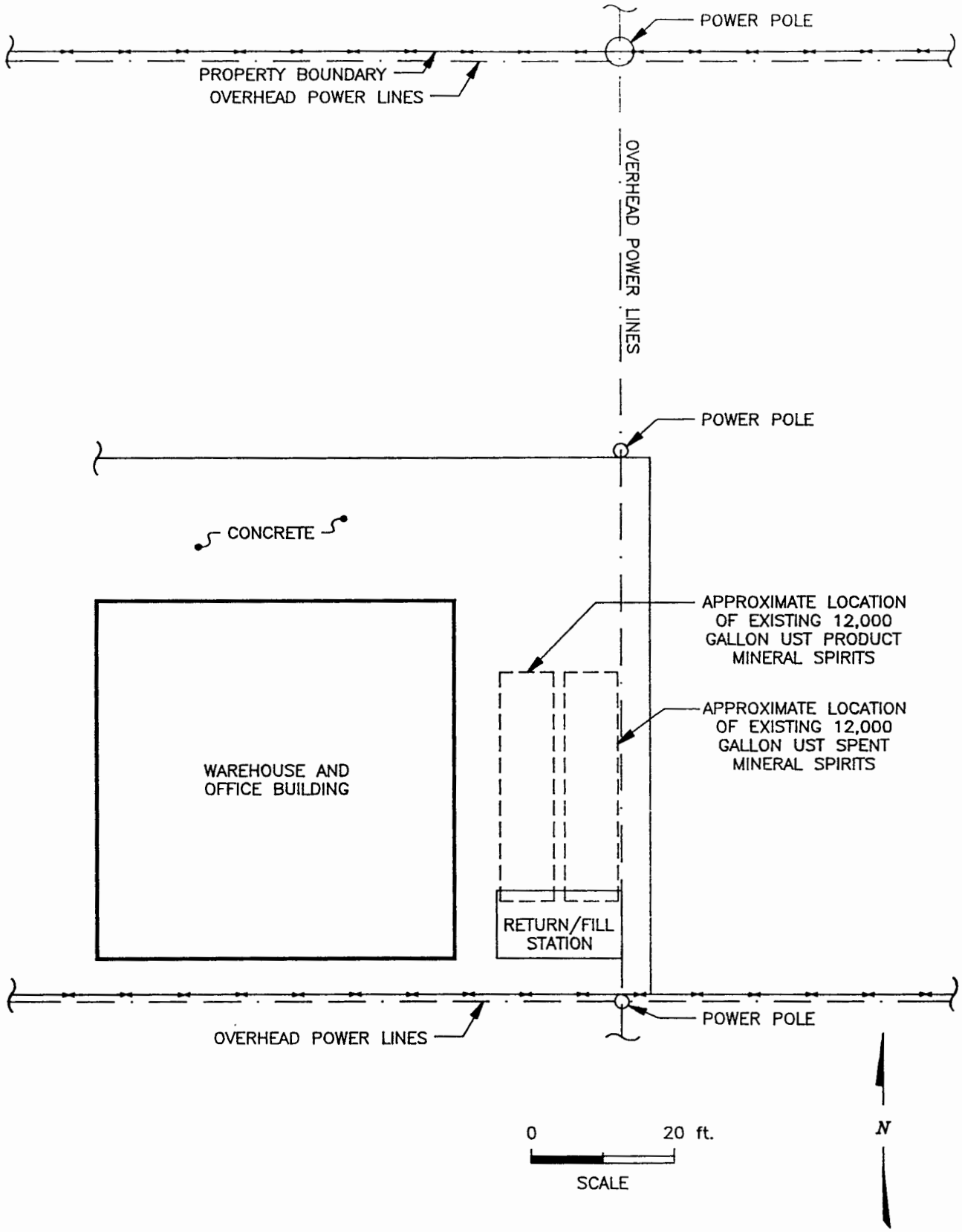

FIGURE II-2 :SITE PLAN, SAFETY-KLEEN CORP. SERVICE CENTER, ALBUQUERQUE, NEW MEXICO

SKANSITE

rounded by a 6-foot high security fence with lockable gates topped with three rows of bared wire and razor wire. The gates are locked after business hours.

Waste Management Units

A summary of the waste management units to be closed, waste stream characteristics, and maximum waste inventory is presented in Table II-1. The waste stream characteristics listed in Table II-1 will form the basis for sampling and analysis methods conducted during the closure activities. The units at the facility to be closed under RCRA interim status include:

1. One 12,000-gallon steel UST for storage of spent mineral spirits and sludge, associated piping, and appurtenances; and

2. A two-bay return and fill station with two wet dumpsters (capacity 375 gallons each).

The UST does not have a secondary containment system and therefore is subject to the requirements for contingent closure and post-closure plans under 40 CFR 265.197 (c). Secondary containment at the return and fill station is accomplished by steel containment pans under the dumpsters. The steel pans are located on a sloped concrete containment area surrounded by concrete curbing.

Product UST

A second 12,000 gallon steel UST used for storage of product mineral spirits is located immediately west of the spent solvent UST (see Figure II-2). The product UST, associated piping, and appurtenances, is not a waste management unit. The product mineral spirits UST system will be removed at the same time as the waste management UST in general accordance with this closure plan.

Maximum Waste Inventory

A summary of the maximum waste inventory ever present in the facility storage units is presented in Table II-1. The actual quantities of wastes present at closure will be less than the maximum inventory estimate. S-K anticipates that most wastes will have been removed from the facility prior to commencement of the actual closure activities. Any wastes remaining at the time of closure will be

Table II-1. Waste Management Units, Waste Stream Characteristics, and Maximum Inventory of Wastes, Safety-Kleen Corp. Service Center, Albuquerque, New Mexico.

Waste Management Area	Waste Stream Characteristics	Maximum Inventory
1. One 12,000 gallon UST system for spent mineral spirits storage.	Ignitability (40 CFR 261.21)-(D001) Toxicity (40 CFR 261.24)[1]	12,000 gallons
2. A two bay return and fill station with two wet dumpsters (375 gallon capacity each)	Ignitability (40 CFR 261.21)-(D001) Toxicity (40 CFR 261.21)[1]	750 gallons

[1] Toxicity Characteristic includes the following: D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D0021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043

transported to a permitted TSD facility (i.e., a S-K Recycle Center) in accordance with applicable State and Federal regulations. For the purpose of the closure cost estimates, it is assumed that all hazardous wastes will be disposed of at a third party permitted treatment, storage and disposal (TSD) facility, a distance of approximately 400 miles from the S-K Albuquerque facility.

Spent Mineral Spirits UST

The spent mineral spirits UST should be empty at the time closure begins. However, if the tank was full the maximum inventory would be 12,000 gallons of spent mineral spirits.

Return/Fill Station

No wastes are expected to be in storage at the return and fill stations when closure begins. The two wet dumpsters have a maximum design capacity of 375 gallons each. Therefore, the maximum inventory of waste which may be present at closure in the return/fill station is 750 gallons of spent mineral spirits and sludge.

Site Assessment Results

S-K conducted environmental site assessment activities at the Albuquerque, New Mexico facility in October 1991 and January-February 1992. The assessment was conducted in the vicinity of the inactive USTs and return/fill station in response to a release from the product mineral spirits UST feedline.

A preliminary assessment was performed at the site on October 17, 1991. The preliminary investigation included the collection and analysis of soil samples at five borehole locations with depth ranging from 8-74 feet below ground surface. Based on the results of the preliminary investigation, S-K determined that additional assessment work was necessary and implemented the additional investigation in January and February 1992.

The additional assessment work included borehole drilling in the vicinity of old USTs and return/fill station, and soil sample collection for field screening and laboratory analysis. The objectives of the investigation were to:

1. Confirm the results of the preliminary investigation;

2. Evaluate the lateral and vertical extent of subsurface impacts; and

3. Determine whether soil quality degradation extends to ground water.

The results of the additional assessment activities are contained in the report "Results of Additional Assessment Activities, Safety-Kleen Corp. Service Center, Albuquerque, New Mexico," dated April 14, 1992. A copy of this report is included as Appendix B of the closure plan.

Geology and Hydrogeology

The area lithology is unconsolidated sand and gravel basin fill, composed primarily of decomposed granite from the Sandia Mountains to the east. Sediments encountered during borehole drilling were sand and silty sand, grading into coarser-grained sand, gravel, and cobbles.

Ground water was not encountered in any of the borings to a depth of 85 feet, the deepest boring drilled. Information obtained from the City of Albuquerque indictates that ground water is a minimum of 200 feet, and more likely 250 feet, below ground surface in the vicinity of the S-K facility. A city water supply well is located approximately one-quarter mile east of the site, and may influence the local ground-water gradient during operation.

Soil Boring/Sampling Procedures

Soil samples were collected from the borehole locations shown on Figure II-3. Borehole locations were chosen based on proximity to the RCRA units and drill rig accessibility, which was influenced by overhead power lines, buildings, the USTs and return/fill station. The borings were advanced to depths of 80 to 85 feet, and soil samples were collected at 5 foot intervals with a split spoon sampler. In addition to the borehole samples, one sample was collected from a backhoe pit at a depth of 5 feet (Figure II-3). Soil samples were field screened for organic vapors with a photoionization detector (PID) and a field gas chromatograph (GC). The field screening results were used to select soil samples for laboratory analysis. Ten samples were retained for laboratory analysis of hydrocarbon characteristic screen (EPA 8015, modified), volatile organic compounds (EPA 8240) and metals (EPA 6010-cadmium, chromium, and lead).

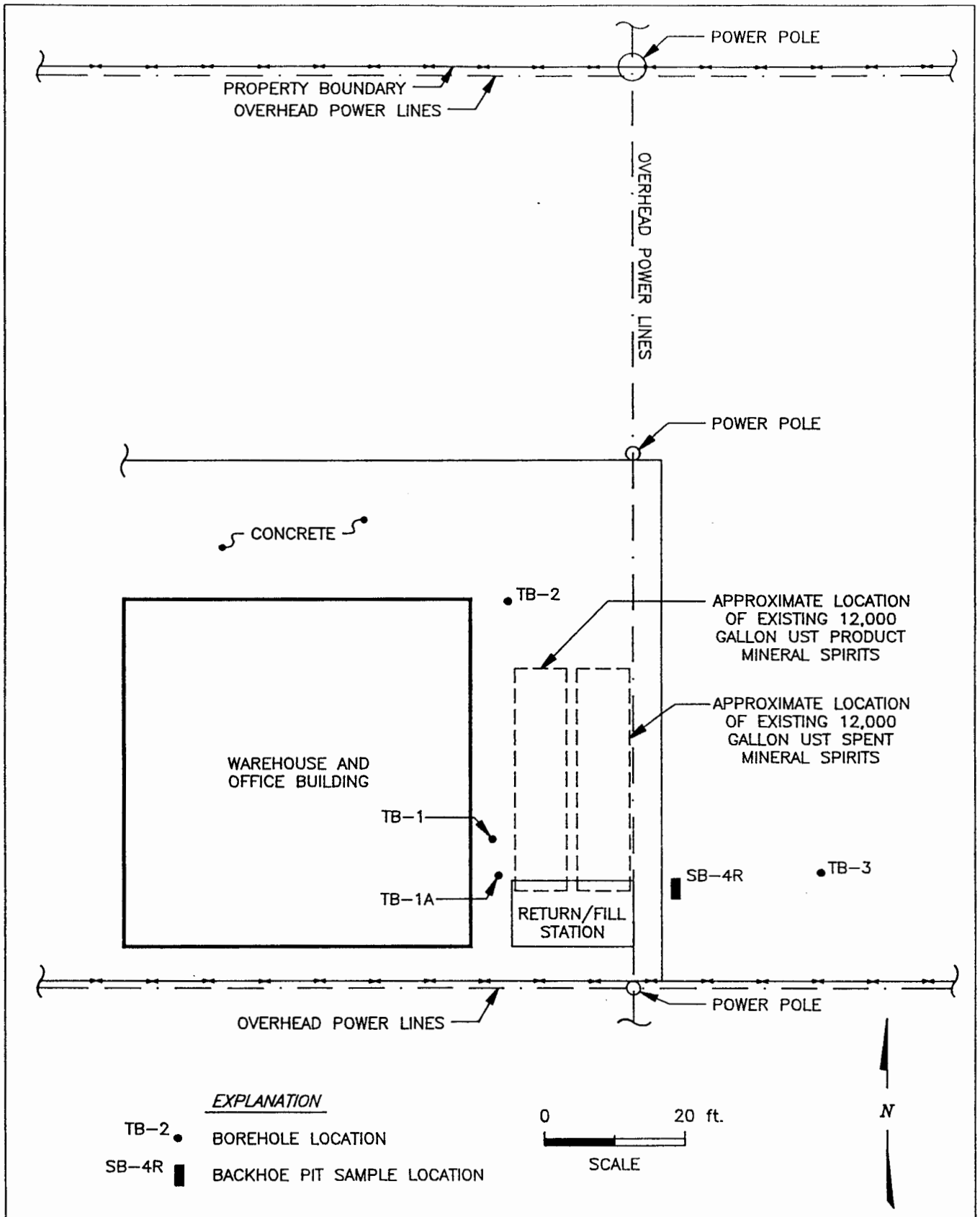

FIGURE II-3 :ADDITIONAL ASSESSMENT SOIL SAMPLING LOCATIONS, SAFETY-KLEEN CORP. SERVICE CENTER, ALBUQUERQUE, NEW MEXICO (January-February 1992)

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Soil Boring/Sampling Results

The soil sampling results are summarized in tables II-2 and II-3. Table II-2 contains the field screening results and Table II-3 contains the laboratory results.

Borehole TB-1 was drilled west of the USTs and return/fill station and closest to the mineral spirits product spill site as possible. Field screening at borehole TB-1 indicated impacts to a depth of 70 feet. The laboratory data indicated the low level presence of toluene (0.016 mg/kg) and xylenes (0.023 mg/kg) at this depth.

Boreholes TB-2 and TB-3 were constructed immediately north of the USTs and east of the return/fill station, respectively, to evaluate the lateral extent of soil quality degradation. Field screening of all soil samples collected from these boreholes resulted in background levels of total organic vapors (TOV), except at Borehole TB-2, between 60 and 80 feet. A low level of xylene (0.0076 mg/kg) was detected in the deepest soil sample from borehole TB-2. All organic constituents were nondetectable in the deepest soil sample from TB-3. Based on the field and laboratory data, soil quality impacts are not extensive to the north and east of the USTs and return/fill station. Access to the south of the USTs and west of TB-1 was not available during the January-February 1992 investigation.

Subsurface conditions and drill rig access prevented collection of soil samples from depths greater than 81.5 feet below ground surface at the site. However, information provided by the City of Albuquerque Public Works Department indicated that the depth to ground water is at least 200 feet below ground surface in the vicinity of the facility. The field and laboratory data generated during the additional assessment activities do not indicate that soil quality degradation extends to the ground-water table (at the locations investigated) underlying the S-K facility.

Table II-2. Field Screening Results, Additional Assessment Activities, Safety-Kleen Corp. Branch Service Center, Albuquerque, New Mexico (January - February 1992).

Borehole/ Date	Interval Depth (ft-bgs)	Field Screening PID (ppm-TOV)	Field GC Sample Analyzed	Laboratory Sample Submitted
TB-1				
1/29/92	0.5-2.0	1.0	No	No
	5.0-6.5	0.0	No	No
	10.0-11.5	0.0	No	No
	15.0-16.5	18	No	Yes
	20.0-21.5	53	No	Yes
	25.0-26.5	8.3	No	No
	30.0-31.5	7.5	No	No
	35.0-36.5	32	No	No
	40.0-41.5	79	No	No
	45.0-46.5	940	Yes	No
	50.0-51.5	1,080	Yes	Yes
	55.5-57.0	730	Yes	No
	60.0-61.5	75	No	Yes
	66.0-67.5	61	No	No
1/30/92	70.0-71.5	2.9	Yes	Yes
	75.0-76.5	4.4	Yes	No
	80.0-81.0	2.2	Yes	No
TB-2				
1/31/92	0.5-2.0	0.3	No	No
	5.0-6.5	0.3	No	No
	10.0-11.5	0.7	No	No
	15.0-16.5	0.3	No	Yes
	20.0-21.5	0.0	No	No
	25.0-26.5	0.0	No	No
	30.0-31.5	0.0	No	No
	35.0-36.5	0.0	No	No
	40.0-41.5	0.0	No	No
	45.0-46.5	0.0	No	No
	50.0-51.5	0.7	Yes	No
	55.5-56.5	--	No	No
	60.0-61.5	5.0	Yes	No
	65.0-66.5	--	No	No
	70.0-71.5	2.6	Yes	No
	75.0-76.5	0.0	Yes	No
2/1/92	80.0-81.5	9.8	Yes	Yes
TB-3				
2/2/92	0.5-2.0	0.4	No	No
	5.0-6.5	0.4	No	No
	10.0-11.5	0.9	No	No
	15.0-16.5	0.9	No	Yes
	20.0-21.5	0.4	No	No
	25.0-26.5	0.4	No	No
	30.0-31.5	0.4	No	No
	35.0-36.5	0.4	No	No
	40.0-41.5	0.7	No	No
	45.0-46.5	0.4	No	No
	50.0-51.5	0.2	No	No
	55.0-56.5	0.4	No	No
	60.0-61.5	1.1	No	No
	65.0-66.5	0.7	No	No
	70.0-71.5	0.9	Yes	No
	75.0-76.5	0.4	Yes	No
	80.0-81.5	0.2	No	Yes
SB-4R				
1/29/92	5.0	0.4	No	Yes

ft-bgs - Sample depth interval in feet below ground surface.
ppm TOV - Parts per million total organic vapor relative to 100 ppm isobutylene standard calibration gas.

Table II-3. Laboratory Results, Additional Assessment Activities, Safety-Kleen Corp. Branch Service Center, Albuquerque, New Mexico (January - February 1992).

Borehole/ Date	Depth (ft-bgs)	Hydrocarbon Characterization Screen (mg/kg)	Volatile Organic Compounds (mg/kg)		Total Metals (mg/kg) Cadmium	Chromium	Lead
TB-1							
1-29-92	16.0-16.5	All ND	All ND		ND(1)	2	ND(5)
	21.0-21.5	All ND	All ND		ND(1)	4	ND(5)
	50.0-51.5	All ND	All ND		1	14	ND(5)
	61.0-61.5	All ND	Toluene	0.006	ND(1)	10	ND(5)
			Ethylbenzene	0.007			
			All Others	ND			
1/30/92	71.0-71.5	All ND	Toluene	0.016	ND(1)	6	ND(5)
			Total xylenes	0.023			
			All Others	ND			
TB-2							
1/31/92	15.5-16.0	All ND	All ND		ND(1)	8	ND(5)
2/1/92	81.0-81.5	All ND	Total xylenes	0.0076	ND(1)	11	ND(5)
			All Others	ND			
TB-3							
2/2/92	15.5-16.0	All ND	Toluene	0.0057	ND(1)	2	ND(5)
			All Others	ND			
2/3/92	81.0-81.5	All ND	All ND		ND(1)	14	ND(5)
SB-4R							
1/29/92	5.0	All ND	All ND		ND(1)	16	ND(5)

Notes:

ft-bgs = Sample depth interval in feet below ground surface.
ND = Constituent not detected above analytical detection limits in parentheses hydrocarbon characterization screen included analysis for seven common hydrocarbon products.
Hydrocarbon Characterization Screen Modified Method 8015 (GC/FID)
Volatile Organic Compounds Method 8240
Total Metals Method 6010

CHAPTER III

CLOSURE ACTIVITIES

S-K intends to close the waste management units and product UST system following approval of this closure plan. Closure activities include decontamination of the return/fill station, UST and appurtenances, and remediation of associated subsurface degradation. The planned activities are intended to meet the closure performance standard at 40 CFR 265.112, which is to:

1. Minimize the need for further maintenance; and

2. Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere.

Closure Objectives

The objectives of this closure project are based on review of existing information, State and Federal regulations, and communication with S-K personnel. The project-specific objectives for closure of the return/fill station and UST system at this service center are as follows:

1. Perform work in accordance with the closure plan, and in coordination with the New Mexico Environment Department (NMED) and local regulatory agencies.

2. Perform work activities in accordance with appropriate health and safety protocol.

3. Develop specifications for closure activities so that a qualified contractor may be selected to perform the work.

4. Perform closure activities (e.g., UST removal) in a manner which will minimize potential for damage to adjacent structures.

5. Dismantle, decontaminate, and document "clean closure" of equipment comprising the return/fill station and wet dumpsters.

6. Remove and decontaminate the UST systems, including the spent mineral spirits tank, product tank, and associated appurtenances and piping.

7. Assess subsurface degradation attributable to this facility in accordance with industry standards and agency regulations.

8. Remediate attributable subsurface degradation to achieve "clean closure" of the facility.

9. Document work activities and submit a written report which summarizes and certifies "clean closure" of the waste management units at this facility.

S-K intends to adopt a phased approach to closure of the Albuquerque facility. The phased closure activities are outlined in Table III-1. The phased activities will be performed in general accordance with the work specifications and procedures as described in the following sections of this closure plan.

Phase 1 - Develop and Implement Closure Specifications

Safety-Kleen Corp. (S-K) has developed this facility closure plan to summarize procedures for decontamination of the return/fill station, UST systems and appurtenances, and remediation of associated subsurface degradation. The activities to be conducted during Phase 1 are:

Activity 1.1: Compilation and review of pertinent data and regulations (completed).

Activity 1.2: Preparation of Health and Safety Plan.

Activity 1.3: Selection of the remediation contractor.

Activity 1.4: Implement health and safety procedures.

Activity 1.5: Implement site security procedures.

These five activities are described below.

Table III-1. Closure Activities Outline, Safety-Kleen Corp. Service Center, Albuquerque, New Mexico.

Phase 1	DEVELOP AND IMPLEMENT CLOSURE SPECIFICATIONS	
	Activity 1.1	Compile Pertinent Information
	Activity 1.2	Prepare Health and Safety Plan
	Activity 1.3	Select Remediation Contractor
	Activity 1.4	Implement Health and Safety Procedures
	Activity 1.5	Implement Site Security Procedures
Phase 2	RETURN/FILL STATION AND UST SYSTEM DECONTAMINATION	
	Activity 2.1	Coordinate with Contractors, Federal, State, and Local Officials
	Activity 2.2	Remove Product, Wastes, and Sludges
	Activity 2.3	Decontaminate and Remove Return/ Fill Station
	Activity 2.4	Tank Entry
	Activity 2.5	Excavate and Remove UST Systems
	Activity 2.6	Manage Excavated Soils
	Activity 2.7	Sample and Analyze Soils
	Activity 2.8	Fill, Compact, and Refinish Excavation
	Activity 2.9	Prepare Closure Progress Report
Phase 3	ADDITIONAL ASSESSMENT ACTIVITIES	
	Activity 3.1	Evaluate Extent of Impact
	Activity 3.2	Establish Cleanup Levels
	Activity 3.3	Request Closure Period Extension
Phase 4	IMPLEMENT REMEDIAL ACTION	
	Activity 4.1	Develop Remedial Action Plan
	Activity 4.2	Implement Remedial Action
	Activity 4.3	Monitor Remediation Progress
	Activity 4.4	Prepare Remediation Progress Reports
Phase 5	CLOSURE CERTIFICATION REPORT	
	Activity 5.1	Compile and Evaluate Data
	Activity 5.2	Prepare Closure Certification Report

Activity 1.1 - Compile Pertinent Information

The closure activities and work specifications are based on the site-specific conditions and materials, applicable regulations, and guidance documents. The work specifications describe procedures for removing, cleaning, and disposing of the tank systems, in addition to vacuum truck service, excavation, and confined space entry.

The specifications consist of guideline documents published by American Petroleum Institute (API), Occupational Safety and Health Administration (OSHA), National Fire Protection Association (NFPA), and National Institute for Occupational Safety and Health (NIOSH). The sources of information used to develop the closure plan and specifications are as follows:

Closure Plan References

1. "Hazardous Waste Facility Permit, Safety-Kleen Corp. Service Center, Albuquerque, New Mexico" (NMD000804294) January 29, 1992.

2. "Interim Status Requirements for Treatment, Storage, and Disposal Facilities" (40 CFR Part 265 Subpart G "Closure and Post-Closure" and Subpart J "Tank Systems").

3. "Underground Storage Tanks" (23 CAC 2670).

4. "Results of Additional Assessment Activities, Safety-Kleen Corp. Service Center, Albuquerque, New Mexico" (April 14, 1992).

Specifications

1. American Petroleum Institute, RP 1604 "Removal and Disposal of Used Underground Petroleum Storage Tanks."

2. American Petroleum Institute, Pub. 2015 "Cleaning Petroleum Storage Tanks."

3. American Petroleum Institute, Pub. 2217 "Guidelines for Confined Space Work in the Petroleum Industry."

4. American Petroleum Institute, Pub. 2219 "Safe Operation of Vacuum Trucks in Petroleum Service."

5. Occupational Safety and Health Administration Standards, "Excavations, Trenching, and Shoring" (29 CFR Sections 1926.850 - 1926.653).

6. Occupational Safety and Health Standards "Permit Required Confined Spaces" (29 CFR Section 1910.146).

7. National Institute for Occupational Safety and Health, "Criteria for a Recommended Standard - Working in Confined Space."

8. National Fire Protection Association, No. 327 "Standard Procedures for Cleaning or Safeguarding Small Tanks and Containers."

The closure plan references and work specifications are incorporated into this plan by reference. All of the closure plan references and specifications will be made available at the site during closure activities.

Activity 1.2 - Prepare Health and Safety Plan

S-K will require contractors working on this project to develop a Health and Safety Plan prior to commencement of onsite assessment and closure activities. The Health and Safety Plan(s) will be prepared in accordance with OSHA regulations in 29 CFR 1910.120. The health and safety protocol will be designed to meet the specific needs of this project and shall be considered a supplement to the work specifications.

All S-K and contractor personnel will follow a Health and Safety Plan developed by the respective companies. Subcontractors will also be encouraged to follow a health and safety plan developed by their respective companies. The primary responsibility for employee safety lies with each individual employer. Each person working onsite must maintain a general responsibility to identify and correct any potential health and safety hazards and cooperate toward working as safely as possible.

Activity 1.3 - Select Remediation Contractor

Work specifications will be submitted to several qualified UST removal/remediation contractors with a request for bid. S-K will select a UST removal/remediation contractor(s) based on qualifications, experience, responsiveness, and cost to perform the specified work. The contractor(s) will be required to provide all equipment necessary to perform the specified work, maintain appropri-

ate certification(s), and perform work in a safe and conscientious manner.

S-K will contract with an independent registered professional engineer to supervise all activities conducted by the UST removal/remediation contractor. Following completion of closure, the engineer will certify that the closure activities followed the approved closure plan.

Activity 1.4 - Implement Health and Safety Procedures

The four principal health and safety concerns on this project involve combustible/flammable or toxic vapors in the work area, confined space entry/oxygen deficient atmospheres, structural integrity of the excavation, and possible contact with hazardous waste. These concerns will be addressed through implementation of precautionary measures described in the work specifications and Health and Safety Plan(s). S-K will conduct site monitoring during closure activities and will notify neighboring businesses if there is a potential for offsite health and safety hazards due to closure operations.

Activity 1.5 - Implement Site Security Procedures

S-K will maintain site security procedures in accordance with 40 CFR 265.14 during the closure period. The site is surrounded by a 6-foot high steel fence topped with three strands of barbed wire and razor wire with locking gates. The gates are kept locked after business hours. Warning signs reading "Caution - Hazardous Waste Storage Area, Unauthorized Persons Keep Out" are posted on the gates and at 50-foot intervals on fences. S-K will also post a sign at the entrance with the name and phone number of the 24-hour S-K emergency contact during closure. The security system prevents unknowing and unauthorized entry into the hazardous waste storage units.

Phase 2 - Return/Fill Station and UST System Decontamination

An independent professional engineer or designate will function as the S-K onsite representative during closure activities. The engineer will supervise UST removal, decontamination, and remediation, and document the closure activities.

Decontamination of the return/fill station, removal of the spent mineral spirits tank and remediation of subsurface degradation, if necessary, will be managed under the RCRA hazardous waste regulations and in accordance with this closure plan. The mineral spirits product tank and subsurface degradation associated with the product tank, if present, are not subject to RCRA hazardous waste closure regulations. The product tank removal and associated remediation, if necessary, will be managed in general accordance with this plan and applicable federal (40 CFR Part 280) UST regulations.

Activity 2.1 - Coordinate With Contractors, Federal, State and Local Officials

The engineer will coordinate with the selected contractor(s), and Federal, State, and local officials to ensure that the closure activities are performed in accordance with the work specifications and this plan. As shown on the site plan (Figure II-2) overhead power lines are located in the UST and return/fill station area. The contractor(s) will be responsible for contacting local utility companies to mark and/or disconnect aboveground and underground lines as required prior to any onsite excavation work.

Activity 2.2 - Remove Product, Wastes and Sludges

The locations of the return/fill stations and UST systems are shown on Figure II-2. The contractor shall be responsible for opening the USTs, removing cover material if necessary to access the tanks, and securing utilities.

Decontamination of Wet Dumpsters and Appurtenances

Any mineral spirits liquids remaining in the wet dumpsters will be transferred to the spent mineral spirits UST. The sludge in the wet dumpsters will be removed, drummed and labeled or pumped directly into a vacuum truck, and manifested for proper disposal at a permitted TSD facility (i.e., a S-K Recycle Center).

The wet dumpsters will be decontaminated with a high pressure wash system with a hot water detergent solution. The appurtenances and piping shall be flushed with a detergent solution. Washing and flushing shall continue until the appurtenances and piping have been designated safe for transport by the engineer. The decontaminated wet

dumpsters, piping, and appurtenances will be transported as non-regulated hazardous scrap metal (40 CFR 261.6) to a facility for recycling.

USTs Evacuation

Precautionary measures must be implemented to prevent sparks and eliminate sources of ignition during UST access. All equipment utilized must be explosion proof because potentially combustible vapors may exist in the tanks and lines. No personnel will be allowed to enter the tanks without proper respiratory protection. All tank work shall be in accordance with the specifications and coordinated with the engineer.

Proper procedures for vacuum truck operations are described in the work specifications, which will be available onsite during closure activities. The contractor shall remove as much remaining product, spent mineral spirits and other liquids from the USTs as possible. The contractor shall properly containerize and prepare the liquids for transportation to a permitted TSD facility (i.e., a S-K Recycle Center).

Non-pumpable sludges and residue may exist in the tanks after removal of the liquids. The contractor will be required to manually remove as much remaining sludge and residue from the tanks as possible. The contractor shall provide auxiliary pumps and high pressure steam cleaning equipment to loosen scale/residue from the tank interiors. The contractor shall provide a vacuum truck and/or drums to containerize the sludge and residue. Non-flowable (non-pumpable) waste solids shall be containerized in 16 gallon drums, labeled and manifested for transport and disposal at a permitted TSD facility (i.e., a S-K Recycle Center).

Activity 2.3 - Dismantle and Remove Return/Fill Station

The return/fill station will be cleaned and dismantled at the site. The contractor will scrap or stockpile the disassembled return/fill station as directed by the engineer or S-K. The return/fill station will be closed according to the following procedures.

The secondary containment pan, metal shelter, and dock area will be decontaminated using a high pressure wash system with hot water/detergent solution, scrub brushes, squeegees, and scrapers (as necessary). Decontamination of the return/fill station will continue until the surfaces appear visually clean. Stains and residue will be removed to the extent practicable. Decontamination will continue

until the supervising engineer designates the return/fill station safe for transport.

The wash/rinse water and any residue generated during decontamination will be collected and containerized for transport to a permitted TSD facility (i.e., a S-K Recycle Center).

Following decontamination, the return/fill station and components will be dismantled and stockpiled in a secure area. The return/fill station components will be transported to a recycling facility as non-regulated hazardous scrap metal.

Activity 2.4 - Tank Entry

The two USTs shall be rendered inert of combustible vapors by the contractor after removal of all remaining liquids and residue. Procedures for purging or venting the tanks are described in the specifications. The engineer and contractor will monitor vapors to ensure the tank atmosphere has combustible gas concentrations less than 20% of the lower explosive limit (LEL).

Tank Opening

Tanks with insufficient openings to properly remove sludges and residue may need to be accessed. Cold cutting of the tank shell must be permitted by the engineer or qualified UST contractor. Personnel must wear proper respiratory protection and protective clothing during this activity. All work on the tanks shall be in accordance with the work specifications. Positive ventilation shall be provided to the tank(s) immediately after opening.

Confined Space Tank Entry

No person(s) shall enter the tank without appropriate respiratory protection. Personnel entering confined spaces shall at a minimum follow all established OSHA and/or NIOSH protocol.

The engineer and contractor shall monitor the work area and tank atmosphere for combustible gas concentrations and oxygen deficiency in order to determine appropriate respiratory protection and health and safety precautions. Protocol for tank entry, as stipulated in the work specifications, will be strictly enforced throughout the project. The "buddy watch" system will be implemented at all times during tank entry.

Activity 2.5 - Excavate and Remove UST Systems

Tank Removal

The tanks shall be removed by the contractor in accordance with specifications contained and/or referenced in this closure plan. Construction debris and soil excavated during removal of the tanks shall be stockpiled in a secure area. Procedures for management of excavated materials are presented in Activity 2.6. Once removed, the USTs will be visually inspected by the engineer and condition documented with photographs. The tanks shall be clearly labeled and stored with the vent opening at the top.

The product mineral spirits tank shall be excavated and removed as soon as all sludges and residue have been removed and the tank atmosphere has been reduced to the acceptable limits of combustible gas concentration. In order to prevent possible spills of hazardous substances or wastes during spent mineral spirits UST removal, preliminary decontamination of the tank will occur before extraction (see below for procedures). The spent mineral spirits tank shall be cleaned by the contractor in accordance with the work specifications.

Preliminary Decontamination

Preliminary decontamination of the spent mineral spirits tank will consist of removal of all sludge and residue and a high pressure wash while the tank is in place. The tank interior may need to be scraped or squeegeed to remove rust, residue, or scale. The engineer will supervise tank decontaminating operations and determine when the tank appears visually clean.

The decontaminating wash solution shall be kept to a minimum during cleaning of the tank. The decontaminating wash solution and residue shall be containerized in a vacuum truck or sealable barrels provided by the contractor. The residue and sludges shall be separated from the washwater as best as possible. All residue, sludges, washwater, and rinse water will be transported to a permitted TSD facility (i.e., S-K Recycle Center). All contaminated clothing, supplies, etc. used during UST cleaning will also be containerized and disposed of appropriately. The containerized wastes may be stored onsite for up to 90 days until the waste can be transported to the TSD facility (i.e., S-K Recycle Center).

Final Decontamination of Spent Mineral Spirits Tank

Final decontamination of the spent mineral spirits UST will be performed in-place or following removal. Final decontamination will consist of at least three rinses with a detergent solution. Decontamination will continue until the engineer determines that the tank is safe for transport as non-regulated hazardous scrap metal to a recycling facility (40 CFR 261.6).

Disposition of UST Systems

The contractor shall arrange for disposal of the tanks, piping, appurtenances, and construction debris at acceptable facilities. The tanks shall be rendered unusable (e.g. three large punctures) by the contractor, prior to shipment. The contractor shall be responsible for providing a certificate of destruction to S-K. The contractor shall transport the decontaminated tanks, piping, and appurtenances as non-regulated hazardous scrap metal to a recycling facility for remelt. The contractor shall be responsible for obtaining permits necessary to handle and transport the tanks.

Activity 2.6 - Manage Excavated Soils

The contractor will appropriately remove, handle, and stockpile soils as directed by the engineer. Soil shall be excavated only to the extent necessary to remove the USTs and disposed offsite. Approximately 30 cubic yards of potentially degraded cover soil may need to be excavated and disposed of in order to access and remove the tanks. Based on the site characterization results, (Chapter II) the degraded soil is non-hazardous. In addition to the degraded soil, an estimated 20 cubic yards of concrete rubble will also be removed from the site and disposed.

Excavation of Soil

S-K will excavate soil only to the extent necessary to remove the tanks. Organic vapor monitoring will be conducted with a PID during excavation to determine any areas of potential impacts. The impacted areas as determined by the PID will be characterized through the collection and analysis of representative soil samples from the excavation, as described in Activity 2.7. Any remaining soil degradation following tank removal will be addressed during the additional assessment and remediation activities (phases 3 and 4).

The contractor will be required to secure the excavation and provide access for inspection and sampling in accordance with 29 CFR 1926 Subpart P (latest revision). Excavations greater than five feet deep may require the sides to be sloped no more steeply than 1.5 horizontal to 1 vertical (29 CFR 1926.652). If site conditions prohibit sloping side walls, the contractor may be required to install shoring for safety and/or to prevent structural damage to adjacent foundations. Any underground lines adjacent to or crossing the excavation must also be supported. Procedures for securing the excavation are presented in the specifications referenced in this Closure Plan.

Handling of Excavated Soil

Results of the site assessment activities (Chapter II) indicates that degraded soil may be encountered during tank removal. S-K analyzed representative samples of degraded soil during the site assessment and found them to be non-hazardous. The non-hazardous degraded soil to be excavated during closure will be temporarily stockpiled on plastic sheeting in an area designated by the engineer. Air monitoring will be routinely performed with a PID around the degraded soil stockpile. Special precautions will be taken to secure the stockpile if PID readings exceed 50 ppm at the stockpile or 10 ppm at the S-K property line. The contractor will be required to implement vapor and dust control measures, such as wetting or covering the stockpile, as necessary. The non-hazardous soil will be appropriately managed at an approved treatment and/or disposal facility. S-K will work with NMED to arrange for appropriate treatment and/or disposal of degraded soil.

Activity 2.7 Sample and Analyze Soil

Following removal of the USTs, representative samples will be collected from the walls and floor of the excavation to determine the characteristics and levels of degraded soil remaining in the excavation. NMED will be notified at least five days prior to the soil sampling and analysis. All sampling will be conducted in accordance with SW-846 methods. Prior to soil sample collection, the excavation will be field screened with a PID for evidence of residual impacts. Soil samples will be collected from the following locations:

1. One sample from each sidewall of the excavation collected at 6 to 12 inches depth from the open face (4 samples total). The samples will be col-

lected from areas of discolored soil or areas where PID readings indicate residual impacts, if present. Otherwise, the sampling locations will be selected randomly.

2. One sample will be collected at a depth of 6 to 12 inches below the former location of each end of the 12,000-gallon tanks (total of four samples).

The samples will be collected from a depth of 6 inches to 1 foot below the surface of the excavation. All soil samples will be analyzed for mineral spirits (modified 8015), VOCs (8240), and metals - cadmium, chromium, and lead, (6010) using methods in the latest version of USEPA SW-846.

If degraded soils and/or ground water are present following removal of the USTs, S-K may conduct a risk assessment and additional assessment activities described in Chapter IV (Phase 3). S-K intends to work with NMED to satisfy the closure performance standard and achieve "clean closure." If necessary, a closure plan amendment will be prepared and submitted which presents a program to effectively monitor and remediate any residual subsurface degradation (Phase 4).

Activity 2.8 - Fill, Compact, and Refinish Excavation

The dimensions and configuration of the excavation will be determined by the engineer prior to filling and finishing. The perimeter corners will be temporarily marked with a shiner and triangulated to a permanent datum.

The contractor shall fill, compact and repave the excavation to match the existing grade. The contractor shall be responsible for obtaining and hauling clean fill (approximately 150 cubic yards) to the site. The fill shall consist of material which is easily compactible. The fill shall be placed in a manner to prevent settlement of the subgrade. Concrete pavement shall be placed to match existing site conditions. The pavement construction, materials, placement, and finish will be suitable for driveway/parking use. The patched area shall be sealed at the edges to prevent infiltration of surface water.

The engineer shall supervise the fill, compaction, and finish of the disturbed areas. The contractor shall be required to clean up the site following closure activities to the satisfaction of the engineer and S-K.

Activity 2.9 - Prepare Closure Progress Report

The engineer shall document the completion of Phase 1 and 2 activities. Documentation shall consist of field notes, photographs, site detail maps, field data, and laboratory data. In addition, the engineer will substantiate the following performance items:

1. Dates and times of closure activities;

2. Quantity of soils removed and transported, and the disposal locations;

3. Quantity of wastes removed and transported, and the disposal locations;

4. Miscellaneous materials handled and transported, and the disposal locations;

5. Dimensions, locations, and configuration of excavation; and

6. Soil sampling information, including sample locations, sampling methods, and QA/QC procedures.

A progress report will be prepared and submitted to NMED which summarizes the decontamination and removal activities in Phase 2. The progress report will be submitted to NMED within 60 days after the USTs have been removed and the Phase 2 site work has been finished.

If necessary, S-K will request NMED for an extension of the closure period in accordance with 40 CFR 265.113(b). The closure period extension may be necessary to complete the additional assessment activities (Phase 3), develop and implement an appropriate remedial action program (Phase 4), and document "clean closure."

CHAPTER IV

PHASE 3 - ADDITIONAL ASSESSMENT ACTIVITIES

S-K conducted site assessment activities at the Albuquerque facility in October 1991 and January-February 1992. The previous assessment results are described in Chapter II and Appendix B of this closure plan. During the site assessment, S-K detected subsurface impacts due to a release from the USTs. The scope of the previous assessment activities was constrained by the presence of the USTs, return/fill station, and other subsurface structures, and numerous overhead power lines. These factors placed limits on the size of drill rig which could be used and accessible drilling locations. Therefore, the previous assessment work was conducted to the extent practical for the existing site conditions and did not fully define the extent of impacts.

Following removal and decontamination of the USTs, return/fill station, and associated equipment (Phase 2), S-K will implement additional assessment activities to further evaluate the extent of subsurface impacts. Removal of the subsurface structures will provide access for sampling at locations previously inaccessible. In addition, S-K anticipates that overhead power lines, which restricted site access during previous assessment work, will be relocated or de-energized for Phase 2 site work. This will allow sampling at previously inaccessible locations during Phase 3.

The additional assessment program will include the following activities:

<u>Activity 3.1</u> - Additional soil boring/sampling to further evaluate the lateral and vertical extent of subsurface impacts

<u>Activity 3.2</u> - A risk assessment or alternate procedure to develop site clean up standards.

<u>Activity 3.3</u> - A petition for an extended closure period (if necessary) to complete the additional assessment and remediation (Phase 4) and achieve clean closure.

These activities are described below.

Activity 3.1 - Evaluate Extent of Impacts

Previous assessment work has defined the lateral extent of impacts to the north and east of the USTs. However, due to technical constraints, the lateral extent was not defined to the west and south of the USTs. S-K proposes to conduct additional soil/boring and sampling to further evaluate the extent of impacts in areas not previously defined. All assessment work will be conducted in general accordance with guidelines in the USEPA Technical Enforcement Guidance Document (TEGD), SW-846, and applicable State of New Mexico regulations.

The proposed borehole locations are shown on Figure IV-1. Two boreholes are located to sample beneath ends of the USTs. These boreholes are intended to establish degree and the maximum vertical extent of degradation. Additional boreholes are planned south of the return/fill station and west of the S-K warehouse. These locations are intended to further evaluate the lateral extent and also the vertical extent of impact. Additional boreholes will be installed if needed to define the lateral extent of soil degradation.

Previous attempts to sample deeper than 81.5 feet with an auger drilling rig were unsuccessful because of auger refusal. Therefore, a percussion hammer rig maybe used for the proposed boreholes to confidently achieve the necessary depths in the additional areas of investigation. This type of rig was not used previously because of access problems. Boreholes will be advanced to the extent of degradation or ground water, whichever comes first.

Sample collection with the percussion hammer rig can be accomplished either by split-spoon sampling or by collecting cuttings at the discharge port of the cyclone. S-K will attempt to collect undisturbed samples using the split-spoon sampler unless the presence of cobbles or non-cohesive sediments precludes the use of a split-spoon sampler. Samples will be collected at five foot intervals to total depth for logging physical characteristics, field screening, and laboratory analysis. Field screening will be conducted with a PID to determine the presence of total organic vapors. Selected soil samples will be retained for analysis based on the PID readings.

Selected soil samples will be analyzed for total petroleum hydrocarbons (EPA 8015, modified for mineral spirits), volatile organic compounds (EPA 8240) and metals (EPA 6010 - cadmium, chromium, and lead). Samples selected for analysis will include the most degraded sample from each boring, based on field screening, and a sample from the deepest interval at which field screening indicates the

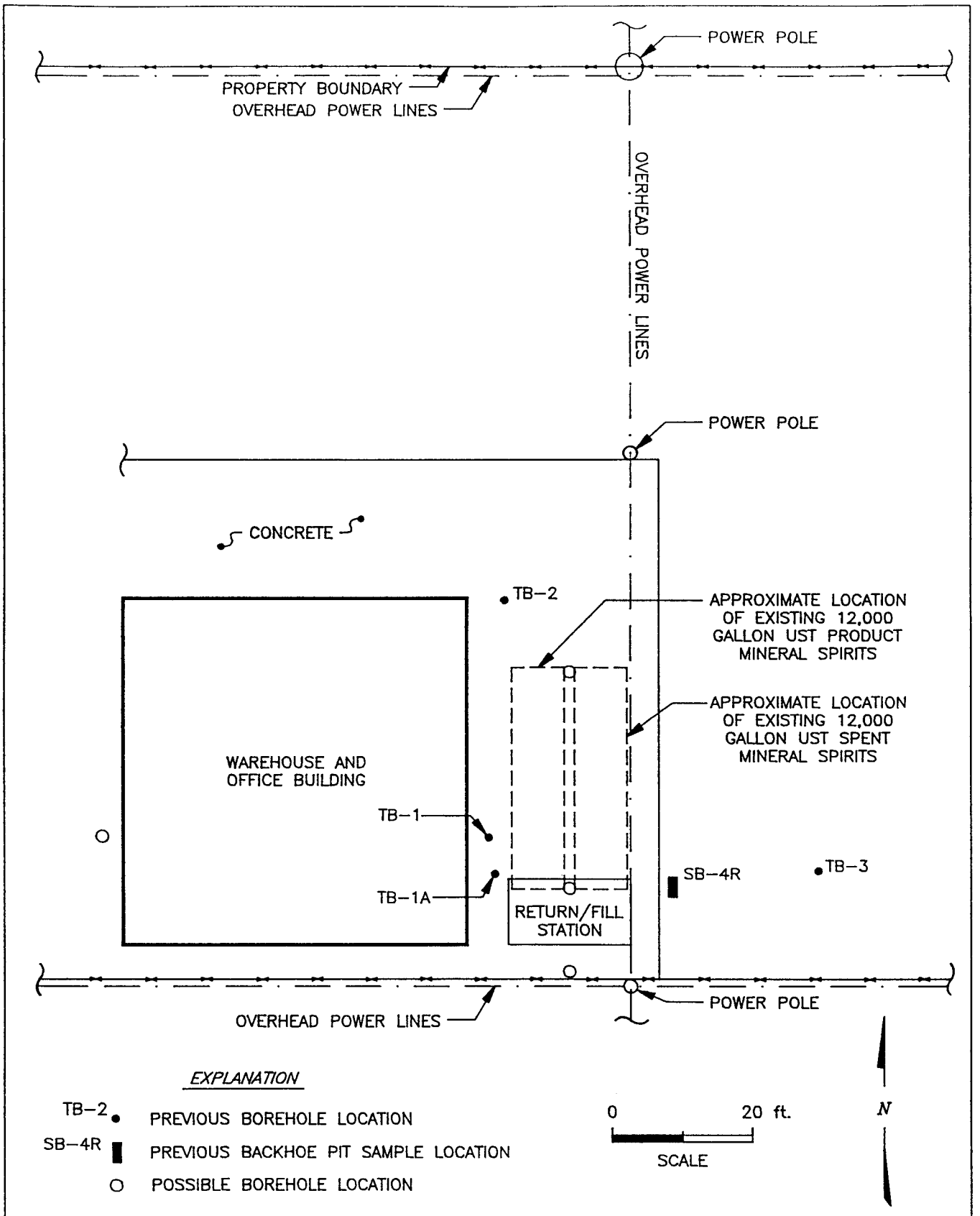

FIGURE IV-1 :POSSIBLE SOIL SAMPLING LOCATIONS, SAFETY-KLEEN CORP. SERVICE CENTER, ALBUQUERQUE, NEW MEXICO

SKANPS02

absence of impacts. Additional samples may be submitted as necessary to define the extent of degradation.

Following receipt of the laboratory data, S-K will prepare an assessment report for NMED review. The report will contain a description of all sampling locations and methods, QA/QC information, and a discussion of the results. The report will be submitted to NMED within 60 days after receipt of the laboratory data.

Activity 3.2 - Establish Cleanup Levels

S-K intends to remediate any subsurface degradation to the extent necessary to protect human health and environment to achieve clean closure. Following completion of Activity 3.1, S-K will work closely with NMED to achieve concurrence on the cleanup levels. The cleanup levels will be those listed in Section 1209 of the New Mexico Underground Storage Tank Regulations and/or alternate limits established by a risk assessment.

If the levels of contaminants remaining in the subsurface satisfy the site cleanup levels, S-K will consider the site to be clean closed and will submit the closure certification (Phase 5) NMED. If the levels of contaminants remaining in the subsurface are greater than the cleanup levels, S-K may conduct remediation activities or complete contingent closure and post-closure of the site as a landfill (see Chapter VIII).

Activity 3.3 - Closure Period Extension

If necessary, S-K may submit a petition to NMED to extend the closure period to complete the additional remediation activities. The petition will be submitted in accordance with 40 CFR 265.113. The petition will be submitted to NMED at least 30 days prior to the end of the 180-day closure period.

CHAPTER V

PHASE 4 - IMPLEMENT REMEDIAL ACTION

S-K will perform the Phase 3 additional assessment activities following UST removal to determine the extent of soil degradation and to develop site cleanup objectives. Following review of the additional assessment results, S-K will develop a remedial action plan and implement the most feasible remedial action necessary to achieve clean closure. The remedial action plan will be in the form of a closure plan modification/amendment (and will be consistent with the requirements in Paragraph 1212 of the New Mexico Underground Storage Tank Regulations, if necessary).

Activity 4.1 - Develop Remedial Action Plan

The type of remedial action that will be implemented depends upon the site cleanup standards and the results of the site assessment. Remediation options that might meet the cleanup objectives include:

1. Excavation and offsite disposal of degraded soils;

2. Excavation and onsite or offsite treatment of degraded soils;

3. In-situ remediation of degraded soils; and

4. No action option.

Following review of the Phase 3 assessment results, the most appropriate remediation alternative will be selected and S-K will develop a remedial action plan. The remedial action plan will include monitoring programs to evaluate the performance of the remedial action. The remedial action plan will be submitted to the NMED for review and approval as a modification to this closure plan.

If an in-situ or treatment-type remedial action is pursued, the time allowed for closure will need to be extended. In such a case, S-K will petition for an extension in accordance with 40 CFR 265.113 and (Paragraph 1221 of the New Mexico Underground Storage Tank Regulations, if necessary) to allow more time to achieve clean closure.

Activity 4.2 - Implement Remedial Action Plan

S-K will implement the remedial action plan following NMED approval. S-K intends to design and implement the most technically feasible remedial action option which will achieve clean closure to the extent necessary to protect human health and environment. The remedial action will be designed to address subsurface degradation attributable to the S-K site.

Activity 4.3 - Monitor Remediation Progress

S-K will implement a program to monitor the effectiveness of the remedial action. The program will consist of soil sampling and analysis and, if necessary, ground-water monitoring. The ground-water monitoring program if required, will be conducted in general accordance with the USEPA Technical Enforcement Guidance Document (TEGD) and Section 1210 of the New Mexico Underground Storage Tank Regulations. The monitoring programs will be developed in conjunction with the remedial action plan. The monitoring program will also be used to determine when the site has been clean closed and the remedial action program may be terminated.

Activity 4.4 - Prepare Remediation Progress Reports

S-K will prepare periodic Phase 4 progress reports. The report(s) will include a description of the remediation system, field data, laboratory data, and an evaluation of performance. The report(s) will be submitted to NMED. The frequency of reporting will be discussed in the remedial action plan and will depend on the type of remediation implemented at the site.

CHAPTER VI

PHASE 5 - CLOSURE CERTIFICATION REPORT

Closure will be considered complete when one of the following conditions are met:

1. The USTs and return/fill station have been removed and soil and ground-water quality satisfy the "clean closure" objectives; or

2. The USTs and return/fill station have been removed, S-K has demonstrated to NMED that degradation cannot be remediated within a reasonable closure schedule and S-K has completed the contingent closure procedures in Chapter VII.

At completion of closure, an authorized representative of S-K and the independent registered professional engineer who supervised closure activities will certify that closure has been completed according to the procedures in the approved closure plan. The closure certification report will document the procedures used to complete closure and include the data collected to verify the conditions of the site at closure.

Activity 5.1 - Compile and Evaluate Data

All data and information collected during closure will be compiled, tabulated, and evaluated to document compliance with the closure plan and appropriate regulatory requirements. The evaluation will be performed to document that closure activities satisfactorily addressed all closure objectives.

Activity 5.2 - Prepare Closure Certification Report

Upon completion of Activity 5.1, a report will be prepared which summarizes the activities, information, data, and interpretation that was associated with the closure. The report will be directed toward providing information which documents that the phased activities satisfied the intent and were in accordance with the closure plan. S-K will submit the report to NMED within 60 days of completion of closure activities.

CHAPTER VII

CLOSURE SCHEDULE AND COST ESTIMATES

A schedule for completion of the closure activities is presented on Figure VII-1. Safety-Kleen Corp. intends to commence closure activities upon receipt of approval of this plan. The closure schedule is based on the following conditions:

1. Safety-Kleen shall notify the Department at least 45 days prior to the date closure activities are expected to begin.

2. Safety-Kleen shall complete closure activities, in accordance with the approved closure plan, within 180 days after receipt of the approved closure plan. The Department may approve an extension of the closure period if S-K demonstrates, at least 30 days prior to expiration of the closure period, that closure activities will, of necessity, require longer than 180 days to complete.

Amendment of Closure Plan

S-K may amend this closure plan at any time during the active life of the waste management units. S-K may also amend the closure plan at any time an unexpected event occurs, while conducting closure activities, that affects the closure plan. The closure plan amendment will be submitted to NMED within 60 days of a change in operating plans or facility design, or an unexpected event occurs which affects the closure plan during facility operation. If the unexpected event occurs during the closure period, the closure plan amendment will be submitted to the Department within 30 days of the event.

Financial Assurance Mechanisms

S-K shall comply with the financial assurance requirements for contingent closure activities and contingent post-closure care, monitoring, and maintenance pursuant to 40 CFR 265, Subpart H. The financial assurance mechanism will consist of either a letter of credit [40 CFR

Figure VII-1. Closure Schedule, Safety-Kleen Service Center, Albuquerque, New Mexico.

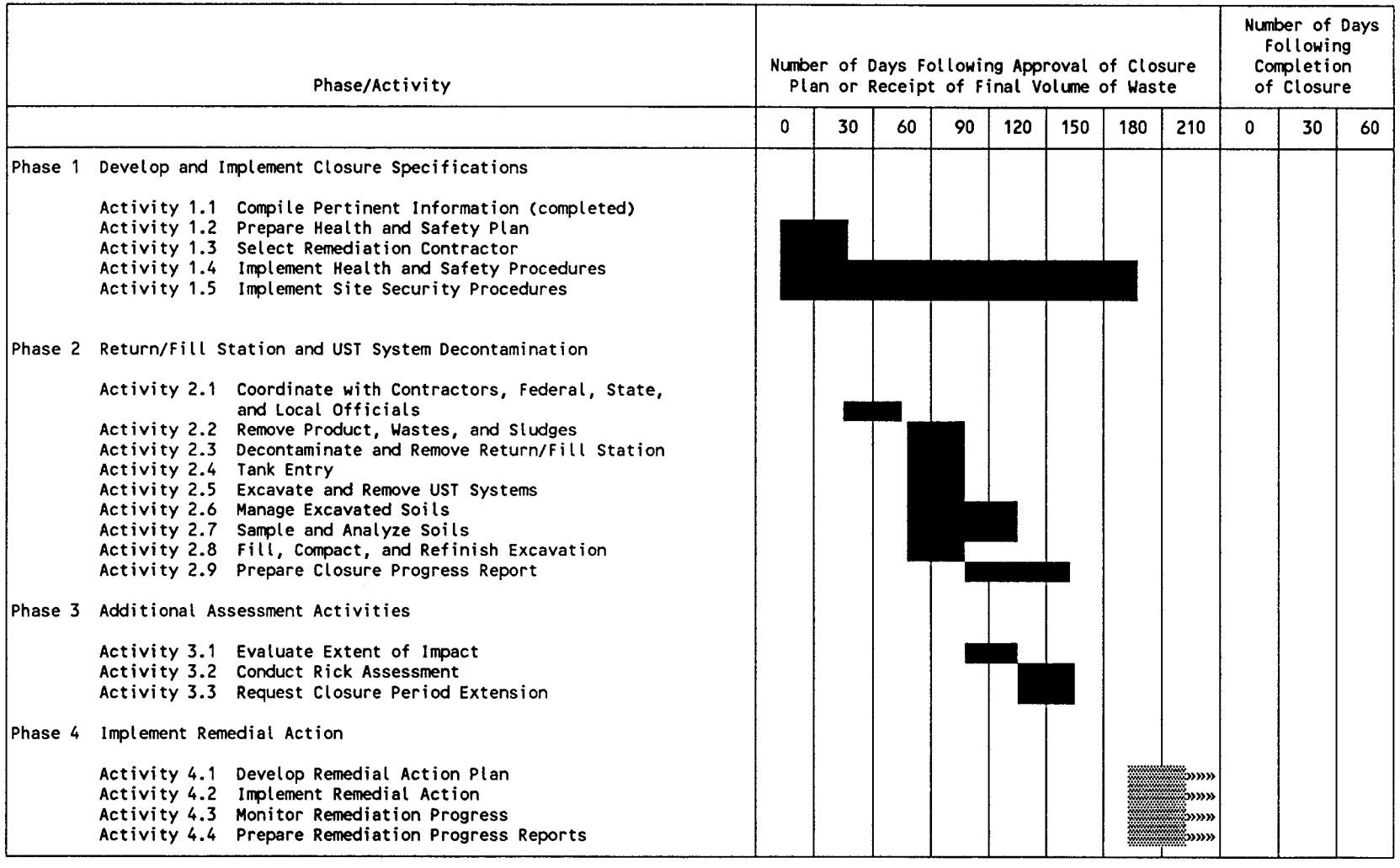

Figure VII-1. Closure Schedule, Safety-Kleen Service Center, Albuquerque, New Mexico (continued).

Phase/Activity	Number of Days Following Approval of Closure Plan or Receipt of Final Volume of Waste								Number of Days Following Completion of Closure		
	0	30	60	90	120	150	180	210	0	30	60
Phase 5 Closure Certification Report											
Activity 5.1 Compile and Evaluate Data											
Activity 5.2 Prepare Closure Certification Report											

»»» Activity continues through closure period until certification of "clean closure."

265.143(d) and 265.145(d)] or a financial test [40 CFR 265.143(f) and 265.145(f)]. S-K shall have the financial assurance mechanism in place prior to implementation of this Closure Plan.

Closure Cost Estimate

Written estimates of closure costs are presented in Appendix C. (Contingent closure and post-closure costs for activities discussed in Chapter VII are included in Appendix D.) The closure costs are for partial closure of the S-K Albuquerque, New Mexico, facility and include the costs associated with closing the return/fill station and 12,000-gallon spent mineral spirits UST. The closure costs are based on the costs of hiring a third party to close the facility, as required by 40 CFR 265.142(a)(2).

CHAPTER VIII

CONTINGENT CLOSURE AND POST-CLOSURE PLANS

Safety-Kleen Corp. (S-K) intends to perform a clean closure of the hazardous waste management units at this facility. The existing units and all associated ancillary equipment will be decontaminated and removed. In addition, remedial actions may be conducted to decontaminate the subsurface soil and ground water to the extent necessary to protect human health and the environment.

S-K may request an extension of the 180-day closure period so that the Phase 4 remedial actions can be implemented, if required. If the monitoring programs conducted in conjunction with the remedial action plan indicate significant progress toward clean closure but that a longer remediation period is necessary, S-K may request further extension of the closure period. If the monitoring programs indicate that the clean closure objectives cannot be achieved within a reasonable time frame, the contingent closure and post-closure procedures will be implemented.

Contingent Closure Plan

If clean closure cannot be achieved within the negotiated closure period, S-K will complete closure of the UST area under the regulations applicable to landfills (40 CFR 265.310). The following is a summary of the contingent closure steps:

1. Assess conditions of final cover;
2. Prepare survey plat; and
3. Submit closure certification.

The contingent closure activities are described in the following sections.

Assess Final Cover

The former UST area will have a final cover designed to meet the requirements in 40 CFR 265.310(a) for landfill final covers. The final cover will consist of a concrete pavement cap. As described in the Closure Plan, the tank pit area will be backfilled, compacted, graded, and

resurfaced with concrete pavement after the tanks have been removed.

At the end of the closure period, an independent registered professional engineer will examine the pavement on and around the site for cracks, subsidence or deterioration. The engineer will verify that the cover meets the following criteria:

1. Provides long-term minimization of migration of liquids through the cover.

2. Functions within minimum maintenance.

3. Promotes drainage and minimizes erosion or abrasion of the cover.

4. Accommodates settling and subsidence so that the cover's integrity is maintained.

5. Has a permeability less than or equal to the natural subsoils.

The final cover will be sloped a minimum of 1% away from the UST excavation to assist in runon and runoff control. The final cover will be constructed to match the existing grade at its outside edges and allow drainage off of the closed area. The final cover will be maintained as necessary to correct the effects of subsidence, erosion, or abrasion.

Survey Plat

At the end of the closure period, a survey plat will be prepared indicating the location and dimensions of the former waste management area. The location and dimensions will be surveyed relative to a permanent benchmark by a professional land surveyor, registered in New Mexico. The survey plat will be submitted to the City of Albuquerque zoning authority. The plat will include a prominently displayed note which states that S-K is required to restrict disturbance to this area. The plat will be submitted to the local zoning authority and NMED no later than 60 days following completion of closure.

Schedule

The contingent closure procedures include all of the procedures in the closure plan as well as the additional procedures necessary to close the UST area as a landfill. The contingent closure plan will be implemented according

to the same schedule as the procedures in the closure plan. The two additional procedures, assessment of the final cover and preparation of the survey plat, will be performed during the last month of the extended closure period.

Closure Certification

Within 60 days of the completion of closure, a closure report will be submitted to NMED. The closure report will contain all of the information required by the Closure Plan, as well as the assessment of the final cover and the survey plat. It will also include a certification of closure signed by a S-K authorized representative and a registered professional engineer.

Contingent Post-Closure Plan

The contingent post-closure plan will be implemented in the event it is necessary to close the UST area as a landfill. The post-closure plan describes the activities to be conducted by S-K during the up-to-30 year period following closure.

S-K may continue to conduct the Phase 4 remedial actions during the post-closure period. When the site monitoring data indicate that impacts have been reduced below levels which protect human health and the environment, S-K may request NMED to shorten the post-closure period and discontinue post-closure care.

Post-closure care for landfills consists of monitoring, maintenance, and reporting requirements specified in 40 CFR 265.310, and corresponding requirements specified in sections 265.117 through 265.120. Post-closure care shall be implemented to address the following:

1. Maintain the integrity and effectiveness of the final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or unpredictable events;

2. Maintain and monitor a ground-water monitoring system in accordance with 40 CFR Part 265, Subpart F, if required;

3. Maintain runon and runoff control structures in an adequate condition to prevent runon and runoff

from eroding or otherwise damaging the final cover;

4. Protect and maintain the surveyed benchmark; and

5. Maintain security and access control structures in an acceptable condition.

Any revisions to the post-closure care procedures in this contingent plan will be handled in accordance with the requirements of 40 CFR 265.118 (d).

Facility Contact at Post-Closure

The S-K contact for post-closure is:

Anne Lunt
Senior Project Manager - Remediation
Safety-Kleen Corp.
P.O. Box 1429
San Pedro, CA 90733-1429
Phone: (310) 831-3903

This information will be kept current to reflect personnel changes.

Post-Closure Land Use

Post-closure use of the facility property in which hazardous wastes remain after partial or final closure shall never be allowed to disturb the integrity of the final cover of the facility or components of the containment system, or function of the facility's monitoring system, unless NMED finds that the disturbance:

1. Is necessary to continued operations at the facility property and will not increase the potential hazard to human health or the environment; or

2. Is necessary to reduce a threat to human health or the environment.

Ground-Water Monitoring

S-K will conduct post-closure ground-water monitoring at the former UST area, if required. The post-closure groundwater monitoring program will be developed in accordance with requirements of 40 CFR, Part 265, Subpart F and will be prepared as part of the Phase 4 Remedial Action Plan. The post-closure ground-water monitoring

program will remain in effect through the post-closure period.

Post-Closure Maintenance and Inspection

Inspection of the former waste-management area will be recorded on the log shown on Figure VIII-1. The inspections will occur quarterly.

The Albuquerque facility manager, or other qualified inspector, will be responsible for performing the quarterly inspections. Inspection records will be kept on file by the S-K remediation manager for at least three years. The inspector will inform the S-K remediation manager of any problems encountered during the inspections. The S-K remediation manager will be responsible for effecting any repairs necessary. Problems will be corrected prior to the next scheduled inspection.

The ground-water monitoring wells will be clearly marked and secured by protective covers that will remain locked at all times. Monitoring wells will be replaced if there is evidence of damage or if they no longer produce representative ground-water samples. Construction of additional or replacement monitoring wells will meet guidance criteria in the TEGD and 40 CFR Part 265, Subpart F.

The final cover will be designed to prevent contact of degraded soil with runoff. The cover will be graded to divert runoff away from the former waste management area. The final cover will be repaired as necessary to maintain its integrity.

During inspections, any areas needing grading or backfilling will be noted. The condition of the area around final cover perimeter, in particular, will be noted. The final cover will be maintained to meet original design specifications. Any cracking or settlement will be repaired as necessary to ensure that the specifications to be satisfied.

Post-Closure Notices

S-K intends to prepare and submit post-closure notices in accordance with 40 CFR 265.119, following completion of closure of the former UST area as a landfill. S-K will establish use limitation and notation on the deed. Evidence of this notation will be submitted to NMED for its review and approval.

Figure VIII-1. Post-Closure Inspection Log, Quarterly Facility Inspection, Safety-Kleen Corp., Albuquerque, New Mexico.

Date _____

Time _____

ITEM	CONDITION	CORRECTIVE ACTION TAKEN	DATE CORRECTED
Final Cover/Runon and Runoff Controls: Erosion? Subsidence? Standing water? Cracks? Odor? Wind dispersal? Monitoring Wells: Locks? Evidence of collision? Condition of survey pins? Warning Signs: In place? Legible? Posts intact? Fences? Gates Secure? Overall Site Appearance: Litter? Soil staining?			

Inspected by: _____
(Signature)

Notice to Local Land Authority

Within 60 days after certification of closure of the hazardous waste facility, S-K will submit to the local zoning authority and to NMED a record of the type, location, and quantity of hazardous waste at the facility. Changes in type, location, and quantity of hazardous waste that occur after the survey plat and record of wastes have been filed will be reported to the local zoning authority and to NMED.

Notice in Deed to Property

S-K will record a notation on the deed to the facility property that will, in perpetuity, notify any potential purchaser of the property that:

1. The land has been used to manage hazardous wastes;

2. Its use is restricted; and

3. The survey plat and record of the type, location, and quantity of hazardous wastes present within the waste management area have been filed with the local zoning authority and NMED.

Post-Closure Certification

No later than 60 days after completion of post-closure care, S-K will submit by registered mail, a certification signed by both S-K and a registered professional engineer, that post-closure care for the facility was performed in accordance with the specifications in the approved post-closure plan. Post-closure certification will be performed in accordance with 40 CFR 265.120.

Financial Assurance Mechanisms

S-K shall comply with the financial assurance requirements for contingent closure activities and contingent post-closure care, monitoring, and maintenance pursuant to 40 CFR 265, Subpart H. The financial assurance mechanism will consist of either a letter of credit [40 CFR 265.143(d) and 265.145(d)] or a financial test [40 CFR 265.143(f) and 265.145(f)]. S-K shall have the financial assurance mechanism in place prior to implementation of this Contingent Closure/Post-Closure Plan.

Contingent Closure/Post-Closure Cost Estimates

Cost estimates for contingent closure/post-closure are contained in Appendix D. The cost estimates assume up to thirty years of post-closure care. The cost estimates are based on the expense of a third party to complete the closure, maintenance, and monitoring activities described in the approved contingent plans. Cost estimates will be updated annually or when the contingent plans change, in accordance with the applicable regulations.

APPENDIX A

MATERIAL SAFETY DATA SHEETS

Eyes: Contact may cause slight to moderate irritation. High vapor concentrations (> 500 ppm) are irritating to the eyes.

Inhalation: High concentrations of vapor or mist may be irritating to the respiratory tract, cause headaches, dizziness, nausea, impaired coordination, anesthesia and may have other central nervous system effects.

Ingestion: Low order of acute oral toxicity. May cause irritation of the throat, nausea, vomiting and symptoms of central nervous system depression. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

CHRONIC: Prolonged and/or repeated contact may cause drying and cracking of the skin or dermatitis.

OTHER POTENTIAL HEALTH HAZARDS:

The impurities that may be present are not expected to add significantly to the effects of exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Individuals with pre-existing central nervous system dysfunction may have increased susceptibility to the effects of exposure. Contact with skin may aggravate pre-existing dermatitis.

CARCINOGENICITY: Tetrachloroethylene is listed by IARC and NTP as a suspected carcinogen. Studies indicate that Ethyl Benzene and 1,1,1 Trichloroethane are experimental teratogens.

SECTION VII -- EMERGENCY AND FIRST AID PROCEDURES

EYES: For direct contact, flush eyes with water for 15 minutes lifting upper and lower lids occasionally. Consult physician if irritation or pain persists. If irritation or redness from exposure to vapors or mists develop, move victim away from exposure into fresh air.

SKIN: Remove contaminated clothing. Wash skin twice with soap and water. If irritation develops and persists, consult a physician.

INGESTION: If conscious, dilute with 4 to 8 ounces of water and seek immediate medical attention. DO NOT induce vomiting.

INHALATION: Remove to fresh air immediately. Use oxygen if there is difficulty breathing or artificial respiration if respiration has stopped. Do not leave victim unattended. Seek immediate medical attention if necessary.

SECTION VIII -- PRECAUTIONS FOR SAFE USE AND HANDLING

SPILL PROCEDURES: Remove all ignition sources. Ventilate area and avoid breathing vapors. For large spills, isolate area and deny entry. If possible, contain as a liquid for possible re-refining. Absorb onto sand or other absorbent material. Shovel into closable container for disposal. Wear protective equipment specified below. Contain away from surface waters and sewers.

WASTE DISPOSAL METHODS: Dispose in accordance with Federal, State, and local regulations. Contact Safety-Kleen regarding recycling.

HANDLING PRECAUTIONS: Avoid contact with eyes, skin or clothing. Use in well ventilated area and avoid breathing vapors or mists. Keep away from heat, sparks and open flames.

SHIPPING AND STORING PRECAUTIONS: Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, grind or expose containers to flame or other sources of ignition. Keep container tightly closed when not in use and during transport.

PERSONAL HYGIENE: Use good personal hygiene. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco products. Launder contaminated clothing and clean protective equipment before reuse.

SECTION IX -- CONTROL MEASURES

VENTILATION: Provide local exhaust or general dilution ventilation as determined necessary to maintain concentrations of vapors or mists below applicable exposure limits. Where explosive mixtures may be present, systems safe for such locations should be used.

PROTECTIVE GLOVES: Use nitrile or neoprene gloves to prevent contact with skin.

EYE PROTECTION: Where there is likelihood of spill or splash, wear chemical goggles or faceshield. Contact lenses should not be worn.

RESPIRATORY PROTECTION: Use NIOSH-approved respiratory protective equipment when concentration of vapors or mists exceeds applicable exposure limit. Depending on the airborne concentration, use a respirator or gas mask with appropriate cartridges and canisters (for organic vapor with mist prefilter). A self-contained breathing apparatus (SCBA) is required for large spills and emergencies. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134 - Respiratory Protection.

OTHER PROTECTIVE EQUIPMENT: Wear solvent-resistant boots, apron or other protective clothing where spills and splashes are possible. A source of clean water should be available in work areas for flushing the eyes and skin.

SECTION X -- OTHER REGULATORY INFORMATION

DOT PROPER SHIPPING NAME: Petroleum Naphtha

DOT CLASS: Combustible Liquid

DOT NUMBER: UN 1255

SARA TITLE III: Product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. Toxic constituents are listed with an asterisk in Section II of this Material Safety Data Sheet.

Product poses the following physical and/or health hazard(s) as defined in 40 CFR 370.3 (Sections 311, 312 of SARA Title III):

Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard
Fire Hazard

SECTION XI -- PREPARATION INFORMATION

PREPARED BY: SK Product Review Committee ***FORM NO.*** 900-14-001

ORIGINAL ISSUE DATE: July 20, 1989 ***REVISED:*** March 12, 1990 ***SUPERSEDES:*** July 20, 1989

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either express or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet applies to the material as supplied to the user.

SAFETY-KLEEN 105 PARTS WASHING SOLVENT

MATERIAL SAFETY DATA SHEET

SECTION I -- PRODUCT INFORMATION

Safety-Kleen Corporation - 777 Big Timber Road - Elgin, IL 60123
For Product/Sales Information Call 708/697-8460

EMERGENCY TELEPHONE	*MEDICAL:*	*TRANSPORTATION:*
These numbers are for emergency use only. If you desire non-emergency information about this product, please call the telephone number listed above.	800/942-5969 or 312/942-5969 RUSH POISON CONTROL CENTER CHICAGO, ILLINOIS (24 HOURS)	800/424-9300 CHEMTREC

IDENTITY (TRADE NAME): SAFETY-KLEEN 105 PARTS WASHING SOLVENT

SYNONYMS: PETROLEUM DISTILLATES, PETROLEUM NAPHTHA, MINERAL SPIRITS, STODDARD SOLVENT

SK PART NUMBER: 6617

FAMILY/CHEMICAL NAME: HYDROCARBON SOLVENT

PRODUCT USAGE: SOLVENT FOR CLEANING AND DEGREASING PARTS

SECTION II -- HAZARDOUS COMPONENTS

NAME	SYNONYM	%	CAS NO.	OSHA PEL (ppm)	ACGIH TLV (ppm)
Parts Washer Solvent (consists predominantly of C9-C13 hydrocarbon)	Mineral Spirits	(Typical % by Wt.)			
C9-C13 Saturated Hydrocarbon		85	64741-41-9	100 (Stoddard Solvent)	100 (Stoddard Solvent)
*Toluene		0.5	108-88-3	100 150 STEL	100 150 STEL
*Xylene		1.0	1330-20-7	100 150 STEL	100 150 STEL
*Ethyl Benzene		0.5	100-41-4	100 Skin 125 STEL	100 125 STEL
C8+ Aromatics		12.0	Mixture	N/E	N/E
Chlorinated Solvents		(Max 1% by Wt.)			
*1,1,1 Trichloroethane		< 0.5	71-55-6	350 450 STEL	350 450 STEL
*Tetrachloroethylene		< 0.5	127-18-4	25	50 200 STEL

N/E = Not Established
* See Section X - Other Regulatory Information

SECTION III -- PHYSICAL DATA

PHYSICAL STATE, APPEARANCE AND ODOR: Combustible liquid - clear, green, with characteristic hydrocarbon odor.

BOILING POINT: 300° - 429° F

EVAPORATION RATE:	(Butyl Acetate = 1) 0.1
PERCENT VOLATILE:	99.9%
VAPOR DENSITY:	4.9 (Air = 1)
VAPOR PRESSURE:	2 mm of Hg at 68° F
SOLUBILITY IN WATER:	Negligible
pH:	Not Applicable
SPECIFIC GRAVITY:	0.77 to 0.80
MOLECULAR WEIGHT:	Approximately 142
VOLATILE ORGANIC COMPOUNDS:	795 g/L

SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 105° F (SETA)

AUTOIGNITION TEMPERATURE: 473° F

CONDITIONS OF FLAMMABILITY: Materials must be moderately heated before ignition can occur.

FLAMMABLE LIMITS IN AIR - LOWER: 0.7% *UPPER:* 6.0%

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical, water (mist only).

FIRE FIGHTING PROCEDURES -- SPECIAL: NFPA 704 Rating 2-2-0

Keep storage tanks cool with water spray. Use self-contained breathing apparatus (SCBA).

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Decomposition and combustion products may be toxic. Heated tanks may rupture, explode or be thrown into the air. Vapors are heavier than air and may travel great distances to ignition source and flashback.

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition and burning may produce carbon monoxide.

SECTION V -- REACTIVITY DATA

STABILITY: Normally stable even under fire exposure conditions and is not reactive with water. Normal firefighting procedures may be used.

INCOMPATIBILITY (CONDITIONS TO AVOID): Strong oxidizing agents (e.g. chlorine, peroxides, strong acids).

HAZARDOUS POLYMERIZATION: Not known to occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Normally none; however, incomplete burning may yield carbon monoxide.

SECTION VI -- HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE: Skin and eye contact; inhalation.

HEALTH HAZARD DATA/SIGNS AND SYMPTOMS OF EXPOSURE:

ACUTE: *Skin*: Prolonged or repeated contact tends to remove skin oils, possibly leading to irritation and dermatitis.

APPENDIX B

RESULTS OF ADDITIONAL ASSESSMENT ACTIVITIES, SAFETY-KLEEN CORP. SERVICE CENTER, ALBUQUERQUE, NEW MEXICO (APRIL 14, 1992)

PROJECT: 502

RESULTS OF ADDITIONAL ASSESSMENT ACTIVITIES SAFETY-KLEEN CORP SERVICE CENTER ALBUQUERQUE, NEW MEXICO

April 14, 1992

Submitted to:

Safety-Kleen Corp.
P.O. Box 1429
San Pedro, CA 90733-1429

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CHAPTER I

INTRODUCTION

Safety-Kleen Corp. (S-K) operates a branch service center at 2720 Girard NE, Albuquerque, New Mexico. On September 23, 1991, S-K reported a release from the product (mineral spirits) underground storage tank system (USTs) feedline to the State of New Mexico. A preliminary extent of impact characterization study was performed at the site on October 17, 1991. This preliminary investigation included the collection and analysis of soil samples at five borehole locations with depths ranging from 8 to 75 feet below ground surface. The extent of degradation was not defined during the preliminary investigation due to auger refusal and site access constraints.

Initial results of the preliminary investigation were provided to the City of Albuquerque in a letter from S-K dated November 7, 1991. The City of Albuquerque responded on November 22, 1991 indicating that due to the degree of impacts encountered during the preliminary investigation and because vertical extent was not defined, additional assessment work was required in the vicinity of the spill. In addition, the City of Albuquerque denied S-K's request to defer the additional assessment activities until after the USTs have been removed.

Scope of Work

In a letter dated December 24, 1991, S-K responded to the City of Albuquerque concerns and requested a meeting to evaluate site conditions. On January 3, 1992, S-K met with City of Albuquerque personnel to review site accessibility, drilling conditions and scope of the additional assessment activities. Accessible drilling locations are limited at the site due to numerous overhead power lines, aboveground and belowground structures (i.e., piping, tanks, foundations, etc.). In addition, the subsurface conditions (i.e., gravels and cobbles) present technical constraints for conventional environmental drilling and soil sampling to depths necessary to define the extent of degradation.

Pursuant to a letter dated January 14, 1992, S-K committed to perform additional assessment activities to the extent practicable. In January and February 1992, S-K conducted an additional site assessment at the Albuquerque facility. The objectives of this investigation were to:

1. Assess the results of the preliminary site investigation (October 1991);

2. Determine the vertical extent of degradation as close to the return/fill station and spill site as possible.

3. Evaluate whether there is any potential threat to ground water (if possible); and

4. Determine the lateral extent of degradation in the subsurface to the extent practicable.

Facility Description

The facility occupies a lot approximately 260 feet wide and 500 feet long. S-K is bordered on the north by an autobody shop and on the south by a concrete construction facility. A concrete-lined arroyo forms the eastern boundary. A number of small lots occupied by another construction company, a packaging and design company, and a New Mexico Power Company substation are located across the street from the S-K facility, on the western side of Girard NE.

S-K operates the facility as a service center for the distribution of mineral spirits and other parts cleaning solvents and storage of spent mineral spirits and waste solvents. During the January-February assessment, the Albuquerque service center consisted of the following structures (see Figure I-1):

1. A 2,500-square foot warehouse with offices and a drummed storage containment area;

2. Another 4800-square foot warehouse and office building;

3. Two 10,000-gallon USTs, one for product mineral spirits and one for spent mineral spirits; and

4. A return/fill station for loading product mineral spirits and unloading spent mineral spirits.

Since the January-February assessment, S-K has installed new USTs, a return/fill station and flammable storage station to the east of units being investigated during January-February activities. The new units became operational March 1992, at which time the old return/fill station and associated USTs were removed from operation.

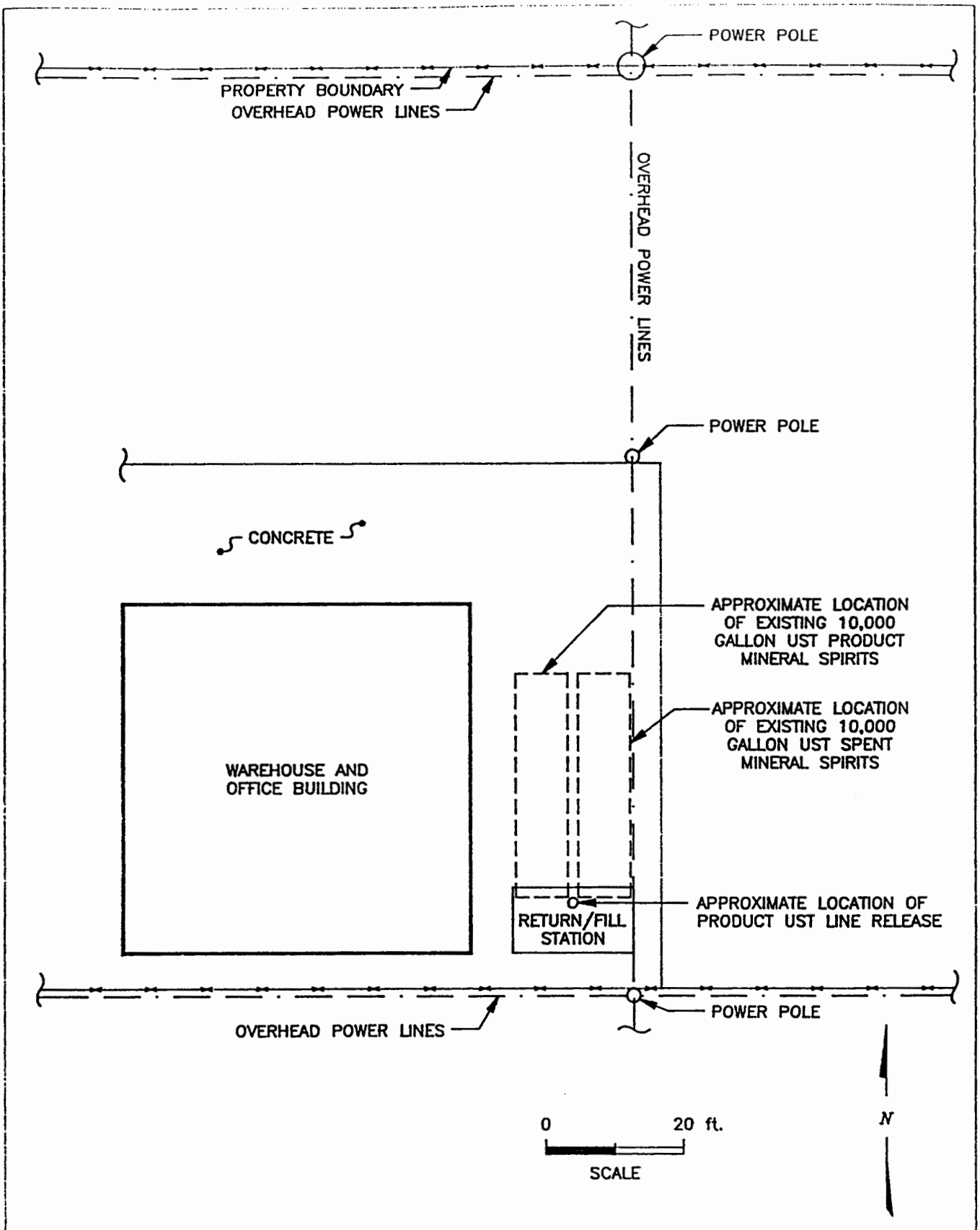

FIGURE I-1 :SAFETY-KLEEN CORP. SERVICE CENTER, ALBUQUERQUE, NEW MEXICO

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The old return/fill station and associated USTs will be closed according to applicable New Mexico Regulations.

Geology and Hydrogeology

The S-K facility lies at an elevation of approximately 5,110 feet above mean sea level. Lithology of the area is sand and gravel basin fill, composed primarily of decomposed granites from the Sandia Mountains to the east. A detailed discussion of the site geology (based on site-specific borehole logs) is presented in Chapter II.

Information pertaining to ground water depth and flow direction in the immediate area was obtained from Mr. Kelly Summers, a hydrologist with the City of Albuquerque Public Works Department. Mr. Summers indicated that ground water is a minimum of 200 feet, and more likely 250 feet below ground surface in the vicinity of the S-K facility. The nearest City Water Well, Santa Barbara #1 (SB-1), is located approximately a quarter of a mile to the east of the site (see Figure I-2).

City records indicate that Well SB-1 operates seasonally at pumping rates of 3,200 to 3,400 gallons per minute (gpm). Without the influence of the City Well, ground water would typically flow west, toward the Rio Grande River. However, during operation, City Well SB-1 has the potential to reverse the ground-water gradient underlying the site.

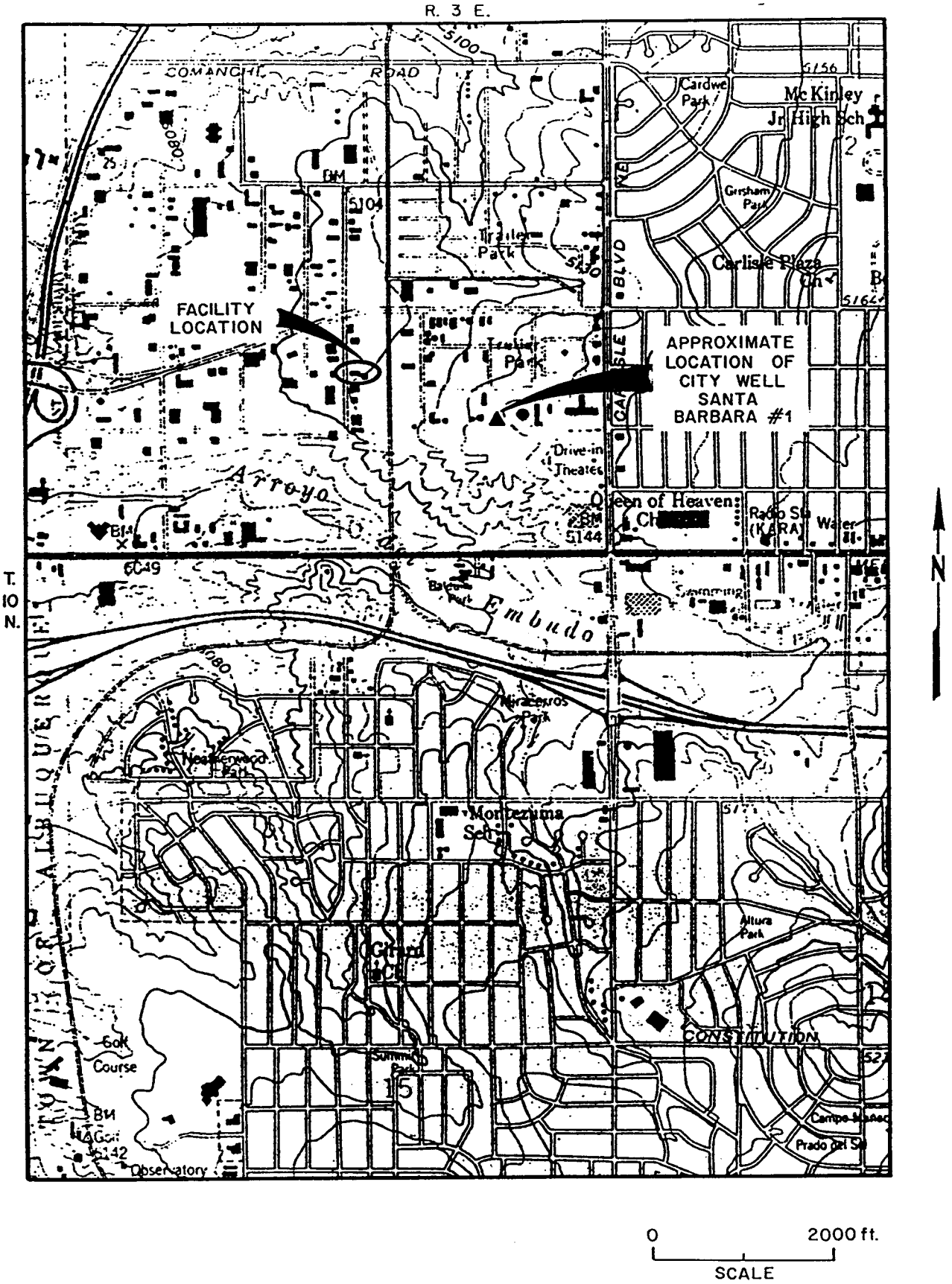

FIGURE I-2 :LOCATION OF NEAREST CITY WATER WELL, SANTA BARBARA #1, TO SAFETY-KLEEN ALBUQUERQUE FACILITY

CHAPTER II

ADDITIONAL ASSESSMENT FIELD ACTIVITIES

The preliminary soil sampling program (October 1991) was performed with a hand auger and Central Mine Equipment Model 55 (CME-55) hollow-stem auger drilling rig at the locations shown on Figure II-1. Soil quality was evaluated as close to operating USTs and return/fill station as possible; however, the CME-55 drilling rig encountered auger refusal at a depth of approximately 75 feet below ground surface. The field screening and laboratory results from the October 1991 investigation indicated degradation extended to a depth of at least 60 feet below ground surface at borehole SB-2.

Physical constraints and lithology severely limit potential soil sampling locations and conventional drilling techniques at the Albuquerque service center. Subsequently, Safety-Kleen Corp. (S-K) performed a feasibility evaluation of site conditions and available drilling equipment to accomplish the objectives of the additional assessment activities. The results of the feasibility evaluation (Reference letter dated December 24, 1991) indicated that a CME-75 was the largest available drilling rig which could safely access the site to both assess the October 1991 investigation results and potentially determine the extent of degradation.

Additional Soil Boring/Sampling Procedures

S-K coordinated with the City of Albuquerque and implemented the additional soil sampling and analysis program on January 29, 1992. Soil samples were collected from the borehole locations shown on Figure II-2 for logging, field screening and laboratory analysis. The additional soil sampling and analysis activities were performed in general accordance with the USEPA Technical Enforcement Guidance Document, SW-846 and applicable State of New Mexico regulations.

Boring/Sampling Procedures

All boreholes were drilled by Western Technologies, Inc. (Albuquerque, New Mexico) with a CME-75 hollow stem auger drilling rig, under the supervision of an experienced field geologist. Soil samples were collected at five foot

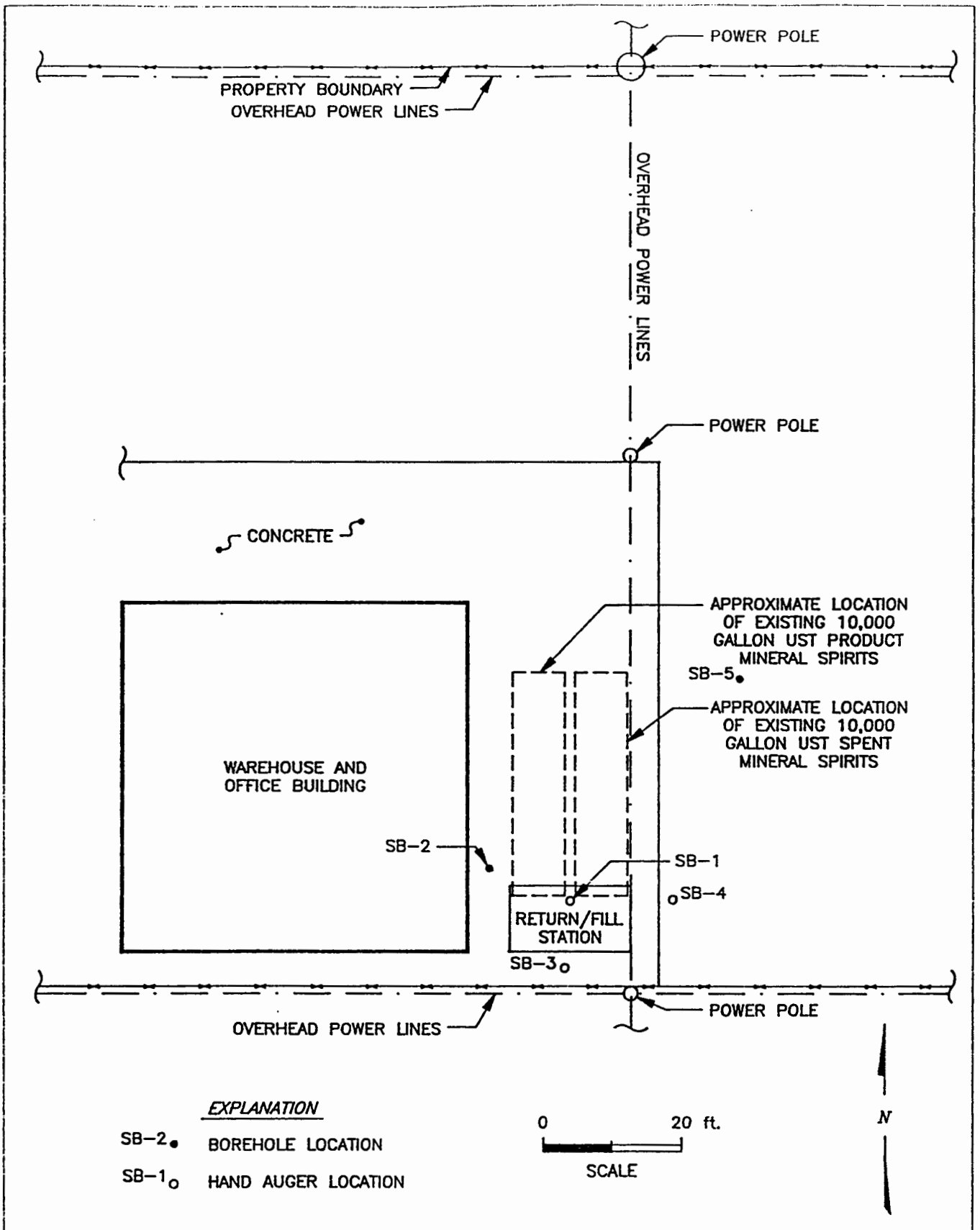

FIGURE II-1 :PRELIMINARY INVESTIGATION SOIL SAMPLING LOCATIONS, SAFETY-KLEEN CORP. SERVICE CENTER, ALBUQUERQUE, NEW MEXICO (October 1991)

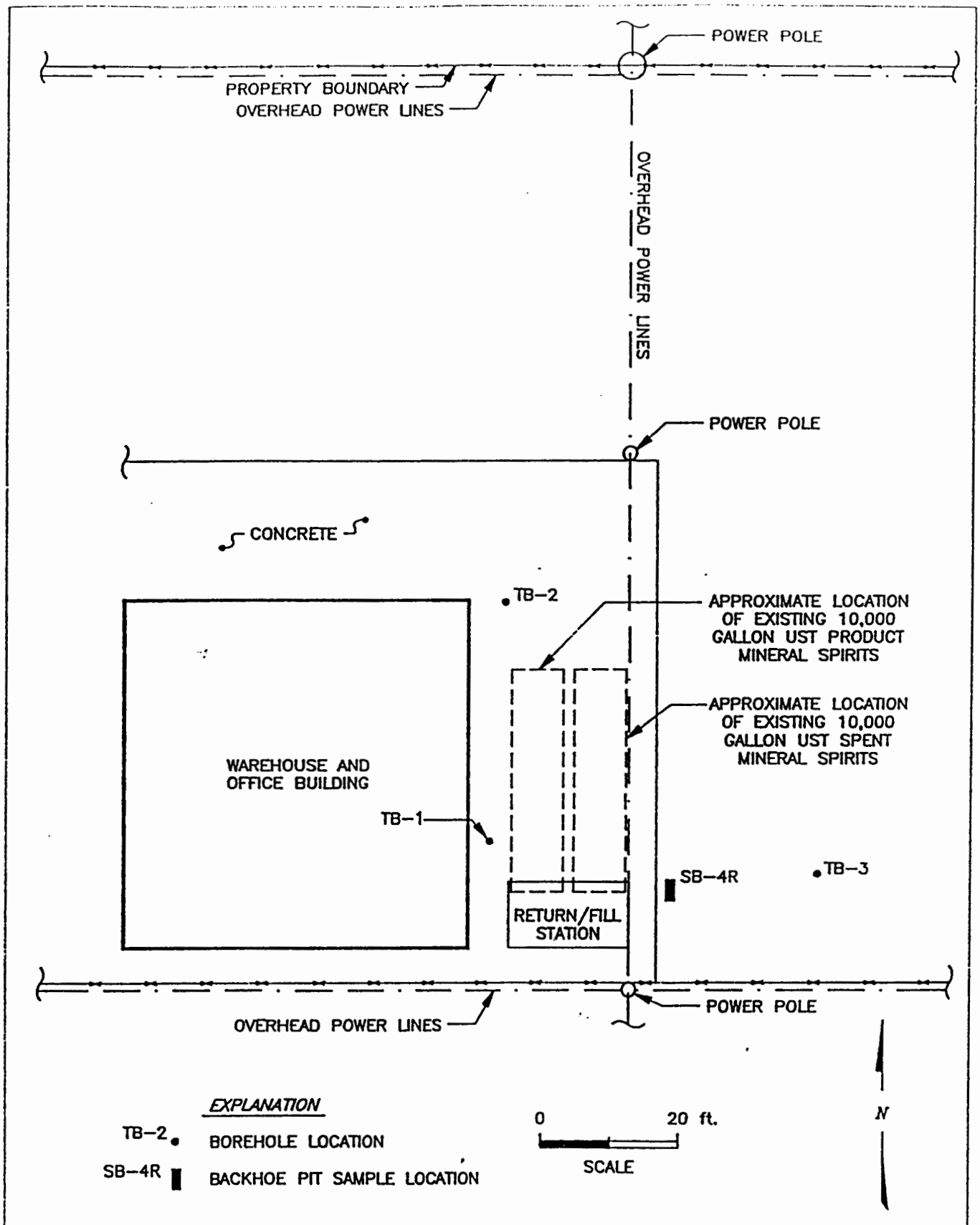

FIGURE II-2 :ADDITIONAL ASSESSMENT SOIL SAMPLING LOCATIONS, SAFETY-KLEEN CORP. SERVICE CENTER, ALBUQUERQUE, NEW MEXICO (January-February 1992)

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intervals from ground surface to the total depth of each boring. A split spoon sampler, equipped with clean brass rings, was utilized to collect undisturbed soil samples for logging, field screening, and laboratory analysis.

Sample Locations

As previously mentioned, physical constraints limited drilling rig accessibility and potential soil boring locations at this site. Borehole sampling locations were selected as best possible based on the results of the initial site assessment performed in October 1991, specific concerns of the City of Albuquerque, and anticipation of future required site assessment activities. The sample locations and intervals were selected to identify, characterize, and, if possible, define both the horizontal and vertical extent of degradation underlying the site.

S-K constructed one borehole (TB-1) immediately adjacent to the deepest borehole installed during the initial site assessment (SB-2). Borehole TB-1 was installed as close to the return/fill station as possible, approximately 10 feet from the reported pipeline release. Borehole TB-2 was installed directly north of the existing USTs, and TB-3 was constructed to the east of the return/fill station (see Figure II-2).

Physical Soil Characteristics

Auger and sampler refusal were encountered in all three boreholes at a depth of approximately 80 to 85 feet below ground surface. An experienced field geologist logged each borehole for physical characteristics. The soil samples were described according to lithology, texture, and color. The completed log-of-borehole forms are presented in Appendix A.

Based on the borehole logs, the site is underlain by a fine to medium-grained sand and silty sand, grading into coarser-grained sands, gravels, and cobbles. Several cobble layers were encountered between 20 and 30 feet and between 55 and 85 feet (total depth of deepest borehole) below ground surface. These cobbles, up to 6 inches in diameter, were set in a coarse silica sand matrix. The cobbles were predominantly composed of quartz with feldspars, mafics, and other minerals typically associated with granitic rock.

Field Screening

A Thermo-Environmental Instruments Model 510 photo-ionization detector (PID) was used to monitor total organic vapor (TOV) in the headspace of the borehole samples. A Thermo-Environmental Instruments Model 210 field gas chromatograph (GC) was also used to analyze the headspace of samples from selected depth intervals to characterize the soil vapor and aid in determining the vertical extent of degradation.

Field Instruments Calibration

The PID was calibrated daily and as necessary during the project to a factory prepared standard of isobutylene (100 ppm). A Hewlett Packard Model 3396B programmable integrator was used to record the field GC results. The field GC results were compared to standard chromatograms of S-K mineral spirits, perchloroetheylene, immersion cleaner and other representative organic compounds.

Sample Preparation and Handling

Total organic vapor concentrations were measured in the field according to procedures outlined in the New Mexico State Underground Storage Tank Regulations, Part XII, Appendix C. Each split-spoon sampler collected from the boreholes contained three brass rings. The top ring from each sampler was discarded because the contents may be composed primarily of borehole slough.

The bottom ring in the split-spoon sampler was immediately sealed with teflon paper and tight-fitting plastic caps, labelled and placed on ice in an opaque cooler. One-half the contents of the middle ring was extruded into a clean glass mason jar (1.0 liter/32 ounce) and sealed with clean aluminum foil for field screening with the PID. The other half of the middle brass ring contents was extruded into a clean zip-lock plastic bag and sealed for field GC analyses.

The containerized samples were gradually warmed to approximately 60 to 80°F (ambient room temperature) before field screening. Aromatic hydrocarbon concentrations were allowed to equilibrate in the headspace of the approximately one-half full containers for at least five minutes. The sample containers were also shaken vigorously during this time for at least one minute to ensure the headspace vapors had reached equilibrium.

Field Instrument Measurements/Analysis

The aluminum foil seal over the glass jars was immediately pierced with the probe of the PID following sample field screening preparation. The highest PID measurement was recorded as the field screening reading for each of the soil samples. In addition, an aliquot of headspace vapor from selected plastic bag samples was extracted with a gas-tight syringe for field GC analysis. The field screening results, including field GC analyses, are presented in Chapter III.

Management of Cuttings and Decontamination Water

Soils brought to the ground surface during drilling were containerized in 55-gallon DOT drums. The drums of cuttings were sealed, labeled and temporarily stored onsite. S-K intends to utilize the laboratory analytical results to properly manage and dispose of the soil cuttings. Based on experience, S-K does not expect the soil cuttings to exhibit the characteristic of hazardous waste.

All downhole drilling and sampling equipment was decontaminated by steam cleaning prior to use at each borehole location/interval. The wash/rinse water generated during decontamination was also containerized in drums. S-K managed the wash/rinse water through the waste processing system at the facility.

Borehole Abandonment

After soil sampling was completed, all of the boreholes were sealed and appropriately abandoned in accordance with the New Mexico regulations. The boreholes were filled from total depth to ground surface with a bentonite grout. Boreholes penetrating a paved surface were capped with concrete to match existing grade.

Additional Assessment Laboratory Analysis

Based on field screening, ten undisturbed soil samples were submitted to GTEL Environmental Laboratories, Inc. (Concord, CA) for analysis. The soil samples were collected in clean brass rings and sealed with teflon sheeting and tight-fitting plastic caps. Each brass ring was labelled and packed on ice in an opaque cooler. A chain-

of-custody/sample-analysis-request form accompanied the samples to the laboratory. These forms are provided in Appendix B.

Sample Selection for Laboratory Analysis

The most degraded soil sample based on field screening and a soil sample from the deepest interval at which field screening indicated an absence of degradation were submitted to the laboratory for analysis. Additional samples were also submitted from each borehole as necessary to confirm, characterize and determine the absence/presence of degradation. A sufficient number of samples were submitted to a qualified laboratory to accomplish the objectives of this additional assessment.

Sampling Analysis Schedule

The sampling and analysis schedule for the soil boring program is presented in Table II-1. All analyses were performed in accordance with EPA SW-846 methods or modified methods (i.e., hydrocarbon characterization screen). The results of the soil sample analyses are discussed in Chapter III. The laboratory data sheets are presented in Appendix B.

Table II-1. Soil Sampling and Analysis Schedule, Safety-Kleen Corp. Branch Service Center, Albuquerque, New Mexico (January - February 1992).

Sample Type	Borehole Location	Depth Interval (ft-bgs)	Constituents/Parameters	Analytical Method
Extent	TB-1	16.0-16.5	Volatile Organic Constituents	8240
		21.0-21.5	Hydrocarbon Characteristic Screen	mod 8015
		71.0-71.5	Total Cadmium, Chromium, and Lead	6010
	TB-2	15.5-16.0		
		81.0-81.5		
	TB-3	15.5-16.0		
		81.0-81.5		
	SB-4R	5.0		
Characterization	TB-1	50.0-51.5	Volatile Organic Constituents	8240
		61.0-61.5	Hydrocarbon Characterization Screen	mod 8015
			Total Cadmium, Chromium, and Lead	6010

ft-bgs = Sample interval in feet below ground surface

Analytical methods based on USEPA SW-846

CHAPTER III

ADDITIONAL ASSESSMENT RESULTS

Soil quality was evaluated at three borehole locations and one shallow excavation shown on Figure III-1. All boreholes were advanced to at least 80 feet below ground surface. The boreholes were sampled every five feet using a split-spoon sampling device. A backhoe excavation was also completed at the approximate location of the preliminary shallow soil boring SB-4 and a sample (SB-4R) was collected at depth of approximately five feet below ground surface. Each sample was field screened for headspace total organic vapor (TOV) concentrations to profile the entire borehole and aid in the selection of samples for field gas chromatograph (GC) analysis and laboratory analyses.

Field Screening Results

Each borehole sample was field screened according to the procedures described in Chapter II. Soil samples which exhibited an elevated headspace TOV concentration were also analyzed with a field GC. In addition, field GC analysis of headspace vapors was performed on the majority of the soil samples which were collected near total depth of the boreholes. Field GC analysis of the samples headspace vapors was conducted to characterize/differentiate TOV, as well as check the PID field screening data.

PID Field Screening Results

Headspace TOV measurements greater than 10 ppm were encountered in soil samples from borehole TB-1 at depths between 15 and 61.5 feet below ground surface. The highest TOV headspace concentration (1080 ppm) was measured in the borehole sample TB-1 (50-51.5 feet); however, the levels attenuated with depth to 2.9 ppm in the borehole sample TB-1 (70-71.5 feet). All of the headspace TOV readings measured in samples from boreholes TB-2 and TB-3 were less than 10 ppm.

The TOV readings measured in the borehole soil samples are presented in Table III-1. Sections 1205 and 1209 of the New Mexico Underground Storage Tank Regulations indicate the extent of degradation shall be identified and soil quality remediated to a total aromatic hydrocarbon values (i.e., TOV) of less than 100 ppm when measured with

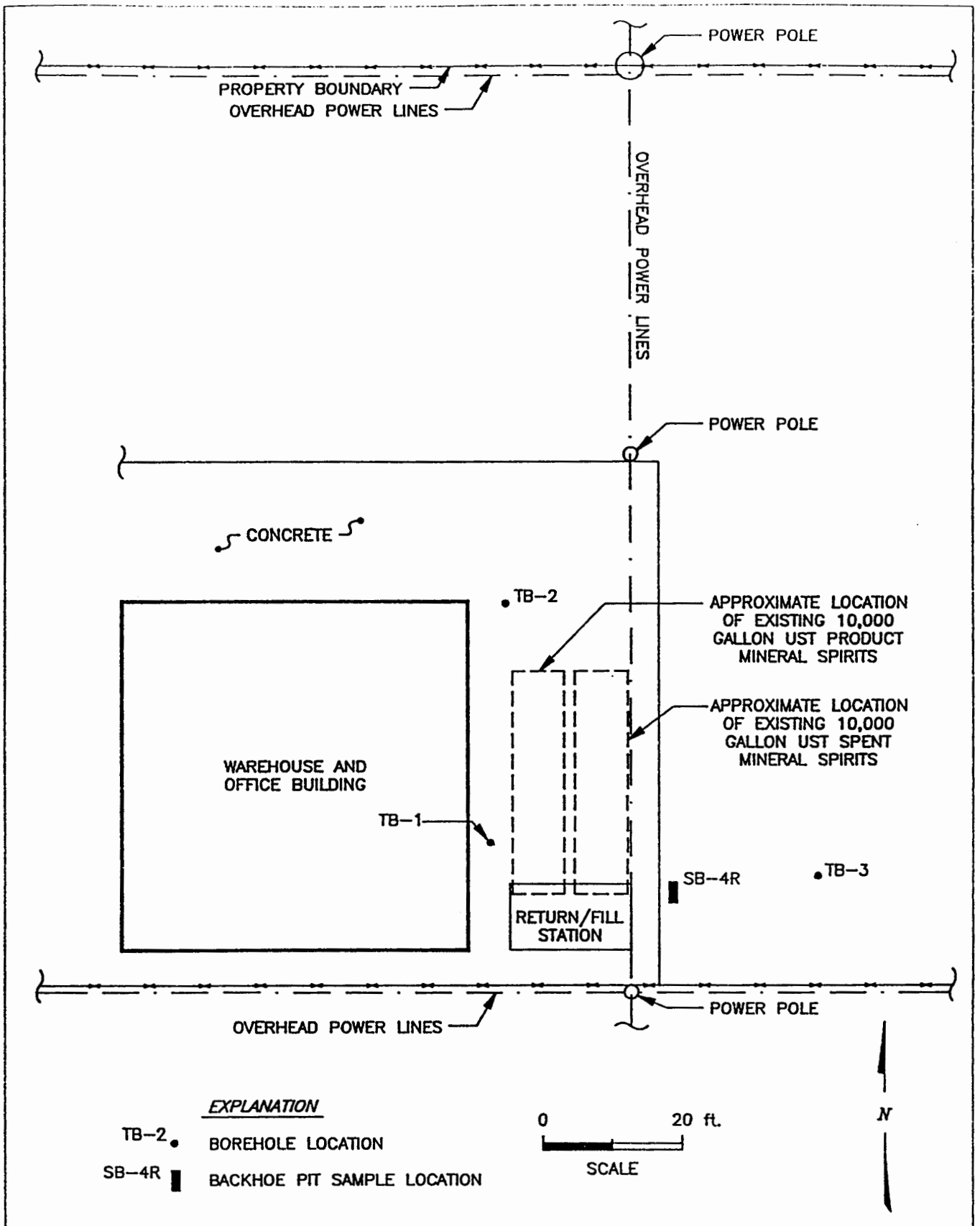

FIGURE III-1 :ADDITIONAL ASSESSMENT SOIL SAMPLING LOCATIONS, SAFETY-KLEEN CORP. SERVICE CENTER, ALBUQUERQUE, NEW MEXICO (January-February 1992)

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Table III-1. Field Screening Results, Additional Assessment Activities, Safety-Kleen Corp. Branch Service Center, Albuquerque, New Mexico (January - February 1992).

Borehole/ Date	Interval Depth (ft-bgs)	Field Screening PID (ppm-TOV)	Field GC Sample Analyzed	Laboratory Sample Submitted
TB-1				
1/29/92	0.5-2.0	1.0	No	No
	5.0-6.5	0.0	No	No
	10.0-11.5	0.0	No	No
	15.0-16.5	18	No	Yes
	20.0-21.5	53	No	Yes
	25.0-26.5	8.3	No	No
	30.0-31.5	7.5	No	No
	35.0-36.5	32	No	No
	40.0-41.5	79	No	No
	45.0-46.5	940	Yes	No
	50.0-51.5	1,080	Yes	Yes
	55.5-57.0	730	Yes	No
	60.0-61.5	75	No	Yes
	66.0-67.5	61	No	No
1/30/92	70.0-71.5	2.9	Yes	Yes
	75.0-76.5	4.4	Yes	No
	80.0-81.0	2.2	Yes	No
TB-2				
1/31/92	0.5-2.0	0.3	No	No
	5.0-6.5	0.3	No	No
	10.0-11.5	0.7	No	No
	15.0-16.5	0.3	No	Yes
	20.0-21.5	0.0	No	No
	25.0-26.5	0.0	No	No
	30.0-31.5	0.0	No	No
	35.0-36.5	0.0	No	No
	40.0-41.5	0.0	No	No
	45.0-46.5	0.0	No	No
	50.0-51.5	0.7	Yes	No
	55.5-56.5	--	No	No
	60.0-61.5	5.0	Yes	No
	65.0-66.5	--	No	No
	70.0-71.5	2.6	Yes	No
	75.0-76.5	0.0	Yes	No
2/1/92	80.0-81.5	9.8	Yes	Yes
TB-3				
2/2/92	0.5-2.0	0.4	No	No
	5.0-6.5	0.4	No	No
	10.0-11.5	0.9	No	No
	15.0-16.5	0.9	No	Yes
	20.0-21.5	0.4	No	No
	25.0-26.5	0.4	No	No
	30.0-31.5	0.4	No	No
	35.0-36.5	0.4	No	No
	40.0-41.5	0.7	No	No
	45.0-46.5	0.4	No	No
	50.0-51.5	0.2	No	No
	55.0-56.5	0.4	No	No
	60.0-61.5	1.1	No	No
	65.0-66.5	0.7	No	No
	70.0-71.5	0.9	Yes	No
	75.0-76.5	0.4	Yes	No
	80.0-81.5	0.2	No	Yes
SB-4R				
1/29/92	5.0	0.4	No	Yes

ft-bgs - Sample depth interval in feet below ground surface.
ppm TOV - Parts per million total organic vapor relative to 100 ppm isobutylene standard calibration gas.

an appropriate field instrument and degraded soils are 50 feet or less above the seasonal high static ground-water level. As shown in Table III-1, the only soil samples which exceeded this criteria were collected from borehole TB-1 between 45 and 60 feet below ground surface.

Field GC Results

A total of thirteen samples were selected for field GC analysis. The chromatograms from TB-1 headspace samples with elevated TOV concentrations were similar in shape and retention times to the chromatograms produced using a S-K mineral spirits standard. The chromatograms produced from the headspace samples taken to confirm vertical extent in TB-1, TB-2, and TB-3 did not exhibit any peaks of significance. The samples analyzed by field GC and the respective TOV concentrations are summarized on Table III-1. The chromatograms generated by the analyses of vapors from the standards, blanks, and samples are found in Appendix C.

Laboratory Analytical Results

Ten undisturbed soil samples were submitted to GTEL Environmental Laboratories, Inc. (Concord, California) on February 3, 1992. The samples were analyzed for a hydrocarbon characterization screen, volatile organic compounds, cadmium, chromium and lead (Table II-1). The analytical data are summarized on Table III-2. The laboratory data sheets and chain-of-custody forms are presented in Appendix B.

Hydrocarbon Characterization Screen

The 10 soil samples were screened for seven common hydrocarbon products (i.e., gasoline, mineral spirits, kerosene, jet fuel, diesel, Fuel Oil No. 6, and lubricating oil) using a gas chromatography/flame ionization detection analysis (modified 8015). An analytical detection limit of 10 mg/kg was reported for gasoline through Fuel Oil No. 6 and 100 mg/kg for lubricating oil. Hydrocarbon products were not identified above the detection limit in the 10 soil samples.

S-K requested that the laboratory review the quality assurance/quality control records and re-analyze samples TB-1 (50.0-51.5 feet) and TB-1 (61.0-61.5 feet) since the analytical results were inconsistent with the field screen-

Table III-2. Laboratory Results, Additional Assessment Activities, Safety-Kleen Corp. Branch Service Center, Albuquerque, New Mexico (January - February 1992).

Borehole/ Date	Depth (ft-bgs)	Hydrocarbon Characterization Screen (mg/kg)	Volatile Organic Compounds (mg/kg)		Total Metals (mg/kg) Cadmium	Chromium	Lead
TB-1							
1-29-92	16.0-16.5	All ND	All ND		ND(1)	2	ND(5)
	21.0-21.5	All ND	All ND		ND(1)	4	ND(5)
	50.0-51.5	All ND	All ND		1	14	ND(5)
	61.0-61.5	All ND	Toluene	0.006	ND(1)	10	ND(5)
			Ethylbenzene	0.007			
			All Others	ND			
1/30/92	71.0-71.5	All ND	Toluene	0.016	ND(1)	6	ND(5)
			Total xylene	0.023			
			All Others	ND			
TB-2							
1/31/92	15.5-16.0	All ND	All ND		ND(1)	8	ND(5)
2/1/92	81.0-81.5	All ND	Total xylene	0.0076	ND(1)	11	ND(5)
			All Others	ND			
TB-3							
2/2/92	15.5-16.0	All ND	Toluene	0.0057	ND(1)	2	ND(5)
			All Others	ND			
2/3/92	81.0-81.5	All ND	All ND		ND(1)	14	ND(5)
SB-4R							
1/29/92	5.0	All ND	All ND		ND(1)	16	ND(5)

Notes:

ft-bgs = Sample depth interval in feet below ground surface.
ND = Constituent not detected above analytical detection limits in parentheses hydrocarbon characterization screen included analysis for seven common hydrocarbon products.
Hydrocarbon Characterization Screen Modified Method 8015 (GC/FID)
Volatile Organic Compounds Method 8240
Total Metals Method 6010

ing data. The review of laboratory records provided no indication of data entry or analytical errors. In addition, the re-analysis results indicated that hydrocarbon products were non-detectable in these two TB-1 soil samples (50.0-51.5 feet and 61.0-61.5 feet).

Volatile Organic Compounds

The 10 soil samples were analyzed for 39 volatile organic compounds (VOCs) using USEPA method 8240. Toluene, ethylbenzene, and/or total xylenes were detected at low levels in samples TB-1 (61.0-61.5 feet), TB-1 (71.0-71.5 feet), TB-2 (81.0-81.5 feet) and TB-3 (15.5-16.0 feet). The total accumulative VOC concentrations (i.e., toluene concentration plus ethylbenzene concentration) detected in the four soil samples ranged from 0.0057 mg/kg in TB-3 (15.5 to 16.0 feet) to 0.039 mg/kg in TB-1 (71.0-71.5 feet).

Inorganic Constituents

The 10 soil samples were also analyzed for total cadmium, chromium and lead (USEPA Method 6010) since these metals are common contaminants of S-K spent mineral spirits. The concentration of cadmium ranged from non-detectable (1.0 mg/kg) in all samples (except one) to a level at the analytical detection limit of 1.0 mg/kg in sample TB-1 (50.0-51.5 feet). Lead was not detected above an analytical reporting level of 5 mg/kg in any of the soil samples.

Total chromium was detected in all 10 of the soil samples. The concentration of chromium detected in the samples ranged from 2 mg/kg in TB-1 (16.0-16.5 feet) to 16 mg/kg in SB-4R (5 feet). These chromium concentrations are well within naturally occurring levels (5 to 500 mg/kg) for New Mexico as reported in the "Chemical Analysis of Soils and Other Surficial Materials of the Conterminous United States" (USGS Open File Report 81-197).

Summary of Additional Assessment Results

Safety-Kleen Corp. (S-K) performed additional subsurface assessment activities in the vicinity of the old USTs and return/fill station. Samples were collected from three boreholes and a shallow excavation to evaluate soil quality using field screening methods and laboratory analysis. The January-February 1992 investigation was conducted to assess

the October 1991 assessment results, evaluate the extent of subsurface impacts, and determine whether soil quality degradation extends to ground water.

Borehole TB-1 was constructed as close to the return/fill station and spill site as possible and immediately adjacent to preliminary boring SB-2. Field screening of soil samples collected from TB-1 resulted in the same trend as the preliminary assessment; however, the data indicates that soil quality degradation attenuates to near background conditions at a depth of approximately 70 feet below ground surface. Based on the laboratory data, low levels of only toluene (0.016 mg/kg) and xylenes (0.023 mg/kg) were present in the deepest soil sample (71.0-71.5 feet) from borehole TB-1.

Boreholes TB-2 and TB-3 were constructed immediately north of the USTs and east of the return/fill station, respectively to evaluate the lateral extent of soil quality degradation. Field screening of all soil samples collected from these boreholes resulted in TOV concentrations less than 10 ppm. A low level of xylene (0.0076 mg/kg) was detected in the deepest soil sample from borehole TB-2 and all organic constituents were non-detectable in the deepest soil sample from TB-3. Based on the field and laboratory data, soil quality impacts are not extensive to the north and east of the USTs and return/fill station. Access to the south and west was not available during the January-February 1992 investigation.

Subsurface conditions and feasible drilling methods prevented collection of soil samples from depths greater than 81.5 feet below ground surface at the site. However, information provided by the City of Albuquerque Public Works Department indicated that the depth to ground water is at least 200 feet below ground surface in the vicinity of the facility. The field and laboratory data generated during the additional assessment activities do not indicate that soil quality degradation extends to the ground-water table (at the locations investigated) underlying the S-K facility.

APPENDIX A

BOREHOLE LOGS

SAFETY-KLEEN CORP. FACILITY
PARTIAL SITE ASSESSMENT
ALBUQUERQUE, NEW MEXICO

LOG-OF-BOREHOLE

PROJECT: Safety-Kleen/Albuquerque Partial Site Assessment JOB# 502

LOC. OR COORDINATES: 3' North of SB-2 MEASURING POINT ELEV.: GROUND ELEV.: TOTAL DEPTH: 85.0' BOREHOLE DIA.: 8" CASING DIA.: N/A	DATE: 1/29/92 DRILLER: Western Technologies Rod Hammer Bill Whaley RIG: CME-75 BIT(S): 7 3/4" HSA FLUID: N/A	BOREHOLE: TB-1 PAGE: 1 OF: 1 LOGGED BY: L. Barnes

DEPTH (FEET)	MATERIAL	BLOW COUNT/ 6 INCHES	DESCRIPTION AND COMMENTS
0.5-2.0	Clay	3-4-5	Reddish-brown clay, silt, and sand, mica flakes and small granite pebbles throughout, granular sand near bottom, some large pebbles up to 1 cm diameter.
3.5-4.0	Silty sand	4	Geotech Sample - as above except no clay.
5.0-6.5	Silty sand	1-3-5	Reddish brown sand, fine-grained particles, mica prevalent, dry, loose, mafic materials, subrounded.
9.5-10.0	Silty sand	7	Geotech Sample - as above finer grained material, some minor clay.
10.0-11.5	Silty sand	2-4-4	As above - red-brown silt and sand, minor clay, slightly moist, balls up, quartz crystals and pebbles.
15.0-16.5	Sand	3-7-8	Fill - well sorted, well rounded silica sand, medium grained.
20.0-21.5	Cobbles,	6-12-12	Sand and cobbles, several cm in length, cobbles sand are subrounded and granitic/quartz.
25.0-26.5	Cobbles, sand	7-10-8	As above, fewer large cobbles.
30.0-31.5	Silty sand	4-10-9	Fine grained, red/brown, silt. Still some small gravels (<0.5 cm), minor clay mafics and quartz chips, subrounded.
35.0-36.5	Sand	7-14-15	Very fine grained, reddish brown, but coarse grains and cobbles throughout, coarse grains are angular, less clay, arkosic, granite.
40.0-41.5	Sand	17-22-24	As above, increase in cementation, coarse-grained cobbles (<0.5 cm) subrounded.
45.0-46.5	Silty sand	6-12-22	Very fine-grained sand/silt, color is brown to mottled brown, some clay.
50.0-51.5	Silty sand	24-64-12	As above, light brown color, flakey and drier than before, some larger cobbles several cm in length.
55.0-56.5	Silty sand, cobbles	13-100+ 6 inches	Lost initial sample. Use basket and go back. Sample from 55.5 to 57.0. Brown fine silty sand with cobbles 10 cm in diameter at 55'.
60.0-61.5	Silty sand, cobbles	34-68-75	As above, cobbles are predominant, coarser grained matrix sand.
65.0-66.5	Silty sand, cobbles	13-65-56	No sample - switch to 2' split spoon - no brass rings - small sample light tan/brown silty sand with cobbles.
70.0-71.5	Sand, cobbles	17-60-60	Tan sand with cobbles. Matrix grains subrounded, poorly sorted. Cobbles as before
75.0-76.5	Sand, cobbles	30-100+ 6 inches	As above - cobbles up to 20 cm in diameter, coarse, smaller grain becoming more angular.
80.0-81.5	Sand, cobbles	44-100	As above. Drill to 85.'

LOG-OF-BOREHOLE

PROJECT: Safety-Kleen/Albuquerque Partial Site Assessment JOB# 502

LOC. OR COORDINATES: 3' North of SB-2 MEASURING POINT ELEV.: GROUND ELEV.: TOTAL DEPTH: 85.0' BOREHOLE DIA.: 8" CASING DIA.: N/A	DATE: 1/29/92 DRILLER: Western Technologies Rod Hammer Bill Whaley RIG: CME-75 BIT(S): 7 3/4" HSA FLUID: N/A	BOREHOLE: TB-1 PAGE: 1 OF: 1 LOGGED BY: L. Barnes

DEPTH (FEET)	MATERIAL	BLOW COUNT/ 6 INCHES	DESCRIPTION AND COMMENTS
85.0	Sand, cobbles	---	As above. Unable to obtain sample.

LOG-OF-BOREHOLE

PROJECT: Safety-Kleen/Albuquerque Partial Site Assessment JOB# 502

LOC. OR COORDINATES: 7' North of Tanks MEASURING POINT ELEV.: GROUND ELEV.: TOTAL DEPTH: 81.5' BOREHOLE DIA.: 10 1/4" CASING DIA.: N/A	DATE: 1/31/92 DRILLER: Western Technologies Rod Hammer Bill Whaley RIG: CME-75 BIT(S): 10 1/4" HSA FLUID: N/A	BOREHOLE: TB-2 PAGE: 1 OF: 1 LOGGED BY: L. Barnes

DEPTH (FEET)	MATERIAL	BLOW COUNT/ 6 INCHES	DESCRIPTION AND COMMENTS
0.5-2.0	Silty clay	6-5-6	Red-brown clay, tight, small rock fragments throughout.
5.0-6.5	Silty sand	2-3-5	Red-brown silty sand, sand is medium grained, subangular, granitic rock and quartz crystal fragments. Slightly moist.
10.0-11.5	Silty sand	2-4-7	Red-brown silty sand, less silt than before.
15.0-16.5	Silty sand	9-18-24	As above, minor clay, tank bedding silica sand - well rounded, sorted.
20.0-21.5	Sand	8-9-9	Tank bedding silica sand.
25.0-26.5	Sand gravel	9-18-21	Sand and gravel, quartz grains and granitic rocks, subrounded. Gravel is <1 cm in diameter.
30.0-31.5	Sand gravel	5-9-12	Brown-red sand with some minor gravel, sand is medium grained and subrounded, grain size increases with depth.
35.0-36.5	Sand	5-20-28	Brown sand, minor silt, gravel as before.
40.0-41.5	Sand	20-30-45	Red brown sand, partially cemented, gravel and silt throughout, increased silt particles from before.
45.0-46.5	Silty sand	11-30-45	Light tan silty sand - fine grained, loose and dry. Occasional gravels.
50.0-51.5	Silty sand	18-89+ 6 inches	As above, increasing gravel content.
55.0-56.5	Sand cobbles	65,42,38	Tan sand with gravels and cobbles up to 30 cm in diameter, some silt.
60.0-61.5	Sand cobbles	18-50-52	As above, sand is not as loose - some cementation finer-grained sand, minor silt.
65.0-66.5	Sand cobbles	47-100+ 6 inches	As above.
70.0-71.5	Sand cobbles	50-150+ 9 inches	As above.
75.0-76.5	Sand cobbles	75-100+ 8 inches	As above - color change to gray/tan.
80.0-81.5	Sand cobbles	80-100+ 8 inches	As above.

LOG-OF-BOREHOLE

PROJECT: Safety-Kleen/Albuquerque Partial Site Assessment JOB# 502

LOC. OR COORDINATES: 25' East of Spill Site MEASURING POINT ELEV.: GROUND ELEV.: TOTAL DEPTH: 81.5' BOREHOLE DIA.: 10 1/4" CASING DIA.: N/A	DATE: 2/2/92 DRILLER: Western Technologies Rod Hammer Bill Whaley RIG: CME-75 BIT(S): 10 1/4" HSA FLUID: N/A	BOREHOLE: TB-3 PAGE: 1 OF: 1 LOGGED BY: L. Barnes

DEPTH (FEET)	MATERIAL	BLOW COUNT/ 6 INCHES	DESCRIPTION AND COMMENTS
0.5-2.0	Silty sand, clay	4-4-8	Red-brown silty sand, minor clay, medium-sized grains, sparse gravel, moist, subangular.
5.0-6.5	Silty sand	1-7-8	Red-brown silty sand, less clay, some fragments of granitic gravels, slightly moist, grains are medium size, subangular.
10.0-10.5	Silty sand	3-6-6	As above, increasing clay content.
15.0-16.5	Sand	5-10-17	Silica sand, well sorted, well rounded, resembles tank bedding material, medium grained.
20.0-21.5	Sand	10-15-9	Coarse-grained silica sand with granitic material, some gravel (<1 cm diameter) angular, mafics.
25.0-26.5	Sand gravel	11-20-12	As above, gravel content increases, size increases (1-3 cm).
30.0-31.5	Sand gravel	14-14-14	As above.
35.0-36.5	Sand	12-17-24	Brown, fine-grained sand, minor gravels, and coarser-grained sand, subangular.
40.0-41.5	Silty sand	22-54-57	Brown fine-grained silty sand, dry, gravels up to 2 cm.
45.0-46.5	Silty sand	20-30-30	As above, formation is tight and dry.
50.0-51.5	Silty sand cobbles	25-77-68	Brown silty sand, cobbles (5-10 cm) sand is medium grained.
55.0-56.5	Sand cobbles	30-56-88	Gray-brown coarse sand gravels and cobbles (granitic, mafic). Subangular.
60.0-61.5	Sand cobbles	18-25-24	As above.
65.0-66.5	Sand cobbles	45-69-96	As above, large cobbles of quartz crystalline rock, cobbles are angular.
70.0-71.5	Sand cobbles	50-100+ 6 inches	As above, abundant feldspars.
75.0-76.5	Sand cobbles	97-100+ 6 inches	Coarse-grained sand, gravel, and cobbles, predominantly quartz cobbles, angular.
80.0-81.5	Sand cobbles	86-91+ 6 inches	As above, auger refusal at 81.5'.

APPENDIX B

LABORATORY DATA SHEETS AND CHAIN-OF-CUSTODY FORMS

SAFETY-KLEEN CORP. FACILITY
PARTIAL SITE ASSESSMENT
ALBUQUERQUE, NEW MEXICO

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-237

March 2, 1992

Jack Bedessem
TriHydro Corporation
920 E. Sheridan Street
Laramie, WY 82070-3939

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 02/07/92.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Lee Conder for
Emma P. Popek
Laboratory Director

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-237

Table 1

ANALYTICAL RESULTS

Hydrocarbons in Soil

Method: GC-FID[a]

GTEL Sample Number		01	02	03	04
Client Identification		TB-1 16.0-16	TB-1 21.0-21	TB-2 15.5-16	SB-4R
Date Sampled		01/29/92	01/29/92	01/31/92	01/29/92
Date Extracted		02/12/92	02/12/92	02/12/92	02/12/92
Date Analyzed		02/14/92	02/14/92	02/14/92	02/14/92
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	<10	<10	<10	<10
Mineral spirits	10	<10	<10	<10	<10
Kerosine	10	<10	<10	<10	<10
Jet fuel	10	<10	<10	<10	<10
Diesel	10	<10	<10	<10	<10
Fuel oil #6	10	<10	<10	<10	<10
Lubricating oil	100	<100	<100	<100	<100
Quantitation Limit Multiplier		1	1	1	1
Percent solids		87	94	89	90

a. Results reported on a wet weight basis.

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-239

February 24, 1992

Jack Bedessem/Eric Brandjord
TriHydro Corporation
920 E. Sheridan Street
Laramie, WY 82070-3939

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 02/07/92.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek/RM

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01	02	03	04
Client Identification		TB-1 16.0-16.5	TB-1 21.0-21.5	TB-2 15.5-16.0	SB-4R
Date Sampled		01/29/92	01/29/92	01/31/92	01/29/92
Date Extracted		02/13/92	02/13/92	02/13/92	02/13/92
Date Analyzed		02/13/92	02/13/92	02/13/92	02/13/92
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Chloromethane	10	<10	<10	<10	<10
Bromomethane	10	<10	<10	<10	<10
Vinyl chloride	10	<10	<10	<10	<10
Chloroethane	10	<10	<10	<10	<10
Methylene chloride	5	<5	<5	<5	<5
Acetone	100	<100	<100	<100	<100
Carbon disulfide	5	<5	<5	<5	<5
1,1-Dichloroethene	5	<5	<5	<5	<5
1,1-Dichloroethane	5	<5	<5	<5	<5
1,2-Dichloroethene, total	5	<5	<5	<5	<5
Chloroform	5	<5	<5	<5	<5
1,2-Dichloroethane	5	<5	<5	<5	<5
2-Butanone	100	<100	<100	<100	<100
1,1,1-Trichloroethane	5	<5	<5	<5	<5
Carbon tetrachloride	5	<5	<5	<5	<5
Vinyl acetate	50	<50	<50	<50	<50
Bromodichloromethane	5	<5	<5	<5	<5
1,2-Dichloropropane	5	<5	<5	<5	<5
cis-1,3-Dichloropropene	5	<5	<5	<5	<5
Trichloroethene	5	<5	<5	<5	<5
Dibromochloromethane	5	<5	<5	<5	<5

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01	02	03	04
Client Identification		TB-1 16.0-16	TB-1 21.0-21	TB-2 15.5-16	SB-4R
Date Sampled		01/29/92	01/29/92	01/31/92	01/29/92
Date Extracted		02/13/92	02/13/92	02/13/92	02/13/92
Date Analyzed		02/13/92	02/13/92	02/13/92	02/13/92
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<5	<5	<5	<5
Benzene	5	<5	<5	<5	<5
trans-1,3-Dichloropropene	5	<5	<5	<5	<5
2-Chloroethylvinyl ether	10	<10	<10	<10	<10
Bromoform	5	<5	<5	<5	<5
4-Methyl-2-pentanone	50	<50	<50	<50	<50
2-Hexanone	50	<50	<50	<50	<50
Tetrachloroethene	5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5
Toluene	5	<5	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5
Styrene	5	<5	<5	<5	<5
1,2-Dichlorobenzene	5	<5	<5	<5	<5
1,3-Dichlorobenzene	5	<5	<5	<5	<5
1,4-Dichlorobenzene	5	<5	<5	<5	<5
Xylene, total	5	<5	<5	<5	<5
Trichlorofluoromethane	5	<5	<5	<5	<5
Quantitation Limit Multiplier		1	1	1	1
Percent solids		87	94	89	90

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

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LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-240

February 21, 1992

Jack Bedessem/Eric Brandjord
TriHydro Corporation
920 E. Sheridan Street
Laramie, WY 82070-3939

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 02/07/92.

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GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek/MGM

Emma P. Popek
Laboratory Director

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-240

ANALYTICAL RESULTS

Matrix: Soil

				Sample Number	01	02	03	04
				Sample Identification	TB-1 16.0-16.5	TB-1 21.0-21.5	TB-2 15.5.-16.0	SB-4R
				Date Sampled	01/29/92	01/29/92	01/31/92	01/29/92
Test Description	Units	Detection Limit	Method	Date Analyzed	Test Result			
Cadmium	mg/Kg	1	EPA 6010	02/12/92	<1	<1	<1	<1
Chromium	mg/Kg	1	EPA 6010	02/12/92	2	4	8	16
Lead	mg/Kg	5	EPA 6010	02/12/92	<5	<5	<5	<5
Percent solids					87	77	86	90

GTEL ENVIRONMENTAL LABORATORIES, INC.

Table 1

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01	02	03	04
Client Identification		TB 1 50.0-51.5	TB 1 61.0-61.5	TB 1 71.0-71.5	TB 2 81.0-81.5
Date Sampled		01/29/92	01/29/92	01/30/92	02/01/92
Date Extracted		02/11/92	02/11/92	02/11/92	02/11/92
Date Analyzed		02/11/92	02/11/92	02/11/92	02/11/92
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Chloromethane	10	<10	<10	<10	<10
Bromomethane	10	<10	<10	<10	<10
Vinyl chloride	10	<10	<10	<10	<10
Chloroethane	10	<10	<10	<10	<10
Methylene chloride	5	<5	<5	<5	<5
Acetone	100	<100	<100	<100	<100
Carbon disulfide	5	<5	<5	<5	<5
1,1-Dichloroethene	5	<5	<5	<5	<5
1,1-Dichloroethane	5	<5	<5	<5	<5
1,2-Dichloroethene, total	5	<5	<5	<5	<5
Chloroform	5	<5	<5	<5	<5
1,2-Dichloroethane	5	<5	<5	<5	<5
2-Butanone	100	<100	<100	<100	<100
1,1,1-Trichloroethane	5	<5	<5	<5	<5
Carbon tetrachloride	5	<5	<5	<5	<5
Vinyl acetate	50	<50	<50	<50	<50
Bromodichloromethane	5	<5	<5	<5	<5
1,2-Dichloropropane	5	<5	<5	<5	<5
cis-1,3-Dichloropropene	5	<5	<5	<5	<5
Trichloroethene	5	<5	<5	<5	<5
Dibromochloromethane	5	<5	<5	<5	<5

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01	02	03	04
Client Identification		TB 1 50.0-51.5	TB 1 61.0-61.5	TB 1 71.0-71.5	TB 2 81.0-81.5
Date Sampled		01/29/92	01/29/92	01/30/92	02/01/92
Date Extracted		02/11/92	02/11/92	02/11/92	02/11/92
Date Analyzed		02/11/92	02/11/92	02/11/92	02/11/92
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<5	<5	<5	<5
Benzene	5	<5	<5	<5	<5
trans-1,3-Dichloropropene	5	<5	<5	<5	<5
2-Chloroethylvinyl ether	10	<10	<10	<10	<10
Bromoform	5	<5	<5	<5	<5
4-Methyl-2-pentanone	50	<50	<50	<50	<50
2-Hexanone	50	<50	<50	<50	<50
Tetrachloroethene	5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5
Toluene	5	<5	6	16	<5
Chlorobenzene	5	<5	<5	<5	<5
Ethylbenzene	5	<5	7	<5	<5
Styrene	5	<5	<5	<5	<5
1,2-Dichlorobenzene	5	<5	<5	<5	<5
1,3-Dichlorobenzene	5	<5	<5	<5	<5
1,4-Dichlorobenzene	5	<5	<5	<5	<5
Xylene, total	5	<5	<5	23	7.6
Trichlorofluoromethane	5	<5	<5	<5	<5
Quantitation Limit Multiplier		1	1	1	1
Percent solids		97	98	99	98

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01	02	03	04
Client Identification		TB 1 50.0-51.5	TB 1 61.0-61.5	TB 1 71.0-71.5	TB 2 81.0-81.5
Date Sampled		01/29/92	01/29/92	01/30/92	02/01/92
Date Extracted		02/11/92	02/11/92	02/11/92	02/11/92
Date Analyzed		02/11/92	02/11/92	02/11/92	02/11/92
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<5	<5	<5	<5
Benzene	5	<5	<5	<5	<5
trans-1,3-Dichloropropene	5	<5	<5	<5	<5
2-Chloroethylvinyl ether	10	<10	<10	<10	<10
Bromoform	5	<5	<5	<5	<5
4-Methyl-2-pentanone	50	<50	<50	<50	<50
2-Hexanone	50	<50	<50	<50	<50
Tetrachloroethene	5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5
Toluene	5	<5	6	16	<5
Chlorobenzene	5	<5	<5	<5	<5
Ethylbenzene	5	<5	7	<5	<5
Styrene	5	<5	<5	<5	<5
1,2-Dichlorobenzene	5	<5	<5	<5	<5
1,3-Dichlorobenzene	5	<5	<5	<5	<5
1,4-Dichlorobenzene	5	<5	<5	<5	<5
Xylene, total	5	<5	<5	23	7.6
Trichlorofluoromethane	5	<5	<5	<5	<5
Quantitation Limit Multiplier		1	1	1	1
Percent solids		97	98	99	98

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		05	06		
Client Identification		TB 3 15.5-16.0	TB 3 81.0-81.5		
Date Sampled		02/02/92	02/03/92		
Date Extracted		02/11/92	02/11/92		
Date Analyzed		02/11/92	02/11/92		
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Chloromethane	10	<10	<10		
Bromomethane	10	<10	<10		
Vinyl chloride	10	<10	<10		
Chloroethane	10	<10	<10		
Methylene chloride	5	<5	<5		
Acetone	100	<100	<100		
Carbon disulfide	5	<5	<5		
1,1-Dichloroethene	5	<5	<5		
1,1-Dichloroethane	5	<5	<5		
1,2-Dichloroethene, total	5	<5	<5		
Chloroform	5	<5	<5		
1,2-Dichloroethane	5	<5	<5		
2-Butanone	100	<100	<100		
1,1,1-Trichloroethane	5	<5	<5		
Carbon tetrachloride	5	<5	<5		
Vinyl acetate	50	<50	<50		
Bromodichloromethane	5	<5	<5		
1,2-Dichloropropane	5	<5	<5		
cis-1,3-Dichloropropene	5	<5	<5		
Trichloroethene	5	<5	<5		
Dibromochloromethane	5	<5	<5		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		05	06		
Client Identification		TB 3 15.5-16.0	TB 3 81.0-81.5		
Date Sampled		02/02/92	02/03/92		
Date Extracted		02/11/92	02/11/92		
Date Analyzed		02/11/92	02/11/92		
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<5	<5		
Benzene	5	<5	<5		
trans-1,3-Dichloropropene	5	<5	<5		
2-Chloroethylvinyl ether	10	<10	<10		
Bromoform	5	<5	<5		
4-Methyl-2-pentanone	50	<50	<50		
2-Hexanone	50	<50	<50		
Tetrachloroethene	5	<5	<5		
1,1,2,2-Tetrachloroethane	5	<5	<5		
Toluene	5	5.7	<5		
Chlorobenzene	5	<5	<5		
Ethylbenzene	5	<5	<5		
Styrene	5	<5	<5		
1,2-Dichlorobenzene	5	<5	<5		
1,3-Dichlorobenzene	5	<5	<5		
1,4-Dichlorobenzene	5	<5	<5		
Xylene, total	5	<5	<5		
Trichlorofluoromethane	5	<5	<5		
Quantitation Limit Multiplier		1	1		
Percent solids		88	87		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-186

February 19, 1992

Jack Bedessem/Eric Brandiord
TriHydro Corporation
920 E. Sheridan Street
Laramie, WA 82070-3939

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 02/04/92.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-186

ANALYTICAL RESULTS

Matrix: Soil

				Sample Number	01	02	03	04
				Sample Identification	TB 1 50.0-51.5	TB 1 61.0-61.5	TB 1 71.0-71.5	TB 2 81.0-81.5
				Date Sampled	01/29/92	01/29/92	01/30/92	02/01/92
Test Description	Units	Detection Limit	Method	Date Analyzed	Test Result*			
Cadmium	mg/Kg	1	EPA 6010	02/12/92/	1	<1	<1	<1
Chromium	mg/Kg	1	EPA 6010	02/12/92	14	10	6	11
Lead	mg/Kg	5	EPA 6010	02/12/92	<5	<5	<5	<5
Percent solids					97	98	99	98

* Results reported on a wet weight basis.

GTEL
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LABORATORIES, INC.

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4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-184

February 20, 1992

Jack Bedessem/Eric Brandjord
TriHydro Corporation
920 E. Sheridan Street
Laramie, WY 82070-3939

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 02/04/92.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek/pc

Emma P. Popek
Laboratory Director

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-184

Table 1

ANALYTICAL RESULTS

Hydrocarbons in Soil

Method: GC-FID[a]

GTEL Sample Number		01	02	03	04
Client Identification		TB 1 50.0 - 51.5	TB 1 61.0 - 61.5	TB 1 71.0 - 71.5	TB 2 81.0 - 81.5
Date Sampled		01/29/92	01/29/92	01/30/92	02/01/92
Date Extracted		02/11/92	02/11/92	02/11/92	02/11/92
Date Analyzed		02/14/92	02/14/92	02/14/92	02/14/92
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	<10	<10	<10	<10
Mineral spirits	10	<10	<10	<10	<10
Kerosine	10	<10	<10	<10	<10
Jet fuel	10	<10	<10	<10	<10
Diesel	10	<10	<10	<10	<10
Fuel oil #6	10	<10	<10	<10	<10
Lubricating oil	100	<100	<100	<100	<100
Quantitation Limit Multiplier		1	1	1	1
Percent solids		85	90	73	90

a. Results reported on a wet weight basis.

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-184

Table 1 (Continued)

ANALYTICAL RESULTS

Hydrocarbons in Soil

Method: GC-FID[a]

GTEL Sample Number		05	06		
Client Identification		TB 3 15.5 - 16.0	TB 3 81.0 - 81.5		
Date Sampled		02/02/92	02/03/92		
Date Extracted		02/11/92	02/11/92		
Date Analyzed		02/14/92	02/14/92		
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	<10	<10		
Mineral spirits	10	<10	<10		
Kerosine	10	<10	<10		
Jet fuel	10	<10	<10		
Diesel	10	<10	<10		
Fuel oil #6	10	<10	<10		
Lubricating oil	100	<100	<100		
Quantitation Limit Multiplier		1	1		
Percent solids		84	83		

a. Results reported on a wet weight basis.

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-186

ANALYTICAL RESULTS

Matrix: Soil

				Sample Number	05	06		
				Sample Identification	TB 3 15.5-16.0	TB 3 81.0-81.5		
				Date Sampled	02/02/92	02/03/92		
Test Description	Units	Detection Limit	Method	Date Analyzed	Test Result*			
Cadmium	mg/Kg	1	EPA 6010	02/12/92	<1	<1		
Chromium	mg/Kg	1	EPA 6010	02/12/92	2	14		
Lead	mg/Kg	5	EPA 6010	02/12/92	<5	<5		
Percent solids					88	87		

* Results reported on a wet weight basis.

C202185

K-1

CHAIN-OF-CUSTODY RECORD

Project No.:	Today's Date:	Date Results Reqeusted:
502	2/3/92	10 day TAT

Sampler's Name:	Phone No.:	Fax No.:
ERIC BRANDJORD LINDA BARNES	307-745-7474	307-745-7729

Company Name and Address:	Company Contact:
TriHydro Corporation 920 Sheridan Laramie, WY 82070	ERIC BRANDJORD/ JACK BEDDESSEM

Analyses Requested

Collector's Sample No.	Sample Matrix	Date Sampled/ Time Sampled	No. of Containers	Modified 8015 for Mineral Spirits - GC/FID	8240 (VOC's)	Total Cadmium, Chromium and Lead - (6010)	TCLP-VOC (8240) SVOC's - (8270) Metals - (6010)
TB-1 50.0-51.5	SOIL 01	1-29-92	1	✓	✓	✓	
TB-1 61.0-61.5	SOIL 02	1-29-92	1	✓	✓	✓	
TB-1 71.0-71.5	SOIL 03	1-30-92	1	✓	✓	✓	
TB-2 81.0-81.5	SOIL 04	2-1-92	1	✓	✓	✓	
TB-3 15.5-16.0	SOIL 05	2-2-92	1	✓	✓	✓	
TB-3 81.0-81.5	SOIL 06	2-3-92	1	✓	✓	✓	
DS-1	SOIL	2-3-92	1				✓

Remarks: Samples were placed in opaque coolers on ice immediately after sampling
Please return cooler to above address

RM 4/14/92

Relinquished by:	Affiliation:	Date/Time:	Received by:	Affiliation:	Date/Time:
E Brandjord	THC	2-3-92 @ 1600			
Relinquished by:	Affiliation:	Date/Time:	Received by:	Affiliation:	Date/Time:
Relinquished by:	Affiliation:	Date/Time:	Received by:	Affiliation:	Date/Time:
		2/4 2:15	[illegible]		

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-187

February 18, 1992

Jack Bedessem/Eric Brandjord
TriHydro Corporation
920 E. Sheridan Street
Laramie, WY 82070-3939

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 02/04/92.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-187

Table 1

ANALYTICAL RESULTS

Volatile Organics in TCLP Leachate[a]

EPA Method 8240[b]

GTEL Sample Number		01			
Client Identification		DS-1			
Date Sampled		02/03/92			
Date Leached		02/13/92			
Date Analyzed		02/14/92			
Analyte	Quantitation Limit, mg/L	Concentration, mg/L			
Benzene	0.05	<0.05			
Carbon tetrachloride	0.05	<0.05			
Chlorobenzene	0.05	<0.05			
Chloroform	0.05	<0.05			
1,2-Dichloroethane	0.05	<0.05			
1,1-Dichloroethylene	0.05	<0.05			
Methyl ethyl ketone	1	<1			
Tetrachloroethylene	0.05	0.06			
Trichloroethylene	0.05	<0.05			
Vinyl chloride	0.1	<0.1			
Quantitation Limit Multiplier		1			

a. Federal Register, March 29, 1990, 40 CFR, Part 261, Appendix II - Method 1311. These data are corrected for analytical bias as required by Method 1311 by applying a correction determined by matrix spike recovery.

b. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA, November 1986.

GTEL
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LABORATORIES, INC.

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(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-188

February 20, 1992

Jack Bedessem/Eric Brandjord
TriHydro Corporation
920 E. Sheridan Street
Laramie, WY 82070-3939

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 02/04/92.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek /R.M.

Emma P. Popek
Laboratory Director

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-188

Table 1

ANALYTICAL RESULTS

Semi-Volatile Organics in TCLP Leachate[a]

EPA Method 8270[b]

TEL Sample Number		01			
Client Identification		DS - 1			
Date Sampled		02/03/92			
Date Leached		02/13/92			
Date Extracted		02/18/92			
Date Analyzed		02/18/92			
Analyte	Quantitation Limit, mg/L	Concentration, mg/L			
o-Cresol	0.033	<0.033			
m-Cresol + p-Cresol	0.033	<0.033			
1,4-Dichlorobenzene	0.033	<0.033			
2,4-Dinitrotoluene	0.033	<0.033			
Hexachloro-1,3-butadiene	0.033	<0.033			
Hexachlorobenzene	0.033	<0.033			
Hexachloroethane	0.033	<0.033			
Nitrobenzene	0.033	<0.033			
Pentachlorophenol	0.17	<0.17			
Pyridine	0.033	<0.033			
2,4,5-Trichlorophenol	0.033	<0.033			
2,4,6-Trichlorophenol	0.033	<0.033			
Quantitation Limit Multiplier		1			

a. Federal Register, March 29, 1990, 40 CFR, Part 261, Appendix II - Method 1311. These data are corrected for analytical bias as required by Method 1311 by applying a correction determined by matrix spike recovery.

b. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA, November 1986. Aqueous leachates are extracted by Method 3510.

C202237

CHAIN-OF-CUSTODY RECORD

Project No.:	Today's Date:	Date Results Reqeusted:
502	2-3-92	10 day TAT

Sampler's Name:	Phone No.:	Fax No.:
Same	307-745-7474	307-745-7729

Company Name and Address:
TriHydro Corporation
920 Sheridan
Laramie, WY 82070

Company Contact: Same

Analyses Requested

Collector's Sample No.	Sample Matrix	Date Sampled/ Time Sampled	No. of Containers	Mod 8015 for Mineral Spirits-GC/FID	8240 - VOC's	Total Cd, Cr, + Pb-6010
X TB-1 16.0-16.5	01	1-29		✓	✓	✓
X TB-1 21.0-21.5	02	1-29		✓	✓	✓
TB-1 26.0-26.5		1-29		✓	✓	✓
X TB-2 15.5-16.0	03	1-31		✓	✓	✓
TB-2 20.5-21.0		1-31		✓	✓	✓
TB-2 25.5-26.0		1-31		✓	✓	✓
X SB-4R	04	1-29		✓	✓	✓

K-1

Remarks: Hold all of these samples for analyses. Approval for analyses will be given by telephone and fax.

Samples were placed in opaque coolers on ice immediately after sampling

M.N. 2/13/92

Relinquished by:	Affiliation:	Date/Time:	Received by:	Affiliation:	Date/Time:
E. Brandford	THC	2-3-92 @ 1600			
Relinquished by:	Affiliation:	Date/Time:	Received by:	Affiliation:	Date/Time:
Relinquished by:	Affiliation:	Date/Time: 2/4 2:15	Received by:	Affiliation:	Date/Time:

Were samples received in good condition?

Remarks: 2-2-92 5:55

GTEL
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LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-185

February 13, 1992

Jack Bedessem/Eric Brandjord
TriHydro Corporation
920 E. Sheridan Street
Laramie, WY 82070-3939

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 02/04/92.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-189

February 18, 1992

Jack Bedessem/Eric Brandjord
TriHydro Corporation
920 E. Sheridan Street
Laramie, WY 82070-3939

Enclosed please find the analytical results report prepared by GTEL for samples received on 02/04/92.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

A formal quality control/quality assurance program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project was performed in strict adherence to our QA/QC program to ensure sample integrity and to meet quality control criteria.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Client Number: TRI02SFK01
Consultant Project Number: 502
Project ID: Not Given
Work Order Number: C2-02-189

Table 1

ANALYTICAL RESULTS

Metals in TCLP Leachate[a]

GTEL Sample Number			01			
Client Identification			DS-1			
Date Sampled			02/03/92			
Date Leached			02/13/92			
Date Analyzed (Method 6010)			02/13/92			
Date Analyzed (Method 7470)			02/13/92			
Analyte	Method[b]	Quantitation Limit, mg/L	Leachate Concentration, mg/L			
Arsenic	EPA 6010	0.1	<0.1			
Barium	EPA 6010	1	1.2			
Cadmium	EPA 6010	0.1	<0.1			
Chromium, total	EPA 6010	0.1	<0.1			
Lead	EPA 6010	0.15	<0.15			
Mercury	EPA 7470	0.002	<0.002			
Selenium	EPA 6010	0.5	<0.5			
Silver	EPA 6010	0.25	<0.25			
Quantitation Limit Multiplier			1			

a. Federal Register, June 29, 1990, 40 CFR, Part 261, Appendix II - Method 1311. These data are corrected for analytical bias as required by Method 1311 by applying a correction determined by matrix spike recovery.

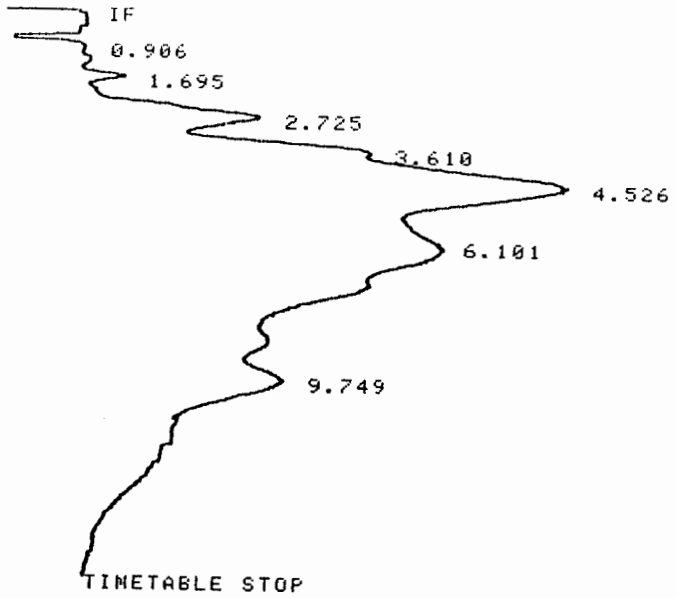
b. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Digestion by Method 3005 except for: Method 7470 for mercury.

APPENDIX C

FIELD GC CHROMATOGRAMS

SAFETY-KLEEN CORP. FACILITY
PARTIAL SITE ASSESSMENT
ALBUQUERQUE, NEW MEXICO

+AN
RUN # 3 JAN 29, 1992 22:23:35
START



Closing signal file M:SIGNAL .BNA

RUN# 3 JAN 29, 1992 22:23:35

SIGNAL FILE: M:SIGNAL.BNA
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.906	106241	PV	.299	3.58137
1.695	140391	VV	.360	4.73257
2.725	508295	VV	.704	17.13457
3.610	446704	VV	.455	15.05834
4.526	1084362	VV	.705	36.55371
6.101	510486	VV	.563	17.20842
9.749	170010	BP	.777	5.73102

TOTAL AREA=2966490
MUL FACTOR=1.0000E+00

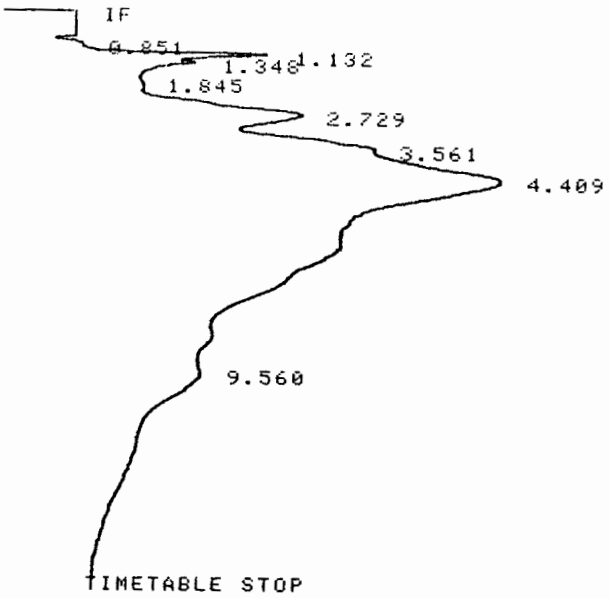
Site S-K Albuquerque
Project No. 502
Date 1-29-92
Analyst EJB
Location Map: 1.0 ml Mineral Spirits Standard Vapor 100°C

Instrument TEI-210
Column 6' 5% SP1200/1.75% Bentone 34
Carrier UHP N_2
Carrier Flow Rate (ml/min) 18
Chart Speed (cm/min) 0.5
Chart Input (mV) 1000

RUN PARAMETERS
ZERO = 0
ATT 2^ = 3
CHT SP = 0.5
AR REJ = 0
THRSH = 3
PK WD = 0.04

TIMETABLE EVENTS
0.000 INTG # = 11
0.000 INTG # = 13
15.000 STOP

+ ATT 2^ 5 @
*AN
RUN # 4 JAN 29, 1992 22:43:28
START



Closing signal file M:SIGNAL .BNA

RUN# 4 JAN 29, 1992 22:43:28

SIGNAL FILE: M:SIGNAL.BNA
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.851	37109	BV	.128	.82241
1.132	458976	VV	.177	10.17180
1.348	323928	VV	.228	7.17888
1.845	38337	VV	.159	.84962
2.729	881307	PV	.523	19.53148
3.561	633586	VV	.316	14.04150
4.409	1937740	VV	.641	42.94411
9.560	201255	VV	.643	4.46020

TOTAL AREA=4512237
MUL FACTOR=1.0000E+00

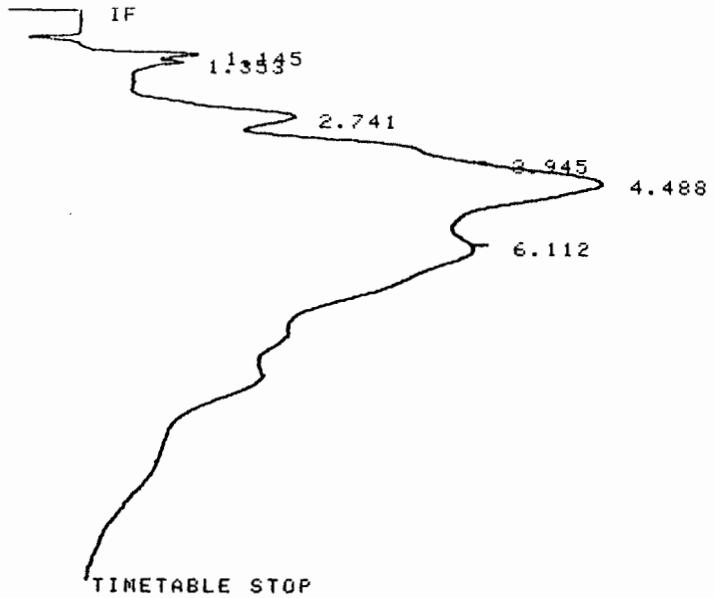
Site S-K Albuquerque
Project No. 502
Date 1-29-92
Analyst EJB
Location Map: 1.0 ml TB-1 45.5 - 46.0 Vapor 100°C

Instrument TEI-210
Column 6' 5% SP-2100/1.75% Bentone 34
Carrier Gas UHP N_2
Carrier Flow Rate (ml/min) 18
Chart Speed (cm/min) 0.5
Chart Range (mV) 1000

RUN PARAMETERS
ZERO = 0
ATT 2^ = 5
CHT SP = 0.5
AR REJ = 0
THRSH = 3
PK WD = 0.04

TIMETABLE EVENTS
0.000 INTG # = 11
0.000 INTG # = 13
15.000 STOP

```
*  ATT 2^ 4  @
*AN
RUN #     5      JAN 29, 1992  23:01:32
START
```




```
Closing signal file M:SIGNAL  .BNA

RUN#      5            JAN 29, 1992  23:01:32

SIGNAL FILE: M:SIGNAL.BNA
AREA%
```

RT	AREA	TYPE	WIDTH	AREA%
1.145	217392	PV	.249	6.27758
1.353	134372	VV	.218	3.88023
2.741	369888	PV	.486	10.68117
3.945	746976	VV	.544	21.57026
4.488	1939041	VV	1.034	55.99325
6.112	55322	VV	.339	1.59752

```
TOTAL AREA=3462990
MUL FACTOR=1.0000E+00
```

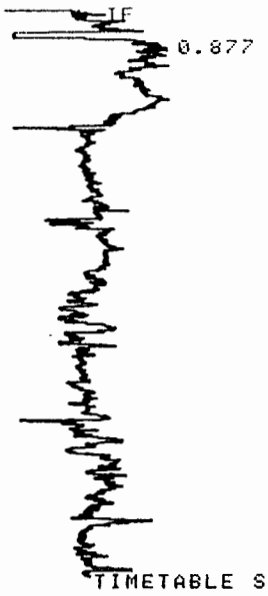
Site SK Albuquerque
Project No. 502
Date 1-29-92
Analyst EJB
Location 1.0 ml TB-1
Map: 50.5-51.0
Vapor 100°C

Instrument TEI-210
Column 6'5% SF1200/1.75% Bentone 34
Carrier UHP N_2
Flow rate (ml/min) 18
Chart speed (cm/min) 0.5
Chart (mV) 1000

```
RUN PARAMETERS
ZERO    =  0
ATT 2^  =  4
CHT SP  =  0.5
AR REJ  =  0
THRSH   =  3
PK WD   =  0.04

TIMETABLE EVENTS
   0.000 INTG # =  11
   0.000 INTG # =  13
  15.000 STOP
```

* RUN # 8 JAN 30, 1992 08:53:31

START



Closing signal file M:SIGNAL .BNC

RUN# 8 JAN 30, 1992 08:53:31

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.877	56384	PV	.208	100.00000

TOTAL AREA= 56384

MUL FACTOR=1.0000E+00

Site S-K Albuquerque

Project No. 562

Date 1-30-92

Analyst EJB

Location

Map: 1.0 ml Syringe Blank Vapor 100°C

Instrument TEI-210

Column 6'5% SP1200/1.75% Bentone 34

[illegible] UHP N_2

[illegible] (ml/min) 18

[illegible] (cm/min) 0.5

Chart input (mV) 1000

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 3

PK WD = 0.04

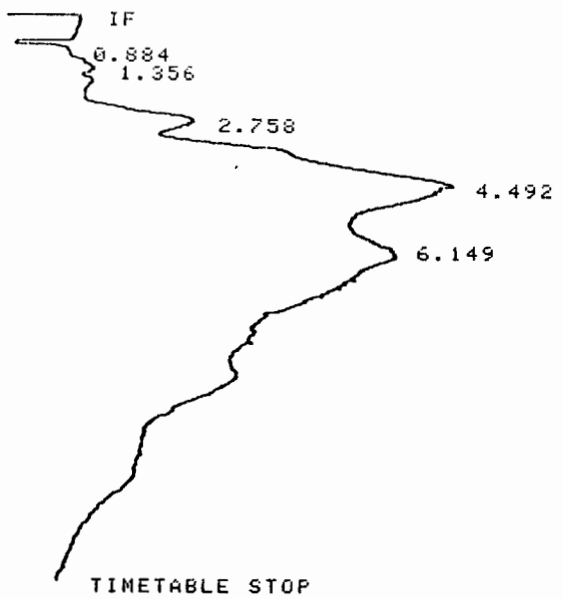
TIMETABLE EVENTS

0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

```
*  ATT 2^ 3  @
*AN
RUN #     6      JAN 29, 1992  23:20:05
START
```




```
Closing signal file M:SIGNAL  .BNA

RUN#      6            JAN 29, 1992  23:20:05

SIGNAL FILE: M:SIGNAL.BNA
AREA%
```

RT	AREA	TYPE	WIDTH	AREA%
.884	21966	PB	.265	2.58159
1.356	18628	BV	.294	2.18928
2.758	96397	PP	.452	11.32920
4.492	687054	PV	1.161	80.74704
6.149	26827	PV	.219	3.15288

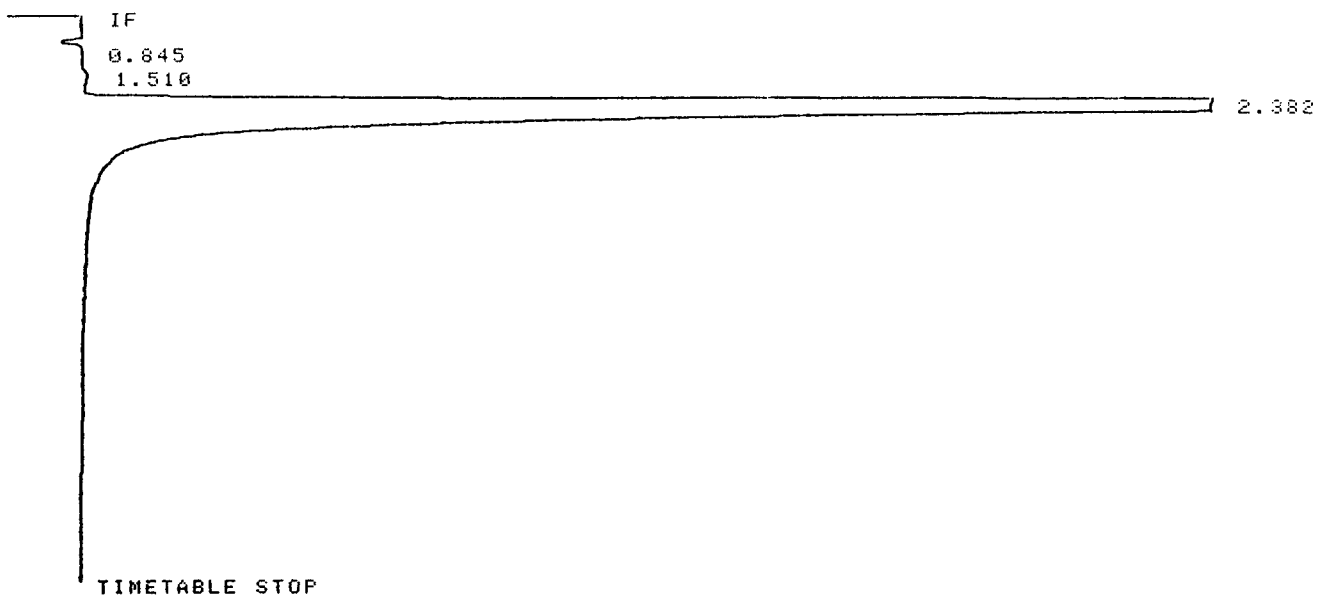
```
TOTAL AREA= 850872
MUL FACTOR=1.0000E+00
```

Site S-K Albuquerque
Project No. 502
Date 1-29-92
Analyst EJB
Location
Map: 1.0 ml TB-1 56.0-56.5 Vapor 100°C

TEI-210
6'59 SP1200/1.75% Bentone 34
UHP N_2
(ml/min) 18
(cm/min) 0.5
(mV) 1000

```
RUN PARAMETERS
ZERO    =  0
ATT 2^  =  3
CHT SP  =  0.5
AR REJ  =  0
THRSH   =  3
PK WD   =  0.04

TIMETABLE EVENTS
   0.000 INTG # =   11
   0.000 INTG # =   13
  15.000 STOP


*DATE
JAN 30, 1992  08:09:20

*  PLOT
   :
```

```
*  ATT 2^ 5  0
*AN
RUN #    10      JAN 30, 1992  09:28:53
START
```




```
Closing signal file M:SIGNAL  .BNA

RUN#     10            JAN 30, 1992  09:28:53

SIGNAL FILE: M:SIGNAL.BNA
AREA%
      RT       AREA TYPE  WIDTH      AREA%
    .845      56926   PV   .220     .45117
   1.510      47444   VV   .314     .37602
   2.382   12513008   PB   .432   99.17283

TOTAL AREA=1.2617E+07
MUL FACTOR=1.0000E+00
```

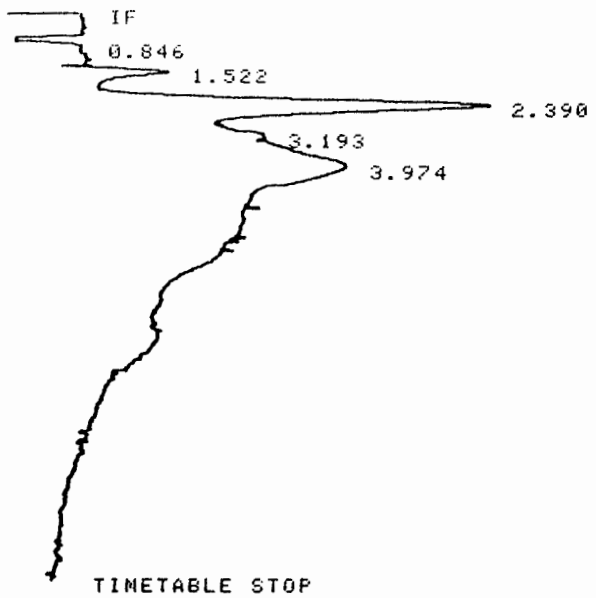
```
RUN PARAMETERS
ZERO    =  0
ATT 2^  =  5
CHT SP  =  0.5
AR REJ  =  0
THRSH   =  3
PK WD   =  0.04

TIMETABLE EVENTS
   0.000 INTG # =   11
   0.000 INTG # =   13
  15.000 STOP
```

Site S-K Albuquerque
Project No. 502
Date 1-30-92
Analyst EJB
Location Map: 1.0 mL Perchloroethylene Std, Vapor 100°C

Instrument: TEI-210
Column: 6'5% SP1200/1.75% Bentone 34
Carrier Gas: UHP N_2
Carrier Flow (ml/min) 18
Chart Speed (cm/min) 0.5
Chart Input (mV) 1000

* RUN # 12 JAN 30, 1992 10:11:57

START



Closing signal file M:SIGNAL .BNC

RUN# 12 JAN 30, 1992 10:11:57

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.846	35511	PV	.202	5.24859
1.522	28492	BP	.206	4.21116
2.390	271356	PV	.431	40.10688
3.193	54065	VV	.287	7.99090
3.974	287158	VV	1.047	42.44246

TOTAL AREA= 676582

MUL FACTOR=1.0000E+00

Site S-K Albuquerque

Project No. 502

Date 1-30-92

Analyst EJB

Location: 1.0 ml Perchloroethylene and Mineral Spirits Vapor

Map: 100°C

Instrument: JEI-210

Column: 6'5% SP1200/1.75% Bentone 34

UHP N_2

18

Chart input (mV) 1000

RUN PARAMETERS

ZERO = 0

ATT 2^ = 2

CHT SP = 0.5

AR REJ = 0

THRSH = 3

PK WD = 0.04

TIMETABLE EVENTS

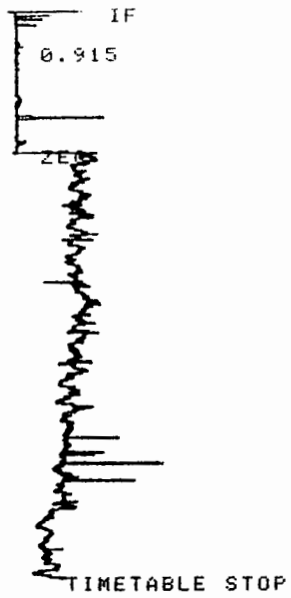
0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

* RUN # 14 JAN 30, 1992 10:42:51

START



Closing signal file M:SIGNAL .BNC

RUN# 14 JAN 30, 1992 10:42:51

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.915	73349	PV	.455	100.00000

TOTAL AREA= 73349

MUL FACTOR=1.0000E+00

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 3

PK WD = 0.04

TIMETABLE EVENTS

0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

Site S-K Albuquerque

Project No. 502

Date 1-30-92

Analyst ETB

Location 1.0 ml Syringe Blank Vapor 100°C

Map:

Instrument TEI-210

Column 6' 5% SP1200/1.75% Bentone 34

Carrier UHP N_2

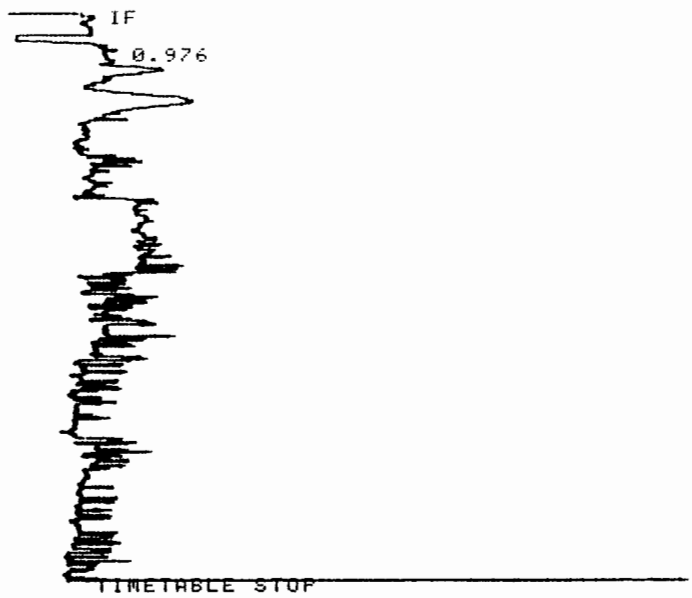
Carrier Flow (ml/min) 18

Chart Speed (cm/min) 0.5

Chart Input (mV) 1000

* RUN # 15 JAN 30, 1992 11:01:46

START



Closing signal file M:SIGNAL .BNC

RUN# 15 JAN 30, 1992 11:01:46

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.976	47597	BV	.399	100.00000

TOTAL AREA= 47597

MUL FACTOR=1.0000E+00

Site S-K Albuquerque

Project No. 502

Date 1-30-92

Analyst EJB

Location Map: 1.0 ml TB-1 70.5-71.0 Vapor 100°C

Instrument TEI-210

Column 6' 5% SP1200/1.75% Bentone 34

Carrier Gas UHP N2

Cat Flow Rate (ml/min) 18

Chart Speed (cm/min) 0.5

Chart Input (mV) 1000

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 3

PK WD = 0.04

TIMETABLE EVENTS

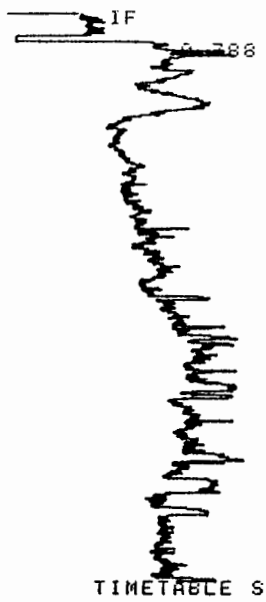
0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

* PLOT

```
*  RUN #     9      JAN 30, 1992  09:09:42
START
```




```
--Closing signal file M:SIGNAL  .BNC

RUN#      9            JAN 30, 1992  09:09:42

SIGNAL FILE: M:SIGNAL.BNC
AREA%
      RT       AREA TYPE  WIDTH       AREA%
    .788      21992   PB   .195   100.00000

TOTAL AREA=  21992
MUL FACTOR=1.0000E+00
```

```
RUN PARAMETERS
ZERO    =  0
ATT 2^  =  0
CHT SP  =  0.5
AR REJ  =  0
THRSH   =  3
PK WD   =  0.04

TIMETABLE EVENTS
   0.000 INTG # =   11
   0.000 INTG # =   13
  15.000 STOP
```

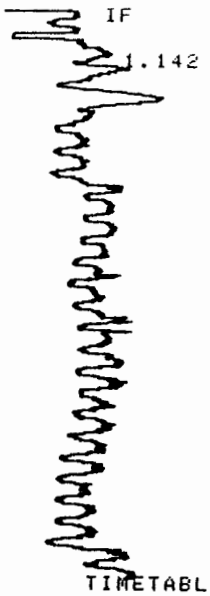
Site S-K Albuquerque
Project No. 502
Date 1-30-92
Analyst EJB
Location Map: 1.0 ml TB-1 80.0-80.5 Vapor 100°C

Instrument JEI-210
Column 6'52 SP1200/1.75% Bentone 34
Carrier UHP N_2
Carrier Flow (ml/min) 18
Chart Speed (cm/min) 0.5
Chart Input (mV) 1000

STOP

* RUN # 16 JAN 30, 1992 15:39:09

START



Closing signal file M:SIGNAL .BNC

RUN# 16 JAN 30, 1992 15:39:09

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.142	75835	PV	.651	100.00000

TOTAL AREA= 75835

MUL FACTOR=1.0000E+00

Site S-K Albuquerque

Project No. 502

Date 1-30-92

Analyst EJB

Location 1.0 ml TB-1 76.0-76.5 Vapor

Map: 100°C

Instrument TEI-210

Column 6.5% SP1200/1.75% Bentone 34

Carrier Gas UHP N_2

Carrier Flow (ml/min) 18

Sample Flow (cc/min) 0.5

Chart Input (mV) 1000

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 3

PK WD = 0.04

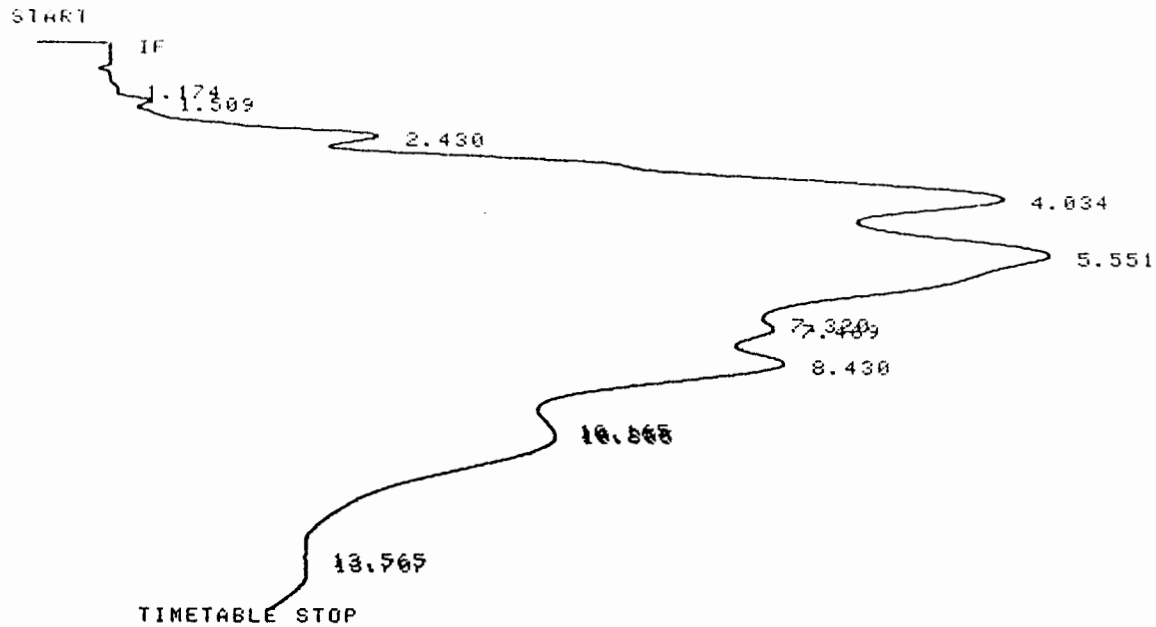
TIMETABLE EVENTS

0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

RUN # 23 JAN 31, 1992 21:04:28



Closing signal file M:SIGNAL .BNA

RUN# 23 JAN 31, 1992 21:04:28

SIGNAL FILE: M:SIGNAL.BNA
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.174	80217	PP	.570	.09130
1.509	128525	PV	.176	.14629
2.430	2969024	VV	.509	3.37936
4.034	29327904	VV	1.400	33.38115
5.551	41372960	VV	2.028	47.09088
7.320	621874	VV	.059	.70782
7.469	1823683	VV	.172	2.07572
8.430	10631440	VV	1.090	12.10075
10.165	683474	VV	.525	.77793
10.250	109736	VV	.087	.12490
10.305	80800	VV	.066	.09197
13.565	8906	VV	.089	.01014
13.707	19176	VV	.113	.02183

TOTAL AREA=8.7858E+07
MUL FACTOR=1.0000E+00

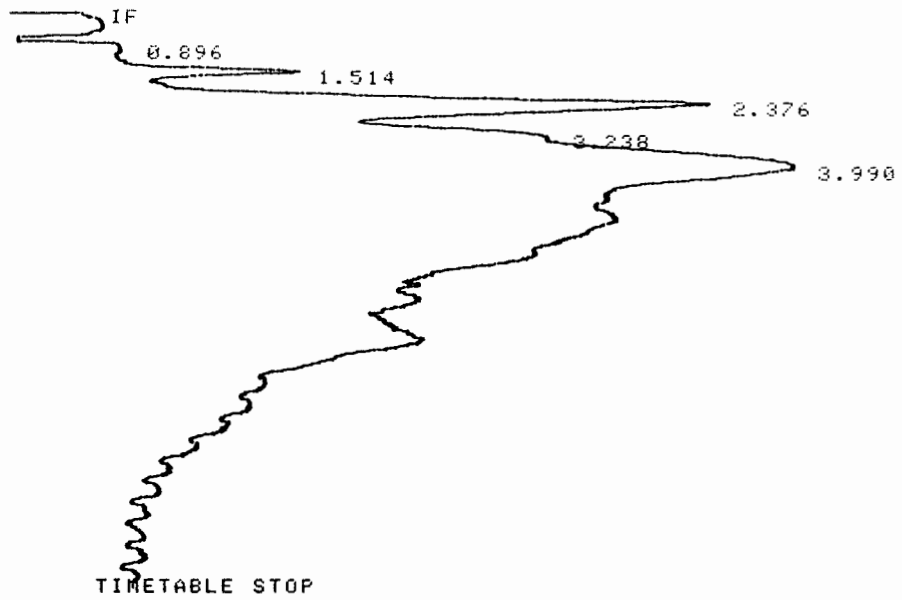
RUN PARAMETERS
ZERO = 0
ATT 2^ = 6
CHT SP = 0.5
AR REJ = 0
THRSH = 2
PK WD = 0.04

TIMETABLE EVENTS
0.000 INTG # = 11
0.000 INTG # = 13
15.000 STOP

Site S-K Albuquerque
Project No. 502
Date 1-31-92
Analyst EJB
Location
Map: 1.0 ml Mineral Spirits Vapor 100°C

Instrument TEI-210
Column 6'5% SP1200/1.75% Bentone 34
Carrier Gas UHP N_2
Flow Rate (cm/min) 18
Chart Speed (cm/min) 0.5
Chart Input (mV) 1000

*AN
RUN # 17 JAN 30, 1992 15:58:50
START



Closing signal file M:SIGNAL .BNA

RUN# 17 JAN 30, 1992 15:58:50

SIGNAL FILE: M:SIGNAL.BNA
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.896	24967	PV	.313	4.62273
1.514	26148	BP	.187	4.84140
2.376	173110	PV	.433	32.05195
3.238	57192	VV	.365	10.58930
3.990	258675	VV	.941	47.89462

TOTAL AREA= 540092
MUL FACTOR=1.0000E+00

Site S-K Albuquerque
Project No. 502
Date 1-30-92
Analyst EJB
Location Map: 1.0 ml Mineral Spirits Vapor 100°C

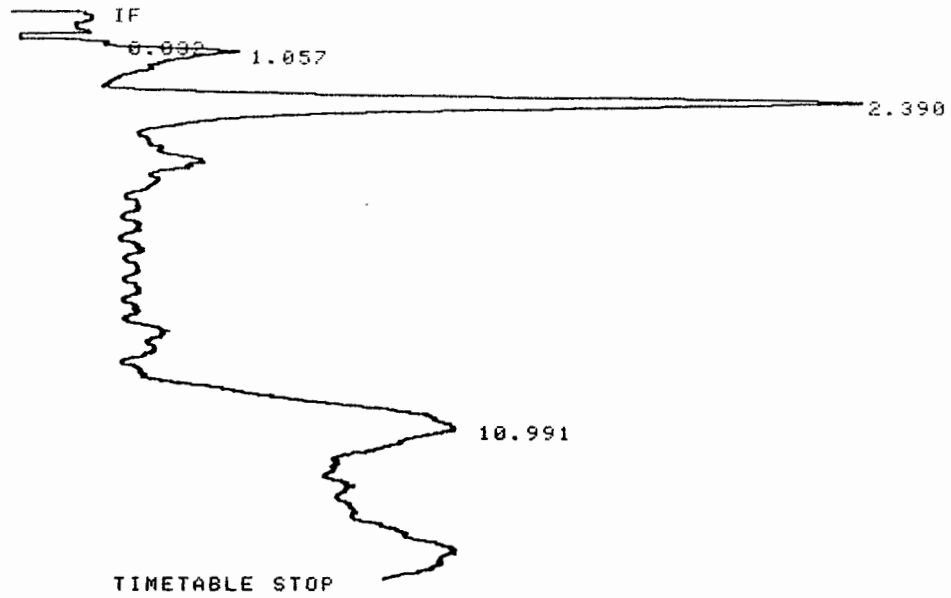
Instrument TEI-210
Column 6' 5% SP1200/1.75% Bentone 34
[illegible] UHP N_2
[illegible] (cc/min) 18
[illegible] (cm/min) 0.5
Chart input (mV) 1000

RUN PARAMETERS
ZERO = 0
ATT 2^ = 1
CHT SP = 0.5
AR REJ = 0
THRSH = 3
PK WD = 0.04

TIMETABLE EVENTS
0.000 INTG # = 11
0.000 INTG # = 13
15.000 STOP

* RUN # 18 JAN 30, 1992 16:19:52

START



Closing signal file M:SIGNAL .BNC

RUN# 18 JAN 30, 1992 16:19:52

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.832	21950	PV	.148	3.64432
1.057	94751	VV	.415	15.73132
2.390	254160	BP	.403	42.19768
10.991	231447	PV	1.266	38.42669

TOTAL AREA= 602308

MUL FACTOR=1.0000E+00

RUN PARAMETERS

ZERO = 0

ATT 2^ = 1

CHT SP = 0.5

AR REJ = 0

THRSH = 3

PK WD = 0.04

TIMETABLE EVENTS

0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

Site S-K Albuquerque

Project No. 502

Date 1-30-92

Analyst EJB

Location Map: 1.0 ml S-K Immersion Cleaner Vapor 100°C

Instrument IEI-210

Column 6' 5% SP/200/1.75 Bentone 34

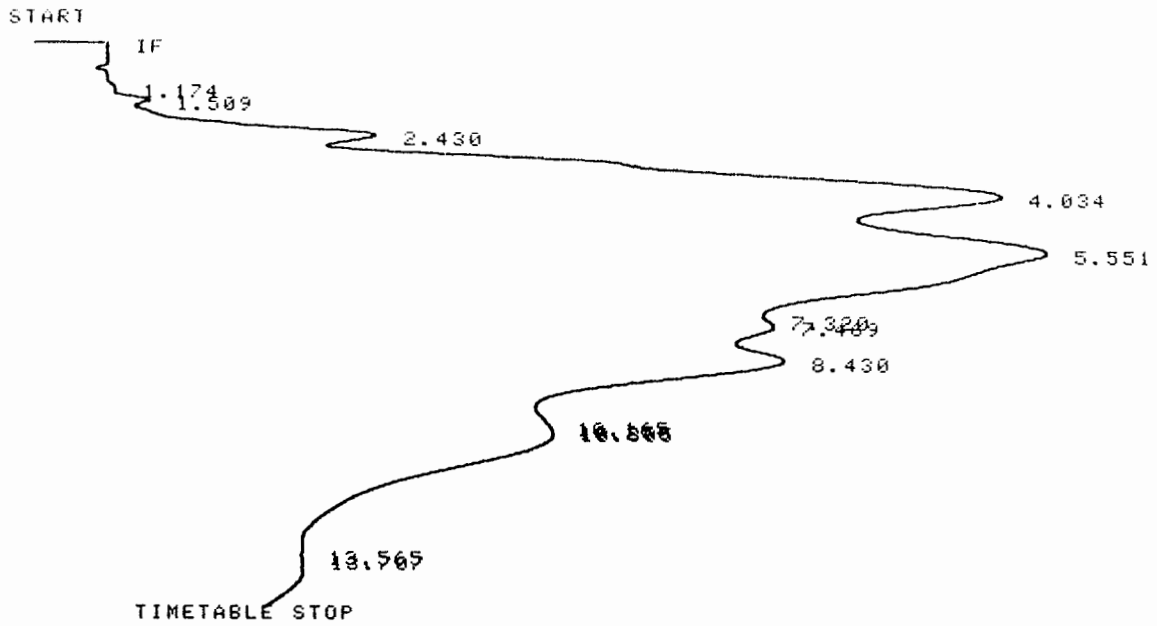
Carrier Gas: UHP N_2

Carrier Flow Rate (ml/min) 18

Chart Speed (cm/min) 0.5

Chart Input (mV) 1000

RUN # 23 JAN 31, 1992 21:04:28



Closing signal file M:SIGNAL .BNA

RUN# 23 JAN 31, 1992 21:04:28

SIGNAL FILE: M:SIGNAL.BNA

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.174	80217	PP	.570	.09130
1.509	128525	PV	.176	.14629
2.430	2969024	VV	.509	3.37936
4.034	29327904	VV	1.400	33.38115
5.551	41372960	VV	2.028	47.09088
7.320	621874	VV	.059	.70782
7.469	1823683	VV	.172	2.07572
8.430	10631440	VV	1.090	12.10075
10.165	683474	VV	.525	.77793
10.250	109736	VV	.087	.12490
10.305	80800	VV	.066	.09197
13.565	8906	VV	.089	.01014
13.707	19176	VV	.113	.02183

TOTAL AREA=8.7858E+07

MUL FACTOR=1.0000E+00

RUN PARAMETERS

ZERO = 0

ATT 2^ = 6

CHT SP = 0.5

AR REJ = 0

THRSH = 2

PK WD = 0.04

TIMETABLE EVENTS

0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

Site S-K Albuquerque

Project No. 502

Date 1-31-92

Analyst EJB

Location Map: 1.0 ml Mineral Spirits Vapor 100°C

Instrument TEI-210

Column 6'5% SP1200/1.75% Bentone 34

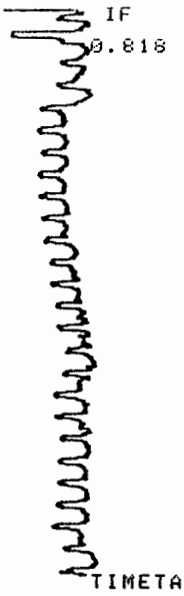
Carrier UHP N_2

Flow (ml/min) 18

Chart Speed (cm/min) 0.5

Chart Input (mV) 1000

```
*  RUN #    19      JAN 31, 1992  18:25:15
START
```




```
Closing signal file M:SIGNAL  .BNC

RUN#     19            JAN 31, 1992  18:25:15

SIGNAL FILE: M:SIGNAL.BNC
AREA%
       RT       AREA TYPE  WIDTH       AREA%
     .818      18602   BV   .208   100.00000

TOTAL AREA=  18602
MUL FACTOR=1.0000E+00
```

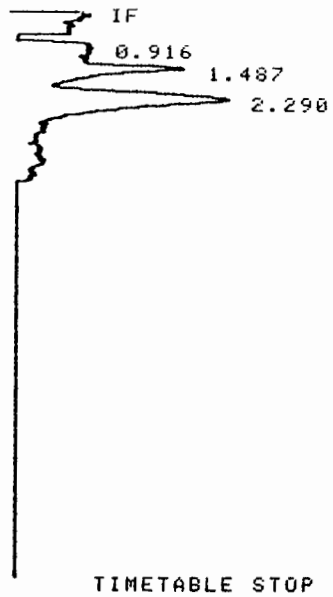
Site S-K Albuquerque
Project No. 502
Date 1-31-92
Analyst EJB
Location: 1.0 ml Syringe Blank Vapor 100°C
Map:

Instrument TEI-210
[illegible] 6'5% SP1200/1.75 Bentone 34
[illegible] UHP N_2
[illegible] 18
[illegible] (cm/min) 0.5
Chart Input (mV) 1000

```
RUN PARAMETERS
ZERO    =  0
ATT 2^  =  0
CHT SP  =  0.5
AR REJ  =  0
THRSH   =  1
PK WD   =  0.04

TIMETABLE EVENTS
   0.000 INTG # =  11
   0.000 INTG # =  13
  15.000 STOP
```

* RUN # 25 JAN 31, 1992 22:03:15

START



TIMETABLE STOP

Closing signal file M:SIGNAL .BNC

RUN# 25 JAN 31, 1992 22:03:15

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.916	42419	PV	.347	49.23797
1.487	10214	BP	.221	11.85593
2.290	33518	PP	.425	38.90611

TOTAL AREA= 86151

MUL FACTOR=1.0000E+00

Site S-K Albuquerque

Project No. 502

Date 1-31-92

Analyst ETB

Location Map: 1.0 ml TB-2 51.0-51.5 Vapor 100°C

Instrument TEI-210

Column 6' 5% SP1200/1.75% Bentone 34

Carrier Gas UHP N_2

Gas Flow Rate (ml/min) 18

Chart Speed (cm/min) 0.5

Chart Input (mV) 1000

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 2

PK WD = 0.04

TIMETABLE EVENTS

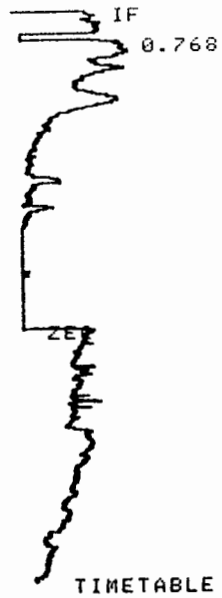
0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

* RUN # 26 JAN 31, 1992 22:18:55

START



Closing signal file M:SIGNAL .BNC

RUN# 26 JAN 31, 1992 22:18:55

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.768	22421	PV	.136	100.00000

TOTAL AREA= 22421

MUL FACTOR=1.0000E+00

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 2

PK WD = 0.04

TIMETABLE EVENTS

0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

Site S-K Albuquerque

Project No. 502

Date 1-31-92

Analyst EJB

Location 1.0 ml TB-2 61.0-61.5 Vapor 100°C

Map:

Instrument JEI-210

Column 6' 5% SP1200/1.75 Bentone 34

Carrier Gas UHP N_2

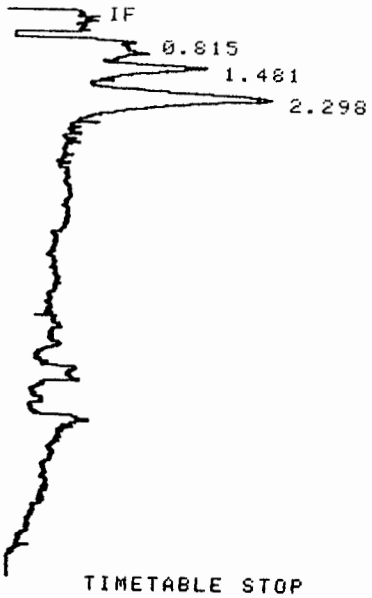
Flow Rate (ml/min) 18

Chart Speed (cm/min) 0.5

Chart Input (mV) 1000

* RUN # 27 JAN 31, 1992 22:37:01

START



TIMETABLE STOP

Closing signal file M:SIGNAL .BNC

RUN# 27 JAN 31, 1992 22:37:01

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.815	39091	PV	.189	18.71224
1.481	81103	VV	.442	38.82272
2.298	88712	VV	.619	42.46502

TOTAL AREA= 208906

MUL FACTOR=1.0000E+00

Site SK Albuquerque

Project No. 502

Date 1-31-92

Analyst EJB

Location 1.0 ml TB-2 71.0-71.5 Vapor

Map: 100°C

Instrument TEI-210

Column 6' 5% SP1200/1.75 Bentone 34

Carrier UHP N2

Flow (ml/min) 18

Chart Speed (cm/min) 0.5

Chart Input (mV) 1000

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 2

PK WD = 0.04

TIMETABLE EVENTS

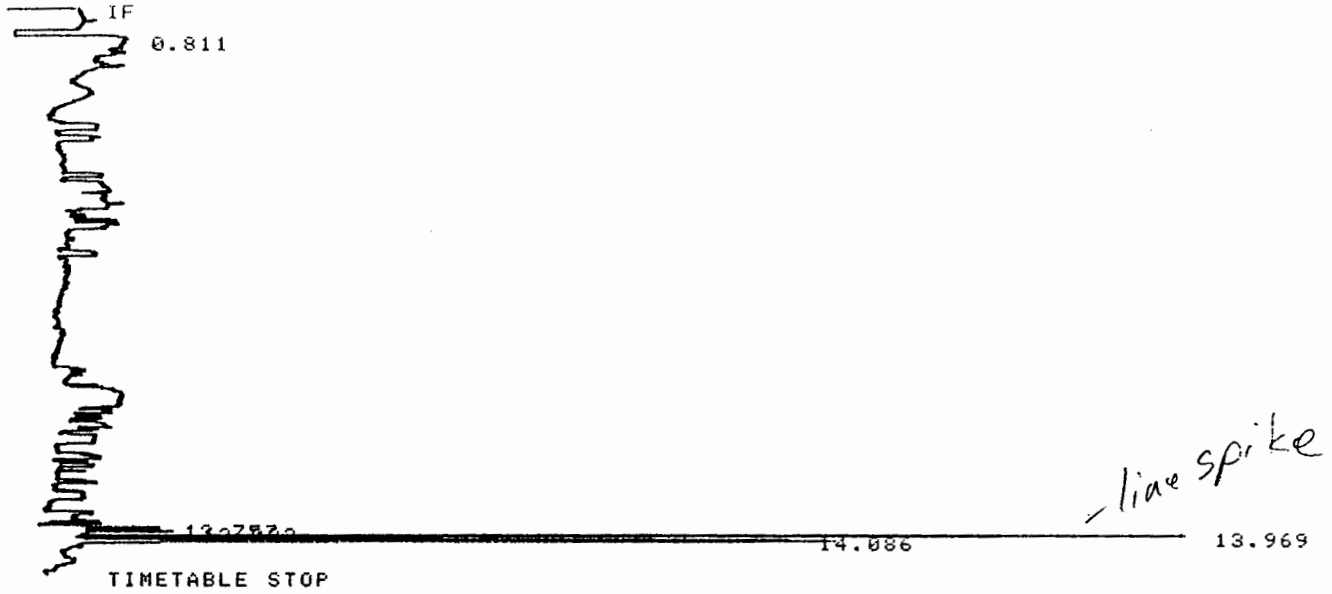
0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

* RUN # 28 JAN 31, 1992 22:52:53

START



Closing signal file M:SIGNAL .BNC

RUN# 28 JAN 31, 1992 22:52:53

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.811	20266	PV	.214	38.95885
13.757	1646	BB	.042	3.16423
13.833	712	BB	.018	1.36873
13.969	10313	PB	.022	19.82545
14.086	19082	PB	.063	36.68275

TOTAL AREA= 52019

MUL FACTOR=1.0000E+00

Site S-K Albuquerque

Project No. 502

Date 1-31-92

Analyst EJB

Location 1.0 ml vapor + B-2 76.0-76.5

Map: 100°C

Instrument TEI-210

Column 6' 5% SP1200/1.75% Bentone 34

Carrier Gas UHP N_2

Flow Rate (ml/min) 18

Split Ratio (ml/min) 0.5

Chart Speed (cm/hr) 1000

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 2

PK WD = 0.04

TIMETABLE EVENTS

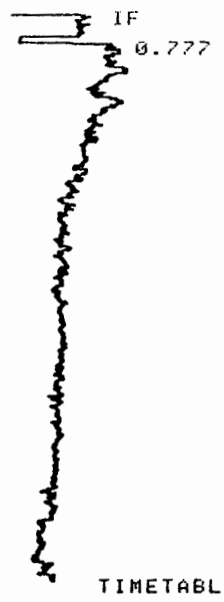
0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

* RUN # 29 JAN 31, 1992 23:08:37

START



Closing signal file M:SIGNAL .BNC

RUN# 29 JAN 31, 1992 23:08:37

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.777	11955	PB	.145	100.00000

TOTAL AREA= 11955

MUL FACTOR=1.0000E+00

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 2

PK WD = 0.04

TIMETABLE EVENTS

0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

Site S-K Albuquerque

Project No. 502

Date 1-31-92

Analyst EJB

Location Map: 1.0 ml vapor Syringe Blank 100°C

Instrument TEI-210

Column 6' 5% SP1200/1.75% Bentone 34

Carrier Gas VHP N_2

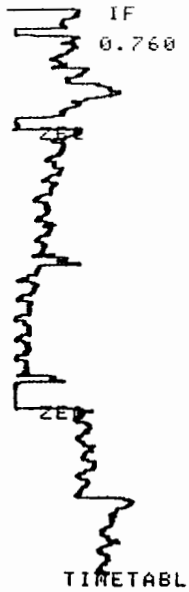
Carrier Flow (ml/min) 18

Chart Speed (cm/min) 0.5

Chart Input (mV) 1000

* RUN # 30 FEB 1, 1992 08:24:12

START



TIMETABLE STOP

Closing signal file M:SIGNAL .BNC

RUN# 30 FEB 1, 1992 08:24:12

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.760	32074	PV	.238	100.00000

TOTAL AREA= 32074

MUL FACTOR=1.0000E+00

Site S-K Albuquerque

Project No. 502

Date 2-1-92

Analyst EJB

Location Map: 1.0 ml Vapor Syringe Blank 100°C

Instrument TEI-210

Column 6'5% SP1200/1.75 Bentone 34

[illegible] VHP N2

[illegible] min) 18

[illegible] (cm/min) 0.5

Chart input (mV) 1000

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 2

PK WD = 0.04

TIMETABLE EVENTS

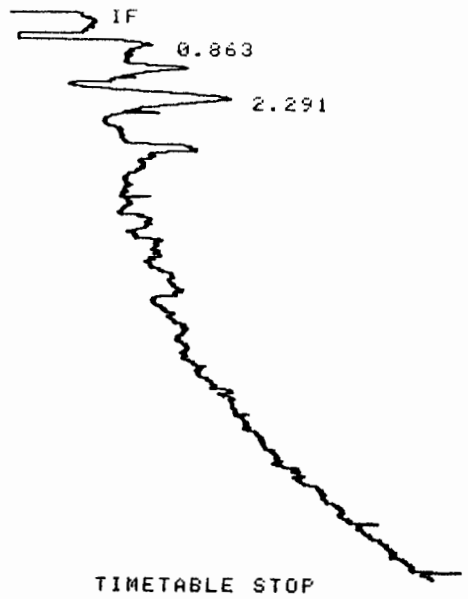
0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

* RUN # 31 FEB 1, 1992 08:40:01

START



Closing signal file M:SIGNAL .BNC

RUN# 31 FEB 1, 1992 08:40:01

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.863	38685	PB	.349	61.64840
2.291	24066	BV	.391	38.35158

TOTAL AREA= 62751

MUL FACTOR=1.0000E+00

Site S-K Albuquerque

Project No. 502

Date 2-1-92

Analyst EJB

Location 1.0ml TB-2 vapor 81.0-81.5

Map: 100°C

Instrument: TEI-210

Column: 6'5% SP1200/1.75% Bentone 34

Carrier Gas: UHP N_2

Carrier Gas Flow Rate (ml/min) 18

Chart Speed (cm/min) 0.5

Chart Signal (mV) 1000

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 2

PK WD = 0.04

TIMETABLE EVENTS

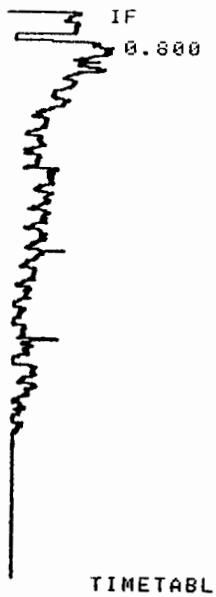
0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

* RUN # 38 FEB 3, 1992 10:37:31

START



TIMETABLE STOP

Closing signal file M:SIGNAL .BNC

RUN# 38 FEB 3, 1992 10:37:31

SIGNAL FILE: M:SIGNAL.BNC

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.800	21254	BV	.150	100.00000

TOTAL AREA= 21254

MUL FACTOR=1.0000E+00

Site S-K Albuquerque

Project No. 502

Date 2-3-92

Analyst EJB

Location Map: 1.0 ml vapor TB-3 71.0-71.5 100°C

Instrument TEI-216

Column 6' 5% SP1200/1.75 Bentone 34

Carrier Gas UHP N_2

Gas Flow Rate (ml/min) 18

Chart Speed (cm/min) 0.5

Chart Input (mV) 1000

RUN PARAMETERS

ZERO = 0

ATT 2^ = 0

CHT SP = 0.5

AR REJ = 0

THRSH = 2

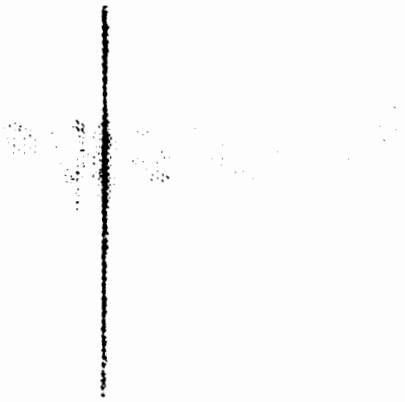
PK WD = 0.04

TIMETABLE EVENTS

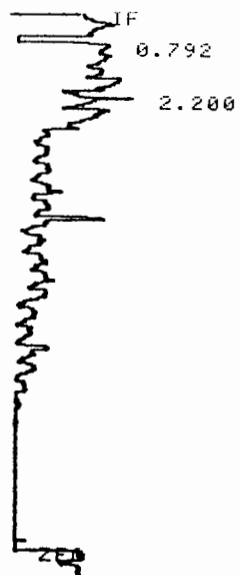
0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP



```
*  RUN #    39      FEB  3, 1992  11:13:29
START
```



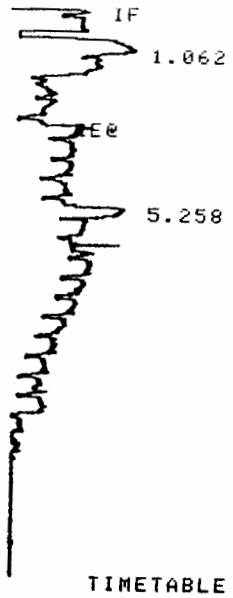

```
Closing signal file M:SIGNAL  .BNC

RUN#     39            FEB  3, 1992  11:13:29

SIGNAL FILE: M:SIGNAL.BNC
AREA%
      RT       AREA TYPE  WIDTH       AREA%
    .792      28373   PB   .231    94.84858
   2.200       1541   PB   .066     5.15143

TOTAL AREA=  29914
MUL FACTOR=1.0000E+00
```

```
RUN PARAMETERS
ZERO    =  0
ATT 2^  =  0
CHT SP  =  0.5
AR REJ  =  0
THRSH   =  2
PK WD   =  0.04

TIMETABLE EVENTS
   0.000 INTG # =   11
   0.000 INTG # =   13
  15.000 STOP
```

Site S-K Albuquerque
Project No. 502
Date 2-3-92
Analyst EJB
Location Map: 1.0 ml vapor TB-3 65.0-65.5 100°C

Instrument TEI-210
Column 6' 5% SP1200/1.75% Bentone 34
Carrier Gas UHP N_2
Carrier Flow Rate (ml/min) 18
Chart Speed (cm/min) 0.5
Chart Input (mV) 1000

* RUN # 37 FEB 3, 1992 09:10:17
START



TIMETABLE STOP

Closing signal file M:SIGNAL .BNC

RUN# 37 FEB 3, 1992 09:10:17

SIGNAL FILE: M:SIGNAL.BNC
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.062	71294	PV	.642	88.29635
5.258	9450	BP	.293	11.70366

TOTAL AREA= 80744
MUL FACTOR=1.0000E+00

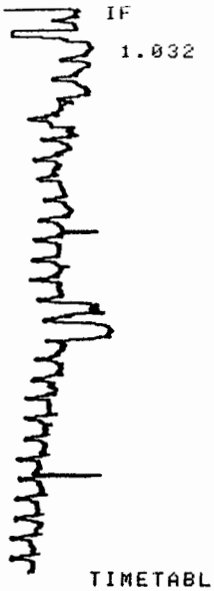
Site S-K Albuquerque
Project No. 502
Date 2-3-92
Analyst EJB
Location
Map: 1.0ml vapor TB-3 75.5-76.0 100°C

Instrument TEI-210
6'5%SP1200/1.75% Bentone 34
UHP N_2
(ml/min) 18
(cm/min) 0.5
(mV) 1000

RUN PARAMETERS
ZERO = 0
ATT 2^ = 0
CHT SP = 0.5
AR REJ = 0
THRSH = 2
PK WD = 0.04

TIMETABLE EVENTS
0.000 INTG # = 11
0.000 INTG # = 13
15.000 STOP

* RUN # 40 FEB 3, 1992 11:36:13
START



TIMETABLE STOP

Closing signal file M:SIGNAL .BNC

RUN# 40 FEB 3, 1992 11:36:13

SIGNAL FILE: M:SIGNAL.BNC
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.032	45495	PB	.651	100.00000

TOTAL AREA= 45495
MUL FACTOR=1.0000E+00

Site S-K Albuquerque
Project No. 502
Date 2-3-92
Analyst EJB
Location
Map: 1.0ml Vapor Syringe Blank 100°C

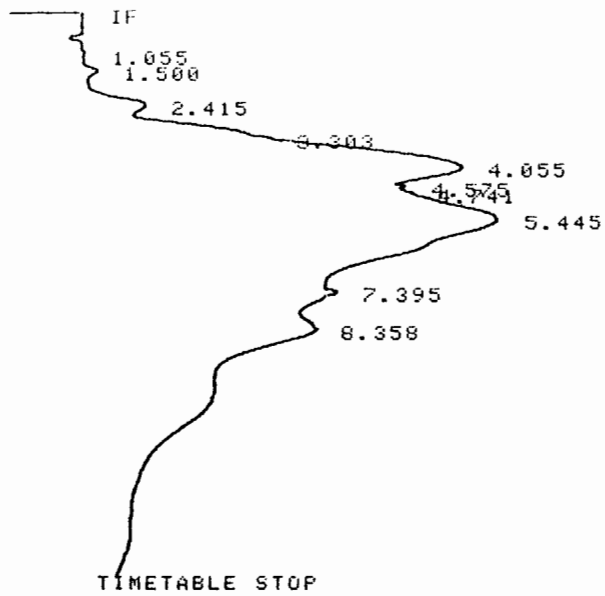
Instrument TEI-210
Column 6' 5% SP1200/1.75% Bentone 34
Carrier Gas UHP N_2
Flow Rate (ml/min) 18
Chart Speed (cm/min) 0.5
Chart Range (mV) 1000

RUN PARAMETERS
ZERO = 0
ATT 2^ = 0
CHT SP = 0.5
AR REJ = 0
THRSH = 2
PK WD = 0.04

TIMETABLE EVENTS
0.000 INTG # = 11
0.000 INTG # = 13
15.000 STOP

RUN # 41 FEB 3, 1992 11:51:47

START



Closing signal file M:SIGNAL .BNA

RUN# 41 FEB 3, 1992 11:51:47

SIGNAL FILE: M:SIGNAL.BNA

AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.055	52297	PV	.549	.28160
1.500	31771	BP	.181	.17108
2.415	286782	PV	.431	1.54423
3.303	819703	VV	.372	4.41385
4.055	4713507	VV	1.020	25.38078
4.575	351117	VV	.094	1.89066
4.741	457959	VV	.121	2.46597
5.445	8866291	VV	1.848	47.74226
7.395	1365953	VV	.620	7.35524
8.358	1625787	VV	.951	8.75436

TOTAL AREA=1.8571E+07

MUL FACTOR=1.0000E+00

Site S-K Albuquerque

Project No. 502

Date 2-3-92

Analyst ESB

Location

Map: 1.0 ml vapor. Mineral Spirits 100°C

Instrument TEI-210

Column 6'5% SP1200/1.75 Bentone 34

Carrier UHP N_2

(Carrier rate (ml/min) 18

Chart (cm/min) 0.5

Chart (mV) 1000

RUN PARAMETERS

ZERO = 0

ATT 2^ = 5

CHT SP = 0.5

AR REJ = 0

THRSH = 2

PK WD = 0.04

TIMETABLE EVENTS

0.000 INTG # = 11

0.000 INTG # = 13

15.000 STOP

*

*

APPENDIX C

CLOSURE COST ESTIMATES

PHASE 1
CLOSURE COST ESTIMATE WORKSHEET

CLOSURE SPECIFICATIONS AND IMPLEMENTATION

Activity 1.1 - Compile Pertinent Information		Completed
Activity 1.2 - Prepare Health and Safety Plan		
Labor: 40 hours x $40/hr		$1,600
Activity 1.3 - Select Remediation Contractor		
Prepare bid package, send out, review proposals 20 hours x $40/hr		$ 800
Activity 1.4 - Implement Health and Safety Procedures		
Health and safety monitoring during UST removal		
1. Labor 40 hours x $40/hr	$1,600	
2. Monitoring instrument 5 days x $30/day	150	
Subtotal Activity 1.4		$1,750
Activity 1.5 - Implement Site Security Procedures		Completed
TOTAL PHASE 1 COSTS		$4,150

PHASE 2
CLOSURE COST ESTIMATE WORKSHEET

RETURN/FILL STATION AND
UST DECONTAMINATION AND REMOVAL

Activity 2.1 - Coordinate with Contractors, Federal, State, and Local Officials

Notify officials, contact utility companies, and locate subsurface utilities 10 hours x $40/hr	$400	
Subtotal Activity 2.1		$400

Activity 2.2 - Remove Product, Wastes, and Sludges

Flush appurtenances, remove tank contents, wet dumpster contents, transport to TSD facility:

1. Labor and Vacuum Truck 12 crew hours x $75/hr	$900	
2. Transport Wastes to third party TSD facility $70/Hr. x 12 Hrs.	840	
3. Disposal of Wastes at TSD Facility Sludge: 750 gallons x $1.75/gallon	1,315	
Spent Mineral Spirits: 12,000 gallons x $1.50/gallon	18,000	
Subtotal Activity 2.2		$21,055

Activity 2.3 - Return/Fill Station Removal

Decontaminate and disassemble dock, wet dumpster, grating, sheeting, etc.

1. Decontamination and disassembly 8 crew hours x $40/hr	$320	
2. High Pressure Cleaning 1 day x $400/day	400	
3. Analyze Final Rinsate 1 sample x $100/sample	100	
4. Disposal of Rinsate (included in Activity 2.4)		
Subtotal Activity 2.3		$820

Activity 2.4 - Tank Entry

1.	Uncover Tank:		
	a. Break up concrete and remove rubble (25 yd^3) 10 hours x $300/hr labor and equipment	$3,000	
	b. Remove cover soil (30 yd^3) 5 hours x $200/hr labor and equipment	1,000	
	c. Dispose of concrete at landfill 45 tons x $30/ton	1,350	
2.	Open Tank		
	a. Evacuate vapors 180 lb dry ice	200	
	b. Cut opening in tank	100	
3.	Clean Tank and Appurtenances		
	a. High pressure cleaning 1.5 days x $400/day	600	
	b. Squeegee and scrape tank 10 crew hours x $20/hr	200	
	c. Vacuum contents and send to a third party TSD facility Tansport rinsate: $70/Hr x 12 Hrs.	~840	
	Dispose rinsate: 300 gallons x $0.50/gallon	~150	
	d. Analyze Final Rinsate 1 sample x $100/sample	100	
	Subtotal Activity 2.4		$7,540

Activity 2.5 - Excavate and Remove RCRA UST System

1.	Disconnect and remove appurtenant equipment 10 crew hours x $40/hr	$400	
2.	Remove tank 1 tank x $400/tank	400	
3.	Scrap tank and equipment 1 tank x $300 tank	600	

Subtotal Activity 2.5		$1,100
Activity 2.6 - Manage Excavated Soils		
1. Excavate and stockpile soils 40 crew hours x $125/hr	$5,000	
2. Air monitoring and vapor control 40 hours x $35/hr	1,400	
3. Dispose of up to 50 yd^3 non-hazardous degraded soils and rubble		
a. Transportation 50 yd^3 x $45/$yd^3$	2,250	
b. Disposal 50 yd^3 x $80/$yd^3$	4,000	
Subtotal Activity 2.6		$6,250
Activity 2.7 - Sample and Analyze Soils		
1. 4 hours x $40/hr	$160	
2. 10 samples (est.) x $400/sample	4,000	
Subtotal Activity 2.7		$4,160
Activity 2.8 - Fill, Compact, and Refinish Excavation		
1. Import soil for backfilling 30 yd^3 x $10/$yd^3$	$300	
2. Backfill, compact, regrade excavation	2,000	
3. Repave excavation 2,500 ft^2 x $3/$ft^2$	7,500	
Subtotal Activity 2.8		$9,800
Activity 2.9 - Evaluate/Document Closure		
Prepare progress report, request closure extension 40 hours x $40/hr	$1,600	
Subtotal Activity 2.9		$1,600
TOTAL PHASE 2 COSTS		$52,725

PHASE 3
CLOSURE COST ESTIMATE WORKSHEET

IMPLEMENT ADDITIONAL ASSESSMENT/REMEDIATION
(IF NECESSARY)

Note: S-K may elect to implement the contingent closure/ post closure plan (refer to Chapter VIII and Appendix D) rather than implement all of Phase 3.

Activity 3.1 - Conduct Risk Assessment

1.	Labor 80 hours/$40 hr	$3,200	
2.	Meeting with DTSC to discuss risk assessment results	800	
	Subtotal Activity 3.1		$4,000

Activity 3.2 - Conduct Additional Assessment Program

(Optional activity not included in cost estimate)

Activity 3.3 - Implement Remedial Action

(Optional activity not included in cost estimate)

Activity 3.4 - Closure Period Extension

(Optional activity not included in cost estimate)

TOTAL PHASE 3 COSTS $4,000

PHASE 4
CLOSURE COST ESTIMATE WORKSHEET

CLOSURE CERTIFICATION REPORT

Activity 4.1 - Compile and Evaluate Data	
20 hours x $50/hour	$1,000
Activity 4.2 - Prepare Closure Certification Report	
40 hours x $50/hour	2,000
TOTAL PHASE 4 COSTS	$3,000

TOTAL CLOSURE COSTS ESTIMATE

1.	Phase 1 - Closure Specifications/ Implementation	$4,150
2.	Phase 2 - Return/Fill Station and UST System Decontamination	52,725
3.	Phase 3 - Implement Additional Assessment/ Remediation (if necessary)	4,000
5.	Phase 4 - Closure Certification Report	3,000
TOTAL PHASE 1 THROUGH 4 COSTS		$63,875

APPENDIX D

CONTINGENT CLOSURE/POST-CLOSURE COST ESTIMATES

I. CONTINGENT CLOSURE COST ESTIMATE WORKSHEET

Note: The cost for contingent closure includes all of the costs for closure included in Appendix C as well as the additional costs outlined below.

1.	Total Closure Cost Estimate (from Appendix C)	$63,875	
2.	Inspect and Certify Final Cover: 12 hrs x $60/hr	720	
3.	Prepare Survey Plat		
	a. Survey Crew 4 hrs x $100/hr	400	
	b. Drafting 10 hrs x $40/hr	400	
TOTAL CONTINGENT CLOSURE COSTS			$65,395

II. CONTINGENT POST-CLOSURE COST ESTIMATE WORKSHEET

A. SITE INSPECTION

1. Number of Inspections:

   a. Routine (quarterly) inspections:

      4/year

   b. Additional inspection (following accidents, extreme weather, etc.):

      Assume 1/year

   c. Total number of annual inspections:

      5/year

2. Cost Per Inspection
   (Inspect wells, final cover, benchmark and perimeter fence, etc.)

   2 hr/inspection x $50/hr =
   $100/inspection

3. Total Annual Cost of Post-Closure Inspection:

   $100/inspection x 5 inspections = $500/year

II. CONTINGENT POST-CLOSURE COST ESTIMATE WORKSHEET

B. SITE MAINTENANCE

1.	Monitoring Well Replacement: (assume 1 well/5 years)	
	$2,000/well x 1 well/5 years =	$400/year
2.	Site Grading: (reslope, grading, backfill, etc.)	
	2 hrs/year x $150/hr (grader and loader)	300/year
3.	Resurvey Benchmarks:	
	1 hr/survey x 1 survey/year x $100/hr=	100/year
4.	Site Security: (fence and sign repair, assume 5% replacement/year)	
	700 ft fence x 5%/year x $10.50/ft =	370/year
5.	Landfill Cover Repair:	
	a. Crack Repair (repair two 30-ft cracks/year)	
	2 repairs/year x 4 hrs/repair x $20/hr =	160/year
	b. Resurfacing (replace 5%/year)	
	300 yd^2 x 5%/year x $10/$yd^2$	150/year
6.	Total Annual Cost for Post- Closure Maintenance	$1,480/year

II. CONTINGENT POST-CLOSURE COST ESTIMATE WORKSHEET

C. GROUND-WATER MONITORING

This contingent post-closure care cost estimate for ground-water monitoring assumes implementation of a semi-annual detection monitoring program in accordance with 40 CFR 265, Subpart F.

1. Monitoring Well Installation

   $7,000/well x 4 wells — $28,000

2. Sample Collection:

   a. Labor

      $45/hr x 8 hrs/event x 2 events/year = — $720/year

   b. Expenses (sample shipments, decontamination equipment, disposal of purged water, etc.)

      $200/event x 2 events/year = — 400/year

3. Sample Analysis: (detection monitoring, assumes background established prior to implementation of post-closure plan)

   a. Indicator Parameters (pH, specific conductance, TOC, TOH)

      $200/sample x 4 samples/event x 2 events/year = — 1,600/year

   b. Ground-Water Quality Parameters (40 CFR 265, App. III)

      $125/sample x 4 samples/event x 1 event/year = — 500/year

4. Data Evaluation, Reporting:

   a. Data Analysis, Statistical Evaluations

      $45/hr x 10 hrs/event x 2 events/year = — 900/year

   b. Annual Report

	$45/hr x 40 hrs/report x 1 report/year =	1,800/year
4.	Total Annual Cost for Post-Closure Ground-Water Monitoring:	$5,920

II. CONTINGENT POST-CLOSURE COST ESTIMATE WORKSHEET

D. TOTAL CONTINGENT POST-CLOSURE COST ESTIMATE

A.	Site Inspection	$500/year
B.	Site Maintenance	1,480/year
C.	1. Ground-Water Monitoring	5,920/year
	2. Well Installation (one time cost)	28,000
D.	Total 30-Year Post-Closure Cost Estimate	$265,000