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RCRA OPERATING PERMIT RENEWAL APPLICATION

Safety-Kleen Corp. Medley Branch Service Center
8755 Northwest 95th Street
Medley, Florida
FLD 984 171 694

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June 1997

Prepared for:

Safety-Kleen Corp.
One Brinckman Way
Elgin, Illinois 60123

ERM

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(904) 656-9700

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1.0 APPLICATION FOR A HAZARDOUS WASTE FACILITY PERMIT

This Part B permit renewal application has been prepared for Safety-Kleen Corporation's (Safety-Kleen's) Branch Service Center (hereafter referred to as the Branch) located at 8755 Northwest 95th Street, Medley, Dade County, Florida. Florida Department of Environmental Protection (FDEP) Application Forms 62-730.900(2)(a), 62-730.900(c), and 62-730.900(d) are provided in this section. Information required by these application forms are provided on the application forms or within subsequent sections of the document, as referenced on the application forms.

All figures and tables referenced within a particular section are provided at the end of that section.

APPLICATION FOR A HAZARDOUS WASTE FACILITY PERMIT
PART I - GENERAL
TO BE COMPLETED BY ALL APPLICANTS

Please Type or Print

A. General Information

1. Type of facility:

Disposal [ ]

landfill		land treatment	[ ]
surface impoundment	[ ]	miscellaneous units	[ ]

Storage [x]

containers	[x]	tanks	[x]
piles	[ ]	surface impoundment	[ ]
miscellaneous units	[ ]	containment building	[ ]

Treatment [ ]

tanks	[ ]	piles	[ ]
incineration	[ ]	surface impoundment	[ ]
miscellaneous units	[ ]	boiler/industrial furnace	[ ]
type of unit ________		type of unit ________	
		containment building	[ ]

2. Type of application: [ ] TOP [ ] construction [x] operation [ ] closure [ ] RD&D
[ ] construction/operation

3. Revision Number: 0

4. Date current operation began (or is expected to begin): July 16, 1992

5. Facility name: Safety-Kleen Corp. Medley Branch Service Center

6. EPA/DEP I.D. No.: FLD 984 171 694

7. Facility location or street address: 8755 Northwest 95th Street, Medley, FL 33166

8. Facility mailing address:

Street or P.O. Box	City	State	Zip
One Brinckman Way	Elgin	FL	60123

9. Contact person: Della Ridley Telephone: (770)449-0533

Title: Southeast Region Environmental Manager

Mailing Address: 4800 S. Old Peachtree Road Norcross GA 30071
Street or P.O. Box City State Zip

10. Operator's name: Safety-Kleen Corp. Telephone: (800) 669-5840

11. Operator's address: One Brinckman Way Elgin IL 60123-7857
Street or P.O. Box City State Zip

12. Facility owner's name: Safety-Kleen Corp. Telephone: (800) 669-5840

13. Facility owner's address: One Brinckman Way Elgin IL 60123-7857
Street or P.O. Box City State Zip

14. Legal structure: [X] Corporation [ ] Non-profit Corporation [ ] Partnership [ ] Individual
[ ] Local Government [ ] State Government [ ] Federal Government [ ] Other

15. If an individual, partnership, or business is operating under an assumed name, specify the county and state where the name is registered.

County: N/A State: N/A

16. If the legal structure is a corporation, indicate the state of incorporation.

State of incorporation: Wisconsin

17. If the legal structure is an individual or partnership, list the owners.

Name: N/A

Address:
Street or P.O. Box City State Zip

Name: N/A

Address:
Street or P.O. Box City State Zip

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Name: N/A

Address: ___
Street or P.O. Box | City | State | Zip

18. Site ownership status: [X] owned [ ] to be purchased [ ] to be leased ____ years
[ ] presently leased; the expiration date of the lease is: ____

If leased, indicate:

Land owner's name: N/A

Land owner's address: ___
Street or P.O. Box | City | State | Zip

19. Name of engineer: Elaina J. Modlin, P.E. Registration no.: 49946

Address: 1901 S. Congress Avenue, Suite 480 | Boynton Beach | FL | 33426
Street or P.O. Box | City | State | Zip

Associated with: Environmental Resources Management-South, Inc.

20. Facility located on Indian land: [ ] yes [X] no

21. Existing or pending environmental permits: (attach a separate sheet if necessary)

NAME OF PERMIT	AGENCY	PERMIT NUMBER	DATE ISSUED	EXPIRATION DATE

See attached table (page 3A).

EXISTING OR PENDING ENVIRONMENTAL PERMITS

Name of Permit	Agency	Permit Number	Date Issued	Expiration Date
Air Construction Permit - Storage Tanks	FDEP	AC13-265331	07/12/95	05/31/96
Air	DERM	329090	Pending	
HSWA Permit	USEPA Region 4	FLD 98417694	02/12/93	02/12/03
Used Oil Transfer Facility	FDEP	FLD 98417694	06/01/96	06/01/97
Stormwater	USEPA	FL R00B905	05/21/96	N/A
Industrial Waste	DERM	IW2-00333	06/01/94	05/31/97
Liquid Waste/Annual Operating Permit	DERM	DERM LW-00046	04/93	06/97
Transport and Storage Facility for Mercury-Containing Lamps	FDEP	H013-291651	07/26/96	12/02/97

B. Site Information

1. Facility location County: Dade Nearest Community: Medley

   Latitude: 25° 51' 90" North Longitude: 80°20'25" West

   Section: 4 Township: 53S Range: 40E

   UTM #: 17 / 604610 /2211660

2. Area of facility site (acres): 4.5

3. Attach a scale drawing and photographs of the facility showing the location of all past, present, and future treatment, storage and disposal areas. Also show the hazardous wastes traffic pattern including estimated volume and control. Please see Section 2.1.

4. Attach topographic map which show all the features indicated in the instruction sheet for this part. Please see Section 2.2.

5. Is the site located in a 100-year flood plain? [ ] yes [x] no Please see Section 2.2.

C. Land Use Information

1. Present zoning of the site LI (Light Industrial)

2. If a zoning change is needed, what should the new zoning be? N/A

3. Present land use of site Industrial

D. Operating Information

1. Is waste generated on site? [x] yes [ ] no

   List the SIC codes (4–digit)

   7389 5172 5084 5013

2. Attach a brief description of the facility operation, nature of the business, and activities that generate, treat, store or dispose of hazardous waste.

   Please see Section 2.3.

3. Using the following table and codes provided, specify, (1) each process used for treating, storing, or disposing of hazardous waste (including design capacities) at the facility, and (2) the hazardous waste (or wastes) listed or designated in 40 CFR Part 261, including the annual quantities, to be treated, stored, or disposed by each process at the facility. (See the instructions for the list of process codes and units).

PROCESS CODE	PROCESS DESIGN CAPACITY AND UNITS OF MEASURE	HAZARDOUS WASTE CODE	ANNUAL QUANTITY OF HAZARDOUS WASTE AND UNITS OF MEASURE

Please see Table 2.3-1 at end of Section 2.3.

APPLICATION FOR A HAZARDOUS WASTE PERMIT
PART II

A. General

1. a. Attach a topographic map showing a distance of 1000 feet around the hazardous waste management area at a scale of 1 inch to 200 feet. Contours must be shown on the map with intervals sufficient to clearly show the pattern of surface water flow in the vicinity of and from each operational unit of the facility (e.g., contour intervals of 5 feet if relief is greater than 20 feet or an interval of 2 feet if relief is less than 20 feet). The map should clearly show the following:

(1) Map scale and date
(2) 100-year floodplain area — Please see Section 2.2.
(3) Orientation of the map
(4) Access control (fences, gates)
(5) Injection and withdrawal wells both on-site and off-site
(6) Buildings and other structures (recreational areas; access and internal roads; storm, sanitary and process sewerage systems; fire control facilities; etc.)
(7) Contours sufficient to show surface water flow
(8) Loading and unloading areas
(9) Drainage or flood control barriers
(10) Hazardous waste units including clean-up areas
(11) Runoff control system

Topographic maps may be obtained at the following address:

Branch of Distribution
U.S.G.S.
1200 South EADS
Arlington, Virginia 22202
Telephone: (703) 557-2751

Information on latitudes and longitudes may be obtained from the U.S.G.S. National Cartographic Information Center at (703) 860-6336.

b. Include a wind rose indicating the local prevailing wind speed and direction, legend, and date with the maps or as a separate item. Please see Section 2.2.

c. Traffic information - Include the information required in §270,14(b)(10). Please see Section 2.1.

2. Financial responsibility information: Please see Section 3.

a. Attach the most recent closure cost estimates for the facility [§264.142] and a copy of the financial mechanism used to establish financial assurance for closure of the facility [§264.143 and §270.14(b)(15)]. Use DEP Forms 17-730.900(4)(a), (b), (c), (d), (e), (f), (g), (h), (i) or (j) only. Retyped documents are not acceptable. Send the originally signed documents to: Hazardous Waste Financial Responsibility Coordinator, Department of Environmental Protection, Division of Waste Management, 2600 Blair Stone Road, Tallahassee, Florida, 32399-2400.

b. If applicable, attach the most recent post-closure care cost estimate for the facility [§264.144] and a copy of the financial mechanism used to establish financial assurance for post-closure care of the facility [§264.145, §264.146 and §270.14(b)(16)]. Use DEP Forms 17-730.900(4)(a), (b), (c), (d), (e), (f), (g), (h), (i) or (j) only. Retyped documents are not acceptable. Send the originally signed documents to the address in 2.a. above.

c. If corrective action under 40 CFR 264.100 or 264.101 is required at the facility, comply with Rule 17-730.180(6), F.A.C.

d. Attach a copy of the documents used to demonstrate liability coverage [§264.147]. Use DEP Forms 17-730.900(4)(b), (d), (k), (l), (m) or (n) only. Retyped documents are not acceptable. Send the originally signed documents to the address in 2.a. above.

3. Attach a flood map. The Federal Insurance Administration (FIA) of the Federal Emergency Management Agency produces flood maps that have information on flood areas. If a FIA flood map is not available for an area, use an equivalent mapping technique to determine whether the facility is within the 100-year floodplain, and if so, what the 100-year flood elevation is. The U.S. Geological Survey, the Soil Conservation Service, the Water Management Districts, and the Regional Planning Councils also have information requested in this section.

Please see Section 2.2.

If the site is located in the 100-year floodplain, identify the 100-year flood level and any other special flooding factors (e.g., wave action) which must be considered in designing, constructing, operating, or maintaining the facility to withstand washout from a 100-year flood. Additionally, provide the following information:

a. An engineering analysis indicating the various hydrodynamic and hydrostatic forces expected to occur at the site as a consequence of a 100-year flood.

b. Structural or other engineering studies showing the design of operational units (i.e., tanks, incinerators) and flood protection devices (i e., floodwalls, dikes) at the facility and how these will prevent washout.

c. If applicable, and in lieu of paragraphs 3.a. and 3.b. above, a detailed description of the procedures to be followed to remove hazardous waste to safety before the facility is flooded, including:

(1) Timing of such movement relative to flood levels, including the estimated time to move the waste to show that such movement can be completed before floodwaters reach the facility;

(2) A description of the location(s) to which the waste will be moved and a demonstration that those facilities will be eligible to receive hazardous waste in accordance with the regulations under 40 CFR Parts 264 and 265;

(3) The planned procedures, equipment, and personnel to be used and the means to ensure that such resources will be available in time for use; and

(4) The potential for accidental discharges of the waste during movement.

If the site is not located in the 100-year floodplain, provide the source of data for such a determination and include a copy of the relevant FIA flood map or the calculations and maps used where a FIA map is not available.

4. Facility security information:

a. Attach a description of the security procedures and equipment required by §264.14. [§270.14(b)(4)] Please see Section 4.1.

b. Attach a copy of the contingency plan required by 40 CFR Part 264, Subpart D. [§270.14(b)(7)] Please see Section 5.

c. Attach a description of procedures, structures, or equipment used at the facility to: Please see Section 5.

(1) Mitigate effects of equipment failure and power outages;
(2) Prevent hazards in unloading operations (i.e., ramps, special forklifts);
(3) Prevent undue exposure of personnel to hazardous waste (i.e., protective clothing);
(4) Prevent contamination of water supplies;
(5) Prevent run-off from hazardous waste handling areas to other areas of the facility or environment, or to prevent flooding (i.e., berms, dikes, trenches);
(6) Prevent releases to atmosphere; and
(7) Prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes. [§270.14(b)(9)]

d. Attach a description of the preparedness and prevention procedures required by 40 CFR Part 264, Subpart C, including design and operation of the facility, required equipment, testing and maintenance of equipment, access to communications or alarm system, required aisle space, and arrangements with local authorities [§270.14(b)(6)]. Please see Section 5.

e. Attach an outline of both the introductory and continuing training programs used to prepare persons to operate or maintain the hazardous waste management facility in a safe manner to demonstrate compliance with §264.16 [270.14(b)(12)]. Please see Section 6.

5. Attach a copy of the reports of the chemical and physical analyses of the hazardous wastes handled at the facility, including all information which must be known to treat, store, or dispose of the wastes in accordance with §264.13. [§270.14(b)(2)]
Please see Section 7.1.

6. Attach a copy of the waste analysis plan required by §264.13(b) [§270.14(b)(3)]. Include the following: Please see Section 7.2.

a. Parameters for which each hazardous waste will be analyzed and the rationale for the selection of these parameters;
b. Test methods used;
c. Sampling methods used;
d. Frequency of analysis to ensure accuracy;
e. Waste analyses that generators supply;
f. Methods used to meet additional waste analysis requirements; and, if applicable,
g. For off-site facilities, the procedures used to inspect and ensure that the wastes received match the accompanying manifest.

7. Attach a copy of the procedures used to comply with §264.12 and 40 CFR Part 264, Subpart E (Manifest System, Recordkeeping, and Reporting). Please see Section 7.3.

8. Indicate all other federal laws that may apply to the issuance of the permit according to §270.3.
This is an existing facility. No major expansions of the facility are planned. No issues with the federal laws listed in 40 CFR 270.3 are expected.

B. Containers

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart I. [§270.15]

1. Attach the requirements of either a. or b.: Please see Section 8.1.

a. Demonstrate compliance with §264.175(c) by attaching:

(1) Test procedures and results or other documentation or information to show that the wastes do not contain free liquids; and
(2) A description of how the storage area is designed or operated to drain and remove liquids or how containers are kept from contact with standing liquids.

b. Demonstrate compliance with §264.175(b) by attaching a description of the containment system which includes:

(1) Basic design parameters, dimensions, and materials of construction;
(2) How the design promotes drainage or how containers are kept from contact with standing liquids in the containment system;
(3) Capacity of the containment system relative to the number and volume of containers to be stored;
(4) Provisions for preventing or managing run-on; and
(5) How accumulated liquids can be analyzed and removed to prevent overflow.

2. Attach sketches, drawings, or data demonstrating compliance with §264.176 (Special requirements for ignitable or reactive wastes) and §264.177 (Special requirements for incompatible wastes) where applicable.
Please see Section 8.2.

3. Where incompatible wastes are stored or otherwise managed in containers, attach a description of the procedures used to ensure compliance with §264.177(a) and (b) (Special requirements for incompatible waste) and §264.17(b) and (c) (General requirements for ignitable, reactive, or incompatible waste).
Please see Section 8.2.

4. Attach a description of the procedures used to comply with §264.171 (Condition of containers), §264.172 (Compatibility of waste with containers), and §264.173 (Management of containers).
Please see Section 8.3.

5. Attach a copy of the inspection procedures as required in §264.174 (Inspections) and §264.15 (General inspection requirements). [§270.14(b)(5)]
Please see Section 8.4.

6. Attach a copy of the closure plan and where applicable the post-closure plan as required by §§264.112, 264.118 and 264.178. [§270.14(b)(13)]
Please see Section 8.5.

7. Attach a copy of the most recent closure cost estimate [§270.14(b)(15)] and where applicable the post-closure cost estimate [§270.14(b)(16)].
Please see Section 10.5.

C. Tank Systems

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart J. [§270.16]

1. Provide a written assessment that is reviewed and certified by an independent, qualified, registered professional engineer as to each tank system's structural integrity and suitability for handling hazardous waste, as required under §§264.191 and 264.192.

   Please see Section 9.1.

2. *Describe the dimensions and capacity of each tank.*

   Please see Section 9.2.

3. Provide a description of feed systems, safety cutoff, bypass systems, and pressure controls (e.g., vents).

   Please see Section 9.2.

4. Attach a diagram of piping, instrumentation, and process flow for each tank system.

   Please see Section 9.2.

5. Provide a description of materials and equipment used to provide external corrosion protection, as required under §264.192(a)(3)(ii).

   Please see Section 9.1.

6. For new tank systems, provide a detailed description of how the tank system(s) will be installed in compliance with §264.192(b), (c), (d), and (e).

   N/A

7. Attach detailed plans and description of how the secondary containment system for each tank system *is or will be designed, constructed, and operated to meet the requirements of* §264.193(a), (b), (c), (d), (e), and (f).

   Please see Section 9.3.

8. For tank systems for which a variance from the requirements of §264.193 is sought as provided by §264.193(g) attach:

   N/A

   a. Detailed plans, engineering reports, and hydrogeologic reports, as appropriate, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous wastes or hazardous constituents into the ground water or surface water during the life of the facility; or

   b. A detailed assessment of the substantial present or potential hazards posed to human health or the environment should a release enter the environment.

9. Attach a description of controls and practices to prevent spills and overflows, as required under §264.194(b).

   Please see Section 9.2.

10. For tank systems in which ignitable, reactive, or incompatible wastes are to be stored or treated, provide a description of how operating procedures, tank system design, and facility design will achieve compliance with the requirements of §§264.198 and 264.199.11. Attach a schedule and procedure for meeting the inspection requirements in §§264.15 and 264.195. [§270.14(b)(5)]

    Please see Section 9.2.

11. Attach a schedule and procedure for meeting the inspection requirements in §§264.15 and 264.195. [§270.14(b)(5)]

    Please see Section 9.4.

12. Attach a copy of the closure and post-closure plan as required by §§264.112, 264.118 and 264.197. [§270.14(b)(14)]

    Please see Sections 10.1, 10.2, and 9.6.

13. Attach a copy of the plan for the response to leaks or spills and disposition of leaking or unfit-for-use tank systems as required by §264.196.

Please see Section 9.7.

14. For tank systems that do not presently meet the containment requirements of §264.193, provide a leak test or other approved method according to §264.193(i) (1), (2) and (3).

N/A

15. Attach a copy of the most recent closure cost estimate [§270.14(b)(15)] and post-closure cost estimate [§270.14(b) (16)].

Please see Section 10.5.

D. Surface Impoundments

N/A

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart K [§270.17]

1. Provide a list of the hazardous wastes placed or to be placed in each surface impoundment.

2. Attach detailed plans and an engineering report describing how the surface impoundment is or will be designed, constructed, operated, and maintained to meet the requirements of §§264.19, 264.221, 264.222 and 264.223. Address the following items:

a. The liner system (except for an existing portion of a surface impoundment). §264.221(b) allows an exemption from the requirement for a liner. To apply for the exemption, submit detailed plans, engineering reports, and hydrogeologic reports, as appropriate, which describe alternate design and operation practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the ground water or surface water at any future time;

b. The double liner and leak (leachate) detection, collection, and removal system, if the surface impoundment must meet the requirements of §264.221(c). If an exemption from the requirement is sought per §264.221(d), (e) or (f), submit appropriate information.

c. If the leak detection system is in the saturated zone, explain the leak detection system design and operation and the location of the saturated zone in relation to the leak detection system.

d. The construction quality assurance (CQA) plan if required under §264.19.

e. Proposed action leakage rate, with rationale, if required under §264.222 and response action plan if required under §264.223.

f. Prevention of overtopping; and

g. Structural integrity of dikes.

3. Attach a description of how each surface impoundment, including the double liner system, leak detection system, cover systems and appurtenances for control of overtopping, will be inspected in order to meet the requirements of §§264.226(a), (b) and (d). Include the inspection plan required under §270.14(b)(5) in this information.

4. Attach a certification by a qualified engineer which attests to the structural integrity of each dike, as required under §264.226(c). For new units, the owner or operator must submit a statement by a qualified engineer that he will provide such a certification upon completion of construction in accordance with the plans and specifications.

5. Attach a description of the procedure to be used for removing a surface impoundment from service, as required under §§264.227(b) and (c). Include this information in the contingency plan submitted under §270.14(b)(7).

6. Attach a description of how hazardous waste residues and contaminated materials will be removed from the unit at closure, as required under §264.228(a)(1). For any wastes not to be removed from the unit upon closure, the owner or operator must submit detailed plans and an engineering report describing how §§264.228(a)(2) and (b) will be complied with. Include the closure plan and, where applicable, the post-closure plan required under §§264.112, 264.118 and 264.228 with this information. [§270.14(b)(13)]

7. If placing ignitable or reactive wastes in a surface impoundment, attach an explanation of how the applicant will comply with §§264.229 and 264.17.

8. If placing incompatible wastes or incompatible wastes and materials in a surface impoundment, attach an explanation of how the applicant will comply with §§264.230 and 264.17.

9. Attach a copy of the notice placed in the deed or other instrument as required by §264.119. [§270.14(b)(14)]

10. If applicable, attach a waste management plan for EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, and F027 describing how the surface impoundment is or will be designed, constructed, operated, and maintained to meet the requirements of §264.231. Addresss the following items as specified in §264.231:

a. The volume and the physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

b. The attenuative properties of underlying and surrounding soils or other materials;

c. The mobilizing properties of other materials co-disposed with these wastes; and

d. The effectiveness of additional treatment, design, or monitoring techniques.

11. Attach a schedule and procedure for meeting the inspection requirements of §§264.15 and 264.226. [§270.14(b)(5)]

12. Attach the information described in Part II, M. - Ground Water Protection [§270.14(c)].

13. Attach the information described in Part II, O. - Exposure Information [§270.10(j)].

14. If applicable, attach the information required in §268.4 to qualify for an exemption for treatment in a surface impoundment of land disposal restricted wastes. [§270.14(b)(21)]

15. Attach a copy of the most recent closure cost estimate [§270.14(b)(15)] and post-closure cost estimate [§270.14(b)(16)].

E. Waste Piles N/A

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart L [§270.18]

1. Attach a list of hazardous wastes placed or to be placed in each waste pile.

2. To apply for an exemption to §264.251 and Subpart F of Part 264, as provided by §264.250(c) or §264.90(b), attach either an explanation of how the requirements of §264.250(c) will be complied with or detailed plans and an engineering report describing how the requirement of §264.90(b)(2) will be met.

3. Attach detailed plans and an engineering report describing how the waste pile is or will be designed, constructed, operated and maintained to meet the requirements of §§264.19, 264.251, 264.252 and 264.253. Address the following items:

a. The liner system (except for an existing portion of a waste pile). To apply for an exemption from the requirement for a liner as provided by §264.251(b), the owner or operator must submit detailed plans, engineering reports, and hydrogeologic reports, as appropriate, describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the ground water or surface water at any future time;

b. The double liner and leak (leachate) detection, collection, and removal system, if the waste pile must meet the requirements of §264.251(c). If the applicant is seeking an exemption from the requirement as described in §264.251(d), (e) or (f), submit appropriate information.

c. If the leak detection system is in the saturated zone, explain the leak detection system design and operation and the location of the saturated zone in relation to the leak detection system.

d. The construction quality assurance (CQA) plan if required under §264.19.

e. Proposed action leakage rate, with rationale, if required under §264.252 and response action plan if required under §264.253.

f. Control of run-on;

g. Control of run-off;

h. Management of collection and holding units associated with run-on and run-off control systems; and

i. Control of wind dispersal of particulate matter, where applicable.

4. Attach a description of how each waste pile, including the double liner system, leachate collection and removal system, leak detection system, cover system and appurtenances for control of run-on and run-off, will be inspected in order to meet the requirements of §§264.254(a), (b) and (c). Include this information in the inspection plan required under §264.15.

5. If treating hazardous waste on or in the pile, attach details of the process and equipment used, and the nature and quality of the residuals.

6. If placing ignitable or reactive wastes in a waste pile, attach an explanation of how the applicant will comply with the requirements of §§264.256 and 264.17.

7. If placing incompatible wastes or incompatible wastes and materials in a waste pile, attach an explanation of how the applicant will comply with §§264.257 and 264.17.

8. Attach a description of how hazardous waste residues and contaminated materials will be removed from the waste pile at closure, as required under §264.258(a). For all waste not to be removed from the waste pile upon closure, the owner or operator must submit detailed plans and an engineering report describing how §264.310(a) and (b) will be complied with. Include the closure plan and, where applicable, the post-closure plan required under §§264.112, 264.118 and 264.258 in this information. [§270.14(b)(13)]

9. If applicable, attach a copy of the notice placed in the deed or other instrument required by §264.119. [§270.14(b)(14)]

10. If applicable, attach a waste management plan for EPA hazardous wastes nos. F020, F021, F022, F023, F026, and F027 describing how a waste pile that is not enclosed, as defined in §264.250(c), is or will be designed, constructed, operated, and maintained to meet the requirements of §264.259. Address the following items as specified in §264.259:

   a. The volume and the physical and chemical characteristics of the wastes to be disposed in the waste pile, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

   b. The attenuative properties of underlying and surrounding soils or other materials;

   c. The mobilizing properties of other materials co-disposed with these wastes; and

   d. The effectiveness of additional treatment, design, or monitoring techniques.

11. Attach a schedule and procedure for meeting the inspection requirements of §§264.15 and 264.254. [§270.14(b)(5)]

12. Attach the information described in Part II, M. - Ground Water Protection. [§270.14(c)]

13. Attach a copy of the most recent closure cost estimate [§270.14(b)(15)] and post-closure cost estimate [§270.14(b)(16)].

F. Land Treatment N/A

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart M. [§270.20]

1. Attach a description of plans to conduct a treatment demonstration as required under §264.272. Include the following information:

   a. The wastes for which the applicant is making the demonstration and the potential hazardous constituents in the wastes;

b. The data sources the applicant is using to make the demonstration (e.g., literature, laboratory data, field data, or operating data); and

c. Any specific laboratory or field test the applicant conduct, including:

(1) The type of test (e.g., column leaching, degradation);
(2) Materials and methods including analytical procedures;
(3) Expected time for completion; and
(4) Characteristics of the unit that will be simulated in the demonstration including treatment zone characteristics, climatic conditions, and operating practices.

2. Attach a description of a land treatment program, as required under §264.271. Submit this information with the plans for the treatment demonstration and update it following the treatment demonstration. Address the following items:

a. The wastes to be land treated;

b. Design measures and operating practices necessary to maximize treatment in accordance with §264.273(a) including:

(1) Waste application method and rate;
(2) Measures to control soil pH;
(3) Enhance microbial or chemical reactions; and
(4) Control moisture content.

c. Provisions for unsaturated zone monitoring including:

(1) Sampling equipment, procedures, and frequency;
(2) Procedures for selecting sampling locations;
(3) Analytical procedures;
(4) Chain of custody control;
(5) Procedures for establishing background values;
(6) Statistical methods for interpreting results;
(7) The justification for any hazardous constituents recommended for selection as principal hazardous constituents, in accordance with the criteria for such selection in §264.278(a).

d. A list of hazardous constituents reasonably expected to be in, or derived from, the wastes to be land treated based on waste analysis performed pursuant to §264.13; and

e. The proposed dimensions of the treatment zone.

3. Attach a description of how the unit is or will be designed, constructed, operated, and maintained in order to meet the requirements of §264.273. Address the following items:

a. Control of run-on;

b. Collection and control of run-off;

c. Minimization of run-off of hazardous constituents from the treatment zone;

d. Management of collection and holding facilities associated with run-on and run-off control systems;

e. Periodic inspection of the unit. Include a copy of the inspection procedures required under §§264.15 and 270.14(b)(5); and

f. Control of wind dispersal of particulate matter, if applicable.

4. If the applicant will grow food-chain crops in or on the treatment zone of the land treatment unit, attach a description of how the applicant will conduct the demonstration required under §264.276(a) including:

a. Characteristics of the food-chain crop for which the demonstration will be made;

b. Characteristics of the waste, treatment zone, and waste application method and rate to be used in the demonstration;

c. Procedures for crop growth, sample collection, sample analysis, and data evaluation; and

d. Characteristics of the comparison crop including the location and conditions under which it was or will be grown.

5. If the applicant will grow food-chain crops and cadmium is present in the land-treated waste, attach a description of how the applicant will comply with the requirements of §264.276(b).

6. Attach a description of the vegetative cover to be applied to the closed portions of the facility and a plan for maintaining such cover during the post-closure care period, as required under §264.280(a)(8) and §264.280(c)(2). Include the closure plan in this information and, where applicable, the post-closure care plan required under §§264.112, 264.118 and 264.280. [§270.14(b)(13)]

7. If the applicant will place ignitable or reactive wastes in or on the treatment zone, attach an explanation of how the applicant will comply with the requirements of §§264.281 and 264.17.

8. If the applicant will place incompatible wastes or incompatible wastes and materials in or on the same treatment zone, attach an explanation of how the applicant will comply with §§264.282 and 264.17.

9. If applicable, attach a waste management plan for EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, and F027 which describes how a land treatment facility is or will be designed, constructed, operated, and maintained to meet the requirements of §264.283. Address the following items as specified in §264.283:

a. The volume and the physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

b. The attenuative properties of underlying and surrounding soils or other materials;

c. The mobilizing properties of other materials co-disposed with these wastes; and

d. The effectiveness of additional treatment, design, or monitoring techniques.

10. Attach an unsaturated zone monitoring program as required by §264.278.

11. Attach a statement of how the applicant will satisfy the recordkeeping requirement in §264.279.

12. Attach the information described in Part II, M. - Ground Water Protection. [§270.14(c)]

13. Attach a copy of the most recent closure cost estimate [§270.14(b)(15)] and post-closure cost estimate [§270.14(b)(16)].

14. If appropriate, attach evidence of an approved extension under §268.5 or an approved petition under §268.6. [§270.14(b)(21)]

G. Landfills N/A

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart N. [§270.21]

1. Attach a list of the hazardous wastes placed or to be placed in each landfill or landfill cell.

2. Attach detailed plans and an engineering report describing how the landfill is or will be designed, constructed, operated, and maintained to comply with the requirements of §§264.19, 264.301, 264.302, and 264.303. Address the following items:

a. The liner system and leachate collection and removal system (except for an existing portion of a landfill). If the applicant is seeking an exemption from the requirements for a liner and a leachate collection and removal system as provided by §264.301(b); submit detailed plans, engineering reports, and hydrogeologic reports, as appropriate; describing alternate design and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituent into the ground water or surface water at any future time;

b. The double liner and leak (leachate) detection, collection, and removal system, if the landfill must meet the requirements of §264.301(c). If the applicant is seeking an exemption from the requirement as described in §264.301(d), (e) or (f), submit appropriate information.

c. If the leak detection system is in the saturated zone, explain the leak detection system design and operation and the location of the saturated zone in relation to the leak detection system.

d. The construction quality assurance (CQA) plan if required under §264.19.

e. Proposed action leakage rate, with rationale, if required under §264.302 and response action plan if required under §264.303.

f. Control of run-on;

g. Control of run-off;

h. Management of collection and holding facilities associated with run-on and run-off control systems; and

i. Control of wind dispersal of particulate matter, where applicable.

3. If the applicant is seeking an exemption from Subpart F of Part 264 as provided by §264.90(b), submit detailed plans and an engineering report explaining the location of the saturated zone in relation to the landfill, the design of a double-liner system that incorporates a leak detection system between the liners, and a leachate collection and removal system above the liners.

4. Attach a description of how the applicant will inspect each landfill, including the double liner system, leachate collection and removal system, cover systems, and appurtenances for control of run-on and run-off, in order to meet requirements of §§264.303(a), (b) and (c). Include this information in the inspection plan required under §264.15.

5. Attach detailed plans and an engineering report describing the final cover which will be applied to each landfill or landfill cell at closure in accordance with §264.310(a). Attach a description of how the applicant will maintain and monitor each landfill after closure in accordance with §264.310(b). Include the closure and post-closure plans required under §§264.112, 264.118 and 264.310. [§270.14(b)(13)]

6. If the applicant will place ignitable or reactive wastes in the landfill, attach an explanation of how the applicant will comply with the requirements of §§264.312 and 264.17.

7. If the applicant will place incompatible wastes, or incompatible wastes and materials in the landfill, attach an explanation of how the applicant will comply with §§264.313 and 264.17.

8. If the applicant will place bulk or non-containerized liquid waste or waste containing free liquids in the landfill, attach an explanation of how the applicant will comply with the requirements of §264.314(a).

9. If the applicant will place containers of hazardous waste in the landfill, attach an explanation of how the applicant will comply with the requirements of §§264.315 or 264.316, as applicable.

10. Attach a copy of the notice the applicant placed in the deed or other instrument as required by §264.119. [§270.14(b)(14)]

11. If applicable, attach a waste management plan for EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, and F027 which describes how a landfill is or will be designed, constructed, operated, and maintained to meet the requirements of §264.317. Address the following items as specified in §264.317:

   a. The volume and the physical and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

   b. The attenuative properties of underlying and surrounding soils or other materials;

   c. The mobilizing properties of other materials co-disposed with these wastes; and

   d. The effectiveness of additional treatment, design, or monitoring techniques.

12. Attach a statement of how the applicant will comply with the surveying and recordkeeping requirements of §264.309.

13. Attach the information described in Part II, M. - Ground Water Protection. [§270.14(c)]

14. Attach the information described in Part II, O. - Exposure Information. [§270.10(j)]

15. If applicable, attach a copy of the approved extension under §268.5 or the approved petition under §268.6. [§270.14(b)(21)]

H. Incinerators N/A

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart O. [§270.19]

1. The applicant must fulfill the requirements of either section a., b., or c.:

a. When seeking an exemption under §264.340(b) or (c) (ignitable, corrosive or reactive wastes only), attach documentation showing:

(1) That the waste is listed as a hazardous waste in 40 CFR Part 261, Subpart D, solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both; or

(2) That the waste is listed as a hazardous waste in 40 CFR Part 261, Subpart D, solely because it is reactive (Hazard Code R) for characteristics other than those listed in §261.23(a)(4) and (5), and will not be burned when other hazardous wastes are present in the combustion zone; or

(3) That the waste is a hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the tests for characteristics of hazardous wastes under 40 CFR Part 261, Subpart C; or

(4) That the waste is a hazardous waste solely because it possesses the reactivity characteristics listed in §261.23(a)(1), (2), (3), (6), (7), or (8); and that it will not be burned when other hazardous wastes are present in the combustion zone.

b. Submit the results of a trial burn conducted in accordance with and including all the determinations required by the following:

(1) The trial burn must be conducted in accordance with a trial burn plan prepared by the applicant and approved by the Department. Conditions in the permit will be based on results of the trial burn. The trial burn plan will include the following information:

(a) An analysis of each waste, or mixture of wastes, to be burned which includes:

(i) Heat value of the waste in the form and composition in which it will be burned;

(ii) Viscosity (if applicable), or description of the physical form of the waste;

(iii) An identification of any hazardous organic constituents listed in 40 CFR Part 261, Appendix VIII, which are present in the waste to be burned, except that the applicant need not analyze for constituents listed in 40 CFR Part 261, Appendix VIII, which would reasonably not be expected to be found in the waste. Indentify the constituents excluded from analysis and state the basis for their exclusion. Use the analytical techniques specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" or their equivalent for the waste analysis; and

(iv) An approximate quantification of the hazardous constituents identified in the waste, within the precision produced by the analytical methods specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" or their equivalent;

(b) A detailed engineering description of the incinerator for which the applicant is seeking the permit, including:

(i) Manufacturer's name and model number of the incinerator (if available);

(ii) Type of incinerator;

(iii) Linear dimensions of the incinerator unit including the cross sectional area of combustion chamber;

(iv) Description of the auxiliary fuel system (type/feed);

(v) Capacity of prime mover;

(vi) Description of automatic waste feed cut-off system(s);

(vii) Stack gas monitoring and pollution control equipment;

(viii) Nozzle and burner design;

(ix) Construction materials; and

(x) Location and description of temperature, pressure, and flow indicating and control devices.

(c) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis;

(d) A detailed test schedule for each waste for which the applicant is planning the trial burn including date(s), duration, quantity of waste to be burned, and other factors relevant to the Department's decision under paragraph 1.b.(4) of this section;

(e) A detailed test protocol, including, for each waste identified, the ranges of temperature, waste feed rate, combustion gas velocity, use of auxiliary fuel, and any other relevant parameters that will be varied to affect the destruction and removal efficiency of the incinerator;

(f) A description of, and planned operating conditions for, any emission control equipment which will be used;

(g) Procedures for rapidly stopping waste feed, shutting down the incinerator, and controlling emissions in the event of an equipment malfunction; and

(h) Such other information as the Department reasonably finds necessary to determine whether to approve the trial burn plan in light of the purposes of this paragraph and the criteria in paragraph 1.b.(4) of this section.

(2) The Department will evaluate the sufficiency of the information provided in the trial burn plan and may require the applicant to supplement this information to achieve the purposes of this section.

(3) The Department will specify trial principal organic hazardous constituents (trial POHCs) based on the waste analysis data in the trial burn plan. The trial POHCs are those constituents for which the applicant must calculate destruction and removal efficiencies during the trial burn. The Department will specify these trial POHCs based on its estimate of the difficulty incinerating the constituents identified in the waste analysis, their concentration or mass in the waste feed, and the hazardous waste organic constituent or constituents identified as the basis for listing a waste in Appendix VII of 40 CFR Part 261, Subpart D.

(4) The Department shall approve a trial burn plan if it finds that:

(a) The trial burn is likely to determine whether the applicant can meet the incinerator performance standard required by §264.343;

(b) The trial burn itself will not present an imminent hazard to human health or the environment;

(c) The trial burn will help the Department to determine operating requirements to specify under §264.345; and

(d) The information sought in paragraphs 1.b.(4)(a) and (b) of this section cannot reasonably be developed through other means.

(5) The applicant must make the following determinations during each approved trial burn or as soon after the trial burn as is practicable:

(a) A quantitative analysis of the trial POHCs in the waste feed to the incinerator;

(b) A quantitative analysis of the exhaust gas for the concentration and mass emissions of the trial POHCs, oxygen (O_2) and hydrogen chloride (HCl);

(c) A quantitative analysis of the scrubber water (if any), ash residues, and other residues for the purpose of estimating the fate of trial POHCs;

(d) A computation of destruction and removal efficiency (DRE) in accordance with the DRE formula specified in §264.343(a);

(e) If the HCl emission rate exceeds 1.8 kilograms of HCl per hour (4 pounds per hour), a computation of HCl removal efficiency in accordance with §264.343(b);

(f) A computation of particulate emissions in accordance with §264.343(c);

(g) An identification of sources of fugitive emissions and their means of control;

(h) A measurement of average, maximum, and minimum temperatures, and combustion gas velocity;

(i) A continuous measurement of carbon monoxide (CO) in the exhaust gas; and

(j) Such other information as the Department may specify as necessary to ensure that the trial burn will determine compliance with the performance standard in §264.343 and to establish the operating conditions required by §264.345 as necessary to meet that performance standard.

6) The applicant shall submit to the Department the results of all the determinations required in paragraph 1.b.(5) of this section and a certification that the trial burn has been carried out in accordance with the approved trial burn plan. Send the certification and the results to the Department no later than 90 days from the completion of the trial burn unless the Department approves a later date.

(7) After the trial burn is completed, submit all data collected during the trial burn to the Department.

(8) A person authorized to sign a permit application or a report shall certify all submissions required by this section on behalf of the applicant.

c. In lieu of a trial burn, the applicant may submit the following information:

(1) An analysis of each waste or mixture of wastes to be burned including:

(a) Heat value of the waste in the form and composition in which it will be burned;

(b) Viscosity (if applicable) or a description of the physical form of the waste;

(c) An identification of any hazardous organic constituents listed in 40 CFR Part 261, Appendix VIII, which are present in the waste to be burned, except that the applicant need not analyze for constituents listed in 40 CFR Part 261, Appendix VIII, which would reasonably not be expected to be found in the waste. Identify the constituents excluded from analysis and state the basis for their exclusion. Use the analytical techniques specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" or their equivalent for the waste analysis;

(d) An approximate quantification of the hazardous constituents identified in the waste, within the precision produced by the analytical methods specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" or their equivalent; and

(e) A quantification of those hazardous constituents in the waste which may be designated as POHCs based on data submitted from other trial or operational burns which demonstrate compliance with the performance standard in §264.343.

(2) A detailed engineering description of the incinerator, including:

(a) Manufacturer's name and model number of the incinerator;

(b) Type of incinerator;

(c) Linear dimension of the incinerator unit including cross sectional area of the combustion chamber;

(d) Description of auxiliary fuel system (type/feed);

(e) Capacity of prime mover;

(f) Description of automatic waste feed cutoff system(s);

(g) Stack gas monitoring and pollution control monitoring system;

(h) Nozzle and burner design;

(i) Construction materials; and

(j) Location and description of temperature, pressure, and flow indicating devices and control devices.

(3) A description and analysis of the waste to be burned compared with the waste for which the applicant provided data from operational or trial burns to support the contention that a trial burn is not needed. Include those items listed in this section in the data. Specify in this analysis the POHCs which the applicant has identified in the waste for which the applicant is seeking a permit, and any differences from the POHCs in the waste for which the applicant provided burn data.

(4) The design and operating conditions of the incinerator unit to be used, compared with that for which comparative burn data are available.

(5) A description of the results submitted from any previously conducted trial burn(s), including:

(a) Sampling and analysis techniques used to calculate the performance standards in §264.343;

(b) Methods and results of monitoring temperatures, waste feed rates, carbon monoxide, and an appropriate indicator of combustion gas velocity (including a statement concerning the precision and accuracy of this measurement); and

(c) The certification and results required by paragraph 1.b.(6) of this section.

(6) The expected incinerator operation information to demonstrate compliance with §§264.343 and 264.345, including:

(a) Expected carbon monoxide (CO) level in the stack exhaust gas;
(b) Waste feed rate;
(c) Combustion zone temperature;
(d) Indication of combustion gas velocity;
(e) Expected stack gas volume, flow rate, and temperature;
(f) Computed residence time for waste in the combustion zone;
(g) Expected hydrochloric acid removal efficiency;
(h) Expected fugitive emissions and their control procedures; and
(i) Proposed waste feed cut-off limits based on the identified significant operating parameters.

(7) Such supplemental information as the Department finds necessary to achieve the purposes of this section.

(8) Waste analysis data, including that submitted in paragraph 1.b.(1)(a) of this section, sufficient to allow the Department to specify permit principal organic hazardous constituents (permit POHCs). Permit POHCs are those constituents for which the applicant must provide destruction and removal efficiencies.

(9) The Department will approve a permit application without a trial burn if it finds that:

(a) The wastes are sufficiently similar; and

(b) The incinerator units are sufficiently similar, and the data from other trial burns are adequate to specify (under §264.345) operating conditions that will ensure that the incinerator will meet the performance standards in §264.343.

2. Attach a copy of the inspection schedule which demonstrates compliance with §264.15 (General inspection requirements). Include a demonstration of compliance with §264.347 (Monitoring and inspections) unless the applicant is exempted in accordance with §264.340. [§270.14(b)(5)]

3. Attach a copy of the closure plan and post-closure plan as required in §§264.112, 264.118 and 264.351. [§270.14(b)(13)]

4. Attach a copy of the closure cost estimate [§270.14(b)(14] and post-closure cost estimate [§270.14(b)(15)].

I. Miscellaneous Units N/A

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart X. [§270.23]

1. Attach a detailed description of the unit in use or proposed for use, including the following:

a. Physical characteristics, materials of construction, and dimensions of the unit;

b. Detailed plans and engineering reports describing how the unit will be located, designed, constructed, operated [§264.73], maintained [§264.33], monitored, inspected [§264.15], and closed [§264.112] to comply with the requirements of §§264.601 and 264.602; and

c. For disposal units, a detailed description of the plans to comply with the post-closure requirements of §§264.603 and 264.118.

2. Attach detailed hydrologic, geologic, and meterologic assessments and land-use maps for the region surrounding the site that address and ensure compliance of the unit with each factor in the environmental performance standards in §264.601.

3. Attach information on the potential pathways of exposure of humans or environmental receptors to hazardous waste or hazardous constituents and on the potential magnitude and nature of such exposures as per §§264.601(a)(8), (b)(10) and (c)(6).

4. Attach a report on a demonstration of the effectiveness of the treatment of each treatment unit based on laboratory or field data.

5. If placing ignitable, reactive, or incompatible wastes in the miscellaneous unit, attach an explanation of how the applicant will comply with the requirements of §264.17.

6. Submit the information described in Part II, K. - Closure.

7. Submit the information described in Part II, M. - Ground Water Protection, if applicable. [§270.14(c)]

8. Submit the information described in Part II, O. - Exposure Information. [§264.601(a)(8) ~~270.10(j)~~]

9. Submit all additional information the Department detemines to be necessary for evaluation of the unit's compliance with the environmental performance standards of §264.601.

10. Attach a copy of the closure cost estimate [§270.14(b)(14)] and the post-closure cost estimate [§270.14(b)(15)].

J. Reserved

N/A

K. Closure

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart G. [§270.14(b)(13)]

1. Attach the following information to meet the closure performance standard of 40 CFR 264.111. 40 CFR 264.111 requires controlling, minimizing, or eliminating to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground water, surface waters or to the atmosphere. The closure plan [§264.112] must include all of the information required in Part II, Sections A through I [§270.14(b)(13)]: Please see Section 10.1.

   a. A description of how the applicant will close each hazardous waste management unit at the facility in accordance with 40 CFR 264.111;

   b. A description of how the applicant will conduct final closure of the facility in accordance with 40 CFR 264.111. The description must identify the maximum extent of the operations during the active life of the facility;

   c. An estimate of the maximum inventory of wastes ever onsite over the active life of the facility and a detailed description of the methods to be used during partial closures and final closure. The methods include but are not limited to, methods for removing, transporting, treating, storing, or disposing of all hazardous wastes. Identify the type(s) of the offsite hazardous waste management units the applicant will use, if applicable;

   d. A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure. The steps include but are not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard;

   e. A detailed description of other activities necessary during the closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including but not limited to, ground water monitoring, leachate collection, and run-on and run-off control; and

f. A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure.

g. For facilities that use trust funds to establish financial assurance under §264.143 or §264.145 and that are expected to close prior to the expiration of the operation permit, an estimate of the expected year of final closure.

2. Attach, if required, a post-closure plan as described in §264.118. The post-closure plan must include all information required by Part II, Sections A through I [§270.14(b)(13)]. The post-closure plan must contain the following information for each hazardous waste management unit at the facility subject to the requirements of 40 CFR Part 264: Please see Section 10.2.

a. The activities which will be carried on after closure for each disposal unit and the frequency of these activities;

b. A description of the planned monitoring activities and frequencies at which they will be performed to comply with Subparts F, J, K, L, M, and N of 40 CFR Part 264 during the post-closure care period;

c. A description of the planned maintenance activities and frequencies at which they will be performed. These activities are to ensure the integrity of the cap and final cover or other containment systems in accordance with the requirements of Subparts J, K, L, M and N of 40 CFR Part 264 and to ensure the function of the monitoring equipment in accordance with the requirements of Subparts F, J, K, L, M, and N of 40 CFR Part 264; and

d. The name, address, and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.

3. If closure or post-closure plans have been approved by the Department as part of a TOP, construction, or operation permit application, attach a copy of a closure and post-closure plan as required by §264.112 and §264.118. Also, either:

N/A

a. Attach a certification stating that no changes have been made to the plans which have been provided to the Department; or

b. Provide an amended plan showing all the changes which have been made, or are proposed to be made, to the plans which have been provided to the Department.

4. For facilities applying for a closure permit, the applicant must submit a Quality Assurance Plan that meets the requirements of Chapter 17-760, F.A.C. N/A

L. Compliance Schedule N/A

The applicant may, at his option, propose a compliance schedule for achieving compliance with any standards that have not been met in accordance with Rule 17-730.280(4), F.A.C. and 40 CFR 270.14(c)(8)(v) and 270.33. The Department will take this proposal into consideration when developing a compliance schedule.

M. Ground Water Protection N/A

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart F. [§270.14(c)]

Owners or operators of hazardous waste surface impoundments, piles, land treatment units, miscellaneous units, and landfills must provide the following additional information regarding protection of ground water except as otherwise provided in §264.90(b):

1. A summary of the ground water monitoring data obtained during the interim status period under §§265.90 through 265.94, where applicable;

2. Identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including ground water flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic investigations of the facility area including ground water contour maps);

3. On the topographic map required under Part II, A.1., a delineation of the waste management area, the property boundary, the proposed "point of compliance" as defined under §264.95, the proposed location of ground water monitoring wells as required under §264.97, and, to the extent possible, the information required in 2. above;

4. A description of any plume of contamination that has entered the ground water from a regulated unit at the time that the application is submitted that:

   a. Delineates the vertical and horizontal extent of the plume on the topographic map required under Part II, A.1.; and

   b. Identifies the concentration of each hazardous constituent in Appendix IX of 40 CFR Part 264 throughout the plume or identifies the maximum concentrations of each hazardous constituent in Appendix IX of 40 CFR Part 264 in the plume.

5. Detailed plans and an engineering report describing the proposed ground water monitoring program the applicant will implement to meet the requirements of §264.97;

6. If the presence of hazardous constituents has not been detected in the ground water at the time the applicant applies for a permit, the owner or operator must submit sufficient information, supporting data, and analyses to establish a detection monitoring program which meets the requirements of §264.98. Address the following items as specified under §264.98:

   a. A proposed list of indicator parameters, waste constituents, or reaction products that can provide a reliable indication of the presence of hazardous constituents in the ground water;

   b. A proposed ground water monitoring system;

   c. Background values for each proposed monitoring parameter or constituent, or procedures to calculate such values; and

   d. A description of proposed sampling, analysis and statistical comparison procedures to be used in evaluating ground water monitoring data.

7. If the applicant detects the presence of hazardous constituents in the ground water at the point of compliance at the time the applicant applies for a permit, the owner or operator must submit sufficient information, supporting data, and analyses to establish a compliance monitoring program which meets the requirements of §264.99. The owner or operator must also submit an engineering feasibility plan for a corrective action program necessary to meet the requirements of §264.100 and Rule 17-730.180(4), FAC except as provided in §264.98(h)(5). The owner or operator must address the following items to demonstrate compliance with §264.99:

a. A description of the wastes previously handled at the facility;

b. A characterization of the contaminated ground water, including concentrations of hazardous constituents;

c. A list of hazardous constituents for which the applicant will conduct compliance monitoring in accordance with §§264.97 and 264.99;

d. Proposed concentration limits for each hazardous constituent, based on the criteria set forth in §264.94(a), including a justification for establishing any alternate concentration limits;

e. Detailed plans and an engineering report describing the proposed ground water monitoring system, in accordance with the requirements of §264.97; and

f. A description of proposed sampling, analysis and statistical comparison procedures to be utilized in evaluating ground water monitoring data.

8. If the applicant measured hazardous constituents in the ground water which exceed the concentration limits established under §264.94 Table 1, or if ground water monitoring conducted at the time of permit application under §§265.90 through 265.94 at the waste boundary indicates the presence of hazardous constituents from the facility in ground water over background concentrations, the owner or operator must submit sufficient information, supporting data, and analyses to establish a corrective action program. The corrective action must meet the requirements of §§264.100 and 264.101 and Rule 17-730.180(4), F.A.C. However, an owner or operator is not required to submit information to establish a corrective action program if the owner or operator demonstrates to the Department that alternate concentration limits will protect human health and the environment after considering the criteria listed in §264.94(b). An owner or operator who is not required to establish a corrective action program for this reason must instead submit sufficient information to establish a compliance monitoring program which meets the requirements of §264.99 and 7. above. To demonstrate compliance with §§264.100 and 264.101 and Rule 17-730.180(4), F.A.C., the owner or operator must address, at a minimum, the following items:

a. A characterization of the contaminated ground water, including concentrations of hazardous constituents;

b. The concentration limit for each hazardous constituent found in the ground water as set forth in §264.94;

c. Detailed plans and an engineering report describing the corrective action to be taken;

d. A description of how the ground water monitoring program will assess the adequacy of the corrective action; and

e. A description of the wastes previously handled at the facility.

9. The requirements of Chapters 17-3 and 17-4, F.A.C.;

Hazardous waste facilities which may impact the ground water must also comply with the ground water provisions of Chapters 17-3 and 17-4, F.A.C. [Rule 17-730.180(4)(c), F.A.C.].

10. Additional ground water monitoring requirements:

a. Do not use filters when taking ground water samples. Use filtered samples for comparison purposes only.

b. The applicant must complete and submit a Well Construction Summary Report [DEP Form 17-730.900(2)(b)] for each piezometer, ground water monitoring and recovery well installed as part of initial site assessment and any ground water monitoring program(s) under 40 CFR Parts 264 and 265.

11. A Quality Assurance Plan that meets the requirements of Chapter 17-160, F.A.C.; and

12. The applicant must have all documents submitted pursuant to this section that entail the practice of professional geology signed and sealed in accordance with Rules 17-4.050(3) and 17-730.220(7), F.A.C.

Instructions For Well Construction Summary Report

A. Elevation: The land surface elevation at the well location and the elevation of the top of casing (TOC) must be reported relative to mean sea level (MSL).

B. Turbidity: Measurements must be made immediately after completing well development.

C. Casing: List the material of each casing used (PVC, stainless steel, etc.) in order of emplacement in each well, the inside and outside diameter of each casing, and the top and bottom depth of each casing (or series of casings where identical casings are used) relative to ground surface.

D. Screen: List the material of the monitoring screen, inside and outside diameter of the screen, the top and bottom depth of the screen (relative to ground surface) and the manufactured slot (or perforation) size of the screen.

E. Annulus: List the material(s) used to seal the annular space of the well along with any additives, the size of the material (filter pack), the depth interval (relative to ground surface), and the method used to install the material (tremie pipe, pouring, etc.).

F. Drilling method: List drilling method(s) used to install the well (mud-rotary, etc.), the diameters of the bit or auger used, the drilling interval (relative to ground surface) for each method or bit/auger diameter used, and the type of drilling fluids used.

G. Well construction diagram: The diagram should show the final construction details of the well including surface elevation, hole diameter, casing length, casing material, screen length, screen material, annulus sealant, and total depth of the well. Indicate height (relative to ground surface) of stickup and the type of security used for the well.

H. Latitude, Longitude: These must be reported to the nearest one-hundreth (.01) of a second.

I. The field geologist is the person responsible for lithologic descriptions.

WELL CONSTRUCTION SUMMARY REPORT

Well Constru
Diagram
Surface (msl) ____

Facility ____________________

EPA Identification Number ____________________

Well identification ____________________

Date(s) of installation ____________________

Well driller's complete name ____________________

Well driller's license number ____________________

Latitude

D	D	M	M	S	S	S	S

Longitude

D	D	M	M	S	S	S	S

Elevation surface ____________ Elevation TOC ____________

Surveyor's name ____________ Surveyor's License #____________

Turbidity ________ Date of reading

M	M	D	D	Y	Y

Static water level (msl) ________ Field geologist ____________

Casing:

Material	Outside Diameter	Inside Diameter	Depth	
			From (ft)	To (ft)

Screen:

Material	Outside Diameter	Inside Diameter	Depth		Slot Size
			From (ft)	To (ft)	

Annulus:

Material including Additives for sealant	Size of Material	Depth		Installation Method
		From (ft)	To (ft)	

Drilling Method	Bit/auger Diameter	From (ft)	To (ft)	Drilling fluids

scale: 1 unit= ____

N. Research, Development and Demonstration N/A

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart F. [§270.65]

1. The applicant should submit a letter to the Department summarizing the proposed research prior to submitting the formal application so that the Department may, in accordance with Rule 17-730.330(2), F.A.C., determine if it can waive any of the requirements of the application. This letter should contain:

   a. The purpose of the research;
   b. An explanation of why the research is innovative and experimental; and
   c. A summary of the research objectives.

2. The applicant should submit the following information as part of the formal application:

   a. The purpose of this project;
   b. An explanation as to why the proposed activity is experimental and innovative;
   c. A general description of the proposed activity;
   d. The estimated time of operation for the experimental activities;
   e. All information on the expected performance of the unit; and
   f. A description of performance data that may have been previously generated from the operation of the unit.

3. The applicant should establish monitoring and inspection requirements at a level consistent with the proposed activity in order to assure protection of human health and the environment.

4. The applicant should propose to report and keep records in a manner which will provide the Department with sufficient data about the operating efficiency of the RD&D activity. The applicant should propose to submit data at a frequency adequate to allow proper Department oversight of the experimental activity.

5. The applicant should describe the qualifications of personnel. The personnel responsible for conducting and managing the experimental testing should be technically competent to assure that all situations which arise as a result of the experimental activity will be handled properly.

6. The applicant should prepare a closure plan in accordance with the appropriate sections of Part II.

O. Exposure Information N/A

The applicant must provide the following information if the facility has a surface impoundment [§264.601(a)(8)] or a landfill [§270.10(j)]:

1. Reasonably foreseeable potential releases from both normal operations and accidents at the unit, including releases associated with transportation to or from the unit.

2. The potential pathways of human exposure to hazardous wastes or constituents resulting from the release described under 1. of this section.

3. The potential magnitude and nature of the human exposure resulting from such releases.

P. Information Regarding Potential Releases From Solid Waste Management Units

A Solid Waste Management Unit (SWMU) is a discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include all areas at a facility where solid wastes have been routinely and systematically released, as described in the July 27, 1990 Federal Register (55 FR 30798). The SWMU list in DEP Form 17-730.900(2)(c) does not include all types of SWMUs; these are a sampling of the more common types of units. If you have a different type of Solid Waste Management Unit, mark yes under "other".

P. Information Regarding Potential Releases From Solid Waste Management Units

Facility name: Safety-Kleen Corp. Medley Branch Service Center

EPA I.D. Number: FLD 984 171 694

Location: City Medley

State Florida

1. Are there any of the following solid waste management units (existing or closed) at your facility? A Solid Waste Management Unit (SWMU) is a discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include all areas at a facility where solid wastes have been routinely and systematically released, as described in the July 27, 1990 Federal Register (55 FR 30798).

NOTE: DO NOT INCLUDE HAZARDOUS WASTES UNITS CURRENTLY SHOWN IN YOUR PART B APPLICATION

	YES	NO
■ Landfill		X
■ Surface impoundment		X
■ Land farm		X
■ Waste pile		X
■ Incinerator		X
■ Storage tank		X
■ Container storage area		X
■ Injection wells		X
■ Wastewater treatment units		X
■ Transfer stations		X
■ Waste recycling operations		X
■ Land treatment facility		X
■ Boiler/industrial furnace		X
■ Other (units not listed above)		X

2. If there are "Yes" answers to any of the items in 1. above, please provide a description of the wastes that were stored, treated or disposed of in each unit. In particular please focus on whether or not the wastes would be considered as hazardous wastes or hazardous constituents under RCRA. Also include any available data on quantities or volumes of wastes disposed of and the dates of disposal. Please also provide a description of each unit and include capacity, dimensions, and location at facility. Provide a site plan if available.

Not applicable

NOTE: HAZARDOUS WASTES ARE THOSE IDENTIFIED IN 40 CFR PART 261. HAZARDOUS CONSTITUENTS ARE THOSE LISTED IN APPENDIX VIII OF 40 CFR PART 261.

3. For the units noted in 1. above **and also for those hazardous waste units in your Part B application,** please describe for each unit all data available on all prior or current releases of hazardous wastes or constituents to the environment that may have occurred in the past or still be occurring.

Please provide the following information:

a. Date of release
b. Type of waste released
c. Quantity or volume of waste released
d. Describe nature of release (i.e., spill, overflow, ruptured pipe or tank, etc.)

Please see page 45-A

Date		Amount (gal)	
10/23/96	105 Solvent	32	Faulty tank coupling resulted in spill within secondary containment.
09/30/92	Perchloroethylene	1-2	Leaky drum within containment area.
04/02/93	Waste Mineral Spirits	7	Wet dumpster overfilled within spill containment area due to nozzle being left partially open.
04/12/93	Waste Trichloroethylene	<1	Leaky drum within containment area.
04/26/93	Waste Trichloroethylene	<0.25	Leaky drum within containment area.
05/06/93	Waste Mineral Spirits	2	Leaking seal on waste solvent pump; occurred within secondary containment.
09/29/93	Waste Mineral Spirits	5	Drum of sludge generated while cleaning wet dumpster tipped; occurred within secondary containment.
09/30/93	Clean Mineral Spirits	1	Leaky nozzle; occurred within secondary containment.
02/02/94	Mineral Spirits Sludge	19	Worker slipped when dumping sludge into wet dumpster.
07/13/95	Lacquer Thinner	5	5-gallon container fell off pallet; completely recovered with absorbent material.

4. In regard to the prior releases described in 3. above, please provide (for each unit) all analytical data that may be available which would describe the nature and extent of environmental contamination that exists as a result of such releases. Please focus on concentrations of hazardous wastes or constituents present in contaminated soil or ground water.

All of the above spills occurred within areas of secondary containment, or were cleaned up completely using absorbent materials.

Signature and Certification

The following certification must be included with the submittal of this information. The certification must be signed by a principal executive officer of at least the level of Vice President or, by a duly authorized representative of that person.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments. Based on my inquiry of those individuals immediately responsible for obtaining the information, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature

Edward Genovese, Regional Sales Manager
Name and Title (typed)

Tampa Branch Service Center
Facility Name

Date: 5-29-97 Telephone: (813) 682-9084

Q. Information Requirements For Solid Waste Management Units N/A

1. The applicant must provide the following information for each solid waste management unit [§270.14]:

   a. The location of the unit on the topographic map;
   b. Designation of type of unit;
   c. General dimensions and structural description (supply all available drawings);
   d. When the unit was operated; and
   e. Specification of all wastes managed at the unit.

2. The applicant must submit all available information pertaining to all releases of hazardous waste or hazardous constituents from each unit.

3. The applicant must attach the results of sampling and analysis of ground water, landsurface, and subsurface strata, surface water, or air. The sampling and analysis may include the installation of wells. The Department will determine what sampling and analysis is necessary to complete the RCRA Facility Assessment.

R. Process Vents

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart AA or Part 265, Subpart AA. [§270.24] Please see Section 11.

1. Facilities that cannot install a closed-vent system and control device to comply with the provisions of 40 CFR Part 264, Subpart AA or Part 265, Subpart AA on the effective date that the facility becomes subject to the provisions of these subparts, must attach an implementation schedule as specified in §264.1033(a)(2).

2. Attach documentation of compliance with the process vent standards in §264.1032, including:

   a. Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and for the overall facility (i.e., the total emissions for all affected vents at the facility), and the approximate location within the facility of each affected unit (e.g., identify the hazardous waste management units on a facility plot plan);

   b. Information and data supporting estimates of vent emissions and emission reduction achieved by add-on control devices based on engineering calculations or source tests. For the purpose of determining compliance, make estimates of vent emissions and emission reductions using operating parameter values (e.g., temperatures, flow rates, or concentrations) that represent the conditions that exist when the waste management unit is operating at the highest load or capacity level reasonably expected to occur; and

   c. Information and data used to determine whether or not a process vent is subject to the requirements of §264.1032.

3. If the applicant proposes to use a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system to comply with the requirements of §264.1032, and chooses to use test data to determine the organic removal efficiency or the total organic compound concentration achieved by the control device, submit a performance test plan as specified in §264.1035(b)(3).

4. Attach documentation of compliance with §264.1033, including:

a. A list of all information references and sources used in preparing the documentation;

b. Records, including the dates, of each compliance test required by §264.1033(k);

c. A design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of "APTI Course 415: Control of Gaseous Emissions" or other engineering texts acceptable to the Department that present basic control device design information. The design analysis shall address the vent stream characteristics and control device operation parameters as specified in §264.1035(b)(4)(iii);

d. A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur; and

e. A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95 weight percent or greater unless the total organic emission limits of §264.1032(a) for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent.

S. Requirements For Equipment

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart BB. [§270.25]

Please see Section 11.

1. Attach the following information for each piece of equipment to which Subpart BB of Part 264 applies:

a. Equipment identification number and hazardous waste management unit identification;

b. Approximate locations within the facility (e.g., identify the hazardous waste management unit on a facility plot plan);

c. Type of equipment (e.g., a pump or pipeline valve);

d. Percent by weight total organics in the hazardous waste stream at the equipment;

e. Hazardous waste state at the equipment (e.g., gas/vapor or liquid); and

f. Method of compliance with the standard (e.g., "monthly leak detection and repair" or "equipped with dual mechanical seals").

2. Facilities that cannot install a closed-vent system and control device to comply with the provisions of 40 CFR 264, Subpart BB on the effective date that the facility becomes subject to the provisions of 40 CFR 264 or 265, Subparts BB, attach an implementation schedule as specified in §264.1033(a)(2).

3. If the applicant proposes to use a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system and chooses to use test data to determine the organic removal efficiency or the total organic compound concentration achieved by the control device, submit a performance test plan as specified in §264.1035(b)(3).

4. Attach documentation that demonstrates compliance with the equipment standards in §§264.1052 to 264.1059. This documentation shall contain the records required under §264.1064. The Department may request further documentation before deciding if the applicant demonstrated compliance.

5. Attach documentation to demonstrate compliance with §264.1060. Include the following information:

a. A list of all information references and sources used in preparing the documentation;

b. Records including the dates of each compliance test required by §264.1033(j);

c. A design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of "APTI Course 415: Control of Gaseous Emissions" or other engineering texts acceptable to the Department that present basic control device design information. The design analysis shall address the vent stream characteristics and control device operation parameters as specified in §264.1035(b)(iii);

d. A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur; and

e. A statement signed and dated by the owner or operator certifying that the control device is designed to operated at an efficiency of 95 weight percent or greater.

T. Boilers and Industrial Furnaces N/A

The applicant must provide the following information in accordance with 40 CFR Part 266, Subpart H. [§270.22]

1. The applicant must conduct a trial burn and must submit a trial burn plan or the results of a trial burn, including all required determinations [§270.66], if the applicant is subject to certain standards in 40 CFR Part 266. The standards are to control organic emissions [§266.104]; particulate matter [§266.105]; metals emissions [§266.106]; or hydrogen chloride or chloride gas emissions [§266.107].

a. Applicants for new boilers and industrial furnaces (those not operating under a TOP under Rule 62-730.231, F.A.C. and §266.103) are subject to paragraphs 1.b. through 1.f. of this section. Boilers and industrial furnaces operating under a TOP are subject to paragraph 1.g. of this section. [§270.66(a)]

b. A permit for a new boiler or industrial furnace must specify appropriate conditions for the Pretrial Burn Period, the Trial Burn Period, and the Post-Trial Burn Period. [§270.66(b)] The applicant must:

(1) Submit a statement describing the conditions necessary to operate in compliance with the standards of §§266.104 through 266.107 during the Pretrial Burn Period. This statement should

include, at a minimum, restrictions on the applicable operating requirements identified in §266.102(e). [§270.66(b)(1)(i)]

(2) Propose a trial burn plan, prepared under paragraph 1.c. of this section, to be submitted with Part II of the permit application. [§270.66(b)(2)]

(3) Submit a statement that identifies the conditions necessary to operate during the Post-Trial Burn Period in compliance with the performance standards of §§266.104 through 266.107. This statement should include, at a minimum, restrictions on the operating requirements provided by §266.102(e). [§270.66(b)(3)(ii)]

c. Submit a trial burn plan that includes the following information [§270.66(c)]:

(1) An analysis of each feed stream as fired, including hazardous waste, other fuels, and industrial furnace feed stocks. Include in the analysis:

(a) Heating value, levels of antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, thallium, total chlorine/chloride, and ash;

(b) Viscosity or a description of the physical form of the feed stream;

(2) An analysis of each hazardous waste, as fired, including:

(a) An identification of any hazardous organic constituents listed in 40 CFR Part 261, Appendix VIII that are present in the feed stream, except that the applicant need not analyze for constituents listed in Appendix VIII that would reasonably not be expected to be found in the hazardous waste. Identify the constituents excluded from analysis and explain the basis for this exclusion. Use the analytical techniques specified in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (adopted by reference in Rule 62-730.021, F.A.C.), or their equivalent.

(b) An approximate quantification of the hazardous constituents identified in the hazardous waste, within the precision produced by the analytical methods specified in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (adopted by reference in Rule 62-730.021, F.A.C.), or other equivalent.

(c) A description of blending procedures prior to firing the hazardous waste, if applicable, including a detailed analysis of the hazardous waste prior to blending, an analysis of the material with which the hazardous waste is blended, and blending ratios.

(3) A detailed engineering description of the boiler or industrial furnace, including:

(a) Manufacturer's name and model number of the boiler or industrial furnace;

(b) Type of boiler or industrial furnace;

(c) Maximum design capacity in appropriate units;

(d) Description of the feed system for the hazardous waste, and, as appropriate, other fuels and industrial furnace feedstocks;

(e) Capacity of hazardous waste feed system;

(f) Description of automatic hazardous waste feed cutoff system(s);

(g) Description of any pollution control system; and

(h) Description of stack gas monitoring and any pollution control monitoring systems.

(4) A detailed description of sampling and monitoring procedures including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

(5) A detailed test schedule for each hazardous waste for which the trial burn is planned, including date(s), duration, quantity of hazardous waste to be burned, and other factors relevant to the Department's decision under paragraph 1.b.(2) of this section.

(6) A detailed test protocol, including, for each hazardous waste identified, the ranges of hazardous waste feed rate, and, as appropriate, the feed rates of other fuels and industrial furnace feedstocks, and any other relevant parameters that may affect the ability of the boiler or industrial furnace to meet the performance standards in §§266.104 through 266.107.

(7) A description of, and planned operating conditions for, any emission control equipment that will be used.

(8) Procedures for rapidly stopping the hazardous waste feed and controlling emissions in the event of an equipment malfunction.

d. Conduct a Trial Burn to demonstrate conformance with the standards of §§266.104 through 266.107 under an approved trial burn plan.

(1) Submit a certification that the trial burn has been carried out in accordance with the approved trial burn plan.

(2) Submit within 90 days of completion of the trial burn, or later if approved by the Department, the results of all the determinations required in paragraph 1.c. of this section.

(a) Submit all data collected during a trial burn following completion of the trial burn.

(b) Certify all submissions required by this paragraph on behalf of the applicant by the signature of a person authorized to sign a permit application or a report under §270.11.

e. The applicant must make the following determinations based on the approved trial burn [§270.66(f)]:

(1) A quantitative analysis of the levels of antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, thallium, silver, and chlorine/chloride, in the feed streams (hazardous waste, other fuels, and industrial furnace feedstocks);

(2) When a DRE trial burn is required under §266.104(a):

(a) A quantitative analysis of the trial POHCs in the hazardous waste feed;

(b) A quantitative analysis of the stack gas for the concentration and mass emissions of the trial POHCs; and

(c) A computation of destruction and removal efficiency (DRE), in accordance with the DRE formula specified in §266.104(a);

(3) When a trial burn for chlorinated dioxins and furans is required under §266.104(e) a quantitative analysis of the stack gas for the concentration and mass emission rate of the 2,3,7,8-chlorinated tetra-octa congeners of chlorinated dibenzo-p-dioxins and furans, and a computation showing conformance with the emission standard.

(4) When a trial burn for particulate matter, metals, or HCl/Cl_2 is required under §§266.105, 266.106 (c) or (d), or 266.107 (b)(2) or (c) a quantitative analysis of the stack gas for the concentrations and mass emissions of particulate matter, metals, or hydrogen chloride (HCl) and chlorine (Cl_2), and computations showing conformance with the applicable emission performance standards;

(5) When a trial burn for DRE, metals, or HCl/Cl_2 is required under §§266.104(a), 266.106 (c) or (d), or 266.107 (b)(2) or (c) a quantitative analysis of the scrubber water (if any), ash residues, other residues, and products for the purpose of estimating the fate of the trial POHCs, metals, and chlorine/chloride;

(6) An identification of sources of fugitive emissions and their means of control;

(7) A continuous measurement of carbon monoxide (CO), oxygen, and where required, hydrocarbons (HC), in the stack gas; and

(8) Such other information as the Department may specify as necessary to ensure that the trial burn will determine compliance with the performance standards in §§266.104 through 266.107 and to establish the operating conditions required by §266.102(e) as necessary to meet those performance standards.

f. **TOPs for boilers and industrial furnaces.** For the purpose of determining feasibility of compliance with the performance standards of §§266.104 through 266.107 and of determining adequate operating conditions under §266.103, applicants owning or operating existing boilers or industrial furnaces operated under the interim status standards of §266.103 must either prepare and submit a trial burn plan and perform a trial burn in accordance with the requirements of this section or submit other information as specified in §270.22(a)(6). Applicants who submit a trial burn plan and receive approval before submission of Part II of the Hazardous Waste Facility Permit Application must complete the trial burn and submit the results specified in paragraph 1.f. of this section with Part II of the permit application. If completion of this process conflicts with Rule 62-730.231(8), F.A.C., for submission of Part II of the Hazardous Waste Facility Permit Application, the applicant must contact the Department to establish a later date for submission the trial burn results. If the applicant submits a trial burn plan with Part II of the permit application, the trial burn must be conducted and the results submitted within a time period prior to permit issuance to be specified by the Department. [§270.66(g) and Rule 62-730.231(8), F.A.C.]

2. Submit documentation that the boiler operates under the special operating requirements provided by §§266.104(a)(4) and 266.110 when seeking a Waiver of a Trial Burn for DRE. [§270.22(a)(2)(i)]

3. Submit the following when seeking provision for low risk wastes for boilers and industrial furnaces in §§266.104(a)(5) and 266.109(a) [§270.22(a)(2)(ii)]:

a. Documentation that the device is operated in conformance with the requirements of §266.109(a)(1).

b. Results of analyses of each waste to be burned, documenting the concentrations of nonmetal compounds listed in 40 CFR Part 261, Appendix VIII, except for those constituents that would reasonably not be expected to be in the waste. Identify the constituents excluded from analysis and explain the basis for their exclusion. Rely on analytical techniques specified in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods for the analysis (adopted by reference, see Rule 62-730.021, F.A.C.).

c. Documentation of hazardous waste firing rates and calculations of reasonable, worst-case emission rates of each constituent identified in 3.b. of this section using procedures provided by § 266.109(a)(2)(ii).

d. Results of emissions dispersion modeling for emissions identified in 3.c. of this section using modeling procedures prescribed by §266.106(h).

e. Documentation that the maximum annual average ground level concentration of each constituent identified in 3.b. of this section quantified in conformance with 3.d. of this section does not exceed the allowable ambient level established in 40 CFR Part 266, Appendix IV or Appendix V. The acceptable ambient concentration for emitted constituents for which a specific Reference Air Concentration has not been established in Appendix IV or Risk-Specific Dose has not been established in Appendix V is 0.1 micrograms per cubic meter, as noted in the footnote to Appendix IV.

4. Submit the following when seeking a Waiver of Trial Burn for Metals under the Tier I (or adjusted Tier I) metals feed rate screening limits in §266.106 (b) and (e): [§270.22(a)(3)]

a. Documentation of the feed rate of hazardous waste, other fuels, and industrial furnace feed stocks;

b. Documentation of the concentration of each metal controlled by §266.106 (b) or (e) in the hazardous waste, other fuels, and industrial furnace feedstocks, and calculations of the total feed rate of each metal;

c. Documentation of how the applicant will ensure that the Tier I feed rate screening limits provided by §266.106 (b) or (e) will not be exceeded during the averaging period;

d. Documentation to support the determination of the terrain-adjusted effective stack height, good engineering practice stack height, terrain type, and land use as provided by §266.106 (b)(3) through (b)(5);

e. Documentation of compliance with the provisions of §266.106(b)(6), if applicable, for facilities with multiple stacks;

f. Documentation that the facility does not fail the criteria provided by §266.106(b)(7) for eligibility to comply with the screening limits; and

g. Proposed sampling and metals analysis plan for the hazardous waste, other fuels, and industrial furnace feed stocks.

5. Submit documentation supporting the low risk waste provisions of §266.109(b) for a Waiver of Trial Burn for Particulate Matter and 3. and 4. of this section. [§270.22(a)(4)]

6. Submit the following when seeking a Waiver of Trial Burn for HCl and Cl_2 under the Tier I (or adjusted Tier I) feed rate screening limits for total chloride and chlorine in §266.107 (b)(1) and (e): [§270.22(a)(5)]

a. Documentation of the feed rate of hazardous waste, other fuels, and industrial furnace feed stocks;

b. Documentation of the levels of total chloride and chlorine in the hazardous waste, other fuels, and industrial furnace feedstocks, and calculations of the total feed rate of total chloride and chlorine;

c. Documentation of how the applicant will ensure that the Tier I (or adjusted Tier I) feed rate screening limits provided by §266.107 (b)(1) or (e) will not be exceeded during the averaging period provided by that paragraph;

d. Documentation to support the determination of the terrain-adjusted effective stack height, good engineering practice stack height, terrain type, and land use as provided by §266.107(b)(3);

e. Documentation of compliance with the provisions of §266.107(b)(4), if applicable, for facilities with multiple stacks;

f. Documentation that the facility does not fail the criteria provided by §266.107(b)(3) for eligibility to comply with the screening limits; and

g. Proposed sampling and analysis plan for total chloride and chlorine for the hazardous waste, other fuels, and industrial furnace feestocks.

7. The applicant may submit Data in Lieu of a Trial Burn. The owner or operator may seek an exemption from the trial burn requirements to demonstrate conformance with §§266.104 through 266.107 and §270.66 by providing the information required by §270.66 from previous compliance testing of the device in conformance with §266.103 or from compliance testing or trial or operational burns of similar boilers or industrial furnaces burning similar hazardous wastes under similar conditions. If data from a similar device is used to support a trial burn waiver, provide the design and operating information required by §270.66 for both the similar device and the device to which the data is to be applied, and provide a comparison of the design and operating information. In addition, submit the following information: [§270.22(a)(6)]

a. For a waiver from any trial burn:

(1) A description and analysis of the hazardous waste to be burned compared with the hazardous waste for which data from compliance testing, or operational or trial burns are provided to support the contention that a trial burn is not needed;

(2) The design and operating conditions of the boiler or industrial furnace to be used, compared with that for which comparative burn data are available; and

(3) Such supplemental information as the Department finds necessary to achieve the purposes of this paragraph.

b. For a waiver of the DRE trial burn, the basis for selection of POHCs used in the other trial or operational burns which demonstrate compliance with the DRE performance standard in §266.104(a). This analysis should specify the constituents in 40 CFR Part 261, Appendix VIII, that the applicant has identified in the hazardous waste for which the applicant is seeking a permit, and all differences from the POHCs in the hazardous waste for which the applicant provided burn data.

8. Submit the following information for an alternative HC limit for industrial furnaces with organic matter in raw materials under §266.104(f): [§270.22(b)]

a. Documentation that the furnace is designed and operated to minimize HC emissions from fuels and raw materials;

b. Documentation of the proposed baseline flue gas HC (and CO) concentration, including data on HC (and CO) levels during tests when the facility produced normal products under normal operating conditions from normal raw materials while burning normal fuels and when not burning hazardous waste;

c. Test burn protocol to confirm the baseline HC (and CO) level including information on the type and flow rate of all feedstreams, point of introduction of all feedstreams, total organic carbon content (or other appropriate measure of organic content) of all nonfuel feedstreams, and operating conditions that affect combustion of fuel(s) and destruction of hydrocarbon emissions from nonfuel sources;

d. Trial burn plan to:

(1) Demonstrate that flue gas HC (and CO) concentrations when burning hazardous waste do not exceed the baseline HC (and CO) level; and

(2) Identify the types and concentrations of organic compounds listed in 40 CFR Part 261, Appendix VIII, that are emitted when burning hazardous waste in conformance with procedures prescribed by the Department;

e. Implementation plan to monitor over time changes in the operation of the facility that could reduce the baseline HC level and procedures to periodically confirm the baseline HC level; and

f. Such other information as the Department finds necessary to achieve the purposes of this paragraph.

9. Submit documentation specifying how the Alternative metals implementation approach under §266.106(f) ensures compliance with the metals emissions standards of §266.106(c) or (d) and how the approach can be effectively implemented and monitored. [§270.22(c)]

10. Submit information describing the automatic waste feed cutoff system, including any pre-alarm systems that may be used. [§270.22(d)]

11. Submit information supporting conformance with the standards for direct transfer operations to feed hazardous waste from transport vehicles directly to the boiler or industrial furnace provided by §266.111. [§270.22(e)]

12. Submit information adequate to demonstrate conformance with the provisions of §266.112 regarding residues excluded from regulation. [§270.22(f)]

13. Attach a copy of the closure cost estimate [§270.14(b)(14)] and the post-closure care cost estimate [§270.14(b)(15)].

U. Requirements For Drip Pads N/A

The applicant must provide the following information in accordance with 40 CFR Part 264, Subpart W. [§270.26]

1. Attach the following additional information, except as otherwise provided by §264.1, for management of hazardous waste on drip pads:

a. A list of hazardous wastes placed or to be placed on each drip pad.

b. If the applicant is seeking an exemption to 40 CFR Part 264, Subpart F, as provided by §264.90, attach detailed plans and an engineering report describing how the applicant will satisfy the requirements of §264.90(b)(2).

c. Attach detailed plans and an engineering report describing how the drip pad is or will be designed, constructed, operated and maintained to meet the requirements of §264.573, including the as-built drawings and specifications. Address the following items as specified in §264.571:

(1) The design characteristics of the drip pad;

(2) The liner system;

(3) The leakage detection system, including the leak detection system and how it is designed to detect the failure of the drip pad or the presence of any releases of hazardous waste or accumulated liquid at the earliest practicable time;

(4) Practices designed to maintain the drip pads;

(5) The associated collection system;

(6) Control of run-on to the drip pad;

(7) Control of run-off from the drip pad;

(8) The interval at which the applicant will remove drippage and other materials from the associated collection system and a statement demonstrating that the interval is sufficient to prevent overflow onto the drip pad;

(9) Procedures for cleaning the drip pad at least once every seven days to ensure the removal of any accumulated residues of waste or other materials. Procedures should include but not be limited to rinsing, washing with detergents or other appropriate solvents, or steam cleaning. Describe the provisions for documenting the date, time, and cleaning procedure used each time the pad is cleaned.

(10) Operating practices and procedures that pesonnel will follow to ensure that they minimize the tracking of hazardous waste or waste constituents off the drip pad due to their or equipment activities;

(11) *Procedures (including recordkeeping practices) for ensuring* that, *after removal from the* treatment vessel, personnel hold treated wood from pressure and non-pressure processes on the drip pad until drippage has ceased;

(12) Provisions for ensuring that personnel empty or otherwise manage collection and holding units associated with the run-on and run-off control systems as soon as possible after storms to maintain design capacity of the system;

(13) If the applicant is treating hazardous waste on the drip pad, details of the process equipment used and the nature and quality of the residuals.

(14) A description of how personnel will inspect each drip pad, including appurtenances for control of run-on and run-off, in order to meet the requirements of §264.573. Include this information in the inspection plan submitted under §270.14(b)(5).

(15) A certification signed by an independent qualified, registered professional engineer, stating that the drip pad design meets the requirements of paragraphs (a) through (f) of §264.573.

(16) A description of how personnel will remove hazardous waste residues and contaminated materials from the drip pad at closure, as required under §264.575(a). For any waste not to be removed from the drip pad upon closure, the applicant must submit detailed plans and an engineering report describing how he will comply with §264.310 (a) and (b). Include this information in the closure plan and, where applicable, the post-closure plan submitted under §270.14(b)(13).

(17) Attach a copy of the closure cost estimate [§270.14(b)(14)] and the post-closure care cost estimate [§270.14(b)(15)].

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Date	06/02/97
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APPLICATION FOR A HAZARDOUS WASTE FACILITY PERMIT
CERTIFICATION
TO BE COMPLETED BY ALL APPLICANTS

Facility Name: Safety-Kleen Corp. EPA ID# FLD 984 171 694

1. Operator

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Further, I agree to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department of Environmental Protection. It is understood that the permit is only transferable in accordance with Chapter 62-730, F.A.C., and, if granted a permit, the Department of Environmental Protection will be notified prior to the sale or legal transfer of the permitted facility.

Signature of the Operator or Authorized Representative*

Edward Genovese, Regional Sales Manager
Name and Title (Please type or print)

Date: 5-21-97 Telephone: (813) 682-8094

***Attach a letter of authorization**

2. Facility Owner

This is to certify that I understand this application is submitted for the purpose of obtaining a permit to construct, operate, or close a hazardous waste management facility on the property as described. As owner of the facility, I understand fully that the facility operator and I are jointly responsible for compliance with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department of Environmental Protection.

Signature of the Facility Owner or Authorized Representative*

Edward Genovese, Regional Sales Manager

Name and Title (Please type or print)

Date: 5-21-97 Telephone:(813) 682-8094

***Attach a letter of authorization**

3. Land Owner

This is to certify that I, as land owner, understand that this application is submitted for the purpose of obtaining a permit to construct, operate, or close a hazardous waste management facility on the property as described. For hazardous waste disposal facilities, I further understand that I am responsible for providing the notice in the deed to the property required by 40 CFR §264.119 and §265.119, as adopted by reference in Chapter 62-730, F.A.C.

Signature of the Land Owner or Authorized Representative*

Edward Genovese, Regional Sales Manager

Name and Title (Please type or print)

Date: 5-21-97 Telephone:(813) 682-8094

***Attach a letter of authorization**

4. **Professional Engineer Registered in Florida** [Complete when required by Chapter 471, F.S. or not exempted by Rule 62-730.220(7), F.A.C.]

This is to certify that the engineering features of this hazardous waste management facility have been designed/examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgement, this facility, when properly constructed, maintained and operated, or closed, will comply with all applicable statutes of the State of Florida and rules of the Department of Environmental Protection.

Elaina J. Modlin
Signature

Elaina J. Modlin, P.E.
Name (please type)

Florida Registration Number: 49946

Mailing Address: 1901 S. Congress Avenue, Suite 480
Street or P.O. Box

Boynton Beach	FL	33426
City	State	Zip

Date: 5/29/97 Telephone (561) 736-4648

[PLEASE AFFIX SEAL]

Elaina J. Modl
#49946
5/29/97

ELAINA J. MODLIN
PROFESSIONAL ENGINEER
CERTIFICATE
49946
STATE OF FLORIDA

5. **Professional Geologist Registered in Florida** [Complete when required by Chapter 492, F.S. or not exempted by Rule 62-730.220(8), F.A.C.]

This is to certify that the interpretations of geology at this hazardous waste management facility have been examined by me, and the interpretations conform to sound geological principles. In my professional judgement, this facility, when properly constructed, maintained and operated, or closed, will comply with all applicable statutes of the State of Florida and the rules of the Department of Environmental Protection.

Not applicable

____
Signature

____
Name (please type)

Florida Registration Number:____________________

Mailing Address:______________________________
Street or P.O. Box

____
City State Zip

Date:____________Telephone (____) ____________

[PLEASE AFFIX SEAL]

2.0 *FACILITY DESCRIPTION*

2.1 *FACILITY LAYOUT AND TRAFFIC PATTERNS*

The facility layout is shown in Figure 2.1-1. The non-building areas of the facility are paved with asphalt or concrete as noted on the site plan. The storm water retention areas and other unpaved areas are vegetated with grass. Site photographs are provided in Appendix A.

Site traffic patterns are illustrated in Figure 2.1-2. The majority of the vehicular traffic and loading/unloading operations occurs at and near the return/fill area (Area A), which is paved with asphalt and concrete. Approximately once per week a tractor trailer brings fresh containerized solvents and removes used, containerized solvents for transfer to a Safety-Kleen recycle facility. This truck backs up to the concrete dock, located on the southeastern side of the facility in Area B, to load and unload containers. Area C is used for the loading/unloading of transfer wastes, and containerized permitted wastes from local area vans and trucks. The trucks dispatched from the recycle center to deliver parts washer solvent and pick up used parts washer solvent will perform these activities at the aboveground tank truck loading area (Area D) approximately once per week. Truck to building transfer of Fluid Recovery Service (FRS) (transfer) wastes may occur on asphalt or concrete surfaces within the compound, especially in the contained truck dock (Area E).

U.S. 27, Okeechobee Road, is the major access road to the facility. The access road is designed in accordance with engineering criteria appropriate for sustaining the traffic volume and loading for the heavy industrial activities in this area. The vans that travel the routes daily between the service center and Safety-Kleen customers use the two-lane road within the industrial park. Traffic from this facility will have a minor impact on local traffic conditions.

2.2 *SITE TOPOGRAPHY AND SURROUNDING LAND USE*

Figure 2.2-1 is a USGS topographic map showing the facility. Due to the small size of the site, all of the information requested in FDEP's application form cannot be placed on one map. Therefore, additional maps are provided here to present the additional information requested in the application form. Specific information requested in the permit application is provided below.

100-Year Floodplain Area

Based on information available from the Federal Emergency Management Agency (Figure 2.2-2), the facility does not lie within the 100-year flood plain. The site is located in a Zone AH (EL6). AH areas are areas of 100-year shallow flooding where depths are between one and three feet. Base flood elevations are shown, but no flood hazard factors are determined. This site does not require any special flood management procedures.

Surface Water Bodies Within One-Quarter Mile of the Facility Property Boundary (e.g., Intermittent Streams and Springs)

Surface water bodies located within one-quarter mile of the facility property boundary include unnamed lakes to the northeast and southeast. These surface water bodies are depicted in Figure 2.2-1.

Surrounding Land Uses

Surrounding land uses are shown in Figure 2.2-3.

Legal Boundaries of the Facility

Figure 2.2-4 shows the property boundaries.

Drinking Water Wells Listed in Public Records or Otherwise Know to the Applicant Within One-Quarter Mile of the Facility Property Boundary

According to information obtained from the South Florida Water Management District (SFWMD), four four-inch monitoring wells were identified by personnel of SFWMD as lying within Section 4, Township 53S, Range 40E. It should be noted that information regarding water wells in this area has not been computerized (as in other Water Management Districts).

Intake and Discharge Structures Within One Mile

There are no known intake or discharge structures within one mile.

Run-Off Control System

Figure 2.2-5 is a storm water drainage plan for the facility. Storm water drainage is accomplished via a french drain system. As shown in Figure 2.2-5, french drain piping exists at the periphery of the facility. Various other surface water management features are shown in Figure 2.2-5.

Access Control (fences, gates, etc.)

Figure 2.1-1 shows access control features.

Injection and Withdrawal Wells Both On Site and Off Site

There are no injection or withdrawal wells on site. To the best of Safety-Kleen's knowledge, there are no known injection or withdrawal wells within one-quarter mile of the facility.

Buildings and Other Structures

Buildings and other structures are shown in Figure 2.1-1.

Contours Sufficient to Show Surface Water Flow

Figure 2.2-5 shows surface elevations at the facility. The site is nearly flat, with surface elevations in unpaved areas ranging from 4.7 to 5.1 feet above mean sea level. Paved areas are at slightly higher elevations. Surface water flow is toward the drainage catchment basins shown in Figure 2.2-5.

Loading and Unloading Areas

Figure 2.1-2 shows loading and unloading areas in relation to the waste management areas. Additional details regarding traffic patterns are provided in Section 2.1.

Drainage or Flood Control Barriers

Figure 2.2-5 is a storm water drainage plan for the facility. Storm water drainage is accomplished via a french drain system. As shown in Figure 2.2-5, french drain piping exists at the periphery of the facility. Various other surface water management features are shown in Figure 2.2-5.

Hazardous Waste Units

Figure 2.2-6 shows hazardous waste management units.

Wind Rose

A wind rose for Miami, Florida is shown in Figure 2.2-7.

2.3 DESCRIPTION OF FACILITY OPERATION

Description of the Business

Safety-Kleen Corp. of Elgin, Illinois is an international, service-oriented company whose customers are primarily engaged in automotive repair and industrial maintenance. Since 1968, Safety-Kleen has been offering a leasing service for petroleum-based hydrocarbon solvents and small parts washing equipment. A unique feature of this business concept is that the solvent is produced through recycling the used solvent that is leased to the customers. Approximately two-thirds of the clean solvent leased has been previously used by the customers.

The Safety-Kleen parts washing equipment, together with the solvents, are leased to customers; the leasing charge includes regularly scheduled solvent changes and machine maintenance. The business is conducted from local Branches (sales branches) located in 45 states domestically that warehouse the products and equipment required to service the customers in their sales areas. On a contractual basis, service representatives furnish clean solvent to the customers, pick up the used solvent, and ensure that the leased equipment is in good working order. In 1979, Safety-Kleen expanded their scope of operations to make their solvent leasing service available to owners of parts cleaning equipment, regardless of manufacturer, using Safety-Kleen's solvents.

The original service offered by the company in 1968 was the parts cleaner service and it remains the primary business activity. This service involves the leasing of a small parts degreasing unit which consists of a sink affixed to a container of parts washer solvent. On a regularly scheduled basis, a Safety-Kleen sales representative cleans and inspects the parts washer machine and replaces the container of used solvent with one of clean product.

The spent solvent is transferred from the containers to a storage tank at the Branch, and containers of product are prepared for the next day's services. Periodically, a tanker truck is dispatched from one of the Safety-Kleen recycle centers to deliver a load of clean solvent and collect the spent solvent at the Branch. Parts washer solvents (used and fresh) are transported in bulk tank trucks between the Branch and the recycle facilities. Clean parts washer solvents may be transported in containers or in bulk tank trucks. Used parts washer solvent is transported in containers from the customer to the Branch, where it is added to the used parts washer solvent tank.

Safety-Kleen has also established a parts cleaner service for users who own their machines. This service provides a solvent reclamation service to these customers regardless of machine model.

A second type of parts washer, the immersion cleaner, is available for the removal of varnish and gum from such things as carburetors and transmissions. This machine consists of an immersible basket with an agitator affixed to a container of the immersion cleaner. The spent solvent remains in the container after delivery to the Branch, where it is stored in a contained area of the warehouse. Periodically, a box trailer truck is dispatched from a Safety-Kleen recycle center to deliver containers of fresh solvent and collect the containers of spent solvent for reclamation.

The solvents are distributed and collected by service representatives. Containers are transported in specially-equipped, enclosed route trucks. Clean solvents are distributed from and used solvents returned to the Branch. At the Branch, clean parts washer solvent and used parts washer solvent are stored in separate tanks. Used parts washer solvent 105 is manifested from the customer as hazardous waste. Other used parts washer solvent is transported from the customer in accordance with the customer's hazardous waste determination pursuant to 40 CFR 262.11.

Warehouse space is dedicated for the storage of clean and used immersion cleaner. Clean and used immersion cleaners are always stored in containers. The immersion cleaner remains in the original covered containers during transfer between the Branch and the recycle facilities.

Clean and used parts washer solvents also may be stored in the permitted storage area. Safety-Kleen leases parts washing equipment, with partially filled containers, which double as the solvent reservoir of the parts washer. During servicing, the quantity of used solvent removed from each machine ranges from 5 to 20 gallons. The spent parts washer solvent is then collected in containers.

Safety-Kleen's solvent cycle is essentially a closed loop, moving from the Branch to the customer, from the customer to the Branch, from the Branch to the recycle facility and then from the recycle center back to the Branch for redistribution to customers. This closed loop supplies Safety-Kleen with most of its solvent requirements; the resultant stabilized cost benefits are passed on to its customers. Ownership of the solvent remains with Safety-Kleen; the Branch personnel are accountable for the quantities of clean and used solvents handled by their branch operations. The Branch is basically a temporary storage and transfer facility.

Safety-Kleen also provides a dry cleaning waste reclamation service where containers of dry cleaning wastes are collected and stored temporarily at the Branch before shipment to the recycle centers for reclamation and residue disposal. Perchloroethylene dry cleaning solvent is managed as a permitted waste. Non-perchloroethylene dry cleaning wastes are managed as transfer wastes.

In addition, Safety-Kleen provides a paint waste reclamation service. Wastes containing various thinners and paints are collected in containers and are stored at the south building permitted storage area. Paint wastes are received at the Branch on manifests which are terminated at that point. These wastes are then re-manifested and shipped to a reclaimer, and the regenerated solvent may be distributed to Safety-Kleen customers for use as a product.

Fluid Recovery Services (FRS) is a program managed by the Safety-Kleen Branch. Under this program, other types of waste are collected by the Branch and sent to the recycle centers. The FRS wastes are managed as transfer wastes. Manifests are not terminated at the Branch. These wastes may or may not have originally been obtained from Safety-Kleen by the industrial customer. Examples of the types of waste that may be received from FRS customers include:

1. Spent hydrocarbon distillates, such as waste fuel, oil, petroleum, naphtha, etc.

2. Lubricating oils, hydraulic oils, synthetic oils, and machine oils.

3. Industrial halogenated solvents such as 1,1,1-trichloroethane, tetrachloroethylene, Freon, and trichloroethane.

4. Photographic and x-ray related wastes.

5. Paint and lacquer thinners.

6. Other hazardous and nonhazardous halogenated and nonhalogenated wastes.

In 1990, Safety-Kleen began offering a service for the collection of spent antifreeze (ethylene glycol) from automobile service stations. All antifreeze collected and managed by Safety-Kleen within Florida is recycled. At the customer's location, Safety-Kleen pumps waste ethylene glycol (antifreeze) into a Safety-Kleen used oil truck. The mixture of waste ethylene glycol and used oil is transported from the Branch directly to CSX's Bulk Intermodal Distribution System (BIDS) terminus for off-loading into tanker cars. The ethylene glycol/used oil mixture is transferred by rail to the Safety-Kleen re-refinery in East Chicago, Indiana, where the waste ethylene glycol is extracted from the oil by distillation. After separation, the ethylene glycol is shipped to a glycol refinery for additional purification into a pure product which is then sold on the open market. This procedure is in accordance with FDEP's *Florida Fact Sheet on the Best Management Practices for Managing Antifreeze Destined for Recycling,* dated August 5, 1996.

In 1996, the Branch became registered in Florida as a transporter and storage facility for mercury-containing lamps and devices destined for recycling. This registration includes a commitment to comply with the requirements of Florida Administrative Code (FAC) 62-737.700. As a registered storage facility, the Branch can store up to 2,000 kilograms of lamps/devices for a period of up to 180 days. Safety-Kleen provides customers with empty four-foot and eight-foot boxes which hold up to 39 lamps. Boxes containing lamps are picked up from customers and are handled at the at the Branch as nonhazardous transfer wastes. The boxes are stored at the Branch in a designated area within the permitted waste storage area (in the southeast corner of the permitted waste storage area, as shown in Figure 8.1-1). This storage area is labeled in accordance with FAC 62-737.700(1)(d), and is partially isolated from other transfer wastes to avoid potential for accidental breakage. The boxes are periodically shipped to a permitted mercury recovery or reclamation facility. Prior to shipment out of the Branch, the boxes are placed on pallets and shrink-wrapped with plastic.

Table 2.3-1 provides a list of permitted and transfer wastes handled at the Medley facility.

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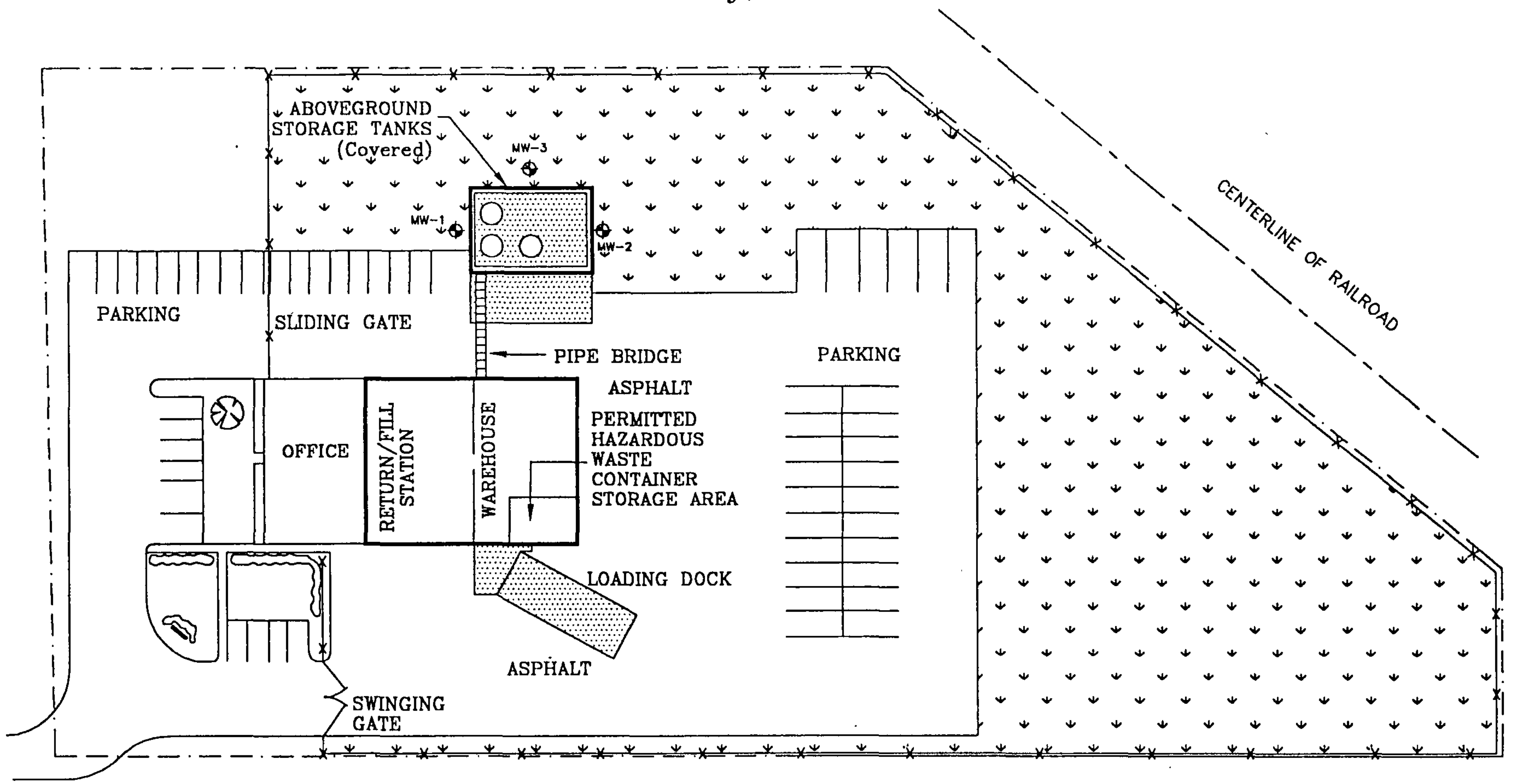
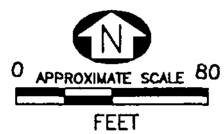
Figure 2.1-1
Facility Layout & Access Control Features
Safety-Kleen Corp. Facility
Medley, Florida



LEGEND

PROPERTY BOUNDARY
CHAIN-LINK FENCE
HAZARDOUS WASTE MANAGEMENT AREAS
CONCRETE
GRASS
ABOVEGROUND STORAGE TANKS
MW-1 GROUND WATER MONITORING WELL



PERMIT

base,border,mw,fig2-1-1

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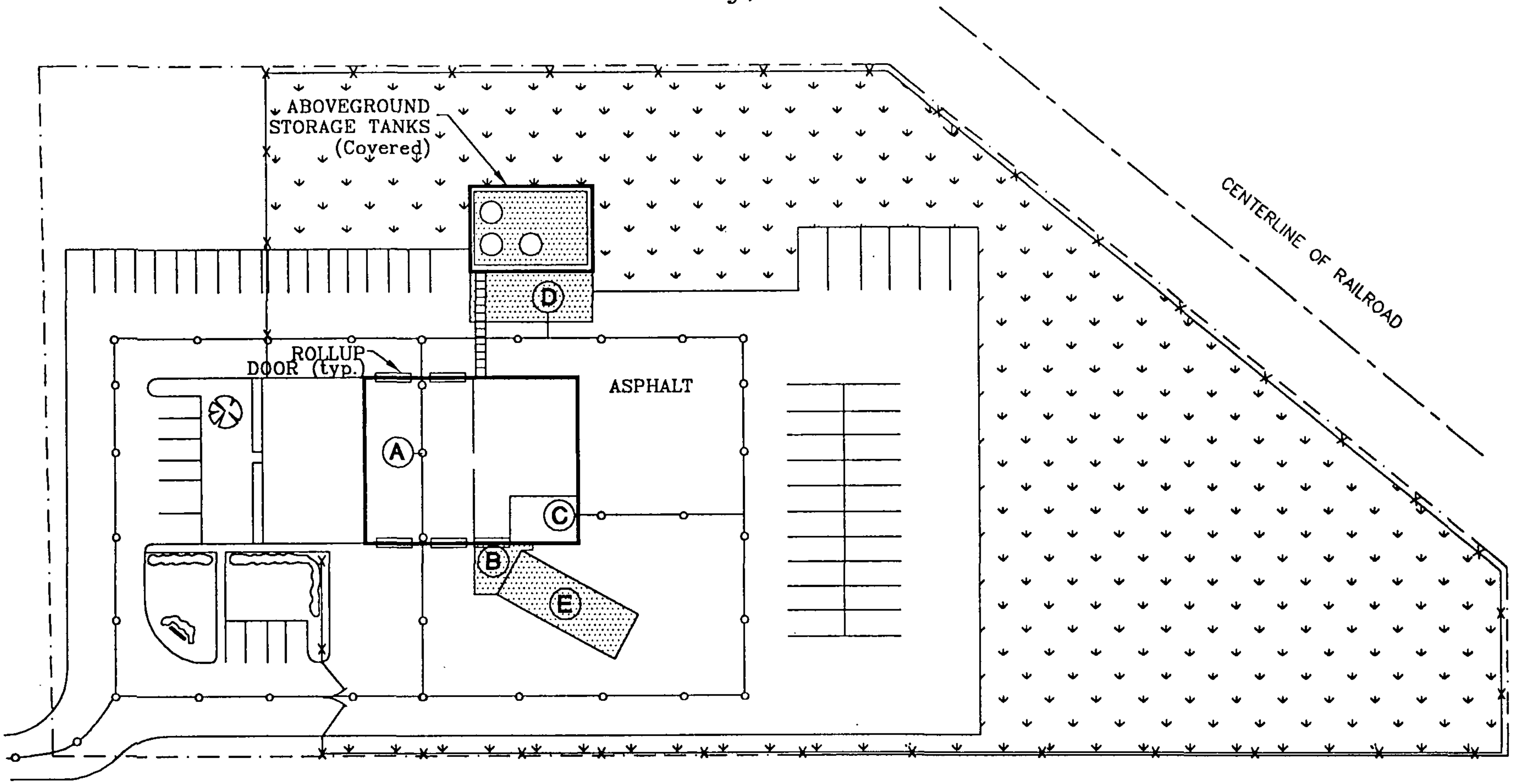
Figure 2.1-2
Truck Traffic Patterns
Safety-Kleen Corp. Facility
Medley, Florida



LEGEND

PROPERTY BOUNDARY	Ⓐ PARTS WASHER SOLVENT DRUM DUMP/BARREL WASH/REFILL (TRUCKS DO NOT DRIVE THROUGH BUILDING)
CHAIN-LINK FENCE	Ⓑ LOADING & UNLOADING OF DRUMS CONTAINING SOLVENTS AND WASTES FRS (TRANSFER) FROM TRUCKS
HAZARDOUS WASTE MANAGEMENT AREAS	Ⓒ LOADING & UNLOADING OF CONTAINERIZED WASTE FROM LOCAL AREA VANS & TRUCKS
CONCRETE	Ⓓ LOADING & UNLOADING OF PARTS WASHER SOLVENT (COVERED DRIVEWAY) AND ETHYLENE GLYCOL, USED OIL, AND OILY WASTEWATER
GRASS	Ⓔ TANK TRUCK TO TANK TRUCK TRANSFER OF ETHYLENE GLYCOL
ABOVEGROUND STORAGE TANKS	
ENTRANCE/EXIT ROUTE	

N

0 APPROXIMATE SCALE 80
FEET

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PERMIT

base,border,mw,pattern,swmu,fig2-1-2

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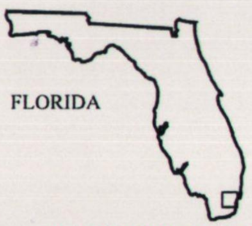
Figure 2.2-1
Topographic Map
Safety-Kleen Corp. Facility
Medley, Florida

HIALEAH QUADRANGLE
FLORIDA-DADE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
PHOTOREVISED 1988



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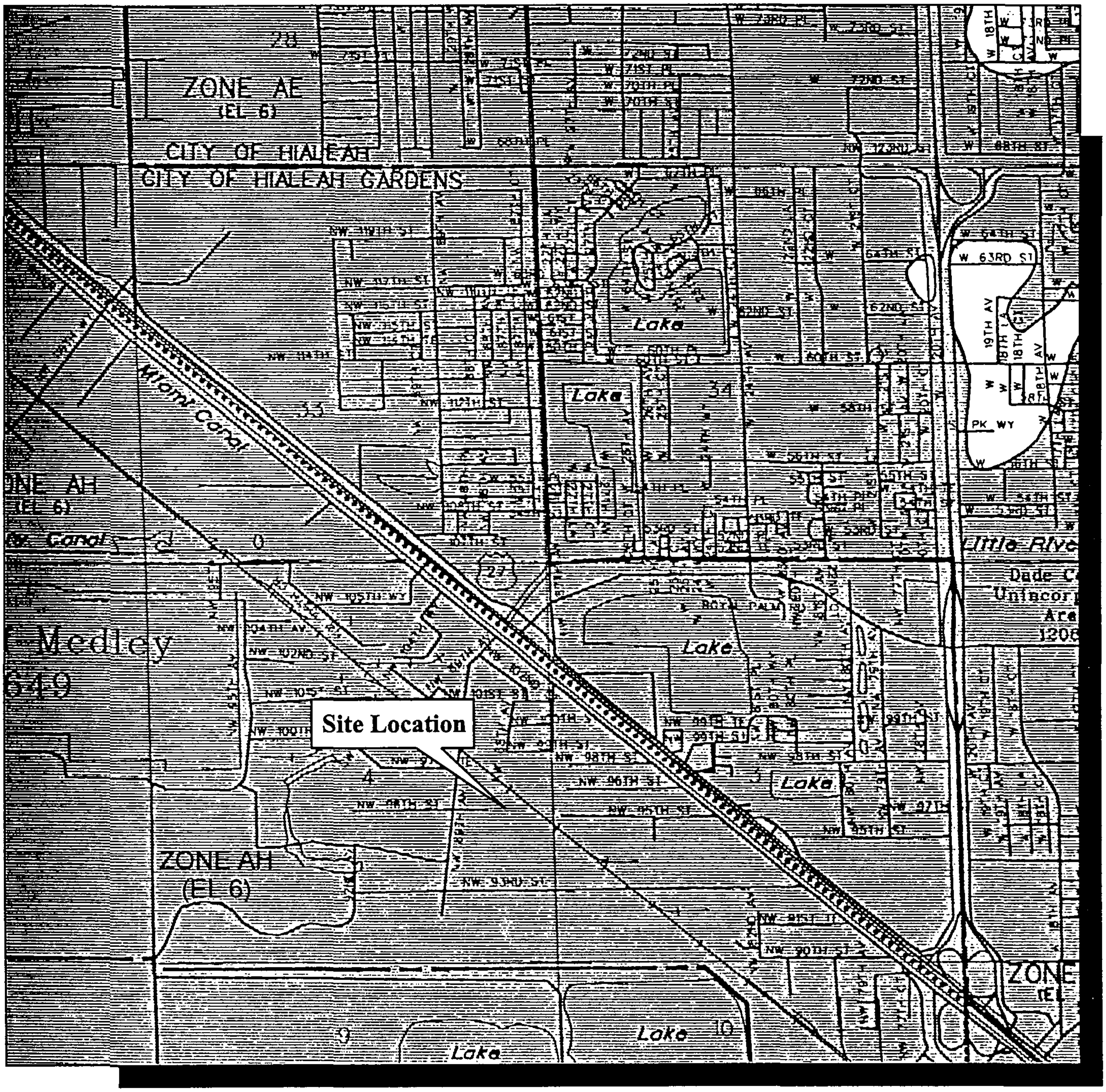
Revision 0 - 6/2/97

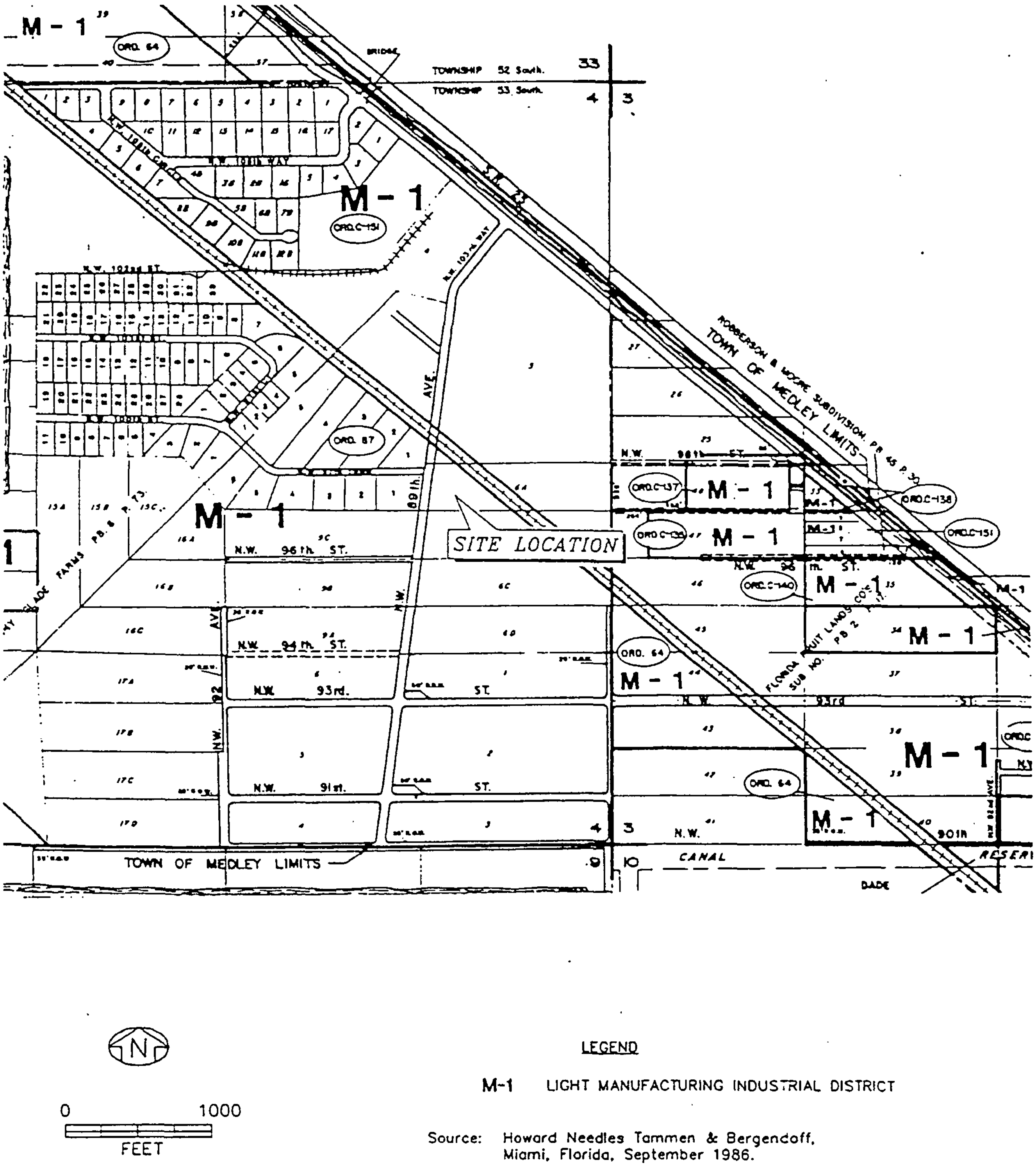
Figure 2.2-2
Flood Insurance Map
Safety-Kleen Corp. Facility
Medley, Florida



OBTAINED FROM FEMA FLOOD INSURANCE RATE MAP,
DADE COUNTY, FLORIDA. MAP NUMBER 12025C0075J,
FEMA MAP REVISED: MARCH 2, 1994.

Revision 0 - 6/2/97

Figure 2.2-3
Surrounding Land Use Map
Safety-Kleen Corp. Facility
Medley, Florida



Source: Howard Needles Tammen & Bergendoff, Miami, Florida, September 1986.

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Figure 2.2-4
Legal Boundaries
Safety-Kleen Corp. Facility
Medley, Florida

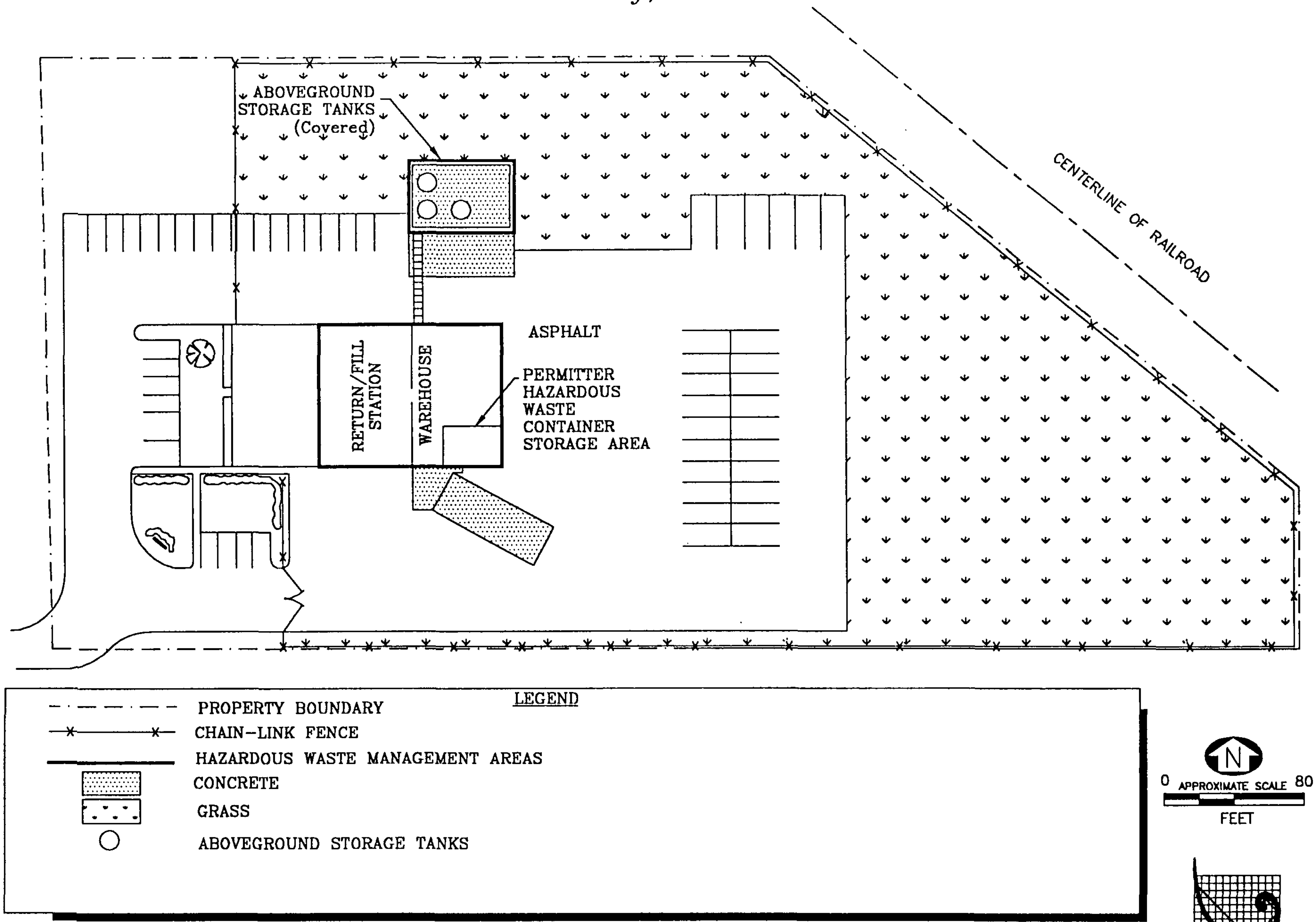

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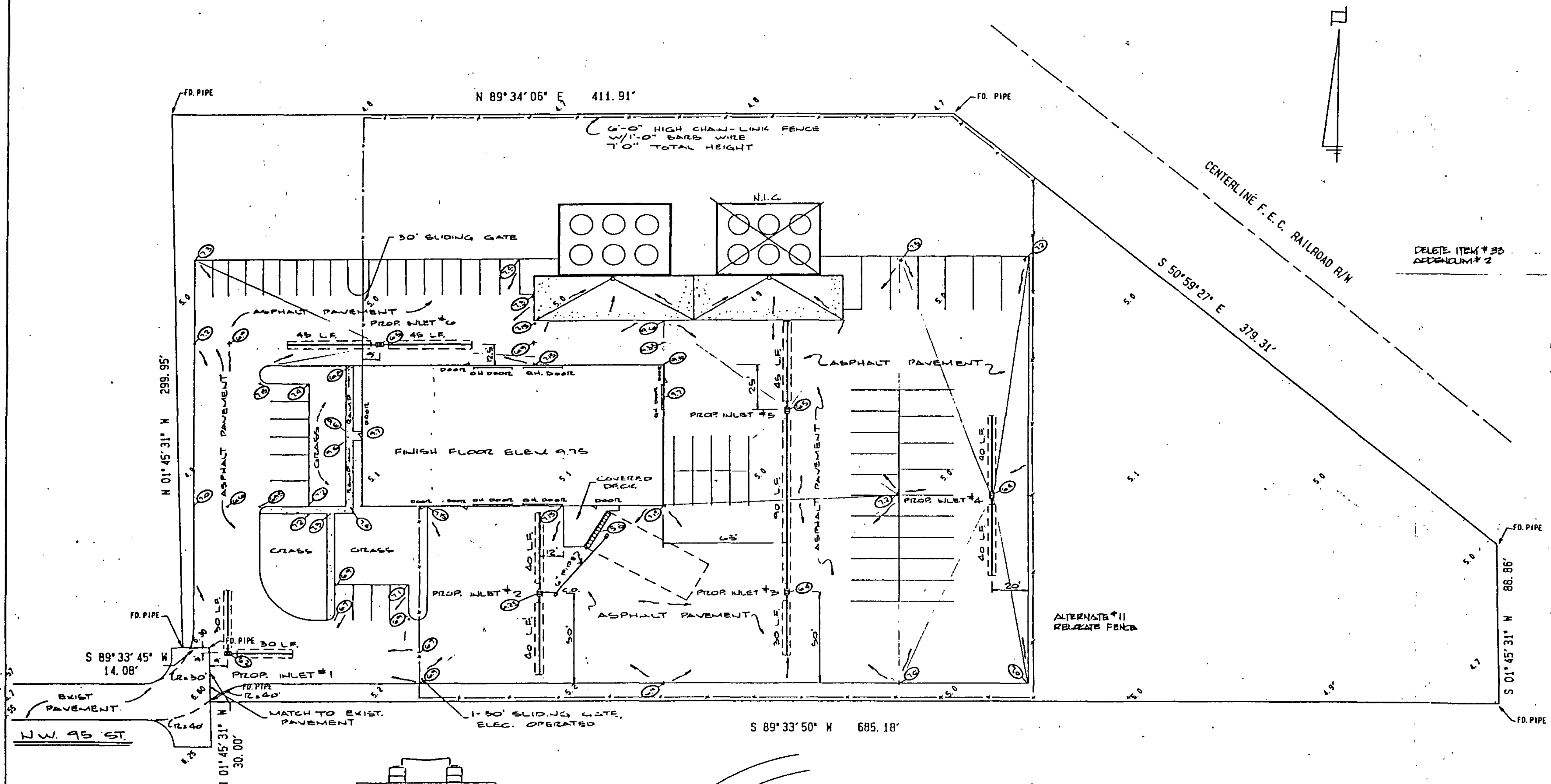
Figure 2.2-5

Drainage Plan

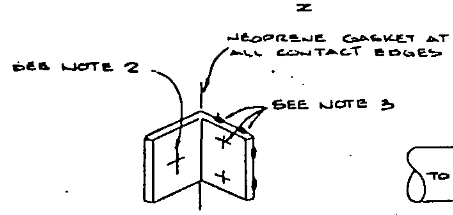


ENGINEER'S NOTES:

1. All materials and labor shall conform to Dade County Public Works standards and specifications, and to Florida Department of Transportation standards and specifications where appropriate.
2. Contractor shall verify acceptable utilities in the field by calling underground utility notification center 1-800-432-4770 prior to digging.
3. Fill shall be locally acceptable and suitable for fill purposes. Fill shall be compacted to 95% of Maximum density as determined by AASHTO T-180 test reports shall be submitted to the architect and owner.
4. ~~Pavement section 1½" type S-I surface course, 8" limerock course, 8" limerock base.~~
5. ~~Concrete shall have a minimum compressive strength of 4000 PSI in 28 days~~
6. Elevations shown are referred to NGV Datum.
7. Any apparent discrepancies in the plans and field conditions shall be brought to the attention of the engineer before proceeding with the work.
8. Dade County Flood Criteria: Elevation 6.7
   Fema Flood Zone "AH", Elevation 6
9. SEEPAGE STRUCTURES SHALL BE A FRENCH DRAIN (SD. 1.1) WITH 15" PERFORATED CMP INVERT OF PIPE TO BE AT ELEVATION 5.0. BOTTOM OF TRENCH TO BE 15' DEEP TRENCH WIDTH TO BE 36". PROVIDE MASONRY PLUG AT END OF TRENCH.

5.2 INDICATES EXISTING ELEVATION

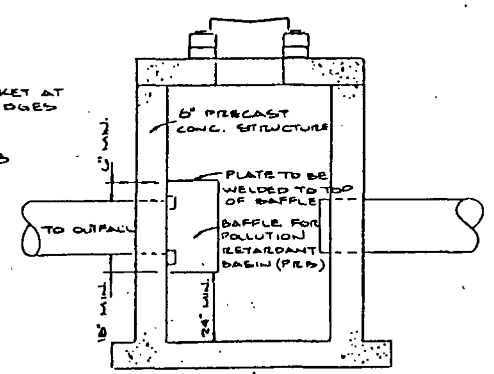
(5.7) INDICATES PROPOSED ELEVATION



BRACKET DETAIL

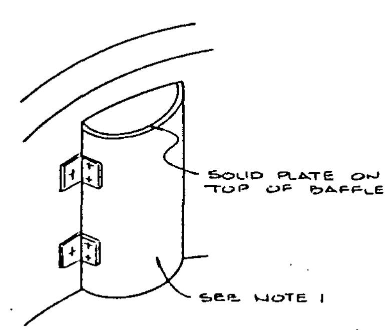
NOTES FOR P.R.B. BASIN

1. BAFFLE TO BE A SECTION OF CMP CUT IN HALF. USE ONE-HALF OF A 24" Ø CMP.
2. 3/8" GALVANIZED LAG BOLT IN LEAD SHIELD (TYP)
3. WELD OR 2-1/2" THRU BOLTS (SS)
GRATING SHALL BE OFFSET IF STRUCTURE IS USED AS OVERFLOW



CATCH BASIN PER DLPWD DETAIL SD. 2.6, MINIMUM SIZE 3.5 FT. BY 6.0 FT SQUARE.

TYPICAL CATCH BASIN



BAFFLE DETAIL

C-2

No.	Date	Apvd.	J. N.	F. B.	Revision Description
1	1/21/90				COMMENTS PER W.H.

Professional Land Surveyor No.
Professional Engineer No. 3179
State of Florida

SAFETY-KLEEN CORP.
DRAINAGE PLAN

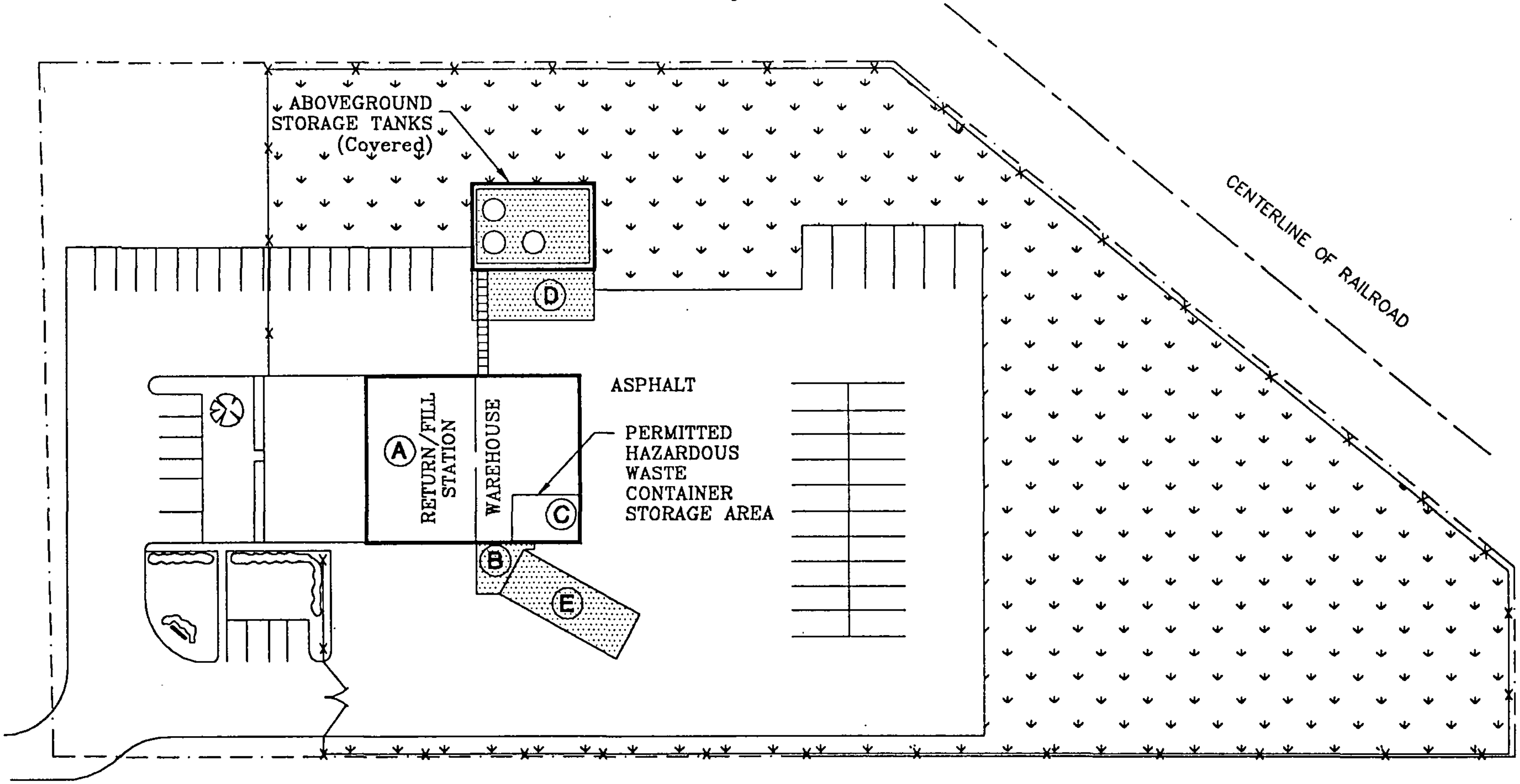
E. R. BROWNELL & ASSOC., INC.
CONSULTING ENGINEERS · LAND SURVEYORS
3152 Coral Way, Miami, Florida, 3314

Drawn by: GZ · Des. by: GZ · Chk. by: TB
Ref. · J.N. 44021 · Scale: 1" = 30'
F.B. FILE · Date: JULY 1990
Sheet 2 of 3 · Sk. No. P-423

311.21 31121-PM 042897-1

REVISION 0 - 2/97

Figure 2.2-6
Locations of Hazardous Waste Storage Areas
Safety-Kleen Corp. Facility
Medley, Florida



LEGEND

- PROPERTY BOUNDARY
- CHAIN-LINK FENCE
- HAZARDOUS WASTE MANAGEMENT AREAS
- CONCRETE
- GRASS
- ABOVEGROUND STORAGE TANKS

(A) PARTS WASHER SOLVENT DRUM DUMP/BARREL WASH/REFILL (TRUCKS DO NOT DRIVE THROUGH BUILDING)

(B) LOADING & UNLOADING OF DRUMS CONTAINING SOLVENTS AND WASTES FRS (TRANSFER) FROM TRUCKS

(C) LOADING & UNLOADING OF CONTAINERIZED WASTE FROM LOCAL AREA VANS & TRUCKS

(D) LOADING & UNLOADING OF PARTS WASHER SOLVENT (COVERED DRIVEWAY) AND ETHYLENE GLYCOL, USED OIL, AND OILY WASTEWATER

(E) TANK TRUCK TO TANK TRUCK TRANSFER OF ETHYLENE GLYCOL

N

0 APPROXIMATE SCALE 80

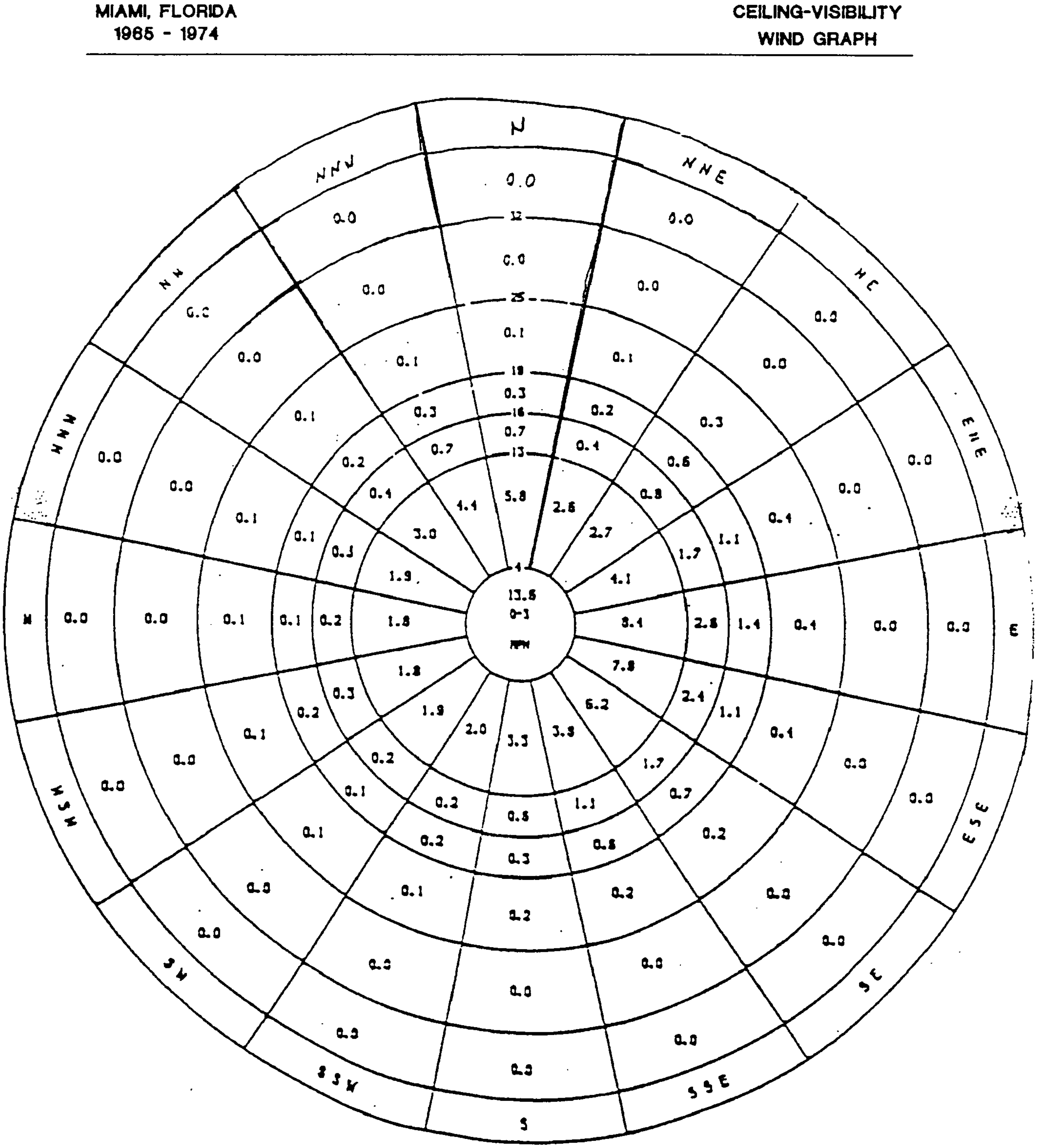
FEET

ERM

base,border,mw,swmu,fig2-2-5

PERMIT

Figure 2.2-7
Wind Rose
Safety-Kleen Corp. Facility
Medley, Florida



Source: NOAA National Oceanic and Atmospheric Administration

ERM

TABLE 2.3-1

PERMITTED AND TRANSFER WASTES
SAFETY-KLEEN CORP.
MEDLEY, FLORIDA

Waste Type	Process Code(s)	Estimated Annual Amounts (Tons)	Waste Codes
Spent Parts Washer Solvent*	S01** S02***	813	D001 and D-Codes Listed in Note Below
Dumpster Sediment	S01**	Included Above	D001 and D-Codes Listed in Note Below
Tank Bottoms	S01**	Included Above	D001 and D-Codes Listed in Note Below
Spent Immersion Cleaner (New Formula) IC699	S01**	28	D-Codes Listed in Note Below
Dry Cleaning Waste (Perchloroethylene)	S01**	350	F002 and D-Codes Listed in Note Below
Dry Cleaning Waste (Non-perchloroethylene)	S01****	Included Above	Transfer wastes - waste codes assigned by generator.
Paint Waste	S01**	69	D001, F003, F005 and D-Codes Listed in Note Below
Fluid Recovery Service (FRS) Waste	S01 ****	250	Transfer wastes - waste codes assigned by generator.
Mercury-Containing Lamps/ Devices	N/A****	Less than 2.2	Not applicable - handled as nonhazardous transfer wastes.

NOTES:

D-Codes: D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043

* Spent parts washer solvents are transported from the customer to the Branch in accordance with the generator's hazardous waste determination.

** This waste will be stored in containers in the container storage area. The maximum drum capacity in the container storage area for hazardous waste and product is 29,400 gallons with 6,912 gallons being waste.

*** The spent parts washer solvent storage tank has a capacity of 20,000 gallons and may be filled up to 19,000 gallons.

**** This waste will be held for transfer in containers in the transfer area.

N/A Process code not applicable.

3.0 FINANCIAL ASSURANCE FOR CLOSURE

Safety-Kleen Corp. is the operator of the Medley, Florida Branch. Financial assurance is provided through the use of the financial test specified in Subpart H of 40 CFR Part 264. The closure cost estimate is provided in the closure plan (Section 10.5 of this document).

4.0 FACILITY SECURITY

4.1 SECURITY PROCEDURES AND EQUIPMENT

In accordance with 40 CFR 264.14, access to the facility is controlled through the following methods:

1. Entry to the container and return/fill areas will be controlled through gates and doors. All gates and doors will be locked at all times when facility is not in operation. The entire facility is surrounded by an approximately eight-foot-high fence. The fence consists of six feet of chain-link topped by approximately two feet of barbed wire.

2. The combination of doors and signs prevents unknowing entry and minimizes the potential for unauthorized entry of people or livestock into the facility.

3. Signs are posted at the entrance of the facility and additional locations so that they are visible from any approach at 50 feet. Signs are marked "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT."

4. "NO SMOKING" signs are posted in areas where hazardous wastes are handled.

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LIST OF FIGURES

LIST OF TABLES

EMERGENCY PHONE NUMBERS

Emergency Coordinators

Primary:	Tim Sholl 9001 SW 49th Street Cooper City, FL 33328 Home: (954) 680-3622 Office: (305) 884-0123 Beeper: (305) 650-5584	Alternate:	Peter Cordero 2951 SW 135th Avenue Miami, FL 33175 Home: (305) 225-7535 Office: (305) 884-0123 Beeper: (305) 650-5575

Emergency Notification Phone Numbers

Safety-Kleen Environment, Health and Safety Department: (800) 468-1760

National Response Center: (800) 424-8802

Florida Department of Environmental Protection Southeast District:
(561) 681-6600 (normal business hours)

State Warning Point: (904) 413-9911 (24 hours)

Dade County Environmental Resources Management, Mr. Mike Graham: (305) 375-3376 (24 hours)

Emergency Team to be Notified

Metro Dade Fire Department
8175 NW 12th Street
Miami, FL 33126
(305) 470-1760 or 911

O.H. Materials Company
P.O. Box 551
Findlay, OH 45839
(800) 537-9540
(Primary Cleanup Contractor)

Medley Police Department
7331 NW 74th Street
Medley, FL 33166
(305) 887-9541 or 911

Ryckman's Emergency Action Team
1733 Vanderventer
St. Louis, MO 63146
(800) 325-1398
(Secondary Cleanup Contractor)

AMI - Palmetto General Hospital
2001 West 68th Street
Hialeah, FL 33016
(305) 823-5000

5.0 PREPAREDNESS, PREVENTION, CONTINGENCY PLAN, AND EMERGENCY PROCEDURES FOR DAILY BUSINESS OPERATIONS - SAFETY-KLEEN CORP., MEDLEY, FLORIDA

5.1 GENERAL INFORMATION

Purpose

The preparedness, prevention, and contingency plan and emergency procedures are designed to ensure that Safety-Kleen reduces the possibility of emergency situations and, should they occur, respond in a manner to prevent or minimize hazards to human health or the environment from fire, explosion, or any unplanned sudden or non-sudden release of hazardous material constituents to the air, soil, surface water, or ground water at the facility.

The provisions of the plan are to be carried out immediately if there is a fire, explosion, or release of hazardous materials that could threaten human health or the environment. All responses must conform with the procedures contained in this plan.

General Description of Activities

The business activities conducted at the Medley Branch Service Center (Branch) relate to the leasing and servicing of Safety-Kleen Parts Cleaning Equipment, including the provisions of a solvent leasing service for the customers. Clean solvents are distributed from, and the used solvents returned to, the Branch, where separate storage tanks are utilized for the storage of clean and used parts washer solvent. Two 20,000-gallon fresh parts washer solvent storage tanks currently are utilized at the facility. In addition, a 20,000-gallon tank is used to contain used parts washer solvent. Warehouse space is designated for the storage of containers of both clean and used immersion cleaner, parts washer solvent, paint waste, Fluid Recovery Services (FRS) wastes, and dry cleaning wastes (chlorinated and nonchlorinated solvent). Overpack containers are used for the management of containers whose integrity has been compromised.

Parts washer solvents are transported in covered containers between the Branch and customers. Upon returning to the Branch, the used parts washer solvent is transferred from the containers into a wet dumpster (solvent return receptacle) in which coarse solids in the parts washer solvents are retained. Used parts washer solvent from the wet dumpster flows into a 20,000-gallon aboveground tank for storage. Used parts washer solvent is picked up regularly by a bulk tank truck from a Safety-Kleen recycle facility which at the same time delivers clean parts washer solvent. The sludge in the wet dumpster is regularly cleaned out, containerized, and stored as Branch-generated waste in a permitted waste storage area for later shipment to a Safety-Kleen recycle facility for reclamation or disposal.

The immersion cleaner remains in a covered container at all times during transportation and storage. The solvent is not transferred to another container while being used by the customers or while in storage at the Branch.

Dry cleaning wastes are picked up at commercial dry cleaning establishments in containers. Dry cleaning wastes handled by Safety-Kleen consist of spent filter cartridges, powder residue from diatomaceous or other powder filter systems, and still bottoms, all of which fall into the categories of either perchloroethylene-based waste or naphtha-based waste. The still bottoms and powder residue are packaged on the customer's premises in containers. The perchloroethylene-based dry cleaning waste is terminated at the Medley facility, where it is stored as permitted waste prior to shipment to a Safety-Kleen recycle center. The naphtha-based dry cleaning waste is handled at the Medley facility as transfer waste. All naphtha-based dry cleaning waste is shipped to a Safety-Kleen recycle center. The naphtha-based dry cleaning waste is shipped to a Safety-Kleen recycle center within 10 days of arrival at the Medley facility.

All antifreeze collected and managed by Safety-Kleen within Florida is recycled. At the customer's location, Safety-Kleen pumps waste ethylene glycol (antifreeze) into a Safety-Kleen used oil tanker truck. The mixture of waste ethylene glycol and used oil is transported from the Branch directly to CSX's Bulk Intermodal Distribution System (BIDS) terminus for off-loading into tanker cars. The ethylene glycol/used oil mixture is transferred by rail to the Safety-Kleen re-refinery in East Chicago, Indiana, where the waste ethylene glycol is extracted from the oil by distillation. After separation, the ethylene glycol is shipped to a glycol refinery for additional purification into a pure product which is then sold on the open market. This procedure is in accordance with FDEP's *Florida Fact Sheet on the Best*

Management Practices for Managing Antifreeze Destined for Recycling, dated August 5, 1996.

Paint wastes consist of various lacquer thinners and paints. The waste is collected in containers at the customer's place of business and the containers are then stored in the container storage area of the warehouse. The paint waste manifests are terminated upon receipt at the Branch. The paint wastes are then re-manifested and periodically sent to a Safety-Kleen recycle center.

The FRS wastes are packaged in polyethylene or steel containers which are not opened until they reach a recycle center. The FRS wastes are transfer wastes and may be stored onsite for up to 10 days. The FRS wastes may also undergo branch-to-branch or truck-to-truck transfer. This transfer will occur at the return/fill station inside secondary containment.

The waste products exhibit essentially the same biological, physical, and chemical properties as the fresh product. Used products are basically fresh products with impurities of dirt and metals. Material Safety Data Sheets (MSDSs) for each hazardous material are available at the Branch and on demand by fax through a company-owned MSDS information service. This service provides 24-hour phone or fax access to an extensive MSDS database.

The Branch is registered in Florida as a transporter and storage facility for mercury-containing lamps and devices destined for recycling. This registration includes a commitment to comply with the requirements of Florida Administrative Code (FAC) 62-737.700. As a registered storage facility, the Branch can store up to 2,000 kilograms of lamps/devices for a period of up to 180 days. Safety-Kleen provides customers with empty four-foot and eight-foot boxes which hold up to 39 lamps. Boxes containing lamps are picked up from customers and are handled at the at the Branch as nonhazardous transfer wastes. The boxes are stored at the Branch in a designated area within the transfer waste storage area. This storage area is labeled in accordance with FAC 62-737.700(1)(d), and is partially isolated from other transfer wastes to avoid potential for accidental breakage. The boxes are periodically shipped to a permitted mercury recovery or reclamation facility. Prior to shipment out of the Branch, the boxes are placed on pallets and shrink-wrapped with plastic.

Figures 5.1-1 and 5.1-2 show the basic site and floor plans and the locations of waste management facilities and facility storage. Table 5.1-1 provides a list of permitted and transfer wastes handled at the facility.

5.2 INSPECTION PROCEDURES

Inspection of Safety Equipment

The purpose of the inspection plan is to establish a procedure and schedule for the systematic monitoring and inspection of emergency and spill control equipment to ensure proper operation, and to maintain compliance. Table 5.2-1 is an Inspection Schedule.

The Branch Manager or designee is responsible for carrying out the inspection in accordance with the following procedure and schedule.

- A weekly inspection of fire extinguishers must be performed to ensure that the tag date has not expired and the units are properly charged and accessible.

- A weekly inspection of eyewash stands must be performed to assure accessibility; check for proper operation of this equipment on a monthly basis. Inventory of the first-aid kit must be checked on a weekly basis.

- A weekly check of the supply of spill control equipment (absorbent material) must be performed.

- A weekly check of the conditions and inventory of other emergency equipment will be made. This includes gloves, aprons, goggles, respirators, and other personal protective equipment.

Inspection of Security Equipment

The Branch Manager or designee, using the Weekly Inspection Log (Figure 5.2-1 or similar), inspects the security features of the facility weekly (e.g., gates and locks), looking for any evidence of sticking, corrosion, or unusual activity. The facility fence will be checked weekly for deterioration, gaps, and broken wire ties.

Inspection of Waste Management Facilities

The purpose of the inspection plan is to establish a procedure and schedule for the systematic monitoring and inspection of hazardous waste management and other material management facilities to ensure proper operation and maintain compliance. Table 5.2-1 provides an Inspection Schedule.

The Branch Manager or designee is responsible for carrying out the inspections of all hazardous waste management facilities in accordance with the following procedure and schedule.

Daily inspections of aboveground tanks will include the following:

- Note volume in tank.
- Observe tank exterior for loose anchoring, wet stops, leaks.
- Check the automatic high level alarm. In addition, measure the depth of used solvent in the tanks to confirm the proper functioning of the automatic alarm system and to determine unexpected deviations in tank measuring data, or a sudden drop in liquid level, which may indicate leakage.
- Inspect secondary containment walls and piping.
- Inspect transfer pumps for leaking seals and overheated motors.

- Inspect the solvent dispensing hose, fittings, and valve for any leaks, damage, or wear that could cause a leak to develop.

- Inspect the valves for proper seat. Stem leaks from worn glands and warped valve bodies should be repaired. If the valve cannot be repaired, replace the unit.

Also, the tanks will be visually inspected and tested periodically.

Daily inspection of the solvent return receptacle (wet dumpster) will consist of an inspection for leaks and excess dumpster mud build-up.

Daily inspections of the container storage area include the following:

- Verify that total volume is within permitted limits.

- Physically examine the condition of containers to verify that leaks have not occurred since the last inspection.

- Verify that all container identification, dates, and hazardous waste labels are attached and current.

- Inspect container placement and stacking such as aisle space, height, and stability of stacks.

- Examine containment areas to detect signs of deterioration and failure of the containment system such as cracks, breakage, settlement, and spillage.

Corrective Action

Any discrepancies or deficiencies found during routine inspections will be recorded in the inspection log and brought to the attention of a supervisor. At this time an evaluation of the seriousness of the problem will be noted and a decision made if the situation requires immediate action or the problem can be handled as routine maintenance. The evaluation of the seriousness of the problem will be recorded in the facility's inspection log. If the problem poses a threat to human health or the environment, action will be taken immediately. The Branch Manager has the overall responsibility for resolving any discrepancies found during the routine inspection.

5.3 *EMERGENCY NOTIFICATION*

Emergency Coordinator

The Branch Manager or designee is the emergency coordinator. Page iii at the beginning of Section 5 includes the names, home addresses, and both office and home phone numbers of the primary emergency coordinator and alternate. At least one employee will be either present on the facility premises or on call with responsibility for coordinating all emergency response measures at all times. This primary emergency coordinator and alternate emergency coordinator are thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of materials handled, the location of all records within the facility, and the facility layout. In addition, these coordinators have the authority to commit the resources needed to carry out the contingency plan.

5.4 *EMERGENCY RESPONSE AGENCIES AND TEAM MEMBERS*

The agencies and response team members to be notified whenever an imminent or actual emergency occurs are presented on page iii, located at the beginning of Section 5.

5.5 *ACTIONS OF THE EMERGENCY COORDINATOR*

Whenever there is an imminent or actual emergency situation, the emergency coordinator (or the designee when the emergency coordinator is on call) must immediately:

a. Notify all facility personnel present of the emergency. The relatively small size of this facility makes direct verbal communication the most expedient form of emergency notification. The emergency coordinator may also elect to proceed to the front of the building and repeatedly sound a car horn to notify building occupants of an emergency. A head count will be performed by the emergency coordinator.

b. Notify appropriate state or local agencies with designated response roles if their help is needed.

c. Summon the primary emergency coordinator, if that person is absent.

Whenever a release, fire, or explosion occurs, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. Because of the limited types of chemicals in storage, the identification processes can easily be performed visually.

Procedure for Assessing Possible Hazard to the Environment and Human Health

- After identification of the character, source, amount, and extent of a release, fire, or explosion, the emergency coordinator must decide whether the situation can be contained or cleaned up by plant personnel and equipment.

- If a fire or explosion is determined uncontrollable by plant personnel or threatening neighboring establishments or population, assistance from a local emergency response agency shall be summoned immediately and an evacuation order requested.

- In case of a release outside of the containment area that is deemed immediately uncontainable or unrecoverable, the local emergency response agency and/or specialty cleanup contractor shall be called in.

- After termination of a fire or explosion or containment and preliminary cleanup of a spill, evaluate whether residues in the form of gas or liquid have become airborne, seeped into ground water, and/or flowed into surface water bodies.

- Expert assistance should be requested to determine whether the escaped materials are potentially harmful and whether the receiving medium ultimately will be a populated area, public water supply source, a private well, or an environmentally sensitive area.

- Additional steps shall then be taken to mitigate the potential impact on the environment and human health, in accordance with expert recommendations.

If the emergency coordinator determines that the facility has had a release, fire, or explosion or other emergency that could threaten human health, or the environment outside the facility, the coordinator must report those findings, as follows:

- If the assessment indicates that evacuation of local areas may be advisable, the coordinator must immediately notify appropriate authorities. The coordinator must be available to help appropriate officials decide whether local areas should be evacuated.

- The coordinator must immediately notify the Southeast District of the FDEP, (561) 681-6600 during regular business hours, or the State Warning Point at (904) 413-9911 outside regular business hours or holidays, or the National Response Center (800) 424-8802, by telephone.

  The report must include:

  (1) Name and telephone number of notifier;
  (2) Name and address of facility;
  (3) Time and type of incident (e.g., release, fire);
  (4) Name and quantity of material(s) involved, to the extent known;
  (5) The extent of injuries, if any; and
  (6) The possible hazards to human health, or the environment outside the facility.

Immediate assistance in assessing and responding to an emergency is obtained by the emergency coordinator by calling the 24-hour emergency number of the Safety-Kleen

Corporation Environment, Health and Safety Department's Contractor InfoTrack ((800) 468-1760). The 24-hour emergency number identified as InfoTrack is a vendor contracted by Safety-Kleen to respond to all reports of spills or chemical emergencies. All Safety-Kleen facilities in the state use this contractual arrangement with InfoTrack. This allows Safety-Kleen to respond to any emergency with a maximum of effort, thereby reducing the threat to human health or the environment.

During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure build-up, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

The emergency coordinator must ensure that, in the affected area(s) of the facility:

- No waste that may be incompatible with the released material is treated or stored until cleanup procedures are completed; and

- All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

The owner or operator must notify the appropriate state and local authorities that the facility is in compliance with the requirements of the preceding paragraph, before operations are resumed in the affected area(s) of the facility.

The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, the owner must submit a written report on the incident to the Southeast District of the FDEP, 400 North Congress Avenue, P.O. Box 15425, West Palm Beach, Florida 33416. The report must include:

1. Name, address, and telephone number of the owner or operator;

2. Name, address, and telephone number of the facility;

3. Date, time, and type of incident (e.g., fire, explosion);

4. Name and quantity of material(s) involved;

5. The extent of injuries, if any;

6. An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

7. Estimated quantity and disposition of recovered material that resulted from the incident.

5.6 POTENTIAL SPILL SOURCES

The following is a list of activities that have the potential for a small scale (less than 55 gallons of waste) pollution incident.

1. Moving of containers.

   Every time a container is moved, the possibility exists that it could tip over or be dropped. To minimize the possibility of spillage of solvent under those conditions, all container lids must be secured before the container is moved.

2. Delivery truck container transfers.

   a. Individual delivery containers hold from 5 to 55 gallons of waste, a quantity which can be contained by oil sorbent clay or pads, if accidentally spilled.

   b. Each vehicle is equipped with a hoist and hand cart for ease of moving clean solvent containers off the truck and into the customer's shop and returning the dirty solvent containers to the truck.

   c. Lids are secured on containers during movement to prevent a spill.

   d. Each truck contains a complete spill kit, shovel, and a quantity of sorbent material to contain minor spills.

   e. The cargo must be secured in the route vehicle before transit.

Spills Inside Buildings

In the event of a spill indoors, the doors and windows should be opened to improve the ventilation in the confined area. Following the instructions of the Material Safety Data Sheet (MSDS), a worker would enter the area wearing rubber gloves, boots, and respirator, and mop up the liquid and return it to dirty storage. The cleanup is completed only when the workers have cleaned themselves and the emergency equipment with soap and water.

Spills on Concrete Pads

Concrete pads in loading and unloading areas are, in most cases, equipped with secondary containment. Under most spill conditions, product can be totally contained on the concrete surface and in the containment system. Upon containment, arrangements must be immediately undertaken to recover the material. Any soil that may be involved must be removed and handled in the same manner as the material spilled.

Tank Spills or Leakage

Aboveground tanks are underlain by a concrete slab and surrounded by a concrete dike to contain any spilled or leaked solvent. The containment system has been sized in accordance with the regulations, and the product will be totally contained under most spill conditions. Should a spill occur, arrangements must be immediately undertaken to recover the material. In the event of leakage, tank repair or replacement will be initiated. Any soil that may be involved must be removed and handled in the same manner as the material spilled.

Spill Control Procedures

If a harmful discharge occurs:

1. Stop the discharge, if possible, by immediately transferring the liquid to a good container.

2. Retain, contain, or slow the flow of the material, if possible, by diking with sorbent pad or dirt. Based on the seriousness of the incident, the emergency coordinator will select the level of personal protective equipment required to address the incident. Pump and mop up the liquid from the floor into a good container and return the container to storage for subsequent shipment to a Safety-Kleen recycle center for reclamation/disposal. The area and equipment that comes in contact with the spill must be decontaminated with soap and water. All residues resulting from containment and decontamination should be collected for proper disposal at a Safety-Kleen recycle center.

3. If the material escapes the containment efforts, immediately call the cleanup contractor with response time less than two hours (page iii). Record the date, time, and name of person taking the message. Call the primary emergency coordinator, if that person is absent.

4. Immediately recover spilled solvent to reduce property and environmental damage using the emergency and safety equipment stored onsite for such situations

(Figure 5.6-1 and Table 5.6-1), or call in emergency response contractors (page iii). Start recovery operations immediately.

After recovery of spilled solvent, wash all contaminated impervious surfaces and equipment with soap and water. The residue of spill- or fire-contaminated soils and waste waters must be removed and disposed of at a Safety-Kleen recycle center. In addition, the recovered solvent will be sent to a Safety-Kleen recycle center for reclamation.

5. Report any incident as soon as possible to Safety-Kleen Corporate Environment, Health and Safety Department on the 24-hour telephone line: (800) 468-1760. If the Environmental Department does not respond within 30 minutes, call the National Response Center (telephone: (800) 424-8802) or the State Warning Point ((904) 413-9911).

6. The person reporting a spill should be prepared to give their name, position, company name, address, and telephone number. The person reporting also should give the nature of the material spilled (e.g., immersion cleaner, etc.) and, if possible, some estimate of the amount, and whether it is near a stream or could enter a stream by flowing through ditches or storm sewers.

If assistance is needed, the emergency coordinator should describe the containment status and specify any additional equipment needed. When reporting a spill, record the date and time of the call and the name of the person answering the call at the above number.

Spill prevention plans are reviewed with facility personnel every year, and records of the training are kept at the facility.

Information on every spill must be recorded (Safety-Kleen Incident Report Form (Figure 5.6-2) or similar). A notification of each spill will be sent to the Corporate Environment Health and Safety Department.

Reports of emergency incidents will be transmitted to the Secretary of the FDEP or designee within 15 days of occurrence. This report shall include:

1. Name, address, and telephone number of the owner of operator;

2. Name, address, and telephone number of the facility;

3. Date, time, and type of incident (e.g., fire, explosion);

4. Name and quantity of materials involved;

5. The extent of injuries, if any;

6. An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

7. Estimated quantity and disposition of recovered material that resulted from the incident.

Containment Systems

Containerized Wastes

Containers are stored in the container storage area. The storage area is totally contained by a concrete floor and the container area's four walls (Figure 5.6-3). The containment system is free of cracks. Containers are stored on pallets whenever possible.

The floor has a two-inch inward slope (four sides) that will direct a spill toward the collection trench located in the center of the room (Figure 5.6-3). Seven openings (doorways) in the containment area exist. Four of these lead to other containment areas; the return/fill station and the enclosed concrete dock. The other three openings (doorways) are located on the east and north side of the warehouse and lead to driveways and the parking lot. The containment system was measured to have a capacity of 2,996 gallons. Due to the volume of containment available and the configuration of the containment area, it is highly unlikely that any spill would extend beyond this area.

In the container storage area, containers are handled with a hand-truck free of sharp points and stacked by hand. Every time a container is moved, the possibility exists that it will be tipped over, dropped, or punctured. To minimize the possibility of spillage, container lids secured and containers are kept in an upright position. A small portable electric pump is available to quickly transfer the liquid from any leaking container into a safe container. Each route truck is equipped with an electric hoist. This hoist is used in the loading/unloading operation to minimize chances for spillage and/or employee injury. Trucks used for shipping containers between a recycle center and the Medley facility have lift gates for container loading/unloading. Containerized wastes are loaded/unloaded in the vicinity of the contained concrete dock on the southeast side of the building (Figure 5.1-2).

Because these areas are fully enclosed, spills originating in these areas should not come in contact with storm water.

All containers are covered during movement and are located within diked, concrete floored areas to contain any potential spill. The small quantities of waste onsite at any time can be cleaned up immediately through the use of hand-held electric pumps, mops, wet/dry vacuums, or sorbent materials, should a spill occur. Any spilled waste is contained for offsite recycling/reclamation.

All containerized waste movement is performed manually, by a pallet jack, or propane-fueled forklift truck. Therefore, power outages are not expected to threaten employee safety.

Return/Fill Station

The return/fill station is located in the building between the office and container storage area. A slight, nondetectable slope (three inches) exists, which terminates at the sumps (2' long, 2' wide, and 2' deep). The sloped floors and containment sump were measured to have a containment capacity of 3,693 gallons. A 20-foot wide steel grate dock (approximately 33 inches above the floor) is located perpendicular to the floor and extends the full width of this area (Figure 5.6-4). Any spill which occurs on the concrete floor is directed by gravity into the sumps. Any residual remaining on the floor can be cleaned up immediately through the use of mops, wet/dry vacuums, or sorbent materials, should a spill occur. Spilled waste is contained and sent for recycling/reclamation. Doors in this area include four overhead roll-up doorways for trucks entering/exiting the service building, two personnel doorways for employees entering/exiting the service building, one overhead doorway connecting the return/fill station and container storage area (warehouse), one doorway connecting the return/fill station and the container storage area, and one doorway connecting the return/fill station and the offices. The office floor and the container storage area floor are approximately 33 inches above the return/fill station floor and are flush with the steel grate dock. Therefore, spills originating in the return/fill station will go into the sump beneath the grate in the return/fill area and will not flow into these areas. Based on the capacity of the return/fill station collection sumps and sloped floor, it is extremely unlikely that a spill would escape through the overhead doorways or two doorways entering/exiting the service building. The area just outside the service building return/fill station is asphalt covered.

Because the return/fill station is fully enclosed and the pavement outside this area is sloped to carry water away from the building, spills originating in this area should not come in contact with storm water.

Tank Area

The tank area (Figure 5.6-5) with capacity for six 20,000-gallon tanks and their associated displacement taken into account, is provided with more than 20,000 gallons of secondary containment which is in excess of the single largest tank (20,000 gallons). This secondary containment capacity is based on the presence of six tanks. Only three tanks are currently installed. This containment area is only slightly sloped. Any spilled material is removed by pump or wet vacuum. The tanks loading/unloading area is a concrete pad. This concrete pad has a slight slope directed to a sump. When rainwater accumulates in the containment area, and it has been verified that no spill has occurred, then the rainwater will be discharged to the ground surface. Only the Branch Manager or someone operating under his/her direct orders may discharge to the ground surface. If it is not possible to verify that a spill has not occurred or the water exhibits an iridescent sheen, then the rainwater will be pumped into the used parts washer solvent tank. Any spills which occur on the pad will be cleaned up and the area decontaminated. Decontamination methods are discussed later in this Plan. This decontamination will result in *de minimis* residue.

Employee training emphasizes the importance of inspection, maintenance, personal safety, and reporting of conditions with pollution incident potential. This training, coupled with the Safety-Kleen's containment system and immediate cleanup of any spills, eliminates or greatly minimizes the chance of contamination of ground water and/or surface water in the vicinity of the site. In addition, surface run-off at the site does not come in contact with stored products in the waste management area.

5.7 DECONTAMINATION

Once the spilled material has been cleaned up, the spill area and equipment used during the spill clean-up must be decontaminated and/or disposed, as described below.

Concrete Surfaces/Containment Area

- Concrete surfaces/containment areas will be cleaned with a detergent solution and then rinsed with hot water. The rinsate will be collected via wet vacuums and placed in containers. Visual inspection will be used to determine the success of the decontamination procedure.

- The intent of the surface decontamination is to prevent current or future releases of materials to the environment. Vigorous cleaning with detergent is sufficient to prevent releases to the environment during normal operations. Potential for hazards from residual materials to future occupants of the facility are addressed in the closure plans for the facility and the decontamination procedures incorporated therein.

Equipment

The equipment used to clean the area includes mops, pails, scrub brushes, and a wet/dry vacuum. Equipment which is considered reusable (i.e., pails, wet/dry vacuum, hoses) will be washed with detergent, and wash water and rinsate will be collected for proper disposal. All non-reusable equipment and/or equipment which is not capable of being decontaminated will be containerized and disposed of as hazardous waste.

Wash Water and Rinsate

If the rinsate or other wastes generated in the clean-up process is determined to be hazardous, it will be properly disposed of as a hazardous waste; otherwise, the material will be disposed of as an industrial waste. It should be noted that wash water and rinsate will not be allowed to drain to surface waters.

5.8 EMERGENCY RESPONSE EQUIPMENT AND COMMUNICATION

Due to the small size of the facility, routine communication will be accomplished by voice communication. Emergency alarms are available at the tank farm, return/fill station, and warehouse. Telephones are used in case of a spill or fire emergency to summon assistance. Emergency numbers are posted by phones throughout the facility. Included with these phone numbers is the 24-hour spill number for the Corporate Environmental Department at the corporate office in Elgin, Illinois. Figure 5.6-1 provides the locations of fire extinguishers, first-aid kits, and emergency eyewashes. Other emergency response equipment (Table 5.6-1) is kept in a small storage area inside the warehouse near the return/fill dock. This equipment includes mops and buckets, soap, shovels, and spill sorbent pads. Rubber gloves, boots, pumps, and a wet/dry vacuum cleaner are stored in an emergency supply area near the container storage area. Descriptions and uses of the equipment are provided in Table 5.8-1. Adequate aisle space is provided in the container storage area for movement in an emergency situation. The City of Medley supplies water for domestic use, decontamination, and fire fighting. The water pressure supplied by the City of Medley was inadequate for fire fighting purposes, so a booster pump has been installed at the facility.

The fire protection system was installed and certified by the installation contractor in accordance with applicable fire codes.

Pails, hoses, and detergents are the primary equipment that will be used for decontamination. The equipment available at the facility for emergency situations is adequate for most cases. Large or serious emergency situations will be remediated by local emergency response teams or special emergency response or cleanup contractors. The facility is constructed and operates in accordance with National Fire Protection Association (NFPA) standards and applicable local ordinances. Applicable health and safety standards are also observed at the facility.

5.9 FIRE CONTROL PROCEDURES

In the event of a fire at the facility, the following activities will be executed.

Call the Fire Department.

[Note: Center aisles are available in container storage areas to permit fire department personnel to pass with fire fighting equipment.]

Act quickly with the fire extinguisher to put out the fire before it spreads.

Call the Police Department and local hospital (page iii) when injury occurs, and/or the order of on-lookers and traffic is to be maintained.

Ignitable Wastes

<u>All wastes and products are kept away from ignition sources</u>--Personnel must confine smoking and open flames to remote areas, separate from any solvent (e.g., the office or locker room). The parts washer solvent and paint waste handling areas are separated from the office area to minimize the potential for a fire to spread or injury to personnel to occur.

The tank farm is more than 20 feet from the property line. Likewise, the flammable storage area is 50 feet or more from the property line. Both of these distances meet the NFPA code for storage of ignitable materials.

Ignitable wastes are handled so that they do not:

1. Become subject to extreme heat or pressure, fire or explosion, or a violent reaction--The parts washer solvents and paint wastes are stored in a tank or in containers, none of which are near sources of extreme heat, fire, potential explosion sources or subject to violent reactions. The tanks are vented and the containers kept at room temperature to minimize the potential for pressure build-up. The tanks are painted white to reflect sunlight and are vented to prevent pressure build-up.

2. Produce uncontrolled toxic mists, fumes, dusts, or gases in quantities sufficient to threaten human health--The vapor pressure of petroleum-based parts washer solvent is low (2 mm mercury) and it and the paint waste may react with strong oxidizers and reactive metals only. Toxic mists, fumes, and dusts do not form in quantities sufficient to threaten human health since strong oxidizers are not handled at this facility and the solvent vaporization is minimal under normal working conditions.

   [Note: Drycleaning wastes are initially not flammable, but may produce toxic gases and hydrochloric acid at elevated temperatures (about 1,200°F).]

3. Produce uncontrolled fires or gases in quantities sufficient to pose a risk of fire or explosion--See "1" above and "4" below.

4. Damage the structural integrity of the Safety-Kleen facility--The parts washer solvent and paint wastes do not cause deterioration of the tank, drums, or other structural components of the facility.

Incompatible Wastes

Reactive and/or incompatible waste is not handled at the facility. All waste or products are kept away from ignition sources. Employees must confine smoking or open flames to designated safe areas.

Materials are handled so they do not:

a. Generate extreme heat or pressure, fire or explosion, or violent reaction.

b. Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health.

c. Produce uncontrolled fires or gases in sufficient quantities to pose a risk of fire or explosion.

d. Damage the structural integrity of the Safety-Kleen facility.

Adequate aisle space is maintained to allow unobstructed movement of personnel, fire protection equipment, and decontamination equipment to any area of the facility operation in an emergency.

External Factors

The design of the facility is such that a harmful spill is highly unlikely to occur from most external factors. The storage tanks are inaccessible to non-Safety-Kleen personnel. Also, the container storage areas are in buildings which are inaccessible to unauthorized personnel.

1. Vandalism - Only extreme vandalism would result in a solvent spill or fire. Responses to spills and fires are described in a previous section of this Plan.

2. Strikes - A strike would not result in a solvent spill or fire.

3. Power Failure - A power failure would not result in a spill or fire. Should a power failure occur, all activities requiring electricity will cease.

4. Flooding - The waste management facility elevation is above the projected 100-year flood plain; therefore, a 100-year flood will not affect the facility.

5. Storms or Cold Weather - The solvent return/fill station, tank storage, and the container storage areas are roofed to eliminate the possibility of rain entering the waste management areas. Neither snow, cold weather, nor storm water is expected to affect the facility.

5.10 EVACUATION PLAN

In an uncontrolled emergency, all persons are to be evacuated from the area by means of a verbal cry or use of the public address system and are to assemble across the street from the entrance drive to the facility to assure that all personnel are accounted for and out of the area. The emergency coordinator may elect to use a car horn as a means of emergency notification. A head count will be performed by the emergency coordinator.

The Fire Department must be notified at the time of evacuation either from a safe onsite building or neighboring facilities.

Clearly marked exits exist in warehouse and office area.

5.11 AVAILABILITY AND REVISION OF THE PREPAREDNESS, PREVENTION, AND CONTINGENCY PLAN

This Plan and all revisions to the Plan are kept at the facility and regularly updated throughout the operating life of the facility.

Copies of this document are provided to local authorities and organizations listed under the Preparedness and Prevention Plan, which may be called upon to provide emergency services.

This Plan and all revisions to the Plan are made readily available to employees working at the facility.

This Plan is reviewed and updated, if necessary, whenever:

1. The facility permit is modified to allow new process wastes to be stored or treated, or applicable regulations are revised;

2. The list or location of emergency equipment changes;

3. The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that:

   a. Materially increase the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or

   b. Changes in response necessary in an emergency.

4. The names, addresses, or phone numbers of emergency coordinators change;

5. The employee assigned to each emergency task changes, or

6. The plan fails when implemented in an emergency.

5.12 ARRANGEMENTS WITH LOCAL AUTHORITIES

Arrangements have been made to familiarize the Police Department, Fire Department, and local emergency response teams with the layout of the facility, properties of hazardous materials handled (Material Safety Data Sheets) at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes.

Potential primary and secondary spill control contractors as well as sorbent suppliers are identified in this Plan.

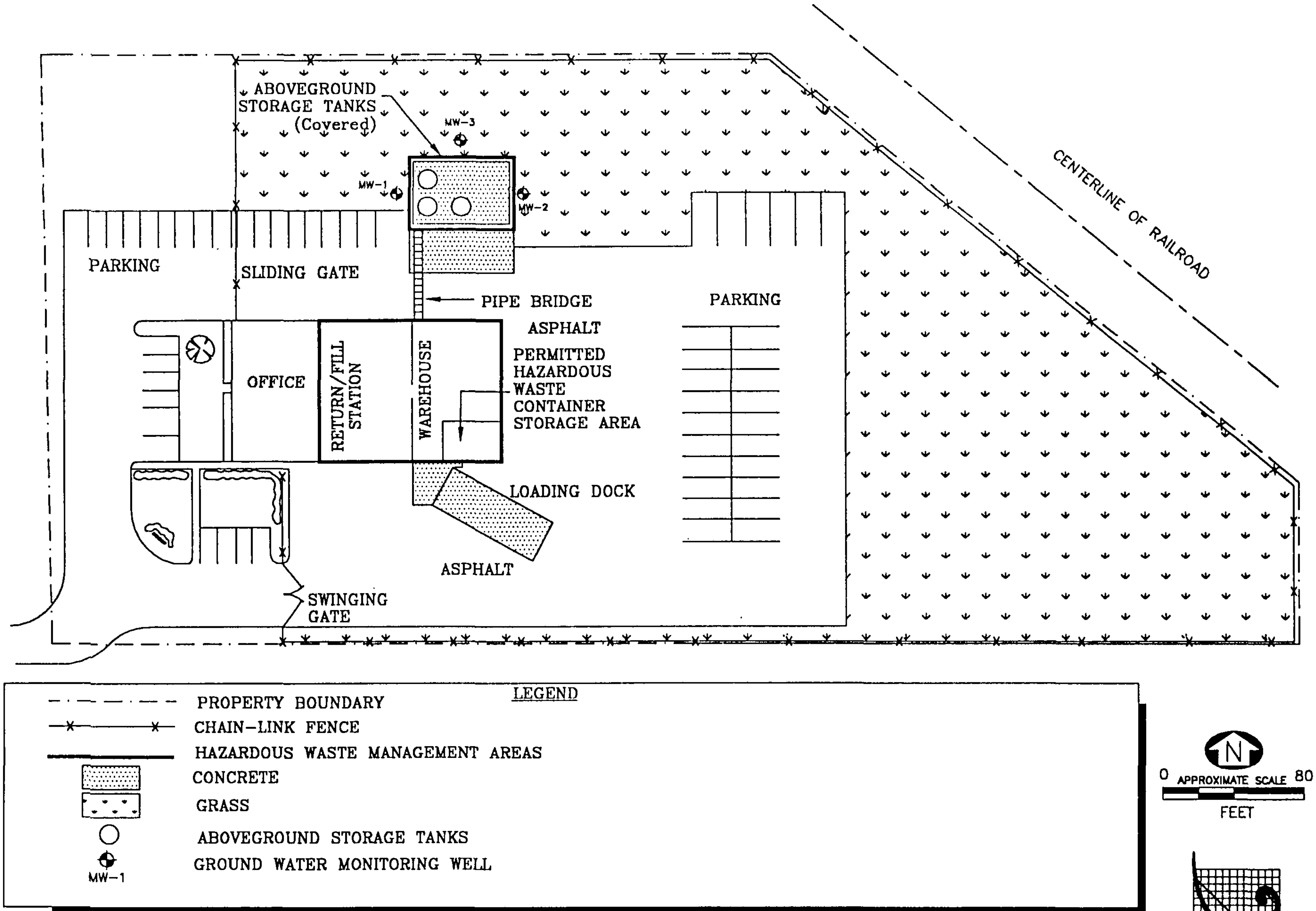
Arrangements have been made to familiarize the local hospital with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which would result from fires, explosions, or releases at the facility.

Appendix A of this Plan (located at the end of Section 5) includes copies of example distribution letters for transmittal. Copies of updated transmittal letters are kept on file at the facility.

311.21 31121-PM 042897-1

REVISION 0 - 6/2/97

Figure 5.1-1
Site Layout Map
Safety-Kleen Corp. Facility
Medley, Florida



base,border,mw,fig2-1-1

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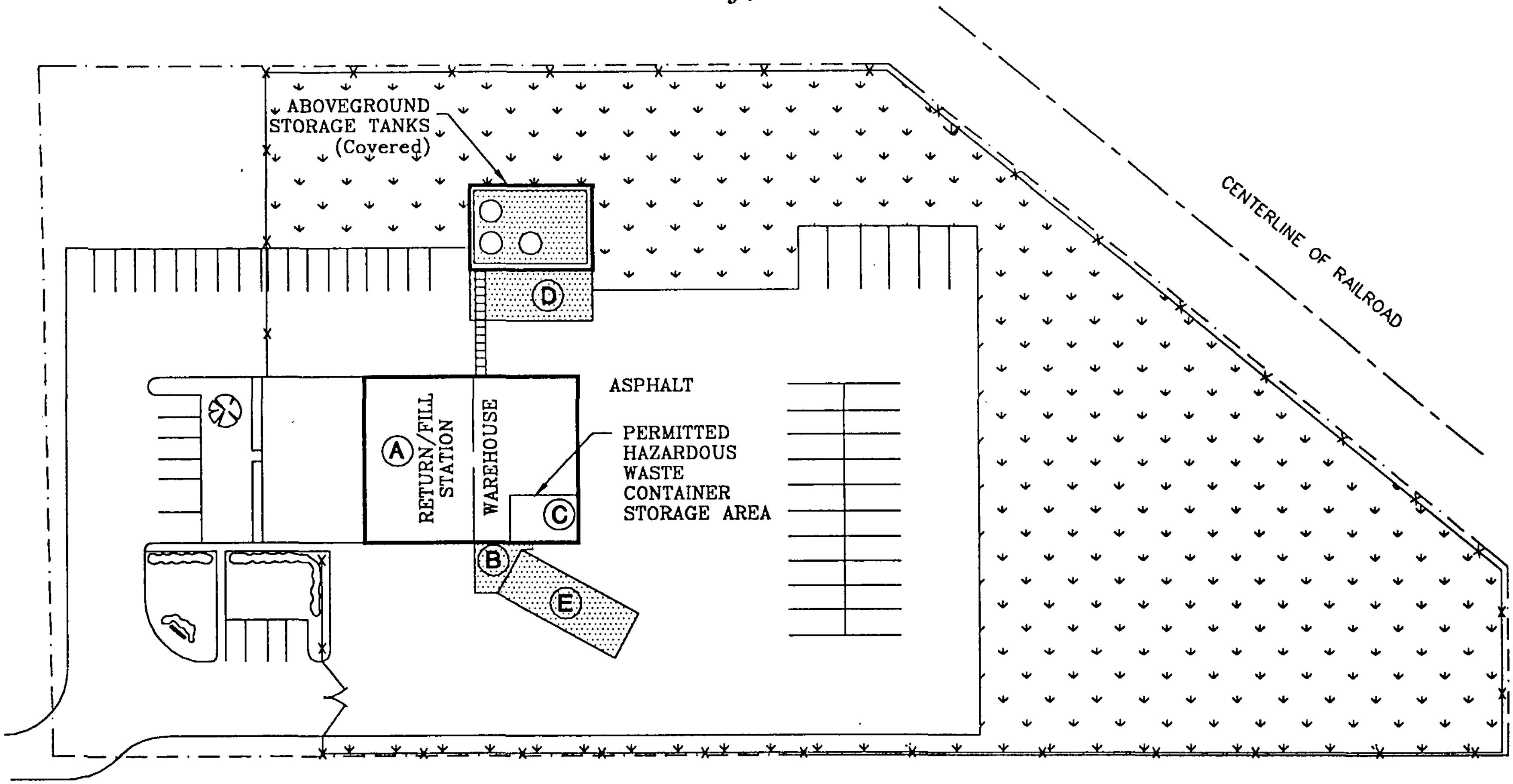
REVISION 0 - 6/2/97

Figure 5.1-2
Locations of Hazardous Waste Storage Areas
Safety-Kleen Corp. Facility
Medley, Florida



LEGEND

— · — · —	PROPERTY BOUNDARY
—x—x—	CHAIN-LINK FENCE
———	HAZARDOUS WASTE MANAGEMENT AREAS
(dotted)	CONCRETE
(grass)	GRASS
○	ABOVEGROUND STORAGE TANKS

- (A) PARTS WASHER SOLVENT DRUM DUMP/BARREL WASH/REFILL (TRUCKS DO NOT DRIVE THROUGH BUILDING)
- (B) LOADING & UNLOADING OF DRUMS CONTAINING SOLVENTS AND WASTES FRS (TRANSFER) FROM TRUCKS
- (C) LOADING & UNLOADING OF CONTAINERIZED WASTE FROM LOCAL AREA VANS & TRUCKS
- (D) LOADING & UNLOADING OF PARTS WASHER SOLVENT (COVERED DRIVEWAY) AND ETHYLENE GLYCOL, USED OIL, AND OILY WASTEWATER
- (E) TANK TRUCK TO TANK TRUCK TRANSFER OF ETHYLENE GLYCOL

N

0 APPROXIMATE SCALE 80 FEET

ERM

base,border,mw,swmu,fig2-2-5

PERMIT

Figure 5.2-1

INSPECTION LOG SHEET FOR:
Weekly Inspection of SAFETY AND EMERGENCY EQUIPMENT, SECURITY DEVICES AND MISCELLANEOUS EQUIPMENT

INSPECTOR'S NAME/TITLE ______________________________

INSPECTOR'S SIGNATURE: (SIGN ON THE DAY INSPECTION IS PERFORMED; PERFORM INSPECTION ON THE SAME DAY EVERY WEEK.)				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY

____/____/____ ____/____/____ ____/____/____ ____/____/____ ____/____/____
DATE: (M / D / Y)

__________ __________ __________ __________ __________
TIME

SAFETY AND EMERGENCY EQUIPMENT

Fire Extinguishers: A* N
If 'N', circle appropriate problem: overdue inspection, inadequately charged, inaccessible, other: ______________

Eyewash and Shower: A N
If 'N', circle appropriate problem: disconnected or malfunctioning valves, inadequate pressure, inaccessible, malfunctioning drain, leaking, other: ______________

First Aid Kit: A N
If 'N', circle appropriate problem: inadequate inventory, other: ______________

Spill Cleanup Equipment: A N
If 'N', circle appropriate problem: inadequate supply of sorbent, towels and/or clay, inadequate supply of shovels, mops, empty drums, wet/dry vacuum, other: ______________

Personal Protection Equipment: A N
If 'N', circle appropriate problem: inadequate supply of malfunctioning or inadequate aprons, gloves, glasses, respirators, emergency respirators, emergency respirator is missing components, items requiring security or clean environment are exposed to the environment, other: ______________

Communication Devices: A N
If 'N', circle appropriate problem: inadequate supply of telephones, malfunctioning telephone(s), malfunctioning intercom, emergency alarm does not work, telephones are not located where needed, other: ______________

SECURITY DEVICES

Gates and Locks: A N
If 'N', circle appropriate problem: sticking, corrosion, lack of warning signs, fit, other: ______________

Fence: A N
If 'N', circle appropriate problem: broken ties, corrosion, holes, distortion, other: ______________

MISCELLANEOUS EQUIPMENT

Dry Dumpster: A N
If 'N', circle appropriate problem: rust, corrosion, split seams, distortion, deterioration, excess debris, liquids in unit, other: ______________

OBSERVATIONS, COMMENTS, DATE AND NATURE OF REPAIRS OF ANY ITEMS INDICATED AS "NOT ACCEPTABLE": ______________

____

____

* A = Acceptable N = Not Acceptable
(IF AN ITEM IS NOT APPLICABLE, ENTER 'N/A' AFTER IT AND DRAW A LINE THROUGH THE 'ACCEPTABLE/NOT ACCEPTABLE' ROW)

FORM 1100-08-05

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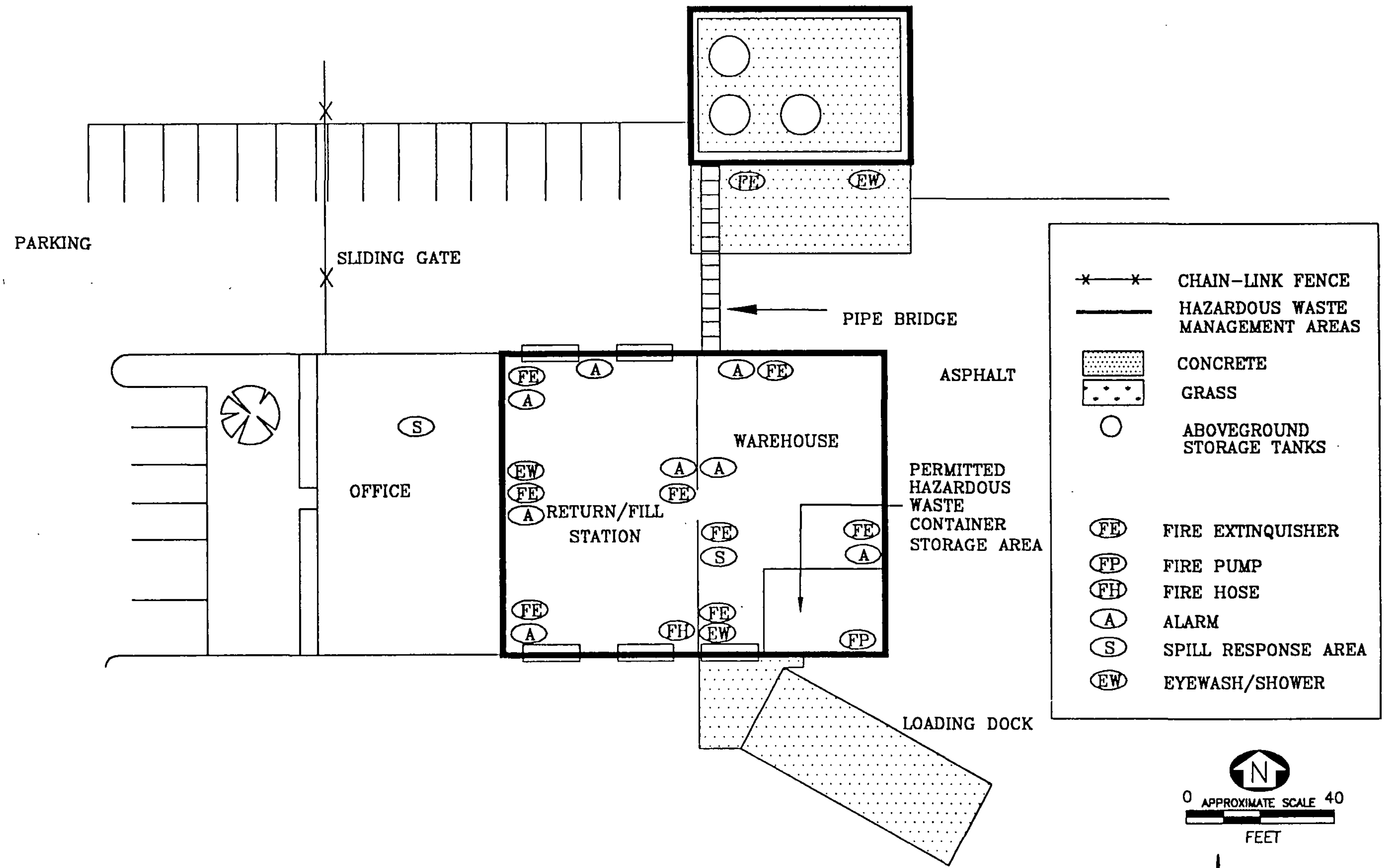
REVISION 0 - 6/2/97

Figure 5.6-1
Locations of Emergency Equipment
Safety-Kleen Corp. Facility
Medley, Florida



ERM

PERMIT

Figure 5.6-2

SAFETY-KLEEN CORP. - U.S. SERVICE CENTERS AND DCs/ACs/OCs
INCIDENT REPORT FORM

Report all environmental incidents to Infotrac, 1-800-468-1760 immediately
(including fires, releases, etc.).

1. Facility Number:________________ Facility Location:________________
2. Incident Date:__________ Approx. Time Began:______ Discovered:______ Ended:______
3. Reported By:________________
4. Incident Location: (a) If at S-K site, specify area of facility:________________
   (b) If not at S-K site, specify location, contact, and phone #:________________

IF A RELEASE, COMPLETE THIS SECTION:

5. Describe incident in detail (if applicable include materials, volume released, and persons/property involved):________________
6. Materials involved: (common name, chemical name)________________
7. Cause of incident :________________
8. Injuries or property damage :________________
9. Describe response action and material not recovered:________________
10. Cleanup residue volume:________________ Spill Kit Restocked? __Yes __No
11. Emergency response contractor (specify name and phone #):________________
12. Emergency agencies at scene (names and phone #s):________________
13. Potential public exposure? yes___ no___ comments:________________
14. Describe actions taken to prevent recurrence:________________
15. Spill residue shipping papers (check): __Bill of Lading __Manifest __Not Applicable
16. Emergency EPA ID # (offsite releases):________________
17. IF NOT A RELEASE, DESCRIBE INCIDENT:________________
18. Follow-up action:________________
19. Notification:

	S-K Infotrac 1-800-468-1760	State (SERC, EPA)	Nat'l Response Center 1-800-424-8802	Local (LEPC, other)
Required?	X yes	_yes _no	_yes _no	_yes _no
Date/Time:				
Contact name:				
Report #:				
Comments rec'd:				

20. Written Reports:

Required?	X no	_yes _no	_yes _no	_yes _no

Name of preparer (print):________________ Date:________________

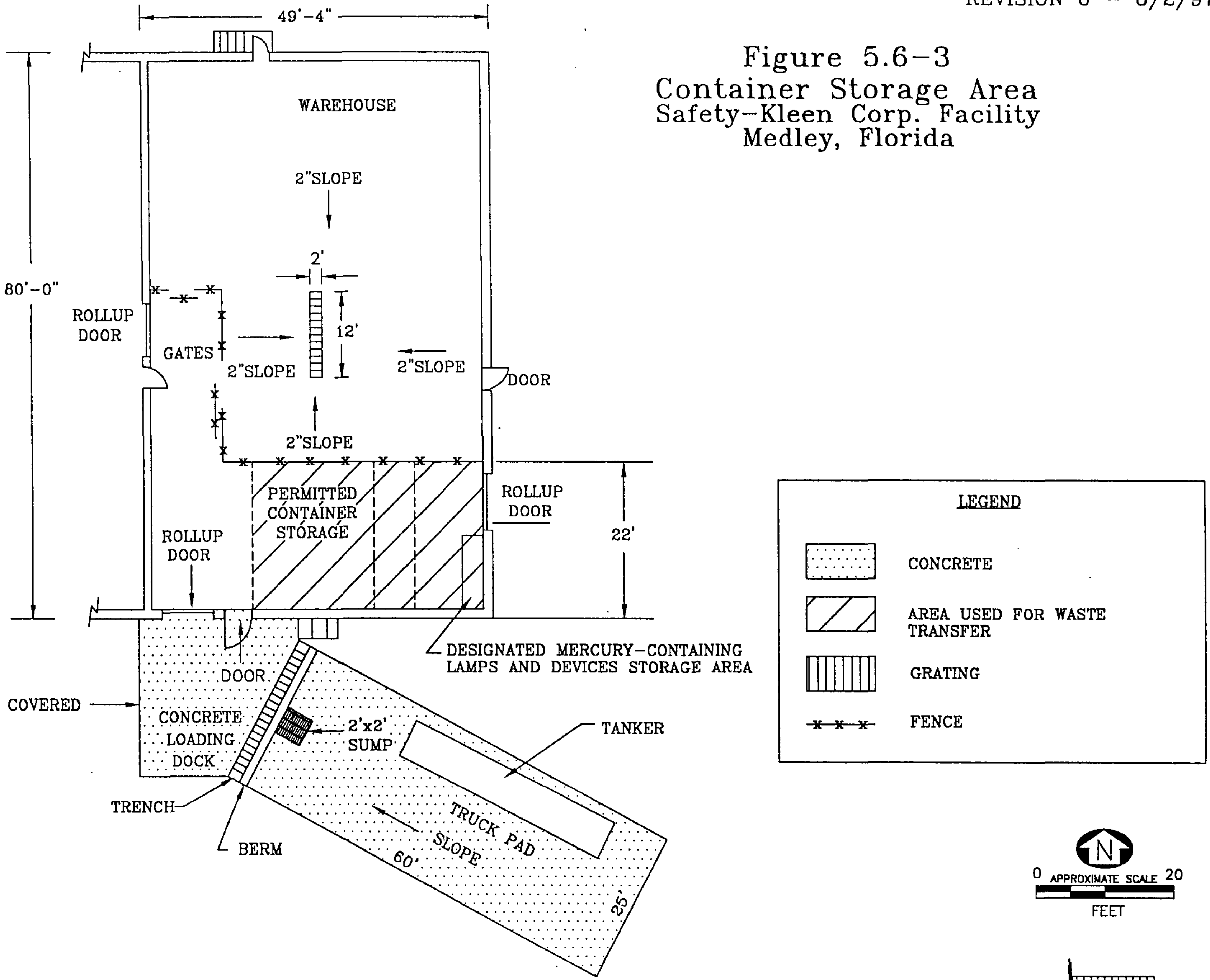
Distribution: (1) immediately deliver/fax to facility Environmental Engineer; (2) within 24 hours fax to Environmental Affairs Manager; (3) file original in Facility Incident Report File (EHS 1430). (NO MAIL DISTRIBUTION REQUIRED.)

311.21

31121-PM 042897-1

REVISION 0 - 6/2/97

Figure 5.6-3
Container Storage Area
Safety-Kleen Corp. Facility
Medley, Florida



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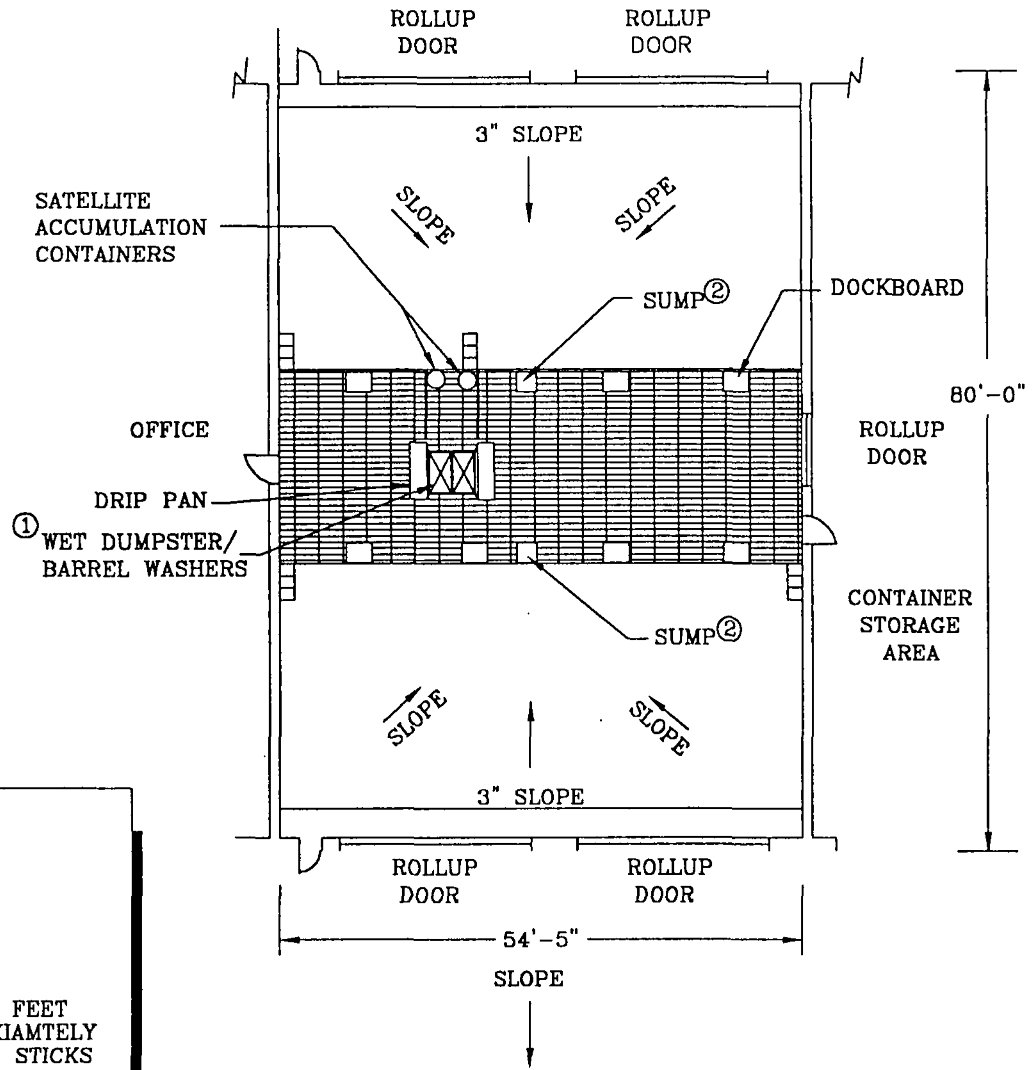
PERMIT

REVISION 0 - [illegible]/2/97

Figures 5.6-4
Return/Fill Station
Safety-Kleen Corp. Facility
Medley, Florida



LEGEND

STEPS

GRATE

Notes:

1. WIDTH APPROXIMATELY 2 FEET
2. SUMPS MEASURE APPROXIAMTELY 2'x2'; THE NORTH SUMP STICKS OUT FROM UNDER THE GRATE BY APPROXIMATELY 6"

N

0 APPROXIMATE SCALE 20

FEET

ERM

PERMIT

REVISION 0 - [illegible]/2/97

Figure 5.6-5
Tank Storage Area
Safety-Kleen Corp. Facility
Medley, Florida

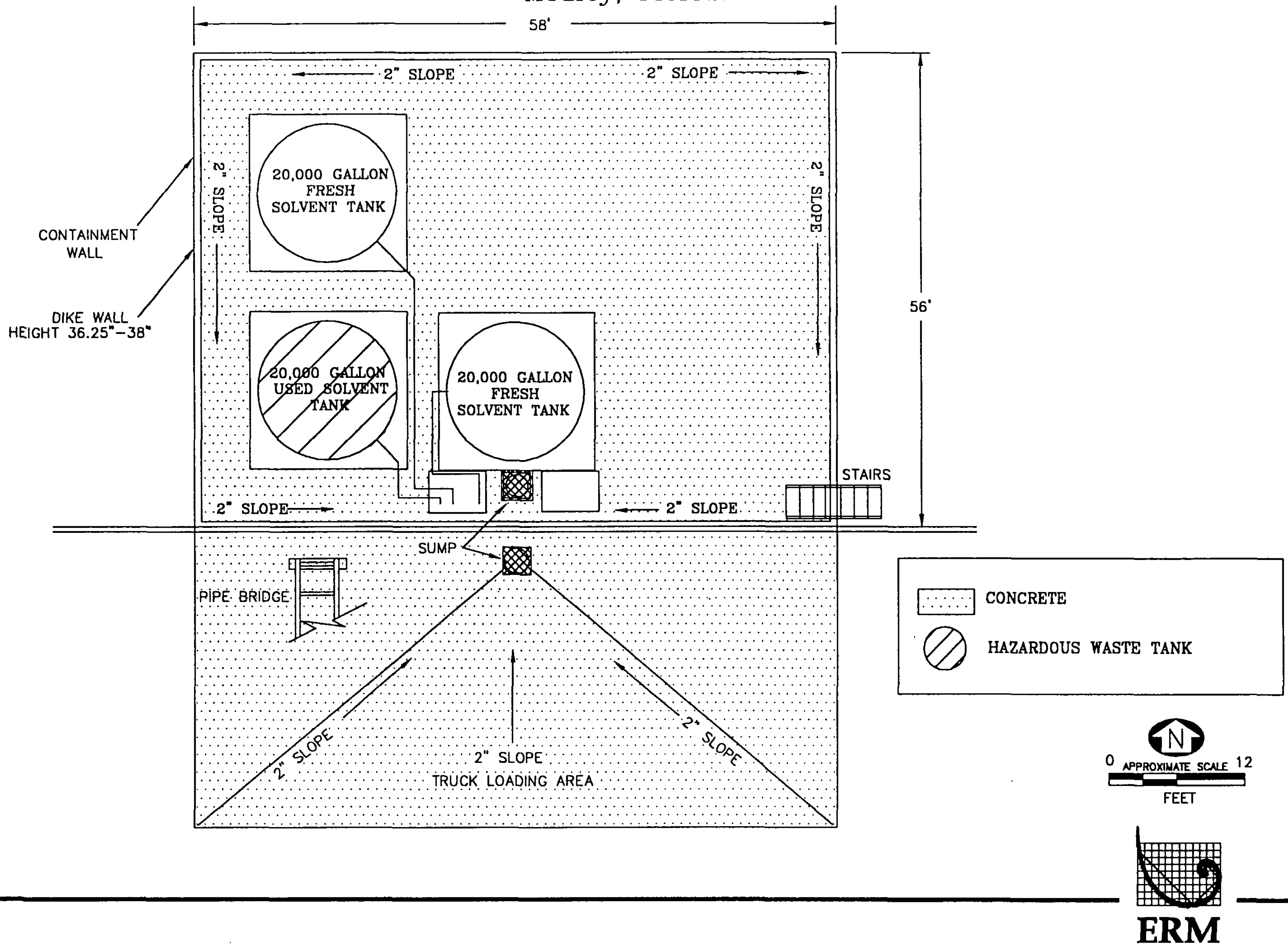


TABLE 5.1-1

PERMITTED AND TRANSFER WASTES
SAFETY-KLEEN CORP.
MEDLEY, FLORIDA

Waste Type	Process Code(s)	Estimated Annual Amounts (Tons)	Waste Codes
Spent Parts Washer Solvent*	S01** S02***	813	D001 and D-Codes Listed in Note Below
Dumpster Sediment	S01**	Included Above	D001 and D-Codes Listed in Note Below
Tank Bottoms	S01**	Included Above	D001 and D-Codes Listed in Note Below
Spent Immersion Cleaner (New Formula) IC699	S01**	28	D-Codes Listed in Note Below
Dry Cleaning Waste (Perchloroethylene)	S01**	350	F002 and D-Codes Listed in Note Below
Dry Cleaning Waste (Non-perchloroethylene)	S01****	Included Above	Transfer wastes - waste codes assigned by generator.
Paint Waste	S01**	69	D001, F003, F005 and D-Codes Listed in Note Below
Fluid Recovery Service (FRS) Waste	S01 ****	250	Transfer wastes - waste codes assigned by generator.
Mercury-Containing Lamps/ Devices	N/A****	Less than 2.2	Not applicable - handled as nonhazardous transfer wastes.

NOTES:

D-Codes: D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043

* Spent parts washer solvents are transported from the customer to the Branch in accordance with the generator's hazardous waste determination.

** This waste will be stored in containers in the container storage area. The maximum drum capacity in the container storage area for hazardous waste and product is 29,400 gallons with 6,912 gallons being waste.

*** The spent parts washer solvent storage tank has a capacity of 20,000 gallons and may be filled up to 19,000 gallons.

**** This waste will be held for transfer in containers in the transfer area.

N/A Process code not applicable.

TABLE 5.2-1

INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Safety Equipment	Fire Extinguishers	• Overdue inspection • Inadequately charged • Inaccessible	Weekly
	Eyewash	• Disconnected/malfunctioning values • Pressure • Inaccessible	Weekly
	First-Aid Kit	• Inadequate inventory	Weekly
	Spill Cleanup Equipment	• Inadequate supply of sorbent, towels, shovels, mops, empty drums	Weekly
	Personal Protection Equipment	• Inadequate supply of aprons, glasses, respirators	Weekly
Security Equipment	Gates and Locks	• Sticking corrosion, lack of warning signs	Weekly
	Fence	• Broken ties, corrosion, holes, distortion	Weekly
Storage Tank System-Storage Tanks	Volume in Tank	• Must never be more than 95 percent full	Each operating day
	Tank Exterior	• Rusty or loose anchoring, lack of grounding, wet spots, discoloration, leaks, distortion	Each operating day
	High Level Alarms	• Malfunctioning siren/strobe light	Each operating day
	Volume Gauges	• Disconnected, sticking, condensation	Each operating day
Secondary Containment	Bottom and Walls	• Cracks, debris, ponding, wet spots/stains, deterioration, displacement, leaks	Each operating day
	Rigid Piping and Supports	• Distortion, corrosion, paint failures, leaks	Each operating day

TABLE 5.2-1

INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Problems	Frequency of Inspection
Transfer Pumps and Hoses	Pumps Seals	• Leaks	Each operating day
	Motors	• Overheating	Each operating day
	Fittings	• Leaks	Each operating day
	Valves	• Leaks, sticking	Each operating day
	Hose Connections and Fittings	• Cracks, loose, leaks	Each operating day
	Hose Body	• Crushed, cracked, thin spots, leaks	Each operating day
Return/Fill Station	Wet Dumpster	• Excess sediment build-up, leaks, rust, split seams, distortion, deterioration, excess debris	Each operating day
Container Storage Area	Total Volume in Storage	• Exceeds permitted limit	Each operating day
	Condition of Drums	• Missing or loose lids; labels missing, incomplete or incorrect; rust, leaks, distortion	Each operating day
	Stacking/Placement/ Aisle Space	• Containers not on pallets, unstable stacks, inadequate aisle space	Each operating day
Secondary Containment	Curbing, Floor and Sump	• Ponding/wet spots, deterioration, displacement, leaks, other	Each operating day

TABLE 5.6-1

EMERGENCY RESPONSE EQUIPMENT

Description	Type/Capacity	Location	Quantity
Fire Extinguisher	ABC (10 lb)	Container Storage Area	9
Fire Extinguisher	ABC	Tank Storage Area	1
Eyewash	Fountain	Container Storage Area	1
Eyewash	Fountain	Return/Fill Shelter	1
First-Aid	Standard	Container Storage Area	1
Telephones	Standard	Manager's Office	1
Telephones	Standard	Secretary's Desk	1
Telephones	Standard	Container Storage Area	2
Gloves	Rubber	Emergency Equip. Area	Min. 3 pair
Boots (optional)	Rubber	Emergency Equip. Area	Min. 3 pair
Protective Clothing	Apron	Emergency Equip. Area	Min. 3
Eye Protection	Goggles/Safety Glasses	Emergency Equip. Area	Min. 3
Sorbent Material	Oil Absorbing	Emergency Equip. Area	Min. 1 bag
Shovel	Standard	Emergency Equip. Area	Min. 1
Mop and Bucket	Standard	Emergency Equip. Area	Min. 1
Pump	Hand-held, Electric	Emergency Equip. Area	Min. 1
Respirator	Air Purifying	Emergency Equip. Area	Min. 2
Wet/Dry Vacuum	Portable, Electric	Emergency Equip. Area	1
Empty Drums for Overpack	30, 55, and 85 gallons	Container Storage Area	9
Fire Sprinkler System	N/A	Container Storage Area	1

TABLE 5.8-1

DESCRIPTION AND USES OF EMERGENCY EQUIPMENT

Item	Location	Use/Description
Gloves	Locker Room/Emergency Equipment Area	The rubber or plastisol gloves sold by Safety-Kleen are to be used when handling the solvents.
Safety Glasses	Locker Room/Emergency Equipment Area	To be worn when loading or unloading solvent.
Plastic Aprons	Locker Room/Emergency Equipment Area	For situations where a solvent may get on the worker's clothing.
Eyewash Stand	Container storage area and return/fill station	The workers should operate the stand and become familiar with its operation.
Showers	Office to return/fill dock exit	These are used for emergency and routine cleaning of employees.
Fire Extinguisher	Points where solvent is transferred	An ABC extinguisher is a universal system used on paper, wood, and electrical, as well as solvent fires. The extinguishers must be full and carry an inspection tag. The accepted extinguisher is available as S-K Part No. 4009.
Absorbent Material	Loading/Unloading Area and Warehouse	An adequate supply will be on hand to handle small spills. S-K Part No. 8890 A 50-pound bag will also be kept in the warehouse to remediate and prevent the spread of large spills.
Air Purifying Respirator	Locker Room/Emergency Equipment Area	To be worn by any person entering an area or performing work where potentially harmful fumes are present or suspected to be present but are not considered to be immediately dangerous to life and health.
Portable Pumps Wet/Dry Vacuum	Warehouse	For use in picking up liquid spills in the container containment area, or other paved areas, and to transfer materials associated with a spill.
Recovery Containers	Warehouse	Emergency storage of spilled product, cleaning fluids, or other materials associated with a spill.
Plastic	Warehouse	To be used for containment of decontamination zones.
Duct Tape	Warehouse	Taping of protective clothing, containment plastic, and other miscellaneous uses.
First-Aid Supplies	Locker Room/Emergency Equipment Area	Minor first-aid needs and health problems.
Shovels and Mops	Warehouse	To be used to collect spills and spill residue.
Communication Equipment	Throughout the Facility	Six telephones with paging/loudspeaker systems are available in the office and warehouse for internal and external communications.

TABLE 5.8-1

DESCRIPTION AND USES OF EMERGENCY EQUIPMENT

Item	Location	Use/Description
Decontamination Equipment	Warehouse	Two brushes, a box of detergent and cloth rags are available for decontamination of clean-up equipment.
Fire Sprinkler System	Warehouse	An automatic sprinkler system that is activated in case of a fire in the building.

Appendix A

Example Letters to Local Authorities

safety-kleen®

____
(Date)

CERTIFIED MAIL — RETURN RECEIPT REQUESTED

Metro Dade Fire Department
8175 NW 12th Street
Miami, FL 33126

RE: Safety-Kleen Corp., 9755 NW 95th Street, Medley, Florida 33166

Dear Sir:

Under terms of Environmental Protection Agency (EPA) Regulations 40 CFR 264, Subpart D, Safety-Kleen Corp. (SK) must provide local police, fire departments, hospitals, and state or local emergency response teams with a copy of the contingency plan for the above-referenced facility, and any revisions to the plan. A copy of the updated contingency plan is enclosed for your files. Please review this updated contingency plan.

EPA Regulations 40 CFR 264, Subpart C, require that SK attempt to make arrangements for the provision of emergency assistance. Emergency assistance for this facility may be needed from the policy and fire departments, state emergency response teams, and hospitals. The completion and return of the enclosed form (self-addressed envelope provided) will acknowledge receipt of this update to the contingency plan and provides your agreement to be available for emergency assistance.

Thank you for your cooperation in this matter. Should you have any questions or desire to visit our facility, please contact me at (305) 884-0123.

Sincerely,

Tim Sholl
Branch Manager
Medley Facility

bai

Enclosure(s)

13112.10\0697PERM\S5APPA.L-1\BAI\1\042997

____

(Date)

Metro Dade Fire Department
8175 NW 12th Street
Miami, FL 33126

Mr. Tim Sholl
Branch Manager
Safety-Kleen Corp. - Medley
8755 NW 95th Street
Medley, FL 33166

RE: Safety-Kleen Corp., 8755 NW 95th Street, Medley, Florida 33166

Dear Mr. Sholl:

This is to acknowledge that the Hillsborough County Fire Department has been made aware of the potential need for emergency assistance associated with the operation of the Safety-Kleen Corp. facility at 8755 NW 95th Street, Medley, Florida. The Metro Dade Fire Department understands that the emergency coordinator is available to provide additional information on the nature of assistance that may potentially be required, type of physical and chemical hazards that may potentially be encountered, and the type of injury or illness that may potentially occur.

This is to acknowledge receipt of the updated contingency plan information for the Medley, Florida facility.

The Metro Dade Fire Department __________________________ (agrees/declines) to be available to provide emergency assistance for the Safety-Kleen Corp. facility at 8755 NW 95th Street, Medley, Florida.

Sincerely,

____

(Signature)

____

(Title)

______ Check here if you do not have a copy of the contingency plan for this Safety-Kleen Corp. facility.

safety-kleen®

____

(Date)

CERTIFIED MAIL — RETURN RECEIPT REQUESTED

AMI-Palmetto General Hospital
2001 West 68th Street
Hialeah, FL 33016

RE: Safety-Kleen Corp. 8755 NW 95th Street, Medley, Florida 33166

Dear Sir:

Under terms of Environmental Protection Agency (EPA) Regulations 40 CFR 264, Subpart D, Safety-Kleen Corp. (SK) must provide local police, fire departments, hospitals, and state or local emergency response teams with a copy of the contingency plan for the above-referenced facility, and any revisions to the plan. A copy of the updated contingency plan is enclosed for your files. Please review this updated contingency plan.

EPA Regulations 40 CFR 264, Subpart C, require that SK attempt to make arrangements for the provision of emergency assistance. Emergency assistance for this facility may be needed from the policy and fire departments, state emergency response teams, and hospitals. The completion and return of the enclosed form (self-addressed envelope provided) will acknowledge receipt of this update to the contingency plan and provides your agreement to be available for emergency assistance.

Thank you for your cooperation in this matter. Should you have any questions or desire to visit our facility, please contact me at (305) 884-0123.

Sincerely,

Tim Sholl
Branch Manager
Medley Facility

bai

Enclosure(s)

13112.10\0697PERM\S5APPA.L-2\BAI\1\042997

____
(Date)

AMI-Palmetto General Hospital
2001 West 68th Street
Hialeah, FL 33016

Mr. Tim Sholl
Branch Manager
Safety-Kleen Corp. - Medley
8755 NW 95th Street
Medley, FL 33166

RE: Safety-Kleen Corp., 8755 NW 95th Street, Medley, Florida 33166

Dear Mr. Sholl:

This is to acknowledge that the AMI-Palmetto General Hospital has been made aware of the potential need for emergency assistance associated with the operation of the Safety-Kleen Corp. facility at 8755 NW 95th Street, Medley, Florida. The AMI-Palmetto General Hospital understands that the emergency coordinator is available to provide additional information on the nature of assistance that may potentially be required, type of physical and chemical hazards that may potentially be encountered, and the type of injury or illness that may potentially occur.

This is to acknowledge receipt of the updated contingency plan information for the Medley, Florida facility.

The AMI-Palmetto General Hospital __________________________ (agrees/declines) to be available to provide emergency assistance for the Safety-Kleen Corp. facility at 8755 NW 95th Street, Medley, Florida.

Sincerely,

____
(Signature)

____
(Title)

______ Check here if you do not have a copy of the contingency plan for this Safety-Kleen Corp. facility.

safety-kleen®

____
(Date)

CERTIFIED MAIL — RETURN RECEIPT REQUESTED

Medley Police Department
7331 NW 74th Street
Medley, FL 33166

RE: Safety-Kleen Corp., 8755 NW 95th Street, Medley, Florida 33166

Dear Sir:

Under terms of Environmental Protection Agency (EPA) Regulations 40 CFR 264, Subpart D, Safety-Kleen Corp. (SK) must provide local police, fire departments, hospitals, and state or local emergency response teams with a copy of the contingency plan for the above-referenced facility, and any revisions to the plan. A copy of the updated contingency plan is enclosed for your files. Please review this updated contingency plan.

EPA Regulations 40 CFR 264, Subpart C, require that SK attempt to make arrangements for the provision of emergency assistance. Emergency assistance for this facility may be needed from the policy and fire departments, state emergency response teams, and hospitals. The completion and return of the enclosed form (self-addressed envelope provided) will acknowledge receipt of this update to the contingency plan and provides your agreement to be available for emergency assistance.

Thank you for your cooperation in this matter. Should you have any questions or desire to visit our facility, please contact me at (305) 884-0123.

Sincerely,

Tim Sholl
Branch Manager
Medley Facility

bai

Enclosure(s)

13112.10\0697PERM\S5APPA.L-3\BAI\1\042997

____
(Date)

Medley Police Department
7331 NW 74th Street
Medley, FL 33166

Mr. Tim Sholl
Branch Manager
Safety-Kleen Corp. - Medley
8755 NW 95th Street
Medley, FL 33166

RE: Safety-Kleen Corp., 8755 NW 95th Street, Medley, Florida 33166

Dear Mr. Sholl:

This is to acknowledge that the Medley Police Department has been made aware of the potential need for emergency assistance associated with the operation of the Safety-Kleen Corp. facility at 8755 NW 95th Street, Medley, Florida. The Medley Police Department understands that the emergency coordinator is available to provide additional information on the nature of assistance that may potentially be required, type of physical and chemical hazards that may potentially be encountered, and the type of injury or illness that may potentially occur.

This is to acknowledge receipt of the updated contingency plan information for the Medley, Florida facility.

The Medley Police Department __________________________ (agrees/declines) to be available to provide emergency assistance for the Safety-Kleen Corp. facility at 8755 NW 95th Street, Medley, Florida.

Sincerely,

____
(Signature)

____
(Title)

______ Check here if you do not have a copy of the contingency plan for this Safety-Kleen Corp. facility.

6.0 PERSONNEL TRAINING

This section of the permit application describes Safety-Kleen's training program. All position descriptions referenced may not be present at this facility. Training plan outlines, job descriptions, training content, frequency and techniques are described as well as the implementation of the training program.

The purpose of Safety-Kleen's training program is to familiarize employees with environmental regulations, records, and emergency procedures so they will perform their jobs in the safest and most efficient manner possible.

6.1 DESCRIPTION OF TRAINING PROGRAM

Each employee is trained to operate and maintain the service center safely, and to understand hazards unique to that person's job assignment. New Branch Managers (Resource Recovery Branch Manager) and new Branch Supervisors must complete a formal introductory training program before starting their jobs, with annual review and update thereafter. New Sales Representatives must be trained prior to conducting unsupervised hazardous waste services. All other hazardous waste employees must undergo a combination of videotape and on-the-job training within six months of starting.

Outline of Training Program

An outline of the training program, given both initially and annually to employees who manage or handle hazardous waste at the Branch, is presented in Table 6.1-1.

Job Title/Job Description

Job descriptions for employees who would be expected to manage or handle hazardous wastes, including the Branch Manager (Resource Recovery Branch Manager), Branch Automotive Manager, Branch Industrial Manager, Branch Secretary (paperwork only), Sales

Representatives, and Warehouseperson (also called Material Handler) are provided in Tables 6.1-2 through 6.1-7.

Training Content, Frequency, and Techniques

Employee training is accomplished using classroom, videotape, written, and on-the-job methods. The Environment, Health and Safety (EHS) and Training Departments of Safety-Kleen's Corporate Office prepares a training program for employees and they must provide documentation that the program has been executed. Employees are trained prior to starting or as soon as they begin working (depending on their position), and are trained annually thereafter.

The following presents the specific training requirements for new Safety-Kleen employees who will manage or handle hazardous waste.

Training of New Branch Managers: New Branch Managers are trained for several weeks before they begin their new positions. This training is given on the job and in the classroom. During this training, the new manager reviews environmental records and learns the recordkeeping requirements. These records include: manifests, personnel records, training records, service center inspection records, and spill reports. At least eight hours of this initial training consists of an introduction to environmental law and a review of the Part B, including the Waste Analysis Plan, Preparedness and Prevention Plan, Contingency Plan, Training Plan, and Closure Plan.

The training culminates in four weeks of training at that person's new service center, at least one day of which is devoted to environmental training with the Environmental Health and Safety Manager. Additional time is spent reviewing past environmental compliance at the Branch Manager's service center; the regulations unique to the state are discussed as well.

Training of New Branch Automotive Manager and Branch Industrial Manager: The Branch Automotive Manager and Branch Industrial Manager are responsible for administrative operations at the Branch. This training is on location and in classroom modes. While being trained at the branch at which they will be stationed, a new Branch

Automotive/Industrial Manager reviews environmental records and learns the recordkeeping and inspection requirements. These records include: manifests, personnel records, training records, service center inspection records, and spill reports.

This training includes an introduction to environmental law (including the Resource Conservation and Recovery Act), health and safety issues, emergency response and inventory (including waste) reconciliation methods. Additional time is spent reviewing past environmental compliance at the Branch Automotive/Industrial Manager's site.

Training of New Branch Secretaries: Branch Secretaries are trained in the proper recordkeeping procedures as soon as they begin working for Safety-Kleen. While they are not usually responsible for preparing the documentation, they must check it for accuracy and completeness and then process or file it as required. Additional training is overseen by the Branch Manager and is done within six months of starting. This training is often presented in company-produced videotape presentations on emergency response, shipping documents (including manifests), drum labels, and other safety and environmental compliance issues.

Training of New Sales Representatives: New Sales Representatives are trained on the job for two weeks during which they are introduced to manifests, service center inspection records, and training records. A Sales Representative may also be trained as the designee for performing a facility inspection. Additional training is in the form of videotape presentations and a review of the Contingency Plan. Within six months of starting a position, the sales representative must review the items listed in the outline presented in Table 6.1-1.

Training of New Warehouseperson: A Warehouseperson is trained to maintain the service center and assist the other branch employees in their tasks. The Warehouseperson may be a designee to perform the Branch inspection and must be trained by the Branch Manager. Within six months of starting a position, the Warehouseperson must review the items listed in the outline presented in Table 6.1-1.

Annual Training: On an annual basis, employees are trained using a program prepared and updated annually by the EHS and Training Departments which contains the topics in

Table 6.1-1. This training also includes updates on environmental regulations, an in-depth review of the Contingency Plan and a review of RCRA inspection criteria. This review is in the form of videotapes and a review and discussion of the storage service center permit/application. In addition, periodic memoranda on changes in environmental regulations are issued by the EHS Department and must be read and discussed by Branch personnel.

Training Director

The training is directed by Safety-Kleen's Training and Development and EHS Departments which operate out of the Corporate Office in Elgin, Illinois. Each Environmental Health and Safety Manager who works in this department is responsible for compliance of the service centers in a given geographic area of the country. The EHS Department, in coordination with the facility, must:

- Provide a training program which addresses the requirements of environmental regulations and corporate policy;
- Notify the proper authorities, oversee remedial actions, and submit a written report to the state after an emergency situation has occurred;
- Assure that environmental permits are submitted and updated as required;
- Manage any environmental compliance issues which exceed the resources available at the service center level; and
- Participate in training new Branch Managers and conducting Annual Branch Manager Training.

Qualifications for individual staff members of the EHS Department who conduct training at the Service Center are available upon request.

Relevance of Training to Job Position

Each employee is trained to operate and maintain the service center safely and to understand hazards unique to the job assignment. Safety-Kleen's training programs are designed to give employees appropriate instruction regarding the hazardous waste management procedures they will encounter in performing their respective duties. Since the handling of hazardous materials is a large part of the operations of the service center, all employees are given training in environmental regulations, transportation regulations, the Preparedness and Prevention Plan, and Contingency Plan.

Training for Hazardous Waste Management

As described previously, all employees are trained in the aspects of hazardous waste management which are relevant to their position. This includes job-specific hazards and necessary precautions, emergency response, and proper recordkeeping. This training is given initially and updated annually.

Training for Contingency Plan Implementation

All employees are trained in Contingency Plan implementation, through both initial training and yearly refresher courses, as summarized in Table 6.1-1. Employees are trained on the contents of the Contingency Plan as well as criteria for implementation.

Training for Emergency Response

All employees are trained in emergency response procedures, through both initial training and yearly refresher courses, as summarized in Table 6.1-1. The emergency training involves spill and fire prevention as well as remedial action procedures. Employees are also trained to recognize when evacuation and outside assistance may be necessary.

Implementation of Training Program

New Branch Managers and Sales Representatives must complete an introductory training program discussed previously within six months of starting their jobs, with annual review and update thereafter. Branch Secretaries and Warehousepersons are given the full hazardous waste training course, as outlined in Table 6.1-1, within six months of starting work. Personnel involved in direct handling of hazardous waste do not work unsupervised until they have completed the entire initial hazardous waste training course.

Training for Handling Mercury-Containing Lamps and Devices

As a registered transporter and storage facility for mercury-containing lamps and devices destined for recycling, the Branch has certified that employees handling spent lamps or devices are trained in the applicable proper handling and emergency cleanup and containment procedures, and that these emergency procedures will be kept at the Branch for inspection upon request by the FDEP.

Personnel Training Records Forms

Tables 6.1-8 and 6.1-9 are sample personnel training record forms. These forms, or forms similar to them, will be used to record training. All training is documented and kept on file at the service center until closure. Additional forms may be used contingent upon the specific issue being addressed. All forms will show the training received, employee name, and the date of training.

TABLE 6.1-1

INTRODUCTORY AND CONTINUING TRAINING TOPICS FOR BRANCH EMPLOYEES

- Hazard Communication Safety Training
- Hazard Communication Understanding MSDSs
- Preventing Injury and Illnesses
- Chemistry of Safety-Kleen Products
- Hazardous Materials Regulations
- Waste Analysis Plan
- Preparedness, Prevention, and Contingency Plan
- Day Four - Ten-Day Training - Haz Mat/POT/MANFST VID QUIZ
- Completion of New Employee Orientation Program *
- Initial Contingency Plan Training (Including Part B review) *
- Respirator Fit Testing and Training

* New employees only; not a part of annual training.

TABLE 6.1-2

JOB DESCRIPTION
RESOURCE RECOVERY BRANCH MANAGER

JOB DESCRIPTION:

The Resource Recovery Branch Manager has overall responsibility for the facility operations and maintenance, and directs sales activities within a certain geographic area defined by the corporate Marketing Department. The Branch Manager is responsible for the proper operations and profitability of the service center.

REPORTS TO:

Regional Manager of Sales

QUALIFICATION:

Minimum high school graduate with Safety-Kleen sales experience

PRINCIPAL RESPONSIBILITIES:

1. Plan, direct, and monitor activities of Sales Representatives.
2. Training of branch facility managers, sales representatives, and other branch personnel.
3. Assist or accompany sales representatives during their sales activities when necessary.
4. Tabulate daily sales and inventory figures and report them to the corporate offices.
5. Maintain adequate inventory of solvents, allied products, and equipment.
6. Carry out corporate policies and standards regarding facilities, equipment operation and maintenance.
7. Ensure the regular inspection of the facility and equipment and the implementation of any necessary repairs or remedial actions.
8. Represent Safety-Kleen Corp. in local community affairs and public relations activities.
9. Coordinate with corporate Technical Services and EHS Departments and implement necessary actions or plans for Regulatory compliance.
10. Be able to act as the primary emergency response coordinator.

TABLE 6.1-3

JOB DESCRIPTION
BRANCH AUTOMOTIVE MANAGER

JOB DESCRIPTION:

Develops and maintains automotive account business by presenting and providing the complete Automotive Fluid Recovery Service to customers in assigned territories. Trains, motivates, and controls the automotive sales staff within the assigned territories.

REPORTS TO:

Directly to the Resource Recovery Branch Manager and indirectly to Regional Automotive Sales Manager. All Automotive and Oil Sales Representatives within assigned territories report directly to the Branch Automotive Manager (BAM). One or more Branch Secretaries report to the BAM, as assigned by the Resource Recovery Branch Manager.

QUALIFICATION:

Minimum high school graduate with above average Safety-Kleen route sales experience. Applicant should exhibit leadership abilities and be self-motivated, and pass Company testing.

PRINCIPAL RESPONSIBILITIES:

1. Markets and sells the total Automotive Fluid Recovery Service.
2. Signs automotive accounts to the Safety-Kleen Service Contract and Oil agreements where applicable.
3. Ensures that customers have the right kind of equipment which is properly labeled, and on the appropriate service interval, by completing machine condition reports.
4. Ensures that the Company's ethical standards are maintained.
5. Reviews weekly and period sales production summaries.
6. Ensures the timely completion of services.
7. Reviews and acts on accounts receivable standards.
8. Assures proper completion and administration of hazardous waste paperwork.
9. Assures proper management, preparation, and shipment of hazardous waste (including packaging, placarding, transportation, and storage procedures).
10. Assures DOT compliance.

11. Trains personnel following the *Corporate Training 10-Day Action Plan*.

12. Conducts sales meetings.

13. Oversees career development by conducting selling skills training meetings (in conjunction with ASM).

14. Conducts health and safety meetings.

15. Develops team contests or rewards for set period objectives.

16. Develops rewards for achieved objectives.

17. Holds monthly goal setting sessions with assigned personnel.

18. Conducts quarterly performance reviews with assigned personnel.

19. Controls all personnel within the assigned territories by daily/weekly communication in regards to branch standards and goals.

TABLE 6.1-4

JOB DESCRIPTION
BRANCH INDUSTRIAL MANAGER

JOB DESCRIPTION:

Develops and maintains industrial account business by presenting and providing the complete Industrial Fluid Recovery Service to customers in assigned territories. Trains, motivates, and controls the industrial sales staff within the assigned territories.

REPORTS TO:

Directly to the Resource Recovery Branch Manager and indirectly to Regional Industrial Sales Manager. All Industrial Sales Representatives within assigned territories report directly to the Branch Industrial Manager (BIM). One or more Branch Secretaries report to the BIM, as assigned by the Resource Recovery Branch Manager.

QUALIFICATION:

Minimum high school graduate with above average Safety-Kleen route sales experience. Applicant should exhibit leadership abilities, be self-motivated, and pass Company testing. Good reading and letter writing skills are also required.

PRINCIPAL RESPONSIBILITIES:

1. Ensures that customers have the right kind of equipment which is properly labeled, and on the appropriate service interval, by completing machine condition reports.

2. Ensures that the Company's ethical standards are maintained.

3. Performs the required amount of cold calls, sample processing, and machine placements.

4. Reviews weekly and period sales production summaries.

5. Ensures the timely completion of services.

6. Reviews and acts on accounts receivable standards.

7. Assures proper completion and administration of hazardous waste paperwork.

8. Assures proper management, preparation, and shipment of hazardous waste (including packaging, placarding, transportation, and storage procedures).

9. Assures DOT compliance.

10. Trains personnel following the *Corporate Training 10-Day Action Plan*.

11. Conducts sales meetings.

12. Oversees career development by conducting selling skills training meetings (in conjunction with ISM).

13. Conducts health and safety meetings.

14. Develops team contests or rewards for set period objectives.

15. Develops rewards for achieved objectives.

16. Holds monthly goal setting sessions with assigned personnel.

17. Conducts quarterly performance reviews with assigned personnel.

18. Controls all personnel within the assigned territories by daily/weekly communication in regards to branch standards and goals.

TABLE 6.1-5

JOB DESCRIPTION
BRANCH SECRETARY

JOB DESCRIPTION:

Performs duties to assist the branch manager, sales representatives, and customers with billing, scheduling, and recordkeeping. Performs secretarial duties at the Branch.

REPORTS TO:

Branch Manager

QUALIFICATION:

Attended high school

PRINCIPAL RESPONSIBILITIES:

1. Maintain records in an orderly manner.
2. Assist sales representatives in scheduling services.
3. Ensure that all hazardous waste manifests are complete, and manage distribution and filing of copies.
4. Maintain Personnel Training Record files.
5. Maintain Facility Inspection Records.
6. Answer customer inquiries.
7. Manage customer billing.
8. Perform other related duties as assigned.

TABLE 6.1-6

JOB DESCRIPTION
SALES REPRESENTATIVE

JOB DESCRIPTION:

The Sales Representative is charged with the responsibility of generating new business and servicing established accounts within a certain defined geographic area.

REPORTS TO:

Branch Industrial Manager or Branch Automotive Manager

QUALIFICATION:

Minimum high school graduate

PRINCIPAL RESPONSIBILITIES:

1. Maintain their route truck and replenish products on the truck before beginning the route sales.

2. Contact potential customers for the purpose of selling Safety-Kleen services and allied products.

3. Exchange used solvents with fresh solvent and replenish the inventory of Safety-Kleen's products for existing customers.

4. Make minor repairs of Safety-Kleen's parts washer equipment or lease new equipment to the customer.

5. Prepare the necessary paperwork for each service, and bill or credit the customer, as necessary.

6. At the end of each day, return the truck to the branch for cleaning and maintenance, and summarize the day's activities so the Branch Manager can tabulate the daily figures and forward them to the corporate office.

TABLE 6.1-7

JOB DESCRIPTION
WAREHOUSE PERSONNEL

JOB DESCRIPTION:

Perform duties to assist the sales representatives in loading and unloading the trucks. Perform janitorial duties at the Branch.

REPORTS TO:

Branch Manager

QUALIFICATIONS:

Attended high school

PRINCIPAL RESPONSIBILITIES:

1. Maintain warehouse in clean and orderly manner.
2. Assist sales representatives in loading trucks and replacing solvent.
3. Clean containers as needed.
4. Park or move trucks as needed.
5. Stock inventory.
6. Replenish trucks with inventory.
7. Perform other related duties as assigned.

Table 6.1-8

ENVIRONMENT, HEALTH, & SAFETY TRAINING

TRAINING SUMMARY SHEET I

Branch Name :____________________ Branch No. :____________________

Employee Name :______________________________ Employee Number :________________

Hire Date :______________ 6 Mon. Training Compl. Date (target) :________________

Position / Title :__________________________ Termination Date :______________

** CORE HAZARDOUS MATERIALS TRAINING **

(Emergency Response Training must be completed before an employee works in an unsupervised position. Employees must be completely trained in all items listed below within six (6) months of starting and annually thereafter.)

TRAINING COMPLETED:

DATE		MGR. INIT.
________	EHS VIDEO PART I - HAZ COM - Safety Training	________
________	EHS VIDEO PART II - HAZ COM - Understanding MSDSs	________
________	EHS VIDEO PART III - Preventing Injuries & Illnesses	________
________	EHS VIDEO PART IV - Hazards Associated w/ Mat'ls Handling	________
________	EHS VIDEO PART V - Chemistry of Safety - Kleen Products	________
________	EHS VIDEO PART VI - Hazardous Materials Regulations	________
________	EHS VIDEO PART VII - Waste Analysis Plan	________
________	EHS VIDEO PART VIII - Prep., Prvn., & Contingency Plans	________
________	Day Four - TEN DAY TRAINING - HAZ MAT/DOT/MANFST VID QUIZ	________
________	Completion of New Employee Orientation Program	________
________	Initial Contingency Plan Training (incl. Part B review)	________
________	Respirator Fit Testing & Training	________

** CERTIFICATION by the employee that training has been received obligates the employee to discharge his/her duties in accordance with the training provided. Failure to comply with the requirements established during the training program may result in civil or criminal penalties against the employee. **

________ Employee's Signature: ____

** CONTINUING TRAINING **
(On the following TRAINING SUMMARY SHEET IIs)

Table 6.1-9

1560.____

ENVIRONMENT, HEALTH, & SAFETY TRAINING

TRAINING SUMMARY SHEET II

Branch Name :____________________ Branch No. :____________________

Employee Name :______________________________ Employee Number :________________

TRAINING COMPLETED:

DATE		MGR. INIT.

7.0 *WASTE INFORMATION*

7.1 *WASTE ANALYSES AND WASTE CODES*

In accordance with EPA's hazardous waste regulations, the following types of hazardous waste have been identified at the Branch:

- Used parts washer solvent, dumpster mud, and tank bottom sludge;
- Used immersion cleaner #699;
- Dry cleaning wastes;
- Paint wastes;
- Fluid Recovery Service (FRS) wastes;
- Used aqueous parts washer solvent; and
- Used aqueous brake cleaner.

The typical composition and chemical/physical analysis for each of the waste streams listed above (except FRS) is shown in the chemical analyses reports in Appendix B. This information is based on existing data generated from similar processes within Safety-Kleen's current and/or potential customer base.

7.1.1 *Used Parts Washer Solvent*

The clean parts washer solvents are labeled under trade names. Flash points of the petroleum-based parts washer solvents range from 105°F (ignitable) to 212°F. Chemically, the solvent primarily consists of petroleum hydrocarbon fractions with boiling points between 310°F and 400°F. Impurities, such as light aromatic hydrocarbons (LAHC) and chlorinated hydrocarbons, usually constitute less than one percent of the total volume.

The used petroleum-based parts washer solvent consists primarily of parts washer solvent, solids, oil, and grease picked up in the various degreasing operations. In most instances, no water is associated with the used solvent; however, at times, the water content may range from one percent to as much as 50 percent. The oily bottoms may range from 2 percent to 10 percent, by volume, in the used solvent. The substances that comprise the used parts washer solvent are compatible and are suitable for bulking. The used parts washer solvent is transported in accordance with the generator's hazardous waste determination pursuant to 40 CFR 262.11. Hazardous characteristics of the used parts washer solvents can vary and are primarily associated with constituents introduced by the customer's processes.

Chemically, the composition of the solvent fraction in the used parts washer solvent is essentially the same as the clean solvent, as shown in analyses.

Containers of parts washer solvent that are returned from customers are poured into a drum washer (wet dumpster) at the return/fill station, which is piped into the 20,000-gallon aboveground storage tank located in the tank farm. As generated, the used Parts Cleaner 105 is considered to be an Ignitable Waste (D001). Other used parts washer solvents are considered nonignitable. The used parts washer solvents may be considered characteristic waste by toxicity characteristic leaching procedure (TCLP) and may carry the waste codes referred to in Table 7.1-1.

7.1.2 Used Immersion Cleaner

Safety-Kleen leases units containing "Immersion Cleaner and Carburetor and Cold Parts Cleaner #699." This product is a heavy aromatic naphtha, N-methyl-2-pyrolidon dipropylene glycol methyl ether, monoethanolamine and oleic acid, and may contain a maximum of 1 percent chlorinated compounds.

The used immersion cleaner is basically unchanged from its clean state, except oil, grease, and other solids may be picked up during the various degreasing operations. The spent solvent is nonflammable. It is regarded as hazardous because of the presence of various contaminants.

The used immersion cleaner #699, returned from customers in separate containers and remaining in the same container for shipment to a Safety-Kleen recycle facility, is considered a characteristic waste by TCLP and may carry the waste codes referred to in Table 7.1-1.

7.1.3 Used Parts Washer Solvent Bottom Sludge

Tank bottom sludge settles from used parts washer solvent in the aboveground tanks. The sludge may contain soils, oil and grease, and water picked up in degreasing operations, together with a small amount of mineral spirits. Analyses have shown that the sludge is an ignitable waste and may be considered "TC" hazardous with respect to TCLP standards. The sludge is removed from the aboveground tank periodically and shipped to a Safety-Kleen facility for reclamation.

Dumpster mud is accumulated in the wet dumpsters when emptying the used parts washer solvent from the containers into the aboveground storage tanks. Filters from parts washers utilizing parts washer solvents may also be added. The nature of this waste is similar to the used parts washer solvent tank bottom sludge, except with some small metal parts and less mineral spirits. It is regarded as an ignitable waste and often is a characteristic waste using TCLP standards.

The sludge in the dumpsters is cleaned out frequently. The waste is containerized and stored as a Branch-generated waste in a permitted waste storage area for later shipment to a Safety-Kleen recycle facility for reclamation or disposal.

Parts washer solvent dumpster mud and tank bottom sludge accumulated in the solvent return receptacles (wet dumpsters) and in the sludge tank are considered to be an Ignitable Waste (D001) and a characteristic waste by TCLP and may carry the waste codes referred to in Table 7.1-1.

7.1.4 Dry Cleaning Wastes

Solvent used in dry cleaning of clothing is commonly tetrachloroethylene (perchloroethylene) or mineral spirits or trichlorotrifluoroethane. Hence, waste generated from dry cleaning operations contains various concentrations of the solvent. Basically, wastes generated by dry cleaning facilities are in the following forms:

1. Filter Cartridges: In addition to the construction materials consisting of steel, paper, clay, and carbon, the used cartridge retains solvent, oil and grease, and undissolved elements such as lint and soil. Solvent retained in the filter cartridge generally amounts to less than 50 percent of the total cartridge weight.

2. Muck: At some dry cleaning facilities, a mixture of powdered materials is used as the filter medium for the dry cleaning solvent, in lieu of the cartridge filter. This filter medium normally consists of diatomaceous earth and carbon. In addition to lint, soil, oil, and grease retained by this medium, between 40 and 50 percent by weight of the "muck" is absorbed solvent.

3. Still Residue: After filtration, the dry cleaning solvent is distilled by the dry cleaning machine to remove the dissolved materials from the used solvent. The dissolved materials (still residues) are in liquid form and consist of primarily detergent, oil and grease, vinyl acetate (a sizing compound), and 20 to 30 percent of solvent.

Approximately 80 percent of the dry cleaning solvent used is perchloroethylene (F002) and a characteristic waste by TCLP, and may carry the waste codes referred to in Table 7.1-1. Approximately 17 percent of the dry cleaning solvent is mineral spirits, and the remaining 3 percent of the dry cleaning solvent is trichlorotrifluoroethane. The mineral spirits and trichlorotrifluoroethane are nonperchloroethylene dry cleaning wastes and are managed as transfer wastes.

7.1.5 Paint Wastes

Paint wastes consist of various lacquer thinners and paints. The waste is collected in containers at the customer's place of business; upon receipt at the Branch, the manifest is terminated. The waste paint containers are stored in Safety-Kleen's permitted container storage area. The paint wastes are then re-manifested and periodically sent to a Safety-Kleen recycle center.

Paint wastes (D001, F003, and F005) include such constituents as acetone, isopropyl alcohol, methyl ethyl ketone, methyl isobutyl ketone, toluene, xylenes, and acetate compounds. This waste stream may be a characteristic waste by TCLP, and may carry the waste codes referred to in Table 7.1-1.

7.1.6 Fluid Recovery Service Wastes

Fluid Recovery Services (FRS) is a program managed by the Safety-Kleen Branch. Under this program, waste types similar to the products provided by Safety-Kleen are collected by the Branch and processed by the recycle centers. These products may or may not have been originally obtained from Safety-Kleen by the industrial customer. These wastes are handled as transfer wastes at the Branch. Examples of the types of wastes that may be received from FRS customers include:

1. Spent hydrocarbon distillates, such as waste fuel, oil, petroleum, and naphtha, etc.

2. Lubricating oils, hydraulic oils, synthetic oils, and machine oils.

3. Industrial halogenated solvents such as 1,1,1-trichloroethane, tetrachloroethylene, Freon, and trichloroethane.

4. Photographic and x-ray related wastes.

5. Paint and lacquer thinners and paint wastes.

6. Other hazardous and nonhazardous halogenated and nonhalogenated wastes.

Due to the great variability in the composition of FRS wastes, their application or use, and the source industry, Safety-Kleen characterizes each waste stream from each generator separately.

Certain other wastes that result from the use of organic solvents are also managed through the Branch. These include the solids and sludges that settle out of the used solvent during handling and processing. Lint, paper, oils, greases, carbons, and metals are examples of materials which may settle or separate out of used solvent. In addition to the listed waste codes, these wastes may also exhibit a characteristic under the toxicity characteristic leaching procedure.

Certain solvents are not economically recoverable in their prime form. These are typically solvents of low intrinsic value (e.g., methanol), those where the user's specifications are unattainable or where the mixture cannot be efficiently separated because of the formation of azeotropes, or due to overlapping or close boiling ranges. However, when properly blended and processed, these solvents can be a beneficial source of energy. The Safety-Kleen recycle centers are equipped to process nonrecoverable solvent mixtures with still bottoms from recovery of their solvent to produce valuable solvent-based fuels.

7.1.7 *Antifreeze Waste*

The spent antifreeze (ethylene glycol) is collected from automobile service stations. All antifreeze collected and managed by Safety-Kleen within Florida is recycled. At the customer's location, Safety-Kleen pumps waste ethylene glycol (antifreeze) into a Safety-Kleen used oil tanker truck. The mixture of waste ethylene glycol and used oil is transported from the Branch directly to the BIDS terminus for off-loading into tanker cars. The ethylene glycol/used oil mixture is transferred by rail to the Safety-Kleen re-refinery in East Chicago, Indiana, where the waste ethylene glycol is extracted from the oil by distillation. After separation, the ethylene glycol is shipped to a glycol refinery for additional purification into a pure product which is then sold on the open market. This procedure is in accordance with FDEP's *Florida Fact Sheet on the Best Management Practices for Managing Antifreeze Destined for Recycling,* dated August 5, 1996.

7.1.8 *Aqueous Brake Cleaner*

The Aqueous Brake Cleaner (ABC) is primarily an aqueous solution with approximately 10% nonorganic additives and detergents. The spent ABC is transported from the customers in containers. Spent ABC from customer's parts washers may be accumulated in a 20,000-gallon aboveground storage tank via the return/fill station. The used aqueous parts washer solvent may be considered characteristic waste by TCLP and may carry the waste codes referred to in Table 7.1-1.

7.1.9 Aqueous Parts Washer Solvent

The aqueous parts washer solvent is primarily an aqueous solution with a small amount of organic additives (alcohols). The spent aqueous parts washer solvent is transported from customers in containers and may be accumulated in a 20,000-gallon aboveground storage tank via the return/fill station. The used aqueous parts washer solvent may be considered characteristic waste by TCLP and may carry the waste codes referred to in Table 7.1-1.

7.1.10 Mercury-Containing Lamps and Devices

Mercury-containing lamps and devices are another type of waste handled by the Branch. These wastes are handled as nonhazardous transfer wastes, and as such carry no waste codes. As part of its protocol for handling mercury-containing lamps and devices, the Branch provides customers with four-foot and eight-foot boxes which hold up to 39 lamps. The boxes are picked up at customer locations and are stored at the Branch in a designated area within the permitted waste storage area (Figure 8.1-1). This storage area is labeled in accordance with Florida Administrative Code (FAC) 62-737.700(1)(d). The boxes are periodically shipped to a permitted mercury recovery or reclamation facility.

7.2 WASTE ANALYSIS PLAN

7.2.1 General Waste Handling Procedures

Safety-Kleen provides solvent distribution, collection, and reclamation services to companies that are primarily engaged in automobile repair, industrial maintenance, and dry cleaning. Safety-Kleen operates a "closed loop" waste recovery service for the parts cleaning machines used by customers at their facilities. When the cleaning fluids become dirty and can no longer be used effectively, Safety-Kleen picks up the dirty fluids and replaces them with clean, recycled fluids. The dirty fluids are returned to Safety-Kleen where they are recycled and subsequently reused by customers. Approximately two-thirds of the cleaning fluids provided as product by Safety-Kleen have been used before and subsequently reclaimed. Safety-Kleen's customers typically are small quantity generators who operate businesses which generate only a few hazardous waste streams. These factors help ensure that Safety-Kleen will receive a highly predictable and homogeneous waste stream.

Spent solvents are the primary feedstocks for the generation of Safety-Kleen solvent products. As a result, quality control of the spent solvents is necessary to ensure that reclamation occurs in the safest and most efficient manner possible.

Furthermore, as discussed earlier in the Facility Description (Section 2.3), the materials collected at the Branch are usually collected from a company with a single process. The composition and quality of these materials are known and Safety-Kleen's operating experiences have shown that the collected materials rarely deviate from company specifications. As an additional safeguard, Safety-Kleen personnel are instructed to inspect certain materials before returning them to the Branch. This mode of operation has been proven to safeguard the recycling process and maintain a quality product.

It is Safety-Kleen's practice that suspected nonconforming material must not be accepted until a full analysis has been done or the material must be rejected. Procedures to verify waste characteristics occur at several check points in the management of the solvent, as described below.

Safety-Kleen controls the use and management of its solvents by:

1. Limiting the solvents stored to those compatible with one another and their containers;

2. Determining the customer's type of business (i.e., his/her SIC code may be recorded) and the purpose for which the machine will be used;

3. Training customers to use the machines properly;

4. Training employees to inspect spent solvent and determine whether it is acceptable;

5. Indicating on the service document Safety-Kleen's acceptance criteria;

6. Marking each container with the customer's name, address, and EPA I.D. number (if required). This information remains on containerized waste until it is accepted at the Branch;

7. Keeping a record of each incoming and outgoing shipment in the operating log at each facility;

8. Demonstrating the chemical and physical homogeneity of the wastes by sampling and analyzing a representative portion of generator waste streams on an ongoing annual basis at the national level; and

9. Routine analysis of the wastes received at the recycle centers.

Safety-Kleen's customers sign a service document containing the following information:

1. The name, address, and EPA I.D. number of the facility to which the waste is being shipped;

2. The customer's name, address, and EPA I.D. number (if required); and

3. The description and amount of Safety-Kleen solvent waste generated.

Each incoming and outgoing shipment is recorded in the facility's operating log. In addition, each sales representative reviews acceptance criteria each time a waste is picked up. In accordance with Safety-Kleen's pre-printed documents, all generators sign a statement with each shipment that there has been no material added to the closed-loop products supplied by Safety-Kleen since the last shipment. Finally, selected environmental reviews may be utilized to guard against the addition of other wastes into the generator's waste.

If a waste is rejected at the time of service based on the volume or consistency discrepancies, the customer will be given a choice as to whether they will dispose of the waste or will require Safety-Kleen's assistance. If a customer requests Safety-Kleen's assistance, a sample will be drawn using a Coliwasa® tube, and it will be analyzed for flash point, volatile organic compounds, and other parameters to adequately define the constituents (e.g., for halogenated organic solvents, PCBs, flash point, etc.). If the waste is within the acceptable range for wastes permitted for storage, it will be relabeled and manifested, and then managed with the other wastes. If it is not acceptable, it will either be: (a) managed on a 10-day transfer basis and manifested to a properly permitted reclamation or disposal facility, or (b) manifested and shipped directly to a properly permitted reclamation or disposal facility.

7.2.2 Qualitative Waste Analyses

General Inspection Procedures

Prior to acceptance, Safety-Kleen visually inspects each container of waste parts washer solvent at the customer's location. This inspection includes an evaluation of the waste volume, appearance, and consistency. Safety-Kleen's personnel are familiar with the characteristics of all wastes as described in Section 7.1 and managed at this facility. Safety-Kleen has established specific criteria for wastes managed at their facilities based on known characteristics. These criteria, described below, are used by Safety-Kleen personnel to aid in their visual inspections. These acceptance criteria enable Safety-Kleen to help ensure that the waste being picked up is an acceptable waste and does not contain unacceptable contaminates.

If a particular container of waste does not meet the established acceptance criteria, the Safety-Kleen service representative will reject the container at the customer's place of business. At the customer's request, a sample may be collected and analyzed by Safety-Kleen to determine whether it can be managed by Safety-Kleen. Depending on the source, the waste will be analyzed for parameters related to the suspected source of the waste. Alternately, the customer may choose to dispose of the material by using another (non-Safety-Kleen) facility.

If the waste is sampled for further analysis, the service representative will take a sample of the waste and then seal the container and label it as hazardous waste. The container is left with the customer pending the results of the laboratory tests. The laboratory testing involves analyzing the suspect waste for compounds related to the suspected source of the waste (e.g., volatile organics, halogenated organics, PCBs, etc.).

If the laboratory analysis reveals that the sampled waste is not contaminated, Safety-Kleen will accept the waste from the customer. If the laboratory confirms that the waste is contaminated, the customer will be given a choice as to whether they will dispose of the waste or will require Safety-Kleen's assistance.

7.2.3 Waste-Specific Criteria

The following is a description of the specific acceptance criteria for each waste stream.

Spent Parts Washer Solvent

Volume and color are the acceptance criteria for determining by visual inspection whether spent parts washer solvent has been contaminated, most significantly volume. Safety-Kleen places clean parts washer solvent in 5-, 16-, and 30-gallon containers with the customer which, if no additional material has been added to the container, should not hold more than the 5, 10, and 19 gallons of waste, respectively, at the time of waste pick-up since those volumes were equal to the respective virgin product amounts in the containers. If the volume of waste in a given container exceeds the specified level, the Safety-Kleen service representative may sample the waste for laboratory testing as described above, or he/she will reject the waste.

The spent parts washer solvent is also visually inspected for its color. Unused parts washer solvent (Parts Cleaner 105 and Premium Solvent) has a greenish tint or is clear. The aqueous parts cleaner is also clear. As the solvent is used, it changes color. The specific color which the solvent turns is dependent upon the type of equipment being cleaned. For example, solvent used at automotive shops changes to brown or black, while solvent used by silk screeners will change the color of the inks (red, blue, pink, green, etc.). If the spent solvent color does not appear to be consistent with the type of equipment being cleaned, the service representative may sample the waste for possible contamination as described above, or he/she will reject the waste.

Immersion Cleaner

The criteria for the inspection of spent immersion cleaner are volume, color, and physical state. Clean immersion cleaner is delivered to the customer in containers. These containers each contain six gallons of immersion cleaner. Spent immersion cleaner is picked up from the customer in the same containers. If no additional material has been added to the spent immersion cleaner, the containers should contain no more than six gallons. If a container contains more than six gallons of waste, a sample may be collected and analyzed for contamination following the procedures described above or the waste will be rejected.

Unused immersion cleaner is amber in color. As the solvent is used, it turns brown in color. The more it is used, the darker brown it becomes, until it is almost black. Therefore, it the spent immersion cleaner does not appear to be amber, brown, or black, the service representative may sample the waste for possible contamination as described above, or he/she will reject the container of waste.

Dry Cleaner Wastes

Dry cleaner wastes consist of spent filter cartridges, powder residue, and still bottoms, each of which is discussed below.

Spent Filter Cartridges

Spent filter cartridges are placed in containers which hold one to three cartridges. It is readily apparent to the trained service representative whether the items in the containers are filter cartridges. The containers may also contain approximately one inch of liquid which should be either clear or have a light brownish tint. If the amount of the liquid is greater than approximately one inch or if the liquid is a color other than light brown, the service representative may sample the waste for contamination in accordance with the procedures described above, or he/she will reject the waste.

Powder Residue

The criteria for the acceptance of powder residue are consistency and color, the former being the more significant criterion of the two. A container of powder residue should not contain more than one inch of liquid. The waste should be slightly wet, with the consistency of a paste. If there is too much liquid in the container, the waste will may be sampled for contamination in accordance with the procedures described above, or the waste will be rejected.

The powder residue is also inspected for color and should appear to be greyish-black. If the residue is not greyish-black in color, the service representative will may sample the waste for contamination in accordance with the procedures described above, or he/she will reject the waste.

Still Bottoms

The criteria for the acceptance of dry cleaning still bottoms are consistency and color. The waste should have a highly viscous, tar-like consistency. If the consistency of the waste is too thin, the waste may be sampled for contamination in accordance with the procedures described above, or it will be rejected.

In addition to the consistency, the still bottom waste is inspected for color. The waste should appear dark brown or black in color. If the waste is a different color, a service representative may sample the waste for contamination in accordance with the procedures described above, or he/she will reject the waste.

Paint Wastes

Safety-Kleen handles both lacquer thinner waste generated from the paint gun cleaning process and paint waste, each of which is described below.

Lacquer Thinner Waste

The significant criterion for determining whether lacquer thinner waste will be accepted is volume. The solvent is provided to customers in five-gallon containers. The paint gun cleaning machine operates as a closed system consisting of a five-gallon container of fresh lacquer thinner and a five-gallon container for spent (used) lacquer thinner. The closed system is designed such that there should never be a combined volume of more than 7.5 gallons of solvent in the two five-gallon containers. The fresh solvent container starts with five gallons of clean solvent and the spent solvent container starts with 2.5 gallons of clean solvent. As the machine is used to clean the spray guns, the fresh solvent is pumped from a tube in the fresh solvent container through the machine and into the spent solvent container. This cleaning/degreasing process will continue until the volume of solvent in the fresh container reaches the 2.5-gallon mark. A tube in the fresh solvent extends half way down the container (i.e., to the 2.5-gallon mark). Any solvent above 2.5 gallons in the fresh solvent container at the time of servicing will be pumped through the machine into the spent solvent container by the Safety-Kleen service representative. Therefore, when the machine is serviced, the spent solvent container will always contain five gallons of solvent. If a service representative discovers more than a total of 7.5 gallons of solvent in the two containers or there is an overfill from the spent solvent container, the waste may be sampled for contamination in accordance with the procedures described above, or the waste will be rejected.

Paint Waste

The significant criterion for the inspection of paint waste is consistency. The waste should contain no more than 30 percent solids. The service representative will insert a three-foot-long glass tube into the container. The tube should glide easily down to the bottom of the container. If there is resistance to the insertion of the glass tube, it is assumed that the level of solids is in excess of 30 percent and the service representative will reject the waste.

The contents of the glass tube are also visually examined for consistency and water content. The material should be a "free flowing" liquid, but should not contain a significant amount of water. If there is more than approximately 10 inches of water in the three-foot tube (the water and paint will separate in the tube and thus can be measured), the waste will be rejected.

Mercury-Containing Lamps and Devices

As part of its protocol for handling mercury-containing lamps and devices destined for recycling, the Branch provides customers with four-foot and eight-foot boxes which hold up to 39 lamps. Boxes are inspected prior to transport from the customer to the Branch. Boxes containing broken lamps are not accepted by Safety-Kleen. If the lamps are broken while in custody of Safety-Kleen, the entire contents of the box are sealed in plastic shrink wrap or transferred to another container and closed.

7.2.4 Waste Analyses at the Recycle Facility

Analyses performed at the Safety-Kleen recycle facilities are undertaken to safeguard the recycling process and to assure the product quality. In addition, each waste material is sampled and analyzed upon receipt of each waste load as required by the permit and associated waste analysis plan for the receiving recycle center. In order to properly and safely process waste generated by the branch, the recycle center samples and analyzes each waste load as it is received from the branch. The following tables summarize a typical waste analysis plan at the recycle facility related to the hazardous materials returned from the Branch:

- Table 7.2-1 Parameters and Rationale for Hazardous Waste Identification
- Table 7.2-2 Parameters and Test Methods
- Table 7.2-3 Methods Used to Sample Hazardous Wastes
- Table 7.2-4 Frequency of Analysis

In addition to the aforementioned analyses, TCLP analyses for all compounds, except pesticides, will be conducted every year on all characteristic hazardous waste streams (example: used parts washer solvent and immersion cleaner #699).

7.3 REQUIRED RECORDS AND REPORTING

7.3.1 Waste Manifests

Appropriate shipping papers/manifests are used, based on the monthly quantity of hazardous waste generated by the customer. Safety-Kleen services all three categories of generators in Florida — conditionally exempt small quantity generators (CESQGs), SQGs, and LQGs. CESQGs' spent solvent is removed via a service document and no manifest or Land Disposal Restrictions (LDR) form is required. Appropriate records are kept at the Branch as to the date of waste pick-up, quantity, and other data on the service document. SQGs' spent solvent is shipped under a tolling agreement in Florida, which means that a manifest is not used. An LDR form is completed for each SQG. LQGs' spent solvent is always manifested (if hazardous) and an LDR form completed.

Spent solvent (from each Safety-Kleen customer, regardless of generator status) is brought back to the Branch and dumped in the return/fill station and pumped to the waste solvent tank. This tank contains the spent solvent of many customers and is hazardous. The contents are regularly sent via truck tanker to the recycle center in Lexington, South Carolina. These loads are always manifested and accompanied with an LDR form.

Shipments of parts washer solvent dumpster mud are also manifested accordingly. Required records are kept at the Branch and the recycle center in accordance with regulatory timeframes.

In accordance with 40 CFR 264.71 through 77, Safety-Kleen will ensure that:

1. Customers who are required to provide a manifest do so;

2. The manifests are prepared and signed properly; and

3. Copies are distributed and kept on file, as required.

In addition, discrepancies must be remediated in accordance with 40 CFR 264.72 and unmanifested wastes will be reported as described under 40 CFR 264.76.

7.3.2 *Required Notices*

If Safety-Kleen arranges to receive hazardous waste from a foreign source, the Regional Administrator must be notified in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required. Safety-Kleen informs its customers in writing (i.e., on each service document) that the facility has the appropriate permit(s) for, and will accept the waste the generator is shipping. Safety-Kleen keeps a copy of this written notice as part of the operating record.

Before transferring ownership or operation of this facility during its operating life, Safety-Kleen will notify the new owner or operator in writing of the requirements of Part 264 and Part 270 of Chapter 40 in the Code of Federal Regulations.

Biennial reports, required by Florida Administrative Code (FAC) Chapter 62-730.180(7), will be prepared and submitted by Safety-Kleen, and these records will also be available at the facility for review. The biennial report will be submitted to the Regional Administrator and/or FDEP by March 1 during each even numbered year (1990 being the first year) on EPA form 8700-13B. The report will cover facility activities during the previous calendar years and will include:

- The EPA identification number, and address of the facility;
- The calendar years covered by the report;
- The method of treatment, storage, or disposal for each hazardous waste;
- The most recent closure cost estimate under 40 CFR 264.142 and the most recent contingent post-closure cost estimate under 40 CFR 264.144; and

- A certification signed by the owner or operator of the facility or the authorized representative.

7.3.3 Operating Record

An operating log which contains the information required under 40 CFR 264.73 is maintained and all records and logs are available at the facility, in accordance with 40 CFR 264.74.

The following information will be maintained in writing in the operation record for the facility:

- A description and quantity of each hazardous waste received;
- The date and storage method for such hazardous waste;
- The location of each hazardous waste stored within the facility;
- Records and results of waste analyses performed;
- Summary reports and details of all incidents that require implementation of the Contingency Plan;
- Monitoring, testing, or analytical data, and corrective action where required by Subpart F and other applicable sections of 40 CFR 264;
- All closure cost estimates under 40 CFR 264.142 and all contingent post-closure cost estimates under 40 CFR 264.144;
- Records of quantities and date of placement for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted; and

- For any restricted waste generated that can be land disposed without further treatment, and is sent to a land disposal facility, a notice and certification will be sent to the treatment, storage, or land disposal facility with the waste. The notice will state that the waste meets the applicable treatment standards set forth in Subpart D of 40 CFR 268 and applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). The notice will include the following information:

  - EPA Hazardous Waste Number; and

  - The corresponding treatment standards and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d).

Further, the LDR certification will be signed by an authorized representative and will state the following:

> *I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.*

Section 264.74 requires that all records, including plans, must be furnished upon request to duly designated representative of the Regional Administrator, and this requirement will be honored. A copy of all records of waste disposal locations and quantities will be submitted to the Regional Administrator and/or FDEP upon closure of the facility, if applicable.

As a registered transporter and storage facility for mercury-containing lamps and devices destined for recycling, the Branch complies with the record keeping requirements of FAC 62-737.200(2)(e).

7.3.4 Land Ban Notification/Certification Forms

In accordance with 40 CFR 268.7, Safety-Kleen will provide notification/certification for wastes banned from landfills as follows:

1. Special forms for each regularly handled waste types (e.g., parts washer solvent, immersion cleaner, and perchloroethylene); or

2. A general form that must be completed for unique or nonstandard waste streams.

The notice is required paperwork for the streams handled by Safety-Kleen. Shipments lacking the proper notice will not be accepted by any Safety-Kleen facility. When a shipment with the proper notice is received, the notice is kept in the files of the receiving facility with the manifest or with the pre-print if a manifest is not used.

TABLE 7.1-1

PERMITTED AND TRANSFER WASTES
SAFETY-KLEEN CORP.
MEDLEY, FLORIDA

Waste Type	Process Code(s)	Estimated Annual Amounts (Tons)	Waste Codes
Spent Parts Washer Solvent*	S01** S02***	813	D001 and D-Codes Listed in Note Below
Dumpster Sediment	S01**	Included Above	D001 and D-Codes Listed in Note Below
Tank Bottoms	S01**	Included Above	D001 and D-Codes Listed in Note Below
Spent Immersion Cleaner (New Formula) IC699	S01**	28	D-Codes Listed in Note Below
Dry Cleaning Waste (Perchloroethylene)	S01**	350	F002 and D-Codes Listed in Note Below
Dry Cleaning Waste (Non-perchloroethylene)	S01****	Included Above	Transfer wastes - waste codes assigned by generator.
Paint Waste	S01**	69	D001, F003, F005 and D-Codes Listed in Note Below
Fluid Recovery Service (FRS) Waste	S01 ****	250	Transfer wastes - waste codes assigned by generator.
Mercury-Containing Lamps/ Devices	N/A****	Less than 2.2	Not applicable - handled as nonhazardous transfer wastes.

NOTES:

D-Codes: D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043

* Spent parts washer solvents are transported from the customer to the Branch in accordance with the generator's hazardous waste determination.

** This waste will be stored in containers in the container storage area. The maximum drum capacity in the container storage area for hazardous waste and product is 29,400 gallons with 6,912 gallons being waste.

*** The spent parts washer solvent storage tank has a capacity of 20,000 gallons and may be filled up to 19,000 gallons.

**** This waste will be held for transfer in containers in the transfer area.

N/A Process code not applicable.

TABLE 7.2-1

PARAMETERS AND RATIONALE FOR HAZARDOUS WASTE IDENTIFICATION

Hazardous Waste	Parameter[a]	Rationale
1. Used Parts Washer Solvent	Flash Point TCLP	May exhibit ignitable characteristics (D001); may contain TCLP compounds.
2. Parts Washer Solvent Tank Bottom Sludge and Free Water	TCLP Flash Point	The sludge and free water may contain TCLP compounds and the sludge has a flash point of 105° F (D001).
3. Parts Washer Solvent Dumpster Mud	TCLP Flash Point	The sludge and free water may contain TCLP compounds and the sludge has a flash point of 105° F (D001).
4. Used Immersion Cleaner (699IC)	TCLP	May contain TCLP compounds.
5. Dry Cleaning Wastes (Perchloroethylene)	Perchloroethylene TCLP	Three separate formulas exist for dry cleaning products. Perchloroethylene formula is the only waste managed as a permitted waste. It may contain TCLP compounds.
6. Paint Wastes	Acetone Isopropyl Alcohol Methyl Ethyl Ketone Methyl Isobutyl Ketone Toluene Xylenes Acetate Compounds Flash Point TCLP	Contains ingredients of F003 and F005 wastes, and may contain TCLP compounds. May exhibit ignitable characteristics (D001).

NOTES:

[a] TCLP Waste Codes: D004-D011, D018, D019, D021-D030, D032-D043.

TABLE 7.2-2

PARAMETERS AND TEST METHODS

Parameter	Test Method	Reference
pH	pH Meter	ASTM Standard D1293-65
Flash Point	Tag closed cup tester	ASTM Standard D56-79
TCLP	Toxicity Characteristic Leaching Procedure	40 CFR 261, Appendix II
Hydrocarbons and Volatile Organics	Gas Chromatography (GC)	Methods Based on "Test Methods for Evaluation of Solid Waste, Physical/ Chemical Methods," SW-846, USEPA and ASTM Standards. In particular 8240 and 8270.

TABLE 7.2-3

METHODS USED TO SAMPLE HAZARDOUS WASTES

Hazardous Waste	Reference for Sampling	Sampler	Description of Sampling Method
1. Used Parts Washer Solvent	Sampling a tank "Samplers and Sampling Procedures for Hazardous Waste Streams," EPA/600/2-80/018	Test Methods for the Evaluation of Solid Waste Physical/ Chemical Methods, SW-846, USEPA	For tanks--Bomb sampler (similar to weighted bottle sampler)
2. Parts Washer Solvent, Tank Bottom Sludge, and Free Water	Same as 1	Same as 1	Same as 1
3. Parts Washer Solvent Dumpster Mud	Sampling a drum "Samplers and Sampling Procedures for Hazardous Waste Streams," EPA/600/2-80/018	Same as 1	Representative composite sample using drum sampler
4. Used Immersion Cleaner IC699	Same as 3	Same as 1	Same as 3
5. Dry Cleaning Wastes	Same as 3	Same as 1	Same as 3
6. Paint Wastes	Same as 3	Same as 1	Same as 3

TABLE 7.2-4

FREQUENCY OF ANALYSIS OF HAZARDOUS WASTES

Hazardous Waste		Frequency[a]
1.	Used Parts Washer Solvent	Gas chromatograph annually Flash point annually TCLP annually
2.	Parts Washer Solvent, Tank Bottom Sludge, and Free Water	Gas chromatograph annually TCLP annually
3.	Parts Washer Solvent Dumpster Mud	Gas chromatograph annually TCLP annually
4.	Used Immersion Cleaner 699	Gas chromatograph annually TCLP annually
5.	Dry Cleaning Wastes	Gas chromatograph annually TCLP annually
6.	Paint Wastes	Gas chromatograph annually TCLP annually

NOTES:

[a] In accordance with 40 CFR 264.13(a), Safety-Kleen will also perform physical and chemical analysis of a waste stream when it is notified or has reason to believe that the process or operation generating the waste has changed, or when the result of inspection indicates that the waste to be collected does not match the waste designated.

8.0 CONTAINERS

The warehouse at the subject facility is depicted in Figure 8.1-1. The warehouse is used for storage of virgin materials, as well as permitted hazardous wastes and transfer wastes. The location of the permitted storage areas are shown as the container storage area in the figure.

8.1 CONTAINMENT SYSTEM

The warehouse area shown in Figure 8.1-1 occupies the eastern portion of the main site building. This warehouse area has concrete floors, concrete berms, and a central collection trench to form a spill containment system within the area.

The warehouse has a total containment capacity of 2,996 gallons, including approximately 500 gallons within a sloped floor trench and the remainder due to the sloped floor in the area. This containment volume was measured in July 1992 by filling the area with water. This task was performed as part of the construction permitting process for this facility. A copy of the engineer's certification report is provided in Appendix C.

The entire warehouse may store up to 29,400 gallons (the containment capacity is 10% of this storage capacity). This capacity includes both fresh product and used material. The sizes and numbers of each type of container may vary, but the total volume of hazardous wastes (including transfer wastes) will not exceed 6,912 gallons in the container storage area. Because the floor is sloped, significant volumes of liquid will flow toward the containment trench, avoiding the concern of containers in standing liquids.

The containment system in the warehouse is free of cracks and is sufficiently impervious to prevent seepage into and through the concrete. Studies performed with the Canadian Portland Cement Association revealed that the average permeability of concrete is 1×10^{-10} cm/s, which should prevent infiltration should a release occur. Copies of documentation supporting this conclusion on the permeability of concrete are presented in Appendix D.

The warehouse is completely enclosed so no precipitation can enter it. In the unlikely event the building's sprinkler system is activated, the building's secondary containment system should be sufficient to contain the water. The firewater, which may have come in contact with hazardous materials, will be containerized and handled appropriately.

Spills from containers are removed by a hand-held, portable electric pump (the COMS pump), wet-dry vacuum cleaner, or sorbent materials. Since the characteristics of the stored wastes are known, no analyses are performed for the materials collected from the containment area. All collected materials are sent to a RCRA-permitted recycling/reclamation facility.

Any small spill which might occur would generally puddle where it was spilled. The spilled material would be cleaned up where it puddled or be manually directed to the containment trench. In the event that a large spill were to occur, some dispersion would be expected to occur based on the direction, force, and pathway obstacles presented by and to the spill. Only a catastrophic event would result in an exceedance of the 2,996 gallon containment capacity. In this case, once outside the containment area, the wastes would flow onto paved surfaces outside the building. These are the same surfaces that serve to protect soils and ground water from contamination due to spills occurring during loading/unloading.

Container Movement

In the container storage area, containers are handled with a hand-truck or forklift that is free of sharp points and stacked by hand. Every time a drum is moved, a chance exists that it will be tipped over, dropped, or punctured. To minimize the possibility of spillage, containers are tightly covered and kept in an upright position. A small portable electric pump is available to quickly transfer the liquid from any leaking container into another safe container. Each route truck is equipped with an electric hoist. This hoist is used in the loading/unloading operation to minimize chances for spillage and/or employee injury. Trucks used for shipping containers between the recycle center and Branch have lift gates for drum loading/unloading. With the exception of mineral spirits, all drummed wastes are loaded/unloaded from the trucks at the docks located on the south or east side of the building. The parts washer solvent is loaded/unloaded at the return/fill station, which is described in Section 9.0.

All containers are transported, moved, and stored carefully in an upright position. In the warehouse area, the immersion cleaner, parts washer solvent dumpster mud containers, and dry cleaning waste containers are moved with two-wheel hand trucks and stacked by hand. Containers are palletized whenever possible to facilitate shipping and storage. Pallets may be stacked up to six feet high, or two high (whichever is higher), while in storage. This will prevent the containers from contacting standing liquid while they are in storage. Pallets may be shipped up to three high during transportation. A two-foot aisle space will be provided immediately adjacent to containment walls. There are two-foot aisle spaces located between parallel rows.

8.2 INCOMPATIBLE, IGNITABLE, AND REACTIVE WASTE MANAGEMENT

All materials are managed in accordance with the local fire protection code and fire department recommendations. All ignitable wastes are stored at least 50 feet from the property line.

The facility does not routinely manage unwashed containers that may previously have held materials that would be incompatible with wastes stored at the facility. Also, the used parts washer solvents and used aqueous parts washer solvents consist of materials that are compatible and suitable for bulking.

Procedure for Managing Waste Types

The solvents stored at this facility are compatible with each other and with other materials handled at this facility with respect to reactivity. Therefore, special waste segregation procedures are not necessary at this facility. However, the wastes are the primary source of feed stock for regenerating the clean solvents. For ease of inventory control and product integrity, separation and grouping of both used and unused solvents is a standard practice at the Branch. All containers are designed and constructed to be compatible with the stored material and to minimize the possibility of breakage and leaking, in accordance with DOT shipping container specifications.

Wastes are stored primarily in polyethylene and steel containers. Since none of the waste handled by Safety-Kleen reacts with metal or polyethylene, compatibility is assured. Since none of the wastes handled by Safety-Kleen react with metal or polyethylene, compatibility is assured. Immersion cleaner and dry cleaning waste containers are never opened at the Branch, and none of the wastes are incompatible. Overpack containers are used for the management of containers whose integrity has been compromised.

Potential Fire Sources

The following is a list of fire prevention and minimization measures:

1. *All wastes and products are kept away from ignitable sources*--Personnel must confine smoking and open flames to the Branch designated area which is located outside the south door of the office area. No other smoking areas are designated. The parts washer solvent handling area and the aboveground storage tanks are remote from the office area to minimize the potential for a fire to spread or injury to personnel to occur.

2. *Ignitable wastes are handled so that they do not:*

   a. *become subject to extreme heat or pressure, fire or explosion, or a violent reaction*--The parts washer solvent waste is stored in a tank or in containers, none of which are near sources of extreme heat, fire, potential explosion sources, or subject to violent reactions. The tanks are vented and the containers kept at room temperature to minimize the potential for pressure build-up.

   b. *produce uncontrolled toxic mists, fumes, dusts or gases in quantities sufficient to threaten human health*--The vapor pressure of petroleum-based parts washer solvent is low (2 mm Hg) and it is reactive with strong oxidizers only. Toxic mists, fumes, dusts, or gases will not form in quantities sufficient to threaten human health since strong oxidizers are not handled at this facility and the solvent vaporization will be minimal under normal working conditions.

c. *produce uncontrolled fires or gases in quantities sufficient to pose a risk of fire or explosion*--See "a" above and "d" below.

d. *damage the structural integrity of the Safety-Kleen facility*--The solvents stored at this facility will not cause deterioration of the tank, containers, or other structural components of the facility.

3. *Adequate aisle space is maintained* to allow the unobstructed movement of personnel, fire protection equipment, and decontamination equipment to any area of the facility operation in an emergency.

4. *"NO SMOKING" signs are posted* in areas where solvents are handled or stored.

5. *Fire extinguishers are checked* weekly by Branch personnel.

<u>*External Factors*</u>

The design of the installation is such that a harmful spill is highly unlikely to occur from most external factors. The storage tanks are inaccessible to non-Safety-Kleen personnel and the pump switches are located inside. Also, the container storage area is in a building which is inaccessible to unauthorized personnel.

1. *Vandalism*--Only extreme vandalism would result in a solvent spill or fire. Responses to spills and fires are described in the Contingency Plan (Section 5).

2. *Strikes*--A strike would not result in a solvent spill or fire.

3. *Power Failure*--A power failure would not result in a spill or fire. Should a power failure occur, all activities requiring electricity will cease.

4. *Flooding*--The site elevation is above the projected 100-year floodplain.

5. *Storms or Cold Weather*--The solvent return/fill station is roofed to eliminate the possibility of rain or snow entering the dumpsters. No opportunity is foreseen to affect the facility with snow, cold weather, or storm water.

8.3 CONTAINER MANAGEMENT

General Protocols

Container management is of paramount importance to Safety-Kleen. All containers are routinely inspected (see Section 8.4) to ensure that the containers are in good condition. If rusting or structural defects are visible, or if the container begins to leak, the contents of the container are immediately transferred to a new sound container. Overpack containers commonly are used for the management of containers whose integrity has been compromised.

Wastes are stored primarily in polyethylene and steel containers. Since none of the wastes handled by Safety-Kleen react with metal or polyethylene, compatibility is assured. Immersion cleaner and dry cleaning waste containers are never opened at the branch, and none of the wastes are incompatible.

Hazardous waste containers are always kept closed during storage except when adding or removing waste. Containers are not handled or stored in a manner that could potentially cause a rupture or leak.

Specific Waste Stream Containers

Parts washer solvent is collected in containers and generally emptied into the wet dumpster at the return/fill station (which is piped to the tank farm). The containers are designed and constructed to be compatible with the stored material and to minimize the possibility of breakage and leaking, in accordance with DOT shipping container specifications.

The immersion cleaner is always contained in partially filled covered containers before, during, and after its use. Until received at the recycle facility, the immersion cleaner is never transferred to another container. The containers of used immersion cleaner are returned to the facility and stored in the designated container storage areas before shipment to a Safety-Kleen recycle center.

Dry cleaning waste is stored in steel or polyethylene containers and consists of perchloroethylene-based waste and naphtha-based waste. Dry cleaning filters are stored in steel containers. The contents of the dry cleaning waste containers are not removed or processed at the Medley facility. Perchloroethylene-based dry cleaning waste is terminated at the Medley facility, where it is stored as permitted waste prior to shipment to a Safety-Kleen recycle center. The naphtha-based dry cleaning waste is handled at the Medley facility as transfer waste. All naphtha-based dry cleaning waste is shipped to a Safety-Kleen recycle center within 10 days of arrival at the Medley facility.

Paint wastes consist of various lacquer thinners and paints. The waste is collected in containers at the customer's place of business and the containers are then stored in the container storage area of the warehouse. The paint wastes manifests are terminated at that point. The paint wastes are then re-manifested and sent to a Safety-Kleen recycle center.

FRS wastes are stored in steel or polyethylene containers that are compatible with the hazardous waste stream. The FRS wastes are managed as transfer waste, and the manifest is not be terminated at the Branch.

As part of its protocol for handling mercury-containing lamps and devices destined for recycling, the Branch provides customers with four-foot and eight-foot boxes which hold up to 39 lamps. Boxes are inspected prior to transport from the customer to the Branch. Boxes containing broken lamps are not accepted by Safety-Kleen. If the lamps are broken while in custody of Safety-Kleen, the entire contents of the box are sealed in plastic shrink wrap or transferred to another container and closed. The boxes are picked up at customer locations and are stored at the Branch in a designated area within the transfer waste storage area (Figure 8.1-1). This storage area is labeled in accordance with Florida Administrative Code

(FAC) 62-737.700(1)(d). The boxes are periodically shipped to a permitted mercury recovery or reclamation facility.

8.4 CONTAINER INSPECTION

The purpose of the container inspection plan is to establish a procedure and schedule for the systematic monitoring and inspection of hazardous waste management and other material management facilities to ensure proper operation, maintain compliance, and prevent the release of hazardous wastes to the environment. The Branch Manager or that person's designee is responsible for carrying out the inspections of all hazardous waste management facilities in accordance with the following procedure and schedule.

An example Daily Inspection Log for the container storage area and associated loading/unloading areas is presented as Figure 8.4-1. This Daily Inspection Log, or equivalent, will be used during daily inspections. Weekly container storage area inspections include the following:

- Verify that total volume is within permitted limits;
- Physically examine the condition of containers to verify that leaks have not occurred since the last inspection;
- Verify that all container identification, dates, and hazardous waste labels are attached and current;
- Inspect container placement and stacking such as aisle space, height, and stability of stacks; and
- Examine containment areas to detect signs of deterioration and failure of the containment system such as cracks, breakage, settlement, and spillage.

As deficiencies are detected, the Branch Manager will ensure that they are remedied promptly. Any deficiencies which could create and environmental or human health hazard will be rectified immediately.

Other inspections at the facility include those performed on a weekly basis for the security systems. These inspections are described in Section 5.

8.5 CONTAINER STORAGE AREA CLOSURE PLAN

The container storage area closure plan is provided as part of the overall closure plan for the facility in Section 10.0.

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Figure 8.1-1
Container Storage Area
Safety-Kleen Corp. Facility
Medley, Florida

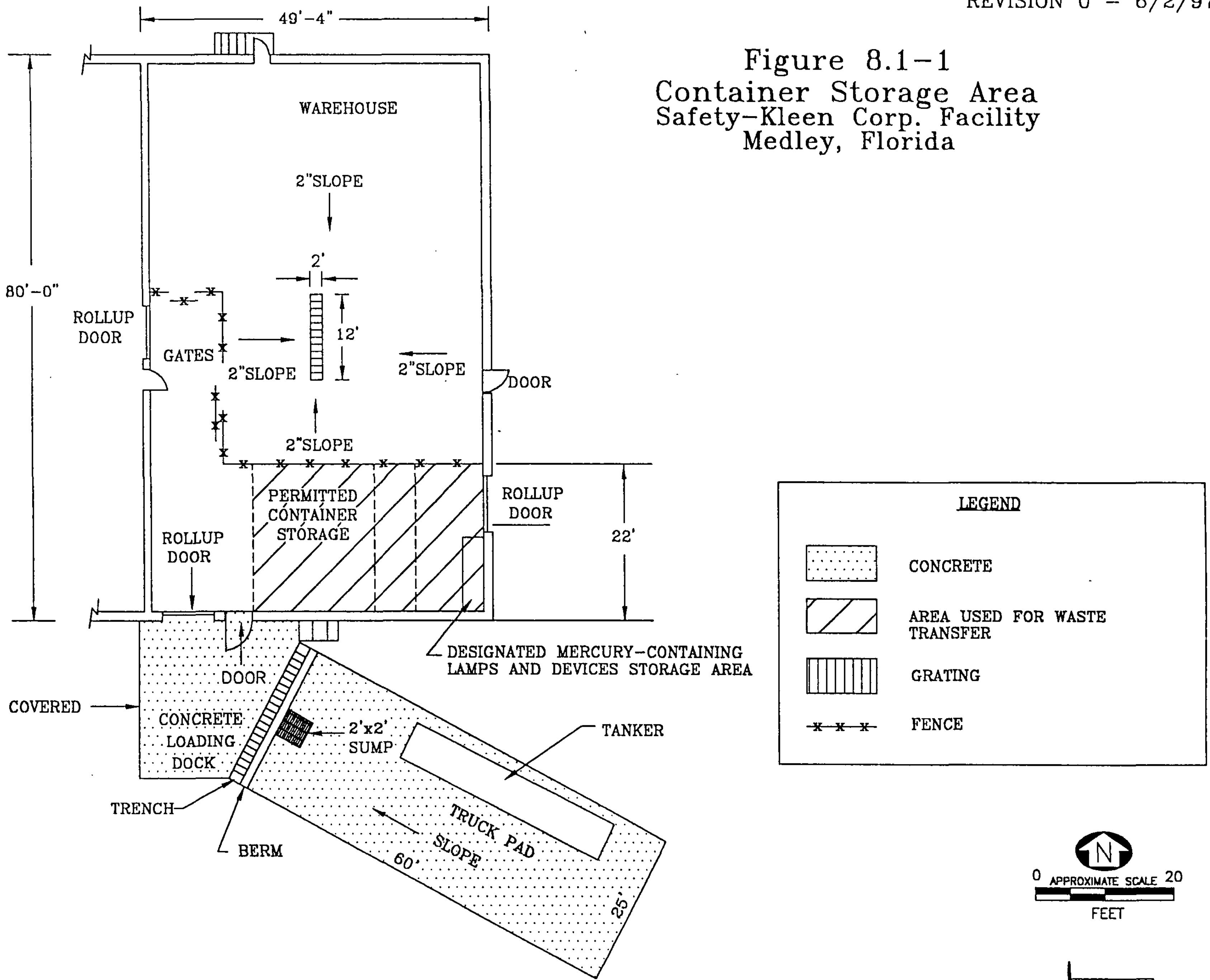

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Figure 8.4-1

INSPECTION LOG SHEET FOR:
Daily Inspection of **CONTAINER STORAGE AREA**
(A separate log must be completed for each storage area.)

DESCRIPTION OF AREA (e.g., metal shelter, northeast corner of warehouse, etc.) ____________________

____

PERMITTED STORAGE VOLUME ____________________

INSPECTOR'S NAME/TITLE ____________________

INSPECTOR'S SIGNATURE:				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY

____/____/____	____/____/____	____/____/____	____/____/____	____/____/____
DATE: (M / D / Y)				
________	________	________	________	________
TIME				

CONTAINERS	MON.	TUES.	WED.	THURS.	FRI.
Total Volume* of ________** waste:					
Total Volume of ________** waste:					
Total Volume of ________** waste:					
Total Volume of ________** waste:					
Total Volume of ________:					
TOTAL VOLUME (IN GALLONS):					
	A*** N	A N	A N	A N	A N

If 'N', circle appropriate problem: Total volume exceeds the amount for which the facility is permitted, other: ____________

	MON.	TUES.	WED.	THURS.	FRI.
Condition of Containers:	A N	A N	A N	A N	A N

If 'N', circle appropriate problem: missing or loose lids, missing, incorrect or incomplete labels, rust, leaks, distortion, other: ____________

	MON.	TUES.	WED.	THURS.	FRI.
Stacking/Placement/Aisle Space:	A N	A N	A N	A N	A N

If 'N', circle appropriate problem: different from Part B Floor Plan, containers not on pallets, unstable stacks, broken or damaged pallets, other: ____________

CONTAINMENT

	MON.	TUES.	WED.	THURS.	FRI.
Curbing, Floor and Sump(s):	A N	A N	A N	A N	A N

(Any material which spills, leaks or otherwise accumulates in the secondary containment must be **completely** removed within 24 hours of it being discovered.)

If 'N', circle appropriate problem: ponding/wet spots, deterioration (cracks, gaps, etc.), displacement, leaks, inadequate sealant, other: ____________

	MON.	TUES.	WED.	THURS.	FRI.
Loading/Unloading Area:	A N	A N	A N	A N	A N

If 'N', circle appropriate problem: cracks, deterioration, ponding/wet spots, other: ____________

OBSERVATIONS, COMMENTS, DATE AND NATURE OF REPAIRS OF ANY ITEMS INDICATED AS "NOT ACCEPTABLE": ____________

____

____

** When calculating total volumes, assume the containers are full.*
**** Enter a short description of the waste (e.g., M.S., I.C., paint, etc.)** ____________
**** A = Acceptable N = Not Acceptable*
(IF AN ITEM IS NOT APPLICABLE, ENTER 'N/A' AFTER IT AND DRAW A LINE THROUGH THE 'ACCEPTABLE/NOT ACCEPTABLE' ROW)

9.0 TANK SYSTEM

9.1 ENGINEERING ASSESSMENT OF TANK SYSTEM

An engineering assessment of the various components of the tank system and the container storage area at the Medley facility was completed in July 1992 by W.O. Heyn. A copy of the engineering assessment report is included in Appendix C. A metal canopy has been installed at the tank farm to cover the three aboveground storage tanks and associated containment structure, as well as the truck loading area.

9.2 TANK SYSTEM SPECIFICATIONS

The facility includes three vertical aboveground steel tanks (Figure 9.2-1). Used parts washer solvent is returned from Safety-Kleen's customers in containers and the solvent is transferred via the wet dumpsters into a 20,000-gallon tank (12' diameter x 23½' in length) , prior to bulk shipment to a Safety-Kleen recycle center. The other two tanks, both 20,000-gallon tanks, are used to store fresh parts washer solvent and are, therefore, not considered RCRA hazardous waste tanks.

A fourth aboveground storage tank (12,000-gallon capacity) currently exists onsite within the tank secondary containment area. This tank is not currently in use and is not connected to any piping. Safety-Kleen may utilize this fourth tank at some time in the future to store waste oil.

Material Compatibility

Waste stored in the RCRA tank at this facility is used parts washer solvent. The parts washer solvent is compatible with the mild steel tank structure; in fact, petroleum products are often used as a light hydrocarbon coating to prevent rusting of metal parts. As with all petroleum storage vessels, water will accumulate over time due to condensation and the addition of aqueous parts washer solvent and aqueous brake cleaner. The aqueous parts washer solvent and aqueous brake cleaner have a specific gravity less than water and the water will accumulate in the bottom of the tank.

Tank Operation Procedures and Design

Used spent parts washer solvent from parts washers is accumulated in the 20,000-gallon aboveground storage tank by transfer through the return/fill station. Used solvent is returned from customers via containers and poured into the wet dumpsters which have barrel washers enclosed within them to facilitate container reuse. The container is then placed on roller brushes within the barrel washer (detailed information on the barrel washers is provided in Appendix E). As the machine is turned on, the container rotates on the brush and the outside of the container is cleaned. A nozzle in the barrel washer sprays a stream of solvent into the bottom of the container to clean the inside of the container. The machine is then turned off and the container is removed. The procedure takes several seconds per container. The container is then refilled with clean solvent using a pump and nozzle assembly (Figure 1 in Appendix F) similar to a gasoline dispenser. The waste is transferred to the tank via piping and a pump (Figure 2 in Appendix F).

The used solvent is fed to a sump in the bottom of the wet dumpster and automatically pumped to the used parts washer solvent storage tank. A basket within the sump collects sludge from the cleaning operations. Periodically, this basket is removed and sludge is removed and placed into a sludge drum for recycling. The wet dumpsters are located in the return/fill station, which is underlain by a secondary containment structure.

The used solvent storage tank is designed and constructed to be compatible with the materials stored. Typical construction and installation standards for the aboveground tank are shown in Figures 3 through 5 in Appendix F. The tank is vented in accordance with National Fire Protection Association (NFPA) standards, and is equipped with a high-level alarm. The design and installation of the tank alarm system is shown in Figures 6a through 6f in Appendix F. The tank seams are lapped with full fillet welds. The weld was performed with an E70 electrode and can withstand a 4-psi air pressure test (which is performed by the manufacturer). The used solvent tank was installed new in 1992.

The W.O. Heyn report (Appendix C) on the independent assessment of the tank system includes a detailed description of the tank system components and operation. The following is a concise description of the main features of the tank system.

The tank is aboveground, supported on an 8-inch skid placed on the 8-inch concrete foundation slab. Therefore, no surface run-on will contact the wastes stored at the site and no run-off collection system is required. To minimize the amount of precipitation that may collect inside the containment area, a canopy has been installed over the tank farm. If rainwater does accumulate in the containment area and it has been verified that no spill has occurred, then rainwater will be discharged to the ground surface. Only the Branch Manager or someone operating under his/her direct orders may discharge to the ground surface. If it is not possible to verify that a spill has not occurred, then the rainwater will be pumped into drums and added to the used parts washer solvent tank via the wet dumpsters.

The tank farm dike and the return/fill station have been sealed with a chemical resistant coating. Level gauges (Figure 7 in Appendix F) are used to measure liquid levels in tanks. Float switch-activated automatic high level alarms (which consist of a strobe light and siren) signal the tank's being 95 percent full. This alarm allows an operator more than two minutes to stop operations and avoid overfilling the tank. In addition, the gauges of the tank are read before filling and before and during the filling of a tanker truck (the available volume of which is noted prior to emptying the tank) to prevent overfilling of the truck or tank. A tank truck provided with a suction pump is used to withdraw used parts washer solvent from the tank. No other equipment or standby equipment is used in the operation of the aboveground tanks. The secondary containment under the tanks and return/fill station is cleaned within 24 hours of a spill.

Controls and Spill Prevention

Equipment used in the operation of the aboveground tank for used parts washer solvent includes gauges for measuring liquid levels in the tank and an automatic high level alarm. The high level alarm will sound when the tank is filled to 95 percent of capacity. Filling of the tank must cease when the alarm sounds to prevent overfilling of the tank. In addition, the gauges of the tank must be read before filling and before and during the filling of a tanker truck (the available volume of which must be noted prior to emptying the tank) to prevent overfilling of the truck. A suction pump equipped with the tanker truck is used to withdraw the content from the tank. No other equipment or standby equipment is used in the operation of the aboveground tanks. The tank should be operated at a maximum volume of 19,000 gallons (95 percent of capacity).

9.3 TANK SYSTEM SECONDARY CONTAINMENT

Tank Containment

All tanks are aboveground, underlain by a 58' x 56' (length and width) concrete slab, surrounded by 36¼" to 38" concrete walls. The wall height in the containment varies with the floor slope and directs flow toward an approximately 60-gallon blind sump. No surface run-on or precipitation will contact the wastes stored in the tank, and no run-off collection and management system is required. A metal canopy installed over the tank farm eliminates any chance of precipitation accumulation inside the containment area. The layout of the tank farm is shown in Figure 9.2-1. The containment volume was estimated to be approximately 20,800 gallons, as shown in the calculations presented in Appendix G. This volume represents greater than 100 percent of the capacity of the largest tank within the containment area.

Return/Fill Containment

The return/fill station is a 54½' x 80' structure (Figure 9.3-1) located between the office area and the warehouse. It contains two wet dumpsters which handle the flow of solvent to the tank. These dumpsters are not intended for storage but can hold a maximum of 1,008 gallons (504 gallons per dumpster).

The area is designed such that the route trucks can be backed into the containment area. The roof extends over the truck unloading area so that no precipitation can get into the return/fill station containment area. The containment for the return/fill station is provided by two blind sumps, with a total capacity of approximately 120 gallons (60 gallons each). The floor in the return/fill station is sloped to direct flow toward the two sumps.

9.4 TANK SYSTEM INSPECTIONS

The purpose of the inspection plan is to establish a procedure and schedule for the systematic monitoring and inspection of hazardous waste management and other material management facilities to ensure proper operation and maintain compliance. The Branch

Manager or that person's designee is responsible for carrying out the inspections of all hazardous waste management facilities in accordance with the following procedure and schedule.

Figure 9.4-1 is an example Daily Inspection Log for the tank system. This Daily Inspection Log, or equivalent, will be used during daily inspections. Daily inspections of the tank and dumpsters will consist of the following:

- Note volume in tank.
- Observe tank exterior for loose anchoring, wet stops, leaks.
- Check the automatic high level alarm. In addition, measure the depth of used solvent in the tanks to confirm the proper functioning of the automatic alarm system and to determine unexpected deviations in tank measuring data, or a sudden drop in liquid level, which may indicate leakage.
- Inspect secondary containment walls and piping.
- Inspect transfer pumps for leaking seals and overheated motors.
- Inspect the solvent dispensing hose, fittings, and valve for any leaks, damage, or wear that could cause a leak to develop.
- Inspect the valves for proper seat. Stem leaks from worn glands and warped valve bodies should be repaired. If the valve cannot be repaired, replace the unit.

Also, the tanks will be visually inspected and tested periodically.

Daily inspection of the solvent return receptacle (wet dumpster) will consist of an inspection for leaks and excess dumpster mud build-up.

9.5 *TANK SYSTEM CLOSURE AND CONTINGENT POST-CLOSURE PLAN*

The tank system closure plan is provided as part of the overall closure plan for the facility in Section 10.0. As discussed below, a contingent post-closure plan for the tanks is not required.

9.6 *TANK SYSTEM CONTINGENT POST-CLOSURE PLAN*

The tank system at the Medley facility meets the secondary containment requirements of 40 CFR 264.193, and is, therefore, not required to have a contingent post-closure plan under 40 CFR 264.197(c). In addition, Safety-Kleen intends to remove or decontaminate all tank system components, associated containment systems, and contaminated soils (if any) at the time of closure. However, should future conditions indicate that all contaminated soils and tank system components cannot practicably be decontaminated or removed, then a plan to perform post-closure care in accordance with the post-closure care requirements that apply to landfills (40 CFR 264.310) will be prepared for implementation upon FDEP approval.

9.7 *RESPONSE TO LEAKS AND DISPOSITION OF UNFIT-FOR-USE TANK SYSTEMS*

In the event that a leak or spill were to occur from a tank system or secondary containment system, the actions identified herein will be undertaken.

Immediate Response

All waste flow to the tank system in question will be ceased immediately. An inspection will be undertaken to identify the cause of the release. Waste flow to the tank system will not be resumed until the tank system has been inspected, repaired, and declared fit for use.

In order to prevent further releases, or to allow inspection and a repair of the system, it may be necessary to remove the waste from the tank system. This waste removal will occur within 24 hours after detection of the leak, or at the earliest practicable time.

All material released to the secondary containment area will be removed within 24 hours, or in as timely a manner as possible, to prevent harm to human health and the environment. Every reasonable effort will be made to prevent migration of the release to soils or surface water. If necessary, visible contamination of surface water and soil will be removed and properly disposed of.

Notifications

If a spill is less than one pound and is immediately contained and cleaned up, no notifications are required. All other releases require notification as described in the Contingency Plan (Section 5.0).

Subsequent Reporting

Within 30 days of detection of a release to the environment, a report must be submitted to the Regional Administrator and FDEP. The report must contain the following information:

1. Likely route of migration of the release.

2. Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate).

3. Results of any monitoring or sampling conducted in connection with the release. If sampling has occurred and sampling results are not available within 30 days, the results must be submitted as soon as available.

4. Proximity to downgradient drinking water, surface water, and populated areas.

5. Description of response actions taken or planned.

Repair or Closure

If the integrity of the containment system has not been damaged, then the system may be returned to service as soon as the released waste is removed and repairs, if necessary, are made. If the tank was the source of the release, then the tank must be repaired prior to returning the tank system to service.

If the release was from a tank system component which did not have secondary containment, then secondary containment must be provided for this component before the system can be returned to service. The exception to this is if the component can be visually inspected. In this instance, the component may be repaired and returned to service. If a component is replaced, then the component must satisfy the requirements for new tank systems and components.

All major repairs must be certified by an independent, registered, professional engineer in accordance with 40 CFR 270.11(d). The engineer must certify that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This report must be filed with the Agency within seven days after returning the tank system to use.

If repairs that meet these requirements cannot be performed, then the tank system must be closed in accordance with the closure plan.

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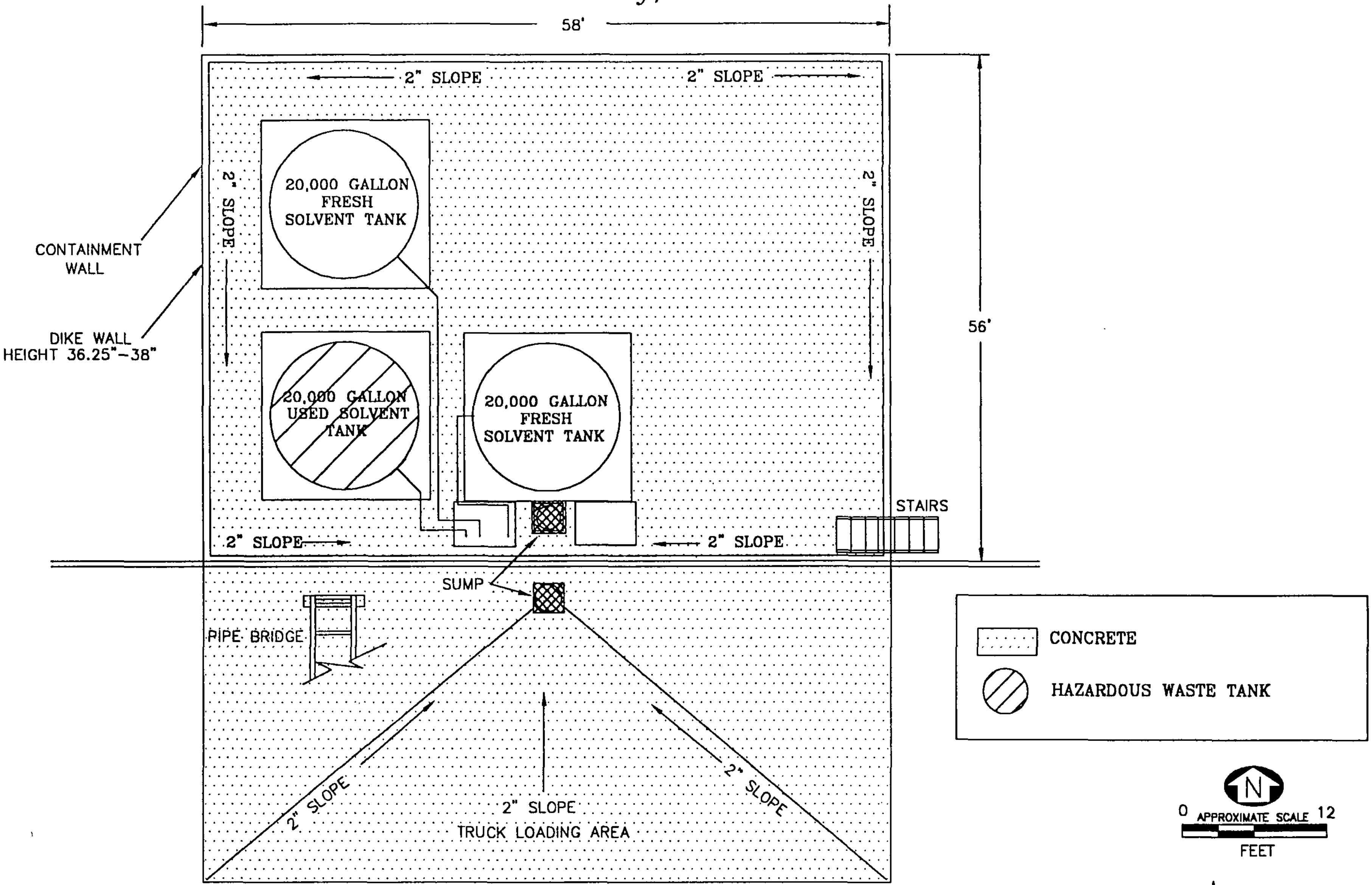
Figure 9.2-1
Tank Storage Area
Safety-Kleen Corp. Facility
Medley, Florida



ERM

PERMIT

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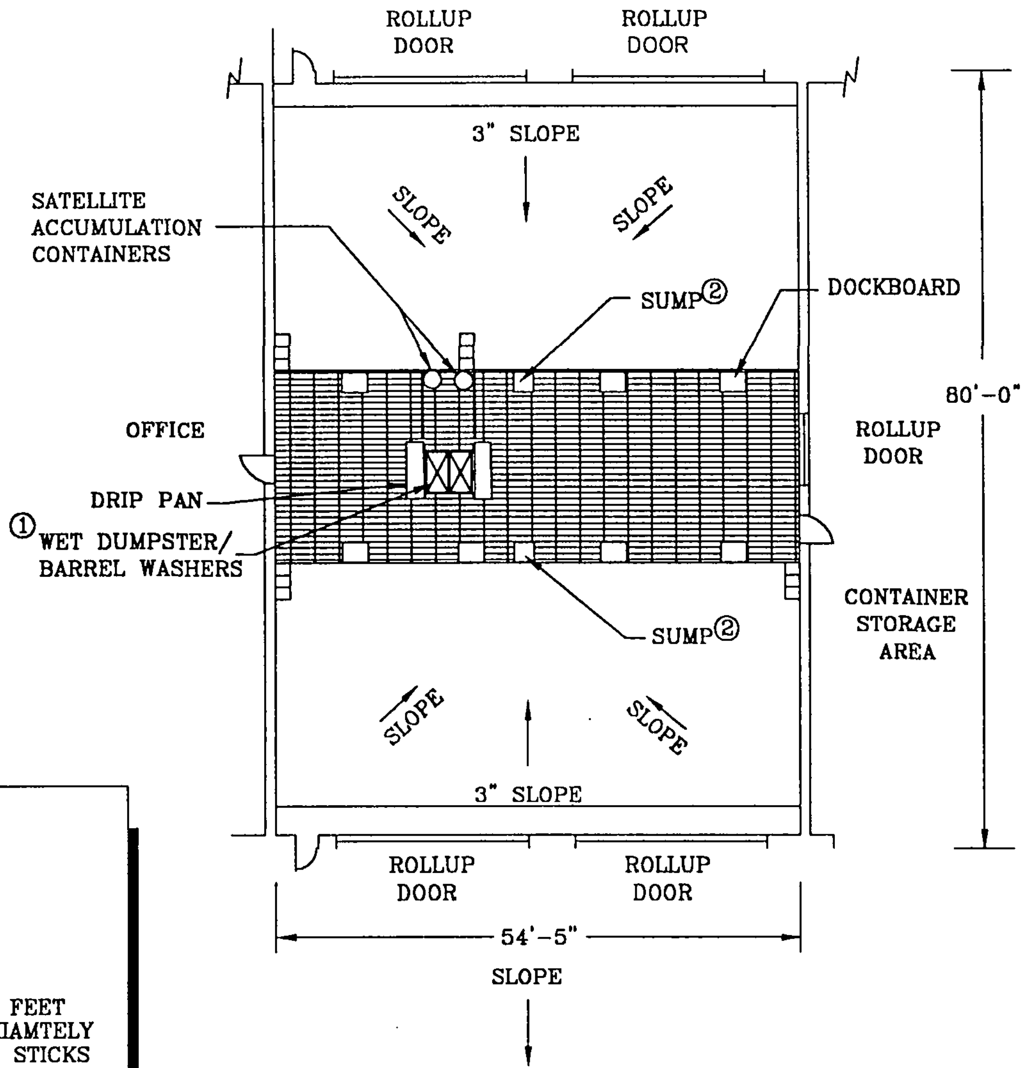
Figure 9.3-1
Return/Fill Station
Safety-Kleen Corp. Facility
Medley, Florida



LEGEND

STEPS

GRATE

Notes:

1. WIDTH APPROXIMATELY 2 FEET
2. SUMPS MEASURE APPROXIAMTELY 2'x2'; THE NORTH SUMP STICKS OUT FROM UNDER THE GRATE BY APPROXIMATELY 6"

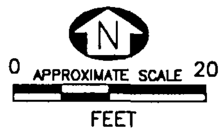


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Figure 9.4-1

INSPECTION LOG SHEET FOR:
Daily Inspection of **STORAGE TANK SYSTEM**
(A separate log must be completed for each tankfarm which contains a hazardous waste storage tank.)

INSPECTOR'S NAME/TITLE ______________________________

INSPECTOR'S SIGNATURE:				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY

___/___/___ DATE: (M / D / Y)	___/___/___	___/___/___	___/___/___	___/___/___
_____ TIME	_____	_____	_____	_____

STORAGE TANKS:
(TANKS MUST NEVER BE MORE THAN 95% FULL!)

	MON.	TUES.	WED.	THURS.	FRI.
______ *Tank (in.)	/	/	/	/	/
______ Tank (in./gal.)	/	/	/	/	/

	MON.		TUES.		WED.		THURS.		FRI.	
Tank Exterior:	A**	N	A	N	A	N	A	N	A	N

If 'N', circle appropriate problem: rusty or loose anchoring, lack of grounding, wet spots, discoloration, leaks, distortion, other: ______________________________

High Level Alarms:	A	N	A	N	A	N	A	N	A	N

If 'N', circle appropriate problem: malfunctioning "Power On" light, malfunctioning siren/strobe light, other: ______________________________

Volume Gauges:	A	N	A	N	A	N	A	N	A	N

If 'N', circle appropriate problem: disconnected, sticking, condensation, other: ______________________________

CONTAINMENT AREA (Tank Dike)

Any material which spills, leaks or otherwise accumulates in the dike, including rainwater, must be completely removed within 24 hours.

Bottom and Walls	A	N	A	N	A	N	A	N	A	N

If 'N', circle appropriate problem: cracks, debris in dike, open drums in dike, ponding/wet spots, stains, sealant is pitted, cracked, or chipped, deterioration, displacement, leaks, other: ______________________________

Rigid Piping and Supports	A	N	A	N	A	N	A	N	A	N

If 'N', circle appropriate problem: distortion, corrosion, paint failure, leaks, other: ______________________________

OBSERVATIONS, COMMENTS, DATE AND NATURE OF REPAIRS OF ANY ITEMS INDICATED AS "NOT ACCEPTABLE": __________

____

____

____

____

*Fill in the Waste Type (e.g. Mineral Spirits) **A = Acceptable N = Not Acceptable

(IF AN ITEM IS NOT APPLICABLE, ENTER 'N/A' AFTER IT AND DRAW A LINE THROUGH THE 'ACCEPTABLE/NOT ACCEPTABLE' ROW)

Figure 9.4-1 (Con't)

INSPECTION LOG SHEET FOR:
Daily Inspection of STORAGE TANK SYSTEM

INSPECTOR'S NAME/TITLE ______________________

INSPECTOR'S SIGNATURE:				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY

	MON.		TUES.		WED.		THURS.		FRI.	
TRANSFER PUMPS AND HOSES										
Pump Seals:	A*	N	A	N	A	N	A	N	A	N
Motors:	A	N	A	N	A	N	A	N	A	N
Fittings:	A	N	A	N	A	N	A	N	A	N
Valves:	A	N	A	N	A	N	A	N	A	N
Hose Connections and Fittings:	A	N	A	N	A	N	A	N	A	N
Hose Body:	A	N	A	N	A	N	A	N	A	N

Pump Seals — If 'N', circle appropriate problem: leaks, other: ______________________

Motors — If 'N', circle appropriate problem: overheating, other: ______________________

Fittings — If 'N', circle appropriate problem: leaks, other: ______________________

Valves — If 'N', circle appropriate problem: leaks, sticking, other: ______________________

Hose Connections and Fittings — If 'N', circle appropriate problem: cracked, loose, leaks, other: ______________________

Hose Body — If 'N', circle appropriate problem: crushed, thin spots, leaks, other: ______________________

	MON.		TUES.		WED.		THURS.		FRI.	
RETURN AND FILL STATION										
Wet Dumpster:	A	N	A	N	A	N	A	N	A	N
Secondary Containment:	A	N	A	N	A	N	A	N	A	N
Loading/Unloading Area:	A	N	A	N	A	N	A	N	A	N

Wet Dumpster — If 'N', circle appropriate problem: sediment buildup, leaks, rust, split seams, distortion, deterioration, excess debris, other: ______________________

Secondary Containment — If 'N', circle appropriate problem: sediment/liquid, leaks, deterioration, distortion, excess debris, other: ______________________

Loading/Unloading Area — If 'N', circle appropriate problem: cracks, ponding/wet spots, deterioration, other: ______________________

OBSERVATIONS, COMMENTS, DATE AND NATURE OF REPAIRS OF ANY ITEMS INDICATED AS "NOT ACCEPTABLE": ______________________

____

____

____

____

____

*A = Acceptable N = Not Acceptable

(IF AN ITEM IS NOT APPLICABLE, ENTER 'N/A' AFTER IT AND DRAW A LINE THROUGH THE 'ACCEPTABLE/NOT ACCEPTABLE' ROW)

Figure 9.4-1 (Con't)

INSPECTION LOG SHEET FOR:
Daily Inspection of TANK EQUIPMENT

INSPECTOR'S NAME/TITLE ______________________________

INSPECTOR'S SIGNATURE:				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY

____/____/____ ____/____/____ ____/____/____ ____/____/____ ____/____/____
DATE: (M / D / Y)

________ ________ ________ ________ ________
TIME

Pump, Flange, or Valve Number	MON.		TUES.		WED.		THURS.		FRI.	
1 ________*	A**	N	A	N	A	N	A	N	A	N
2 ________	A	N	A	N	A	N	A	N	A	N
3 ________	A	N	A	N	A	N	A	N	A	N
4 ________	A	N	A	N	A	N	A	N	A	N
5 ________	A	N	A	N	A	N	A	N	A	N
6 ________	A	N	A	N	A	N	A	N	A	N
7 ________	A	N	A	N	A	N	A	N	A	N
8 ________	A	N	A	N	A	N	A	N	A	N
9 ________	A	N	A	N	A	N	A	N	A	N
10 ________	A	N	A	N	A	N	A	N	A	N
11 ________	A	N	A	N	A	N	A	N	A	N
12 ________	A	N	A	N	A	N	A	N	A	N
13 ________	A	N	A	N	A	N	A	N	A	N
14 ________	A	N	A	N	A	N	A	N	A	N
15 ________	A	N	A	N	A	N	A	N	A	N
16 ________	A	N	A	N	A	N	A	N	A	N
17 ________	A	N	A	N	A	N	A	N	A	N
18 ________	A	N	A	N	A	N	A	N	A	N
19 ________	A	N	A	N	A	N	A	N	A	N
20 ________	A	N	A	N	A	N	A	N	A	N
21 ________	A	N	A	N	A	N	A	N	A	N
22 ________	A	N	A	N	A	N	A	N	A	N
23 ________	A	N	A	N	A	N	A	N	A	N
24 ________	A	N	A	N	A	N	A	N	A	N
25 ________	A	N	A	N	A	N	A	N	A	N
26 ________	A	N	A	N	A	N	A	N	A	N
27 ________	A	N	A	N	A	N	A	N	A	N
28 ________	A	N	A	N	A	N	A	N	A	N
29 ________	A	N	A	N	A	N	A	N	A	N
30 ________	A	N	A	N	A	N	A	N	A	N
31 ________	A	N	A	N	A	N	A	N	A	N
32 ________	A	N	A	N	A	N	A	N	A	N
33 ________	A	N	A	N	A	N	A	N	A	N
34 ________	A	N	A	N	A	N	A	N	A	N
35 ________	A	N	A	N	A	N	A	N	A	N
36 ________	A	N	A	N	A	N	A	N	A	N
37 ________	A	N	A	N	A	N	A	N	A	N
38 ________	A	N	A	N	A	N	A	N	A	N
39 ________	A	N	A	N	A	N	A	N	A	N
40 ________	A	N	A	N	A	N	A	N	A	N

If 'N', enter pump or valve # ____________ and circle appropriate problem: potential leak, active leak, sticking, wear, does not operate smoothly, other: ______________________________

For all leaks and potential leaks, the Leak Detection and Repair Record must be completed.
*Add short descriptions of unit being inspected (e.g. gate valve, dumpster flange, dumpster pump, etc.)
**A = Acceptable N = Not Acceptable
Draw a line through valve and pump I.D. numbers which do not apply.

FORM 1100-08-03

10.0 CLOSURE PLAN

Safety-Kleen constructed the Medley Branch with the intent that it will be a long-term facility for the distribution of Safety-Kleen products. No onsite disposal activity occurs at the facility and, hence, no disposal capacity will be exhausted that will necessitate closure of the facility. Based on current business and facility conditions, the Medley facility is expected to remain in operation at least until the year 2025.

In the event that some presently unforeseen circumstance(s) would result in the discontinuance of operations and permanent closure or sale of the facility, this closure plan identifies the steps necessary to close the facility at any point during its intended life. This plan should be applied to the tank system, container storage area, and equipment used by the facility for hazardous waste management to accomplish the closure performance standard of 40 CFR 264.111. It is intended that all closures will be complete and final with removal of waste and decontamination of the facility and associated equipment. This will eliminate the need for maintenance after closure and the possibility of escape of hazardous waste constituents into the environment.

10.1 FACILITY DATA

1. Waste Management Facility Descriptions

   a. Aboveground Storage Tank: The tank is a 20,000-gallon vertical steel tank used for the storage of used parts washer solvent. This tank is located within a containment system consisting of a 58' by 56' foundation slab with 36¼" to 38" perimeter walls as the floor slopes towards the south.

   b. Solvent Return/Fill Station: The station is a 54½' x 80' portion of the building located between the office area and the warehouse. It contains two wet dumpsters, which are used to receive returned solvent from containers and pump it to the used parts washer solvent tank. These dumpsters are not intended for storage but can hold a maximum of 1,008 gallons (504 gallons each).

c. Container Storage Area: The warehouse is a 49¼' x 80' portion of the site building. The floors in this area are sloped toward a 2' x 12' containment trench in the area. The maximum volume of product and waste stored is 29,400 gallons. Hazardous wastes, including transfer wastes, are stored in a 22' x 33' area in the southeast portion of the warehouse. Wastes stored in this area consist of dry cleaner wastes, spent immersion cleaner, antifreeze, paint wastes, FRS wastes, and tank bottoms and dumpster mud. The container storage area is permitted to store up to 6,912 gallons of hazardous and transfer wastes.

2. Maximum Inventory of Wastes

   a. Used Parts Washer Solvent: 20,000 gallons.

   b. Wet Dumpsters: 1,008 gallons.

   c. Containerized Waste: 6,912 gallons. [NOTE: This includes any combination of 5-, 16-, 20-, 30-, 55-, or 85-gallon containers used for various management purposes].

10.2 CLOSURE PROCEDURES

Container Storage Area

- At closure, all containers present at the facility will be sent to a Safety-Kleen recycle center, where the contents in the containers will be reclaimed and the containers cleaned for reuse. The containers will be removed and transported with proper packaging, labeling, and manifesting.

- The concrete floor and spill containment trench will be scrubbed with a detergent solution and rinsed with clean water to remove waste residuals from the surface. Final rinsate samples will be collected and analyzed to determine the effectiveness of decontamination. Unless otherwise designated in the formal closure plan, one rinsate sample will be collected from container storage area and analyzed for the eight RCRA metals, and for volatile and semivolatile organics by EPA Methods 8015, 8240, and 8270. The area will continue to be scrubbed and rinsed until rinsate concentrations meet action limits established in the formal closure plan and/or closure permit.

- Decontamination (i.e., detergent wash and clean rinse) fluids will be collected and contained for proper management. One representative sample of the contained fluids will be collected to determine whether the water is hazardous. This determination will be made by laboratory analysis of the sample for the metals and organics (excluding pesticides/herbicides) on the TCLP list. [Note: This wash water will be from all areas undergoing decontamination, not just from the container storage area.]

- If the wash water or other wastes generated in the closure process are determined to be hazardous, they will be disposed of properly as a hazardous waste. Otherwise, the material will be disposed of as an industrial waste. Based on an assumed decontamination water usage rate of four gallons per square foot, approximately 64,000 gallons of rinsate will require disposal as a hazardous waste. This amount includes rinsate from all structures at the facility, including the container storage area, return/fill station, and the tank containment vault. This value has been used in the closure cost estimates in Section 10.5. However, it is anticipated that substantially less water will be generated for disposal, and the generated water is expected to be nonhazardous based on Safety-Kleen's experience from other facility closures.

- Equipment to be used to clean this area includes mops, pails, scrub brushes, a wet/dry vacuum, and containers. The mops, pails, and scrub brushes will be containerized and disposed of as hazardous waste. The wet/dry vacuum and containers used will be washed with a detergent solution and rinsed to decontaminate them.

Solvent Return/Fill Station

- At closure, any sludge in the wet dumpsters ("dumpster mud") will be cleaned out and containerized, labeled, and manifested for proper disposal at a permitted facility.

- The metal superstructure components of the station (i.e., the wet dumpsters and the dock grating) will be cleaned by appropriate means to remove visible contamination.

Safety-Kleen intends to recycle these components as scrap metal in accordance with 40 CFR 261.6(a)(3)(ii), or to reuse them at another Safety-Kleen facility. Accordingly, decontamination of the components is required only to the extent necessary for safe demolition, storage, and transportation of the scrap.

- The concrete floor in the return/fill station will be scrubbed with a detergent solution and rinsed with clean water to remove waste residuals from the surface. Two final rinsate samples will be collected and analyzed to determine the effectiveness of decontamination. Unless otherwise designated in the formal closure plan, the rinsate samples will be analyzed for the same constituents as the container storage area rinsate samples. The area will continue to be scrubbed and rinsed until rinsate concentrations meet action limits established in the formal closure plan and/or closure permit.

Aboveground Storage Tank System

Metal Components of the Storage Tank System

- At closure, the contents of the tank will be removed to a tanker truck using existing unloading equipment and subsequently transported to a Safety-Kleen recycle center.

- Once the contents have been drained, the tank will be opened by removing the manways and vented by supplying fresh air to the interior space of the tank. Any residual wastes will be removed via vacuum for recycling with the previously drained wastes.

- The interior of the tank as well as all associated piping and appurtenant equipment will then be cleaned by appropriate means to remove visible contamination. Safety-Kleen intends to recycle the tank, piping, and appurtenant equipment as scrap metal in accordance with 40 CFR 261.6(a)(3)(ii), or to reuse them at another Safety-Kleen facility. Accordingly, decontamination of the metal components is required only to the extent necessary for the safe demolition, storage, and transportation of the scrap.

Concrete Containment System

- Final disposition of the concrete containment system within which the waste tank is located will depend in part upon the presence or absence of underlying soil contamination. To make that determination, the upper six inches of soil immediately below the concrete slab will be sampled at three locations, as follows:

  - Under the waste tank;
  - At the containment system sump; and
  - Beneath the most prominent of any cracks observed in the slab.

  An additional soil sample will be collected near one of the containment sumps in the return/fill station. These sample locations may be adjusted as actual field conditions warrant, but a minimum of three samples will be retrieved. These samples will be analyzed for the eight RCRA metals and for volatile and semivolatile organics by EPA Methods 8015, 8240, and 8270.

- The perimeter walls and foundation slab of the secondary containment area will be scrubbed with a detergent solution and rinsed with clean water to remove waste residuals from the surface. Two final rinsate samples will be collected and analyzed to determine the effectiveness of decontamination. Unless otherwise designated in the formal closure plan, the rinsate samples will be analyzed for the same constituents as the container storage area rinsate samples. The area will continue to be scrubbed, rinsed, and resampled until rinsate concentrations meet action limits established in the formal closure plan and/or closure permit. Safety-Kleen anticipates that proper maintenance of the concrete containment system will allow the slab to remain in place at closure.

- Safety-Kleen will proceed with demolition of the perimeter walls. If it is determined that soil contamination exists beneath the foundation slab, Safety-Kleen will demolish the entire concrete structure and complete a further delineation of the extent of soil contamination to be removed to complete closure. An additional work plan will be prepared to guide the soil assessment, removal, and disposal activities that Safety-Kleen will implement to address residual soil contamination.

- Prior to demolition of the perimeter walls, one representative composite sample of the construction materials will be collected and submitted for analyses (by TCLP) of metals and organics (excluding pesticides and herbicides) unless an alternate analytical protocol is required by the selected disposal facility. The representative composite sample will include biased grab samples collected from areas of staining. If no stained areas are evident, the grab sample locations will be randomly selected. If the construction materials are classified as nonhazardous using TCLP, then they will be disposed of as construction debris in an appropriately permitted disposal facility. In the event the construction materials are identified as hazardous using TCLP, the construction materials will be disposed of as a hazardous waste in accordance with RCRA regulations.

- If the foundation slab must be removed, it will be demolished and the construction materials tested using TCLP in the same manner as that described above for the walls of the secondary containment system.

- If soil removal becomes necessary, Safety-Kleen will backfill the excavated area with clean, compacted general fill material graded to match existing surfaces and to preclude ponding of water. To ensure backfill is clean (i.e., is not contaminated with constituents at concentrations above Florida soil cleanup goals or site background (whichever is higher)), one representative composite sample of the backfill will be collected and analyzed prior to emplacement of the fill. The backfill sample will be analyzed for the eight RCRA metals and by EPA Methods 8015, 8240, and 8270.

10.3 FACILITY CLOSURE SCHEDULE AND CERTIFICATION

- Safety-Kleen may amend the closure plan at any time during the active life of the facility. The active life of the facility is that period during which wastes are periodically received. Safety-Kleen will amend the plan any time changes in operating plans or facility design affect the closure plan or whenever a change occurs in the expected year of closure of the facility. The plan will be amended within 60 days of the changes.

- Safety-Kleen will notify the FDEP of its intent to close the facility by submitting an application for a closure permit pursuant to FAC Chapter 62-730.260(1). This application will be submitted no later than 60 days before the final receipt of hazardous wastes by the facility or at the time specified in the current operating permit.

- Within 90 days of receiving the final volume of hazardous wastes, or 90 days after issuance of a closure permit, if that is later, Safety-Kleen will remove from the site all hazardous wastes in accordance with the approved closure plan. The Regional Administrator may approve a longer period if Safety-Kleen demonstrates that:

  1. The activities required to comply with this paragraph will, of necessity, take longer than 90 days to complete; or

  2. The following requirements are met:

     - The facility has the capacity to receive additional wastes;

     - There is a reasonable likelihood that a person other than Safety-Kleen will recommence operation of the site;

     - Closure of the facility would be incompatible with continued operation of the site; and

     - Safety-Kleen has taken and will continue to take all steps to prevent threats to human health and the environment.

- Safety-Kleen will complete closure activities in accordance with the approved closure plan within 180 days after receiving the final volume of wastes or 180 days after approval of the closure plan, whichever is later. When closure is completed, all facility equipment and structures shall have been properly disposed of, or decontaminated by removing all hazardous waste and residues.

- Within 60 days of closure completion, Safety-Kleen will submit certification by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

Figure 10.3-1 presents a typical closure schedule anticipated for the Medley facility.

10.4 CONTINGENT POST-CLOSURE PLAN

The tank system at the Medley facility meets the secondary containment requirements of 40 CFR 264.193, and is, therefore, not required to have a contingent post-closure plan under 40 CFR 264.197(c). In addition, Safety-Kleen intends to remove or decontaminate all tank system components, associated containment systems, and contaminated soils (if any) at the time of closure. However, should future conditions indicate that all contaminated soils and tank system components cannot practicably be decontaminated or removed, then a plan to perform post-closure care in accordance with the post-closure care requirements that apply to landfills (40 CFR 264.310) will be prepared for implementation upon FDEP approval.

10.5 CLOSURE COST ESTIMATE

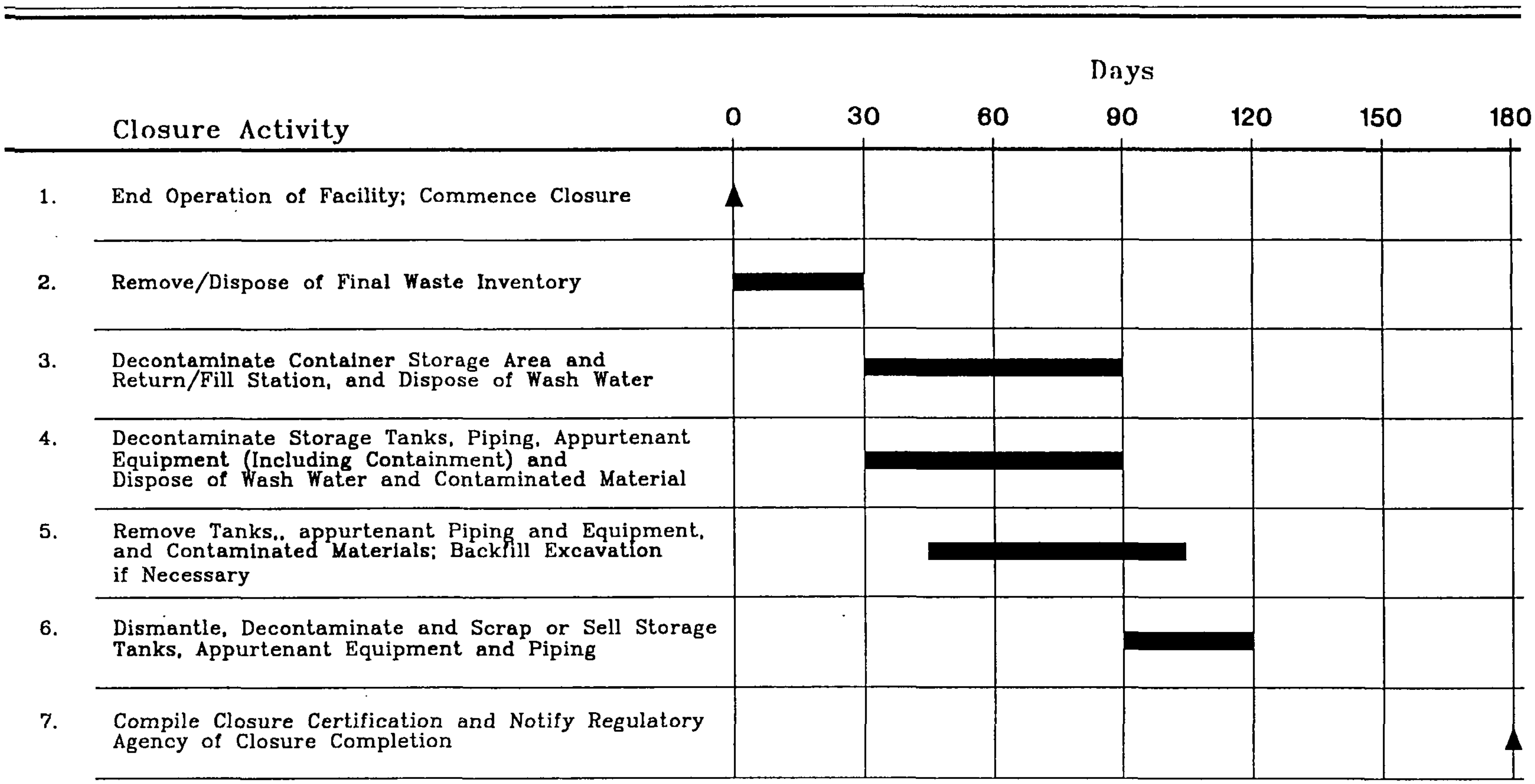
The cost for closure of the facility is estimated in the following worksheets and summarized as follows:

• Closure of Container Storage Area	=	$208,175*
• Closure of Tank System	=	$ 13,298
Total Estimated Closure Cost	=	$221,473

* Includes facility costs for decontamination and waste transportation and disposal.

REVISION 0 – 6/2/97

Figure 10.3-1
Typical Closure Schedule
Safety-Kleen Corp. Facility
Medley, Florida



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The inventory worksheet will be used in completing the appropriate cost estimating worksheets to determine the costs of closure activities. If the design characteristics of the container storage area being evaluated do not conform to the format of the worksheet below, alternative methods should be used to accurately determine the maximum permitted capacity of the unit, the area of all structures to be decontaminated and demolished, and the volume of all structures and soils to be removed. Depending on the activities being conducted, it may not be necessary to complete each section of the inventory sheet.

1	**MAXIMUM PERMITTED CAPACITY** Determine the maximum permitted capacity of waste in the unit to calculate transportation, treatment, and disposal costs.		
1.A	Volume of Waste (Permit limit)		6912 gal
1.B	**Supplemental Information on Waste Inventory (In the additional space provided, denote any supplemental information regarding waste characteristics, treatment and disposal methods, and sampling and analysis methods):** The warehouse and container storage are will be decontaminated until clean criteria are met.		
2	**SURFACE AREA OF SECONDARY CONTAINMENT SYSTEM PAD** Calculate the surface area of the secondary containment system pad to calculate decontamination and demolition costs. Demolition of the secondary containment system pad is an additional activity that might be conducted if the pad cannot be effectively decontaminated or if the owner or operator elects to demolish the pad.		
2.A	Length (excluding any curbs or berm)	47.3 ft	
2.B	Width (excluding any curbs berm)	78 ft	
2.C	**Surface Area of Containment System Pad (Multiply line 2.A by line 2.B)** *		3787 ft^2
2.D	**Surface Area of Containment System Pad in yd^2 (Divide line 2.C by 9 ft^2/yd^2)**		421 yd^2
3	**VOLUME OF SECONDARY CONTAINMENT SYSTEM PAD** NA ** Calculate the volume of materials constituting the secondary containment system pad to determine removal costs. Removal of secondary containment system pad is an additional activity that might be conducted if the pad cannot be effectively decontaminated.		
3.A	Thickness	yd	
3.B	**Volume of Containment System Pad (Multiply line 2.D by line 3.A)**		yd^3

* SEE ATTACHED CALCULATIONS.

** DECON TO CONTINUE UNTIL COMPLETE.

4 SURFACE AREA OF SECONDARY CONTAINMENT SYSTEM BERM NA - NO BERM OR CURBING

Calculate the inside surface area of the secondary containment system berm, or curbing, to determine decontamination and demolition costs. Demolition of the secondary containment system berm is an additional activity that might be conducted if the berm cannot be effectively decontaminated or if the owner or operator elects to demolish the berm.

4.A	Inside perimeter (multiply the sum of lines 2.A and 2.B by 2)	ft	
4.B	Height	ft	
4.C	**Surface Area of Containment System Berm (Multiply line 4.A by line 4.B)**		ft²
4.D	**Surface Area of Containment System Berm in yd² (Divide line 4.C by 9 ft²/yd²)**		yd²

5 VOLUME OF SECONDARY CONTAINMENT SYSTEM BERM NA-NO BERM OR CURBING

Calculate the volume of materials constituting the secondary containment system berm, or curbing, to determine the removal costs. Removal of secondary containment system berm is an additional activity that might be conducted if the berm cannot be effectively decontaminated.

5.A	Thickness	yd	
5.B	**Volume of Containment System Berm (Multiply line 4.D by line 5.A)**		yd³

6 SURFACE AREA OF OTHER STRUCTURES

Calculate the surface area of additional structures that will be decontaminated or demolished, for example, ramps or sumps. Demolition of other structures is an additional activity that might be conducted if the structures cannot be effectively decontaminated or if the owner or operator elects to demolish the structures.

6.A	**Surface Area of Other Structures** TRENCH	80* ft²
6.B	**Surface Area of Other Structures in yd² (Divide line 6.A by 9 ft²/yd²)**	8.89 yd²

7 VOLUME OF OTHER STRUCTURES NA

Calculate the volume of materials constituting the other structures to be removed.

7	**Volume of Other Structures**	yd³

* See attached calculations

8	**VOLUME OF CONTAMINATED SOIL TO BE REMOVED** NA - ASSUMED CLEAN Calculate the volume of contaminated soil to be removed. Removal of contaminated soil is an additional activity that might be conducted if soil contamination is identified or if removal of contaminated soil is indicated in the closure plan.		
8.A	Length	ft	
8.B	Width	ft	
8.C	Depth	ft	
8.D	**Volume of Contaminated Soil to be Removed (Multiply line 8.A by line 8.B by line 8.C)**		ft
8.E	**Volume of Contaminated Soil to be Removed in yd^3 (Divide line 8.D by 27 ft^3/yd^3)**		yd^3

Basis for Data Input Values

Form	Item	Explanation		Value	Units	Comment
CS-1	2C	*Floor area*				
		Floor	47.3' x 80'	3,787	sf	
CS-1	6A	*Trench area*				
		Trench side 1	2' x 2' x 2'	8	sf	
		Trench side 2	2' x 2' x 12'	48	sf	
		Trench floor	2' x 12'	24	sf	
		Total surface area		80	sf	

Facility Name: Safety-Kleen Medley

SUMMARY WORKSHEET

	Activity Some of the activities listed below are routine. The owner or operator might elect or be required to conduct additional activities. Italic type denotes worksheets for estimating the costs of those additional activities.	Worksheet Number	Cost
1.	*Demolition and Removal of Containment System*	CS-3	$ 0
2.	*Removal of Soil*	CS-4	$ 0
3.	*Backfill*	CS-5	$ 0
4.	Decontamination[a] *	DC-1	$ 18303
5.	Sampling and Analysis[b] *	SA-2	$ 11886
6.	*Monitoring Well Installation[c]*	MW-1	$ 0
7.	Transportation[d] *	TR-1	$ 28688
8.	Treatment and Disposal[e] *	TD-1	$ 96377
9.	Subtotal of Closure Costs (Add lines 1 through 8)		$ 155,254
10.	Engineering Expenses (Approximately 10% of closure costs, excluding certification of closure [Multiply line 9 by 0.10])		$ 15525
11.	Certification of Closure	CS-6	$ 2700
12.	Subtotal (Add engineering expenses and cost of certification of closure to closure costs [Add lines 9, 10, and 11])		$ 173,479
13.	Contingency Allowance (Allow 20% of closure costs, engineering expenses, and cost of certification of closure [Multiply line 12 by 0.20])		$ 34696
14.	*Landfill Closure[f]*	LF-2	$ 0
	TOTAL COST OF CLOSURE ***(Add lines 12, 13, and 14)***		**$ 208,175**

Notes:

[a] Decontamination Worksheets are found in Chapter 12.

[b] Sampling and Analysis Worksheets are found in Chapter 13.

[c] Monitoring Well Installation Worksheets are found in Chapter 14.

[d] Transportation Worksheets are found in Chapter 15.

[e] Treatment and Disposal Worksheets are found in Chapter 16.

[f] Landfill Worksheets are found in Chapter 7. Costs of post-closure care are included in this total.

* Items 4, 5, 7, and 8 are facility-wide costs, not just those associated with the container storage area.

DEMOLITION AND REMOVAL OF CONTAINMENT SYSTEM - Page 1 of 2

The containment system will be decontaminated, not demolished.

1 DEMOLITION OF CONTAINMENT SYSTEM			
1.A	Area of containment system (Enter from worksheet CS-1; add lines 2.C, 4.C, and 6.A)	ft^2	
1.B	Labor and equipment cost per work hour[a] Choose the appropriate level of PPE: a. Protection Level D $ 34.98/work hr[b] b. Protection Level C $ 50.91/work hr[c] c. Protection Level B $ 64.45/work hr[c]	$	
1.C	Work rate to demolish one ft^2 of containment system[d]	0.040 work hr/ft^2	
1.D	Number of hours required to demolish the containment system (Multiply line 1.A by line 1.C) (One hour minimum; round up to the 0.5 hour)	work hrs	
1.E	**Cost to Demolish the Containment System (Multiply line 1.B. by line 1.D)**		$ Ø
2 REMOVAL AND LOADING OF CONTAINMENT SYSTEM			
2.A	Volume of materials constituting the containment system (Enter from worksheet CS-2; add lines 3.B, 5.B, and 7)	yd^3	
2.B	Labor and equipment cost per work hour[e] Choose the appropriate level of PPE: a. Protection Level D $ 41.18/work hr[f] b. Protection Level C $ 58.04/work hr[g] c. Protection Level B $ 72.51/work hr[g]	$	
2.C	Work rate to remove and load one yd^3[h]	0.300 work hr/yd^3	
2.D	Number of hours required to remove the containment system (Multiply line 2.A by line 2.C) (One hour minimum; round up to the 0.5 hour)	work hrs	
2.E	Subtotal of labor and equipment costs to remove and load the containment system (Multiply line 2.B by line 2.D)		$ Ø
2.F	Number of debris box containers needed to hold containment system (Divide line 2.A by 20 yd^3 per container; round up to the nearest whole number)	containers	

DEMOLITION AND REMOVAL OF CONTAINMENT SYSTEM - Page 2 of 2

2.G	Cost of one 20-yd^3-capacity debris box container (rent per week)[i]	$ 260/container	
2.H	Cost of containers (Multiply line 2.F by line 2.G)		$
2.I	Cost of mobilization and demobilization (flat rate)[k]		$ 269.00
2.J	**Cost to Remove and Load Containment System (Add lines 2.E, 2.H, and 2.I)**		$ -0-
TOTAL COST OF DEMOLITION AND REMOVAL OF CONTAINMENT SYSTEM (Add lines 1.E and 2.J) (Enter total on worksheet CS-2, line 1)			$ -0-

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 24, item no. 554-2320. Activity described is site demolition, concrete, 6-in thick, no reinforcing.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 506, crew B-39. Crew B-39 consists of one labor foreman, four building laborers, one light equipment operator, one air compressor (250 cubic feet per minute [cfm]), two air tools and accessories, and two 50-ft air hoses (1.5-in diameter).

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 506, crew B-39. Crew B-39 consists of one labor foreman, four building laborers, one light equipment operator, one air compressor (250 cfm), two air tools and accessories, and two 50-ft air hoses (1.5-in diameter). See Appendix B of this manual for details of the calculation.

[d] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 24, item no. 554-2320. Work rate is based on a six-person crew.and a 6-in thick concrete slab without reinforcing.

[e] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 25, item no. 620-3080. Activity described is loading by machine of demolition rubbish.

[f] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-6. Crew B-6 consists of two building laborers, one light equipment operator, and one 48-horsepower backhoe loader.

[g] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-6. Crew B-6 consists of two building laborers, one light equipment operator, and one 48-horsepower backhoe loader. See Appendix B of this manual for details of the calculation.

[h] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 25, item no. 620-0380. Work rate is based on a three-person crew.

[i] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 25. Cost is determined by averaging the weekly rental rate of a 10-yd^3-capacity debris box container (item no. 620-0700) and a 30-yd^3-capacity debris box container (item no. 620-0800).

[k] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 48, item no. 274-0010. Cost is based upon an average mobilization and demobilization cost for a 105-horsepower dozer or loader, 3/4-yd^3 shovel or backhoe, 1.0-yd^3 tractor shovel or front-end loader, and a 2 1/4-yd^3 tractor shovel or front-end loader from a location within a 25-mile radius of the site. This cost is added to all activities that require the use of heavy equipment. If equipment has already been mobilized for another activity, it may not be necessary to include this cost.

No soil will be excavated - assumed clean.

REMOVAL OF SOIL - Page 1 of 1

1	Volume of contaminated soil to be removed (Enter from worksheet CS-1, line 8.E)	yd^3	
2	Labor and equipment cost per work hour[a] Choose the appropriate level of PPE: a. Protection Level D \$ 59.83/work hr[b] b. Protection Level C \$ 79.49/work hr[c] c. Protection Level B \$ 96.76/work hr[c]	\$	
3	Work rate required to remove one yd^3[3,d]	0.030 work hr/yd^3	
4	Number of hours required to remove soil (Multiply line 1 by line 3) (One hour minimum; round up to the 0.5 hour)	work hrs	
5	Subtotal of labor and equipment costs to remove soil (Multiply line 2 by line 4)		\$ θ
6	Number of debris box containers needed to hold soil (Divide line 1 by 20 yd^3 per container; round up to the nearest whole number)	containers	
7	Cost of one 20-yd^3-capacity debris box container (rent per week)[e]	\$260/container	
8	Cost of containers (Multiply line 6 by line 7)		\$ θ
9	Cost of mobilization and demobilization (flat rate)[f]		\$ 269.00
	TOTAL COST OF REMOVAL OF SOIL (Add lines 5, 8, and 9) (Enter total on worksheet CS-2, line 2)		\$ θ

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 43, item no. 242-2020. Activity described is excavating common earth and hauling the common earth 50 ft.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 501, crew B-10L. Crew B-10L consists of one medium equipment operator, one-half building laborer, and one 75-horsepower dozer.

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 501, Crew B-10L. Crew B-10L consists of one medium equipment operator, one-half building laborer, and one 75-horsepower dozer. See Appendix B of this manual for details of the calculation.

[d] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 43, item no. 242-2020. Work rate is based on a one-and-one-half-person crew.

[e] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 25. Cost is determined by averaging the weekly rental rate of a 10-yd^3-capacity debris box container (item no. 620-0700) and a 30-yd^3-capacity debris box container (item 620-0800).

[f] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 48, item no. 274-0010. Cost is based upon an average mobilization and demobilization cost for a 105-horsepower dozer or loader, 3/4-yd^3 shovel or backhoe, 1.0-yd^3 tractor shovel or front-end loader, and a 2 1/4-yd^3 tractor shovel or front-end loader from a location within a 25-mile radius of the site. This cost is added to all activities that require the use of heavy equipment. If equipment has already been mobilized for another activity, it may not be necessary to include this cost.

NO BACKFILL WILL BE REQUIRED - ASSUMED CLEAN & NO EXCAVATION

To calculate backfill costs, an estimate of the total volume of fill material required must be provided. Add the volumes of the containment system pad materials removed and soil excavated to determine the total volume of fill material needed.

1	Volume of fill (Enter from worksheet CS-1; add lines 3.B and 8.E)	yd^3	
2	Compaction factor[a]	0.25	
3	Volume of additional fill required because of compaction factor (Multiply line 1 by line 2)	yd^3	
4	Total volume of fill needed (Add lines 1 and 3) (One yd^3 minimum; round up to the nearest whole number)	yd^3	
5	Labor, material, and equipment cost per $yd^{3,b}$	$11.70/$yd^3$	
6	Subtotal of labor, material, and equipment costs to backfill (Multiply line 4 by line 5)		$ ~~0~~
7	Cost of mobilization and demobilization (flat rate)[c]		$ 269.00
	TOTAL COST OF BACKFILL (Add lines 6 and 7) (Enter total on worksheet CS-2, line 3)		$ ~~0~~

Notes:

[a] U.S. Environmental Protection Agency, *Final Guidance Manual: Cost Estimates for Closure and Post-Closure Plans (Subparts G and H)*, January 1987, EPA/530-SW-87-009, Volume III, pg. 7-10. Compaction factor provided is for native soil for slope and fill.

[b] R.S. Means Company, Inc. *Means Building Construction Cost Data*, 1994, pg. 42, item nos. 212-0200 and 212-0900. Cost is $8.30/$yd^3$ for common borrow plus $3.40/$yd^3$ for hauling the material a distance of 5 miles for a total cost of $11.70/$yd^3$.

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 48, item no. 274-0010. Cost is based upon an average mobilization and demobilization cost for a 105-horsepower dozer or loader, 3/4-yd^3 shovel or backhoe, 1.0-yd^3 tractor shovel or front-end loader, and a 2 1/4-yd^3 tractor shovel or front-end loader from a location within a 25-mile radius of the site. This cost is added to all activities that require the use of heavy equipment. If equipment has already been mobilized for another activity, it may not be necessary to include this cost.

CERTIFICATION OF CLOSURE - Page 1 of 1

1	Number of units requiring certification of closure[a]	1	
2	Cost of certification of closure per unit[b]	$ 2,700	
TOTAL COST OF CERTIFICATION OF CLOSURE (Multiply line 1 by line 2) (Enter total on worksheet CS-2, line 11)			$ 2,700

Notes:

[a] Facilities closing multiple container storage areas in the same manner at the same time should incur cost of certification of closure only once.

[b] Assumes performance of the following tasks by an independent registered professional engineer at \$56.50/hr: 1) 8 hrs for initial review of closure plan, 2) 16 hrs to perform final closure inspections, and 3) 16 hrs to prepare a certification of closure report [(8 hrs + 16 hrs + 16 hrs) x \$56.50/hr = \$2,260]. The estimate also includes 20 clerical hrs at a rate of \$22/hr (20 hrs x \$22/hr = \$440). The total cost is \$2,260 + \$440 = \$2,700.

The inventory worksheet will be used in completing the appropriate cost estimating worksheets to determine the cost of closure activities. If the design characteristics of the tank system being evaluated do not conform to the format of the worksheet below, alternative methods should be used to accurately determine the maximum permitted capacity of the unit, the area of all structures to be decontaminated and demolished, and the volume of all structures and soils to be removed. Depending on the activities being conducted, it may not be necessary to complete each section of the inventory sheet.

1 UNIT DESCRIPTION AND MAXIMUM PERMITTED CAPACITY			
Describe the unit to determine the activities to be conducted to close it.			
1.A	Type of tank system (aboveground, on-ground, in-ground, or underground)	A/G	
1.B	Maximum permitted capacity of the tank *	20,008 gal	
1.C	Maximum capacity of ancillary piping *	70 gal	
1.D	Maximum capacity of tank and ancillary piping (Add lines 1.B and 1.C)	20,078 gal	
1.E	Total length of ancillary piping	±100 ft	
1.F	Type of secondary containment system	____ Double-wall tank ____ Vault _X_ Lined containment system (external to tank) ____ Other (explain)	
1.G	**Supplemental Information on Waste Inventory (In the additional space provided, denote any supplemental information regarding waste characteristics, treatment and disposal methods, and sampling and analysis methods):** METAL COMPONENTS TO BE DECONNED, SCRAPPED AND/OR REUSED. CONTAINMENT TO BE DECONNED, (TANK & RETURN/FILL) - CONTAINMENT WALLS ONLY TO BE DEMOLISHED.		

2 SURFACE AREA OF TANK SYSTEM			
Determine the surface area of the tank system to determine decontamination costs.			
2.A	Tank & dumpsters *	1312 ft²	
2.B	Ancillary piping & grating *	2290 ft²	
2.C	**Surface Area of Tank System (Add lines 2.A and 2.B)**		3602 ft²
2.D	**Surface Area of Tank System in yd² (Divide line 2.C by 9 ft²/yd²)**		400 yd²

* SEE ATTACHED CALCULATIONS

3	**VOLUME OF TANK SYSTEM TO BE REMOVED** NA - NO IN-GROUND COMPONENTS Determine the volume of in-ground or underground materials constituting components of the tank system to be removed to determine volume of soil needed to backfill. Complete this section only if tank is in-ground or underground.	
3.A	Volume of Tank System to be Removed (Divide line 1.B by 7.48 gal/ft^3)	ft^3
3.B	Volume of Tank System to be Removed in yd^3 (Divide line 3.A by 27 ft^3/yd^3)	yd^3

4	**SURFACE AREA OF SECONDARY CONTAINMENT SYSTEM PAD** Calculate the area of the secondary containment system pad for an aboveground or on-ground tank to calculate decontamination and demolition costs. Demolition of containment system pad is an additional activity that might be conducted if the pad cannot be effectively decontaminated or if the owner or operator elects to demolish the pad.		
4.A	Length	58 ft	
4.B	Width	56 ft	
4.C	Surface Area of Secondary Containment System Pad (Multiply line 4.A by line 4.B) *		3268 ft^2
4.D	Surface Area of Secondary Containment System Pad in yd^2 (Divide line 4.C by 9 ft^2/yd^2)		363 yd^2

5	**VOLUME OF SECONDARY CONTAINMENT SYSTEM PAD** NA - THE PAD WILL NOT BE DEMOLISHED; DECONNED UNTIL CLEAN CRITERIA ARE MET Calculate the volume of the secondary containment system pad to determine removal costs. Removal of secondary containment system pad is an additional activity that might be conducted if the pad cannot be effectively decontaminated.		
5.A	Thickness	yd	
5.B	Volume of Secondary Containment System Pad (Multiply line 4.D by line 5.A)		yd^3

6	**SURFACE AREA OF SECONDARY CONTAINMENT SYSTEM BERM** Calculate the area of the secondary containment system berm, or curbing, to determine the cost of decontamination and demolition costs. Demolition of secondary containment system berm is an additional activity that might be conducted if the berm cannot be effectively decontaminated or if the owner or operator elects to demolish the berm.		
6.A	Total Length 2(56'+58')	228 ft	
6.B	Height	3.17 ft	
6.C	Surface Area of Secondary Containment System Berm (Multiply line 6.A by line 6.B)		722 ft^2
6.D	Surface Area of Secondary Containment System Berm in yd^2 (Divide line 6.C by 9 ft^2/yd^2)		80 yd^2

* SEE ATTACHED CALCULATIONS

7 VOLUME OF SECONDARY CONTAINMENT SYSTEM BERM

Calculate the volume of the secondary containment system berm, or curbing, to determine the removal costs. Removal of secondary containment system berm is an additional activity that might be conducted if the berm cannot be effectively decontaminated.

7.A	Thickness	8 IN ~~yd~~	
7.B	Volume of Secondary Containment System Berm (Multiply line 6.D by line 7.A)		18 yd^3

8 SURFACE AREA OF OTHER STRUCTURES IN SECONDARY CONTAINMENT SYSTEM

Calculate the surface area of additional structures that will be decontaminated or demolished, for example, ramps or sumps. Demolition of other structures is an additional activity that might be conducted if the structures cannot be effectively decontaminated or if the owner or operator elects to demolish the structures.

8.A	Surface Area of Other Structures RETURN/FILL SHELTER *	4400 ft^2
8.B	Surface Area of Other Structures in yd^2 (Divide line 8.A by 9 ft^2/yd^2	489 yd^2

9 VOLUME OF OTHER STRUCTURES IN SECONDARY CONTAINMENT SYSTEM NA

Calculate the volume of materials constituting other structures to determine removal costs. Removal of other structures is an additional activity that might be conducted if the structures cannot be effectively decontaminated.

9	Volume of Other Structures	yd^3

10 VOLUME OF CONTAMINATED SOIL TO BE REMOVED NA - ASSUMED CLEAN.

Calculate the volume of contaminated soil to be removed. Removal of contaminated soil is an additional activity that might be conducted if soil contamination is identified or if removal of contaminated soil is indicated in the closure plan.

10.A	Length	ft	
10.B	Width	ft	
10.C	Depth	ft	
10.D	Volume of Contaminated Soil to be Removed (Multiply line 10.A by line 10.B by line 10.C)		ft^3
10.E	Volume of Contaminated Soil to be Removed in yd^3 (Divide line 10.D by 27 ft^3/yd^3		yd^3

*SEE ATTACHED CALCULATIONS

Surface Areas for Various Tank Capacities
Reference for Line 2.A

Capacity (gal)	Approximate Diameter (ft)	Approximate Height or Length (ft)	Surface Area[a] (ft^2)
TYPICAL VERTICAL TANK DIMENSIONS			
5,000	9	10.5	424
10,000	11.5	13	575
15,000	13	15	745
20,000	15	15	884
25,000	16	17	1,055
30,000	17	18	1,188
TYPICAL HORIZONTAL TANK DIMENSIONS			
5,000	6	23	490
10,000	8	26	750
15,000	8	29	1,080
20,000	10	34	1,225
25,000	10	38	1,350
30,000	11	42	1,640

Standard Equations for Calculating Surface Area of a Tank System
Reference for Line 2.A

Shape	Equation[b]
Cylinder	$2\pi rh$
Circle	πr^2
Cone	$\pi r\sqrt{r^2 + h^2}$

Notes:

[a] Includes top and bottom.
[b] r = radius
h = height

Properties of Standard Wall Steel Pipe[a]
Reference for Lines 1.C and 2.B

Nominal Size (inches)	Inside Diameter (inches)	Inside Volume (gal/ft)[b]	Inside Surface Area (ft²/ft)[c]
.75	0.824	0.0276	0.217
1	1.049	0.0448	0.274
1.25	1.380	0.0776	0.362
1.5	1.610	0.106	0.421
2	2.067	0.174	0.540
2.5	2.469	0.248	0.646
3	3.068	0.384	0.802
4 X	4.026	X 0.661	X 1.06
6	6.065	1.500	1.59
8	7.981	2.59	2.09
10	10.020	4.09	2.62
12	12.090	5.95	3.17
14	13.250	7.17	3.46
16	15.250	9.48	3.99
18	17.250	12.09	4.52
20	19.250	15.19	5.04
24	23.250	22.13	6.08

Notes:

[a] Modified from Carrier Air Conditioning Company, Inc., *Carrier System Design Manual*, 1973, Chapter 1, page 3-2

[b] Gallons per linear foot of straight pipe

[c] Square foot per linear foot of straight pipe

Form	Item	Explanation		Value	Units	Comment
TS-1	1B	*Tank volume*				
		Tank permitted capacity		19,000	gal	(95% of 20,000 gal)
		Dumpster capacity	2 @ 504 gal/ea	1,008	gal	
		Total volume		20,008	gal	
TS-1	1C	*Piping volume*				
		100 ft times 0.66 gal/ft		70	gal	Rounded from 66.1 gal
TS-1	2A	*Surface area of tanks and dumpsters*				
		Dumpsters	2 @ est. 100 sf each	200	sf	
		Tank	12' diameter by 23.5 ft height	1,112	sf	(PI x Diameter x Ht) + (2 PI D^2/4)
		Total surface area		1,312	sf	
TS-1	2B	*Surface area of piping and grating*				
		Piping	100 ft x 1.06 gal/ft	110	sf	
		Grating	20 ft x 54.5 ft x 2	2,180	sf	Decon top and bottom
		Total surface area		2,290	sf	
TS-1	4C	*Surface area of secondary containment pad*				
		Floor	56' x 58'	3,248	sf	
		Sump walls	4 walls x 2' x 2'	16	sf	
		Sump floor	2' x 2'	4	sf	
		Total surface area		3,268	sf	
TS-1	8A	*Surface area of return/fill station*				
		Floor Area	54.5' x 80'	4,360	sf	
		Sump floor	2 sumps x 2' x 2'	8	sf	
		Sump walls	2 sumps x 4 walls x 2' x 2'	32	sf	
		Total surface area		4,400	sf	

Facility Name: Safety-Kleen Medley

SUMMARY WORKSHEET

Activity Some of the activities listed below are routine. The owner or operator might elect or be required to conduct additional activities. Italic type denotes worksheets for estimating the costs of those additional activities.		Worksheet Number	Cost
1.	Removal of Waste	TS-3	$ 348
2.	Tank System Purging (ignitable wastes *only*)	TS-4	$ 378
3.	*Flushing the Tank and Piping*	TS-5	$ 713
4.	*Excavation, Disassembly, and Loading*	TS-6	$ 1720
5.	*Demolition and Removal of Containment System*	TS-7	$ 4461
6.	*Removal of Soil*	TS-8	$ 0
7.	*Backfill*	TS-9	$ 0
8.	Decontamination[a] *	DC-1	$ 0
9.	Sampling and Analysis[b] *	SA-2	$ 0
10.	*Monitoring Well Installation*[c]	MW-1	$ 0
11.	Transportation[d] *	TR-1	$ 0
12.	Treatment and Disposal[e] *	TD-1	$ 0
13.	Subtotal of Closure Costs (Add lines 1 through 12)		$ 7620
14.	Engineering Expenses (Approximately 10% of closure costs, excluding certification of closure [Multiply line 13 by 0.10])		$ 762
15.	Certification of Closure	TS-10	$ 2700
16.	Subtotal (Add engineering expenses and cost of certification of closure to closure costs [Add lines 13, 14, and 15])		$ 11082
17.	Contingency Allowance (Allow 20% of closure costs, engineering expenses, and cost of certification of closure [Multiply line 16 by 0.20])		$ 2216
18.	*Landfill Closure*[f]	LF-2	$ 0
TOTAL COST OF CLOSURE *(add lines 16, 17, and 18)*			$ 13,298

* See CS-2 for these costs, which were calculated on a facility-wide basis

Notes:

[a] Decontamination Worksheets are found in Chapter 12.

[b] Sampling and Analysis Worksheets are found in Chapter 13.

[c] Monitoring Well Installation Worksheets are found in Chapter 14.

[d] Transportation Worksheets are found in Chapter 15.

[e] Treatment and Disposal Worksheets are found in Chapter 16.

[f] Landfill Summary Worksheets are found in Chapter 7. Costs of post-closure care are included in this total.

REMOVAL OF WASTE - Page 1 of 1

1	Maximum volume of waste to be removed from the tank and ancillary piping (Enter from worksheet TS-1, line 1.D) (incl. dumpsters)	20,078 gal	
2	Labor and equipment cost per work hour[a] Choose the appropriate level of PPE: a. Protection Level D $ 101.90/work hr[b] b. Protection Level C $ 127.87/work hr[c] c. Protection Level B $ 151.45/work hr[c]	$ 101.90	
3	Work rate required to remove waste from tank and ancillary piping[d]	0.00017 work hr/ gal capacity	
4	Number of hours required to remove waste from tank and ancillary piping (Multiply line 1 by line 3) (One hour minimum; round up to the 0.5 hour)	3.5 work hrs	
	TOTAL COST OF REMOVAL OF WASTE FROM TANK AND ANCILLARY PIPING (Multiply line 2 by line 4) (Enter total on worksheet TS-2, line 1)		$ 348

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 37, item no. 880-0310. Activity described is removing sludge, water, and remaining waste from bottom of tank with a vacuum truck.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 499, crew A-13. Crew A-13 consists of one equipment operator and one large production vacuum loader.

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 499, crew A-13. Crew A-13 consists of one equipment operator and one large production vacuum loader. See Appendix B of this manual for details of the calculation.

[d] Rate derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 37, item no. 880-0310. A waste removal estimate of one hour for a one-person crew is required for one, 6,000-gallon tank.

Complete this worksheet *only* if the contents of the tank are ignitable.

1	Maximum capacity of tank system (Enter from worksheet TS-1, line 1.D) (incl. dumpsters)	20,078 gal	
2	Amount of solid carbon dioxide (dry ice) needed per gal capacity[a]	1.5 lbs/ 100 gal capacity	
3	Amount of dry ice needed to purge tank system (Divide line 1 by 100 gal and multiply value by 1.5 lbs)	302 lbs	
4	Cost of dry ice[a]	$ 0.75/lb	
5	Cost of dry ice needed to purge tank system (Multiply line 3 by line 4)		$ 227
6	Labor cost per work hour[b] Choose the appropriate level of PPE: a. Protection Level D $ 30.10/work hr[c] b. Protection Level C $ 45.30/work hr[d] c. Protection Level B $ 58.11/work hr[d]	$ 30.10	
7	Work rate required to purge tank per gal capacity[e]	0.00024 work hr/ gal capacity	
8	Number of hours required to purge tank system (Multiply line 1 by line 7) (One hour minimum; round up to the 0.5 hour)	5 work hrs	
9	Labor cost to purge tank system (Multiply line 6 by line 8)		$ 151
	TOTAL COST OF TANK SYSTEM PURGING (Add lines 5 and 9) (Enter total on worksheet TS-2, line 2)		$ 378

Notes:

[a] Material requirements derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 37, item no. 880-0401.

[b] Labor requirements derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 37, item no. 880-0401. One common laborer is specified for this activity.

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 499, crew A-1. Total cost for one common laborer is $29.10/hr.

[d] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 499, crew A-1. Total cost for one common laborer is $29.10/hr. See Appendix B of this manual for details of the calculation.

° Rate derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 37, item no. 880-0401. The work rate was estimated assuming the work hours required per pound of dry ice as follows: 0.016 work hr/lb of dry ice x 1 ½ lbs of dry ice/100-gal capacity = 0.00024 work hr/gal capacity.

FLUSHING THE TANK AND PIPING - Page 1 of 2

incl. dumpsters

1	Maximum capacity of the tank and ancillary piping (Enter from worksheet TS-1, line 1.D)	20,078 gal	
2	Number of times tank and ancillary piping are flushed (If unknown, assume 1)	1	
3	Total volume of flushing solution (Multiply line 1 by line 2)	20,078 gal	
4	Labor and equipment cost per work hour[a] Choose the appropriate level of PPE: a. Protection Level D $101.90/work hr[b] b. Protection Level C $ 127.87/work hr[c] c. Protection Level B $ 151.45/work hr[c]	$ 101.90	
5	Work rate required to flush tank and ancillary piping[d]	0.00034 work hr/ gal capacity	
6	Number of hours required to flush tank and ancillary piping (Multiply line 3 by line 5) (One hour minimum; round up to the 0.5 hour)	7 work hrs	
7	Subtotal of labor and equipment costs to flush tank and ancillary piping (Multiply line 4 by line 6)		$ 713
8	Total volume of flushing solution (Enter from line 3). (The volume of flushing solution generated may be disposed of either in drums or as bulk liquid. If the volume is too large to be handled effectively by placement in drums, use worksheet TD-3 (for water-based flushing solution) or TR-1 and TD-2 (for a solvent solution) to calculate the transportation, treatment, and disposal cost. If the flushing solution is to be placed in drums, complete lines 9 through 11.)	20,078 (tanker) gal	
9	Number of drums required to contain flushing solution (Divide line 8 by 55 gallons per drum; round up to the nearest whole number)	0 drums	
10	Cost of one drum[e]	$ 62.95/drum	
11	Cost of drums needed to contain flushing solution (Multiply line 9 by line 10)		$ 0
	TOTAL COST TO FLUSH TANK AND ANCILLARY PIPING (Add lines 7 and 11) (Enter total on worksheet TS-2, line 3)		$ 713

Remember to calculate costs for transporting, treating, and disposing of the wastes in drums generated from this activity. Use worksheets TR-1 and TD-2 found in Chapters 15 and 16, respectively.

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 37, item no. 880-0310. Activity described is removing sludge, water, and remaining waste from bottom of tank with a vacuum truck.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 499, crew A-13. Crew A-13 consists of one equipment operator and one large production vacuum loader.

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 499, crew A-13. Crew A-13 consists of one equipment operator and one large production vacuum loader. See Appendix B of this manual for details of the calculation.

[d] Rate derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 37, item no. 880-0310. The work rate for a 1-person crew was derived based on the waste removal rate for a 6,000-gal tank as follows: 1 hr/6,000-gal tank x 2 = 0.00034 work hr/gal capacity, because the tank must be filled and emptied to flush it.

[e] Lab Safety Supply, *General Catalog*, pg. 354, 55-gallon, lock-ring, open-head, 18-gauge steel drum.

EXCAVATION, DISASSEMBLY, AND LOADING - Page 1 of 3

This worksheet can be used to determine the costs of excavation and disassembly of tanks and ancillary piping for aboveground, on-ground, in-ground, and underground tanks. To determine costs for in-ground and underground tanks, complete sections 1 and 2; to determine costs for on-ground and aboveground tanks, complete sections 2 and 3.

1	**EXCAVATION AND LOADING (FOR IN-GROUND AND UNDERGROUND TANKS ONLY)** NA		
1.A	Capacity of tank (Enter from worksheet TS-1, line 1.B)	gal	
1.B	Labor and equipment cost per work hour[e] Choose the appropriate level of PPE: a. Protection Level D $ 36.16/work hr[b] b. Protection Level C $ 52.27/work hr[c] c. Protection Level B $ 65.99/work hr[c]	$	
1.C	Work rate required to remove and load tank per gallon capacity[d]	0.002 work hr/ gal capacity	
1.D	Number of hours required to excavate and load tank (Multiply line 1.A by line 1.C) (One hour minimum; round up to the 0.5 hour)	work hrs	
1.E	**Cost to Excavate and Load Tank (Multiply line 1.B by line 1.D)**		$ 0
2	**DISASSEMBLY OF ANCILLARY PIPING**		
2.A	Length of ancillary piping to be disassembled (Enter from worksheet TS-1, line 1.E)	100 ft	
2.B	Labor and equipment cost per work hour[e] Choose the appropriate level of PPE: a. Protection Level D $ 41.18/work hr[f] b. Protection Level C $ 58.04/work hr[g] c. Protection Level B $ 72.51/work hr[g]	$ 41.18	
2.C	Work rate required to disassemble 1 ft of pipe[h]	0.150 work hr/ft	
2.D	Number of hours required to disassemble ancillary piping (Multiply line 2.A by line 2.C) (One hour minimum; round up to the 0.5 hour)	15 work hrs 6 grating 21	
2.E	Cost of disassembly of ancillary piping (Multiply line 2.B by line 2.D)		$ 865

3 LOADING (FOR ON-GROUND AND ABOVEGROUND TANKS ONLY)			
3.A	Capacity of tank (Enter from worksheet TS-1, line 1.B) (no piping) (incl. dumpsters)	20,008 gal	
3.B	Labor and equipment cost per work hour[j] Choose the appropriate level of PPE: a. Protection Level D $ 41.72/work hr[k] b. Protection Level C $ 58.66/work hr[l] c. Protection Level B $ 73.22/work hr[l]	$ 41.78	
3.C	Work rate required to load tank per gallon capacity[m]	0.001 work hr/ gal capacity	
3.D	Number of hours required to load tank (Multiply line 3.A by line 3.C) (One hour minimum; round up to the 0.5 hour)	20.5 work hrs	
3.E	**Cost to Load Tank (Multiply line 3.B by line 3.D)**		$ 855
TOTAL COST OF EXCAVATION, DISASSEMBLY, AND LOADING (Add lines 1.E, 2.E, and 3.E) (Enter total on worksheet TS-2, line 4)			$ 1720

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 37, item no. 880-0120. Activity described is excavating an underground tank and loading it into a trailer.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 503, crew B-14. Crew B-14 consists of one labor foreman, four building laborers, one equipment operator, and one backhoe loader.

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 495, crew B-14. Crew B-14 consists of one labor foreman, four building laborers, one equipment operator, and one backhoe loader. See Appendix B for details of the calculation.

[d] Rate derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 37, item no. 880-0120. An excavation and loading estimate of 12 work hours for a six-person crew is required for one 6,000 gallon tank. Therefore, the per gallon work rate is 12 work hrs/6,000-gal capacity = 0.002 work hr/gal capacity.

[e] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 24, item no. 554-3200. activity described is demolition of 4-in steel pipe with welded connections.

[f] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-6. Crew B-6 consists of two building laborers, one light equipment operator, and one 48-horsepower backhoe loader.

[g] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-6. Crew B-6 consists of two building laborers, one light equipment operator, and one 48-horsepower backhoe loader. See Appendix B of this manual for details of the calculation.

[h] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 24, item no. 554-3200. Work rate is based on a three-person crew.

[i] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 37, item no. 880-0120. Activity described is excavating an underground tank and loading it into a trailer. Activity and crew costs are modified to exclude excavation and cost only loading of a tank.

[k] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 503, crew B-13. Crew B-13 consists of one labor foreman, four building laborers, one crane operator, one equipment operator oiler, and one 25-ton hydraulic crane.

[l] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 503, crew B-13. Crew B-13 consists of one labor foreman, four building laborers, one crane operator, one equipment operator oiler, and one 25-ton hydraulic crane. See Appendix B for details of the calculation.

[m] Rate derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 37, item no. 880-0120. An excavation and loading time of 12 hours for a six-person crew is required for one 6,000-gallon underground tank. Therefore, an estimate of 6 hours (half the time) is assumed for one 6,000-gallon aboveground tank. Calculation of the work rate of 0.001 work hour per gallon capacity was derived as follows: 6 hrs/tank x 1 tank/6,000 gal = 0.001 work hr/gal capacity.

DEMOLITION AND REMOVAL OF CONTAINMENT SYSTEM - Page 1 of 2

1 DEMOLITION OF CONTAINMENT SYSTEM WALLS ONLY			
1.A	Area of containment system (Enter from worksheet TS-1; add lines 4.C, 6.C, and 9)	722 ft^2	
1.B	Labor and equipment cost per work hour[e] Choose the appropriate level of PPE: a. Protection Level D $ 34.98/work hr[b] b. Protection Level C $ 50.91/work hr[c] c. Protection Level B $ 64.45 work hr[c]	$ 34.98	
1.C	Work rate to demolish one ft^2 of containment system[d]	0.040 work hr/ft^2	
1.D	Number of hours required to demolish the containment system (Multiply line 1.A by line 1.C) (One hour minimum; round up to the 0.5 hour)	29 work hrs	
1.E	Cost to Demolish the Containment System (Multiply line 1.B by line 1.D)		$ 1014
2 REMOVAL AND LOADING OF CONTAINMENT SYSTEM WALLS ONLY			
2.A	Volume of the containment system (Enter from worksheet TS-1; add lines 5.B, 7.B, and 9)	18 yd^3	
2.B	Labor and equipment cost per work hour[e] Choose the appropriate level of PPE: a. Protection Level D $ 41.18/work hr[f] b. Protection Level C $ 58.04/work hr[g] c. Protection Level B $ 72.51/work hr[g]	$ 41.18	
2.C	Work rate to remove and load one yd^3 [h]	0.300 work hr/yd^3	
2.D	Number of hours required to remove the containment system (Multiply line 2.A by line 2.C) (One hour minimum; round up to the 0.5 hour)	5.5 work hrs	
2.E	Subtotal of labor and equipment costs to remove and load the containment system (Multiply line 2.B by line 2.D)		$ 227
2.F	Number of debris box containers needed to hold containment system (Divide line 2.A by 20 yd^3 per container; round up to the nearest whole number)	12 containers	
2.G	Cost of one 20-yd^3-capacity debris box container (Rent per week)[i]	$ 260/container	

DEMOLITION AND REMOVAL OF CONTAINMENT SYSTEM - Page 2 of 2

2.H	Cost of containers (Multiply line 2.F by line 2.G)	$ 2951
2.I	Cost of mobilization and demobilization (flat rate)[k]	$ 269.00
2.J	Cost to Remove and Load Containment System (Add lines 2.E, 2.H, and 2.I)	$ 3447
TOTAL COST OF DEMOLITION AND REMOVAL OF CONTAINMENT SYSTEM (Add lines 1.E and 2.J) (Enter total on worksheet TS-1, line 5)		$ 4461

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994 pg. 24, item no. 554-2320. Activity described is site demolition, concrete, 6-in-thick, no reinforcing.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 506, crew B-39. Crew B-39 consists of one labor foreman, four building laborers, one light equipment operator, one air compressor (250 cubic feet per minute [cfm]), two air tools and accessories, and two 50-ft air hoses (1.5-in diameter).

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 506, crew B-39. Crew B-39 consists of one labor foreman, four building laborers, one light equipment operator, one air compressor (250 cfm), two air tools and accessories, and two 50-ft air hoses (1.5-in diameter). See Appendix B of this manual for details of the calculation.

[d] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 24, item no. 554-2320. Work rate is based on a six-person crew and a 6-in-thick concrete slab without reinforcing.

[e] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 25, item no. 620-3080. Activity described is loading by machine of demolition rubbish.

[f] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-6. Crew B-6 consists of two building laborers, one light equipment operator, and one 48-horsepower backhoe loader.

[g] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-6. Crew B-6 consists of two building laborers, one light equipment operator, and one 48-horsepower backhoe loader. See Appendix B of this manual for details of the calculation.

[h] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 25, item no. 620-3080. Work rate is based on a three-person crew.

[i] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 25. Cost is determined by averaging the weekly rental rate of a 10-yd^3-capacity debris box container (item no. 620-0700) and a 30-yd^3-capacity debris box container (item no. 620-800).

[k] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 48, item no. 274-0020. Cost is based upon an average mobilization and demobilization costs for a 105-horsepower dozer or loader, 3/4-yd^3 shovel or backhoe, 1.0-yd^3 tractor shovel or front-end loader, and a 2 1/4-yd^3 tractor shovel or front-end loader from a location within a 25-mile radius of the site. The cost is added to all activities that require the use of heavy equipment. If equipment has already been mobilized for another activity, it may not be necessary to include this cost.

REMOVAL OF SOIL - Page 1 of 2

NA – ASSUMED TO BE CLEAN – NO SOIL TO BE REMOVED

1	Volume of contaminated soil to be removed (Enter from worksheet TS-1, line 10.E)	yd^3	
2	Labor and equipment cost per work hour[a] Choose the appropriate level of PPE: a. Protection Level D $ 59.83/work hr[b] b. Protection Level C $ 79.49/work hr[c] c. Protection Level B $ 96.76/work hr[c]	$	
3	Work rate required to remove one yd^3[a,d]	0.030 work hr/yd^3	
4	Number of hours required to remove soil (Multiply line 1 by line 3) (One hour minimum; round up to the 0.5 hour)	work hrs	
5	Cost to remove soil (Multiply line 2 by line 4)		$ 0
6	Number of debris box containers needed to contain soil (Divide line 1 by 20 yd^3 per container; round up to the nearest whole number)	containers	
7	Cost of one 20-yd^3-capacity debris box container (rent per week)[e]	$260/container	
8	Cost of containers (Multiply line 6 by line 7)		$ 0
9	Cost of mobilization and demobilization (flat rate)[f]		$ 269.00
TOTAL COST OF REMOVAL OF SOIL (Add lines 5, 8, and 9) (Enter total on worksheet TS-2, line 6)			$ 0

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 43, item no. 242-2020. Activity described is excavating common earth and hauling the common earth 50 ft.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 501, crew B-10L. Crew B-10L consists of one medium equipment operator, one-half building laborer, and one 75-horsepower dozer.

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 501, crew B-10L. Crew B-10L consists of one medium equipment operator, one-half building laborer, and one 75-horsepower dozer. See Appendix B of this manual for details of the calculation.

[d] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 43, item no. 242-2020. Work rate is based on a one-and-one-half-person crew.

[e] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 25. Cost is determined by averaging the weekly rental rate of a 10-yd^3-capacity debris box container (item no. 620-0700) and a 30-yd^3-capacity debris box container (item no. 620-800).

[f] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 48, item no. 274-0020. Cost is based upon an average mobilization and demobilization costs for a 105-horsepower dozer or loader, 3/4-yd^3 shovel or backhoe, 1.0-yd^3 tractor shovel or front-end loader, and a 2 1/4-yd^3 tractor shovel or front-end loader from a location within a 25-mile radius of the site. The cost is added to all activities that require the use of heavy equipment. If equipment has already been mobilized for another activity, it may not be necessary to include this cost.

NO BACKFILL NEEDED - ASSUMED CLEAN

To calculate backfill costs, an estimate of the total volume of fill material required must be provided. Add the volumes of all materials removed to determine the total volume of fill material needed.

1	Volume of fill (Enter from worksheet TS-1; add lines 3.B, 5.B, and 10.E, as appropriate)	yd^3	
2	Compaction factor[a]	0.25	
3	Volume of additional fill required because of compaction factor (Multiply line 1 by line 2)	yd^3	
4	Total volume of fill needed (Add lines 1 and 3) (One yd^3 minimum; round up to the nearest whole number)	yd^3	
5	Labor, material, and equipment cost per yd^3[b]	$11.70/$yd^3$	
6	Subtotal of labor, material, and equipment costs to backfill (Multiply line 4 by line 5)		$ 0
7	Cost of mobilization and demobilization (flat rate)[c]		$269.00
	TOTAL COST OF BACKFILL (Add lines 6 and 7) (Enter total on worksheet TS-2, line 7)		$ 0

Notes:

[a] U.S. Environmental Protection Agency, *Final Guidance Manual: Cost Estimates for Closure and Post-Closure Plans (Subparts G and H)*, January 1987, EPA/530-SW-87-009, Volume III, pg. 7-10. Compaction factor provided is for native soil for slope and fill.

[b] R.S. Means Company, Inc. *Means Building Construction Cost Data*, 1994, pg. 42, item nos. 212-0200 and 212-0900. Cost is \$8.30/yd^3 for common borrow plus \$3.40/yd^3 for hauling the material a distance of 5 miles for a total cost of \$11.70/yd^3.

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 48, item no. 274-0020. Cost is based upon an average mobilization and demobilization costs for a 105-horsepower dozer or loader, 3/4-yd^3 shovel or backhoe, 1.0-yd^3 tractor shovel or front-end loader, and a 2 1/4-yd^3 tractor shovel or front-end loader from a location within a 25-mile radius of the site. The cost is added to all activities that require the use of heavy equipment. If equipment has already been mobilized for another activity, it may not be necessary to include this cost.

1	Number of units requiring certification of closure[a]	1	
2	Cost of certification of closure per unit[b]	$ 2,700	
TOTAL COST OF CERTIFICATION OF CLOSURE (Multiply line 1 by line 2) (Enter total on worksheet TS-2, line 15)			$ 2700

Notes:

[a] Facilities closing multiple tanks in the same manner at the same time should incur cost of certification of closure only once.

[b] Assumes performance of the following tasks by an independent registered professional engineer at \$56.50/hr: 1) 8 hrs for initial review of closure plan, 2) 16 hrs to perform final closure inspections, and 3) 16 hrs to prepare a certification of closure report [(8 hrs + 16 hrs + 16 hrs) x \$56.50/hr = \$2,260]. The estimate also includes 20 clerical hrs at a rate of \$22/hr (20 hrs x \$22/hr = \$440). The total cost is \$2,260 + \$440 = \$2,700.

Facility Name: SAFETY-KLEEN MEDLEY

SUMMARY WORKSHEET

Activity		Worksheet Number	Cost
Some of the activities listed below are routine. The owner or operator might elect or be required to conduct additional activities. Italic type denotes worksheets for estimating the costs of those additional activities.			
1.	Decontamination of Unit by Steam Cleaning or Pressure Washing	DC-2	$ 15029
2.	Decontamination of Unit by Sand Blasting	DC-3	$ -0-
3.	Decontamination of Heavy Equipment	DC-4	$ 3274
TOTAL COST OF DECONTAMINATION *(Add lines 1, 2, and 3)*			**$** 18303

DECONTAMINATION OF UNIT BY STEAM CLEANING OR PRESSURE WASHING - Page 1 of 2

Use this worksheet when the proposed method of decontaminating the unit is steam cleaning or pressure washing.

1	Area of unit to be decontaminated (Enter * from appropriate unit inventory worksheet)	16,000 ft²	
2	Labor and equipment cost per work hour[a] Choose the appropriate level of PPE: a. Protection Level D $ 34.79/work hr[b] b. Protection Level C $ 50.69/work hr[c] c. Protection Level B $ 64.21/work hr[c]	$ 34.79	
3	Work rate to steam clean or pressure wash one ft²[,d]	0.027 work hrs/ft²	
4	Number of hours required to steam clean or pressure wash the unit (Multiply line 1 by line 3) (One hour minimum; round up to the 0.5 hour)	432 work hrs	
5	Subtotal of labor and equipment costs to decontaminate unit by steam cleaning or pressure washing (Multiply line 2 by line 4)		$ 15,029
6	Volume of decontamination fluid (Multiply line 1 by 4 gal/ft²)[e] (The volume of decontamination fluids generated may be disposed of either in drums or as bulk liquid. If the volume is too large to be handled effectively by placement in drums, use worksheet TD-3 in Chapter 16 to calculate the transportation, treatment, and disposal cost. If the decontamination fluids are to be placed in drums, complete lines 7 through 9.)	64,000 gal	
7	Number of drums required to contain decontamination fluid for removal (Divide line 6 by 55 gallons per drum; round up to the nearest whole number)	TANKER ~~drums~~	
8	Cost of one drum[f]	$ 62.95/drum	
9	Cost of drums needed to contain decontamination fluid (Multiply line 7 by line 8)		$ ~~0~~
	TOTAL COST OF DECONTAMINATION OF UNIT BY STEAM CLEANING OR PRESSURE WASHING (For bulk liquids, obtain cost from line 5. For drummed liquids, add lines 5 and 9.) (Enter total on worksheet DC-1, line 1)		$ 15029

Remember to calculate costs for transporting, treating, and disposing of the wastes in drums generated from this activity. Use worksheets TR-1 and TD-2 found in Chapters 15 and 16, respectively.

* See attached calculation

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 111, item no. 166-0100. Activity described is steam cleaning a building.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-9. Crew B-9 consists of one labor foreman, four building laborers, one air compressor (250 cfm), two air tools and accessories, and two 50-ft air hoses (1.5-in diameter).

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-9. Crew B-9 consists of one labor foreman, four building laborers, one air compressor (250 cfm), two air tools and accessories, and two 50-ft air hoses (1.5-in diameter). See Appendix B of this manual for details of the calculation.

[d] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 111, item no. 166-0100. Work rate is based on a five-person crew.

[e] U.S. Environmental Protection Agency, *Final Guidance Manual: Cost Estimates for Closure and Post-Closure Plans (Subparts G and H)*, November 1986, EPA/530-SW-87-009, Volume III, pg. 5-3. The generation rate provided for decontamination fluid is for steam cleaning and pressure washing.

[f] Lab Safety Supply, *General Catalog*, 1993, pg. 354, 55-gallon, lock-ring, open-head, 18-gauge steel drum.

Basis for Data Input Values

Form	Item	Explanation	Value	Units	Comment
DC-2	1	*Area to be Decontaminated*			
		Container storage area floor	3,787	sf	
		Container storage area trench	80	sf	
		Tank and dumpsters	1,312	sf	
		Piping and grating	2,290	sf	
		Tank storage area floor	3,268	sf	
		Tank storage area berm	722	sf	
		Return/fill station	4,400	sf	
		Total surface area	16,000	sf	Rounded from 15,859 sf

DECONTAMINATION OF UNIT BY SANDBLASTING - Page 1 of 2

DECON BY WATER ONLY (DC-2)

Use this worksheet when the proposed method of decontaminating the unit is sandblasting.

1	Area of unit to be decontaminated (Enter from appropriate unit inventory worksheet)	ft^2	
2	Labor and equipment cost per work hour[a] Choose the appropriate level of PPE: a. Protection Level D $ 34.79/work hr[b] b. Protection Level C $ 50.69/work hr[c] c. Protection Level B $ 64.21/work hr[c]	$	
3	Work rate to sandblast one ft^2[d]	0.027 work hrs/ft^2	
4	Number of hours required to sandblast the unit (Multiply line 1 by line 3) (One hour minimum; round up to the 0.5 hour)	work hrs	
5	Subtotal of labor and equipment costs to decontaminate unit by sandblasting (Multiply line 2 by line 4)		$ Ø
6	Volume of material used for sandblasting (Multiply line 1 by 2 lbs/ft^2)[e]	lbs	
7	Number of drums required to contain decontamination sands for removal (Divide line 6 by 808.89 lbs per drum; round up to the nearest whole number)[f]	drums	
8	Cost of one drum[g]	$ 62.95/drum	
9	Cost of drums needed to contain decontamination sands (Multiply line 7 by line 8)		$ Ø
	TOTAL COST OF DECONTAMINATION OF UNIT BY SANDBLASTING (Add lines 5 and 9) (Enter total on worksheet DC-1, line 2)		$ Ø

Remember to calculate costs for transporting, treating, and disposing of the wastes in drums generated from this activity. Use worksheets TR-1 and TD-2 found in Chapters 15 and 16, respectively.

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 110, item no. 150-5000. Activity described is sand blasting (dry system) a building.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-9. Crew B-9 consists of one labor foreman, four building laborers, one air compressor (250 cfm), two air tools and accessories, and two 50-ft air hoses (1.5-in diameter).

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-9. Crew B-9 consists of one labor foreman, four building laborers, one air compressor (250 cfm), two air tools and accessories, and two 50-ft air hoses (1.5-in diameter). See Appendix B of this manual for details of the calculation.

[d] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 110, item no. 150-5000. Work rate is based on a five-person crew.

[e] U.S. Environmental Protection Agency, *Final Guidance Manual: Cost Estimates for Closure and Post-Closure Plans (Subparts G and H)*, January 1987, EPA/530-SW-87-009, Volume III, pg. 5-3. The generation rate provided for decontamination sand is for sand blasting (dry system).

[f] Unit weight of medium sand, on average, equals 110 lbs/ft3. Using the conversions of 0.1337 ft^3/gal and 55-gal/drum, the calculation is: 110 lbs/ft^3 x 0.1337 ft^3/gal x 55 gal/drum = 808.89 lb/drum.

[g] Lab Safety Supply, *General Catalog*, 1993, pg. 354, 55-gallon, lock-ring, open-head, 18-gauge steel drum.

DECONTAMINATION OF HEAVY EQUIPMENT - Page 1 of 3

Decontamination of heavy equipment typically will be conducted for equipment that will come into direct contact with hazardous waste.

1	Number of hours needed to decontaminate all heavy equipment used during closure of the unit (Enter from attachment to this worksheet)	10 work hrs	
2	Cost of steam cleaner rental per hour[a]	$ 5.98/hr	
3	Subtotal steam cleaner rental costs (Multiply line 1 by line 2)		$ 60
4	Labor cost per work hour[b] Choose the appropriate level of PPE: a. Protection Level D $ 30.10/work hr[b] b. Protection Level C $ 45.30/work hr[c] c. Protection Level B $ 58.11/work hr[c]	$ 30.10	
5	Subtotal of labor costs (Multiply line 1 by line 4)		$ 301
6	Volume of decontamination fluid (Multiply line 1 by 100 gallons per hour)[d] (The volume of decontamination fluids generated may be disposed of either in drums or as bulk liquid. If the volume is too large to be effectively handled by placement in drums, use TD-3 worksheet in Chapter 16 to calculate the transportation, treatment and disposal cost. If the decontamination fluids are to be placed in drums, complete lines 7 through 9.)	1000 gal	
7	Number of drums required to contain decontamination fluid for removal (Divide line 6 by 55 gallons per drum and round up to the nearest whole number)	19 drums	
8	Cost of one drum[e]	$ 62.95/drum	
9	Cost of drums (Multiply line 7 by line 8)		$ 1196
10	Cost of construction of temporary decontamination area for heavy equipment (Include this cost if permanent decontamination area does not exist)[f] **NOTE: THIS COST SHOULD ONLY BE INCURRED ONCE FOR THE CLOSURE OF ALL UNITS**		$ 1,225.71

11	Cost of demolition of temporary decontamination area for heavy equipment (Include this cost if permanent decontamination area does not exist)[g] **NOTE: THIS COST SHOULD ONLY BE INCURRED ONCE FOR THE CLOSURE OF ALL UNITS**	$ 852.10
TOTAL COST OF DECONTAMINATION OF HEAVY EQUIPMENT (Add lines 3, 5, 9, 10, and 11) (Enter total on worksheet DC-1, line 3)		$ 3274

Remember to calculate costs for transporting, treating, and disposing of the wastes in drums generated from this activity. Use Worksheets TR-1 and TD-2 found in Chapters 15 and 16, respectively.

Notes:

[a] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 19, item no. 420-6300. Rental cost per hour was derived by dividing the daily rental rate by hours per day and adding the hourly operating cost: ($45/day ÷ 8 hrs/day) + $0.35/hr = $5.98/hr.

[b] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 499, crew A-1. The cost provided is the hourly rate for one building laborer.

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 499, crew A-1. The cost provided is the hourly rate for one building laborer. See Appendix B of this manual for details of the calculation.

[d] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 19, item no. 420-6300. Production rate of steam cleaner is 100 gal/hr.

[e] Lab Safety Supply, *General Catalog*, 1993, pg. 354, 55-gallon, lock-ring, open head, 18-gauge steel drum.

[f] Assume the temporary decontamination area is 25.5 ft by 17 ft and is constructed on a 3/4-in plywood base, with 6-in-by-8-in-by 8.5-ft railroad tie curbs and 2-in-by-8-in-by-16-in concrete blocks that hold the 6-mil polyethylene sheeting that covers the decontamination area.

Plywood - R.S. Means Company, Inc., *Means Site Work and Landscape Cost Data*, 1994, pg. 166, item no. 164-0200. The cost per ft^2 is $0.56. A total of 433.5 ft^2 of plywood is needed to cover the decontamination area. The cost of the plywood was calculated by multiplying the cost per ft^2, $0.56, by the number of ft^2, 433.5 = $242.76.

Railroad Ties - R.S. Means Company, Inc., *Means Site Work and Landscape Cost Data*, 1994, pg. 62, item no. 258-0600. The cost per ft is $2.25. A total of 10 railroad ties is needed to construct a curb around the decontamination area. The cost of the railroad ties was calculated by multiplying the cost per foot, by the length of each railroad tie, and by the number of railroad ties needed: $2.25/ft x 8.5 ft x 10 = $191.30.

Polyethylene Sheeting - Lab Safety Supply, *General Catalog*, 1993, pg. 635, 20-ft-by-100-ft roll of 6-mil polyethylene sheeting. The cost per roll is $54.95. A total of one roll is needed to cover the decontamination area.

Concrete Blocks - R.S. Means Company, Inc., *Means Site Work and Landscape Cost Data*, 1994, pg. 140, item no. 204-0020. The cost per block is $0.70. A total of 15 concrete blocks is needed to hold the polyethylene sheeting. The cost of the blocks was calculated by multiplying the cost of one block by the number of blocks needed: $0.70/block x 15 = $10.50.

Labor to Construct Decontamination Area - R.S. Means Company, Inc., *Means Site Work and Landscape Cost Data*, 1994, pg. 449, crew A-1. Assume that two building laborers at $30.10 per hour will construct the decontamination area in eight hours. The cost of the labor was calculated by multiplying the cost per hour for one building laborer, by the number of work hours needed to construct the decontamination area: $30.10/hr x 16 = $481.60.

Equipment Rental - R.S. Means Company, Inc., *Means Site Work and Landscape Cost Data*, 1994, pg. 17, item no. 420-2020. One forklift will be needed to move the railroad ties into place. The cost of renting one forklift for one day was calculated by multiplying the operational cost per hour by 8 hours and adding the daily rental cost: (8.95/hr x 8 hrs) + $173 = $244.60.

The total cost of constructing the decontamination area is $242.76 + $191.30 + 54.95 + 10.50 + $481.60 + $244.60 = $1,225.71.

- Costs for demolition of the temporary decontamination area were derived as follows:

Labor to Demolish Decontamination Area - R.S. Means Company, Inc., *Means Site Work and Landscape Cost Data*, 1993, pg. 451, crew A-1. Assume that two building laborers, at $30.10/hr, demolish the decontamination area in eight hours. The cost of the labor was calculated by multiplying the cost per hour for one building laborer, by the number of work hours needed to demolish the decontamination area: $30.10/hr x 16 hrs = $481.60.

Equipment Rental - R.S. Means Company, Inc., *Means Site Work and Landscape Cost Data*, 1993, pg. 17, item no. 420-2020. One forklift will be needed to move the railroad ties into place. The cost of renting one forklift for one day (8 hours) was calculated by multiplying the operational cost per hour by 8 hours and adding the daily rental cost: ($8.95/hr x 8 hrs) + $173 = $244.60.

Drums to Contain Contaminated Polyethylene Sheeting - Lab Safety Supply, *General Catalog*, 1993, pg. 354, 55-gallon, lock-ring, open head, 18-gauge steel drum. The cost of one drum is $62.95. Two drums are needed to contain the polyethylene sheeting. The cost of purchasing drums was calculated as follows: $62.95/drum x 2 drums = $125.90.

The total cost of demolishing the decontamination area is $481.60 + $244.60 + $125.90 = $852.10.

Decontamination Times for Heavy Equipment[a]
Reference for Line 1

Use the following time estimates to calculate the total number of hours needed to decontaminate all heavy equipment. Assume that each piece of heavy equipment will be decontaminated at least once for the closure of each unit.

Equipment	Decontamination Time (Hrs)
Forklift	1
Rotary disc	1
Tractor	2
Tank wagon	2
Front-end loader	3
Dozer	3
Backhoe	3
Front shovel	3

Notes:

[a] U.S. Environmental Protection Agency, *Final Guidance Manual: Cost Estimates for Closure and Post-Closure Plans (Subparts G and H)*, January 1987, EPA/530-SW-87-009, Volume III, pg. 5-2.

The inventory worksheet will be used in completing the appropriate cost estimating worksheets to determine the cost of sampling and analysis during closure. Depending on the activities being conducted, it may not be necessary to complete each section of the inventory sheet.

1 NUMBER OF BORING AND SUBSURFACE SOIL SAMPLES

In the additional space below, identify the number of boring and subsurface soil samples being collected for each individual unit. Add the number of samples and record the total in the box provided.

1	Number of Boring and Subsurface Soil Samples	0 samples

2 NUMBER OF CONCRETE CORE SAMPLES

In the additional space below, identify the number of concrete core samples being collected for each individual unit. Add the number of samples and record the total in the box provided.

2	Number of Concrete Core Samples	0 samples

3 NUMBER OF WIPE SAMPLE LOCATIONS

In the additional space below, identify the number of wipe sample locations for each individual unit. Add the number of sample locations and record the total in the box provided.

3	Number of Wipe Sample Locations	0 sample locations

4 NUMBER OF AQUEOUS SAMPLE LOCATIONS

In the additional space below, identify the number of aqueous sample locations being collected for each individual unit. Add the number of sample locations and record the total in the box provided.

4	Number of Aqueous Sample Locations WASH WATER RETURN/FILL 2 TANK CONT. 2 CONTAINER STORAGE 1	5 sample locations

5 NUMBER OF NONAQUEOUS SAMPLE LOCATIONS	
In the additional space below, identify the number of nonaqueous sample locations for each individual unit. Add the number of sample locations and record the total in the box provided.	
5	**Number of Nonaqueous Sample Locations** TANK CONTAINMENT 3 RETURN/FILL 1 CONTAINER STORAGE 1 5 sample locations
6 NUMBER OF GROUNDWATER SAMPLE LOCATIONS	
In the additional space below, identify the number of groundwater sample locations for each individual unit. Add the number of sample locations and record the total in the box provided.	
6	**Number of Groundwater Sample Locations** 3 EXISTING WELLS 3 sample locations
7 NUMBER OF LYSIMETERS TO BE SAMPLED	
In the additional space below, identify the number of lysimeters to be sampled. Record the number in the box provided.	
7	**Number of Lysimeters to be Sampled** 0 samples
8 NUMBER OF SUBSURFACE SOIL SAMPLES COLLECTED DURING MONITORING WELL INSTALLATION	
In the additional space below, identify the number of subsurface soil samples collected during monitoring well installation.	
8	**Number of Subsurface Soil Samples Collected During Monitoring Well Installation** 0 samples

Facility Name: SAFETY-KLEEN MEDLEY

SUMMARY WORKSHEET

	Activity	Worksheet Number	Cost
1.	Boring and Subsurface Soil Sample	SA-3	$ 0
2.	Concrete Core Sample	SA-4	$ 0
3.	Wipe Sample	SA-5	$ 0
4.	Aqueous Sample	SA-6	$ 4061
5.	Nonaqueous Sample	SA-7	$ 4671
6.	Groundwater Sample	SA-8	$ 3155
7.	Soil-Pore Liquid Sample	SA-9	$ 0
8.	Analysis of Subsurface Soil Sample (from Monitoring Well Installation)	SA-10	$ 0
TOTAL SAMPLING AND ANALYSIS COST *(Add lines 1 through 8)*			**$** 11886

Use this worksheet when you are estimating the cost to collect soil or rock samples at depth. This worksheet estimates cost by using a drill rig or other mechanical equipment to bore or core soil and rock using various drilling methods.

1	**BORING AND SUBSURFACE SOIL SAMPLE COSTS - 2-1/2-INCH-DIAMETER HOLE**		
1.A	Number of borings to be drilled (Enter from worksheet SA-1; line 1)	-0- borings	
1.B	Enter total of bore depths (Add all depths. If the depth is not provided, use the average boring depth and multiply by line 1.A)	ft	
1.C	Labor and equipment cost per work hour (Enter costs from Attachment A to this worksheet)	$ /work hr	
1.D	Work rate to drill 2-1/2-inch-diameter hole (Enter work rates from Attachment B to this worksheet)	work hr/ft	
1.E	Number of hours required to drill 2-1/2-inch-diameter hole (Multiply line 1.B by line 1.D) (One hour minimum; round up to the 0.5 hour)	work hrs	
1.F	Cost to Drill 2-1/2-inch Borings (Multiply line 1.C by line 1.E)		$ -0-
2	**BORING AND SUBSURFACE SOIL SAMPLE COSTS - 4-INCH-DIAMETER HOLE**		
2.A	Number of borings to be drilled (Enter from worksheet SA-1; line 1)	borings	
2.B	Enter total of bore depths (Add all depths. If depth is not provided, use the average depth and multiply by line 2.A)	ft	
2.C	Labor and equipment cost per work hour (Enter costs from Attachment A to this worksheet)	$ /work hr	
2.D	Work rate to drill 4-inch-diameter hole (Enter work rates from Attachment B to this worksheet)	work hr/ft	
2.E	Number of work hours required to drill 4-inch-diameter hole (Multiply line 2.B by line 2.D) (One hour minimum; round up to the 0.5 hour)	work hrs	
2.F	Cost to Drill 4-inch Borings (Multiply line 2.C by line 2.E)		$ -0-

3 ANALYSIS OF BORING SAMPLE			
3.A	Using the table in Attachment C to this worksheet, calculate the cost of analysis per sampling event for boring or soil core samples (Enter cost from Attachment C to this worksheet)	$ /event	
3.B	Enter the number of sampling events	events	
3.C	Cost to Analyze Soil Samples (Multiply line 3.A by line 3.B)		$ ~~0~~
TOTAL COST OF SAMPLING AND ANALYSIS OF BORING AND SOIL CORE SAMPLES (Add line 1.F, 2.F, and 3.C) (Enter total on worksheet SA-2, line 1)			$ ~~0~~

Drilling Labor and Equipment Costs
Reference for Lines 1.C and 2.C

Drilling Method	Drilling Labor and Equipment Cost Per Work Hour ($) for 2-1/2-Inch and 4-Inch Diameter Boreholes		
	Level D	Level C	Level B
Hollow-Stem Auger	57.04[a]	76.28[b]	93.13[b]
Cased Borings	57.04[a]	76.28[b]	93.13[b]
BX-size Rock Core	69.41[c]	90.51[d]	109.21[d]
NX-size Rock Core	69.41[c]	90.51[d]	109.21[d]

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 507, crew B-55. Crew B-55 consists of two building laborers, one truck driver, one flatbed truck with auger, and one 3-ton truck.

[b] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 507, crew B-55. Crew B-55 consists of two building laborers, one truck driver, one flatbed truck with auger, and one 3-ton truck. See Appendix B of this manual for details of the calculation.

[c] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 507, crew B-56. Crew B-56 consists of one building laborer, one light equipment operator, one 4-in crawler-type drill, one 600-cfm air compressor, and one 3-in-diameter, 50-ft air hose.

[d] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 507, crew B-56. Crew B-56 consists of one building laborer, one light equipment operator, one 4-in crawler type drill, one 600 cfm air compressor, and one 3-in-diameter, 50-ft air hose. See Appendix B of this manual for details of the calculation.

Drilling Work Rate
Reference for Lines 1.D and 2.D

Drilling Method	Borehole Diameter (in)	Drilling Rate (Work Hour/Foot)
Hollow-Stem Auger (with sample collection)	2-1/2 4	0.457[a] 0.534[b]
Cased Borings (with sample collection)	2-1/2 4	0.432[c] 0.736[d]
BX-size Rock Core (with casing and sample collection)	2-1/2	0.505[e]
NX-size Rock Core (with casing and sample collection)	4	0.640[f]

Notes:

[a] Work rate derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 22, item no. 123-0600. Work rate is based on a three-person crew. Activities include augering 2-1/2-in-diameter holes in earth. Assume a 50 percent decrease in drilling rate efficiency for collection of continuous split-spoon samples.

[b] Work rate derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 22, item no. 123-0650. Work rate is based on a three-person crew. Activities include augering 4-in-diameter holes in earth. Assume a 50 percent decrease in drilling rate efficiency for collection of continuous split-spoon samples.

[c] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 22, item no. 123-0800. Work rate is based on a three-person crew. Activities include cased borings in earth, with samples, 2-1/2-in-diameter.

[d] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 22, item no. 123-0850. Work rate is based on a three-person crew. Activities include cased borings in earth, with samples, 4-in-diameter.

[e] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 22, item no. 123-1050. Work rate is based on a two-person crew. Activities include drilling a "BX" core, in rock, with casing and sampling.

[f] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 22, item no. 123-1250. Work rate is based on a two-person crew. Activities include drilling a "NX" core in rock, with casing and sampling.

Cost of Analysis per Sampling Event
Reference for Line 3.A

Column 1 Analytical Parameter and Method Reference[a]	Column 2 Cost of Analysis ($) per Parameter[b]	Column 3 Number of Analyses, including QC Analyses[c]	Column 4 Total Cost of Analysis ($) per Parameter per Event (Multiply Column 2 by Column 3)
NOT	APPLICABLE		
TOTAL COST FOR ANALYSIS OF SOIL SAMPLES (Total of all costs in column 4)			$ -0- /event

Notes:

[a] List analytical parameter(s) and method number(s) from the sampling and analysis attachment to this chapter that correspond most closely with those specified in the work plan or permit. If a method of analysis is not specified, choose the appropriate SW-846 method from the sampling and analysis attachment to this chapter.

[b] Choose a unit analysis cost from the sampling and analysis attachment to this chapter for each parameter. Note that unit cost may differ according to the method of analysis used, the type of medium (solid or liquid) sampled, and the number of analyses performed.

[c] Identify the number of sampling locations and analyses specified in the work plan or permit. The number of quality control (QC) samples is typically 20 percent of the total number of samples to be analyzed.

Coring may be necessary for collecting bulk samples from hard surfaces, such as concrete.

1	**COLLECTION OF CORE SAMPLE**		
1.A	Number of corings to be drilled (Enter from worksheet SA-1; line 2)	-0- coring samples	
1.B	Labor and equipment cost per work hour[a] Choose the appropriate level of PPE: a. Protection Level D $ 38.29/work hr[b] b. Protection Level C $ 54.72/work hr[c] c. Protection Level B $ 68.76/work hr[c]	$	
1.C	Work rate to drill each core sample to a 6-inch depth[d]	0.400 work hr/sample	
1.D	Number of hours required to drill 3-inch-diameter boring (Multiply line 1.A by Line 1.C) (One hour minimum; round up to the 0.5 hour)	work hrs	
1.E	**Cost to Collect Core Samples (Multiply line 1.B by line 1.D)**		$ -0-
2	**ANALYSIS OF CORE SAMPLES**		
2.A	Using the table in the attachment to this worksheet, calculate the cost of analysis per sampling event for core samples (Enter cost from the attachment to this worksheet)	$ /event	
2.B	Enter the number of sampling events	events	
2.C	**Cost to Analyze Core Samples (Multiply line 2.A by line 2.B)**		$ -0-
	TOTAL COST OF SAMPLING AND ANALYSIS OF CORING SAMPLES (Add line 1.E to line 2.C) (Enter total on worksheet SA-2, line 2)		$ -0-

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 22, item no. 125-0300. Activities include drilling a 3-in-diameter core in a concrete slabs up to 6-in thick.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 510, crew B-89A. Crew B-89A consists of one skilled worker, one laborer, and one large-core drill.

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 510, crew B-89A. Crew B-89A consists of one skilled worker, one laborer, and one large-core drill. See Appendix B of this manual for details of the calculation.

[d] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, p. 22, item no. 125-0300. Work rate is based on a two-person crew. The work rate is for coring to a 6-in depth; if the coring sample is deeper than 6 in, add 0.060 to the work rate for each additional inch.

Cost of Analysis per Sampling Event
Reference for Line 2.A

Column 1 Analytical Parameter and Method Reference[a]	Column 2 Cost of Analysis ($) per Parameter[b]	Column 3 Number of Analyses, including QC Analyses[c]	Column 4 Total Cost of Analysis ($) per Parameter per Event (Multiply Column 2 by Column 3)
	NOT APPLICABLE		
TOTAL COST FOR ANALYSIS OF CORING SAMPLES (Total of all costs in column 4)			$ -0- /event

Notes:

[a] List analytical parameter(s) and method number(s) from the sampling and analysis attachment to this chapter that correspond most closely with those specified in the work plan or permit. If a method of analysis is not specified, choose the appropriate SW-846 method from the sampling and analysis attachment to this chapter.

[b] Choose a unit analysis cost from the sampling and analysis attachment to this chapter for each parameter. Note that unit cost may differ according to the method of analysis used, the type of medium (solid or liquid) sampled, and the number of analyses performed.

[c] Identify the number of sampling locations and analyses specified in the work plan or permit. The number of quality control (QC) samples is typically 20 percent of the total number of samples to be analyzed.

Wipe samples are used to assess surface contamination of hard, relatively nonporous surfaces. Wipe sampling should be used only when the contaminant of concern has a heavy, persistent characteristic, meaning it does not easily volatilize or leave the surface being sampled. Contaminants typically sampled by wipe sampling techniques are polychlorinated biphenyls (PCB) and dioxins.

1 COLLECTION OF WIPE SAMPLE			
1.A	Number of sampling locations (Enter from worksheet SA-1; line 3)	Ø sample locations	
1.B	Sampling team and equipment cost per work hour[a]	$	
	Choose the appropriate level of PPE: a. Protection Level D $ 91.29/work hr[b] b. Protection Level C $ 115.67/work hr[c] c. Protection Level B $ 137.66/work hr[c]		
1.C	Work hours required to collect samples from one sampling location[d]	0.5 work hr/sample location	
1.D	Number of hours required to collect all samples (Multiply line 1.A by line 1.C)	work hrs	
1.E	Cost to Collect Wipe Samples (Multiply line 1.B by line 1.D)		$ Ø
2 ANALYSIS OF WIPE SAMPLE			
2.A	Using the table in the attachment to this worksheet, calculate the cost of analysis per sampling event for wipe samples (Enter cost from the Attachment to this worksheet)	$ /event	
2.B	Enter the number of sampling events	events	
2.C	Cost to Analyze Wipe Samples (Multiply line 2.A by line 2.B)		$ Ø
	TOTAL COST OF SAMPLING AND ANALYSIS OF WIPE SAMPLES (Add line 1.E to line 2.C) (Enter total on worksheet SA-2, line 3)		$ Ø

Notes:

[a] Includes cost of collection and handling of samples, vehicle rental, and decontamination of sampling team and sampling equipment.

[b] Cost derived from price quotes provided by EPA Region 4 vendors. Crew consists of two sampling technicians.

[c] Cost derived from price quotes provided by EPA Region 4 vendors. Crew consists of two sampling technicians. See Appendix B of this manual for details of the calculation.

[d] Work rate is determined by assuming two wipe samples can be collected in an hour, using the following method: saturate a piece of filter paper or gauze with appropriate solvent. Using a pair of stainless steel forceps or rubber gloves, wipe an area of 100 cm^2 with the saturated filter paper or gauze to obtain the sample. Place the filter paper or gauze in the sample jar, label the sample jar, place the sample jar in an ice chest (cool to 4° C), complete appropriate sample documentation, and move to the next sample location.

Cost of Analysis per Sampling Event
Reference for Line 2.A

Column 1 Analytical Parameter and Method Reference[a]	Column 2 Cost of Analysis ($) per Parameter[b]	Column 3 Number of Analyses, including QC Analyses[c]	Column 4 Total Cost of Analysis ($) per Parameter per Event (Multiply Column 2 by Column 3)
	NOT APPL	ICABLE	
TOTAL COST FOR ANALYSIS OF WIPE SAMPLES (Total of all costs in column 4)			$ -0- /event

Notes:

[a] List analytical parameter(s) and method number(s) from the sampling and analysis attachment to this chapter that correspond most closely with those specified in the work plan or permit. If a method of analysis is not specified, choose the appropriate SW-846 method from the sampling and analysis attachment to this chapter.

[b] Choose a unit analysis cost from the sampling and analysis attachment to this chapter for each parameter. Note that unit cost may differ according to the method of analysis used, the type of medium (solid or liquid) sampled, and the number of analyses performed.

[c] Identify the number of sampling locations and analyses specified in the work plan or permit. The number of quality control (QC) samples is typically 20 percent of the total number of samples to be analyzed.

Aqueous samples refer to liquid samples, including samples of rinsate and wastewater. Do not use this worksheet for estimating the cost of sampling other aqueous media, such as groundwater.

1	**COLLECTION OF AQUEOUS SAMPLE**		
1.A	Number of sampling locations (Enter from worksheet SA-1; line 4)	5 sample locations	
1.B	Sampling team and equipment cost per work hour[a] Choose the appropriate level of PPE: a. Protection Level D $ 91.29/work hr[b] b. Protection Level C $ 115.67/work hr[c] c. Protection Level B $ 137.66/work hr[d]	$ 91.29	
1.C	Work hours required to collect samples from one sampling location[d]	1 work hr/sample location	
1.D	Number of hours required to collect all samples (Multiply line 1.A by line 1.C)	5 work-hrs	
1.E	**Cost to Collect Aqueous Samples (Multiply line 1.B by line 1.D)**		$ 456
2	**ANALYSIS OF AQUEOUS SAMPLE**		
2.A	Using the table in the attachment to this worksheet, calculate the cost of analysis per sampling event for aqueous samples (Enter cost from the Attachment to this worksheet)	$ 3,605 /event	
2.B	Enter the number of sampling events	1 events	
2.C	**Cost to Analyze Aqueous Samples (Multiply line 2.A by line 2.B)**		$ 3,605
	TOTAL COST OF SAMPLING AND ANALYSIS OF AQUEOUS SAMPLES (Add line 1.E to line 2.C) (Enter total on cost worksheet SA-2, line 4)		$ 4,061

Notes:

[a] Includes cost of collection and handling of samples, vehicle rental, and decontamination of sampling team and sampling equipment.

[b] Cost derived from price quotes provided by EPA Region 4 vendors. Crew consists of two sampling technicians.

[c] Cost derived from price quotes provided by EPA Region 4 vendors. Crew consists of two sampling technicians. See Appendix B of this manual for details of the calculation.

[d] Work rate obtained by assuming two aqueous samples can be collected in an hour using the following methods:

Rinsate Sample - Using laboratory prepared de-ionized water or an appropriate solvent, pour water over an area of the surface to be sampled. Collect the water or solvent in a precleaned sample container. Preserve the sample, label the sample jar, place the sample in an ice chest (cool to 4° C), complete the appropriate sample documentation, and move to the next sample location.

Wastewater and other aqueous samples - Various sample collection devices (bailers, kemmerer samples, Van Dorn samples, peristaltic pump, and others) can be used to collect wastewater and other aqueous samples. Samples are collected with the appropriate device and the liquid is poured into sample containers. The samples are then preserved, labeled, and placed in an ice chest (cooled to 4° C). Sample documentation is completed, the sampling equipment is decontaminated, and the samplers move to the next location.

Cost of Analysis per Sampling Event
Reference for Line 2.A

Column 1 Analytical Parameter and Method Reference[a]	Column 2 Cost of Analysis ($) per Parameter[b]	Column 3 Number of Analyses, including QC Analyses[c]	Column 4 Total Cost of Analysis ($) per Parameter per Event (Multiply Column 2 by Column 3)
8 RCRA METALS (TOTAL)	$90	7	$630
8015	$55	7	$385
8240	$120	7	$840
8270	$250	7	$1750
		(includes 2 QC samples)	
TOTAL COST FOR ANALYSIS OF AQUEOUS SAMPLES (Total of all costs in column 4)			$ 3,605 /event

Notes:

[a] List analytical parameter(s) and method number(s) from the sampling and analysis attachment to this chapter that correspond most closely with those specified in the work plan or permit. If a method of analysis is not specified, choose the appropriate SW-846 method from the sampling and analysis attachment to this chapter.

[b] Choose a unit analysis cost from the sampling and analysis attachment to this chapter for each parameter. Note that unit cost may differ according to the method of analysis used, the type of medium (solid or liquid) sampled, and the number of analyses performed.

[c] Identify the number of sampling locations and analyses specified in the work plan or permit. The number of quality control (QC) samples is typically 20 percent of the total number of samples to be analyzed.

Nonaqueous samples refer to sludge, chip, or surface soil samples. These samples are shallow samples, that is, they are collected at depths of less than 1.5 feet below ground surface.

1	**COLLECTION OF NONAQUEOUS SAMPLE**		
1.A	Number of sampling locations (Enter from worksheet SA-1; line 5)	5 sample locations	
1.B	Sampling team and equipment cost per work hour[a]	$ 91.29	
	Choose the appropriate level of PPE: a. Protection Level D $ 91.29/work hr[b] b. Protection Level C $ 115.67/work hr[c] c. Protection Level B $ 137.66/work hr[c]		
1.C	Work hours required to collect samples from one sampling location[d]	1 work hr/sample location	
1.D	Number of hours required to collect all samples (Multiply line 1.A by line 1.C)	5 work.hrs	
1.E	Cost to Collect Nonaqueous Samples (Multiply line 1.B by line 1.D)		$ 456
2	**ANALYSIS OF NONAQUEOUS SAMPLE**		
2.A	Using the table in the attachment to this worksheet, calculate the cost of analysis per sampling event for nonaqueous samples (Enter costs from the attachment to this worksheet)	$ 4,215 /event	
2.B	Enter the number of sampling events	1 events	
2.C	Cost to Analyze Nonaqueous Samples (Multiply line 2.A by line 2.B)		$ 4215
	TOTAL COST OF SAMPLING AND ANALYSIS OF NONAQUEOUS SAMPLES (Add line 1.E to line 2.C) (Enter total on worksheet SA-2, line 5)		$ 4671

Notes:

[a] Includes cost of collection and handling of samples, vehicle rental, and decontamination of sampling team and sampling equipment.

[b] Cost derived from price quotes provided by EPA Region 4 vendors. Crew consists of two sampling technicians.

[c] Cost derived from price quotes provided by EPA Region 4 vendors. Crew consists of two sampling technicians. See Appendix B of this manual for details of the calculation.

[d] U.S. Environmental Protection Agency, *Final Guidance Manual: Cost Estimates for Closure and Post-Closure Plans (Subpart G and H)*, January 1987, EPA/530-SW-009, Volume III, pg. 2-16.

Cost of Analysis per Sampling Event
Reference for Line 2.A

Column 1 Analytical Parameter and Method Reference[a]	Column 2 Cost of Analysis ($) per Parameter[b]	Column 3 Number of Analyses, including QC Analyses[c]	Column 4 Total Cost of Analysis ($) per Parameter per Event (Multiply Column 2 by Column 3)
8 RCRA METALS	90	7	630
8015	55	7	385
8240	120	7	840
8270	250	7	1750
TCLP metals and organics	610	1	610
		Includes 2 QC samples	
TOTAL COST FOR ANALYSIS OF NONAQUEOUS SAMPLES (Total of all costs in column 4)			$ 4,215 /event

Notes:

[a] List analytical parameter(s) and method number(s) from the sampling and analysis attachment to this chapter that correspond most closely with those specified in the work plan or permit. If a method of analysis is not specified, choose the appropriate SW-846 method from the sampling and analysis attachment to this chapter.

[b] Choose a unit analysis cost from the sampling and analysis attachment to this chapter for each parameter. Note that unit cost may differ according to the method of analysis used, the type of medium (solid or liquid) sampled, and the number of analyses performed.

[c] Identify the number of sampling locations and analyses specified in the work plan or permit. The number of quality control (QC) samples is typically 20 percent of the total number of samples to be analyzed.

Use this worksheet to estimate the cost of sampling and analysis of groundwater monitoring wells.

1	**COLLECTION OF GROUNDWATER SAMPLE FOR CLOSURE**		
1.A	Number of sampling locations (Enter from worksheet SA-1; line 6)	3 sample locations	
1.B	Sampling team and equipment cost per work hour[a] Choose the appropriate level of PPE: a. Protection Level D $ 91.29/work hr[b] b. Protection Level C $ 115.67/work hr[c] c. Protection Level B $ 137.66/work hr[c]	$ 91.29	
1.C	Work hours required to collect samples from one sampling location[d]	4 work hrs/sample location	
1.D	Number of hours required to collect all samples (Multiply line 1.A by line 1.C)	12 work hrs	
1.E	**Cost to Collect Groundwater Samples for Closure (Multiply line 1.B by line 1.D)**		$ 1,095
2	**ANALYSIS OF GROUNDWATER SAMPLE FOR CLOSURE**		
2.A	Using the table in the attachment to this worksheet, calculate the cost of analysis per sampling event for groundwater samples (Enter costs from the attac'ment to this worksheet)	$ 2,060 /event	
2.B	Enter the number of sampling events	1 events	
2.C	**Cost to Analyze Groundwater Samples for Closure (Multiply line 2.A by line 2.B)**		$ 2,060
	TOTAL COST OF SAMPLING AND ANALYSIS OF GROUNDWATER FOR CLOSURE (Add line 1.E to line 2.C) (Enter total on worksheet SA-2, line 6)		$ 3,155
3	**COLLECTION OF GROUNDWATER SAMPLE FOR POST-CLOSURE CARE** NOT APPLICABLE		
3.A	Cost to sample groundwater wells for one sampling event (Enter from line 1.E)	$ /event	
3.B	Enter the number of sampling events per year	events/yr	
3.C	**Cost to Collect Groundwater Samples Annually for Post-Closure Care (Multiply line 3.A by line 3.B)**		$ -0- /yr

4	**ANALYSIS OF GROUNDWATER SAMPLE FOR POST-CLOSURE CARE** NOT APPLICABLE		
4.A	Cost to analyze groundwater samples for one event (Enter from line 2.A)	$ /event	
4.B	Enter the number of analysis events per year	events/yr	
4.C	**Cost to Analyze Groundwater Samples Annually for Post-Closure Care (Multiply line 4.A by line 4.B)**		**$ ~~0~~ /yr**
	TOTAL COST OF SAMPLING AND ANALYSIS OF GROUNDWATER ANNUALLY FOR POST-CLOSURE CARE (Add line 3.C to line 4.C) (Enter total on line 2 of groundwater monitoring worksheet PC-6 or line 3.A of post-closure care land treatment unit worksheet LT-6.)		**$ 3155 /yr**

Notes:

[a] Includes cost of collection and handling of samples, vehicle rental, and decontamination of sampling team and sampling equipment.

[b] Cost derived from price quotes provided by EPA Region 4 vendors. Crew consists of two sampling technicians.

[c] Cost derived from price quotes provided by EPA Region 4 vendors. Crew consists of two sampling technicians. See Appendix B of this manual for details of the calculation.

[d] U.S. Environmental Protection Agency, *Final Guidance Manual: Cost Estimates for Closure and Post-Closure Plans (Subpart G and H)*, January 1987, EPA/530-SW-009, Volume III, pg. 2-4. This rate includes the time required to purge the well, allow well recovery, sample the well, document the sampling, and move to the next sampling location.

Cost of Analysis per Sampling Event
Reference for Line 2.A

Column 1 Analytical Parameter and Method Reference[a]	Column 2 Cost of Analysis ($) per Parameter[b]	Column 3 Number of Analyses, including QC Analyses[c]	Column 4 Total Cost of Analysis ($) per Parameter per Event (Multiply Column 2 by Column 3)
8 RCRA METALS	90	4	360
8015	55	4	220
8240	120	4	480
8270	250	4	1000
		includes 1 QC sample	
TOTAL COST FOR ANALYSIS OF GROUNDWATER SAMPLES (Total of all costs in column 4)			$ 2060 /event

Notes:

[a] List analytical parameter(s) and method number(s) from the sampling and analysis attachment to this chapter that correspond most closely with those specified in the work plan or permit. If a method of analysis is not specified, choose the appropriate SW-846 method from the sampling and analysis attachment to this chapter.

[b] Choose a unit analysis cost from the sampling and analysis attachment to this chapter for each parameter. Note that unit cost may differ according to the method of analysis used, the type of medium (solid or liquid) sampled, and the number of analyses performed.

[c] Identify the number of sampling locations and analyses specified in the work plan or permit. The number of quality control (QC) samples is typically 20 percent of the total number of samples to be analyzed.

Use this worksheet to estimate the cost of sampling and analysis for land treatment facilities.

1	COLLECTION OF SOIL-PORE LIQUID SAMPLE FOR CLOSURE NA		
1.A	Number of lysimeters to be sampled (Enter from worksheet SA-1; line 7)	lysimeters	
1.B	Labor and equipment cost per work hour[a] Choose the appropriate level of PPE: a. Protection Level D $ 91.29/work hr[b] b. Protection Level C $ 115.67/work hr[c] c. Protection Level B $ 137.66/work hr[c]	$	
1.C	Work rate required to sample one lysimeter[d]	1 work hr/lysimeter	
1.D	Number of hours required to sample all lysimeters (Multiply line 1.A by line 1.C)	work hrs	
1.E	Cost to Collect Soil-Pore Liquid Samples for Closure (Multiply line 1.B by line 1.D)		$ -0-
2	ANALYSIS OF SOIL-PORE LIQUID SAMPLE FOR CLOSURE		
2.A	Using the table from the attachment, calculate the analysis cost per sampling event for soil-pore liquid samples (Enter costs from attachment)	$ /event	
2.B	Enter the number of sampling events	event	
2.C	Cost to Analyze Soil-Pore Liquid Samples for Closure (Multiply line 2.A by line 2.B)		$ -0-
	TOTAL COST OF SAMPLING AND ANALYSIS OF SOIL-PORE LIQUID SAMPLES FOR CLOSURE (Add line 1.E to line 2.C) (Enter total on worksheet SA-2, line 7)		$ -0-
	TOTAL COST OF SAMPLING AND ANALYSIS OF SOIL-PORE LIQUID FOR POST-CLOSURE CARE (Add line 1.E to line 2.A) (Enter total on line 1.A of post-closure care of land treatment worksheet LT-6)		$ -0- /event

Notes:

[a] Includes cost of collection and handling of samples, vehicle rental, and decontamination of sampling team and sampling equipment.

[b] Cost derived from price quotes provided by EPA Region 4 vendors. Crew consists of two sampling technicians.

[c] Cost derived from price quotes provided by EPA Region 4 vendors. Crew consists of two sampling technicians. See Appendix B of this manual for details of the calculation.

[d] U.S. Environmental Protection Agency, *Final Guidance Manual: Cost Estimates for Closure and Post-Closure Plans (Subpart G and H)*, January 1987, EPA/530-SW-009, Volume III, pg. 2-14.

Cost of Analysis per Sampling Event
Reference for Line 2.A

Column 1 Analytical Parameter and Method Reference[a]	Column 2 Cost of Analysis ($) per Parameter[b]	Column 3 Number of Analyses, including QC Analyses[c]	Column 4 Total Cost of Analysis ($) per Parameter per Event (Multiply Column 2 by Column 3)
	NOT APPLICA	BLE	
TOTAL COST FOR ANALYSIS OF SOIL-PORE LIQUID SAMPLES (Total of all costs in column 4)			$ -0- /event

Notes:

[a] List analytical parameter(s) and method number(s) from the sampling and analysis attachment to this chapter that correspond most closely with those specified in the work plan or permit. If a method of analysis is not specified, choose the appropriate SW-846 method from the sampling and analysis attachment to this chapter.

[b] Choose a unit analysis cost from the sampling and analysis attachment to this chapter for each parameter. Note that unit cost may differ according to the method of analysis used, the type of medium (solid or liquid) sampled, and the number of analyses performed.

[c] Identify the number of sampling locations and analyses specified in the work plan or permit. The number of quality control (QC) samples is typically 20 percent of the total number of samples to be analyzed.

ANALYSIS OF SUBSURFACE SOIL SAMPLE - Page 1 of 2

Use this worksheet to estimate the cost of analysis of samples collected during installation of a groundwater monitoring well.

ANALYSIS OF SUBSURFACE SOIL SAMPLE NA			
1	Using the table in the attachment to this worksheet, calculate the cost of analysis per *sampling event for subsurface soil samples* (Enter costs from the attachment to this worksheet)	$ Ø /event	
2	Enter the number of sampling events	events	
TOTAL COST FOR ANALYSIS OF SUBSURFACE SOIL SAMPLES (Multiply line 1 by line 2) (Enter total on worksheet SA-2, line 8)			$ Ø

Cost of Analysis per Sampling Event
Reference for Line 1

Column 1 Analytical Parameter and Method Reference[a]	Column 2 Cost of Analysis ($) per Parameter[b]	Column 3 Number of Analyses, including QC Analyses[c]	Column 4 Total Cost of Analysis ($) per Parameter per Event (Multiply Column 2 by Column 3)
	NOT APPLICABLE		
TOTAL COST FOR ANALYSIS OF SUBSURFACE SOIL SAMPLES (Total of all costs in column 4)			$ ⊖ /event

Notes:

[a] List analytical parameter(s) and method number(s) from the sampling and analysis attachment to this chapter that correspond most closely with those specified in the work plan or permit. If a method of analysis is not specified, choose the appropriate SW-846 method from the sampling and analysis attachment to this chapter.

[b] Choose a unit analysis cost from the sampling and analysis attachment to this chapter for each parameter. Note that unit cost may differ according to the method of analysis used, the type of medium (solid or liquid) sampled, and the number of analyses performed.

[c] Identify the number of sampling locations and analyses specified in the work plan or permit. The number of quality control (QC) samples is typically 20 percent of the total number of samples to be analyzed.

TRANSPORTATION OF WASTE - Page 1 of 1

Facility Name: SAFETY-KLEEN MEDLEY

Depending on the activities being conducted, it may not be necessary to complete each section of the transportation worksheet.

1 TRANSPORTATION OF DRUMMED WASTE			
1.A	Number of drums of waste *	126 drums	
1.B	Cost to transport one truckload of 55-gallon drums 250 miles[a]	$ 1,062.50/truckload	
1.C	*Number of truckloads needed to transport waste in drums (Divide line 1.A by 80 drums per truckload; round up to the nearest whole number)*	2 truckloads	
1.D	**Cost to Transport Drummed Waste (Multiply line 1.B by line 1.C)**		$ 2125
2 TRANSPORTATION OF BULK LIQUIDS DECON FLUID & TANK CONTENTS			
2.A	Gallons of liquid waste*	84,078 gal	
2.B	Cost to transport one truckload of bulk liquids 250 miles[b]	$ 1,062.50/truckload	
2.C	*Number of truckloads needed to transport bulk free liquid waste (Divide line 2.A by 6,900 gallons per truckload; round up to the nearest whole number)*	13 truckloads	
2.D	**Cost to Transport Bulk Liquid Waste (Multiply line 2.B by line 2.C)**		$ 13813
3 TRANSPORTATION OF BULK WASTE			
3.A	Number of waste debris boxes	12 debris boxes	
3.B	Cost to transport one truckload of bulk waste 250 miles[a]	$ 1,062.50/truckload	
3.C	*Number of truckloads needed to transport bulk waste (Assume one debris box can be hauled on every truck)*	12 truckloads	
3.D	**Cost to Transport Bulk Solid Waste (Multiply line 3.B by line 3.C)**		$ 12750
	TOTAL COST OF TRANSPORTATION OF WASTE (Add lines 1.D, 2.D, and 3.D) (Enter total on appropriate unit summary worksheet)		$ 28,688

Notes: * SEE ATTACHED CALCULATION

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 30, item no. 717-1270. Activity described is transporting one truckload of solid waste. Maximum capacity of truck is 80 drums or 25 yd^3 and the cost per mile is \$4.25. Assume a 250-mi trip to transport waste. The cost is calculated as follows: \$4.25/mi x 250 mi = 1,062.50.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 30, item no. 717-3400. Activity described is transporting one truckload of bulk free liquid waste. Maximum capacity of truck is 6,900 gallons, and the cost per mile is \$4.25. Assume a 250-mi trip to transport waste. The cost is calculated as follows: \$4.25/mi x 250 mi = 1,062.50.

Basis for Data Input Values

Form	Item	Explanation		Value	Units	Comment
TR-1	1A	*Number of drums of waste*				
		From container storage area	6912 gallons	126	drums	Assumes 55-gallon drums
TR-1	2A	*Gallons of liquid waste*				
		From tank and piping		20,078	gal	
		From Decontamination		64,000	gal	
		Total gallons		84,078	gal	

Facility Name: SAFETY-KLEEN HEDLEY

SUMMARY WORKSHEET			
Activity		Worksheet Number	Cost
1.	Treatment and Disposal of Waste	TD-2	$ 47406
2.	Transportation and Disposal of Decontamination Fluids	TD-3	$ -0-
TOTAL COST OF TREATMENT AND DISPOSAL *(Add lines 1 and 2)*			$ 47406

TREATMENT AND DISPOSAL TD-2

1 TREATMENT AND DISPOSAL OF WASTE 1			
1.A	Volume of Waste to be treated or disposed of (in yd^3) (Refer to Appendix A of this manual or conversion factors, if needed)	126 ~~yd^3~~	
1.B	Density of waste. Select the density of the material that most closely resembles the waste (Refer to Attachment A to this worksheet)	— ~~lb/yd^3~~	
1.C	Amount of waste to be treated as disposed of (Multiply line 1.A by line 1.B)	— ~~lb~~	
1.D	Amount of waste to be treated or disposed of in tons (Divide line 1.C by 2,000 lb/ton)	— ~~tons~~	
1.E	Treatment cost (Enter cost from Attachment B, C, or D to this worksheet)*	$ 60/DR ~~/ton~~	
1.F	**Cost to Treat and Dispose of Waste 1 (Multiply line 1.D by line 1.E)**		$ 7560
2 TREATMENT AND DISPOSAL OF WASTE 2			
2.A	Volume of waste to be treated or disposed of (in yd^3) (Refer to Appendix A of this manual for conversion factors, if needed)	84,078 ~~yd^3~~	
2.B	Density of waste. Select the density of the material that most closely resembles the waste (Refer to Attachment A to this worksheet)	— ~~lb/yd^3~~	
2.C	Amount of waste to be treated as disposed of (Multiply line 2.A by line 2.B)	— ~~lb~~	
2.D	Amount of waste to be treated or disposed of in tons (Divide line 2.C by 2,000 lb/ton)	— ~~tons~~	
2.E	Treatment cost (Enter cost from Attachment B, C, or D to this worksheet)*	$ 1.00/GAL ~~/ton~~	
2.F	**Cost to Treat and Dispose of Waste 2 (Multiply line 2.D by line 2.E)**		$ 84078

3 TREATMENT AND DISPOSAL OF WASTE 3 DEBRIS			
3.A	Volume of waste to be treated or disposed of (in yd^3) (Refer to Appendix A of this manual for conversion factors, if needed)	18 yd^3	
3.B	Density of waste. Select the density of the material that most closely resembles the waste (Refer to Attachment A to this worksheet)	4050 lb/yd^3	
3.C	Amount of waste to be treated as disposed of (Multiply line 3.A by line 3.B)	7290 lb	
3.D	Amount of waste to be treated or disposed of in tons (Divide line 3.C by 2,000 lb/ton)	3645 tons	
3.E	Treatment cost (Enter cost from Attachment B, C, or D to this worksheet)*	$ 130 /ton	
3.F	**Cost to Treat and Dispose of Waste 3 (Multiply line 3.D by line 3.E)**		$ 4,739
4 TREATMENT AND DISPOSAL OF WASTE 4			
4.A	Volume of waste to be treated or disposed of (in yd^3) (Refer to Appendix A of this manual for conversion factors, if needed)	yd^3	
4.B	Density of waste. Select the density of the material that most closely resembles the waste (Refer to Attachment A to this worksheet)	lb/yd^3	
4.C	Amount of waste to be treated as disposed of (Multiply line 4.A by line 4.B)	lb	
4.D	Amount of waste to be treated or disposed of in tons (Divide line 4.C by 2,000 lb/ton)	tons	
4.E	Treatment cost (Enter cost from Attachment B, C, or D to this worksheet)*	$ /ton	
4.F	**Cost to Treat and Dispose of Waste 4 (Multiply line 4.D by line 4.E)**		$ 0
TOTAL COST OF TREATMENT AND DISPOSAL (Add lines 1.F, 2.F, 3.F, and 4.F) (Enter total on worksheet TD-1, line 1)			$ 96377

Notes:

* Depending on information available, treatment costs per unit may be determined by using either Attachment B (based on waste characteristics) or Attachments C and D (based on treatment and disposal technologies).

Bulk Densities[a]

Bulk Densities of Selected Materials	
Material	Bulk Density Range (lb/yd^3)
Water	1,685.8
Sludge	1,620 - 2,430
Soil[b]	2,025 - 3,240
Incinerator Ash	945 - 1,350
Cement[c]	4,050
Demolition Rubble	2,430 - 3,240
Steel[c]	13,230

Notes:

[a] Densities derived from OSWER Policy Directive #9476.00-6, 1987.

[b] Soils rich in organic matter and soils with large amounts of fine particles have lower bulk density compared with soils poor in organic matter and rich in sand particles.

[c] Densities derived from Standard Handbook for Civil Engineering, 3rd Edition, 1983.

Treatment and Disposal Prices by Waste Type

Prices for Various Waste Type*		
Waste Type	Average Price ($/Ton)	Price Range ($/Ton)
CONTAMINATED SOIL AND DEBRIS		
Hazardous due to inorganic toxicity characteristic		
Free liquids present	1,060	940 - 1,220
No free liquids present	740	560 - 920
Hazardous due to organic toxicity characteristic (no pesticides)		
Free liquids present	1,200	860 - 1,480
No free liquids present	800	360 - 1,180
Hazardous due to inorganic and organic toxicity characteristic (no pesticides)		
Free liquids present	1,330	940 - 1,640
No free liquids present	940	420 - 1,580
Hazardous due to pesticides		
Free liquids present	1,660	N/A
No free liquids present	1,640	N/A
Hazardous due to F001-F005 solvents		
Free liquids present	1,580	N/A
No free liquids present	940	420 - 1,540
Hazardous due to P and U listed organic hazardous wastes		
Meets LDR standards	580	540 - 640
Does not meet LDR standards	1,680	1,420 - 1,920
Hazardous due to P and U listed inorganic hazardous wastes		
Meets LDR standards	580	560 - 620
Does not meet LDR standards	1,440	1,320 - 1,560
Hazardous due to F006-F012, F019 wastes		
Meets LDR standards	580	520 - 620

Treatment and Disposal
Prices by Waste Type (continued)

Prices for Various Waste Type*	
Waste Type	Average Price ($/Ton)
AQUEOUS WASTES	
Hazardous due to inorganic toxicity characteristic	
Drums	980
Bulk	900
Hazardous due to organic toxicity characteristic (no pesticides)	
Drums	920
Bulk	820
Hazardous due to inorganic and organic toxicity characteristic (no pesticides)	
Drums	1,100
Bulk	920
Hazardous due to pesticides	
Drums	1,400
Bulk	1,060
Hazardous due to F001-F005 solvents (Does not meet LDR standards)	
Drums	1,280
Bulk	1,140
Hazardous due to P and U listed organic hazardous wastes (Does not meet LDR standards)	
Drums	1,480
Bulk	1,140
Hazardous due to P and U listed inorganic hazardous wastes (Does not meet LDR standards)	
Drums	1,420
Bulk	1,140
Hazardous due to F006-F012, F019 wastes (Does not meet LDR standards)	
Drums	1,220
Bulk	1,060

Treatment and Disposal
Prices by Waste Type (continued)

Prices for Various Waste Type[a]	
Waste Type	Average Price ($/Ton)
SLUDGES	
Hazardous due to inorganic toxicity characteristic	
Drums	1,080
Bulk	980
Hazardous due to organic toxicity characteristic	
Drums	1,300
Bulk	1,240
Hazardous due to inorganic and organic toxicity characteristic	
Drums	1,480
Bulk	1,280
Hazardous due to F001-F005 solvents	
Drums	1,680
Bulk	1,360

Notes:

[a] Prices based on a survey of several waste brokers and storage companies, and TSDF companies. The prices include handling, labeling, monitoring, sampling, and profiling of wastes. The actual unit price may vary in different regions of the U.S. and according to the actual quantity of wastes to be treated or disposed of and the type and level of contamination.

Treatment and Disposal Prices for Established Technologies

Price Ranges for Established Treatment and Disposal Technologies[a]			
Treatment / Disposal Method	Waste Type	Typical Price ($ / Ton)	Price Range ($ / Ton)
Incineration	Bulk Liquids (Liquid Injection)	653	130 - 1,175
	Bulk Solids (Rotary Kiln)	1,305	653 - 1,958
	Liquids in Containers (Liquid Portion Only-Liquid Injection)	816	196 - 1,435
	Solids or Sludges in Containers (Rotary Kiln)	1,305	653 - 1,958
Deep Well Injection	Oily Wastewaters	66	22 - 87
	Toxic Wastewaters (Requiring Pretreatment)	326	157 - 376
Land Treatment	All Wastes That Can Be Land Treated	27	7 - 29
Hazardous Waste Treatment	Acidic or Alkaline Wastes	130	18 - 267
	Contaminated Leachate or Runoff, Moderately Toxic Wastes	261	125 - 314
	Cyanides, Heavy Metals, Highly Toxic Wastes	653	267 - 1,881
Landfill Disposal (No free liquids)	Bulk Solids	130	97 - 196
	Solids or Sludges in Containers	261	163 - 359
Landfill Disposal (Solidification required)	Bulk Liquids	261	229 - 326
	Liquids or Sludges in Containers	392	293 - 489
Solidification or Stabilization[b]	Bulk Solids	257	103 - 410

Notes:

[a] Costs are derived from the OSWER Policy Directive #9476.00-6, 1987. Rates are in 1994 dollars, using standard inflation factors.

[b] Cost range for solidification or stabilization is based on engineering expertise. Factors that can increase the cost of solidification or stabilization include the need for screening or extensive mixing, high content of organic contaminants and complex combinations of contaminants.

Treatment
Prices for Innovative Technologies

Price Ranges for Innovative Treatment Technologies[a]		
Technology	Number of Vendors Having Cost Data	Price Range $ / Ton[b]
Bioremediation - Slurry Phase	8	30 - 700
Bioremediation - Solid Phase	18	15 - 400
Chemical Treatment - Dechlorination	2	100 - 300
Chemical Treatment - Other	2	25 - 500
Materials Handling/Physical Separation	3	5 - 150
Soil Washing	12	25 - 300
Solvent Extraction	6	50 - 900
Thermal Desorption - General	3	50 - 1,000
Vitrification - Off-Gas Treated	6	40 - 1,000

Notes:

[a] Source: U.S. EPA VISITT 2.0 Database

[b] This price assumes a bulk density of 2,000 lbs/yd^3. For additional conversions, see Appendix A of this manual.

TRANSPORTATION AND DISPOSAL OF DECONTAMINATION FLUIDS- Page 1 of 2

ACCOUNTED FOR UNDER TD-2 & TR-1

If the amount of wastewater generated during unit closure activities exceeds a volume that can be handled effectively by placing the waste in drums, wastewater may be handled and disposed of as a bulk liquid. This worksheet may be used to determine the cost to transport and dispose of wastewater generated during closure as a bulk hazardous liquid.

1	Determine the volume of decontamination fluid generated from closure activities. Add all volumes calculated from closure activity worksheets to determine the total volume of liquid to be transported and disposed of. _______ gal _______ gal _______ gal _______ gal _______ gal	total gal	
2	Labor and equipment cost per work hour[a] Choose the appropriate Level of PPE: a. Protection Level D $39.24/work hr[b] b. Protection Level C $55.81/work hr[c] c. Protection Level B $69.99/work hr[c]	$	
3	Work rate to pump decontamination fluid to a holding tank (per gallon)[d]	0.0000667 work hrs/ gallon	
4	Number of hours required to pump decontamination fluid to a holding tank (Multiply line 1 by line 3) (One hour minimum; round up to the 0.5 hour)	work hours	
5	Subtotal of labor and equipment costs to pump decontamination fluid to a holding tank (multiply line 2 by line 4)		$
6	Number of days required to rent holding tank (Round up line 4 to nearest 8 hours; divide by 8 hours per day)	days	
7	Holding tank rental fee (10,000 gallon capacity) (Flat rate per tank per day)[e]	$345.00/day	
8	Number of tanks required (Divide line 1 by 10,000 gallons; round up to the nearest whole number)	tanks	
9	Subtotal of tank rental costs (Multiply lines 6, 7, and 8)		$
10	Removal costs for bulk liquid (Multiply line 1 by $1.05 per gallon)[f]		$
TOTAL COST TO TRANSPORT AND DISPOSE OF DECONTAMINATION FLUID AS A BULK LIQUID (Add lines 5, 9, and 10) (Enter total on worksheet TD-1, line 2)			$

Notes:

[a] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pgs. 18 and 38, item nos. 420-4300 and 404-0900. The activity described is pumping liquid with a 3-inch centrifugal gas pump at a rate of 15,000 gallons per hour.

[b] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-10J. Crew B-10J consists of one equipment operator, 0.5 building laborers, and one 3-inch centrifugal gas pump and accessories.

[c] Cost derived from R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 500, crew B-10J. Crew B-10J consists of one equipment operator, one-half building laborer, and one 3-inch centrifugal water pump and accessories. See Appendix B of this manual for details of the calculations.

[d] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 18, item no. 420-4300. The work rate is obtained by determining the time required to pump one gallon of decontamination fluid ((1 hour ÷ 15,000 gallons).

[e] R.S. Means Company, Inc., *Means Building Construction Cost Data*, 1994, pg. 19, item no. 420-7000. The cost is based on the daily cost of renting a 10,000-gallon-capacity liquid holding tank.

[f] Cost for removal of 1 gallon of decontamination fluid is based on 1994 price quotes from several commercial hazardous waste management companies. The cost includes transport, treatment, and disposal of bulk, water-based, hazardous liquids by a third-party contractor.

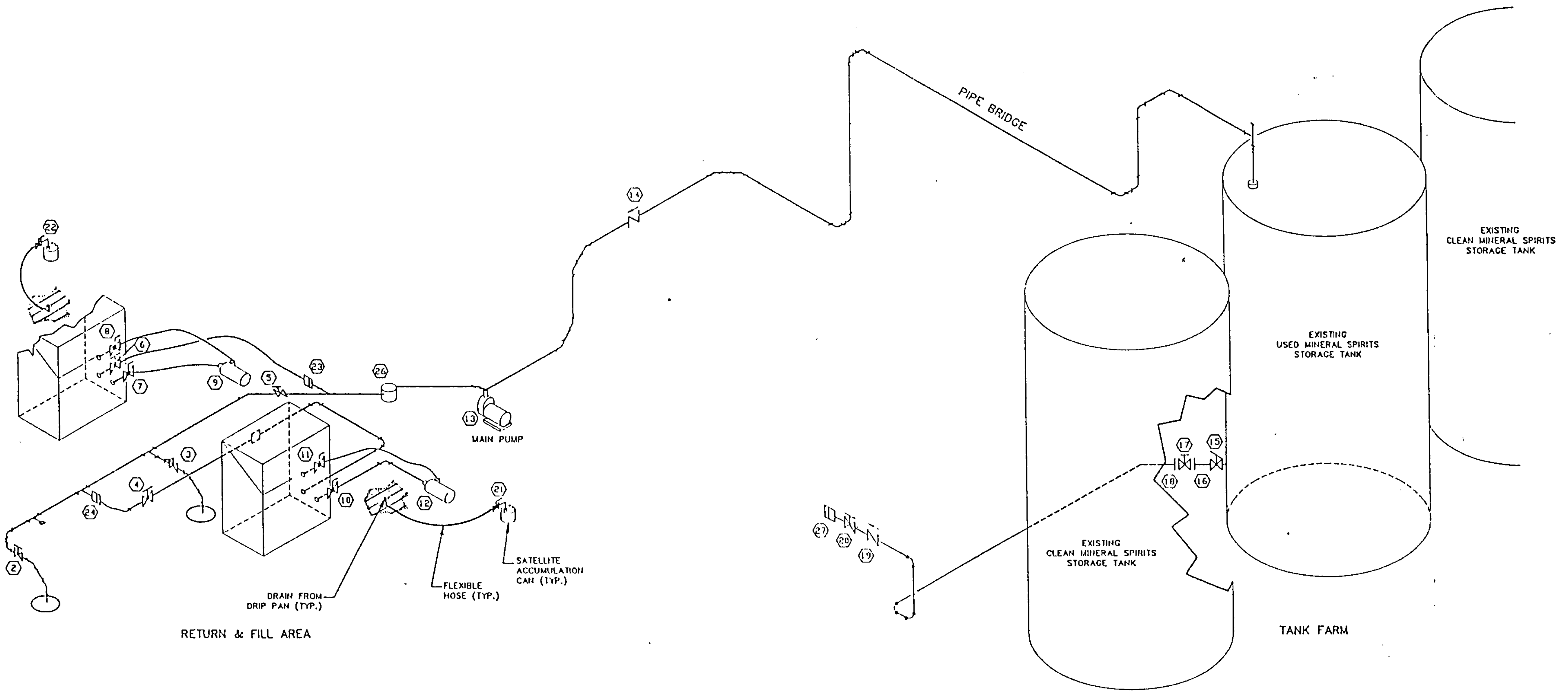
11.0 AIR EMISSION STANDARDS

The Medley Branch is a minor source of air emissions, which is permitted under FDEP air rules (Permit AC13-265331). Certain other air emission standards promulgated under the hazardous waste management rules affect facility operations and are discussed below.

The Medley Branch manages hazardous wastes containing volatile organic compounds (VOCs) which subject it to certain provisions of the air emissions standards promulgated under 40 CFR Part 264. The requirements of 40 CFR Part 264 Subpart AA: Air Emission Standards for Process Vents ***do not*** apply since the facility is strictly a storage facility. No process vents are present.

The requirements of 40 CFR Part 264 Subpart BB: Air Emission Standards for Equipment Leaks *do* apply to certain equipment associated with the used parts washer solvent storage tank system. This equipment contains or contacts hazardous wastes with VOC concentrations greater than 10 percent by weight. The Subpart BB requirements apply to pumps, flanges, and valves which are part of the used parts washer solvent storage tank system. Figure 11.0-1 shows the specific equipment items which are considered to be in heavy liquid service for Subpart BB compliance. Compliance with the applicable portions of 40 CFR 264.1052 through 1063 will be achieved through implementation of the procedures detailed in Appendix H. This appendix also contains example forms which show the minimum information which Safety-Kleen will keep to comply with the recordkeeping requirements of 40 CFR 264.1064. Safety-Kleen will comply with the reporting requirements of 40 CFR 264.1065.

Safety-Kleen maintains an operating record in the facility. This record provides a place in which the required information is recorded under 40 CFR 264.1064. The forms and plans in Appendix H contain the necessary information.



EQUIPMENT SCHEDULE WASTE MINERAL SPIRITS

MARK	DESCRIPTION
1	
2	2" THREADED BALL VALVE
3	2" THREADED BALL VALVE
4	2" THREADED GATE VALVE
5	2" THREADED GATE VALVE
6	2" THREADED GATE VALVE
7	1 1/2" THREADED BALL VALVE
8	1 1/4" THREADED BALL VALVE
9	WASTE M.S. RECIRCULATION PUMP
10	1 1/2" THREADED BALL VALVE
11	1 1/4" THREADED BALL VALVE
12	WASTE M.S. RECIRCULATION PUMP
13	WASTE MINERAL SPIRITS PUMP
14	2" THREADED CHECK VALVE
15	3" THREADED INTERNAL EMERGENCY VALVE
16	3" FLANGED CONNECTION
17	3" FLANGED GATE VALVE
18	3" FLANGED CONNECTION
19	3" THREADED CHECK VALVE
20	3" THREADED GATE VALVE
21	1" THREADED BALL VALVE
22	1" THREADED BALL VALVE
23	2" CAM LOCK
24	2" CAM LOCK
25	
26	STRAINER ASSY.
27	3" CAM LOCK

GENERAL NOTES

1.) ACTUAL PIPING CONFIGURATION MAY VARY.

2.) NON-PERMITTED TANKS AND EQUIPMENT MAY CHANGE.

3

Figure 11.0-1

NO.	DESCRIPTION	BY	CHK	APPR	DATE
06	REMOVED WASTE ANTIFREEZE TANK & SCHEDULE REMOVED DUMPSTER & VALVES 1 & 25	MBH	KJM	DP	022195
05	ADDED TAGS 23, 24, 25, 26 & 27	MBH	KJM	-	120192
04	ADDED TAGS 21 & 22	MBH	KJM	-	111992
03	MISC. REVISIONS	JBC	TYJ	-	042192
02	ADDED VACUM VENT (TAG #34)	MBH	-	-	031192
01	REVISED GLYCOL PIPING & VALVES	MBH	-	-	012292

REVISIONS

TITLE

ENVIRONMENTAL PIPING SCHEMATIC FOR WASTE M.S. – EXISTING

Safety-Kleen Corp.
1000 NORTH RANDALL ROAD ELGIN, ILLINOIS 60123
PHONE (708)697-8460

SCALE	BY	CHKD	APPROVED	OPERATIONS	DATE
NTS	MBH	-	-	-	080291

SERVICE CENTER LOCATION	SC-DWG NUMBER	REV. NO.
TAMPA, FL.	316301-2003B	06

Appendix A

Site Photographs

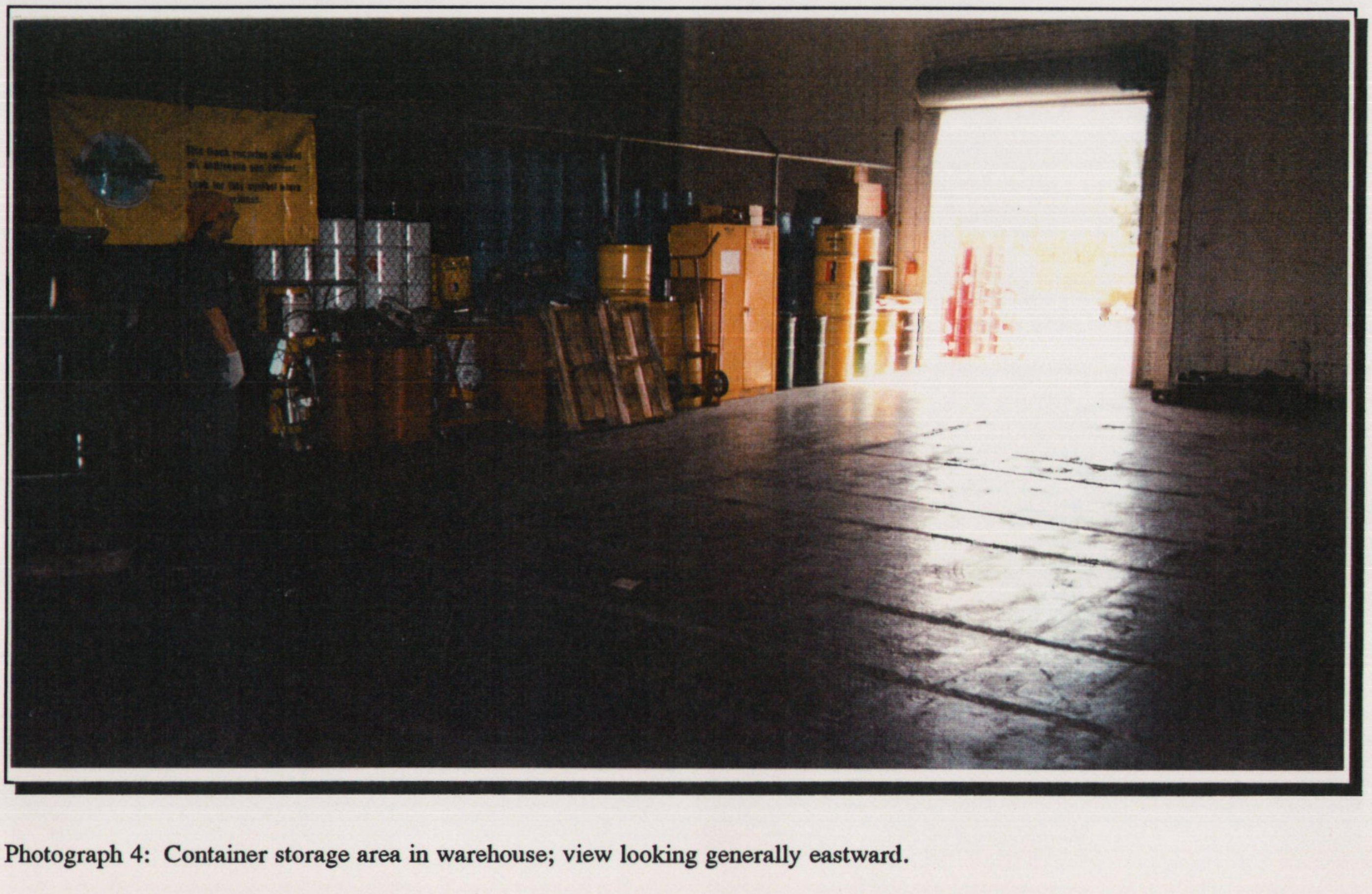
Safety-Kleen Corp. Facility
Medley, Florida

Photograph 1: Return/fill station; view looking northward.

Photograph 2: Containment sump beneath return/fill station; view looking northward beneath the grating.

Safety-Kleen Corp. Facility
Medley, Florida

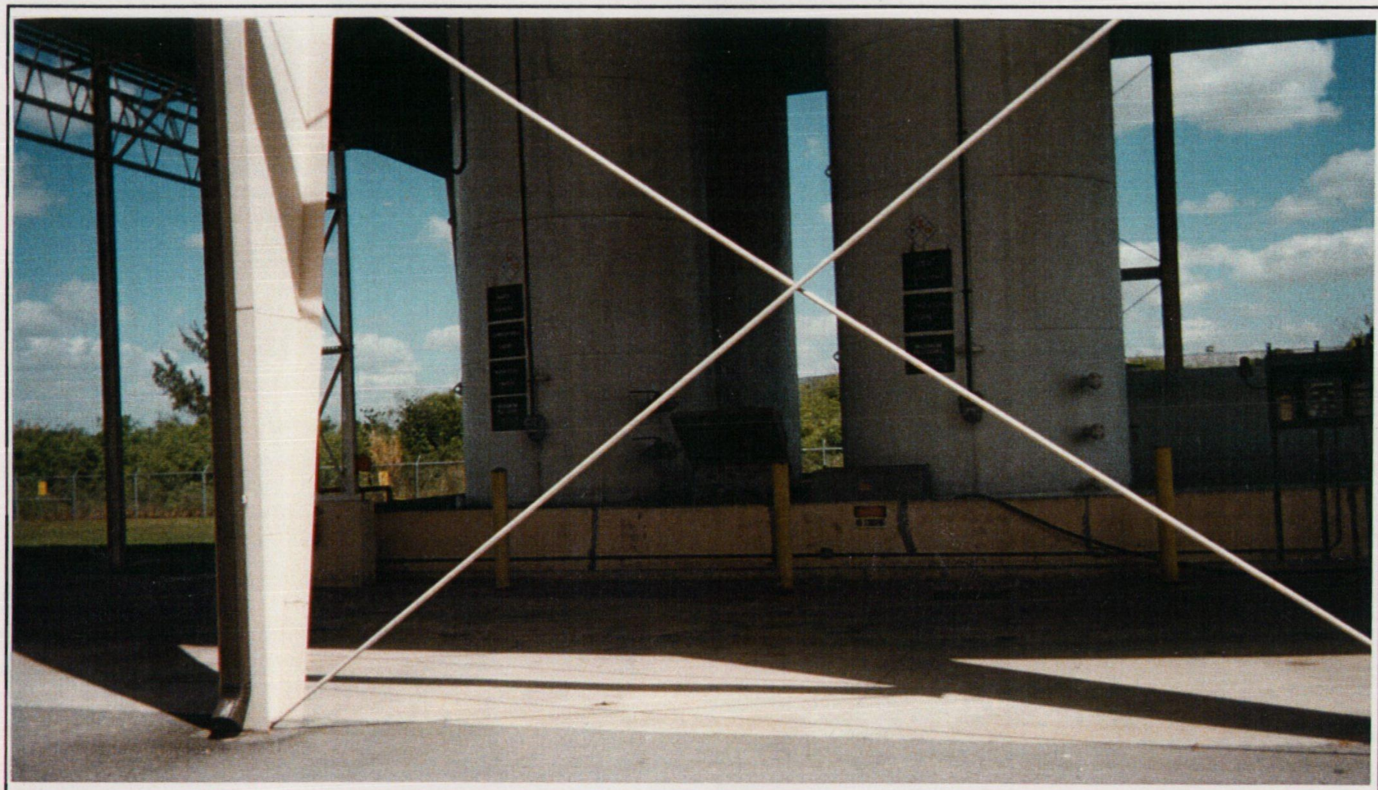
Photograph 3: Container storage area in warehouse; view looking toward southeastern corner of container storage area.



Photograph 4: Container storage area in warehouse; view looking generally eastward.

Safety-Kleen Corp. Facility
Medley, Florida

Photograph 5: Truck dock behind warehouse; view looking westward.



Photograph 6: Tank storage area; view looking northward.

Appendix B

Chemical Analysis Reports

safety-kleen.

1996
ANNUAL WASTE STREAM RECHARACTERIZATION

FINAL REPORT
12/16/96

safety-kleen.

1996
ANNUAL WASTE STREAM RECHARACTERIZATION

FINAL REPORT
12/16/96

1996
ANNUAL WASTE STREAM RECHARACTERIZATION SAMPLING SITE CODES

BI, Bismark, ND
BU, Buffalo, NY
CO-E, Englewood, CO
CO-GJ, Grand Junction, CO
CO-P, Pueblo, CO
DE, Denton, TX (Recycle Center)
DO, Dolton, IL (Recycle Center)
RE, Reedley, CA (Recycle Center)
FA, Fargo, ND
GA-C, Columbus, GA
GA-G, Garden City, GA
GA-M, Macon, GA
GA-m, Morrow, GA
GA-N, Norcross, GA
ID-B, Boise, ID
IL-D, Dolton, IL
KS-D, Dodge City, KS
KS-E, Edwardsville, KS
KS-W, Wichita, KS
LA-K, Kenner, LA
LA-P, Pineville, LA
MN-B, Blaine, MN
MS-J, Jackson, MS
NC-R, Raliegh, NC
ND-B, Bismark, ND
NE-GI, Grand Island, NE
NE-O, Omaha, NE
NJ-B, Bound Brook, NJ
NJ-N, Newark, NJ
NJ-S, Southampton, NJ
NM-A, Albuquerque, NM
NM-F, Farmington, NM
NY-A, Avon, NY
NY-C, Colonie, NY
NY-D, Dewitt, NY
NY-L, Lackawanna, NY
NY-N, N. Amityville, NY
NY-S, Syracuse, NY
NY-T, Thornwood, NY
NY-W, Woodside, NY
OK-T, Tulsa, OK
SC-G, Greer, SC
SD-S, Sioux Falls, SD
TECH CTR, SK Technical Center, Elk Grove Vlg.
WA-L, Lynnwood, WA
WA-S, Spokane, WA
WV-N, Nitro, WV
WV-W, Wheeling, WV

AQUEOUS BRAKE CLEANER

Physical Properties and TCLP Metals Analysis, ppm

LAB	SITE	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	4.37	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	4.66	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.19	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	2.62	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.31	3.73	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<0.40	0.21	3.28	<0.20	<0.35	0.02	<0.75	<0.15
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.24	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.14	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	5.92	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.36	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	2.42	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	0.96	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.09	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.25	<1.0	<2.0	5.85	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.15	1.62	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.7	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	1	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.55	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.52	3.28	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	3.03	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	KS-E	8.98	0.998	85*	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	KS-D	8.40	1.016	134*	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	KS-W	7.52	1.002	102*	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	WA-L	9.01	1	104	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	GA-C	9.08	0.993	126	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	GA-G	8.94	0.993	>200	<4.0	1.79	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5

AQUEOUS BRAKE CLEANER

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1
LAB	SITE										
SK-95	NJ-N	9.00	0.991	>200	<4.0	1.19	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	NJ-B	9.21	1.00	>200	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	ID-B	9.24	1.007	>200	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45
SK-95	NY-S	8.74	1.01	>200	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45
SK-95	NY-W	8.90	0.99	>200	<4.0	1.36	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	NY-A	8.93	1.002	>200	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45
SK-95	NJ-S	9.12	0.996	>200	<4.0	2.07	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	NY-T	7.56	0.995	>200	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	NY-C	9.01	0.996	>200	<4.0	1.36	<u>1.73</u>	<2.0	<4.0	<0.04	<0.45
SK-95	NY-L	9.01	1.01	>200	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	GA-m	9.08	0.099	<u>126</u>	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	NY-N	9.28	0.986	>200	<4.0	<1.0	<1.0	<2.0	<4.0	<0.04	<0.45
SK-95	GA-M	8.91	0.991	>200	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-96	GA-m	9.07	0.996	>200	<5.00	2.48	<0.500	<0.500	<4.00	<0.04	<0.45
SK-96	GA-M	9.16	0.99	>200	<5.00	0.83	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	GA-G	9.10	1	>142	<5.00	1.39	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	GA-N	8.83	0.98	**79**	<5.00	1.79	0.848	<0.500	<4.00	<0.040	<0.452
SK-96	GA-C	7.85	1	>200	<5.00	0.88	<0.50	<0.50	<4.00	<0.04	<0.45
SK-96	KS-W	9.12	0.99	>200	<5.00	0.838	<0.500	<0.500	<4.0	<0.040	<0.45
SK-96	KS-E	9.03	1	>200	<5.0	0.816	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	KS-D	8.41	1.02	>200	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	WA-L	9.15	0.99	142	<5.00	1.21	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	MO-C	9.34	1.01	>200	<5.00	1.03	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-L	7.65	1.04	>200	<5.00	0.722	<0.500	<0.500	<4.00	<0.040	<0.450
SK-96	NY-L	9.02	1.015	>200	<5.00	1.02	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-C	8.28	1.01	>200	<5.00	48.1	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-C	8.62	1.041	>200	<5.00	0.628	0.736	<0.500	<4.00	<0.040	<0.45
SK-96	NY-C	9.06	1.019	>200	<5.00	0.699	<u>2.24</u>	<0.500	<4.00	<0.040	<0.45
SK-96	NY-N	8.19	0.97	>200	<5.00	1.2	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-N	8.42	1.009	>200	<5.00	0.787	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-S	8.97	0.999	>200	<5.00	0.819	<0.500	<0.500	<4.00	<0.040	<0.45

AQUEOUS BRAKE CLEANER

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-96	NY-S	9.30	1.00	>200	<5.00	1.34	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	NY-S	8.97	1.00	>200	<5.00	4.02	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	NM-F	9.15	1.01	>200	<5.00	1.88	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NM-A	8.68	1.01	>200	<5.00	1.41	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	DE	8.26	0.99	151	<5.00	1.82	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	NE-G	8.9	1.01	>200	<5.00	0.8	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	NY-A	8.72	0.998	>200	<5.00	0.723	<0.500	<0.500	<4.00	<0.04	<0.45	<0.500
SK-96	NY-A	8.54	1.0	>200	>5.00	0.628	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NY-A	8.74	0.99	>200	<5.00	0.681	<0.500	<0.500	<4.00	<0.04	<0.45	<0.500
Total # 0f Samples		71										
# of Hits		0	0	4	0	0	9	0	1	0	0	0
	MAX	9.34	1.041	151	0	48.1	5.92	0	5.85	0.02	0	0
	MIN	7.52	0.099	104	0	0.21	0.736	0	5.85	0.02	0	0

*RESAMPLE CONFIRMS FLASH POINT RESULT >200.

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-95	NJ-N	<0.95	<0.72	<1.4	<1.9	<1.6	<0.62	<9.00	<0.90	<0.45	<0.59
SK-95	NJ-B	<1.90	<1.40	<2.80	<3.80	<3.20	<1.20	<18.00	<1.80	<0.90	<1.20
SK-95	ID-B	<1.0	<1.0	<2.0	<3.0	<3.0	<2.0	<0.60	<2.0	<2.0	<2.0
SK-95	NY-S	<1.4	<1.2	<1.7	<3.0	<3.0	<1.6	<0.60	<1.8	<1.8	<1.9
SK-95	NY-W	<0.700	<0.580	<0.850	<1.50	<1.50	<0.800	<0.300	<0.900	<0.900	<0.950
SK-95	NY-A	<1.4	<1.2	<1.7	<3.0	<3.0	<1.6	<0.6	<1.8	<1.8	<1.9
SK-95	NJ-S	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
SK-95	NY-T	<0.280	<0.230	<0.340	<0.590	<0.600	<0.320	<0.120	<0.360	<0.360	<0.380
SK-95	NY-C	<0.70	<0.58	<0.85	<1.5	<1.5	<5.6	<0.30	<0.90	<0.90	<0.95
SK-95	NY-L	<1.4	<1.2	<1.7	<3.0	<3.0	<1.6	<0.60	<1.8	<1.8	<1.9
SK-95	GA-m	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
SK-95	NY-N	<2.8	<2.3	<3.4	<5.9	<6.0	<3.2	<1.2	<3.6	<3.6	<3.8
SK-95	GA-M	<0.070	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
SK-96	GA-m	<14.0	<11.5	<17.0	<29.5	<30.0	<16.0	<6.00	<18.0	<18.0	<19.0
SK-96	GA-M	<0.450	<0.450	<0.500	<0.720	<0.720	<0.580	<0.780	<0.900	<0.480	<0.450
SK-96	GA-G	<14.0	<11.5	<17.0	<29.5	<30.0	<16.0	<6.00	<18.0	<18.0	<19.0
SK-96	GA-N	<0.900	<0.900	<1.00	<1.740	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
SK-96	GA-C	<0.85	<0.90	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.95	<0.90
SK-96	KS-W	<7.0	<7.0	<7.0	<7.0	<7.0	<7.0	<35	<35	<7.0	<7.0
SK-95	KS-E	<70*	<70*	<70*	<70*	<70*	<70*	<350*	<350*	<70*	<70*
SK-96	KS-D	<14.0	<11.5	<17.0	<29.5	<30.0	<16.0	<6.00	<18.0	<18.0	<19.0
SK-96	WA-L	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
SK-96	MO-C	<1.40	<1.20	<1.70	<3.00	<3.00	<1.60	<0.600	<1.80	<1.80	<1.90
SK-96	NY-L	<9.00	<9.00	<10.0	<14.5	<14.5	<11.5	<15.5	<18.0	<9.50	<9.00
SK-96	NY-L	<1.70	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
SK-96	NY-C	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
SK-96	NY-C	<1.70	**0.27**	**0.92**	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
SK-96	NY-C	<1.70	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
SK-96	NY-N	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
SK-96	NY-N	<1.70	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
SK-96	NY-S	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900

TCLP Volatiles Analysis, ppm

LAB	SITE	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.14	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.14	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.53	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.13	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.53	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.19	<0.10	<0.14
SK-95	TECH CTR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	29	<0.50	<0.50	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	2.2	<0.10	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.43	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**4.0**	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.11	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.91	**127**	**0.51**	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	9.6	<0.10	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.37	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.26	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.14
SK-95	TECH CTR	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	196	<5.0	<5.0	<7.0
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**61.4**	**20.5**	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**1.6**	0.25	<0.14
SK-95	TECH CTR	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	**5020**	<5.0	<7.0
SK-95	TECH CTR	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	**543**	<5.0	<7.0
SK-95	TECH CTR	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<1.2	<0.25	<0.25	<0.14
SK-95	KS-E	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	**56**	<5.0	<7.0
SK-95	KS-D	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	59	**2.4**	<1.0	<1.4
SK-95	KS-W	0.29	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	**301**	**348**	<0.10	<0.14
SK-95	WA-L	**12**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.4
SK-95	GA-C	<25	<25	<25	<25	<25	<25	<25	<125	**178**	<25	<35
SK-95	GA-G	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	**59**	**17**	<1.4

AQUEOUS BRAKE CLEANER

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	**SITE**											
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**33.1**	<0.100	<0.140
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**230**	**67.1**	<0.140
SK-96	NM-F	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	48.8	**0.93**	<0.100	<0.140
SK-96	NM-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	<0.100	<0.100	<0.140
SK-96	DE	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**35.6**	**5.80**	<0.140
SK-96	NE-G	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**0.92**	<0.100	<0.140
SK-95	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**1250**	<0.100	<0.140
SK-96	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**42.5**	<0.100	<0.140
SK-95	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**3200**	<0.100	<0.140
Total # 0f Samples		71										
# of Hits		**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**41**	**8**	**0**
	MAX	12	0	0	0	0	0	0	301	5020	67.1	0
	MIN	0.15	0	0	0	0	0	0	0.91	0.11	0.16	0

AQUEOUS PARTS CLEANER

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	**SITE**											
SK-96	TECH CTR	9.04	NA	>142	<5.00	0.619	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
TOTAL # OF SAMPLES		32										
	#OF HITS	0.00	0	0	0	0	6	0	1	0	0	0
	MAX	10.1	1.02	151	0	5.72	8.07	4.22	5.59	0	0	1.56
	MIN	6.23	0.996	151	0	0.55	0.929	0.561	4.64	0	0	1.56

AQUEOUS PARTS CLEANER

TCLP Semi Volatiles Analysis, ppm

LAB	SITE	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
SK-96	TECH CTR	<21.2	<20.0	<20.0	<20.9	<42.7	<22.2	<20.0	<20.0	<20.0	<21.0
TOTAL # OF SAMPLES		32									
	#OF HITS	0	0	0	0	0	0	0	0	0	0
	MAX	0	0	0	0	0	0	0	0	0	0
	MIN	0	0	0	0	0	0	0	0	0	0

AQUEOUS PARTS CLEANER

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	**SITE**											
SK-96	TECH CTR	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	0.305	<0.100	**0.852**	<0.100
TOTAL # OF SAMPLES		32										
	#OF HITS	0	0	0	0	0	0	0	0	**11**	1	0
	MAX	0	0	0	0	0.105	0	0	4.3	182	0.852	0
	MIN	0	0	0	0	0.105	0	0	0.305	0.12	0.42	0

DRY CLEANER FILTER POWDER

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-96	LA-K	N/A	N/A	N/A	<0.500	0.262	0.06	0.094	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-A	6.21	0.92	>200	<0.500	0.237	<0.050	0.069	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-A	6.20	1.02	>200	<0.500	0.168	<0.050	0.063	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-A	6.10	1.04	>200	<0.500	0.24	<0.050	0.075	<0.400	<0.0008	<0.600	<0.050
TOTAL # OF SAMPLES		35										
# of Hits		0	0	0	0	0	0	1	0	0	0	0
	MAX	7.27	1.66	0	0	0.661	0.129	9.49	0.488	0	0	0
	MIN	2.65	0.647	0	0	0.0296	0.052	0.058	0.488	0	0	0

TCLP Semi Volatiles Analysis, ppm

LAB	SITE	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
SK-96	LA-K	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-A	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
SK-96	NY-A	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
SK-96	NY-A	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
TOTAL # OF SAMPLES		35									
# of Hits		0	0	0	0	0	0	0	0	0	0
	MAX	0.14	0	0	0	0	0	0	0	0	0
	MIN	0.035	0	0	0	0	0	0	0	0	0

DRY CLEANER FILTER POWDER

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-96	LA-K	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	436	<0.100	<0.140
SK-96	NY-A	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	1090	243	<10.00	<14.0
SK-96	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	1030	<0.100	<0.140
SK-96	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	283	<0.100	<0.140
TOTAL # OF SAMPLES		35										
# of Hits		0	0	0	0	0	0	0	1	34	5	0
	MAX	0	0	0	0.11	0	0	0	1090	11200	2.9	0.14
	MIN	0	0	0	0.11	0	0	0	0.84	43.6	0.1	0.14

DRY CLEANER BOTTOMS

Physical Properties and TCLP Metals Analysis, ppm

LAB	SITE	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
SK-96	GA-N	4.39	1.20	>142	<0.500	0.11	<0.050	0.12	<0.400	<0.0008	<0.600	<0.05
SK-96	MO-C	5.49	1.29	>200	<0.500	0.105	<0.050	0.084	<0.400	<0.0008	<0.600	<0.050
SK-96	GA-C	5.77	1.33	>200	<5.00	1.6	<0.50	13.3	<4.00	0.048	<0.452	<0.50
SK-96	NY-L	5.70	1.25	>200	<5.00	0.87	<0.500	9.13	<4.00	<0.040	<0.452	<0.500
SK-96	NY-L	6.75	1.004	>200	<5.00	0.575	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	NY-L	6.75	1.005	>200	<5.00	0.697	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	GA-G	6.76	1	>142	<0.500	0.405	<0.050	0.07	<0.40	<0.0008	<0.600	<0.050
SK-96	MS-J	5.97	1.3	>200	<0.500	0.224	<0.050	0.12	<0.400	<0.0008	<0.600	<0.050
SK-96	NM-A	7.22	0.98	155	<5.00	9.41	<0.500	12.8	48.5	<0.040	<0.45	0.986
SK-96	NM-A	5.88	0.85	>200	<0.500	0.366	<0.050	0.08	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-S	5.01	1.13	136	<5.00	51.1	2.77	128	56	0.22	<0.452	0.618
SK-96	NY-S	6.40	0.9	>200	<0.500	0.112	<0.050	0.096	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-S	2.83	1.15	>200	<5.00	100	5.1	458	72.2	0.14	0.51	2.29
SK-96	NE-GI	4.10	1.05	>200	<0.500	0.848	<0.050	0.966	0.611	<0.0008	<0.600	<0.050
SK-96	NE-G	4.66	1.315	>200	<0.500	0.407	<0.050	0.738	<0.400	<0.0008	<0.600	<0.050
SK-96	SC-G	6.65	1.39	153	<5.00	1.19	<0.500	5.03	<4.00	<0.040	<0.452	<0.501
SK-96	NY-N	6.83	1.29	>200	<5.00	1.27	<0.500	2.65	<4.00	<0.040	<0.45	<0.500
SK-96	NY-N	6.30	1.46	>200	<4.33	0.45	<0.430	1.04	<3.46	<0.0341	<0.470	<0.430
SK-96	NY-N	2.59	1.424	>200	<5.00	<0.500	<0.500	9.82	<4.00	<0.040	<0.45	<0.500
SK-96	NY-N	6.58	1.425	>200	<5.00	1.95	<0.500	8.12	<4.00	<0.040	<0.45	<0.500
SK-96	NY-N	5.63	1.492	>200	<0.500	0.14	<0.050	0.106	<0.400	<0.0008	<0.600	<0.050
SK-96	LA-K	4.65	1.22	>200	<0.500	0.209	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	LA-P	6.38	1.3	>200	<5.00	0.545	<0.500	4.26	<4.00	<0.040	<0.452	<0.500
SK-96	NY-A	5.69	1.33	>200	<0.500	0.595	0.104	1.1	0.4	<0.0008	<0.600	<0.050
SK-96	NY-A	4.82	1.24	>200	<5.00	35.5	4.37	602	79	0.05	<0.45	<0.500
SK-96	NY-A	6.19	1.37	>200	<0.500	0.512	<0.050	0.332	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-C	8.01	1.241	>200	<5.00	0.591	<0.500	6.65	<4.00	<0.040	<0.452	<0.500
SK-96	NY-C	5.20	1.242	>200	<0.500	0.99	<0.050	0.989	0.457	<0.0008	<0.600	<0.050
SK-96	NY-C	5.16	1.222	>200	<5.00	2.62	<0.500	98.7	<4.00	0.042	<0.452	0.855
SK-96	NE-O	9.29	1.31	>200	<5.00	2.07	1.11	7.45	5.9	<0.040	<0.45	<0.500
SK-96	DE	7.82	1.03	>150	<5.00	0.723	<0.500	<0.500	<4.00	<0.040	<0.452	<0.050

DRY CLEANER BOTTOMS

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-95	CO-E/AC	<190	<144	<272	<384	<312	<124	<1790	<180	<90	<118
SK-95	SD-S	<0.048	<0.036	<0.068	<0.096	<0.078	<0.031	<0.449	<0.045	<0.023	<0.030
SK-95	KS-W	<0.572	<0.440	<0.440	<1.0	<1.2	<0.680	<3.5	<1.4	<0.400	<1.4
SK-95	KS-E	<0.048	<0.036	<0.068	<0.096	<0.078	<0.031	<0.449	<0.045	<0.023	<0.030
SK-95	GA-C	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	GA-G	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	NJ-N	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	LA-K	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	ID-B	<0.140	<0.120	<0.170	<0.300	<0.300	<0.160	<0.060	<0.180	<0.180	<0.190
SK-95	LA-P	0.18	<0.058	<0.085	<0.150	<0.150	0.14	<0.030	<0.090	<0.090	<0.095
SK-95	NY-S	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-W	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NM-A	<0.070	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
SK-95	NY-A	<0.028	<0.023	<0.034	<0.059	<0.060	<0.032	<0.012	<0.036	<0.036	<0.038
SK-95	NJ-S	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	NY-C	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-N	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-T	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-L	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-m	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	NE-O	<0.700	<0.580	<0.850	<1.50	<1.50	<0.800	<0.300	<0.900	<0.900	<0.950
SK-95	NE-GI	<0.040	<0.044	<0.044	<0.100	<0.120	<0.068	<0.350	<0.140	<0.040	<0.140
SK-95	DE	0.072	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
SK-95	MS-J	<2.8	<2.3	<3.4	<5.9	<6.0	<3.2	<1.2	<3.6	<3.6	<3.8
SK-95	GA-N	<0.110	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-96	CO-E/AC	<0.07	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
SK-96	DE	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	SD-S	<2.80	<2.30	<3.40	<5.90	<6.0	<3.20	<1.20	<3.60	<3.60	<3.80
SK-96	KS-E	<1.40	<1.20	<1.70	<3.00	<3.00	<1.60	<0.600	<1.80	<1.80	<1.90
SK-96	KS-W	<2.80	<2.30	<3.40	<5.90	<6.00	<3.20	<1.20	<3.60	<3.60	<3.80
SK-96	GA-m	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380

TCLP Semi Volatiles Analysis, ppm

LAB	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-96	NY-N	1.03	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
TOTAL # OF SAMPLES		61									
	#OF HITS	0	0	0	0	0	0	0	0	0	0
	MAX	1.03	0	0	0	0	0.14	0	0	0.95	0
	MIN	0.072	0	0	0	0	0.14	0	0	0.95	0

DRY CLEANER BOTTOMS

TCLP Volatiles Analysis, ppm

LAB	SITE	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
SK-95	GA-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	2.3	**442**	<0.100	<0.140
SK-96	SK-96	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**171**	<0.100	<0.140
SK-96	GA-C	<2.00	<2.00	<2.00	2.4	**10.2**	<2.00	<4.00	13.2	**18700**	**4.1**	<2.00
SK-96	NY-L	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<40.0	<100	**78400**	**25.9**	<20.0
SK-96	NY-L	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<50.0	**103**	<10.00	<14.0
SK-96	NY-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**24.5**	**1.5**	<0.140
SK-96	GA-G	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<50.0	**191**	<10.0	<14.0
SK-96	MS-J	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**673**	0.400	<0.140
SK-96	NM-A	<2.00	<2.00	<2.00	<2.00	3.8	<2.00	<4.00	12.7	**11200**	**4.8**	<2.00
SK-96	NM-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**327**	0.13	<0.140
SK-96	NY-S	<20.0	<20.0	<20	<20.0	<20.0	<20.0	<40.0	<100	**66800**	**1060**	<20.0
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**220**	0.17	<0.140
SK-96	NY-S	<20.0	<20.0	<20.0	<20.0	34.8	<20.0	<40.0	<10.0	**99500**	**393**	<20.0
SK-96	NE-GI	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<125	**3630**	<25.0	<35.0
SK-96	NE-G	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**476**	0.42	<0.140
SK-96	SC-G	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<40.0	<100	**59200**	**166**	<20.0
SK-96	NY-N	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	<10.00	**13000**	**4.6**	<2.00
SK-96	NY-N	<3.59	<3.59	<3.59	<3.59	<3.59	<3.59	<3.59	<17.9	**259**	**3.73**	<5.02
SK-96	NY-N	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<40.0	<100.0	**113000**	**30.4**	<20.0
SK-96	NY-N	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<40.0	<100.0	**131000**	<20.0	<20.0
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**151**	0.27	<0.140
SK-96	LA-K	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**526**	0.39	<0.140
SK-96	LA-P	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<40.0	<100	**58900**	**364**	<20.0
SK-96	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**301**	0.33	<0.140
SK-96	NY-A	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<100.0	**154000**	**388**	<20.0
SK-96	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**121**	**0.8**	<0.140
SK-96	NY-C	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<40.0	<100.0	**610000**	**899**	<20.0
SK-96	NY-C	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**2520**	<0.100	<0.140
SK-96	NY-C	<20.0	<20.0	<20.0	<20.0	**73.8**	<20.0	<40.0	<100.0	**118000**	**111**	<20.0
SK-96	NE-O	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	11.1	**102000**	**760**	<2.00
SK-96	DE	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<50.0	**81**	<10.0	<14.0

PAINT WASTE (16s)

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-95	CO-E/AC	6	0.859	<70	<0.40	2.46	<0.10	0.26	<0.35	<0.0008	<0.75	<0.15
SK-95	KS-E	5.40	0.859	<55	<0.40	0.73	<0.10	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	KS-W	5.93	0.884	<70	<0.40	3.1	<0.10	1.36	<0.35	<0.0008	<0.75	<0.15
SK-95	GA-C	7.70	0.892	<74	<0.4	1.16	<0.10	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	LA-P	6.35	0.889	<70	<0.40	0.81	<0.10	16.51	<0.35	<0.0008	<0.75	<0.15
SK-95	NY-S	4.98	0.925	<70	<0.40	<0.10	<0.10	4.04	<0.35	<0.0008	<0.75	<0.15
SK-95	LA-K	6.13	0.932	<80	<0.40	0.159	<0.10	4.45	0.5	<0.0008	<0.75	<0.15
SK-95	MS-J	5.67	0.877	<70	<4.0	<1.0	<1.0	6.41	<4.0	<0.04	<0.45	<2.0
SK-95	NY-A	6.60	0.904	<70	<0.40	0.31	<0.10	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	NJ-S	4.73	0.867	<70	<4.0	9.07	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NY-T	6.83	0.880	<60	<4.0	11.54	<1.0	5.41	<3.5	<0.04	<0.45	<1.5
SK-95	GA-N	6.19	0.830	<70	<4.0	1.49	<1.0	<2.0	4.97	<0.04	<0.45	<1.5
SK-95	NM-A	6.46	0.895	<70	<4.0	0.886	<1.0	<0.20	<4.0	<0.0008	<0.75	<0.15
SK-95	NY-N	6.06	0.864	<70	<4.0	11.7	<1.0	7.29	<4.0	<0.04	<0.45	<2.0
SK-95	DE	5.86	0.844	<70	<0.40	0.515	<0.10	0.51	<0.35	<0.0008	<0.75	<0.15
SK-95	NE-O	5.33	0.869	<70	<0.40	1.22	<0.10	0.29	<0.35	<0.0008	<0.75	<0.15
SK-95	NE-GI	5.83	0.869	<70	<0.40	2.49	<0.10	1.1	<0.35	<0.0008	<0.75	<0.15
SK-95	NY-L	5.50	0.843	<75	<4.0	15.1	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	GA-m	7.70	0.892	<74	<0.4	1.16	<0.10	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	NY-W	6.48	NA	<60	<0.40	1.68	<0.10	3.94	<0.35	<0.0008	<0.75	<0.15
SK-95	NY-C	6.40	0.856	<70	<4.0	62.2	<1.0	31	156	<0.04	<0.45	<2.0
SK-95	GA-N	5.34	0.880	69	<5.00	5.02	<0.500	2.32	<4.00	<0.04	<0.45	<0.500
SK-96	MO-C	6.93	0.943	69	<0.500	2.83	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	KS-E	7.81	0.85	69	<5.00	5.04	<0.500	2.48	<4.00	<0.040	<0.45	<0.500
SK-96	KS-W	6.77	0.88	69	<5.00	3.25	<0.500	7.06	26.4	<0.040	<0.45	<0.500
SK-96	CO-E/AC	7.28	1.004	<70	<0.500	0.997	<0.050	3.99	<0.400	<0.0008	<0.600	<0.050
SK-96	GA-C	6.22	0.9	64	<5.00	3.21	<0.50	3.39	<4.00	<0.04	<0.45	<0.50
SK-96	NY-C	6.01	0.88	69	<5.00	221	<0.500	158	38.4	<0.040	<0.450	<0.500
SK-96	NY-C	6.27	0.87	65	<5.00	27.1	<0.500	5.15	8.48	<0.040	<0.452	<0.500
SK-96	NY-C	5.91	0.881	69	<5.00	38.2	<0.500	2.63	<4.00	<0.040	<0.45	<0.500
SK-96	NY-L	6.66	0.85	<70	<0.500	2.26	<0.050	0.616	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-L	6.92	0.892	70	<5.00	<0.500	<0.500	2.98	<4.00	<0.040	<0.45	<0.500

PAINT WASTE (16s)

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-95	CO-E/AC	<190	<144	<272	<384	<312	<124	<1790	<180	<90	<118
SK-95	KS-E	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	KS-W	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	GA-C	<0.048	<0.036	<0.070	<0.095	<0.080	0.59	<0.45	2.9	<0.022	<0.030
SK-95	LA-P	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-S	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	LA-K	0.53	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	MS-J	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-A	<0.110	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	NJ-S	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	NY-T	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-N	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	NM-A	<1.4	<1.2	<1.7	<3.0	<3.0	<1.6	<0.60	<1.8	<1.8	<1.9
SK-95	NY-N	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	DE	<0.070	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<1.8	<0.090	<0.095
SK-95	NE-O	0.72	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	NE-GI	<0.110	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	NY-L	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-m	<0.048	<0.036	<0.070	<0.095	<0.080	0.59	<0.45	2.9	<0.022	<0.030
SK-95	NY-W	<0.700	<0.580	<0.850	<1.50	<1.50	<0.800	<0.300	<0.900	<0.900	<0.950
SK-95	NY-C	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-N	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	MO-C	<0.070	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
SK-96	KS-E	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	KS-W	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	CO-E/AC	<0.056	<0.046	<0.068	<0.120	<0.120	<0.064	<0.024	0.28	<0.072	<0.076
SK-96	GA-C	<170	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-C	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-C	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-C	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-L	0.14	0.067	0.084	<0.072	<0.072	<0.058	<0.078	<0.090	0.07	0.074
SK-96	NY-L	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180

PAINT WASTE (16s)

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-95	CO-E/AC	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1440	0.19	<0.10	<0.14
SK-95	KS-E	0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1230	<0.10	<0.10	<0.14
SK-95	KS-W	<100	<100	<100	<100	<100	<100	<100	12400	<100	<100	<140
SK-95	GA-C	0.37	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1020	<0.10	<0.10	<0.14
SK-95	LA-P	0.17	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1480	<0.10	<0.10	<0.14
SK-95	NY-S	0.24	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	2610	<0.10	<0.10	<0.14
SK-95	LA-K	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1460	<0.10	<0.10	<0.14
SK-95	MS-J	<100	<100	<100	<100	<100	<100	<100	12000	<100	<100	<140
SK-95	NY-A	0.15	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	256	0.87	<0.10	<0.14
SK-95	NJ-S	104	<100	<100	<100	<100	<100	<100	27900	<100	<100	<140
SK-95	NY-T	<100	<100	<100	<100	<100	<100	<100	20500	<100	<100	<140
SK-95	GA-N	<100	<100	<100	<100	<100	<100	<100	12800	<100	<100	<140
SK-95	NM-A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1410	0.28	<0.10	<0.14
SK-95	NY-N	<100	<100	<100	<100	<100	<100	<100	54900	<100	<100	<140
SK-95	DE	<25	<25	<25	<25	<25	<25	<25	3020	<25	<25	<0.14
SK-95	NE-O	0.18	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	640	<0.10	<0.10	<0.14
SK-95	NE-GI	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	2180	<0.25	<0.25	<0.35
SK-95	NY-L	<100	<100	<100	<100	<100	<100	<100	12700	<100	<100	<140
SK-95	GA-m	0.37	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1020	<0.10	<0.10	<0.14
SK-95	NY-W	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	229	<0.005	<0.005	<0.005
SK-95	NY-C	<100	<100	<100	<100	<100	<100	<100	10800	<100	<100	<140
SK-95	GA-N	539	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	16400	54.6	2.40	<2.00
SK-96	SK-96	0.14	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	926	0.34	<0.100	<0.140
SK-96	KS-E	24.8	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	15000	6.3	4.50	<2.00
SK-96	KS-W	31	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	28200	3.2	<2.00	<2.00
SK-96	CO-E/AC	0.69	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	245	0.17	<0.10	<0.14
SK-96	GA-C	56.8	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	31700	90.5	2.9	<2.00
SK-96	NY-C	<2.00	<2.00	3.2	<2.00	2.5	<2.00	<4.00	27100	4.4	4.8	<2.00
SK-96	NY-C	144	<100	<100	<100	<100	<100	<100	388000	<100	<100	<140
SK-96	NY-C	112	<20.0	<20.0	<20.0	<20.0	<20.0	<40.0	43100	55.1	<20.0	<20.0
SK-96	NY-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	694	<0.100	<0.100	<0.140
SK-96	NY-L	78.9	<20.0	<20.0	<20.0	<20.0	<20.0	<40.0	50900	573	30.4	<20.0

PAINT GUN CLEANER (5s)

Physical Properties and TCLP Metals Analysis, ppm

LAB	SITE	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
SK-95	CO-E/AC	8.02	0.842	**<70**	<0.40	11.18	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	SD-S	7.11	0.848	**<65**	<4.00	6.62	<1.00	**9.60**	**24.4**	<0.04	<0.45	<1.5
SK-95	KS-E	5.1	0.825	**<55**	<4.0	1.84	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	KS-W	6.11	0.846	**<70**	<4.0	1.14	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	GA-C	4.18	0.840	**<70**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NJ-N	4.64	0.838	**<70**	<4.0	3.54	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	ID-B	7.47	0.806	**<70**	<4.0	<1.0	<1.0	<2.0	<4.0	<0.04	<0.45	<2.0
SK-95	LA-K	5.57	0.83	**<70**	<4.00	<1.00	<1.00	<2.00	<4.00	<0.04	<0.45	<2.0
SK-95	NM-A	4.82	0.819	**<70**	<4.0	<1.0	<1.0	<2.0	<4.0	<0.04	<0.45	<2.0
SK-95	LA-P	6.99	0.842	**<70**	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45	<1.0
SK-95	NY-S	7.07	0.849	**<60**	<4.0	<1.0	<1.0	2.22	<4.0	<0.04	<0.45	<2.0
SK-95	NY-W	5.94	0.858	**<70**	<5.0	38.85	<1.0	<2.0	<5.0	<0.04	<0.45	<1.0
SK-95	MS-J	5.69	0.840	**<70**	<4.0	6.75	<1.0	<2.0	<4.0	<0.04	<0.45	<2.0
SK-95	NY-A	5.35	0.842	**<70**	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45	<1.0
SK-95	NJ-S	6.20	0.828	**<70**	<4.0	<1.0	<1.0	<2.0	4.28	<0.04	<0.45	<1.5
SK-95	NY-T	4.58	0.830	**<75**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	GA-N	6.31	0.830	**<75**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	DE	5.66	0.811	**<70**	<4.0	<1.0	<1.0	<2.0	4.42	<0.04	<0.45	<1.5
SK-95	NE-O	5.80	0.862	**<70**	<0.40	1.23	<0.10	**6.88**	<0.35	<0.0008	<0.75	<0.15
SK-95	NE-GI	5.12	0.839	**<70**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NY-L	7.29	0.864	**<75**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	GA-m	4.18	0.840	**<70**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NY-C	5.42	0.859	**<70**	<4.0	6.78	<1.0	**5.43**	**22.4**	<0.0008	<0.45	<1.5
SK-95	NY-N	5.42	0.825	**<70**	<4.0	3.89	<1.0	**21.4**	**77.1**	<0.04	<0.45	<1.5
SK-96	SD-S	5.71	0.83	**<70**	<5.00	0.55	<0.500	<0.500	<4.00	<0.040	<0.45	<0.050
SK-96	KS-E	7.22	0.84	**69**	<5.00	0.65	<0.500	<0.500	<4.0	<0.040	<0.45	<0.500
SK-96	KS-W	5.66	0.83	**69**	<5.00	1.89	<0.500	0.666	<4.0	<0.040	<0.45	<0.500
SK-96	GA-N	4.32	0.84	**69**	<5.00	1.28	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	MO-C	6.53	0.85	**69**	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	CO-E/AC	7.36	0.84	**<70**	<5.00	6.35	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	GA-C	4.90	0.830	**<70**	<5.00	<0.50	0.52	0.5	<4.00	<0.04	<0.45	<0.50

PAINT GUN CLEANER (5s)

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-95	CO-E/AC	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	SD-S	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	KS-E	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	KS-W	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	GA-C	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	NJ-N	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	ID-B	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	LA-K	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NM-A	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	LA-P	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-S	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-W	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	MS-J	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-A	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NJ-S	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	NY-T	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	GA-N	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	DE	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NE-O	<0.110	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	NE-GI	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-L	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-m	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	NY-C	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-N	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	SD-S	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	KS-E	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	KS-W	<2000	<2000	<2000	<2000	<2000	<2000	<10000	<2000	<2000	<2000
SK-96	GA-N	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	MO-C	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	CO-E/AC	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	GA-C	<170	<180	<200	<290	<290	<230	<310	<360	<190	<180

PAINT GUN CLEANER (5s)

TCLP Volatiles Analysis, ppm

LAB	Parameter / SITE	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
SK-95	CO-E/AC	<250	<250	<250	<250	<250	<250	<250	**49200**	<250	<250	<250
SK-95	SD-S	<100	<100	<100	<100	<100	<100	<100	**56600**	**156**	**138**	<140
SK-95	KS-E	<100	<100	<100	<100	<100	<100	<100	**65800**	**134**	**209**	<140
SK-95	KS-W	<100	<100	<100	<100	<100	<100	<100	**68500**	<100	<100	<140
SK-95	GA-C	<100	<100	<100	<100	<100	<100	<100	**92700**	<100	<100	<140
SK-95	NJ-N	<100	<100	<100	<100	<100	<100	<100	**63400**	<100	<100	<140
SK-95	ID-B	<1000	<1000	<1000	<1000	<1000	<1000	<1000	**13700**	<1000	<1000	<1400
SK-95	LA-K	<100	<100	<100	<100	<100	<100	<100	**37900**	<100	<100	<140
SK-95	NM-A	<1000	<1000	<1000	<1000	<1000	<1000	<1000	**61400**	<1000	<1000	<1.40
SK-95	LA-P	<100	<100	<100	<100	<100	<100	<100	**22100**	<100	<100	<140
SK-95	NY-S	<100	<100	<100	<100	<100	<100	<100	**36200**	**119**	<100	<140
SK-95	NY-W	<1000	<1000	<1000	<1000	<1000	<1000	<1000	**30800**	<1000	<1000	<1400
SK-95	MS-J	<250	<250	<250	<250	<250	<250	<250	**26000**	<250	<250	<350
SK-95	NY-A	**367**	<100	<100	<100	<100	<100	<100	**246000**	**491**	**194**	<140
SK-95	NJ-S	<100	<100	<100	<100	<100	<100	<100	**150000**	<100	<100	<140
SK-95	NY-T	**204**	<100	<100	<100	<100	<100	<100	**76700**	<100	<100	<140
SK-95	GA-N	<1000	<1000	<1000	<1000	<1000	<1000	<1000	**40700**	<1000	<1000	<1400
SK-95	DE	<1000	<1000	<1000	<1000	<1000	<1000	<1000	**50900**	<1000	<1000	<1400
SK-95	NE-O	0.24	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	**1920**	0.17	0.34	<0.14
SK-95	NE-GI	<50	<50	<50	<50	<50	<50	<50	**52800**	**161**	**90**	<70
SK-95	NY-L	**117**	<100	<100	<100	<100	<100	<100	**23500**	**294**	<100	<140
SK-95	GA-m	<100	<100	<100	<100	<100	<100	<100	**92700**	<100	<100	<140
SK-95	NY-C	<100	<100	<100	<100	<100	<100	<100	**29900**	**133**	<100	<140
SK-95	NY-N	<100	<100	<100	<100	<100	<100	<100	**33600**	<100	<100	<140
SK-96	SD-S	**91.2**	<2.00	3.2	**28**	<2.00	**5.2**	**6.1**	**54000**	**316**	**226**	<2.00
SK-96	KS-E	**84.7**	<2.0	2.8	**26.1**	<2.00	**5.6**	**6.6**	**92600**	**295**	**237**	<2.00
SK-96	KS-W	**51.5**	<2.0	<2.0	2.8	<2.00	<2.00	<4.00	**51500**	**84.7**	**11.3**	<2.00
SK-96	GA-N	**102**	<2.00	<2.00	2.50	<2.00	**2.10**	<4.00	**48700**	**82.7**	**136**	<2.00
SK-96	MO-C	**71.4**	**2.9**	2.8	**13.4**	<2.00	**4.00**	**6.4**	**70900**	**79.2**	**98.3**	<2.00
SK-96	CO-E/AC	**37.1**	<2.00	<2.00	2.00	<2.00	<2.00	<4.00	**40000**	**57.4**	**6.9**	<2.00
SK-96	GA-C	**139**	<2.00	2.5	3.2	2.2	**3.1**	<4.00	**68300**	**64.9**	**42.1**	<2.00

PARTS WASHER SOLVENT 105

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-95	CO-E-DE	8.06	0.81	141	<0.40	1.71	**1.02**	<2.0	**7.97**	<0.04	<0.45	<1.5
SK-95	BI	8.03	0.79	**128**	<4.00	3.56	**2.88**	<2.00	**8.81**	<0.04	<0.45	<1.5
SK-95	CO-GJ-RE	7.64	0.8	**131**	<0.40	1.71	<1.0	<2.0	**10.67**	<0.04	<0.45	<1.5
SK-95	CO-P-DE	8.8	0.811	143	<0.40	1.31	<1.0	<2.0	**5.14**	<0.04	<0.45	<1.5
SK-95	FA	7.17	0.811	>142	<4.00	1.8	<1.00	<2.00	**3.88**	<0.04	<0.452	<1.5
SK-95	KS-D	6.84	0.792	>142	<4.0	1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	KS-E	6.75	0.789	**138**	<4.0	3.94	**1.24**	<2.0	**5.16**	<0.04	<0.45	<1.5
SK-95	KS-W	7.13	0.803	144	<4.0	1.26	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	SD-S	7.44	0.795	**134**	<4.00	1.48	**1.32**	<2.00	**11.64**	<0.04	<0.45	<1.5
SK-95	WA-S	7.29	0.812	>142	<4.0	1.88	<1.0	<2.0	**7.43**	<0.04	<0.45	<1.5
SK-95	GA-C	5.35	0.805	148	<4.0	1.3	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	GA-G	4.78	0.783	**137**	<4.0	<1.0	<1.0	<2.0	**13.82**	<0.04	<0.45	<1.5
SK-95	NJ-N	8.36	0.792	**132**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NJ-B	8.84	0.788	**139**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	DE	8.43	0.80	145	<5.0	<20	<1.0	<2.0	**13.49**	<0.04	<0.45	<1.0
SK-95	LA-K	7.29	0.799	146	<4.00	1.98	<1.00	<2.00	<4.00	<0.04	<0.45	<2.0
SK-95	LA-P	6.90	0.789	144	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45	<1.0
SK-95	NY-S	5.44	0.807	**138**	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45	<1.0
SK-95	NY-W	7.28	0.78	**130**	<4.0	1.51	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	ID-B	8.02	0.81	**139**	<4.0	5.97	<1.0	<2.0	**5.48**	<0.04	<0.45	<1.5
SK-95	DO	7.76	0.83	**138**	<4.0	1.59	<1.0	<2.0	**8.65**	<0.04	<0.45	<2.0
SK-95	NY-A	7.31	0.192	140	<4.0	1.23	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NJ-S	7.36	0.798	**137**	<4.0	<1.0	<1.0	<2.0	<3.5	0.04	<0.45	<1.5
SK-95	NY-T	7.89	0.804	**120**	<4.0	1.25	<1.0	<2.0	**13.9**	<0.04	<0.45	<1.5
SK-95	GA-N	3.98	0.780	148	<4.0	2.0	<1.0	<2.0	3.83	<0.04	<0.45	<1.5
SK-95	NM-F	8.95	0.787	**120**	<4.0	<1.0	<1.0	<2.0	**5.29**	<0.04	<0.45	<2.0
SK-95	MS-J	6.49	0.789	149	<4.0	<1.0	<1.0	<2.0	<4.0	<0.04	<0.45	<2.0
SK-95	GA-M	7.88	0.786	143	<4.0	2.09	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NY-L	6.57	0.799	140	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	GA-m	5.35	0.805	148	<4.0	1.3	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5

PARTS WASHER SOLVENT 105

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-96	LA-P	7.12	0.784	147	<5.00	<0.500	0.503	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	DE	6.37	0.83	155	<5.00	3.73	1.39	0.933	45.2	<0.040	<0.452	<0.500
SK-96	NE-O	8.33	0.794	140	<5.00	2.17	1.22	0.893	6.73	<0.040	<0.452	<0.500
SK-96	DO	5.09	0.81	130	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	DO	7.67	1.05	>200	<5.00	4.84	1.40	0.971	15.2	<0.040	<0.45	<0.500
SK-96	MN-E	7.46	0.78	156	<5.00	<0.500	1.64	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	MN-E	8.06	0.81	136	<5.00	1.43	1.01	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	MN-E	7.61	0.8	136	<5.00	1.31	0.752	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	LA-K	7.17	0.792	160	<5.00	5.21	<0.500	0.561	<4.00	<0.040	<0.45	<0.500
SK-96	SC-G	8.33	0.8	154	<5.00	0.578	1.75	0.618	<4.00	<0.040	<0.452	<0.500
	UT-S											
SK-96	NY-A	5.60	0.812	120	<5.00	<0.500	<0.500	3.32	5.55	<0.04	<0.45	<0.500
SK-96	NY-A	7.35	0.801	126	<5.00	0.542	<0.500	<0.500	6.18	<0.04	<0.45	<0.500
SK-96	MN-B	7.72	0.8	138	<5.00	1.53	0.91	<0.500	8.3	<0.040	<0.452	<0.500
SK-96	MN-B	8.23	0.82	112	<5.00	1.56	0.551	<0.500	4.91	<0.040	<0.452	<0.500
SK-96	NE-GI	8.57	0.803	135	<5.00	2.91	0.734	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	CO-E-DE	7.58	0.810	147	<5.00	2.88	0.83	<0.500	7.83	<0.040	<0.45	<0.500
SK-96	CO-P-DE	8.44	0.81	152	<5.00	1.74	<0.500	<0.500	6.64	<0.040	<0.452	<0.500
SK-96	CO-GJ-RE	6.71	0.800	144	<5.00	0.89	0.67	<0.500	11.4	<0.040	<0.45	<0.500
SK-96	NE-G	8.69	0.831	148	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
Total # of Samples		81										
# of Hits		0	0	40	0	0	12	0	37	0	0	0
	MAX	8.95	1.053	160	0	9.76	5.71	3.32	250	0.04	0	0
	MIN	3.98	0.192	112	0	0.537	0.503	0.515	3.83	0.04	0	0

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-95	NY-C	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-N	<280	<230	<340	<590	<600	<2220	<120	<360	<360	<380
SK-95	NE-O	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NE-GI	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	DE	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	MN-B	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	ND-F	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	KS-E	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	KS-W	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	SD-S	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	KS-D	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	GA-G	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	GA-m	<280	<230	<340	<<590	<600	<320	<120	<360	<360	<380
SK-96	GA-N	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	WA-S	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	MO-C	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	BI	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	NY-L	40.2	<0.073	<0.015	<0.015	<0.015	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-L	28.0	<0.073	<0.003	<0.003	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	MS-J	3.2	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	GA-M	<3600	<3600	<4000	<5800	<5800	<4600	<6200	<7200	<3800	<3600
SK-96	NM-A	15.7	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NM-F	5.5	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-N	9.8	<0.073	<0.016	<0.034	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-N	11.8	<0.073	<0.003	0.013	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-N	10.9	<0.073	<0.003	0.011	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-S	21.2	<0.073	<0.016	0.108	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-S	12.4	<0.073	0.85	<1.50	<1.50	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-S	68.9	<0.073	<0.850	<1.50	<1.50	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-C	56.5	<0.360	<0.003	<0.003	<0.003	<4.00	<1.50	<1.80	<0.920	<1.20
SK-96	NY-A	19.9	<0.073	<0.016	<0.034	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240

PARTS WASHER SOLVENT 105

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-95	CO-E-DE	<100	<100	<100	<100	<100	<100	<100	<500	**662**	<100	<140
SK-95	BI	<100	<100	<100	<100	<100	<100	<100	<500	**1140**	**139**	<140
SK-95	CO-GJ-RE	<100	<100	<100	<100	<100	<100	<100	<500	**1610**	<100	<140
SK-95	CO-P-DE	<100	<100	<100	<100	<100	<100	<100	<500	**784**	<100	<140
SK-95	FA	<100	<100	<100	<100	<100	<100	<100	<500	**311**	<100	<140
SK-95	KS-D	<100	<100	<100	<100	<100	<100	<100	<500	**201**	<100	<140
SK-95	KS-E	<100	<100	<100	<100	<100	<100	<100	<500	**833**	<100	<140
SK-95	KS-W	<100	<100	<100	<100	<100	<100	<100	<500	**1560**	<100	<140
SK-95	SD-S	<100	<100	<100	<100	<100	<100	<100	<500	**761**	<100	<140
SK-95	WA-S	**1.1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	**2.5**	<1.0	<1.4
SK-95	GA-C	<100	<100	<100	<100	<100	<100	<100	<500	**2260**	<100	<140
SK-95	GA-G	<100	<100	<100	<100	<100	<100	<100	<500	**321**	<100	<140
SK-95	NJ-N	<100	<100	<100	<100	<100	<100	<100	<500	**4120**	<100	<140
SK-95	NJ-B	<10	<10	<10	<10	<10	<10	<10	<50	**246**	<10	<14
SK-95	DE	<100	<100	<100	<100	<100	<100	<100	<500	**558**	<100	<140
SK-95	LA-K	<100	<100	<100	<100	<100	<100	<100	<500	**225**	<100	<140
SK-95	LA-P	**5.7**	<5.0	<5.0	<5.0	**8.6**	<5.0	<5.0	<25	**508**	**31.1**	<7.0
SK-95	NY-S	<100	<100	<100	<100	<100	<100	<100	<500	**1250**	**162**	<140
SK-95	NY-W	<5.0	<5.0	<5.0	<5.0	**12.28**	<5.0	<5.0	<25	**261.2**	**25.51**	<7.0
SK-95	ID-B	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	**68.5**	<5.0	<7.0
SK-95	DO	<10	<100	<100	<100	<10	<10	<10	<500	**424**	<100	<140
SK-95	NY-A	<100	<100	<100	<100	<100	<100	<100	<500	**563**	<100	<140
SK-95	NJ-S	<100	<100	<100	<100	<100	<100	<100	<500	**620**	<100	<140
SK-95	NY-T	<100	<100	<100	<100	<100	<100	<100	<500	**185**	<100	<140
SK-95	GA-N	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<12.5	**8**	<2.5	<3.5
SK-95	NM-F	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	**1.5**	<1.0	<1.4
SK-95	MS-J	<100	<100	<100	<100	<100	<100	<100	<500	**259**	<100	<140
SK-95	GA-M	<100	<100	<100	<100	<100	<100	<100	<500	**1180**	<100	<140
SK-95	NY-L	<5.0	<5.0	<5.0	<5.0	5.9	<5.0	<5.0	<25	**71.5**	<5.0	<7.0
SK-95	GA-m	<100	<100	<100	<100	<100	<100	<100	<500	**2260**	<100	<140

PARTS WASHER SOLVENT 105

TCLP Volatiles Analysis, ppm

LAB	SITE	benzene	CCl4	Clbenz	CHCl3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
SK-96	LA-P	<2.00	<2.00	3.4	<2.00	5.5	<2.00	<4.00	<10.00	304	14.1	<2.00
SK-96	DE	4.3	<2.00	<2.00	<2.00	3.5	<2.00	<4.00	<10.0	257	69.4	<2.00
SK-96	NE-O	<2.00	<2.00	<2.00	<2.00	8.5	<2.00	<4.00	<10.0	67.5	<2.00	<2.00
SK-96	DO	9.7	<2.00	3.4	<2.00	12.40	<2.00	<4.00	13.4	1500	86.5	<2.00
SK-96	DO	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	16.9	1.6	0.26	<0.140
SK-96	MN-E	<0.200	<0.200	<0.200	<0.200	0.94	<0.200	<0.400	<1.00	0.51	<0.200	<0.200
SK-96	MN-E	2.9	<0.200	<0.200	<0.200	9.5	<0.200	<0.400	7.2	243	135	<0.200
SK-96	MN-E	3.2	<0.200	<0.200	<0.200	9.3	<0.200	<0.400	7.1	240	145	<0.200
SK-96	LA-K	<2.00	<2.00	<2.00	<2.00	3.4	<2.00	<4.00	<10.00	205	3.1	<2.00
SK-96	SC-G	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	<10.0	<2.00	<2.00	<2.00
•	UT-S	<14	<35	<14	<35	<70	<35	<35	<350	959	39.2	<35
SK-96	NY-A	<2.00	<2.00	<2.00	<2.00	16.2	<2.00	<4.00	<10.00	1540	2580	<2.00
SK-96	NY-A	<2.00	<2.00	<2.00	<2.00	15.7	<2.00	<4.00	<10.00	1510	2840	<2.00
SK-96	MN-B	3.3	<0.200	<0.200	<0.200	7.3	<0.200	<0.400	7.3	218	65.4	<0.200
SK-96	MN-B	<2.00	<2.00	<2.00	<2.00	5.4	<2.00	<4.00	13.3	999	34.1	<2.00
SK-96	NE-GI	<2.00	<2.00	<2.00	<2.00	9.3	<2.00	<4.00	<10.00	563	<2.00	<2.00
SK-95	CO-E-DE	6.00	<2.00	<2.00	<2.00	3.7	<2.00	<4.00	17.5	1470	70.1	<2.00
SK-95	CO-P-DE	3.90	<2.00	<2.00	<2.00	3.2	<2.00	<4.00	<10.0	450	19.8	<2.00
SK-95	CO-GJ-RE	8.1	<0.20	<0.20	<0.20	6.2	0.43	13.7	12.5	2110	415	<0.20
SK-96	NE-G	4.8	<2.00	<2.00	<2.00	5.7	<2.00	<4.00	16.4	1060	59.4	<2.00
Total # of Samples		81										
# of Hits		23	0	0	2	26	0	0	0	79	45	0
	MAX	14.4	0	3.9	13.8	35.2	0.43	13.7	18.9	4120	2840	0
	MIN	0.14	0	0.98	7.3	0.94	0.43	0.44	1.9	0.51	0.26	0

PARTS WASHER SOLVENT 150

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	**SITE**											
SK-96	NY-L	7.17	0.78	136	<5.00	<0.50	<0.50	<0.50	<4.00	<0.04	<0.45	<0.50
SK-96	NY-L	6.68	0.798	138	<5.00	2.15	<0.500	<0.500	5.75	<0.040	<0.45	<0.500
SK-96	NY-L	7.09	0.792	138	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NY-L	7.40	0.799	153	<5.00	0.651	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	NY-N	7.94	0.784	157	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NY-N	7.28	0.792	155	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NY-N	7.12	0.796	154	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NY-S	8.33	0.802	153	<5.0	<0.500	<0.500	<0.500	<4.00	<0.04	<0.45	<0.500
SK-96	NY-S	5.65	0.78	164	<5.00	1.58	<0.500	0.572	<4.00	<0.040	<0.452	<0.500
SK-96	NY-S	7.90	0.79	151	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	NY-A	7.08	0.843	93*	<5.0	0.686	<0.500	<0.500	<0.400	<0.04	<0.45	<0.500
SK-96	LA-P	7.06	0.8	161	<5.00	18.3	0.86	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	LA-K	7.51	0.814	160	<5.00	6.19	<0.500	0.538	<4.00	<0.040	<0.45	<0.500
SK-96	DO	6.59	0.83	140	<5.00	0.522	0.691	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	NY-A	6.89	0.823	153	<5.0	<0.500	<0.500	<0.500	<0.400	<0.04	<0.45	<0.500
SK-96	NY-A	7.13	0.805	152	<5.0	<0.500	<0.500	<0.500	<0.400	<0.04	<0.45	<0.500
SK-96	NE-G	8.55	0.799	158	<5.00	1.61	0.865	<0.500	66.3	<0.040	<0.452	<0.500
Total # of Samples		48										
# of Hits		0	0	8	0	1	4	0	10	0	0	0
	MAX	9.37	0.843	164	0	138	3.85	2.44	66.3	0.048	0	0
	MIN	5.56	0.76	126	0	0.522	0.521	0.538	4.66	0.048	0	0

* Data rejected due to contamination problems.

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-96	NY-L	22.7	<0.073	<0.015	<0.015	<0.015	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-L	31.1	<0.073	<0.003	<0.003	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-L	15.2	<0.073	<0.003	<0.003	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-L	2.18	<0.073	<0.003	<0.003	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-N	<0.850	<0.073	0.016	0.105	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-N	<0.850	<0.073	<0.850	<1.50	<1.50	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-N	<0.850	<0.073	0.021	0.031	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-S	<0.850	<0.073	<0.016	0.086	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-S	<0.850	<0.073	<0.850	<1.50	<1.50	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-S	<0.850	<0.073	<0.850	<1.50	<1.50	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-A	<0.850	<0.073	0.029	<0.034	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	LA-P	5.6	<0.073	<0.016	0.046	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	LA-K	<0.850	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-95	DO	44.3	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-A	<0.850	<5.00	<0.003	<0.003	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-A	<0.850	<0.073	<0.003	<0.003	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NE-G	0.86	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
Total # of Samples		48									
# of Hits		0	0	0	0	0	0	0	0	0	0
	MAX	44.3	0	0.029	0.105	0	0	0	0	0	0
	MIN	0.86	0	0.009	0.031	0	0	0	0	0	0

PARTS WASHER SOLVENT 150

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-96	NY-L	<0.200	<0.200	0.32	<0.200	5.5	<0.200	<0.400	<1.00	**84.8**	0.28	<0.200
SK-96	NY-L	<2.00	<2.00	<2.00	<2.00	2.3	<2.00	<4.00	<10.00	**32.5**	<2.00	<2.00
SK-96	NY-L	<0.200	<2.00	<2.00	<2.00	**11.7**	<2.00	<4.00	<1.00	**905**	**24.3**	<2.00
SK-96	NY-L	<0.200	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	<1.00	**81.9**	<2.00	<2.00
SK-96	NY-N	<0.200	<0.200	<0.200	<0.200	0.97	<0.200	<0.400	<1.00	0.2	<0.200	<0.200
SK-96	NY-N	<0.200	<0.200	<0.200	<0.200	0.33	<0.200	<0.400	<1.00	0.32	<0.200	<0.200
SK-96	NY-N	<0.200	<0.200	<0.200	<0.200	0.33	<0.200	<0.400	<1.00	0.32	<0.200	<0.200
SK-96	NY-S	<0.200	<0.200	<0.200	<0.200	0.28	<0.200	<0.400	1.5	**6.00**	<0.200	<0.200
SK-96	NY-S	<2.00	<2.00	<2.00	<2.00	2.4	<2.00	<4.00	18.9	**37.50**	<2.00	<2.00
SK-96	NY-S	<0.200	<0.200	<0.200	<0.200	0.34	<0.200	<0.400	<1.00	0.39	<0.200	<0.200
SK-96	NY-A	**1.00**	<0.200	<0.200	<0.200	0.52	<0.200	<0.400	<1.00	0.47	<0.200	<0.200
SK-96	LA-P	<2.00	<2.00	<2.00	<2.00	3.3	<2.00	<4.00	<10.0	**151**	**6.40**	<2.00
SK-96	LA-K	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	19.1	**412**	**214**	<2.00
SK-95	DO	**11.5**	<2.00	3.3	<2.00	**10.6**	<2.00	<4.00	11.4	**1450**	**74.6**	<2.00
SK-96	NY-A	<2.00	<2.00	<2.00	<2.00	1	<2.00	<4.00	<1.00	**1.6**	0.32	<2.00
SK-96	NY-A	<2.00	<2.00	<2.00	<2.00	0.94	<2.00	<4.00	<1.00	**2.6**	0.32	<2.00
SK-96	NE-G	**3.6**	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	<10.00	**207**	**346**	<2.00
Total # of Samples		48										
# of Hits		13	0	0	0	3	0	0	0	37	14	0
	MAX	1390	0	37.8	0	11.7	0	0	19.1	2810	346	0
	MIN	0.46	0	0.25	0	0.28	0	0	1.3	0.11	0.17	0

PARTS WASHER SOLVENT SLUDGE

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-96	SD-S	7.73	1.430	**129**	<0.500	0.871	0.679	0.06	0.55	<0.040	<0.600	<0.050
SK-96	SD-S	7.57	1.41	**139**	<0.500	1.16	0.525	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	KS-W	7.14	1.34	146	<0.500	1.01	0.594	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	KS-E	7.8	1.19	**130**	<0.640	0.98	0.77	0.08	**180**	<0.002	<0.600	<0.06
SK-96	KS-D	6.90	1.17	145	<0.590	1.17	0.483	0.064	4.04	<0.0016	<0.600	<0.060
SK-96	GA-M	8.1	1.21	153	<4.10	0.931	0.467	<0.410	4.04	<0.032	<0.480	<0.410
SK-96	GA-m	7.3	1.23	140	<0.500	1.1	**1.97**	<0.050	0.556	<0.0008	<0.600	<0.050
SK-96	GA-G	7.38	1.55	148	<0.50	0.943	0.314	<0.050	2.63	<0.0008	<0.600	<0.050
SK-96	GA-C	6.8	1.39	**109**	<3.65	0.78	0.39	0.63	**6.94**	<0.03	<0.50	<0.37
SK-96	MO-C	7.53	1.049	**108**	<0.500	0.434	0.619	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-L	7.89	1.29	144	<0.500	1.78	0.398	<0.050	1.69	<0.0008	<0.600	<0.050
SK-96	NY-L	8.51	1.176	>200	<0.500	0.632	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-L	8.52	1.186	>200	<0.500	0.68	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	MS-J	7.29	1.22	**116**	<0.500	0.62	0.329	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	NM-F	7.69	1.49	150	<0.500	0.707	0.562	<0.050	**83.4**	<0.0008	<0.600	<0.050
SK-96	GA-N	8.39	1.33	>200	<0.500	2.34	0.625	<0.050	0.503	<0.0008	<0.600	<0.050
SK-96	NM-A	7.47	1.34	152	<0.500	1.01	0.552	<0.050	0.698	<0.0008	<0.600	<0.050
SK-96	SC-G	7.84	0.98	150	<0.500	1.53	0.33	<0.050	1.68	<0.0008	<0.600	<0.050
SK-96	NY-N	7.07	1.38	**128**	<0.500	0.378	**1.76**	<0.050	<4.00	0.001	<0.600	<0.050
SK-96	NY-N	8.11	1.284	**75**	<0.500	0.559	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-N	9.15	0.982	152	<0.500	0.076	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-S	7.71	1.21	**132**	<0.500	0.665	0.1	<0.050	<0.400	0.001	<0.600	<0.050
SK-96	NY-S	6.9	1.36	**138**	<0.550	1.25	0.435	<0.0500	**29.7**	<0.00120	<0.600	<0.050
SK-96	NY-S	7.97	1.00	**138**	<0.500	2.07	0.784	<0.050	**9.29**	0.001	<0.600	<0.050
SK-96	LA-K	6.80	0.81	144	<1.00	6.71	<0.100	<0.100	0.93	<0.00510	<0.580	<0.100
SK-96	LA-P	7.83	0.902	**108**	<0.500	1.22	0.256	<0.050	1.45	<0.0008	<0.600	<0.050
SK-96	NE-O	8.17	0.886	**135**	<0.500	1.83	0.379	0.06	0.587	<0.0008	<0.600	<0.050
SK-96	NE-GI	8.84	1.63	148	<0.500	0.926	0.222	<0.050	**127**	<0.0008	<0.600	<0.050
*	UT-S	8.20		**122**	<0.3	1.83	0.57	0.05	0.8	<0.0002	<0.4	<0.025
*	UT-S	7.93		**103**	<0.10	1.4	0.54	0.04	1.1	0.006	<0.30	<0.02
SK-96	DE	7.77	1.14	140	<0.500	0.697	0.608	<0.050	4.38	<0.0008	<0.600	<0.050

PARTS WASHER SOLVENT SLUDGE

TCLP Semi Volatiles Analysis, ppm

LAB	SITE	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
SK-95	CO-E/AC	<137.5	<112.5	<62.5	<75	<112.5	<75	<150	<362.5	<75	<162.5
SK-95	BI	1.4	<0.029	<0.054	<0.077	<0.062	<0.025	<0.359	<0.036	<0.018	<0.024
SK-95	FA	<190	<160	<88	<100	<160	<100	<210	<510	<100	<160
SK-95	SD-S	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	KS-E	1.6	<0.029	<0.056	<0.076	<0.064	<0.025	<0.36	<0.036	<0.018	<0.024
SK-95	KS-W	1.2	<0.058	<0.109	<0.154	<0.125	0.13	<0.718	<0.072	<0.036	<0.047
SK-95	GA-C	1.2	<0.058	<0.11	<0.15	<0.13	<0.050	<0.72	<0.072	<0.036	<0.047
SK-95	GA-G	<0.076	<0.058	<0.11	<0.15	<0.13	<0.050	<0.72	<0.072	<0.036	<0.047
SK-95	NJ-N	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	KS-D	48	<36.02	<68.04	<96.06	<78.05	<31.02	<448.77	<45.03	<22.51	<29.52
SK-95	NJ-B	<0.48	<0.36	<0.70	<0.95	<0.80	<0.31	<4.50	<0.45	<0.22	<0.30
SK-95	DE	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	LA-P	0.39	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	LA-K	<0.040	<0.040	<0.040	<0.042	<0.085	<0.044	<0.040	<0.040	<0.040	<0.042
SK-95	NY-S	<0.110	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	NY-A	0.370	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	NJ-S	3.2	<0.06	<0.11	<0.15	<0.13	<0.05	<0.72	<0.07	<0.04	<0.05
SK-95	GA-N	2.08	<0.180	<0.270	<0.470	<0.480	<0.260	<0.096	<0.290	<0.290	<0.300
SK-95	MS-J	0.69	<0.046	<0.068	<0.120	<0.120	<0.064	<0.024	<0.072	<0.072	<0.076
SK-95	GA-M	1.97	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	NM-A	0.3	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	NY-L	<0.110	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	GA-m	1.2	<0.058	<0.11	<0.15	<0.13	<0.050	<0.72	<0.072	<0.036	<0.047
SK-95	NY-C	1	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	NE-O	2.4	<0.046	<0.068	<0.120	<0.120	<0.064	<0.024	<0.072	<0.072	<0.076
SK-95	NE-GI	1.51	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	NM-F	<0.34	<0.28	<0.41	<0.71	<0.72	<2.7	<0.14	<0.43	<0.43	<0.46
SK-95	NY-N	1.85	<0.92	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-96	CO-E/AC	<140	<115	<170	<295	<300	<160	<26.0	<180	<<180	<190
SK-96	FA	1.5	<0.230	<0.340	<0.590	<0.600	<0.320	<0.120	<0.360	<0.360	<0.380
SK-96	BI	0.58	<0.09	<0.14	<0.24	<0.24	<0.13	<0.048	<0.14	<0.14	<0.15

PARTS WASHER SOLVENT SLUDGE

TCLP Semi Volatiles Analysis, ppm

LAB	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-96	NY-A	2.730	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-A	0.26	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-A	0.24	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-C	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
SK-95	NY-C	<0.450	<0.450	<0.500	<0.720	<0.720	<0.580	<0.780	<0.900	<0.480	<0.450
SK-96	NY-C	2.4	<0.450	<0.500	<0.720	<0.720	<0.580	<0.780	<0.900	<0.480	<0.450
	Total # samples		68								
	# of Hits	0	0	0	0	0	0	0	0	0	0
	MAX	48	0	0	0	0	0.13	0	0	0	0
	MIN	0.149	0	0	0	0	0.13	0	0	0	0

PARTS WASHER SOLVENT SLUDGE

TCLP Volatiles Analysis, ppm

LAB	SITE	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
SK-96	SD-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.48	0.1	<0.140
SK-96	SD-S	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.54	0.36	<0.100	<0.140
SK-96	KS-W	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	0.9	0.4	<0.100	<0.140
SK-96	KS-E	0.13	<0.100	<0.100	<0.100	0.12	<0.100	<0.100	2.17	**3.82**	0.32	<0.140
SK-96	KS-D	0.22	<0.100	<0.100	<0.100	0.12	<0.100	<0.100	0.77	**4.59**	0.42	<0.140
SK-96	GA-M	0.15	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**8.64**	0.4	<0.140
SK-95	GA-m	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.50	**1.3**	**1.9**	<0.14
SK-96	GA-G	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.37	<0.100	<0.140
SK-96	GA-C	<2.45	<2.45	<2.45	<2.45	<2.45	<2.45	<2.45	<12.3	**107**	**10.9**	<3.43
SK-96	MO-C	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.62	<0.100	<0.140
SK-96	NY-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.3	<0.100	<0.140
SK-96	NY-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.36	<0.100	<0.140
SK-96	NY-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.36	<0.100	<0.140
SK-96	MS-J	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	<0.100	<0.100	<0.140
SK-96	NM-F	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.11	<0.100	<0.140
SK-96	GA-N	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.48	<0.10	<0.14
SK-96	NM-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.140	<0.100	<0.140
SK-96	SC-G	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.350	<0.10	<0.14
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.36	<0.100	<0.140
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**2.0**	<0.100	<0.140
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	<0.100	<0.100	<0.140
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**3.50**	<0.100	<0.140
SK-96	NY-S	<0.110	<0.110	<0.110	<0.110	<0.110	<0.110	<0.110	0.998	**0.78**	<0.110	<0.160
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	0.68	**3.9**	**0.7**	<0.140
SK-96	LA-K	0.127	<0.110	<0.110	<0.110	<0.110	<0.110	<0.110	0.92	**1.98**	0.289	<0.150
SK-96	LA-P	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.36	<0.100	<0.140
SK-96	NE-O	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	0.64	0.36	<0.100	<0.140
SK-96	NE-GI	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.37	<0.100	<0.140
*	UT-S	0.03	<0.05	<0.02	<0.05	<0.1	<0.05	<0.05	<0.5	0.27	0.06	<0.05
*	UT-S	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.28	0.32	<0.050	<0.10
SK-96	DE	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.12	0.15	<0.140

PWS TANK BOTTOMS

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-95	FA	6.58	1.132	**98**	<0.40	1.19	0.86	<0.20	0.49	<0.0008	<0.75	<0.15
SK-95	DE	7.81	0.856	>200	<0.40	0.21	<0.10	<0.20	3.06	<0.0008	<0.75	<0.15
SK-95	SC-G	7.00	1.14	**136**	<0.58	2.16	0.371	<0.29	1.84	<0.0028	<0.74	<0.22
SK-95	NY-N	5.30	1.02	**128**	<0.58	0.41	**2.19**	<0.29	0.89	<0.003	<0.74	<0.22
SK-95	NE-GI	7.51	1.33	**136**	<0.40	1.36	0.683	<0.20	1.85	<0.0008	<0.75	<0.15
SK-95	NE-O	8.05	1.11	**124**	<0.40	1.53	**1.11**	<0.20	2.26	<0.0008	<0.75	<0.15
SK-95	NY-L	6.53	0.791	**114**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	BI	8.01	1.05	**85**	<0.40	1.7	0.579	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	CO-E	8.17	1.28	140	<0.40	1.19	0.862	<0.20	1.14	<0.0008	<0.75	<0.15
SK-95	DO	6.51	0.876	>200	<0.40	0.314	0.135	<0.20	1.73	<0.0008	<0.75	<0.15
SK-95	ID-B	7.59	1.265	**128**	<0.40	0.86	0.44	<0.20	0.95	0.0017	<0.75	<0.15
SK-96	AZ-T	7.91	1.33	**132**	<0.400	0.853	**1.54**	<0.200	2.18	<0.0008	<0.750	<0.150
SK-96	TX-P	9.60	1.27	>142	<0.500	0.719	0.226	<0.050	**37.9**	<0.0008	<0.045	<0.050
SK-96	MI-P	8.46	1.32	>142	<0.200	1.27	**1.32**	0.107	2.01	0.0018	<0.460	<0.020
SK-96	PA-W	7.91	0.96	**107**	<0.50	1.38	**1.44**	0.05	4.46	<0.0008	<0.60	<0.05
SK-96	GA-G	7.20	1.24	148	<0.730	1.03	0.489	0.091	**5.9**	<0.003	<0.590	<0.070
SK-96	MO-C	8.96	1.32	>200	<0.500	3.57	0.429	<0.050	3.77	<0.0008	<0.600	<0.050
SK-96	NY-C	7.33	1.31	**128**	<0.500	1.72	0.551	0.06	0.952	<0.0008	<0.600	<0.050
SK-96	DE	7.42	0.89	151	<5.00	22.3	**4.83**	**6.19**	**149**	<0.040	**1.01**	<0.500
SK-96	BI	7.90	0.911	**127**	<0.590	1.42	0.92	0.06	0.56	0.0002	<0.600	<0.060
•	UT-S	7.94		166	<1.0	<10.0	0.8	<0.3	<2.0	0.0009	<3.0	<0.20
SK-96	NY-N	7.85	1.342	**134**	<0.500	0.344	0.120	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-N	8.00	1.359	**134**	<0.500	0.43	0.126	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-N	8.05	1.444	**135**	<0.500	0.351	0.082	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-L	7.80	1.1	**114**	<4.33	1.52	0.44	<0.430	**9.78**	<0.0341	<0.470	<0.430
SK-96	NY-L	7.30	1.15	>200	<3.20	1.37	0.34	<0.320	**7.18**	<0.0243	<0.510	<0.320
SK-96	NY-S	8.96	1.16	>200	<0.500	4.04	0.531	0.204	**16.4**	<0.0008	<0.600	<0.050
SK-96	NE-GI	8.08	1.47	**104**	<0.500	1.05	<0.050	0.127	<0.400	<0.0008	<0.600	<0.050
Total # of Samples		28										
# of Hits		0	0	17	0	0	6	1	6	0	1	0

PWS TANK BOTTOMS

TCLP Semi Volatiles Analysis, ppm

LAB	Parameter / SITE	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
SK-95	FA	0.68	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	DE	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	SC-G	26.9	<11.5	<17.1	<29.6	<30.1	<16.1	<6.02	<18.1	<18.1	<19.1
SK-95	NY-N	23.6	<10.9	<16.1	<28	<28.4	<104	<5.69	<17.1	<17.1	<18
SK-95	NE-GI	<0.040	<0.044	<0.044	<0.100	<0.120	<0.068	<0.350	<0.140	<0.040	<0.140
SK-95	NE-O	1.75	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
SK-95	NY-L	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	BI	2.5	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
SK-95	CO-E	1.15	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-95	DO	<0.670	<0.550	<0.820	<1.40	<1.40	<0.770	<0.290	<0.860	<0.860	<0.910
SK-95	ID-B	1.32	<0.140	<0.200	<0.350	<0.360	<0.190	<0.072	<0.220	<0.220	<0.230
SK-96	AZ-T	7.00	<0.230	<0.340	<0.590	<0.600	<0.320	<0.120	<0.360	<0.360	<0.180
SK-96	TX-P	2	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-96	MI-P	5.1	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
SK-96	PA-W	<0.90	<0.90	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.95	<0.90
SK-96	GA-G	<155	<127	<187	<325	<330	<176	<66	<198	<198	<209
SK-96	MO-C	1.2	<0.092	<0.140	<0.240	<0.240	<0.130	<0.048	<0.140	<0.140	<0.150
SK-96	NY-C	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
SK-96	DE	3.72	<0.073	0.073	0.158	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	BI	2.56	<0.050	<0.050	<0.070	<0.080	<0.070	<0.080	<0.100	<0.050	<0.050
	UT-S	<160	<160	<160	<160	<160	<160	<800	<160	<160	<160
SK-96	NY-N	0.74	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-N	0.75	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-N	0.74	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-L	<34.2	<34.2	<38.0	<55.2	<55.2	<43.8	<59.0	<68.5	<36.1	<34.2
SK-96	NY-L	11.21	<5.44	<6.05	<8.77	<8.77	<6.96	<9.38	<10.9	<5.75	<5.44
SK-96	NY-S	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NE-GI	0.62	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
Total # of Samples		28									
# of Hits		0	0	0	0	0	0	0	0	0	0

TCLP Volatiles Analysis, ppm

LAB	Parameter / SITE	benzene	CCl4	Clbenz	CHCl3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
SK-95	FA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.39	0.1	<0.14
SK-95	DE	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.14
SK-95	SC-G	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	0.83	0.25	<0.14	<0.20
SK-95	NY-N	<0.42	<0.42	<0.42	<0.42	0.54	<0.42	<0.42	<2.08	**6.37**	<0.42	<0.58
SK-95	NE-GI	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1.2	0.26	<0.10	<0.14
SK-95	NE-O	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.68	0.32	0.15	<0.140
SK-95	NY-L	<100	<100	<100	<100	<100	<100	<100	<500	**352**	<100	<140
SK-95	BI	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.41	0.17	<0.14
SK-95	CO-E	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.27	<0.10	<0.14
SK-95	DO	<0.10	<0.10	<0.10	0.3	<0.10	<0.10	<0.10	<0.50	0.11	<0.10	<0.14
SK-95	ID-B	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**0.79**	<0.10	<0.14
SK-96	AZ_T	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.51	<0.10	<0.14
SK-96	TX-P	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.15	<0.150	<0.140
SK-96	MI-P	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1.73	0.406	<0.100	<0.140
SK-96	PA-W	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**0.93**	0.13	<0.14
SK-96	GA-G	0.14	<0.100	<0.100	<0.100	0.13	<0.100	0.1	0.82	**1.51**	0.36	<0.140
SK-96	MO-C	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.29	0.16	<0.140
SK-96	NY-C	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<1.20	**12.9**	**1.5**	<0.350
SK-96	DE	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	4.00	<0.500	<0.500	<0.700
SK-96	BI	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<1.00	**17.1**	**0.75**	<0.280
	UT-S	<120	<120	<120	<120	<120	<120	<120	<500	<120	<120	<250
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**2.2**	0.140	<0.140
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**0.86**	0.13	<0.140
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**1.4**	0.16	<0.140
SK-96	NY-L	**0.576**	<0.230	<0.230	<0.230	<0.230	<0.230	<0.230	<1.14	**34.4**	**3.5**	<0.320
SK-96	NY-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**1.84**	0.14	**0.452**
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.38	**0.54**	<0.140
SK-96	NE-GI	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	0.96	0.29	<0.100	<0.140
Total # of Samples		28										
# of Hits		1	0	0	0	0	0	0	0	12	4	1

IMMERSION CLEANER

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-95	CO-E/AC	10.42	0.933	153	<0.40	<1.0	3.53	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	KS-D	10.10	0.928	>142	<4.0	2.09	11.44	<2.0	41.14	<0.04	<0.45	<1.5
SK-95	KS-E	10.97	0.93	144	<4.0	<1.0	6.87	<2.0	55.4	<0.04	<0.45	<1.5
SK-95	KS-W	10.51	0.947	145	<4.0	<1.0	24.41	13.88	<3.5	<0.04	0.54	<1.5
SK-95	SD-S	10.08	0.931	137	<4.00	<1.00	<1.00	<2.00	8.43	<0.04	<0.45	<1.5
SK-95	GA-C	10.68	0.944	139	<4.0	<1.0	2.35	<2.0	11.78	<0.04	<0.45	<1.5
SK-95	GA-G	9.27	0.935	>200	<4.0	3.26	122.4	7.23	58.2	<0.04	0.65	<1.5
SK-95	NJ-N	10.11	0.935	145	<4.0	<1.0	4.07	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	ID-B	10.70	0.949	>200	<5.0	59.3	2.0	244.63	74.95	<0.04	<0.45	<1.0
SK-95	LA-P	9.41	0.939	138	<5.0	<20	33.81	<2.0	11.78	<0.04	<0.45	<1.0
SK-95	NY-S	10.33	0.948	144	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45	<1.0
SK-95	NY-W	10.16	0.945	137	<5.0	<20	<1.0	<2.0	6.64	<0.04	<0.45	<1.0
SK-95	LA-K	10.23	0.942	140	<4.00	<1.00	160	<2.00	<4.00	<0.04	<0.45	<2.0
SK-95	NY-A	10.20	0.955	140	<5.0	<20	6.91	<2.0	5.08	<0.04	<0.45	<1.0
SK-95	NJ-S	10.09	0.935	149	<4.0	<1.0	<1.0	<2.0	16.5	<0.04	<0.45	<1.5
SK-95	NM-A	10.85	0.956	134	<4.0	<1.0	1.72	<2.0	13.1	<0.04	<0.45	<2.0
SK-95	NM-F	10.14	0.937	147	<4.0	<1.0	6.56	<2.0	<4.0	<0.04	<0.45	<2.0
SK-95	NY-T	10.39	0.940	142	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	GA-M	10.27	0.928	148	<4.0	<1.0	<1.0	<2.0	8.6	<0.04	<0.45	<2.0
SK-95	NY-C	10.25	0.923	146	<4.0	<1.0	1.22	<2.0	<4.0	<0.04	<0.45	<2.0
SK-95	GA-N	10.26	0.940	139	<4.0	1.2	<1.0	<2.0	59.83	<0.04	<0.45	<1.5
SK-95	NY-L	10.56	0.939	147	<4.0	<1.0	28	<2.0	34.3	<0.04	<0.45	<1.5
SK-95	GA-m	10.68	0.944	139	<4.0	<1.0	2.35	<2.0	11.78	<0.04	<0.45	<1.5
SK-95	NE-O	10.18	0.944	147	<4.0	<1.0	22.3	<2.0	49.1	<0.04	<0.45	<1.5
SK-95	NE-GI	10.4	0.937	>200	<4.0	<1.0	<1.0	<2.0	3.94	<0.04	<0.45	<1.5
SK-95	DE	10.07	0.926	144	<4.0	1.26	30.6	5.14	47.02	<0.04	<0.45	<1.5
SK-95	MS-J	6.66	0.943	148	<4.0	<1.0	2.47	<2.0	7.75	<0.04	<0.45	<2.0
SK-95	NY-N	10.42	0.930	144	<4.0	1.77	6.39	<2.0	22.1	<0.04	<0.45	<1.5
SK-96	CO-E/AC	10.66	0.92	148	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	KS-W	9.47	0.95	143	<5.00	2.28	32.4	0.85	242	0.17	<0.45	<0.500
SK-96	KS-E	9.60	0.94	147	<5.00	2.35	14.2	0.909	72.8	<0.040	<0.45	<0.500

Physical Properties and TCLP Metals Analysis, ppm

LAB	SITE	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1	5
SK-96	SD-S	9.92	0.94	148	<5.0	0.573	<0.500	<0.500	16.1	<0.040	<0.45	<0.500
SK-96	DE	9.82	0.947	145	<5.00	0.713	0.706	12.4	15.0	<0.040	<0.452	<0.500
Total # of Samples		64										
	# of Hits	0	0	7	1	0	39	5	43	0	0	0
	MAX	10.97	1.01	180.00	9.59	59.30	160.00	244.63	3040.00	0.17	0.65	0.00
	MIN	6.66	0.912	134	9.59	0.508	0.706	0.536	3.94	0.0077	0.54	0

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TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-96	KS-D	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	MO-C	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-N	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	GA-G	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	GA-m	<280	<230	<340	<<590	<600	<320	<120	<360	<360	<380
SK-96	GA-C	<170	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-C	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-C	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-C	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	GA-M	<3600	<3600	<3600	<3600	<3600	<3600	<3600	<3600	<3600	<3600
SK-96	NM-F	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NM-A	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-S	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-S	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-S	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-N	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-N	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-N	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-A	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	LA-P	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	LA-K	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
*	UT-S	<500000	<500000	<500000	<500000	<500000	<500000	<2550000	<500000	<2550000	<500000
SK-96	NY-L	<1800	<1800	<2000	<2900	<2900	<2300	<3100	<3600	<1900	<1800
SK-96	NY-L	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-L	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-A	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-A	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	SC-G	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NE-GI	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NE-O	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NE-G	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-95	CO-E/AC	<100	<100	<100	<100	684	<100	<100	<500	202	<100	<140
SK-95	KS-D	<100	<100	<100	<100	558	<100	<100	<500	465	<100	<140
SK-95	KS-E	<100	<100	<100	<100	496	<100	<100	<500	145	<100	<140
SK-95	KS-W	<100	<100	<100	<100	954	<100	<100	<500	304	<100	<140
SK-95	SD-S	<100	<100	<100	<100	790	<100	<100	<500	276	<100	<140
SK-95	GA-C	<100	<100	<100	<100	466	<100	<100	<500	103	<100	<140
SK-95	GA-G	<100	<100	<100	<100	439	<100	<100	<500	<100	<100	<140
SK-95	NJ-N	<100	<100	<100	<100	573	<100	<100	<500	<100	<100	<140
SK-95	ID-B	<10	<10	<10	<10	<10	<10	<10	<50	70.5	<10	<14
SK-95	LA-P	<25	<25	<25	<25	<25	<25	<25	<125	102	<25	<35
SK-95	NY-S	<10	<10	34.1	<10	308	<10	<10	105	86.9	<10	<14
SK-95	NY-W	<25	<25	<25	<25	193	<25	<25	<125	118	<25	<35
SK-95	LA-K	<100	<100	<100	<100	662	<100	<100	<500	192	<100	<140
SK-95	NY-A	<10	<10	<10	<10	173	<10	<10	<50	91	<10	<14
SK-95	NJ-S	<100	<100	<100	1430	552	<100	<100	<500	111	<100	<140
SK-95	NM-A	<100	<100	<100	<100	622	<100	<100	<500	<100	<100	<140
SK-95	NM-F	<100	<100	<100	<100	666	<100	<100	<500	218	<100	<140
SK-95	NY-T	<100	<100	<100	<100	788	<100	<100	<500	<100	<100	<140
SK-95	GA-M	<25	<25	<25	<25	412	<25	<25	<125	82.2	<25	<35
SK-95	NY-C	<5.0	<5.0	20.8	<5.0	407	<5.0	<5.0	<25	176	24.1	<7.0
SK-95	GA-N	<5.0	<5.0	<5.0	<5.0	172	<5.0	<5.0	<25	174	7.9	<7.0
SK-95	NY-L	<100	<100	<100	<100	485	<100	<100	1650	205	<100	<140
SK-95	GA-m	<100	<100	<100	<100	466	<100	<100	<500	103	<100	<140
SK-95	NE-O	<5.0	<5.0	35.7	<5.0	370	<5.0	<5.0	<25	122	35	<7.0
SK-95	NE-GI	<10.0	<10.0	36.2	<10.0	443	<10.0	<10.0	<50	291	317	<14.0
SK-95	DE	<5.0	<5.0	42.2	43.9	166	<5.0	<5.0	<25	189	14.1	<0.14
SK-95	MS-J	<100	<100	<100	<100	223	<100	<100	914	<100	<100	<140
SK-95	NY-N	<100	<100	<100	<100	636	<100	<100	<500	129	<100	<140
SK-96	CO-E/AC	2.1	<2.00	33	<2.00	856	<2.00	<4.00	16.6	116	7.4	<2.00
SK-96	KS-W	3.9	<2.0	24.3	<2.0	831	<2.0	<4.0	21.1	86.8	6.8	<2.0
SK-96	KS-E	<2.0	<2.0	33.9	<2.0	648	<2.0	<4.0	20.3	91.1	208	<2.0

IMMERSION CLEANER

TCLP Volatiles Analysis, ppm

LAB	Parameter / SITE	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
SK-96	SD-S	3.7	<2.0	88.2	<2.0	2200	<2.0	<4.0	38.1	260	1540	<2.0
SK-96	DE	<10.0	<10.0	15.9	<10.0	191	<10.0	<10.0	<50.0	32.9	<10.0	<14.0
Total # of Samples			64									
	# of Hits	6	0	0	2	61	1	0	3	58	26	0
	MAX	3.90	0.00	88.20	1430.00	2200.00	2.10	0.00	1650.00	465.00	1540.00	0.00
	MIN	2	0	5.8	43.9	19	2.1	0	11.1	12.1	2.9	0

safety-kleen.

MEMORANDUM

SUBJECT:	**Annual Recharacterization** **1997 Supplemental Data Package**	**DATE:**	**February 10, 1997**
TO:	**EHS Managers (Br., Process, Fuel)** **Regional Environmental Managers** **Jeff Bard** **Gary Long** **Rick Parker**	**FROM:**	**Liane Hetherington-Ward** LHW **on behalf of the Annual Recharacterization Team**

The Annual Waste Recharacterization Final Data Package was distributed to all EHS Managers and Regional Environmental Managers on December 20. The enclosed Supplemental Data Package includes the remaining data points that were not available when the data package was distributed in December. **This additional data does not change any of the final waste codes.**

The analytical results from the following samples have been added:

- the third sample of Aqueous Brake Cleaner from Lackawanna, NY,
- the Parts Washer Solvent 105 sample from Columbus, GA,
- the Immersion Cleaner sample from Jackson, MS, and
- the Dry Cleaning Filter Powder samples from Omaha and Grand Island, NE.

The additional data is included in the attachment. Enough copies of the supplemental data package have been provided for you to file in each of your facility's 999 File System at # 1160.

Please contact me at X2550 or e-mail at ELGIN/LHWARD if there are any questions.

/dr

Annual Recharacterization Team:

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Hank Habicht
Mark Hartwig
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Norm Jackson
Larry Keen
Gary King
Steve Kunkel
John Kusz
Steve Lewis
Catherine McCord
Tony Monda
Cathy Padrta
Rick Peoples
Matt Sauvageau
Bonnie Sims
Dave Stringham

AQUEOUS BRAKE CLEANER

Physical Properties and TCLP Metals Analysis, ppm

LAB	SITE	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se
	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	4.37	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	4.66	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.19	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	**2.62**	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.31	**3.73**	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<0.40	0.21	**3.28**	<0.20	<0.35	0.02	<0.75
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.24	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.14	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	**5.92**	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.36	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	2.42	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	0.96	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.09	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.25	<1.0	<2.0	**5.85**	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.15	**1.62**	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.7	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	<1.0	**1**	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.55	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	1.52	**3.28**	<2.0	<3.5	<0.04	<0.45
SK-95	TECH CTR	N/A	N/A	N/A	<4.0	3.03	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	KS-E	8.98	0.998	85*	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	KS-D	8.40	1.016	134*	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	KS-W	7.52	1.002	102*	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	WA-L	9.01	1	**104**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45

AQUEOUS BRAKE CLEANER

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1
LAB	SITE										
SK-95	GA-C	9.08	0.993	**126**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	GA-G	8.94	0.993	>200	<4.0	1.79	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	NJ-N	9.00	0.991	>200	<4.0	1.19	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	NJ-B	9.21	1.00	>200	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	ID-B	9.24	1.007	>200	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45
SK-95	NY-S	8.74	1.01	>200	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45
SK-95	NY-W	8.90	0.99	>200	<4.0	1.36	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	NY-A	8.93	1.002	>200	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45
SK-95	NJ-S	9.12	0.996	>200	<4.0	2.07	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	NY-T	7.56	0.995	>200	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	NY-C	9.01	0.996	>200	<4.0	1.36	**1.73**	<2.0	<4.0	<0.04	<0.45
SK-95	NY-L	9.01	1.01	>200	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	GA-m	9.08	0.099	**126**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-95	NY-N	9.28	0.986	>200	<4.0	<1.0	<1.0	<2.0	<4.0	<0.04	<0.45
SK-95	GA-M	8.91	0.991	>200	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45
SK-96	GA-m	9.07	0.996	>200	<5.00	2.48	<0.500	<0.500	<4.00	<0.04	<0.45
SK-96	GA-M	9.16	0.99	>200	<5.00	0.83	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	GA-G	9.10	1	>142	<5.00	1.39	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	GA-N	8.83	0.98	**79**	<5.00	1.79	0.848	<0.500	<4.00	<0.040	<0.452
SK-96	GA-C	7.85	1	>200	<5.00	0.88	<0.50	<0.50	<4.00	<0.04	<0.45
SK-96	KS-W	9.12	0.99	>200	<5.00	0.838	<0.500	<0.500	<4.0	<0.040	<0.45
SK-96	KS-E	9.03	1	>200	<5.0	0.816	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	KS-D	8.41	1.02	>200	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	WA-L	9.15	0.99	142	<5.00	1.21	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	MO-C	9.34	1.01	>200	<5.00	1.03	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-L	7.65	1.04	>200	<5.00	0.722	<0.500	<0.500	<4.00	<0.040	<0.450
SK-96	NY-L	9.02	1.015	>200	<5.00	1.02	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-C	8.28	1.01	>200	<5.00	48.1	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-C	8.62	1.041	>200	<5.00	0.628	0.736	<0.500	<4.00	<0.040	<0.45

AQUEOUS BRAKE CLEANER

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se
	Reg. Limit	<2; >12.5	na	< 140	5	100	1	5	5	0.2	1
LAB	**SITE**										
SK-96	NY-C	9.06	1.019	>200	<5.00	0.699	**2.24**	<0.500	<4.00	<0.040	<0.45
SK-96	NY-N	8.19	0.97	>200	<5.00	1.2	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-N	8.33	0.995	>200	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-N	8.42	1.009	>200	<5.00	0.787	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-S	8.97	0.999	>200	<5.00	0.819	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-S	9.30	1.00	>200	<5.00	1.34	<0.500	<0.500	<4.00	<0.040	<0.452
SK-96	NY-S	8.97	1.00	>200	<5.00	4.02	<0.500	<0.500	<4.00	<0.040	<0.452
SK-96	NM-F	9.15	1.01	>200	<5.00	1.88	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NM-A	8.68	1.01	>200	<5.00	1.41	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	DE	8.26	0.99	151	<5.00	1.82	<0.500	<0.500	<4.00	<0.040	<0.452
SK-96	NE-G	8.9	1.01	>200	<5.00	0.8	<0.500	<0.500	<4.00	<0.040	<0.452
SK-96	NY-A	8.72	0.998	>200	<5.00	0.723	<0.500	<0.500	<4.00	<0.04	<0.45
SK-96	NY-A	8.54	1.0	>200	>5.00	0.628	<0.500	<0.500	<4.00	<0.040	<0.45
SK-96	NY-A	8.74	0.99	>200	<5.00	0.681	<0.500	<0.500	<4.00	<0.04	<0.45
SK-96	NY-L	9.01	1.01	>200	<5.00	1.11	<0.500	<0.500	<4.00	<0.040	<0.45
Total # 0f Samples		72									
# of Hits		0	0	**4**	0	0	**9**	0	**1**	0	0
	MAX	9.34	1.041	151	0	48.1	5.92	0	5.85	0.02	0
	MIN	7.52	0.099	79	0	0.21	0.736	0	5.85	0.02	0

*RESAMPLE CONFIRMS FLASH POINT RESULT >200.

AQUEOUS BRAKE CLEANER

Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
SITE										
TECH CTR	<0.48	<0.36	<0.68	<0.96	<0.78	<0.31	<4.49	<0.45	<0.23	<0.30
TECH CTR	<0.238	<0.180	<0.340	<0.480	<0.390	<0.155	<2.24	<0.225	<0.113	<0.148
TECH CTR	<0.190	<0.144	<0.272	<0.384	<0.312	<0.124	<1.79	0.23	<0.090	<0.118
TECH CTR	<0.240	<0.180	<0.350	<0.480	<0.400	<0.160	<2.20	<0.220	<0.110	<0.150
TECH CTR	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
TECH CTR	<0.71	<0.54	<1.0	<1.4	<1.2	<0.46	<6.8	<0.68	<0.23	<0.44
TECH CTR	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
TECH CTR	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
TECH CTR	<0.95	<0.72	<1.4	<1.9	<1.6	<0.62	<9.0	<0.90	<0.45	<0.59
TECH CTR	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
TECH CTR	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
TECH CTR	<0.95	<0.72	<1.4	<1.9	<1.6	<0.62	<9.0	<0.90	<0.45	<0.59
TECH CTR	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
TECH CTR	<3.8	<2.9	<5.6	<7.6	<6.4	<2.5	<36	<3.6	<1.8	<2.4
TECH CTR	<3.8	<2.9	<5.6	<7.6	<6.4	<2.5	<36	<3.6	<1.8	<2.4
TECH CTR	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
TECH CTR	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
TECH CTR	<3.8	<2.9	<5.6	<7.6	<6.4	<2.5	<36	<3.6	<1.8	<2.4
TECH CTR	<3.8	<2.9	<5.6	<7.6	<6.4	<2.5	<36	<3.6	<1.8	<2.4
TECH CTR	<3.8	<2.9	<5.6	<7.6	<6.4	<2.5	<36	<3.6	<1.8	<2.4
TECH CTR	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
TECH CTR	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
TECH CTR	<3.8	<2.9	<5.6	<7.6	<6.4	<2.5	<36	<3.6	<1.8	<2.4
TECH CTR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TECH CTR	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
KS-E	<0.48	<0.36	<0.68	<0.96	<0.78	<0.31	<4.49	<0.45	<0.23	<0.30
KS-D	<0.190	<0.144	<0.272	<0.384	<0.312	<0.124	<1.794	<0.180	<0.090	<0.118
KS-W	<4.8	<3.6	<7.0	<9.5	<8.0	<3.1	<45.0	<4.5	<2.2	<3.0
WA-L	<0.19	<0.14	<0.28	<0.38	<0.32	<0.12	<1.8	<0.18	<0.09	<0.12

Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
SITE										
GA-C	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
GA-G	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
NJ-N	<0.95	<0.72	<1.4	<1.9	<1.6	<0.62	<9.00	<0.90	<0.45	<0.59
NJ-B	<1.90	<1.40	<2.80	<3.80	<3.20	<1.20	<18.00	<1.80	<0.90	<1.20
ID-B	<1.0	<1.0	<2.0	<3.0	<3.0	<2.0	<0.60	<2.0	<2.0	<2.0
NY-S	<1.4	<1.2	<1.7	<3.0	<3.0	<1.6	<0.60	<1.8	<1.8	<1.9
NY-W	<0.700	<0.580	<0.850	<1.50	<1.50	<0.800	<0.300	<0.900	<0.900	<0.950
NY-A	<1.4	<1.2	<1.7	<3.0	<3.0	<1.6	<0.6	<1.8	<1.8	<1.9
NJ-S	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
NY-T	<0.280	<0.230	<0.340	<0.590	<0.600	<0.320	<0.120	<0.360	<0.360	<0.380
NY-C	<0.70	<0.58	<0.85	<1.5	<1.5	<5.6	<0.30	<0.90	<0.90	<0.95
NY-L	<1.4	<1.2	<1.7	<3.0	<3.0	<1.6	<0.60	<1.8	<1.8	<1.9
GA-m	<1.9	<1.4	<2.8	<3.8	<3.2	<1.2	<18	<1.8	<0.90	<1.2
NY-N	<2.8	<2.3	<3.4	<5.9	<6.0	<3.2	<1.2	<3.6	<3.6	<3.8
GA-M	<0.070	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
GA-m	<14.0	<11.5	<17.0	<29.5	<30.0	<16.0	<6.00	<18.0	<18.0	<19.0
GA-M	<0.450	<0.450	<0.500	<0.720	<0.720	<0.580	<0.780	<0.900	<0.480	<0.450
GA-G	<14.0	<11.5	<17.0	<29.5	<30.0	<16.0	<6.00	<18.0	<18.0	<19.0
GA-N	<0.900	<0.900	<1.00	<1.740	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
GA-C	<0.85	<0.90	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.95	<0.90
KS-W	<7.0	<7.0	<7.0	<7.0	<7.0	<7.0	<35	<35	<7.0	<7.0
KS-E	<70*	<70*	<70*	<70*	<70*	<70*	<350*	<350*	<70*	<70*
KS-D	<14.0	<11.5	<17.0	<29.5	<30.0	<16.0	<6.00	<18.0	<18.0	<19.0
WA-L	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
MO-C	<1.40	<1.20	<1.70	<3.00	<3.00	<1.60	<0.600	<1.80	<1.80	<1.90
NY-L	<9.00	<9.00	<10.0	<14.5	<14.5	<11.5	<15.5	<18.0	<9.50	<9.00
NY-L	<1.70	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
NY-C	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
NY-C	<1.70	**0.27**	**0.92**	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210

AQUEOUS BRAKE CLEANER

Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-13-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
SITE										
NY-C	<1.70	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
NY-N	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
NY-N	<1.70	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
NY-N	<1.70	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
NY-S	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
NY-S	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
NY-S	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
NM-F	<1.70	<0.150	<1.70	<3.00	<3.00	<1.60	<0.600	<0.700	<0.370	<0.470
NM-A	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
DE	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
NE-G	<9.00	<9.00	<10.0	<14.5	<14.5	<11.5	<15.5	<18.0	<9.50	<9.00
NY-A	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
NY-A	<1.70	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
NY-A	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
NY-L	<2.80	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
	72									
	0	**1**	**1**	0	0	0	0	0	0	0
MAX	0	0.27	0.92	0	0	0	0	0.23	0	0
MIN	0	0.27	0.92	0	0	0	0	0.23	0	0

AQUEOUS BRAKE CLEANER

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.14	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.14	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.53	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.13	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.53	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.19	<0.10	<0.14
SK-95	TECH CTR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	29	<0.50	<0.50	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	2.2	<0.10	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.43	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**4.0**	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.11	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.91	**127**	**0.51**	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	9.6	<0.10	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.37	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.26	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.14
SK-95	TECH CTR	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	196	<5.0	<5.0	<7.0
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**61.4**	**20.5**	<0.14
SK-95	TECH CTR	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**1.6**	0.25	<0.14
SK-95	TECH CTR	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	**5020**	<5.0	<7.0
SK-95	TECH CTR	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	**543**	<5.0	<7.0
SK-95	TECH CTR	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<1.2	<0.25	<0.25	<0.14
SK-95	KS-E	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	**56**	<5.0	<7.0
SK-95	KS-D	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	59	**2.4**	<1.0	<1.4
SK-95	KS-W	0.29	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	**301**	**348**	<0.10	<0.14
SK-95	WA-L	**12**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.4

AQUEOUS BRAKE CLEANER

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-95	GA-C	<25	<25	<25	<25	<25	<25	<25	<125	**178**	<25	<35
SK-95	GA-G	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	**59**	**17**	<1.4
SK-95	NJ-N	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.42	<0.10	<0.14
SK-95	NJ-B	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.4
SK-95	ID-B	<100	<100	<100	<100	<100	<100	<100	<500	**952**	<100	<140
SK-95	NY-S	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0
SK-95	NY-W	<10	<10	<10	<10	<10	<10	<10	<50	**76.2**	<10	<14
SK-95	NY-A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	**1.6**	<1.0	<1.0
SK-95	NJ-S	<100	<100	<100	<100	<100	<100	<100	<500	**989**	<100	<140
SK-95	NY-T	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	**12.2**	<1.0	<1.4
SK-95	NY-C	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**9.6**	<0.10	<0.14
SK-95	NY-L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**30.2**	**2.6**	<0.14
SK-95	GA-m	<25	<25	<25	<25	<25	<25	<25	<125	**178**	<25	<35
SK-95	NY-N	0.15	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**7.6**	<0.10	<0.14
SK-95	GA-M	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	0.27	<0.10	<0.14
SK-96	GA-m	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	<0.100	<0.100	<0.14
SK-96	GA-M	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	<0.100	<0.100	<0.140
SK-96	GA-G	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**0.9**	<0.100	<0.140
SK-96	GA-N	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	**10.5**	<1.00	<1.40
SK-96	GA-C	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	3.7	**2220**	0.42	<0.14
SK-96	KS-W	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**32.8**	0.27	<0.140
SK-96	KS-E	<10	<10	<10	<10	<10	<10	<10	158	**1580**	<10	<10
SK-96	KS-D	**0.92**	<0.100	<100.0	<0.100	<100.0	<0.100	<0.100	**253**	**2650**	0.16	<0.140
SK-96	WA-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**93.4**	**3.6**	<0.140
SK-96	MO-C	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.49	<0.100	<0.140
SK-96	NY-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.46	<0.100	<0.140
SK-96	NY-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**117**	<0.100	<0.140
SK-96	NY-C	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**1.1**	<0.100	<0.140
SK-96	NY-C	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**1.4**	<0.100	<0.140

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-96	NY-C	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	1.5	**15.1**	<0.100	<0.140
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**19.1**	**2.2**	<0.140
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	0.12	0.23	<0.500	0.12	<0.100	<0.140
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	0.25	<0.100	<0.140
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	11.6	**50.4**	<0.100	<0.140
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**33.1**	<0.100	<0.140
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**230**	**67.1**	<0.140
SK-96	NM-F	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	48.8	**0.93**	<0.100	<0.140
SK-96	NM-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	<0.100	<0.100	<0.140
SK-96	DE	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**35.6**	**5.80**	<0.140
SK-96	NE-G	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**0.92**	<0.100	<0.140
SK-96	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**1250**	<0.100	<0.140
SK-96	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**42.5**	<0.100	<0.140
SK-96	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**3200**	<0.100	<0.140
SK-96	NY-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**125**	<0.100	<0.140
Total # 0f Samples		72										
# of Hits		**2**	0	0	0	0	0	0	**2**	**42**	**8**	0
	MAX	12	0	0	0	0	0.12	0.23	301	5020	67.1	0
	MIN	0.15	0	0	0	0	0.12	0.23	0.91	0.11	0.16	0

Physical Properties and TCLP Metals Analysis, ppm

LAB	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	≤2; ≥12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-95	CO-E-DE	8.06	0.81	141	<0.40	1.71	**1.02**	<2.0	**7.97**	<0.04	<0.45	<1.5
SK-95	BI	8.03	0.79	**128**	<4.00	3.56	**2.88**	<2.00	**8.81**	<0.04	<0.45	<1.5
SK-95	CO-GJ-RE	7.64	0.8	**131**	<0.40	1.71	<1.0	<2.0	**10.67**	<0.04	<0.45	<1.5
SK-95	CO-P-DE	8.8	0.811	143	<0.40	1.31	<1.0	<2.0	**5.14**	<0.04	<0.45	<1.5
SK-95	FA	7.17	0.811	>142	<4.00	1.8	<1.00	<2.00	**3.88**	<0.04	<0.452	<1.5
SK-95	KS-D	6.84	0.792	>142	<4.0	1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	KS-E	6.75	0.789	**138**	<4.0	3.94	**1.24**	<2.0	**5.16**	<0.04	<0.45	<1.5
SK-95	KS-W	7.13	0.803	144	<4.0	1.26	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	SD-S	7.44	0.795	**134**	<4.00	1.48	**1.32**	<2.00	**11.64**	<0.04	<0.45	<1.5
SK-95	WA-S	7.29	0.812	>142	<4.0	1.88	<1.0	<2.0	**7.43**	<0.04	<0.45	<1.5
SK-95	GA-C	5.35	0.805	148	<4.0	1.3	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	GA-G	4.78	0.783	**137**	<4.0	<1.0	<1.0	<2.0	**13.82**	<0.04	<0.45	<1.5
SK-95	NJ-N	8.36	0.792	**132**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NJ-B	8.84	0.788	**139**	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	DE	8.43	0.80	145	<5.0	<20	<1.0	<2.0	**13.49**	<0.04	<0.45	<1.0
SK-95	LA-K	7.29	0.799	146	<4.00	1.98	<1.00	<2.00	<4.00	<0.04	<0.45	<2.0
SK-95	LA-P	6.90	0.789	144	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45	<1.0
SK-95	NY-S	5.44	0.807	**138**	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45	<1.0
SK-95	NY-W	7.28	0.78	**130**	<4.0	1.51	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	ID-B	8.02	0.81	**139**	<4.0	5.97	<1.0	<2.0	**5.48**	<0.04	<0.45	<1.5
SK-95	DO	7.76	0.83	**138**	<4.0	1.59	<1.0	<2.0	**8.65**	<0.04	<0.45	<2.0
SK-95	NY-A	7.31	0.192	140	<4.0	1.23	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NJ-S	7.36	0.798	**137**	<4.0	<1.0	<1.0	<2.0	<3.5	0.04	<0.45	<1.5
SK-95	NY-T	7.89	0.804	**120**	<4.0	1.25	<1.0	<2.0	**13.9**	<0.04	<0.45	<1.5
SK-95	GA-N	3.98	0.780	148	<4.0	2.0	<1.0	<2.0	3.83	<0.04	<0.45	<1.5
SK-95	NM-F	8.95	0.787	**120**	<4.0	<1.0	<1.0	<2.0	**5.29**	<0.04	<0.45	<2.0
SK-95	MS-J	6.49	0.789	149	<4.0	<1.0	<1.0	<2.0	<4.0	<0.04	<0.45	<2.0
SK-95	GA-M	7.88	0.786	143	<4.0	2.09	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NY-L	6.57	0.799	140	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5

PARTS WASHER SOLVENT 105

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	≤2; ≥12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	**SITE**											
SK-95	GA-m	5.35	0.805	148	<4.0	1.3	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NY-C	7.70	0.785	142	<4.0	2.52	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	NY-N	8.88	0.796	**124**	<4.0	1.01	<1.0	<2.0	<4.0	<0.04	<0.45	<2.0
SK-95	NE-O	7.46	0.795	**129**	<4.0	1.94	<1.0	<2.0	**8.71**	<0.04	<0.45	<1.5
SK-95	NE-GI	6.99	0.804	**136**	<4.0	1.08	<1.0	<2.0	**6.99**	<0.04	<0.45	<1.5
SK-95	DE	8.72	0.793	147	<4.0	1.13	<1.0	<2.0	**8.14**	<0.04	<0.45	<1.5
SK-95	MN-B	6.01	0.797	142	<4.0	1.97	<1.0	<2.0	**7.67**	<0.04	<0.45	<1.5
SK-96	ND-F	7.65	0.80	**138**	<5.00	1.95	0.93	<5.00	**7.42**	<0.04	<0.45	<0.50
SK-96	KS-E	7.24	0.80	**132**	<5.00	<0.500	<0.50	0.67	<4.00	<0.040	<0.45	<0.50
SK-96	KS-W	6.51	0.80	141	<5.00	1.15	0.99	1.30	**7.19**	<0.040	<0.45	<0.50
SK-96	SD-S	7.97	0.87	**136**	<0.500	2.00	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	KS-D	7.77	0.80	145	<5.00	3.01	0.80	<0.500	4.89	<0.040	<0.45	<0.50
SK-96	GA-G	6.79	0.81	141	<5.00	1.39	0.58	<0.50	**5.88**	<0.040	<0.45	<0.50
SK-96	GA-m	5.61	0.79	148	<5.00	1.00	<0.50	<0.50	<4.00	<0.040	<0.45	<0.50
SK-96	GA-N	7.16	0.82	151	<5.00	3.02	0.63	<0.50	**5.07**	<0.04	<0.45	<0.50
SK-96	WA-S	6.59	0.80	**138**	<5.00	2.96	0.82	<0.50	**7.89**	<0.04	<0.45	<0.50
SK-96	MO-C	6.27	0.802	**127**	<5.00	0.755	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	BI	7.21	0.8	>142	<5.00	0.712	<0.500	<0.500	**7.36**	<0.040	<0.45	<0.500
SK-96	NY-L	7.15	0.8	140	<5.00	<0.500	**5.71**	<0.500	<4.00	<0.040	<0.450	<0.500
SK-96	NY-L	8.59	0.799	**120**	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	MS-J	7.37	0.8	150	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	GA-M	7.81	0.8	146	<5.00	1.15	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NM-A	6.54	0.79	141	<5.00	0.537	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NM-F	8.35	0.81	**115**	<5.00	9.76	**2.35**	0.515	**36.5**	<0.040	<0.45	<0.500
SK-96	NY-N	7.67	0.797	**138**	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NY-N	6.73	0.787	**135**	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NY-N	6.04	0.787	**132**	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NY-S	7.64	0.781	**131**	<5.0	1.41	0.8	<0.500	**5.17**	<0.04	<0.45	<0.500
SK-96	NY-S	5.50	0.77	**136**	<5.00	<0.500	<0.500	<0.500	<0.400	<0.040	<0.452	<0.500

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	≤2; ≥12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-96	NY-S	6.38	0.77	**124**	<5.00	3.38	<0.500	<0.500	**5.15**	<0.040	<0.452	<0.050
SK-96	NY-C	6.98	0.802	**119**	<5.00	0.912	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NY-A	6.14	0.801	**136**	<5.00	1.95	<0.500	<0.500	**250**	<0.04	<0.45	<0.500
SK-96	LA-P	7.12	0.784	147	<5.00	<0.500	0.503	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	DE	6.37	0.83	155	<5.00	3.73	**1.39**	0.933	**45.2**	<0.040	<0.452	<0.500
SK-96	NE-O	8.33	0.794	140	<5.00	2.17	**1.22**	0.893	**6.73**	<0.040	<0.452	<0.500
SK-96	DO	5.09	0.81	**130**	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	DO	7.67	1.05	>200	<5.00	4.84	**1.40**	0.971	**15.2**	<0.040	<0.45	<0.500
SK-96	MN-E	7.46	0.78	156	<5.00	<0.500	**1.64**	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	MN-E	8.06	0.81	**136**	<5.00	1.43	**1.01**	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	MN-E	7.61	0.8	**136**	<5.00	1.31	0.752	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	LA-K	7.17	0.792	160	<5.00	5.21	<0.500	0.561	<4.00	<0.040	<0.45	<0.500
SK-96	SC-G	8.33	0.8	154	<5.00	0.578	**1.75**	0.618	<4.00	<0.040	<0.452	<0.500
•	UT-S											
SK-96	NY-A	5.60	0.812	**120**	<5.00	<0.500	<0.500	3.32	**5.55**	<0.04	<0.45	<0.500
SK-96	NY-A	7.35	0.801	**126**	<5.00	0.542	<0.500	<0.500	**6.18**	<0.04	<0.45	<0.500
SK-96	MN-B	7.72	0.8	**138**	<5.00	1.53	0.91	<0.500	**8.3**	<0.040	<0.452	<0.500
SK-96	MN-B	8.23	0.82	**112**	<5.00	1.56	0.551	<0.500	4.91	<0.040	<0.452	<0.500
SK-96	NE-GI	8.57	0.803	**135**	<5.00	2.91	0.734	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	CO-E-DE	7.58	0.810	147	<5.00	2.88	0.83	<0.500	**7.83**	<0.040	<0.45	<0.500
SK-96	CO-P-DE	8.44	0.81	152	<5.00	1.74	<0.500	<0.500	**6.64**	<0.040	<0.452	<0.500
SK-96	CO-GJ-RE	6.71	0.800	144	<5.00	0.89	0.67	<0.500	**11.4**	<0.040	<0.45	<0.500
SK-96	GA-C	6.45	0.9	150	<5.00	<0.50	<0.50	<0.50	**8.69**	<0.04	<0.45	<0.50
SK-96	NE-G	8.69	0.831	148	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
Total # of Samples		82										
# of Hits		0	0	**40**	0	0	**12**	0	**38**	0	0	0
	MAX	8.95	1.053	160	0	9.76	5.71	3.32	250	0.04	0	0
	MIN	3.98	0.192	112	0	0.537	0.503	0.515	3.83	0.04	0	0

PARTS WASHER SOLVENT 105

TCLP Semi Volatiles Analysis, ppm

LAB	Parameter / SITE	cresol	2.4-DNT	Cl6-benz	Cl6-1,3-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
SK-95	CO-E-DE	<190	<144	<272	<384	<312	<124	<1800	<180	<90	<120
SK-95	BI	<2000	<2000	<2000	<2000	<2000	<2000	<2000	<1000	<2000	<2000
SK-95	CO-GJ-RE	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	CO-P-DE	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	FA	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	KS-D	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	KS-E	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	KS-W	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	SD-S	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	WA-S	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	GA-C	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	GA-G	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	NJ-N	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	NJ-B	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	DE	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	LA-K	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	LA-P	<280	<230	<340	<590	<600	<2220	<120	<360	<360	<380
SK-95	NY-S	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-W	<196	<161	<239	<414	<421	<224	<84	<253	<253	<267
SK-95	ID-B	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	DO	<280	<230	<340	<590	<600	<2220	<120	<360	<360	<380
SK-95	NY-A	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NJ-S	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	NY-T	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-N	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	NM-F	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	MS-J	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-M	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-L	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-1,3-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-95	GA-m	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	NY-C	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-N	<280	<230	<340	<590	<600	<2220	<120	<360	<360	<380
SK-95	NE-O	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NE-GI	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	DE	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	MN-B	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	ND-F	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	KS-E	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	KS-W	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	SD-S	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	KS-D	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	GA-G	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	GA-m	<280	<230	<340	<<590	<600	<320	<120	<360	<360	<380
SK-96	GA-N	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	WA-S	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	MO-C	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	BI	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	NY-L	40.2	<0.073	<0.015	<0.015	<0.015	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-L	28.0	<0.073	<0.003	<0.003	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	MS-J	3.2	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	GA-M	<3600	<3600	<4000	<5800	<5800	<4600	<6200	<7200	<3800	<3600
SK-96	NM-A	15.7	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NM-F	5.5	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-N	9.8	<0.073	<0.016	<0.034	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-N	11.8	<0.073	<0.003	0.013	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-N	10.9	<0.073	<0.003	0.011	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-S	21.2	<0.073	<0.016	0.108	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-S	12.4	<0.073	0.85	<1.50	<1.50	<0.800	<0.300	<0.350	<0.180	<0.240

PARTS WASHER SOLVENT 105

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-1,3-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-96	NY-S	68.9	<0.073	<0.850	<1.50	<1.50	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NY-C	56.5	<0.360	<0.003	<0.003	<0.003	<4.00	<1.50	<1.80	<0.920	<1.20
SK-96	NY-A	19.9	<0.073	<0.016	<0.034	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	LA-P	<0.850	<0.073	0.035	0.093	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	DE	3.5	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
SK-96	NE-O	38.6	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
SK-96	DO	63.6	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	DO	60.9	<3.60	<4.00	<5.80	<5.80	<4.60	<6.20	<7.20	<3.80	<3.60
SK-96	MN-E	<1.70	<0.050	<0.048	<0.082	<0.880	<0.610	<0.250	<1.30	<1.40	<0.210
SK-96	MN-E	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	MN-E	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	LA-K	5.4	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	SC-G	<0.850	<0.073	<0.016	0.053	<0.367	<0.800	<0.300	<0.350	<0.180	<0.240
*	UT-S	<365	<365	<365	<365	<365	<365	<365	<365	<3500	<365
SK-96	NY-A	26	<0.73	<0.003	<0.003	<0.003	<8.00	<3.00	<3.50	<1.80	<2.40
SK-96	NY-A	59.1	<0.73	<0.003	<0.003	<0.003	<8.00	<3.00	<3.50	<1.80	<2.40
SK-96	MN-B	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	MN-B	10.8	<0.073	<0.003	<0.003	<0.003	<0.800	<0.300	<0.350	<0.180	<0.240
SK-96	NE-GI	28.8	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-95	CO-E-DE	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	CO-P-DE	16.3	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
SK-95	CO-GJ-RE	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	GA-C	<170	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NE-G	10.6	<0.073	<0.016	<0.034	<0.370	<0.800	<0.300	<0.350	<0.180	<0.240
Total # of Samples		82									
# of Hits		0	0	0	0	0	0	0	0	0	0
	MAX	68.9	0	0.85	0.108	0	0	0	0	0	0
	MIN	3.2	0	0.035	0.011	0	0	0	0	0	0

PARTS WASHER SOLVENT 105

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-95	CO-E-DE	<100	<100	<100	<100	<100	<100	<100	<500	**662**	<100	<140
SK-95	BI	<100	<100	<100	<100	<100	<100	<100	<500	**1140**	**139**	<140
SK-95	CO-GJ-RE	<100	<100	<100	<100	<100	<100	<100	<500	**1610**	<100	<140
SK-95	CO-P-DE	<100	<100	<100	<100	<100	<100	<100	<500	**784**	<100	<140
SK-95	FA	<100	<100	<100	<100	<100	<100	<100	<500	**311**	<100	<140
SK-95	KS-D	<100	<100	<100	<100	<100	<100	<100	<500	**201**	<100	<140
SK-95	KS-E	<100	<100	<100	<100	<100	<100	<100	<500	**833**	<100	<140
SK-95	KS-W	<100	<100	<100	<100	<100	<100	<100	<500	**1560**	<100	<140
SK-95	SD-S	<100	<100	<100	<100	<100	<100	<100	<500	**761**	<100	<140
SK-95	WA-S	**1.1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	**2.5**	<1.0	<1.4
SK-95	GA-C	<100	<100	<100	<100	<100	<100	<100	<500	**2260**	<100	<140
SK-95	GA-G	<100	<100	<100	<100	<100	<100	<100	<500	**321**	<100	<140
SK-95	NJ-N	<100	<100	<100	<100	<100	<100	<100	<500	**4120**	<100	<140
SK-95	NJ-B	<10	<10	<10	<10	<10	<10	<10	<50	**246**	<10	<14
SK-95	DE	<100	<100	<100	<100	<100	<100	<100	<500	**558**	<100	<140
SK-95	LA-K	<100	<100	<100	<100	<100	<100	<100	<500	**225**	<100	<140
SK-95	LA-P	**5.7**	<5.0	<5.0	<5.0	**8.6**	<5.0	<5.0	<25	**508**	**31.1**	<7.0
SK-95	NY-S	<100	<100	<100	<100	<100	<100	<100	<500	**1250**	**162**	<140
SK-95	NY-W	<5.0	<5.0	<5.0	<5.0	**12.28**	<5.0	<5.0	<25	**261.2**	**25.51**	<7.0
SK-95	ID-B	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	**68.5**	<5.0	<7.0
SK-95	DO	<10	<100	<100	<100	<10	<10	<10	<500	**424**	<100	<140
SK-95	NY-A	<100	<100	<100	<100	<100	<100	<100	<500	**563**	<100	<140
SK-95	NJ-S	<100	<100	<100	<100	<100	<100	<100	<500	**620**	<100	<140
SK-95	NY-T	<100	<100	<100	<100	<100	<100	<100	<500	**185**	<100	<140
SK-95	GA-N	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<12.5	**8**	<2.5	<3.5
SK-95	NM-F	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	**1.5**	<1.0	<1.4
SK-95	MS-J	<100	<100	<100	<100	<100	<100	<100	<500	**259**	<100	<140
SK-95	GA-M	<100	<100	<100	<100	<100	<100	<100	<500	**1180**	<100	<140
SK-95	NY-L	<5.0	<5.0	<5.0	<5.0	5.9	<5.0	<5.0	<25	**71.5**	<5.0	<7.0

PARTS WASHER SOLVENT 105

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-95	GA-m	<100	<100	<100	<100	<100	<100	<100	<500	**2260**	<100	<140
SK-95	NY-C	<100	<100	<100	<100	<100	<100	<100	<500	**288**	<100	<140
SK-95	NY-N	<5.0	<5.0	<5.0	<5.0	**24.6**	<5.0	<5.0	<25	**286**	<5.0	<7.0
SK-95	NE-O	**3.6**	<0.10	<2.5	**13.8**	<2.5	<0.10	<0.10	5.5	**101**	**24.3**	<0.140
SK-95	NE-GI	**2**	<2.5	<2.5	**7.3**	<2.5	<2.5	<2.5	<12.5	**161**	**15.1**	<0.140
SK-95	DE	**2.7**	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<1.2	**82.7**	**29.5**	<0.14
SK-95	MN-B	<100	<100	<100	<100	<100	<100	<100	<500	**701**	<100	<140
SK-96	ND-F	**3.60**	<2.00	<2.00	<2.00	**8.00**	<2.00	<4.00	<10.0	**821**	**137**	<2.00
SK-96	KS-E	**3.30**	<2.00	<2.0	<2.0	**13.70**	<2.00	<4.00	<10	**1760**	**71.2**	<2.00
SK-96	KS-W	**9.60**	<2.00	<2.0	<2.0	7.20	<2.00	<4.00	<10	**892**	**12.9**	<2.00
SK-96	SD-S	<2.00	<2.00	<2.00	<2.00	6.50	<2.00	<4.0	18.9	**727**	**9.60**	<2.00
SK-96	KS-D	<2.00	<2.00	3.90	<2.0	7.10	<2.00	<4.00	<10.0	**1010**	**4.80**	<2.00
SK-96	GA-G	**3.10**	<2.00	<2.00	<2.00	**19.30**	<2.00	<4.00	14.90	**3310**	**74.7**	<2.00
SK-96	GA-m	<2.00	<2.00	<2.00	<2.00	**8.50**	<2.00	<4.00	<10.0	**1090**	**2.30**	<2.00
SK-95	GA-N	<2.00	<2.00	<2.00	<2.00	4.60	<2.00	<4.00	16.40	**1030**	**9.10**	<2.00
SK-96	WA-S	**3.90**	<2.00	<2.00	<2.00	**9.60**	<2.00	<4.00	<10.0	**944**	**151**	<2.00
SK-96	MO-C	**2.2**	<2.00	2.2	<2.00	**11.9**	<2.00	<4.00	<10.0	**671**	**36.8**	<2.00
SK-96	BI	**14.4**	<2.00	<2.00	<2.00	**10.3**	<2.00	<4.00	<10.0	**1320**	**39.9**	<2.00
SK-96	NY-L	0.14	<0.100	<10.0	<0.100	<10.0	<0.100	<0.100	<0.500	**184**	**2.8**	<0.140
SK-96	NY-L	<20.0	<20.0	<20.0	<20.0	**26.6**	<20.0	<40.0	<100.0	**2770**	<20.0	<20.0
SK-96	MS-J	<2.00	<2.00	<2.00	<2.00	3.7	<2.00	<4.00	<10.0	**242**	**11.5**	<2.00
SK-96	GA-M	<2.00	<2.00	<2.00	<2.00	**7.7**	<2.00	<4.00	<10.0	**756**	**7.5**	<2.00
SK-96	NM-A	<2.00	<2.00	<2.00	<2.00	4.20	<2.00	<4.00	<10.0	**353**	**6.60**	<2.00
SK-96	NM-F	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	<10.00	**77.1**	<2.00	<2.00
SK-96	NY-N	**3.00**	<0.200	<0.200	<0.200	4.4	<0.200	0.44	17.1	**437**	**29.2**	<0.200
SK-96	NY-N	<0.200	<2.00	<2.00	<2.00	**11.20**	<2.00	<4.00	<1.00	**209**	**3.1**	<2.00
SK-96	NY-N	<0.200	<2.00	<2.00	<2.00	**10.20**	<2.00	<4.00	<1.00	**203**	**3.0**	<2.00
SK-96	NY-S	**1.4**	<0.200	0.98	<0.200	**9.4**	<0.200	<0.400	1.9	**496**	**16.9**	<0.200
SK-96	NY-S	<2.00	<2.00	<2.00	<2.00	**11.4**	<2.00	<4.00	<10.0	**527**	**2.4**	<2.00

PARTS WASHER SOLVENT 105

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-96	NY-S	<2.00	<2.00	<2.00	<2.00	**20.8**	<2.00	<4.00	<10.0	**856**	**10.9**	<2.00
SK-96	NY-C	<2.00	<2.00	<2.00	<2.00	**35.2**	<2.00	<4.00	<10.0	**878**	**13.10**	<2.00
SK-96	NY-A	<2.00	<2.00	<2.00	<2.00	**10.9**	<2.00	<4.00	<10.00	**381**	**5.9**	<2.00
SK-96	LA-P	<2.00	<2.00	3.4	<2.00	5.5	<2.00	<4.00	<10.00	**304**	**14.1**	<2.00
SK-96	DE	**4.3**	<2.00	<2.00	<2.00	3.5	<2.00	<4.00	<10.0	**257**	**69.4**	<2.00
SK-96	NE-O	<2.00	<2.00	<2.00	<2.00	**8.5**	<2.00	<4.00	<10.0	**67.5**	<2.00	<2.00
SK-96	DO	**9.7**	<2.00	3.4	<2.00	**12.40**	<2.00	<4.00	13.4	**1500**	**86.5**	<2.00
SK-96	DO	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	16.9	**1.6**	0.26	<0.140
SK-96	MN-E	<0.200	<0.200	<0.200	<0.200	0.94	<0.200	<0.400	<1.00	0.51	<0.200	<0.200
SK-96	MN-E	**2.9**	<0.200	<0.200	<0.200	**9.5**	<0.200	<0.400	7.2	**243**	**135**	<0.200
SK-96	MN-E	**3.2**	<0.200	<0.200	<0.200	**9.3**	<0.200	<0.400	7.1	**240**	**145**	<0.200
SK-96	LA-K	<2.00	<2.00	<2.00	<2.00	3.4	<2.00	<4.00	<10.00	**205**	**3.1**	<2.00
SK-96	SC-G	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	<10.0	<2.00	<2.00	<2.00
*	UT-S	<14	<35	<14	<35	<70	<35	<35	<350	**959**	**39.2**	<35
SK-96	NY-A	<2.00	<2.00	<2.00	<2.00	**16.2**	<2.00	<4.00	<10.00	**1540**	**2580**	<2.00
SK-96	NY-A	<2.00	<2.00	<2.00	<2.00	**15.7**	<2.00	<4.00	<10.00	**1510**	**2840**	<2.00
SK-96	MN-B	**3.3**	<0.200	<0.200	<0.200	7.3	<0.200	<0.400	7.3	**218**	**65.4**	<0.200
SK-96	MN-B	<2.00	<2.00	<2.00	<2.00	5.4	<2.00	<4.00	13.3	**999**	**34.1**	<2.00
SK-96	NE-GI	<2.00	<2.00	<2.00	<2.00	**9.3**	<2.00	<4.00	<10.00	**563**	<2.00	<2.00
SK-95	CO-E-DE	**6.00**	<2.00	<2.00	<2.00	3.7	<2.00	<4.00	17.5	**1470**	**70.1**	<2.00
SK-95	CO-P-DE	**3.90**	<2.00	<2.00	<2.00	3.2	<2.00	<4.00	<10.0	**450**	**19.8**	<2.00
SK-95	CO-GJ-RE	**8.1**	<0.20	<0.20	<0.20	6.2	0.43	**13.7**	12.5	**2110**	**415**	<0.20
SK-96	GA-C	<2.00	<2.00	<2.00	<2.00	**8.00**	<2.00	<4.00	<10.0	**1050**	**9.4**	<2.00
SK-96	NE-G	**4.8**	<2.00	<2.00	<2.00	5.7	<2.00	<4.00	16.4	**1060**	**59.4**	<2.00
Total # of Samples		82										
# of Hits		**23**	0	0	**2**	**27**	0	0	0	**80**	**46**	0
	MAX	14.4	0	3.9	13.8	35.2	0.43	13.7	18.9	4120	2840	0
	MIN	0.14	0	0.98	7.3	0.94	0.43	0.44	1.9	0.51	0.26	0

IMMERSION CLEANER

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	≤2; ≥12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-95	CO-E/AC	10.42	0.933	153	<0.40	<1.0	**3.53**	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	KS-D	10.10	0.928	>142	<4.0	2.09	**11.44**	<2.0	**41.14**	<0.04	<0.45	<1.5
SK-95	KS-E	10.97	0.93	144	<4.0	<1.0	**6.87**	<2.0	**55.4**	<0.04	<0.45	<1.5
SK-95	KS-W	10.51	0.947	145	<4.0	<1.0	**24.41**	**13.88**	<3.5	<0.04	0.54	<1.5
SK-95	SD-S	10.08	0.931	**137**	<4.00	<1.00	<1.00	<2.00	**8.43**	<0.04	<0.45	<1.5
SK-95	GA-C	10.68	0.944	**139**	<4.0	<1.0	**2.35**	<2.0	**11.78**	<0.04	<0.45	<1.5
SK-95	GA-G	9.27	0.935	>200	<4.0	3.26	**122.4**	**7.23**	**58.2**	<0.04	0.65	<1.5
SK-95	NJ-N	10.11	0.935	145	<4.0	<1.0	**4.07**	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	ID-B	10.70	0.949	>200	<5.0	59.3	**2.0**	**244.63**	**74.95**	<0.04	<0.45	<1.0
SK-95	LA-P	9.41	0.939	**138**	<5.0	<20	**33.81**	<2.0	**11.78**	<0.04	<0.45	<1.0
SK-95	NY-S	10.33	0.948	144	<5.0	<20	<1.0	<2.0	<5.0	<0.04	<0.45	<1.0
SK-95	NY-W	10.16	0.945	**137**	<5.0	<20	<1.0	<2.0	**6.64**	<0.04	<0.45	<1.0
SK-95	LA-K	10.23	0.942	140	<4.00	<1.00	**160**	<2.00	<4.00	<0.04	<0.45	<2.0
SK-95	NY-A	10.20	0.955	140	<5.0	<20	**6.91**	<2.0	**5.08**	<0.04	<0.45	<1.0
SK-95	NJ-S	10.09	0.935	149	<4.0	<1.0	<1.0	<2.0	**16.5**	<0.04	<0.45	<1.5
SK-95	NM-A	10.85	0.956	**134**	<4.0	<1.0	**1.72**	<2.0	**13.1**	<0.04	<0.45	<2.0
SK-95	NM-F	10.14	0.937	147	<4.0	<1.0	**6.56**	<2.0	<4.0	<0.04	<0.45	<2.0
SK-95	NY-T	10.39	0.940	142	<4.0	<1.0	<1.0	<2.0	<3.5	<0.04	<0.45	<1.5
SK-95	GA-M	10.27	0.928	148	<4.0	<1.0	<1.0	<2.0	**8.6**	<0.04	<0.45	<2.0
SK-95	NY-C	10.25	0.923	146	<4.0	<1.0	**1.22**	<2.0	<4.0	<0.04	<0.45	<2.0
SK-95	GA-N	10.26	0.940	**139**	<4.0	1.2	<1.0	<2.0	**59.83**	<0.04	<0.45	<1.5
SK-95	NY-L	10.56	0.939	147	<4.0	<1.0	**28**	<2.0	**34.3**	<0.04	<0.45	<1.5
SK-95	GA-m	10.68	0.944	**139**	<4.0	<1.0	**2.35**	<2.0	**11.78**	<0.04	<0.45	<1.5
SK-95	NE-O	10.18	0.944	147	<4.0	<1.0	**22.3**	<2.0	**49.1**	<0.04	<0.45	<1.5
SK-95	NE-GI	10.4	0.937	>200	<4.0	<1.0	<1.0	<2.0	3.94	<0.04	<0.45	<1.5
SK-95	DE	10.07	0.926	144	<4.0	1.26	**30.6**	**5.14**	**47.02**	<0.04	<0.45	<1.5
SK-95	MS-J	6.66	0.943	148	<4.0	<1.0	**2.47**	<2.0	**7.75**	<0.04	<0.45	<2.0
SK-95	NY-N	10.42	0.930	144	<4.0	1.77	**6.39**	<2.0	**22.1**	<0.04	<0.45	<1.5
SK-96	CO-E/AC	10.66	0.92	148	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500

IMMERSION CLEANER

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	≤2; ≥12.5	na	< 140	5	100	1	5	5.	0.2	1	5
LAB	SITE											
SK-96	KS-W	9.47	0.95	143	<5.00	2.28	**32.4**	0.85	**242**	0.17	<0.45	<0.500
SK-96	KS-E	9.60	0.94	147	<5.00	2.35	**14.2**	0.909	**72.8**	<0.040	<0.45	<0.500
SK-96	KS-D	9.56	0.94	144	<5.00	0.759	**26.8**	0.974	**83.9**	0.11	<0.45	<0.500
SK-96	MO-C	10.87	0.944	148	<5.00	<0.500	**2.62**	<0.500	**31.8**	<0.040	<0.45	<0.050
SK-96	GA-N	10.70	0.941	148	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	GA-G	9.50	0.94	147	<5.00	<0.500	**9.52**	<0.50	**29.4**	<0.040	<0.45	<0.500
SK-96	GA-m	9.43	0.93	>200	<5.00	2.52	**3.17**	1.78	**63.4**	<0.040	<0.45	<0.500
SK-96	GA-C	10.13	0.95	146	<5.00	<0.50	<0.50	<0.50	<4.00	<0.04	<0.45	<0.50
SK-96	NY-C	9.97	0.95	148	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.450	<0.500
SK-96	NY-C	9.64	0.990	>200	**9.59**	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NY-C	10.01	0.94896	148	<5.00	<0.500	<0.500	<0.500	**14.4**	<0.040	<0.45	<0.500
SK-96	GA-M	9.85	0.94	148	<5.00	<0.500	**1.94**	0.554	**17.8**	<0.040	<0.45	<0.500
SK-96	NM-F	9.97	1.01	148	<5.00	<0.500	**1.89**	<0.500	<4.00	<0.04	<0.45	<0.500
SK-96	NM-A	9.95	0.96	148	<5.00	<0.500	<0.500	0.536	**35**	<0.040	<0.45	<0.500
SK-96	NY-S	9.60	0.94	>200	<5.00	0.508	0.765	<0.500	**12.9**	<0.040	<0.452	<0.500
SK-96	NY-S	9.67	0.97	147	<5.00	<0.500	**2.36**	<0.500	**7.61**	<0.040	<0.45	<0.500
SK-96	NY-S	10.46	0.936	147	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.45	<0.500
SK-96	NY-N	9.70	0.912	>200	<5.00	17	**6.99**	2.62	**3040**	<0.040	<0.45	<0.500
SK-96	NY-N	9.97	0.939	148	<5.00	0.713	**7.06**	<0.500	**14.8**	<0.040	<0.45	<0.500
SK-96	NY-N	9.97	0.931	143	<5.00	1.25	**10.3**	<0.500	**23.1**	<0.040	<0.45	<0.500
SK-96	NY-A	9.72	0.93	148	<5.0	0.629	**34**	1.12	**84**	<0.04	<0.45	<0.500
SK-96	LA-P	9.78	0.954	153	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	LA-K	9.71	0.93394	149	<5.00	<0.500	**1.12**	0.726	**15.3**	<0.040	<0.45	<0.500
*	UT-S	10.8		151	<1.0	<10.0	**10.4**	<0.3	<2.0	0.0077	<3.0	<0.2
SK-96	NY-L	9.85	0.94	151	<5.00	<0.500	**2.19**	0.6	**12.9**	<0.040	<0.450	<0.500
SK-96	NY-L	10.57	0.951	148	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	NY-L	10.57	0.951	148	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	NY-A	9.96	0.936	148	<5.0	16.7	<0.500	<0.500	**5.15**	<0.04	<0.45	<0.500
SK-96	NY-A	9.93	0.946	147	<5.0	5.17	<0.500	<0.500	**5.91**	<0.04	<0.45	<0.500

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Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	≤2; ≥12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-96	SC-G	9.78	0.965	180	<5.00	<0.500	**6.32**	<0.500	**25.3**	<0.040	<0.452	<0.500
SK-96	NE-GI	9.95	0.955	143	<5.00	<0.500	**2.95**	<0.500	**8.22**	0.17	<0.45	<0.500
SK-96	NE-O	10.06	0.923	150	<5.00	<0.500	<0.500	<0.500	<4.00	<0.040	<0.452	<0.500
SK-96	NE-G	10.1	0.926	144	<5.00	<0.500	**2.06**	<0.500	**6.45**	<0.040	<0.452	<0.500
SK-96	SD-S	9.92	0.94	148	<5.0	0.573	<0.500	<0.500	**16.1**	<0.040	<0.45	<0.500
SK-96	DE	9.82	0.947	145	<5.00	0.713	0.706	**12.4**	**15.0**	<0.040	<0.452	<0.500
SK-96	MS-J	9.94	0.94	148	<5.00	<0.500	**7.08**	2.02	**4.36**	<0.040	<0.45	0.856
Total # of Samples		65										
	# of Hits	0	0	**7**	**1**	0	**40**	**5**	**44**	0	0	0
	MAX	10.97	1.01	180.00	9.59	59.30	160.00	244.63	3040.00	0.17	0.65	0.00
	MIN	6.66	0.912	134	9.59	0.508	0.706	0.536	3.94	0.0077	0.54	0

IMMERSION CLEANER

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-1,3-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-95	CO-E/AC	<190	<140	<280	<380	<320	<120	<1800	<180	<90	<120
SK-95	KS-D	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	KS-E	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	KS-W	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	SD-S	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	GA-C	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	GA-G	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	NJ-N	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	ID-B	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	LA-P	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-S	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-W	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	LA-K	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-A	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NJ-S	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	NM-A	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NM-F	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-T	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-M	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-C	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-N	<190	<144	<280	<380	<320	<124	<1800	<180	<90	<118
SK-95	NY-L	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-m	<190	<144	<272	<384	<312	<124	<1794	<180	<90	<118
SK-95	NE-O	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NE-GI	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	DE	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	MS-J	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	NY-N	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	CO-E/AC	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380

TCLP Semi Volatiles Analysis, ppm

LAB	SITE	cresol	2.4-DNT	Cl6-benz	Cl6-1,3-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
SK-96	KS-W	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	KS-E	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	KS-D	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	MO-C	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-95	GA-N	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	GA-G	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	GA-m	<280	<230	<340	<<590	<600	<320	<120	<360	<360	<380
SK-96	GA-C	<170	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-C	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-C	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-C	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	GA-M	<3600	<3600	<3600	<3600	<3600	<3600	<3600	<3600	<3600	<3600
SK-96	NM-F	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NM-A	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-S	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-S	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-S	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-N	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-N	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-N	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-A	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	LA-P	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	LA-K	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
*	UT-S	<500000	<500000	<500000	<500000	<500000	<500000	<2550000	<500000	<2550000	<500000
SK-96	NY-L	<1800	<1800	<2000	<2900	<2900	<2300	<3100	<3600	<1900	<1800
SK-96	NY-L	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-L	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-A	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-A	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180

IMMERSION CLEANER

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-1,3-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-96	SC-G	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NE-GI	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NE-O	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NE-G	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	SD-S	<280	<230	<340	<590	<600	<320	<120	<360	<360	<380
SK-96	DE	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	MS-J	<3600	<3600	<4000	<5800	<5800	<4600	<6200	<7200	<3800	<3600
Total # of Samples			65								
	# of Hits	0	0	0	0	0	0	0	0	0	0
	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MIN	0	0	0	0	0	0	0	0	0	0

IMMERSION CLEANER

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-95	CO-E/AC	<100	<100	<100	<100	**684**	<100	<100	<500	**202**	<100	<140
SK-95	KS-D	<100	<100	<100	<100	**558**	<100	<100	<500	**465**	<100	<140
SK-95	KS-E	<100	<100	<100	<100	**496**	<100	<100	<500	**145**	<100	<140
SK-95	KS-W	<100	<100	<100	<100	**954**	<100	<100	<500	**304**	<100	<140
SK-95	SD-S	<100	<100	<100	<100	**790**	<100	<100	<500	**276**	<100	<140
SK-95	GA-C	<100	<100	<100	<100	**466**	<100	<100	<500	**103**	<100	<140
SK-95	GA-G	<100	<100	<100	<100	**439**	<100	<100	<500	<100	<100	<140
SK-95	NJ-N	<100	<100	<100	<100	**573**	<100	<100	<500	<100	<100	<140
SK-95	ID-B	<10	<10	<10	<10	<10	<10	<10	<50	**70.5**	<10	<14
SK-95	LA-P	<25	<25	<25	<25	<25	<25	<25	<125	**102**	<25	<35
SK-95	NY-S	<10	<10	34.1	<10	**308**	<10	<10	105	**86.9**	<10	<14
SK-95	NY-W	<25	<25	<25	<25	**193**	<25	<25	<125	**118**	<25	<35
SK-95	LA-K	<100	<100	<100	<100	**662**	<100	<100	<500	**192**	<100	<140
SK-95	NY-A	<10	<10	<10	<10	**173**	<10	<10	<50	**91**	<10	<14
SK-95	NJ-S	<100	<100	<100	**1430**	**552**	<100	<100	<500	**111**	<100	<140
SK-95	NM-A	<100	<100	<100	<100	**622**	<100	<100	<500	<100	<100	<140
SK-95	NM-F	<100	<100	<100	<100	**666**	<100	<100	<500	**218**	<100	<140
SK-95	NY-T	<100	<100	<100	<100	**788**	<100	<100	<500	<100	<100	<140
SK-95	GA-M	<25	<25	<25	<25	**412**	<25	<25	<125	**82.2**	<25	<35
SK-95	NY-C	<5.0	<5.0	20.8	<5.0	**407**	<5.0	<5.0	<25	**176**	**24.1**	<7.0
SK-95	GA-N	<5.0	<5.0	<5.0	<5.0	**172**	<5.0	<5.0	<25	**174**	**7.9**	<7.0
SK-95	NY-L	<100	<100	<100	<100	**485**	<100	<100	**1650**	**205**	<100	<140
SK-95	GA-m	<100	<100	<100	<100	**466**	<100	<100	<500	**103**	<100	<140
SK-95	NE-O	<5.0	<5.0	35.7	<5.0	**370**	<5.0	<5.0	<25	**122**	**35**	<7.0
SK-95	NE-GI	<10.0	<10.0	36.2	<10.0	**443**	<10.0	<10.0	<50	**291**	**317**	<14.0
SK-95	DE	<5.0	<5.0	42.2	**43.9**	**166**	<5.0	<5.0	<25	**189**	**14.1**	<0.14
SK-95	MS-J	<100	<100	<100	<100	**223**	<100	<100	**914**	<100	<100	<140
SK-95	NY-N	<100	<100	<100	<100	**636**	<100	<100	<500	**129**	<100	<140
SK-96	CO-E/AC	**2.1**	<2.00	33	<2.00	**856**	<2.00	<4.00	16.6	**116**	**7.4**	<2.00

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-96	KS-W	**3.9**	<2.0	24.3	<2.0	**831**	<2.0	<4.0	21.1	**86.8**	**6.8**	<2.0
SK-96	KS-E	<2.0	<2.0	33.9	<2.0	**648**	<2.0	<4.0	20.3	**91.1**	**208**	<2.0
SK-96	KS-D	<2.0	<2.0	32	<2.0	**954**	<2.0	<4.0	<10	**140**	**31.6**	<2.0
SK-96	MO-C	**2.9**	<2.00	39.2	<2.00	**682**	<2.00	<4.00	22.3	**46**	**301**	<2.00
SK-95	GA-N	<2.00	<2.00	17.1	<2.00	**870**	<2.00	<4.00	19.2	**86.9**	**2.9**	<2.00
SK-96	GA-G	<2.50	<2.50	16.2	<2.50	**243**	<2.50	<2.50	62.5	**59.6**	<2.50	<2.50
SK-96	GA-m	<2.00	<2.00	10.3	<2.00	**645**	<2.00	<4.00	<10.0	**64.6**	<2.00	<2.00
SK-96	GA-C	<10.0	<10.0	<10.0	<10.0	**387**	<10.0	<10.0	<50.0	**60**	<10.0	<14.0
SK-96	NY-C	<20.0	<20.0	42.2	<20.0	**1020**	<20.0	<40.0	<100.0	**73.2**	**24.6**	<20.0
SK-96	NY-C	<20.0	<20.0	20.8	<20.0	**354**	<20.0	<40.0	<100.0	**95.2**	<20.0	<20.0
SK-96	NY-C	<20.0	<20.0	<20.0	<20.0	**299**	<20.0	<40.0	<100.0	**110**	<20.0	<20.0
SK-96	GA-M	<2.00	<2.00	15.8	<2.00	**262**	<2.00	<2.00	<10.0	**45.6**	**4.90**	<2.00
SK-96	NM-F	<2.00	<2.00	12.6	<2.00	**225**	<2.00	<2.00	<10.0	**12.1**	**8.1**	<2.80
SK-96	NM-A	<2.00	<2.00	16.7	<2.00	**222**	<2.00	<2.00	<10.0	**48.2**	**3.3**	<2.80
SK-96	NY-S	<2.00	<2.00	8.40	<2.00	**460**	<2.00	<4.00	11.7	**29.4**	**5.00**	<2.00
SK-96	NY-S	<20.0	<20.0	28.0	<20.0	**640**	<20.0	<40.0	<100.0	**120**	**20.60**	<20.0
SK-96	NY-S	**2.00**	<2.00	8.00	<2.00	**404**	<2.00	<4.00	14	**34.8**	**18.8**	<2.00
SK-96	NY-N	<20.0	<20.0	35.4	<20.0	**575**	<20.0	<40.0	<100.0	**168**	<20.0	<20.0
SK-96	NY-N	<20.0	<20.0	22.2	<20.0	**494**	<20.0	<40.0	<100.0	**163**	<20.0	<20.0
SK-96	NY-N	<20.0	<20.0	<20.0	<20.0	**563**	<20.0	<40.0	<100.0	**462**	<20.0	<20.0
SK-96	NY-A	<2.00	<2.00	12.6	<2.00	**19**	<2.00	<4.00	11.1	**59.5**	**3.8**	<2.00
SK-96	LA-P	<10.0	<10.0	18.8	<10.0	**170**	<10.0	<10.0	<50.0	**42.6**	<10.0	<14.0
SK-96	LA-K	<20.0	<20.0	35.6	<20.0	**508**	<20.0	<40.0	**273**	**38**	<20.0	<20.0
*	UT-S	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<4000	<1000	<1000	<2000
SK-96	NY-L	<20.0	<20.0	38.8	<20.0	**996**	<20.0	<40.0	<100	**189**	**24.2**	<20.0
SK-96	NY-L	<0.200	<2.00	5.8	<2.00	**327**	<2.00	<4.00	<1.00	**66.2**	**3.9**	<2.00
SK-96	NY-L	<20.0	<20.0	<20.0	<20.0	**349**	<20.0	<40.0	<100.0	**179**	<20.0	<20.0
SK-96	NY-A	<2.00	<2.00	12.6	<2.00	**19**	<2.00	<4.00	11.1	**59.5**	**3.8**	<2.00
SK-96	NY-A	<20.0	<20.0	20.8	<20.0	**584**	<20.0	<40.0	<100.0	**116**	<20.0	<20.0

TCLP Volatiles Analysis, ppm

LAB	SITE	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
SK-96	SC-G	<2.00	<2.00	<2.00	<2.00	**312**	<2.00	<4.00	<10.0	**61.2**	<2.00	<2.00
SK-96	NE-GI	<10.00	<10.00	<10.00	<10.00	**489**	<10.00	<10.00	<50.0	**163**	**81.2**	<14.0
SK-96	NE-O	<2.00	<2.00	19.3	<2.00	**371**	**2.1**	<4.00	35.2	**96.4**	**161**	<2.00
SK-96	NE-G	**2.8**	<2.00	14.7	<2.00	**461**	<2.00	<4.00	<10.0	**39**	**11.5**	<2.00
SK-96	SD-S	**3.7**	<2.0	88.2	<2.0	**2200**	<2.0	<4.0	38.1	**260**	**1540**	<2.0
SK-96	DE	<10.0	<10.0	15.9	<10.0	**191**	<10.0	<10.0	<50.0	**32.9**	<10.0	<14.0
SK-96	MS-J	<2.00	<2.00	13.2	<2.00	**438**	<2.00	<4.00	<10.0	**21.6**	**3.00**	<2.00
Total # of Samples			65									
	# of Hits	**6**	0	0	**2**	**62**	**1**	0	**3**	**59**	**27**	0
	MAX	3.90	0.00	88.20	1430.00	2200.00	2.10	0.00	1650.00	465.00	1540.00	0.00
	MIN	2	0	5.8	43.9	19	2.1	0	11.1	12.1	2.9	0

DRY CLEANER FILTER POWDER

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	≤2; ≥12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	SITE											
SK-95	KS-E	6.9	0.647	>200	<0.40	0.21	<0.10	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	KS-W	6.54	1.08	>200	<0.40	0.33	<0.10	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	NY-A	6.62	1.439	>200	<0.40	0.23	<0.10	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	NY-T	6.33	N/A	>200	<0.40	0.2	<0.10	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	DE	6.74	0.791	>200	<0.40	0.497	<0.10	0.28	<0.35	<0.0008	<0.75	<0.15
SK-95	NY-C	7.17	NA	>200	<4.0	0.252	0.110	0.273	<0.35	<0.0008	<0.75	<0.15
SK-95	NE-GI	5.75	1.38	>200	<0.40	0.298	0.129	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	NE-O	6.11	1.32	>200	<0.40	0.418	<0.10	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	NY-L	6.28	1.03	>200	<0.40	0.24	<0.10	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	NM-A	6.26	0.905	>200	<0.40	0.237	<0.10	<0.20	<0.35	<0.0008	<0.75	<0.15
SK-95	NY-N	6.57	1.17	>200	<0.40	0.518	<0.10	0.445	<0.35	<0.0008	<0.75	<0.15
SK-96	KS-E	5.66	1.31	>200	<0.500	0.0296	0.071	0.058	<0.400	<0.0008	<0.600	<0.050
SK-96	KS-W	5.63	1.33	>200	<0.500	0.581	0.111	0.084	<0.400	<0.0008	<0.600	<0.050
SK-96	MO-C	5.85	1.37	>200	<0.500	0.283	0.06	0.079	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-L	6.32	0.98	>200	<0.500	0.176	0.113	0.099	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-L	6.00	1.591	>200	<0.500	0.175	<0.050	0.061	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-L	5.85	1.598	>200	<0.500	0.161	<0.050	0.061	<0.400	<0.0008	<0.600	<0.050
SK-96	GA-m	6.29	1.42	>200	<0.500	0.254	0.052	0.072	<0.400	<0.0008	<0.600	<0.050
SK-96	MS-J	6.96	1.28	>200	<0.500	0.181	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	NM-A	7.27	1.03	>200	<0.500	0.381	<0.050	0.232	0.488	<0.0008	<0.600	<0.050
SK-96	GA-N	6.67	1.05	>200	<0.500	0.252	<0.050	0.065	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-N	6.15	1.66	>200	<0.500	0.299	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-N	2.65	1.427	>200	<5.00	0.661	<0.500	**9.49**	<4.00	<0.040	<0.452	<0.500
SK-96	NY-N	5.86	1.142	>200	<0.500	0.163	0.069	0.428	<0.400	<0.0008	<0.600	<0.050
SK-96	DE	6.05	0.78	>200	<0.500	0.076	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	LA-P	NA*	NA*	NA*	<0.500	0.318	0.065	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-S	5.85	1.01	N/A	<0.500	0.176	<0.050	0.065	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-S	6.24	1.1	>200	<0.500	0.266	0.108	0.1	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-S	6.10	1.39	>200	<0.500	0.228	0.099	0.095	<0.400	<0.0008	<0.600	<0.050

DRY CLEANER FILTER POWDER

Physical Properties and TCLP Metals Analysis, ppm

	Parameter	pH	SG	FP	As	Ba	Cd	Cr	Pb	Hg	Se	Ag
	Reg. Limit	≤2; ≥12.5	na	< 140	5	100	1	5	5	0.2	1	5
LAB	**SITE**											
SK-96	GA-C	6.12	1.14	>200	<0.500	0.184	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	GA-G	5.98	1.59	>200	<0.500	0.35	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
SK-96	LA-K	N/A	N/A	N/A	<0.500	0.262	0.06	0.094	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-A	6.21	0.92	>200	<0.500	0.237	<0.050	0.069	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-A	6.20	1.02	>200	<0.500	0.168	<0.050	0.063	<0.400	<0.0008	<0.600	<0.050
SK-96	NY-A	6.10	1.04	>200	<0.500	0.24	<0.050	0.075	<0.400	<0.0008	<0.600	<0.050
SK-96	NE-O	7.15	1.01	>200	<0.500	0.158	0.083	0.522	<0.400	<0.0008	<0.600	<0.050
SK-96	NE-GI	6.65	0.81	>200	<0.500	0.237	<0.050	<0.050	<0.400	<0.0008	<0.600	<0.050
TOTAL # OF SAMPLES		37										
# of Hits		0	0	0	0	0	0	**1**	0	0	0	0
	MAX	7.27	1.66	0	0	0.661	0.129	9.49	0.488	0	0	0
	MIN	2.65	0.647	0	0	0.0296	0.052	0.058	0.488	0	0	0

DRY CLEANER FILTER POWDER

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-1,3-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	SITE										
SK-95	KS-E	0.035	<0.042	<0.044	<0.098	<0.120	<0.069	<0.350	<0.142	<0.041	<0.142
SK-95	KS-W	0.14	<0.044	<0.044	<0.10	<0.12	<0.068	<0.35	<0.14	<0.040	<0.14
SK-95	NY-A	<0.040	<0.040	<0.040	<0.042	<0.085	<0.044	<0.040	<0.040	<0.040	<0.042
SK-95	NY-T	<0.070	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
SK-95	DE	<0.040	<0.044	<0.044	<0.100	<0.120	<0.068	<0.350	<0.140	<0.040	<0.140
SK-95	NY-C	0.052	<0.046	<0.068	<0.120	<0.120	<0.064	<0.024	<0.072	<0.072	<0.076
SK-95	NE-GI	<0.040	<0.044	<0.044	<0.100	<0.120	<0.068	<0.350	<0.140	<0.040	<0.140
SK-95	NE-O	<0.070	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
SK-95	NY-L	<0.070	<0.058	<0.085	<0.150	<0.150	<0.080	<0.030	<0.090	<0.090	<0.095
SK-95	NM-A	<0.040	<0.040	<0.040	<0.042	<0.085	<0.044	<0.040	<0.040	<0.040	<0.042
SK-95	NY-N	<0.040	<0.040	<0.040	<0.042	<0.085	<0.044	<0.040	<0.040	<0.040	<0.042
SK-96	KS-E	<0.040	<0.040	<0.040	<0.040	<0.090	<0.040	<0.040	<0.040	<0.040	<0.040
SK-96	KS-W	<0.042	<0.040	<0.040	<0.042	<0.085	<0.044	<0.040	<0.040	<0.040	<0.040
SK-96	MO-C	0.091	<0.040	<0.040	<0.042	<0.085	<0.044	<0.040	<0.040	<0.040	<0.040
SK-96	NY-L	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-L	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-L	<0.040	<0.040	<0.040	<0.050	<0.050	<0.040	<0.200	<0.050	<0.040	<0.040
SK-96	GA-m	<0.040	<0.040	<0.040	<0.050	<0.050	<0.040	<0.200	<0.050	<0.040	<0.040
SK-96	MS-J	<0.040	<0.040	<0.040	<0.05	<0.050	<0.040	<0.200	<0.050	<0.040	<0.040
SK-96	NM-A	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	GA-N	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-N	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-N	<180	<180	<200	<290	<290	<230	<310	<360	<190	<180
SK-96	NY-N	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	DE	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	LA-P	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-S	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-S	0.059	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-S	0.057	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045

DRY CLEANER FILTER POWDER

TCLP Semi Volatiles Analysis, ppm

	Parameter	cresol	2.4-DNT	Cl6-benz	Cl6-1,3-but	Cl6-eth	nitrobenz	Cl5-phenol	pyridine	2.4.5-TCP	2.4.6-TCP
	Reg. Limit	200	0.13	0.13	0.5	3	2	100	5	400	2
LAB	**SITE**										
SK-96	GA-C	<0.042	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	GA-G	<0.040	<0.040	<0.040	<0.050	<0.050	<0.040	<0.200	<0.050	<0.040	<0.040
SK-96	LA-K	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NY-A	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
SK-96	NY-A	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
SK-96	NY-A	<0.900	<0.900	<1.00	<1.40	<1.40	<1.20	<1.60	<1.80	<0.950	<0.900
SK-96	NE-O	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
SK-96	NE-GI	<0.045	<0.045	<0.050	<0.072	<0.072	<0.058	<0.078	<0.090	<0.048	<0.045
TOTAL # OF SAMPLES		37									
# of Hits		0	0	0	0	0	0	0	0	0	0
	MAX	0.14	0	0	0	0	0	0	0	0	0
	MIN	0.035	0	0	0	0	0	0	0	0	0

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DClB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	SITE											
SK-95	KS-E	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**134**	0.45	<0.14
SK-95	KS-W	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**116**	<0.10	<0.14
SK-95	NY-A	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	**129**	<0.005	<0.005
SK-95	NY-T	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**186**	<0.10	<0.14
SK-95	DE	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.14
SK-95	NY-C	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**105**	**1.9**	<0.14
SK-95	NE-GI	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**43.6**	**2.9**	<0.14
SK-95	NE-O	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**1870**	**0.51**	<0.14
SK-95	NY-L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**131**	<0.10	<0.14
SK-95	NM-A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	**105**	0.1	<0.14
SK-95	NY-N	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.84	**106**	<0.10	<0.14
SK-96	KS-E	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**119**	0.150	<0.140
SK-96	KS-W	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**277**	<0.100	<0.140
SK-96	MO-C	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**156**	<0.100	<0.140
SK-96	NY-L	<0.100	<0.100	<0.100	0.11	<0.100	<0.100	<0.100	<0.500	**134**	<0.100	<0.140
SK-96	NY-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**102**	<0.100	<0.140
SK-96	NY-L	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**193**	<0.100	<0.140
SK-96	GA-m	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**111**	**0.8**	<0.140
SK-96	MS-J	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**145**	0.34	<0.140
SK-96	NM-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**1110**	0.22	<0.140
SK-96	GA-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**261**	0.2	<0.140
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**230**	<0.100	<0.140
SK-96	NY-N	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<4.00	<10.00	**11200**	**2.9**	<2.00
SK-96	NY-N	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**176**	0.26	<0.140
SK-96	DE	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**210**	<0.100	<0.140
SK-96	LA-P	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**389**	<0.100	<0.140
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**218**	0.36	<0.140
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**159**	0.15	0.14
SK-96	NY-S	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**162**	0.16	<0.140

DRY CLEANER FILTER POWDER

TCLP Volatiles Analysis, ppm

	Parameter	benzene	CCl4	Clbenz	CHCl3	1.4-DCIB	1.2-DCA	1.1-DCE	MEK	PCE	TCE	VChloride
	Reg. Limit	0.5	0.5	100	6	7.5	0.5	0.7	200	0.7	0.5	0.2
LAB	**SITE**											
SK-96	GA-C	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**174**	<0.100	<0.140
SK-96	GA-G	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<125	**214**	<0.100	<0.140
SK-96	LA-K	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**436**	<0.100	<0.140
SK-96	NY-A	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	<10.00	**1090**	**243**	<10.00	<14.0
SK-96	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**1030**	<0.100	<0.140
SK-96	NY-A	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**283**	<0.100	<0.140
SK-96	NE-O	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**165**	<0.100	<0.140
SK-96	NE-GI	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.500	**194**	<0.100	<0.140
TOTAL # OF SAMPLES		37										
# of Hits		0	0	0	0	0	0	0	**1**	**36**	**5**	0
	MAX	0	0	0	0.11	0	0	0	1090	11200	2.9	0.14
	MIN	0	0	0	0.11	0	0	0	0.84	43.6	0.1	0.14

Appendix C

Engineering Assessment of Tank System

Note: The facility has undergone minor modifications which no longer conform to the drawings and figures in this report. These minor modifications have not affected the tank volumes, system integrity, or secondary capacity of the tank system. For a current figure of the facility layout and tank farm, refer to Figures 2.1-1 and 9.2-1.

W. O. HEYN
256 Woodbine Place
Barrington, IL 60010
Phone 708-381-6743

July 7, 1992

Safety Kleen Corp.
129 S. Kentucky Avenue
Suite 701
Lakeland, FL 33801

Attention: Victor San Agustin

Subject: Safety-Kleen Corp.
Medley Branch Construction Certification
Part B Permit HC-13-175466

Dear Mr. San Agustin:

The attached certification report is an update of the report submitted by the writer on June 8, 1992. Also included are updated as-built prints which were prepared after the earlier submittal.

Only minor changes were made in the report such as changing some statements from *will be* to *are* and a paragraph was added to page 5 describing the outside dock pad rainwater control. No other changes were made in the report.

Sincerely,

W. O. Heyn, P.E.
Florida Cert. N. 45516

WOH: rlh

Enclosure: One set of full-size as built prints

cc: Jack Krivec - SK Atlanta Regional Office
Cindy Norton - ERM South

Professional Engineers Certification Report

of

Construction of the Safety-Kleen Medley, Florida

Branch Service Center

By W. O. Heyn P.E.
Florida Certificate
No. 45516

CERTIFICATION

Florida Dept. of Environmental Regulation

Facility Name SAFETY-KLEEN CORP., MEDLEY, FLORIDA
FDER Site Code FLD984167791
Construction Permit Requiring Certification HC-13-175466
Permit Issuance Date March 1, 1991

The Hazardous Waste Facilities have been constructed and tested in accordance with the specifications in the Part B construction permit with the exceptions noted in the attached report. Documentation that the construction was in accordance with the permit is contained in the enclosed report.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system of those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of imprisonment for knowing violations.

Glenn Casbourne	Glenn R. Casbourne, Vice-President, Engineering
Signature of Owner/Operator	Name and Title
William O. Heyn	William O. Heyn, 45516
Signature of Registered P.E.	Name of Registered P.E. and Florida P.E. No.
7-7-92	(P.E. Seal)
Date	

Construction Documentation Report for Construction of Hazardous Waste Facilities at the Safety-Kleen Corp. Branch Service Center Located at 8755 N.W. 95th Street, Medley, Florida

Introduction

Safety-Kleen Corp. constructed an office, warehouse building and tank farm with ancillary equipment in Medley, Florida in accordance with the requirements of the Part B construction permit that was issued by the Florida DER on March 1, 1991 and amended on December 9, 1991 and May 15, 1992 with deviations from the permit indicated in this report. Figure 11A.4(b)-3 indicates Sanford whereas it should be Medley. Also the tank farm as-built is in the "Future" location which is consistent with the rest of the permit.

Regulatory Requirements:

40CFR264.192(a)

The tanks for storage of hazardous waste were constructed in accordance with Underwriters Laboratories Inc., "Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids." The tank shell thickness is 1/4" from 0 to 18 feet, and 3/16" from 18 to 24 feet. The tank bottom is 1/4" thick and the tank top is 3/16" thick steel. The waste ethylene glycol and waste mineral spirits tanks are identical.

All tanks are coated with white acrylic base paint. All pipes and threads are painted to protect them from corrosion. Each tank is protected by a high level alarm which will sound and activate an alarm and a strobe light when the tank level reaches 95% of capacity. The alarm on the waste solvent tank will also deactivate the waste solvent pump at the return and fill. The high level alarm system was changed from a float activated switch to a sonar based tank gauge and high level alarm system called "Level Devil" provided by Electronic Sensors, Inc. of Wichita, Kansas.

All connections to the tanks are equipped with a spring loaded safety valve held in the open position by a fusible link that will melt and allow the valve to close in the event of a fire.

40CFR 264.192(b)

Each tank was inspected after installation for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion and other structural damage or inadequate construction/installation.

All discrepancies found were corrected and the tanks are suitable for use.

40CFR264.192(c) Not applicable

40CFR264.192(d)

The tanks, after installation, were filled over 95% of full with water and observed for 5 hours for leaks. No leaks were observed and the tanks are certified tight. All ancillary equipment was tested in conjunction with the tank tests and certified tight.

40CFR264.192(e)

All ancillary equipment has been properly mounted and installed. All lengths of piping are supported no less than every eight running feet.

40CFR264.192(f) Not applicable

40CFR264.192(g) See Certification Statement

40CFR264.193(a-e)

Tank secondary containment in the form of an open concrete dike vault has been constructed in accordance with prints No. 316301-5002-00 Sheet No. 8 and 316301-5015-00 Sheet No. 9. The floor and dike walls of the tank containment system contain no cracks. The slab has been sloped to drain all liquids that accumulate inside the containment system to a stainless steel sump which can be readily pumped out to a holding tank to remove the accumulated liquids. The sump is located adjacent to the south wall of the vault per Figure II C2-1.

The interior of the dike walls and slab are coated with an epoxy material (Semstone 140) to prevent permeation through the concrete.

40CFR264.193(f)

Some piping inside the dike vault is threaded. Secondary containment for this piping is provided by the vault. All piping outside the concrete dike vault has fully welded connections. The clean solvent pump has been installed inside the concrete dike vault as is the spill container for hookup to tank trucks. Note: Although the permit specified that six tanks would be installed in the tank farm, only 3 tanks have been installed: one dirty mineral spirits tank, one clean mineral spirits tank and one waste glycol tank. The two waste oil tanks and the perchloroethylene tank were not installed but may be at a later date. Also the permit showed the tank truck connections outside the diked area and a change was made to move them inside the diked area. Refer to print No. 316301-2000-00 sheet No. 45.

With reference to Fig. II C.2-1 Tank Farm; The location of the tanks was changed to accommodate the use of one truck connection container. As-built, the used mineral spirits tank is located in the southwest corner of the vault whereas the permit shows it in the southeast corner of the vault. The fresh mineral spirits tank as-built is located in the northwest corner of the vault vs. the northeast location per the permit. The used ethylene glycol tank as-built is located in the south central position of the tank farm vs. the permit location in the northwest position. The tanks were mounted on stainless steel sheets, 13 ft. 8 in. by 13 ft. 8 in. which were bolted to the concrete housekeeping pads.

The dimensions of the vault, as-built, varies from the permit dimensions as follows; length 58 ft. 0 in. vs. 56 ft. 0 in. in the permit, width 40 ft. 0 in. vs. 40 ft. 0 in. in the permit. The height of the dike wall varies from 36-1/4 in. to 38 in. due to the sloped floor of the vault vs. 36 in. in the permit. Three monitoring wells have been installed about 10 ft. from the north, east and west sides of the vault.

Tank Truck Loading Area

The permit application shows an 80 ft. by 25 ft. tank truck loading area constructed of 6 in. thick reinforced concrete sloping 2 inches to a 2 ft. diameter by 2 ft. deep stainless steel sump with no outlet. A change was made to increase the slope to 9 inches to increase the containment capacity of the pad to 2917 gallons. Refer to print No. 316301-5003-00 sheet No. 10. The containment volume of the truck loading area was measured by filling with water. The actual volume measured was 2432 gallons which is significantly less than the design volume.

Tank Farm Shelter

Provisions were made during construction to provide foundations for a proposed tank farm shelter which will be installed at a later date. This proposed shelter will cover the entire tank farm and tank truck loading pad with an overhang of 10 ft. at each end of the tank farm (east and west) and a 2 ft. overhang on the front and rear (south and north) of the tank farm and tank truck loading slab. This shelter will prevent a major portion of rainfall from entering the containment areas. No side walls will be installed so that access for fire fighting is not impaired. Refer to print Sheet No. ST-1 Tank Farm Canopy.

Warehouse Containment Area

The Warehouse containment area was constructed in accordance with print 316301-7005-00 Sheet No. 26. The sloped floor containment area is free of cracks and has been sealed with an epoxy sealant (Semstone 245) that is chemically resistant to the products to be stored in the warehouse. The sloped floors of the warehouse drain into a 12 ft. x 2 ft. stainless steel sump that has no outlet. Any spills collected in the sump will be pumped out and properly disposed. The containment volume of the warehouse was measured by filling with water. The actual volumetric measure was 2996 gallons which is equal to or greater than the design volume of 2940 gallons.

With reference to Fig. II B.1-1 Container Storage Location; The rollup door and personnel door in the northeast location in the east wall of the warehouse were moved to a southeast location in the east wall. A personnel door was added to the north wall. The security fence in the warehouse was relocated and two 6 ft. wide by 8 ft. high sliding gates were added to the fence.

The truck loading dock will contain one dock leveler and provisions for a second leveler and is covered by a metal roof. Any spills that occur on the loading dock will be collected in a 24 ft. x 2 ft. stainless steel trench located at the foot of the dock. This trench, covered by a steel grating, has no outlet and any spills must be pumped out by use of a portable pump.

Rainwater which falls on the outside truck loading pad is collected in a sump which drains into the stormwater system. A small CURB ~~brem~~ separates this sump from the stainless steel spill collecting sump at the foot of the dock to prevent rainwater from entering the stainless steel sump.

Return and Fill

The return and fill containment is made up of concrete floors sloped to two 2 ft. diameter by 2 ft. deep stainless steel sumps that have no outlets. The concrete containment areas are sealed by an epoxy sealant (Semstone 140) that is compatible with and resistant to the solvents that will be handled in the facility. The steel loading dock, sized to handle 8 trucks, is covered by heavy duty grating that can support all anticipated loads including forklifts. Openings in the gratings contain two drum washers for dumping and washing solvent drums. The dock is equipped with dock plates to provide safe access to the trucks. Hose trees are located at the edge of the dock to provide valves and hose mountings for filling drums.

Two as-built, wet dumpster/barrel washers were installed adjacent to each other near the positions indicated in Fig. II C.7-3 Return and Fill Shelter.

The containment volume of the return and fill area was measured by filling with water that was used in the hydrostatic test of the tanks. The actual volume measured was 3693 gallons which compares favorably with the design volume of 3680 gallons. After the test the water was pumped into the storm sewer.

The permit application showed a single 20 ft. by 2 ft. rectangular stainless steel sump in the return and fill. A change was made to two round sumps with changes in the floor slopes to accommodate them and to achieve the same overall containment volume. Refer to print no. 316301-7004-00 sheet No. 24.

Fire Suppression System

The fire sprinkler system for the warehouse, Return and Fill area and the office area has been designed and installed by Kannapolis Fire Sprinklers. The piping system with sprinkler heads for the warehouse and Return and Fill areas have been completed and are operational. The available water flow has been tested by the City of Medley. The available flow has been found to be inadequate as required by NFPA for a water system. Flow *is* adequate for a foam system which has been installed. The foam bladder tank has been installed in the southeast corner of the warehouse with the required controls. The foam sprinkler system has been tested by the installer and approved by the Medley Fire Department prior to issuance of the Certificate of Occupancy.

Other Emergency Equipment

Fire Extinguishers - The warehouse and Return and Fill are equipped with eight 20 lb. ABC fire extinguishers wall bracket mounted and labeled in accordance with the approved design.

Eye Washer/Showers - one eyewash/shower is located on the west wall of the warehouse adjacent to the doorway to the Return and Fill. A second eyewash/shower is located on the west side of the steel loading dock in the Return and Fill area. A third eyewash/shower is located adjacent to the tank farm.

Exit Signs - All doorways opening to the outside are identified by a lighted "Exit" sign.

Personal Protective Equipment - All employees working in the Warehouse and the Return and Fill will be required to wear safety glasses with side shields, hard hats and safety shoes.

Branch Security

The working areas of the Medley facility are enclosed by a 6 foot high chain link fence with a one foot extension containing 3 strands of barbed wire. Access and exit is through two 30 ft. sliding gates which are motor operated. Entrance is achieved by a keypunch pad located adjacent to the entrance drive. The gate opening can also be achieved by a push button located in the office. Gate closing is controlled by a timer and an electric eye. All gates are required to be kept closed at all times except for passage of vehicles.

Access into the office is controlled by a door equipped with an electrically operated lock activated from inside the office. Two doors exiting from the office area will be equipped with an emergency bar on the inside. These doors can only be opened from inside the building.

Signs designating "no smoking", "fire extinguisher", etc. have been mounted in locations shown on drawing No. 316301-9000-00 Sheet No. 28.

Site Storm Water Control

The City of Medley has no stormwater drainage system available for this site. In order to provide for stormwater control and disposal, the areas to be paved have been equipped with 6 catch basins each of which are connected to an underground collection system. The collection system consists of 15 in. diameter perforated corrugated metal pipes laid horizontally 3 ft. underground in 15 ft. deep by 36 in. wide trenches filled with pervious material. The capacity of these structures is adequate to store a rainfall of 6.7 inches over a 1 hour period. The water collected in the structure will drain by seepage into the surrounding soil.

Electrical

All electrically operated equipment was tested with a temporary electrical supply. Florida Power and Light will hook up permanent power after the Certificate of Occupancy is issued by the City of Medley.

Strategy for measuring volume of Containment Areas and Testing Tanks and Piping Systems

Since the tanks are to be tested by filling with water and observing for leaks, 20,000 gallons of water will be available for filling the various containment systems, i.e: Return and Fill (3680 gal. reqd.) and the warehouse (2940 gal. reqd.) and the tank truck loading/unloading pad (2917 gal. reqd.)

One option to determine volumes is to measure the physical dimensions of each containment area and calculate the actual volume each would contain.

A second option would be to fill each containment volume with water from the tank test and measure the amount of water used by means of the tank gauge after the tanks are tested.

The high level alarms for the tanks should be operational when the tanks are filled to provide a test of the high level alarm system for each tank.

At the completion of the tests the water will be drained into the stormwater drainage system onsite.

Procedure

1. Fill used Mineral Spirits tank with water from the domestic supply until the high level alarm sounds. Record the number of gallons indicated by the tank gauge. Continue to fill an additional 500 gal. taking care *not* to overfill the tank. Observe the tank system for 5 hours for leaks. Note any leakage that must be repaired before placing tank in service.

2. Hook up an auxiliary pump to the drain line of the used Mineral Spirits tank and connect the discharge to the fill line of the Used Glycol Tank. Transfer the water to the Used Glycol tank. Note: The residual water in the bottom of the used Mineral Spirits tank is not available for this part of the test. Add additional water to the Used Ethylene Glycol of 500 gallons over the point at which the high level alarm sounds. Record the tank gauge reading when the high level alarm sounds. After the tank is filled observe the tank system for 5 hours and note any points of leakage. Repair all leaks before terminating the tests on both tanks.

3. Fill out certification forms indicating tanks and ancillary piping are tight.

4. Drain water from the filled tank into the truck loading area. Note gauge readings on the tank gauge before filling and at the point that the loading area is completely filled. Record gallons. Pump the water from the truck loading area into the storm drain.

5. Drain water from the filled tank into the warehouse containment area. Note tank gauge readings before and at the point the containment area is completely filled. Record gallons. Pump the water from the containment area into the storm drain.

6. Repeat the above procedure for the return and fill containment area.

7. Fill out certification forms for all 3 areas.

8. Drain remaining water from the filled tank into the storm drain. Note: each tank tested will contain several hundred gallons of water in the bottom of the dish that cannot be pumped out through the discharge ports. To remove this residual water, remove one 4" plug at the bottom of the tank and siphon or pump the residual water from the bottom of the dish. After draining replace plug using approved thread sealer.

W. O. Heyn
2010 Imperial G.C. Boulevard
Naples, FL 33942
813-566-2326

TEST CERTIFICATION FORM

Date 6-6-92

Project SAFETY-KLEEN CORP

Location MEDLEY, FLORIDA

System TANK #1 WASTE MINERAL SPIRITS

Type of Test ____ Hydrostatic
____ Air
____ Other ____

Test Pressure ATMOSPHERIC

Duration of Test 5 HOURS

Test Witnessed By [signature]

Test Supervised By W.O. HEYN

RESULTS - TANK AND ANCILLARY EQUIPMENT TIGHT

By: [signature]

Title: PE FLORIDA CERT. 45516

Date: 6-6-92

W. O. Heyn
2010 Imperial G.C. Boulevard
Naples, FL 33942
813-566-2326

TEST CERTIFICATION FORM

Date 6-6-92

Project SAFETY-KLEEN CORP.

Location MEDLEY, FLORIDA

System TANK #3 WASTE ETHYLENE GLYCOL

Type of Test ____________ Hydrostatic

____________ Air

____________ Other ____________

Test Pressure ATMOSPHERIC

Duration of Test 5 HOURS

Test Witnessed By Archie Nonce

Test Supervised By W.O. HEYN

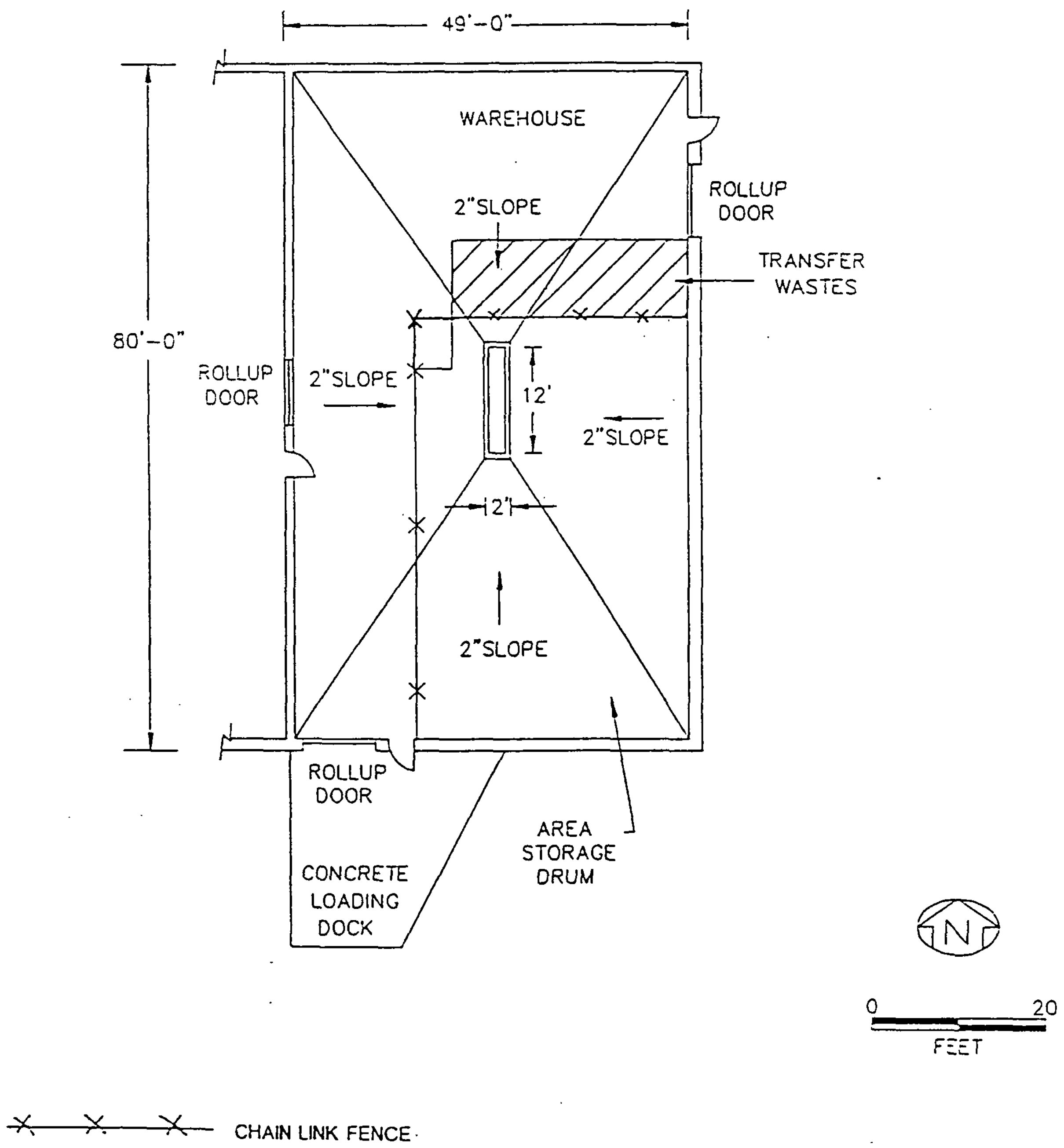
RESULTS - TANK AND ANCILLARY EQUIPMENT TIGHT

By: W O Heyn

Title: PE FLORIDA CERT 45516

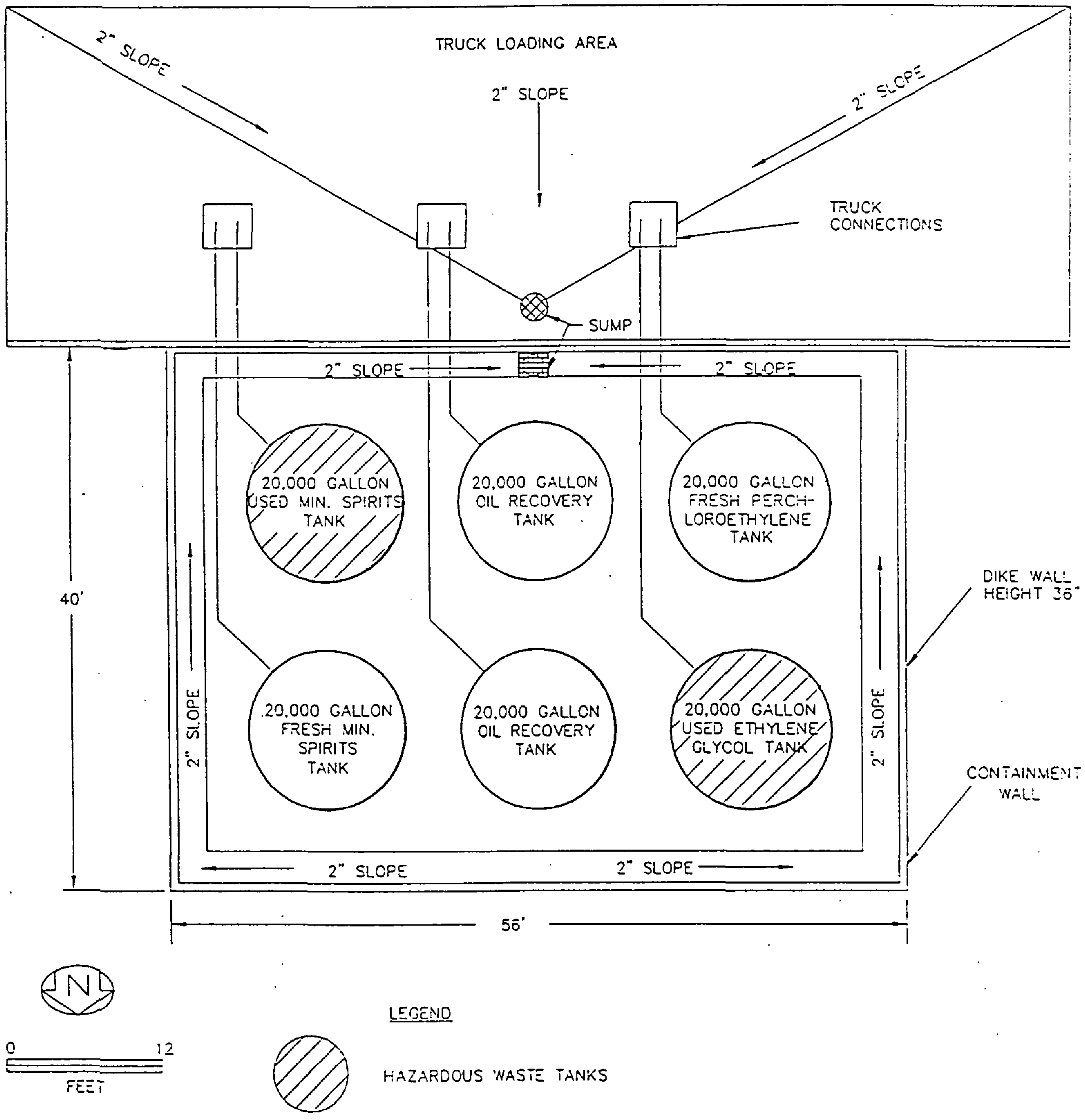
Date: 6-6-92

II.B.1-1
Container Storage Location
Safety-Kleen Corp. Facility
Medley, Florida



The ERM Group

Figure II.C.2-1
Tank Farm
Safety-Kleen Corp. Facility
Medley, Florida

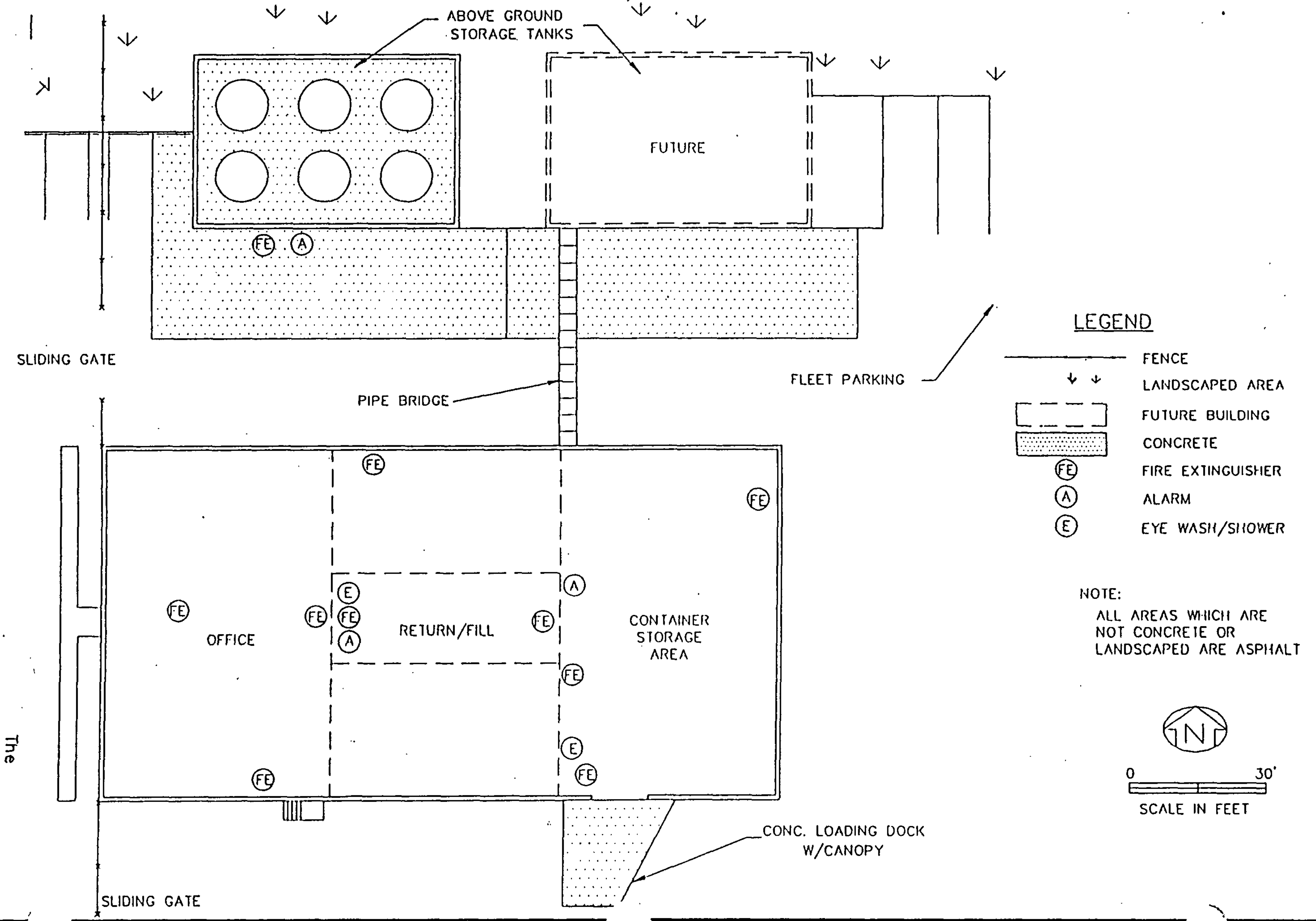


NOTE: ENTIRE AREA IS CONCRETE

The ERM

13112.22/31122TF/062591

Figure II.A.4(b)-3
Location of Emergency Equipment
Safety-Kleen Corp. Facility
Sanford, Florida

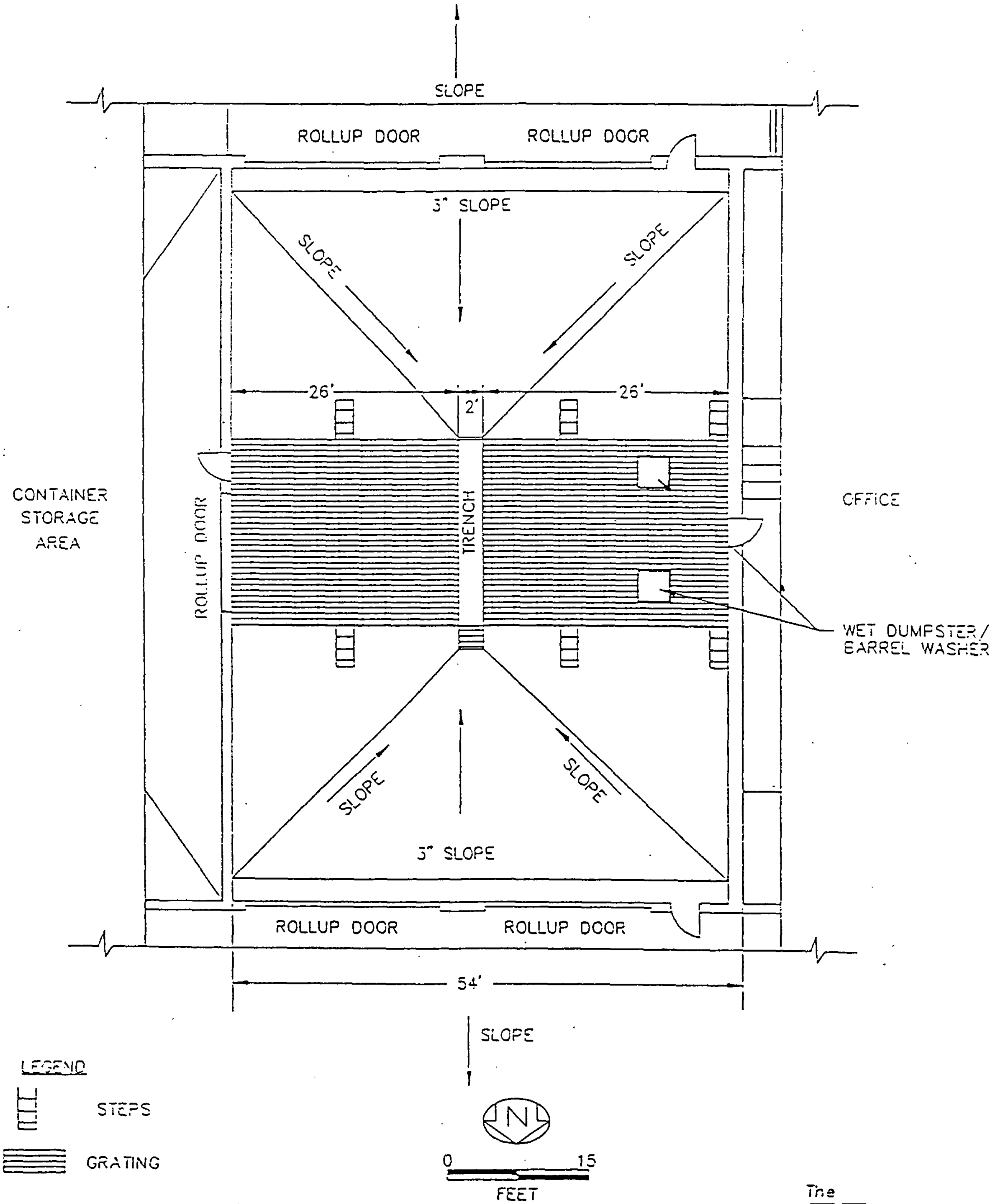


13112.22/31122LEE/061491

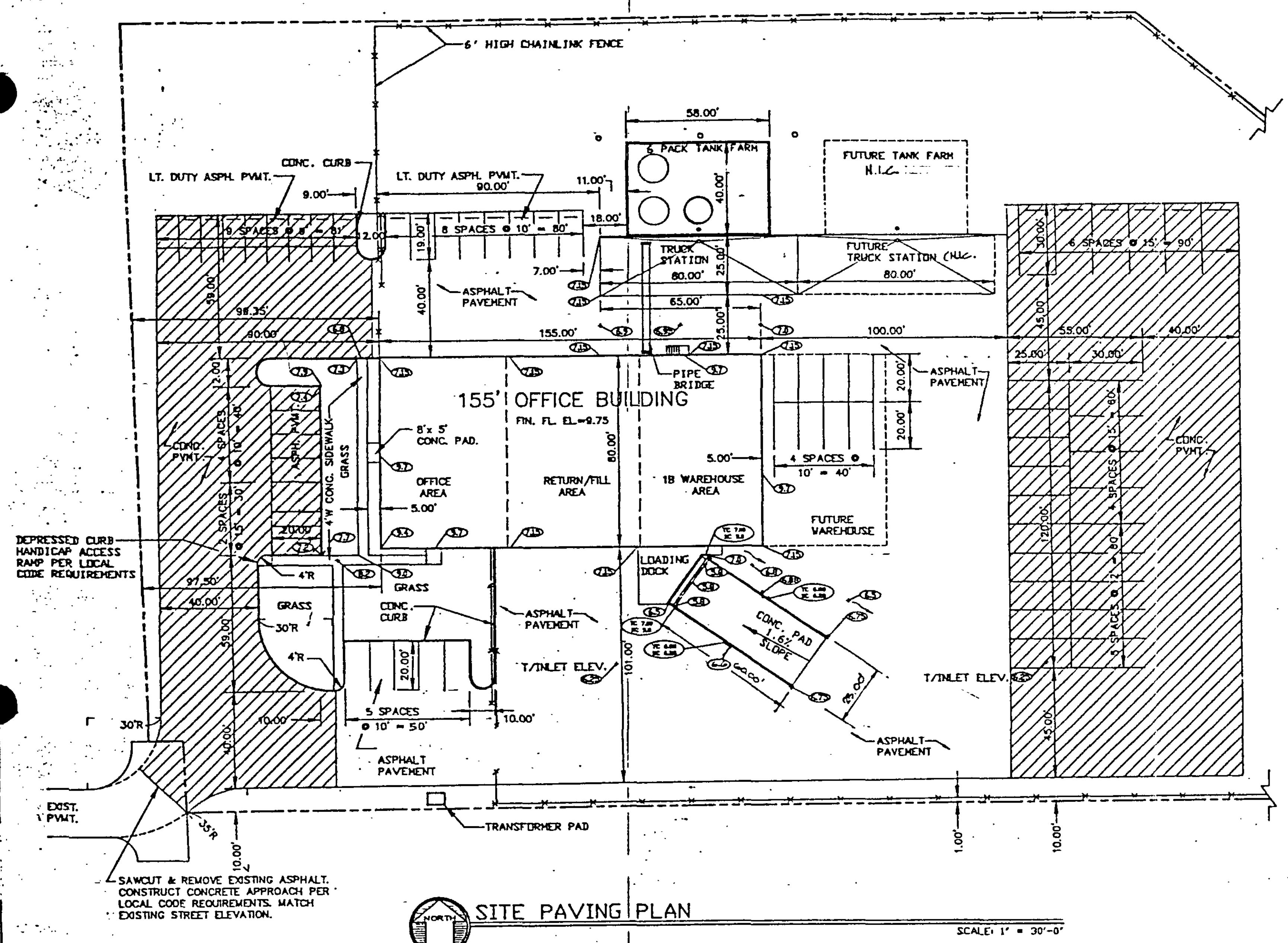
II.A.4(b)-11A

The ERM Group ®

Figure II. C.7-3
Return/Fill Shelter
Safety-Kleen Corp. Facility
Medley, Florida

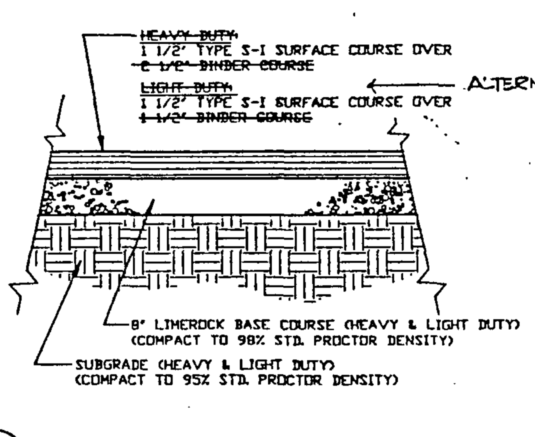


The ERM



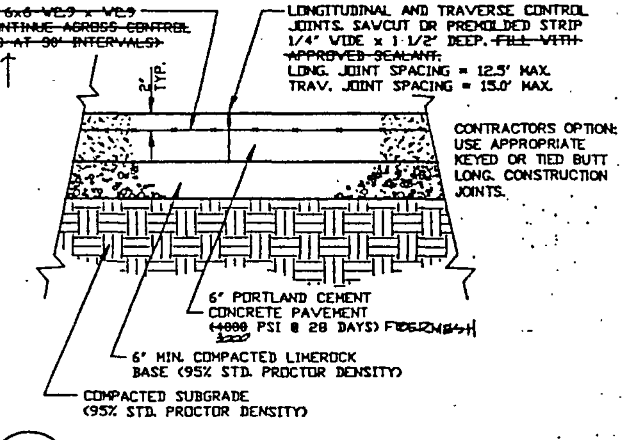
SITE PAVING PLAN

SCALE: 1" = 30'-0"



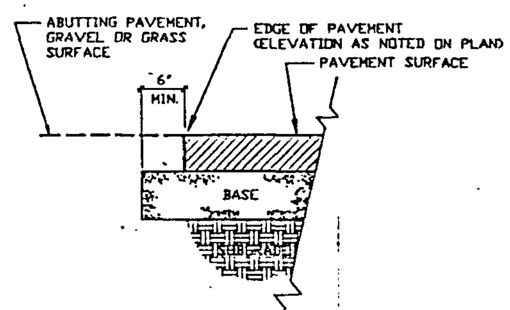
1 ASPHALT PAVEMENT DETAIL 0020

NO SCALE



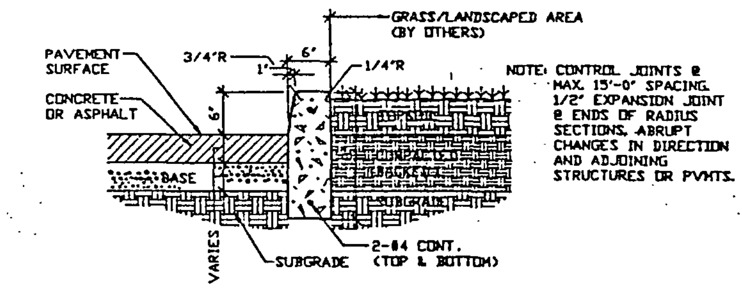
2 CONCRETE PAVEMENT DETAIL 0020

NO SCALE



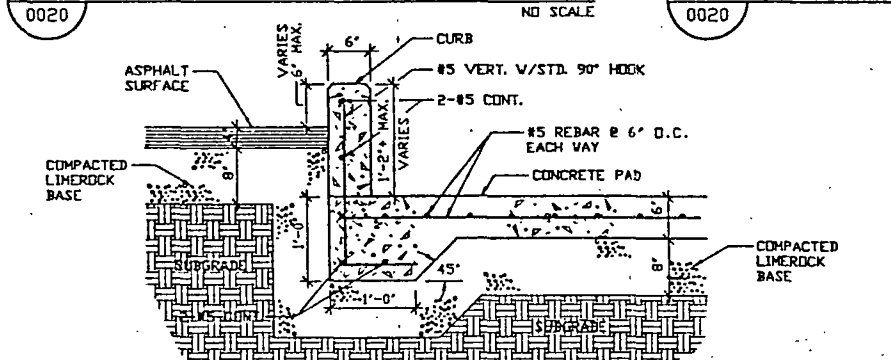
3 ASPHALT/CONCRETE EDGE DETAIL 0020

NO SCALE



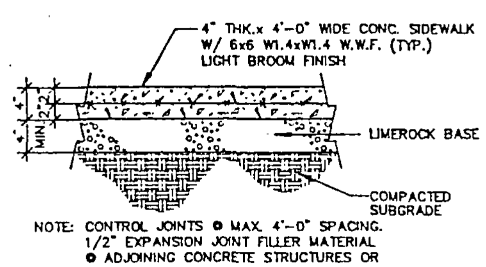
4 CONCRETE BARRIER CURB DETAIL 0020

NO SCALE



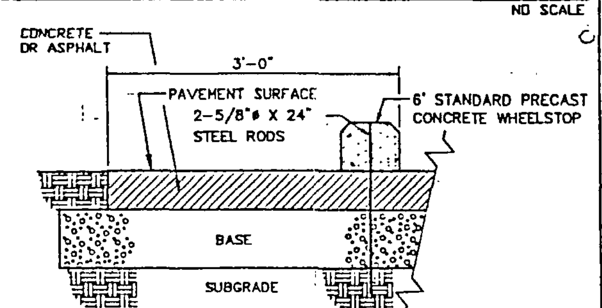
5 CONCRETE PAD DETAIL (@ EXT. LOADING DOCK) 0020

NO SCALE



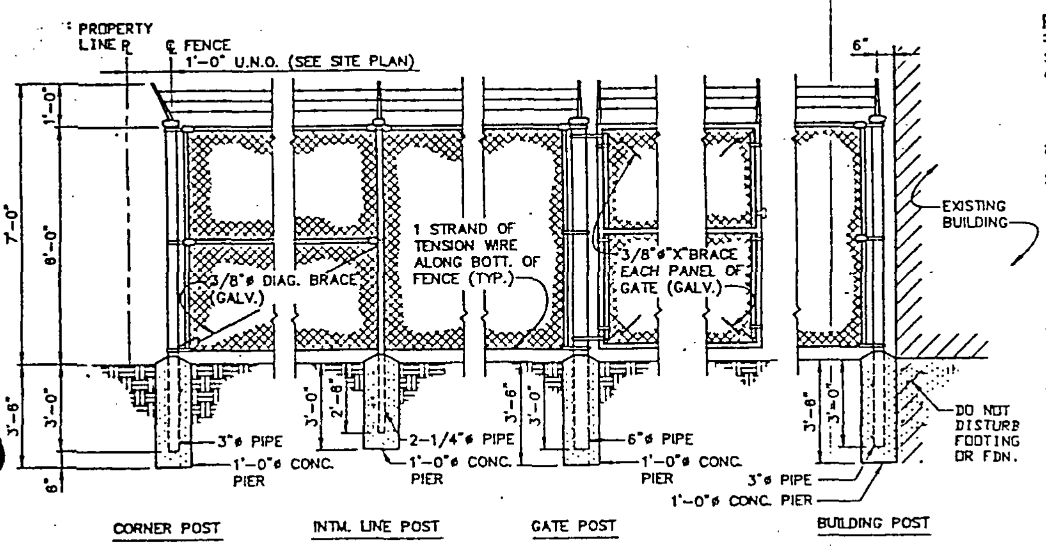
6 CONCRETE SIDEWALK DETAIL 0020

NO SCALE



7 WHEELSTOP DETAIL 0020

NO SCALE



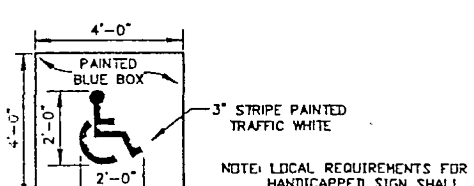
8 FENCE DETAILS 0020

NO SCALE

FENCING NOTES:

SPECIFICATIONS FOR SUPPORTING MEMBERS ARE AS FOLLOWS:

1. ALL MEMBERS SHALL BE FABRICATED FROM HOT DIPPED GALV. SCH. 40 PIPE, NEW MATERIAL ONLY.
2. POST SPACING SHALL NOT EXCEED 10'-0" O.C.
3. MEMBERS SHALL BE SIZED AS FOLLOWS:
   CORNER POSTS 3"ø O.D.
   INTM. POSTS 2 1/4"ø O.D.
   GATE POSTS 6"ø O.D.
   BUILDING POSTS 3"ø O.D.
   TOP RAIL 1 5/8"ø O.D.
   GATE FRAMES 2 1/4"ø O.D.
4. WOVEN WIRE FABRIC SHALL BE 9 GA. STEEL 2" MESH AND HOT DIPPED GALV. AFTER WEAVING.
5. BARBED WIRE SHALL BE 9 GA. 3-STRAND GALV. STEEL.
6. TENSION WIRE SHALL BE 7 GA. GALV. STEEL.
7. CONCRETE SHALL BE 3000 PSI AND CURED 5 DAYS BEFORE FENCING IS ERECTED.
8. INSTALLATION SHALL BE IN ACCORDANCE WITH LOCAL CODES AND THE STATE HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS.
9. GATES SHALL BE LOCKED BY CHAIN AND LOCK PROVIDE 5/16" HARDENED STEEL CHAIN. LOCK BY S-K.
10. SEE SITE PLAN BY E.R. BROWNELL & ASSOCIATES, INC. FOR LOCATION OF FENCING.



9 HANDICAPPED PARKING SIGN DETAIL 0020

NO SCALE

GENERAL NOTES

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO SAFETY-KLEEN CORPORATION. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAWING IS EXPRESSLY PROHIBITED EXCEPT BY SAFETY-KLEEN OR AS SAFETY-KLEEN MAY AGREE IN WRITING.

1. REFER TO SITE DRAWINGS BY E.R. BROWNELL AND ASSOCIATES, INC. FOR ADDITIONAL INFORMATION.
2. REFER TO SOILS REPORT BY SCHWEBKE-SHISKIN AND ASSOCIATES, INC. DATED 9/10/91 FOR RECOMMENDATIONS AND SPECIFICATIONS REGARDING LIMEROCK BASE AND ASPHALTIC CONCRETE PAVEMENT.
3. ALL ASPHALT AND CONCRETE PAVEMENT WORK SHALL BE IN CONFORMANCE WITH FLORIDA D.O.T. AND DADE CO. PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
4. PROVIDE PRECAST CONCRETE WHEEL STOPS, 3500 PSI CONCRETE STRENGTH, FULLY REINFORCED, AS MANUFACTURED BY SAF-T-PARK COMPANY, COMPLETE WITH ANCHOR PINS, AS INDICATED ON THE DRAWINGS.
5. ALL FINISHED GRADE ELEVATIONS AT THE BUILDING AND SURROUNDING PAVEMENTS NOTED ON THIS DRAWING SHALL SUPERCEDE ELEVATIONS SHOWN ON THE PAVING AND DRAINAGE PLAN BY E.R. BROWNELL AND ASSOCIATES, INC.

QUESTEC CONSULTING ENGINEERS

C-1

NO.	DESCRIPTION	BY	CHK	APPR	DATE
1	ADD 1 PKG SPACE, MOVE SIDEWALK TO OFFICE AREA.	GS			4/92

REVISIONS

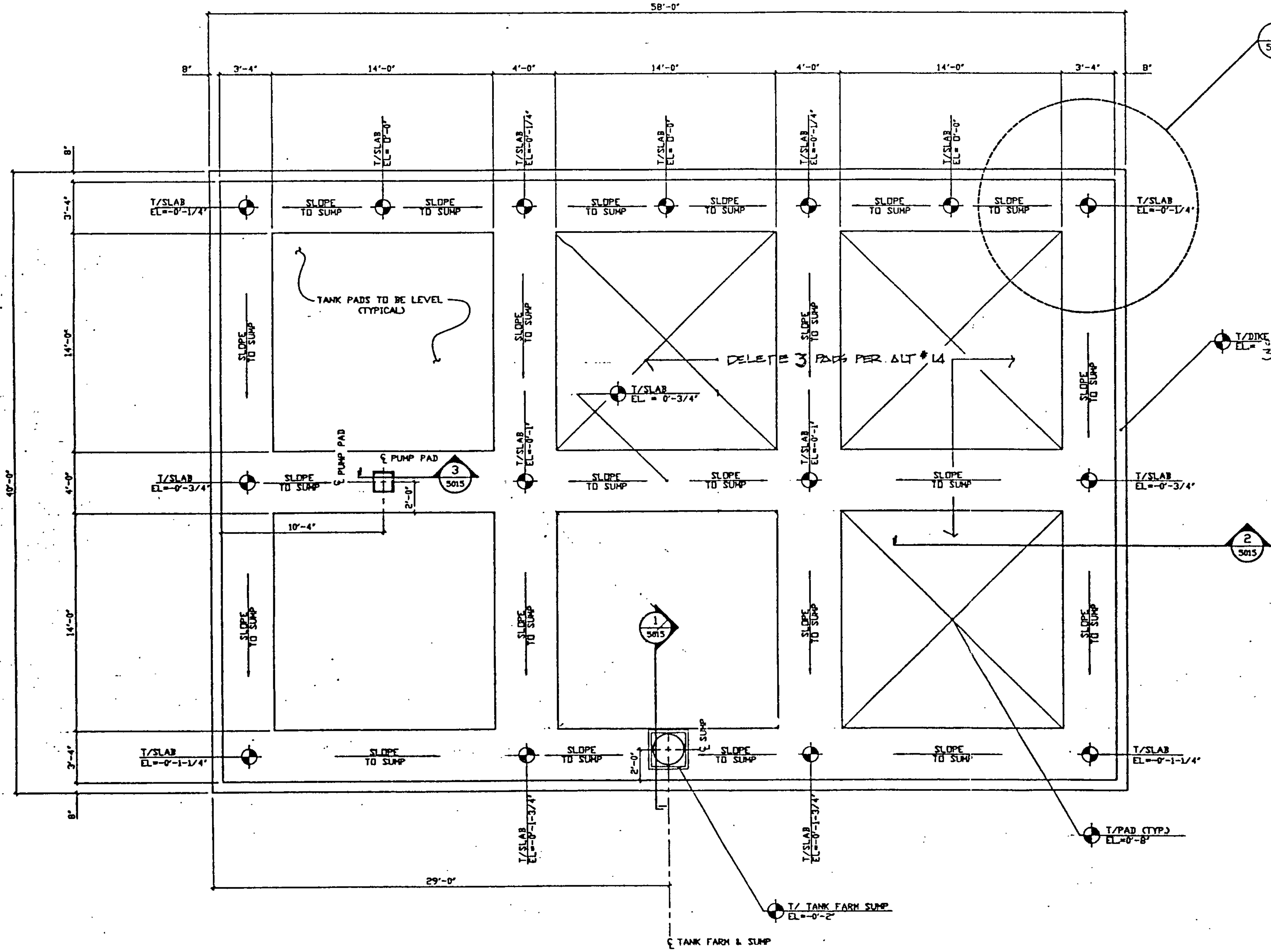
TITLE: SITE PAVING PLAN AND DETAILS

SAFETY-KLEEN CORP.
777 BIG TIMBER ROAD ELGIN, ILLINOIS 60123

SCALE	BY	CHKD	P.E. APPR	OP. APPR	DATE
AS SHOWN	QuesTec				9-27-91

SERVICE CENTER LOCATION	SC-DWG-REV NO.	SHEET NO.
MEDLEY, FL	316301-0020-00	20

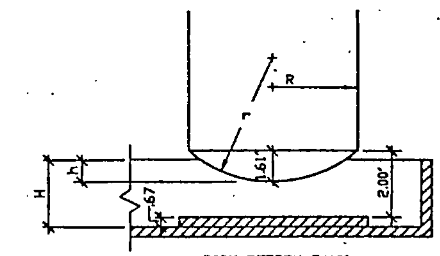
10-18-91 3:30pm



TANK FARM PLAN

SCALE: 1/4" = 1'-0"

CONTAINMENT CALCULATIONS



DISH BOTTOM TANK

TANK FARM (20,000 GAL DISH BOTTOM VERTICAL STORAGE TANK) -

NOTE: SUMP AND SLOPED CONCRETE SLAB CONTAINMENT NEGLIGIBLE

FORMULAS USED:

[(1/3)(PI)(h^2)(3r−h)](7.48 GAL/CF)(# OF UNITS) = TANK DISPLACEMENT VOLUME (GAL)
(L)(W)(H)(7.48 GAL/CF)(# OF UNITS) = OTHER DISPLACEMENT VOLUMES (GAL)
(L)(W)(H)(7.48 GAL/CF) = DIKE CONTAINMENT VOLUME (GAL)

R (TANK RADIUS) = 6.00 FT
L (DIKE LENGTH) = 56.67 FT
W (DIKE WIDTH) = 38.67 FT
H (DIKE HEIGHT) = 2.75 FT
r (DISH RADIUS) = 12.00 FT
h (DISH HEIGHT) = 1.69 FT
PI = 3.141

DIKE CONTAINMENT VOLUME:
(56.67)(38.67)(2.75)(7.48 GAL/CF) = 45,078 GAL (+)

VOLUME OF LARGEST TANK WITHIN DIKED AREA: = 20,000 GAL (-)

TANK PAD DISPLACEMENT VOLUME:
(14.00^2)(0.67)(7.48 GAL/CF)(6 PADS) = 5,894 GAL (-)

TANK DISPLACEMENT VOLUME:
[(1/3)(PI)(1.69^2)((3)(12.00)-1.69)](7.48 GAL/CF)(5 TANKS) = 3,838 GAL (-)

LOCAL RAINFALL ALLOWANCE:
25 YEAR FREQUENCY/24 HOUR DURATION
RAINFALL = 11 INCHES
(56.67)(38.67)(11/12)(7.48 GAL/CF) = 15,026 GAL (-)

TOTAL DISPLACEMENT VOLUME:
(20,000 + 5,894 + 3,838 + 15,026) = 44,758 GAL (-)

NET CONTAINMENT (EXCESS CAPACITY):
(45,078 - 44,758) = 320 GAL

GENERAL NOTES

1. REFER TO APPLICABLE GENERAL NOTES ON DRAWING 5011.
2. CONTRACTOR SHALL INSTALL OWNER FURNISHED S.S. FRAME AND LINER DESIGNATED FOR THE SUMP.
3. SLOPE CONCRETE SLAB TO SUMP AS SHOWN ON PLAN. TANK PADS MUST BE PERFECTLY LEVEL.
4. ALL REBAR SHALL BE GRADE 60 BILLET STEEL CONFORMING TO ASTM A-615. ALL REBAR SHALL BE EPOXY COATED.
5. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3" FOR CONCRETE CAST AGAINST SOIL, AND 2" FOR CONCRETE EXPOSED TO WEATHER.
6. TOP OF ALL EXPOSED CONCRETE WALLS SHALL BE SCREEDED AND FINISHED PERFECTLY LEVEL FOR PROPER ARCHITECTURAL APPEARANCE.
7. TANK FARM ELEVATIONS ARE RELATIVE. FINAL NGVD ELEVATIONS TO BE COORDINATED WITH SITE DRAWINGS BY E.R. BROWNELL AND ASSOCIATES, INC.

QUESTEC CORPORATION CONSULTING ENGINEERS

MP-1

NO.	DESCRIPTION	BY	CHK	APPR	DATE

REVISIONS

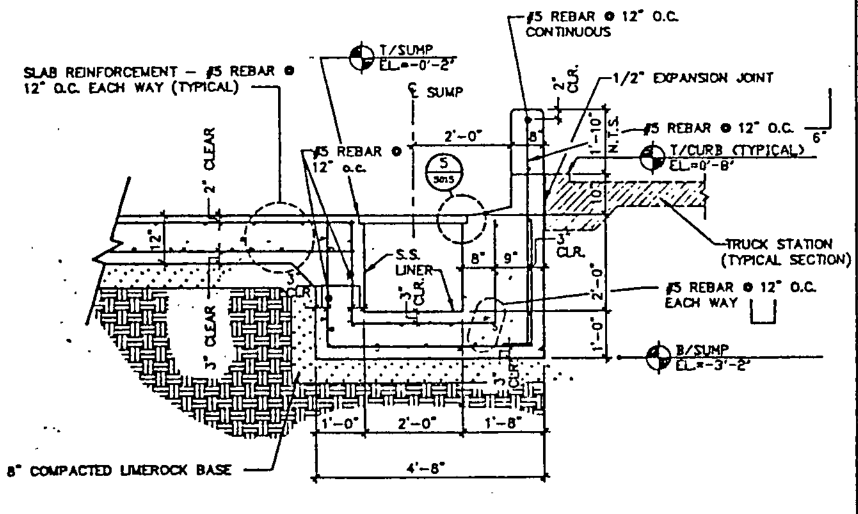
TITLE
TANK FARM FOUNDATION PLAN

SAFETY-KLEEN CORP.

SCALE	BY	CHKD	P.E. APPR	OP. APPR	DATE
1/4" = 1'-0"	QuesTec				9-27-91

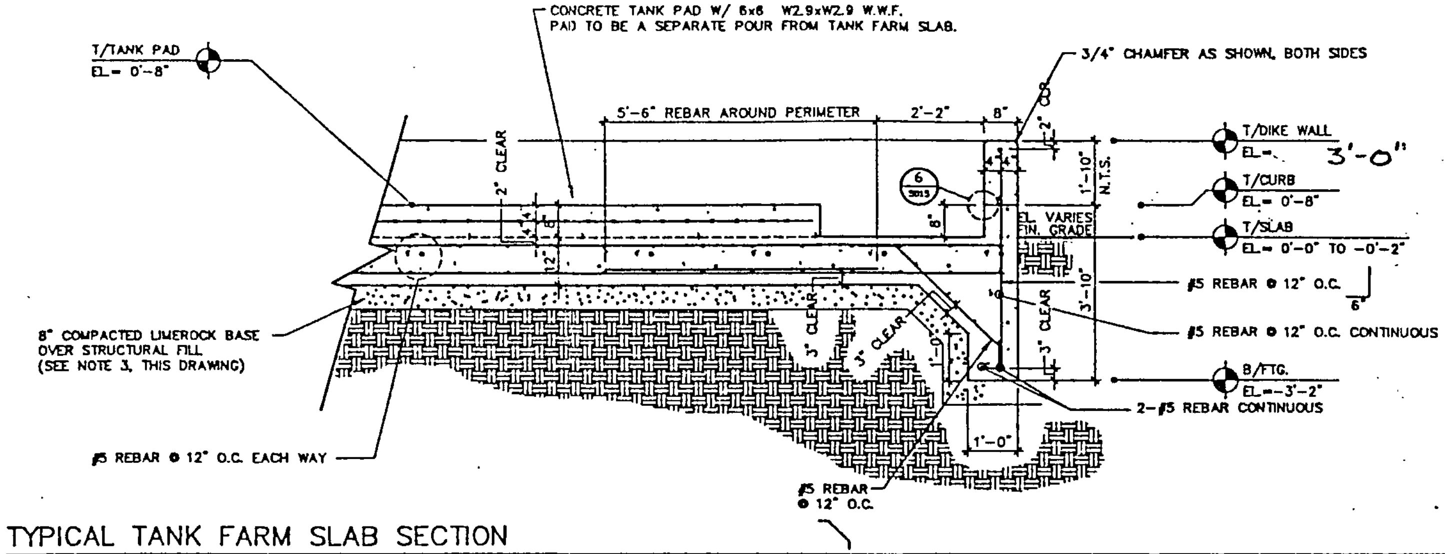
SERVICE CENTER LOCATION	SC-DWG-REV NO.	SHEET NO.
MEDLEY, FL	316301-5002-00	8

10-9-91 11:00am



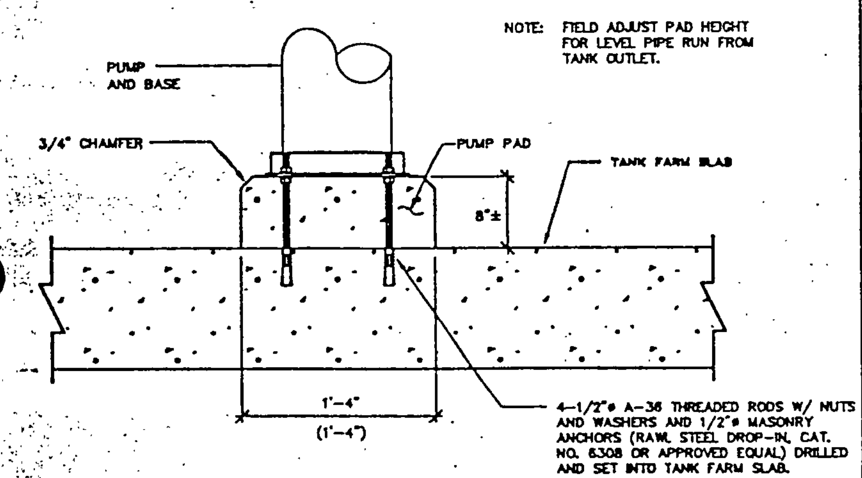
1 / 5015 TANK FARM SUMP SECTION

SCALE: 1/2" = 1'-0"



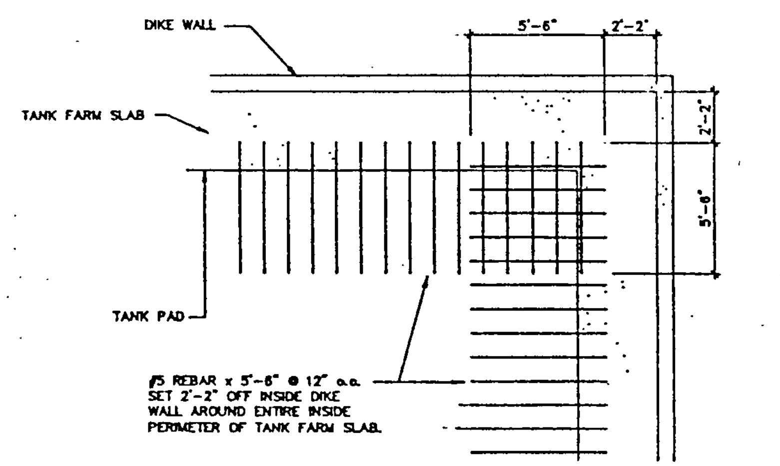
2 / 5015 TYPICAL TANK FARM SLAB SECTION

SCALE: 1/2" = 1'-0"



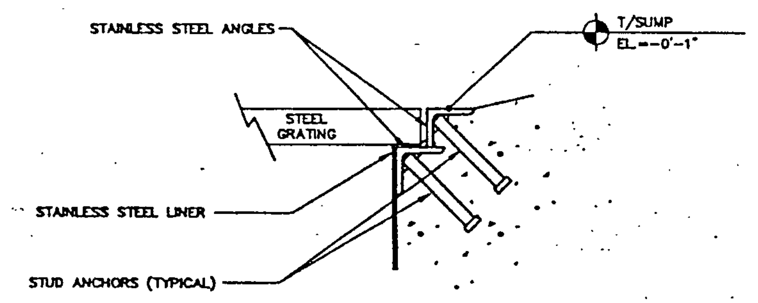
3 / 5015 TANK FARM PUMP PAD DETAIL

SCALE: NONE



4 / 5015 TANK FARM REINFORCEMENT DETAIL

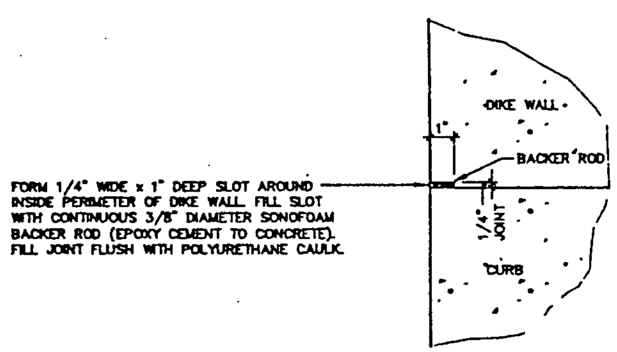
SCALE: 1/4" = 1'-0"



NOTE: SUMP RIM ASSEMBLY INCLUDING GRATING IS SUPPLIED BY S-K; COMPLETELY FABRICATED, ASSEMBLED AND READY FOR INSTALLATION. WELDS ARE SHOWN FOR INFORMATION PURPOSES ONLY. FORM IN CONCRETE SUMP AS SHOWN.

5 / 5015 TANK FARM SUMP RIM DETAIL

SCALE: 3" = 1'-0"



FORM 1/4" WIDE x 1" DEEP SLOT AROUND INSIDE PERIMETER OF DIKE WALL. FILL SLOT WITH CONTINUOUS 3/8" DIAMETER SONOFOAM BACKER ROD (EPOXY CEMENT TO CONCRETE). FILL JOINT FLUSH WITH POLYURETHANE CAULK.

6 / 5015 DIKE WALL HORIZONTAL JOINT DETAIL

SCALE: 3" = 1'-0"

GENERAL NOTES

1. REFER TO APPLICABLE GENERAL NOTES ON DRAWINGS 5011 AND 5002.
2. TANK FARM ELEVATIONS ARE RELATIVE. FINAL NGVD ELEVATIONS TO BE COORDINATED WITH SITE DRAWINGS BY E.R. BROWNELL AND ASSOCIATES, INC.
3. REFER TO SOILS REPORT BY SCHWEBKE-SHISKIN AND ASSOCIATES, INC. DATED 9/10/91 FOR RECOMMENDATIONS AND SPECIFICATIONS REGARDING STRUCTURAL FILL AND LIMEROCK BASE.

QUESTEC CONSULTING ENGINEERS

MP-2

NO.	DESCRIPTION	BY	CHK	APPR	DATE
	REVISIONS				

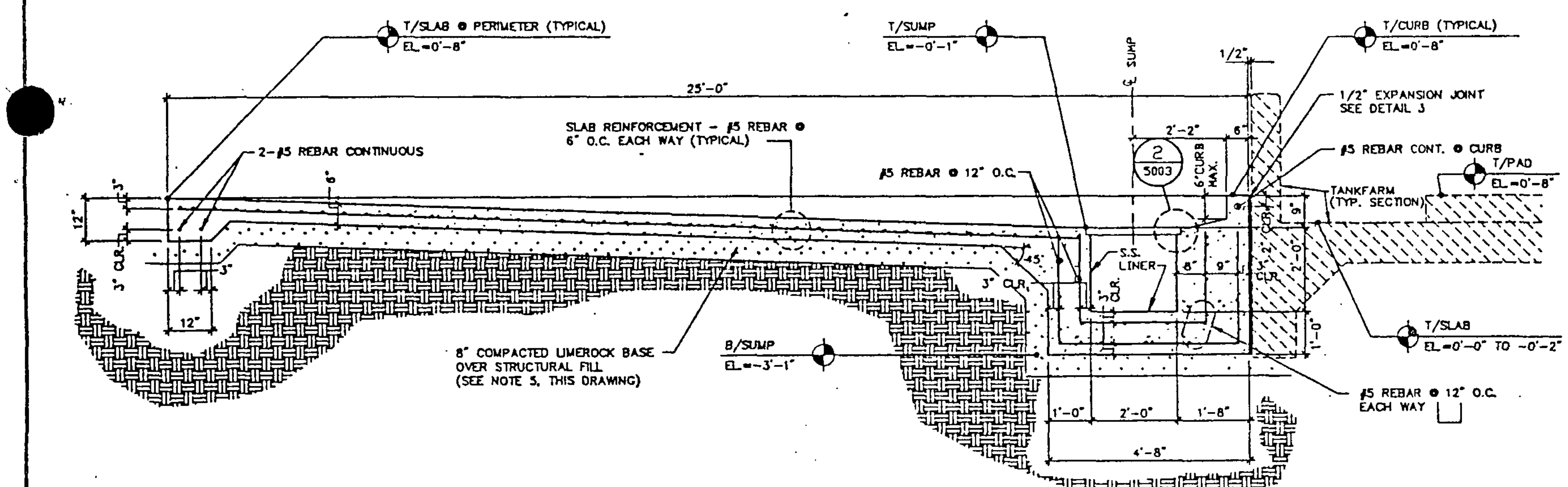
TITLE: TANK FARM FOUNDATION SECTIONS & DETAILS

SAFETY-KLEEN CORP.

SCALE	BY	CHKD	P.E. APPR	OP. APPR	DATE
AS SHOWN	QuesTec				9-27-91

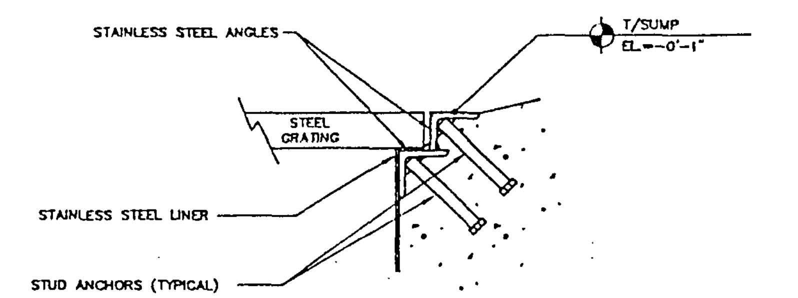
SERVICE CENTER LOCATION	SC-DWG-REV NO.	SHEET NO.
MEDLEY, FL	316301-5015-00	9

10-8-91 11:45am



1 (5003) TRUCK STATION SLAB AND SUMP SECTION

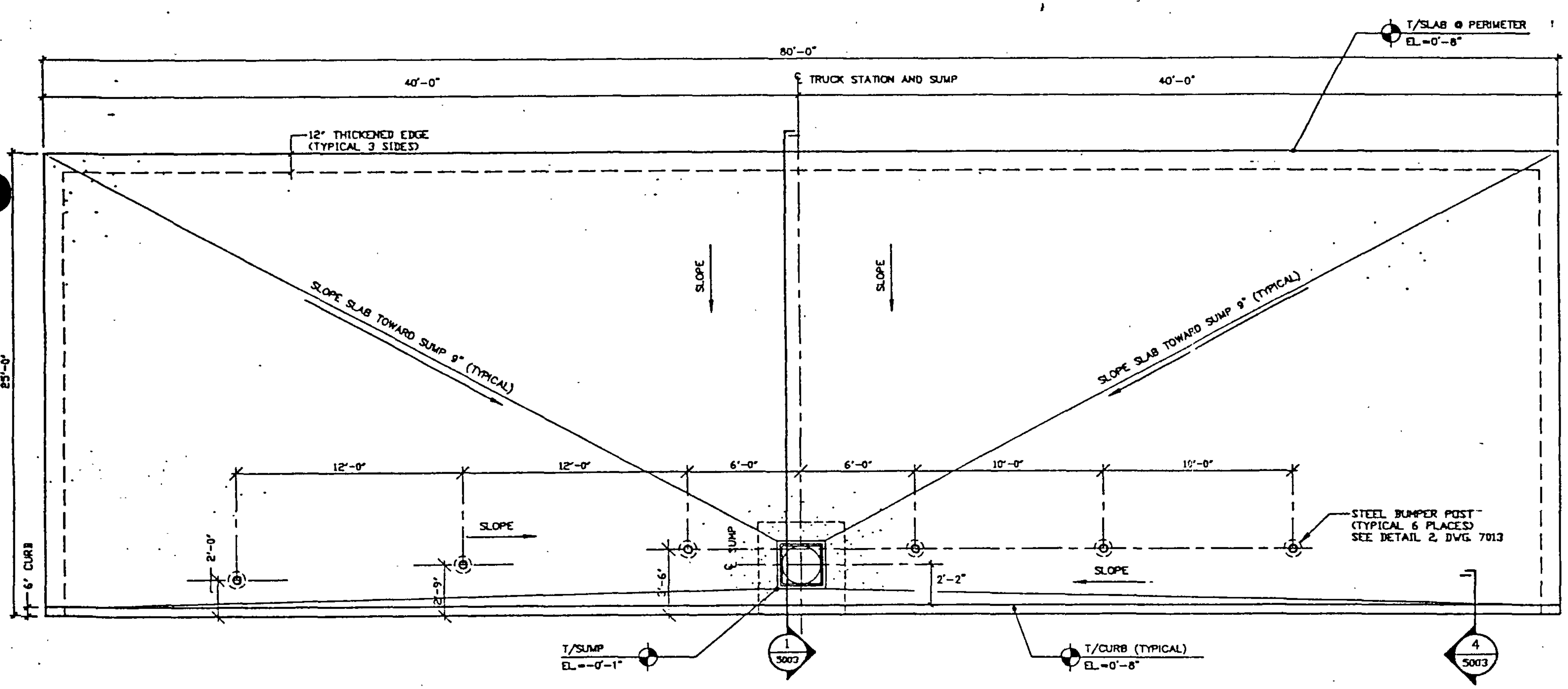
SCALE: 1/2" = 1'-0"

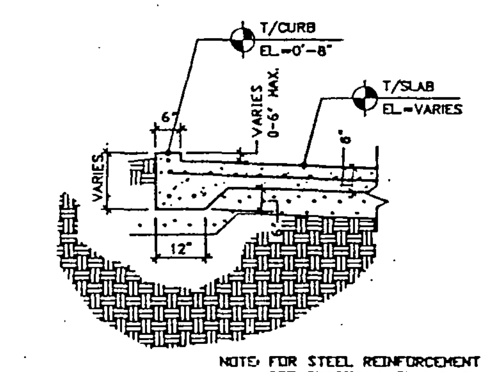


NOTE: SUMP RIM ASSEMBLY INCLUDING GRATING IS SUPPLIED BY S-K; COMPLETELY FABRICATED, ASSEMBLED AND READY FOR INSTALLATION. WELDS ARE SHOWN FOR INFORMATION PURPOSES ONLY. FORM IN CONCRETE SUMP AS SHOWN.

2 (5003) TRUCK STATION SUMP RIM DETAIL

SCALE: 3" = 1'-0"





NOTE: FOR STEEL REINFORCEMENT SEE SECTION 1, THIS DWG.

4 (5003) TRUCK STATION CURB DETAIL

1/2" = 1'-0"

GENERAL NOTES

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO SAFETY-KLEEN CORPORATION. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAWING IS EXPRESSLY PROHIBITED EXCEPT BY SAFETY-KLEEN OR AS SAFETY-KLEEN MAY AGREE IN WRITING.

1. REFER TO APPLICABLE GENERAL NOTES ON DRAWINGS 5011 AND 5002.
2. CONTRACTOR SHALL INSTALL OWNER FURNISHED S.S. FRAME AND LINER DESIGNATED FOR THE SUMP.
3. SLOPE CONCRETE SLAB TO SUMP AS SHOWN ON PLAN.
4. TRUCK STATION ELEVATIONS ARE RELATIVE. FINAL NGVD ELEVATIONS TO BE COORDINATED WITH SITE DRAWINGS BY E.R. BROWNELL AND ASSOCIATES, INC.
5. REFER TO SOILS REPORT BY SCHWEBKE-SHISKIN AND ASSOCIATES, INC. DATED 9/10/91 FOR RECOMMENDATIONS AND SPECIFICATIONS REGARDING STRUCTURAL FILL AND LIMEROCK BASE.

CONTAINMENT CALCULATIONS

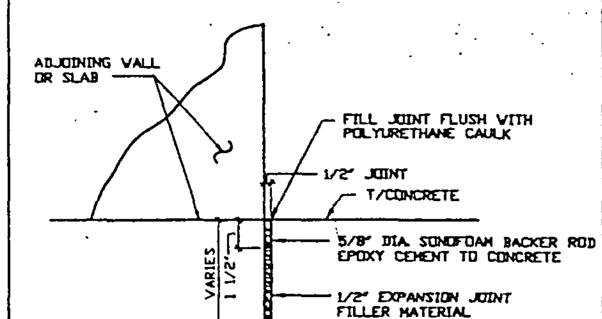
TRUCK STATION (SLOPED CONCRETE SLAB)-

NOTE: SUMP CONTAINMENT NEGLIGIBLE

FORMULA USED:
(1/3)(L)(W)(H)(7.48 GALLONS/CUBIC FOOT)

L = 80'-0"
W = 19'-6"
H = 0'-9"

TOTAL CONTAINMENT:
(1/3)(80.0)(19.5)(.75)(7.48 GAL/CF) = 2917 GAL



3 (5003) EXPANSION JOINT DETAIL

NO SCALE

TRUCK STATION PLAN

SCALE: 1/4" = 1'-0"

QUESTEC CONSULTING ENGINEERS

MP-3

NO.	DESCRIPTION	BY	CHK	APPR	DATE

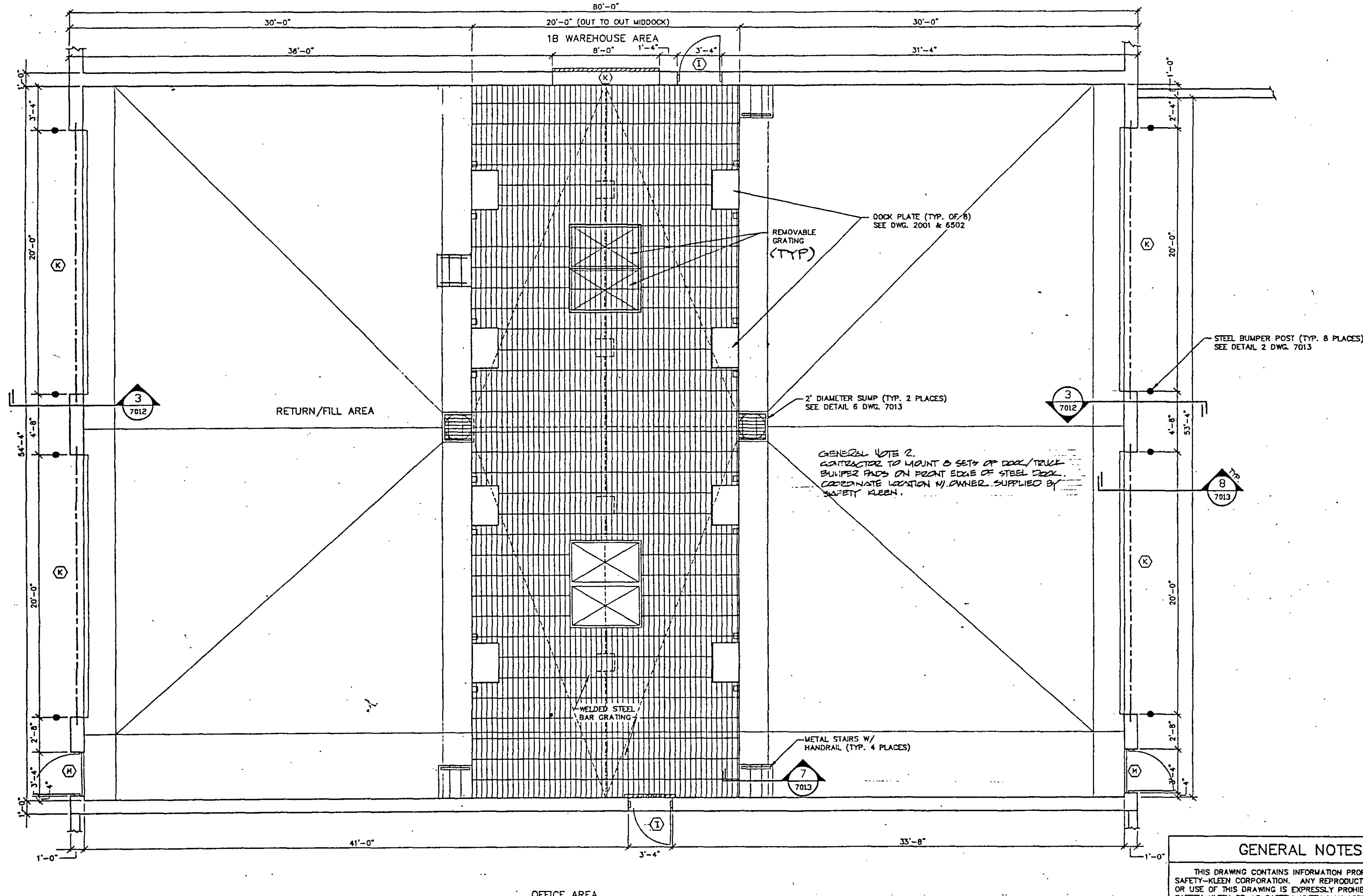
REVISIONS

TITLE
TRUCK STATION / FOUNDATION PLAN, SECTIONS AND DETAILS

SAFETY-KLEEN CORP.

SCALE	BY	CHKD	P.E. APPR	OP. APPR	DATE
AS SHOWN	QuesTec				9-27-91

SERVICE CENTER LOCATION	SC-DWG-REV NO.	SHEET NO.
MEDLEY, FL	316301-5003-00	10



RETURN/FILL AREA/FLOOR PLAN

SCALE: 1/4" = 1'-0"

GENERAL NOTES

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO SAFETY-KLEEN CORPORATION. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAWING IS EXPRESSLY PROHIBITED EXCEPT BY SAFETY-KLEEN OR AS SAFETY-KLEEN MAY AGREE IN WRITING.

1. DIMENSIONING ON ALL PLANS IS TO FACE OF STUD, ACTUAL WIDTH, FACE OF MASONRY, NOMINAL WIDTH, OR FACE OF ROUGH OPENING.

QUESTEC CONSULTING ENGINEERS

A-7

NO.	DESCRIPTION	BY	CHK	APPR	DATE
	REVISIONS				

TITLE

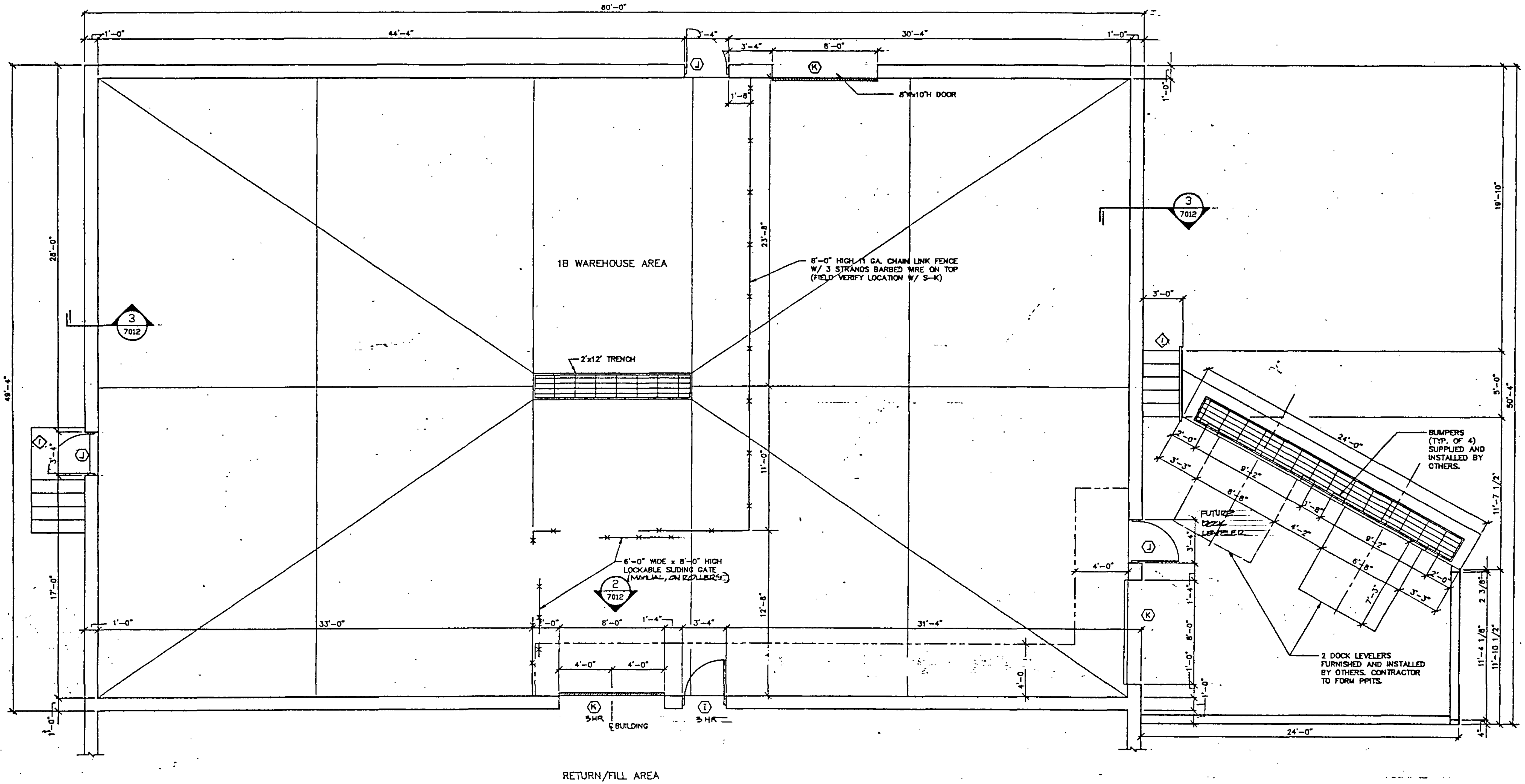
RETURN/FILL AREA FLOOR PLAN

SAFETY-KLEEN CORP.

SCALE	BY	CHKD	P.E. APPR	OP. APPR	DATE
1/4" = 1'-0"	QuesTec				9-27-91

SERVICE CENTER LOCATION	SC-DWG-REV NO.	SHEET NO.
MEDLEY, FL	316301-7004-00	24

10-7-91 8:00pm 700



1B WAREHOUSE AREA FLOOR PLAN

SCALE: 1/4" = 1'-0"

GENERAL NOTES

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1. DIMENSIONING ON ALL PLANS IS TO FACE OF STUD, ACTUAL WIDTH, FACE OF MASONRY, NOMINAL WIDTH, OR FACE OF ROUGH OPENING.

QUESTEC CORPORATION — CONSULTING ENGINEERS

A-8

NO.	DESCRIPTION	BY	CHK	APPR	DATE
1	ADDED STOOP & REVISED STAIRS	CF	SD		102191

REVISIONS

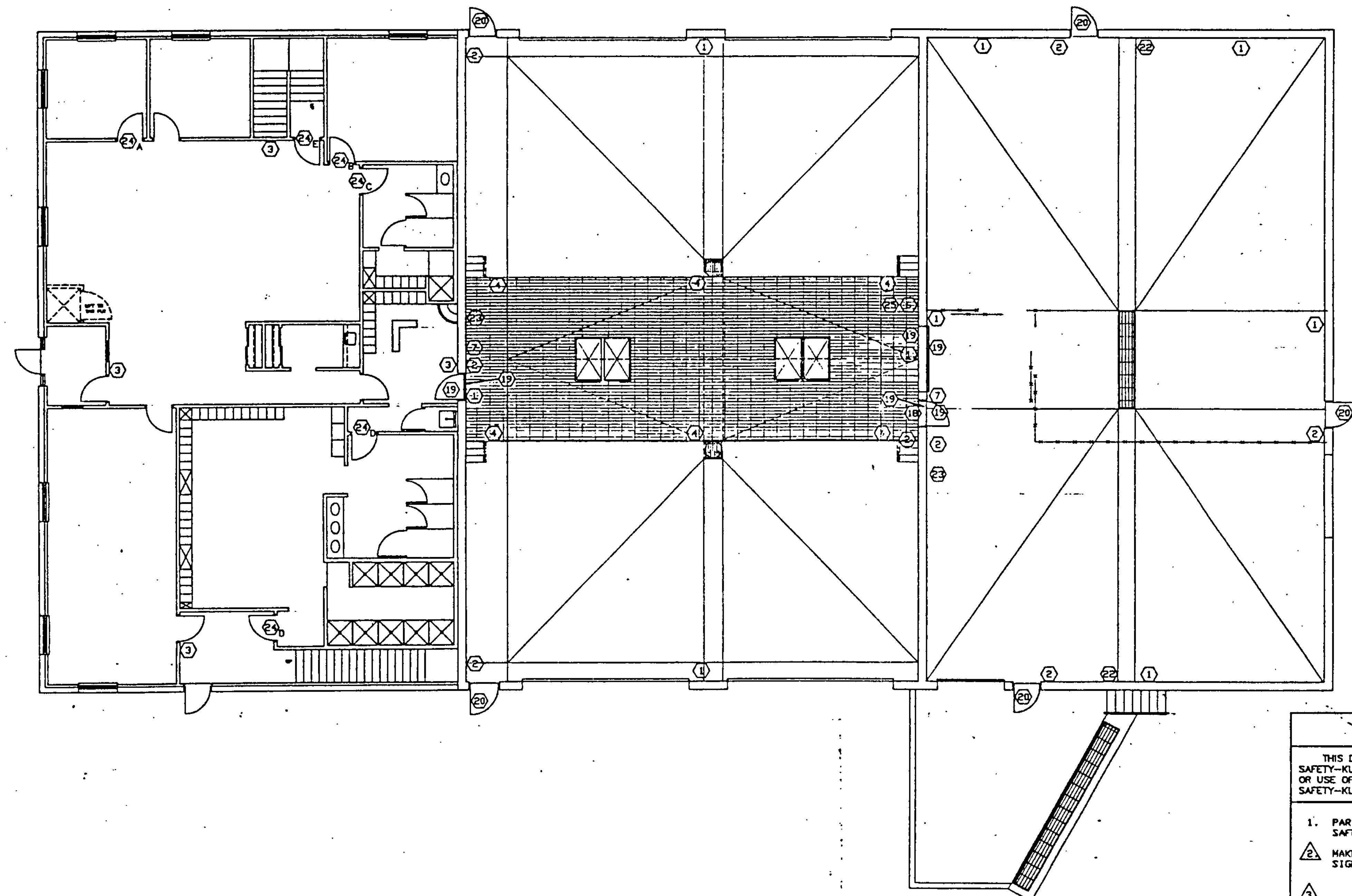
TITLE: 1B WAREHOUSE AREA FLOOR PLAN

SAFETY-KLEEN CORP.

SCALE	BY	CHKD	P.E. APPR	OP. APPR	DATE
1/4" = 1'-0"	QuesTec				9-30-91

SERVICE CENTER LOCATION	SC-DWG-REV NO.	SHEET NO.
MEDLEY, FL	316301-7005-00	26

10-21-91 8:00am



155' BUILDING SIGN LOCATION PLAN

SCALE: 1/8" = 1'-0"

SIGN SCHEDULE

MARK NO.	DESCRIPTION	DETAIL	NUMBER REQUIRED (4)	LOCATION	REMARKS
1	NO SMOKING	A	8	10' A.F.F.	■ DENOTES 10' ABOVE T/DOCK
2	"FIRE EXTINGUISHER"	B	7	6' ABOVE EXTINGUISHER	COORDINATE LOCATIONS W/ FIRE PROTECTION CONTR.
3	"FIRE EXTINGUISHER"	C	2	6' ABOVE EXTINGUISHER	COORDINATE LOCATIONS W/ FIRE PROTECTION CONTR.
4	"105° SOLVENT"	D	3		MOUNT TO SOLVENT TREE ANGLE UPRIGHT (2)
6	"USED SOLVENT PUMP JOG SWITCH	D	1	3' ABOVE JOG SWITCH	
7	"LIGHT & VENTILATION FAN"	D	4	3' ABOVE SWITCH	
9	NFPA DESCRIPTION		2/ TANK	11' A.F.F.	S.K.# 2452 (3)
10	~~"WASTE OIL"~~ GLYCOL	U	2/ WASTE OIL TANK	13' A.F.F.	
12	"105 SOLVENT"	V	2/ 105° SOLVENT TANK	13' A.F.F.	
13	"WASTE SOLVENT"	X	2/ WASTE SOLVENT TANK	13' A.F.F.	
14	"COMBUSTIBLE LIQUID"	Y	2/ TANK	15' A.F.F.	
15	"HAZARDOUS WASTE"	Z	2/ WASTE SOLVENT TANK	13' A.F.F.	S.K.# 1257
16	~~TANK CAPACITY~~ (19,000 GAL)	K	1/ TANK	17' A.F.F.	
17	PIPELINE IDENTIFICATION	L	VARIES SEE DWG. 9005	6' ABOVE CONTAINER PENETRATION	SEE TANK ACCESS CONTAINER
18	OPEN DOOR SLOWLY	M	2	5 1/2' A.F.F.	
19	FIRE DOOR	N	4	6 1/2' A.F.F.	
20	NO ADMITTANCE	P	6	5 1/2' A.F.F.	
22	FLAMMABLE	R	2	6' A.F.F.	
23	EYE WASH	S		6' A.F.F.	
24	DOOR	T	SEE DWG. 9002	5 1/2' A.F.F.	A - BRANCH MANAGER B - CONFERENCE C - WOMEN D - MEN E - STAIRWAY
25	EMERGENCY SHUT-OFF WASTE SOLVENT	D	1	3' ABOVE DISCONNECT	
26	EMERGENCY SHUT-OFF 105° SOLVENT PUMP	D	1	3' ABOVE DISCONNECT	LOCATED AT TANKFARM

GENERAL NOTES

1. PARTS W/ S-K PART #'S ARE SUPPLIED BY SAFETY KLEEN AND INSTALLED BY CONTRACTOR.

(2) MAKE MOUNTING BRACKET AS REQUIRED. MOUNT SIGN TO BE VISABLE FROM DOCK.

(3)
- WASTE SOLVENT
- WASTE OIL
- 105° SOLVENT
- WASTE ETHYLENE GLYCOL

(4) CONTRACTOR TO VERIFY ALL QUANTITIES REQUIRED.

QUESTEC CORPORATION
CONSULTING ENGINEERS

A-11

TITLE
155' BUILDING
SIGN LOCATION PLAN

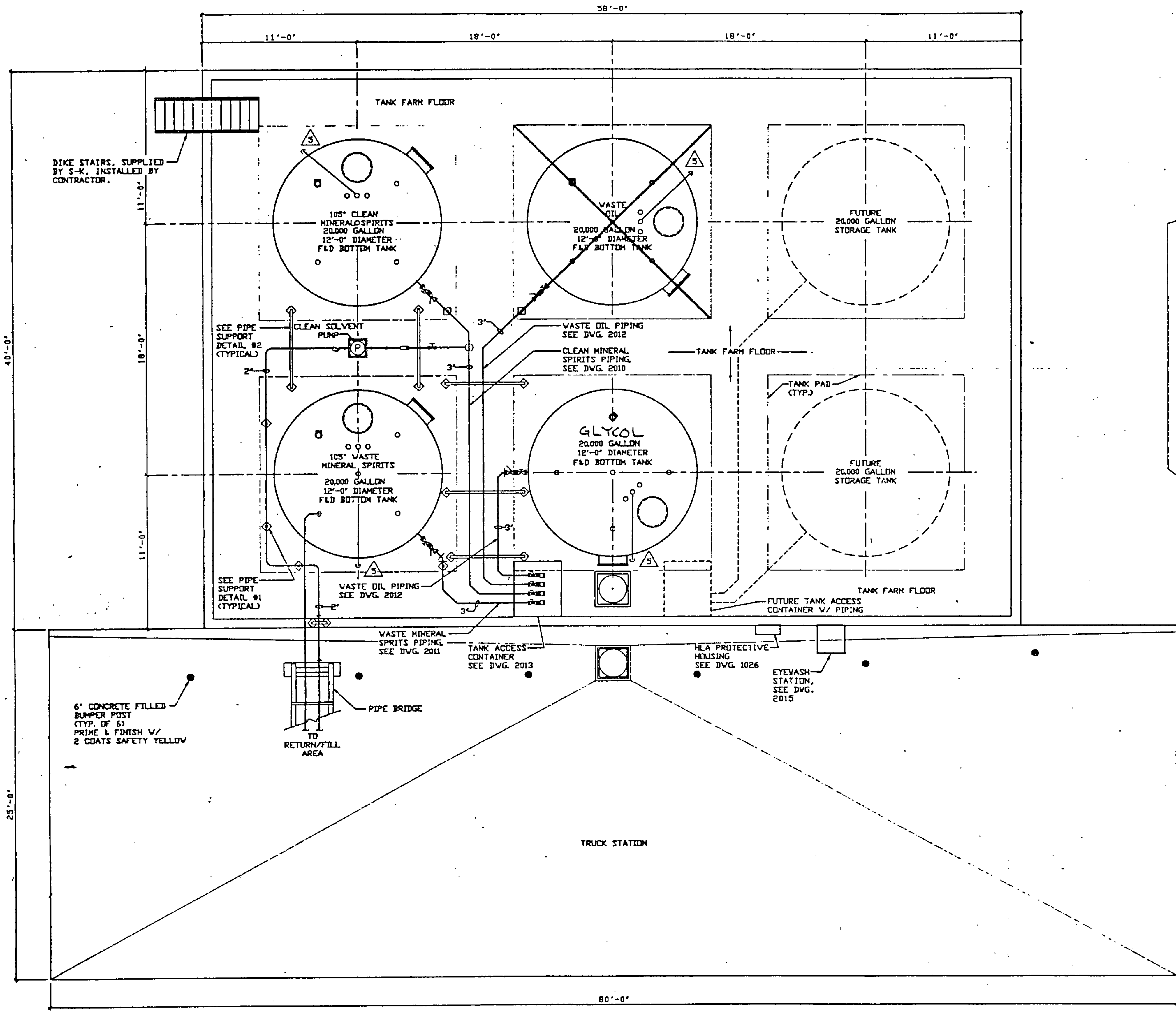
SAFETY-KLEEN CORP.
777 BIG TIMBER ROAD ELGIN, ILLINOIS 60123 PHONE 708-697-8460

NO.	DESCRIPTION	BY	CHK	APPR	DATE

REVISIONS

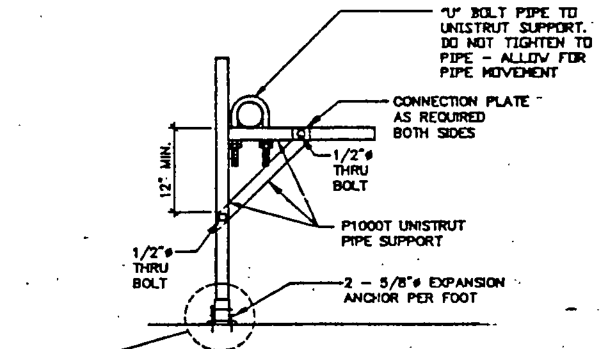
SCALE	BY	CHKD	P.E. APPR	OP. APPR	DATE
1/8" = 1'-0"	QuesTec				9-27-91

SERVICE CENTER LOCATION	SC-DWG-REV NO.	SHEET NO.
MEDLEY, FL	316301-9000-00	28



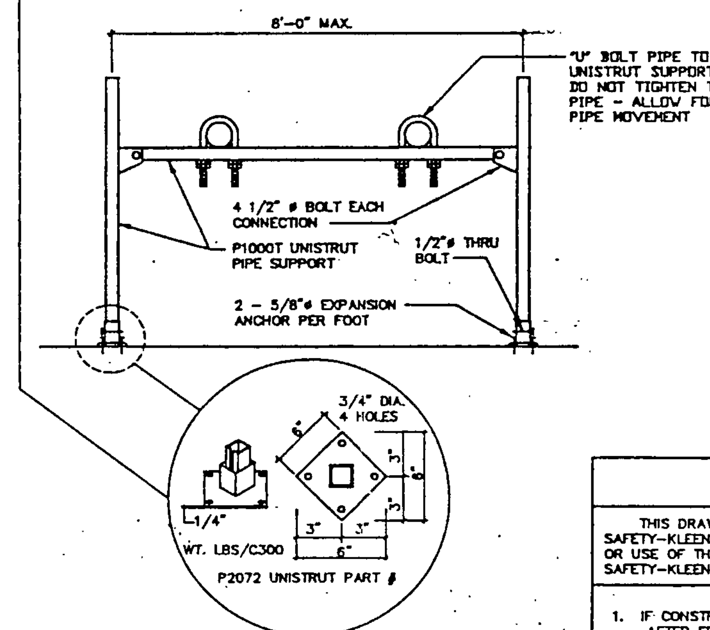
TANK FARM PIPING PLAN

SCALE: 1/4" = 1'-0"



PIPE SUPPORT DETAIL #1

SCALE: 3/4" = 1'-0"



PIPE SUPPORT DETAIL #2

SCALE: 3/4" = 1'-0"

GENERAL NOTES

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO SAFETY-KLEEN CORPORATION. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAWING IS EXPRESSLY PROHIBITED EXCEPT BY SAFETY-KLEEN OR AS SAFETY-KLEEN MAY AGREE IN WRITING.

1. IF CONSTRUCTION REQUIRES CONC. PENETRATIONS AFTER EPOXY COATING IS APPLIED - CONTRACTOR SHALL PATCH & REPAIR EPOXY COATING AS PER MANUFACTURERS RECOMMENDATIONS & REQUIREMENTS.
2. SHIM ACCESS CONTAINER & EYEWASH STAND AS REQUIRED, WITH STEEL OR LEAD PLATES, TO LEVEL.
3. CONC. PENETRATIONS WILL NOT BE ALLOWED ON TANKFARM FLOOR.
4. ALL CHANGES IN DIRECTION OF WASTE PIPING SHALL BE MADE USING 2-45° ELBOWS OR LONG RADIUS 90'S.
5. "VERIC" TANK GAUGE, SEE DRAWING 2025.
6. RUN PROCESS PIPE LEVEL FROM TANK. CHANGE ELEVATION, ONLY AS REQUIRED, FOR ENTRANCE INTO TANK ACCESS CONTAINER.
7. WELD PIPE SUPPORT TO TOP OF TANK. FIELD FABRICATE PIPE SADDLE AS REQUIRED.
8. SUPPORT PIPE APPROXIMATELY AS SHOWN, BUT NOT MORE THAN 8'-0" O.C. UNLESS OTHERWISE NOTED.
9. ALL PROCESS PIPE FITTINGS TO BE WELDED.

QUESTEC CONSULTING ENGINEERS

MP5

TITLE

TANK FARM PIPING PLAN

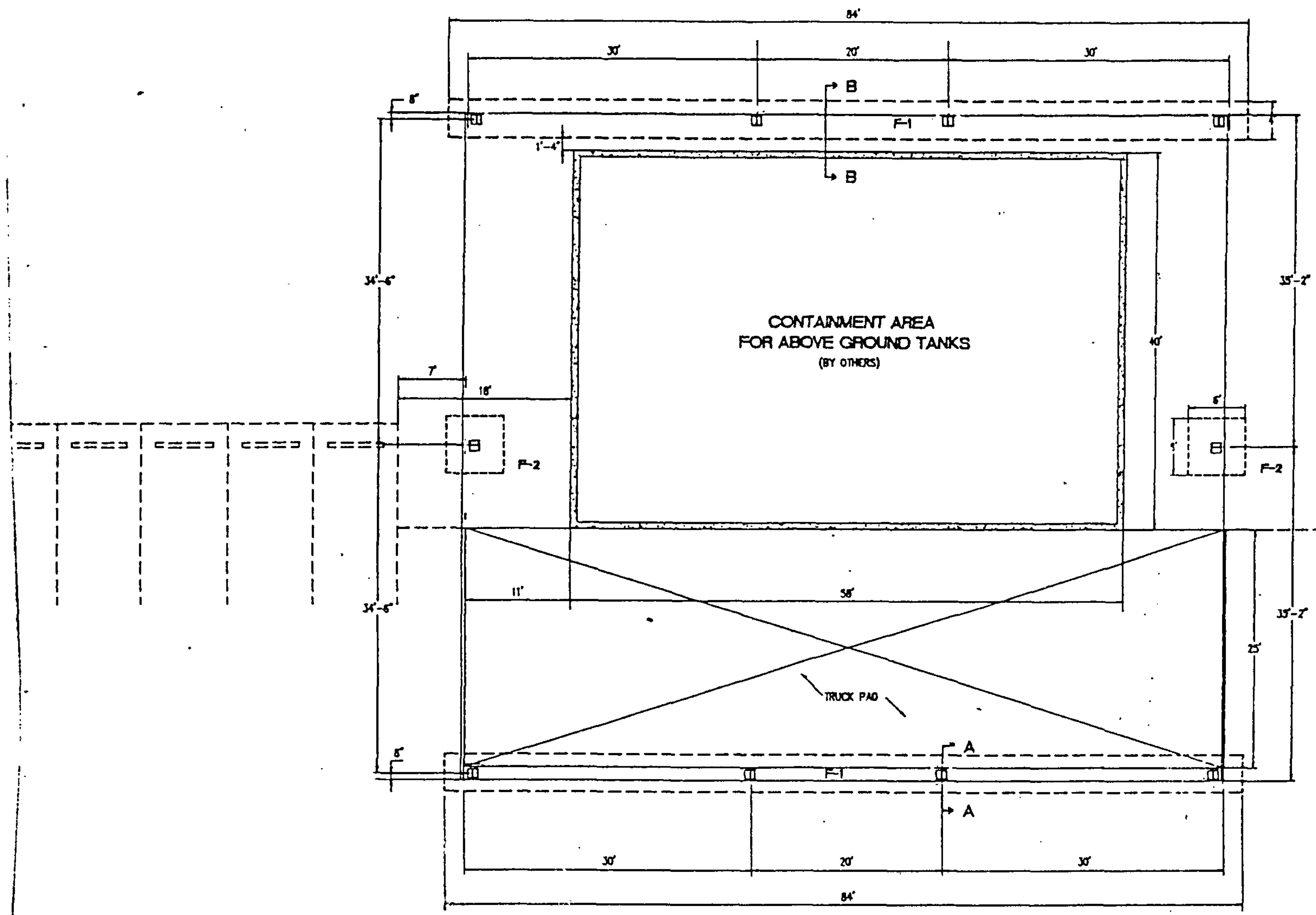
SAFETY-KLEEN CORP.

SCALE	BY	CHKD	P.E. APPR	OP. APPR	DATE
1/4" = 1'-0"	QuesTec				9-27-91

SERVICE CENTER LOCATION	SC-DWG-REV NO.	SHEET NO.
MEDLEY, FL	316301-2000-00	45

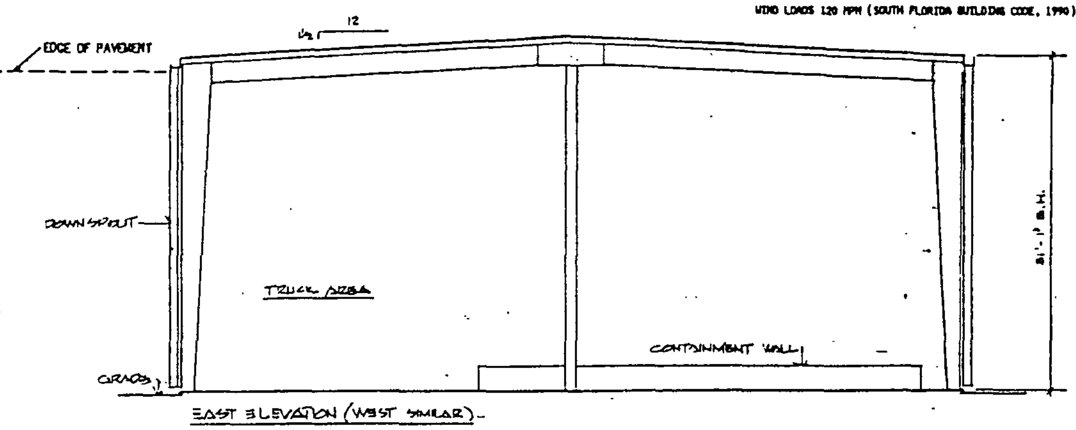
NO.	DESCRIPTION	BY	CHK	APPR	DATE

REVISIONS

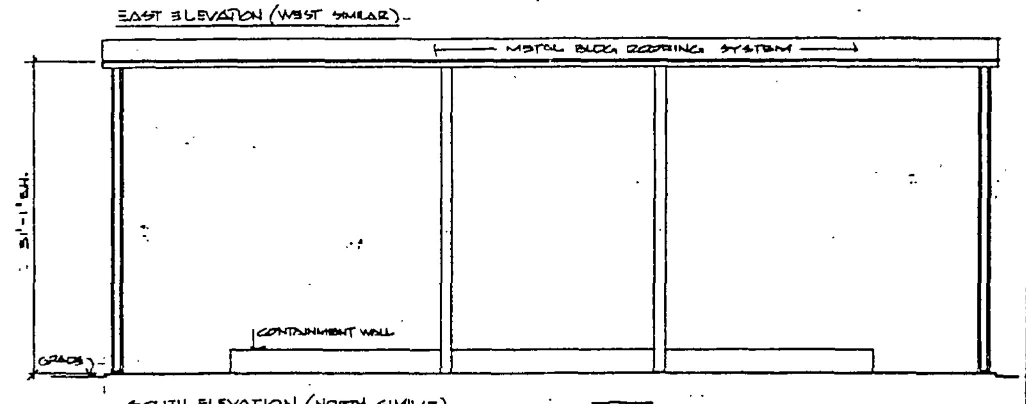


FOUNDATION PLAN

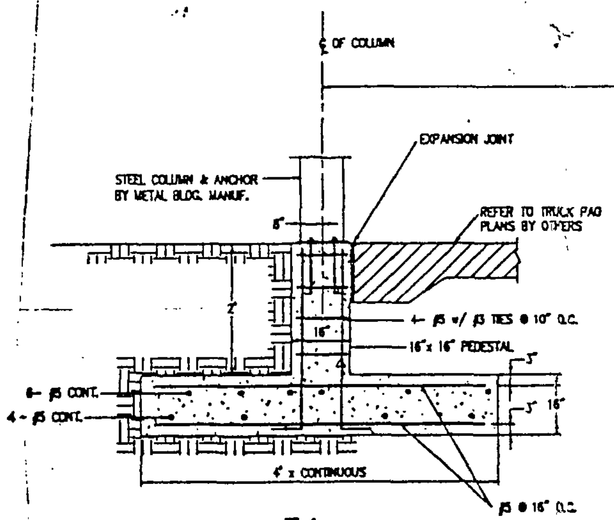
SCALE: 1/8" = 1'-0"



EAST ELEVATION (WEST SIMILAR)



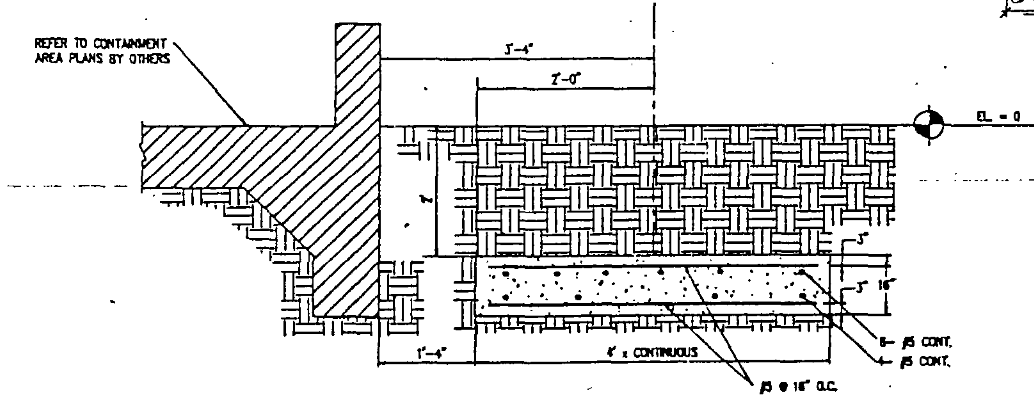
SOUTH ELEVATION (NORTH SIMILAR)



F-1

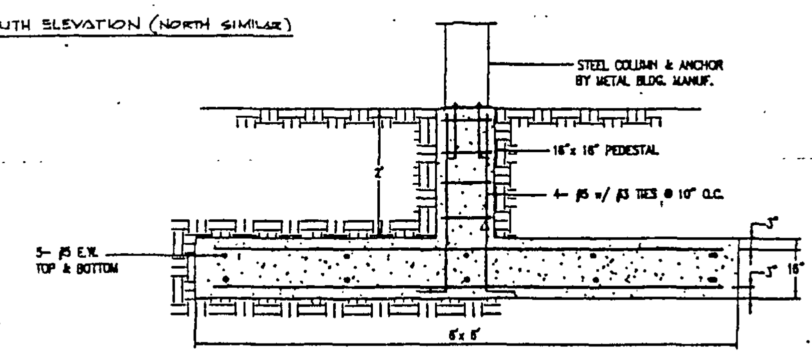
SECTION "A-A"

N.T.S.



SECTION "B-B"

N.T.S.



F-2

N.T.S.

FOUNDATIONS

1. THE SUBSURFACE INFORMATION AND FOUNDATION DESIGN ARE BASED ON A REPORT PREPARED BY SCHMEHKE - SHISKIN & ASSOCIATES REPORT NUMBER 89691. SOIL TO HAVE A 3,000 PSF BEARING CAPACITY. THE CONTRACTOR SHALL PERFORM EXCAVATIONS, FOOTING CONSTRUCTION, AND PREPARATION OF THE SUBGRADE IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT.
2. FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION, WHICH DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT, SHALL BE REPORTED TO THE STRUCTURAL ENGINEER AND THE GEOTECHNICAL ENGINEER BEFORE PROCEEDING.

GENERAL

1. PRE-ENGINEERED METAL BUILDING COMPONENTS SHALL BE DESIGNED FOR ALL LOADS PRESCRIBED BY THE SOUTH FLORIDA BUILDING CODE, LATEST EFFECTIVE EDITION. SHOP DRAWINGS SIGNED AND SEALED BY A FLORIDA REGISTERED ENGINEER SHALL BE SUBMITTED TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION OR ERECTION.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL ANCHOR BOLT AND FOOTING LOCATIONS WITH METAL BUILDING MANUFACTURER'S SHOP DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
3. DESIGN LOADS:

   ROOF LIVE LOAD = 30 PSF

   ROOF DEAD LOAD = STEEL LOAD + 3 PSF ADDITIONAL

   WIND LOADS 120 MPH (SOUTH FLORIDA BUILDING CODE, 1990)

Issue

Developers Choice, Inc.
Commercial • Industrial • Architecture • Civil Engineering • Land Planning • Design Feasibility

SAFETY KLEEN
MEDLEY FLORIDA

TANK FARM CANOPY

Drawn	GS
Check	
Date	6-18-92
Scale	AS NOTED
Job No.	3291

Sheet: ST-1

Appendix D

Concrete Permeability Information

safety-kleen ®

RECEIVED MAR 17 1995

MEMORANDUM

SUBJECT: Epoxy Coatings on Concrete Containment Systems

DEPOT/OFFICE: Breslau

TO: Dan Dowling

DATE: March 2, 1995
H:\ENG\WORD95\CR\CRMEMS.DOC

FROM: Chris Riehl CRiehl

cc: Peter Dwan
David Flahaut
Frank Wagner

Following continuous problems with the maintenance and high capital cost of epoxy coatings on the concrete containment areas in the branches, I began questioning the need to install these products.

I discussed this issue with the three regional environmental engineers and found the following. In Eastern Canada, only Québec has regulations regarding the requirements for containment areas. Québec Hazardous Waste regulations specify that containment systems have a permeability less than 1×10^{-7} cm/s. In Ontario (Central Region), there are no specific regulations regarding the specifications of containment systems. In Western Region, only B.C. has specific requirements for containment systems, which are the same as Québec. The regulation in B.C. (as attached), also states that the permeability of the containment system must be less than 1×10^{-7} cm/s. Therefore, there are no provincial regulations specifically requiring an epoxy coating system on the concrete containment. However, there are certain branches with permit conditions requiring the coatings.

Preliminary investigations with the Canadian Portland Cement Association (CPCA) revealed the average permeability of concrete is from 1×10^{-10} cm/s (see attached), or one thousand times less permeable than the quantified requirements of Québec and B.C. Following discussions with Peter Dwan, I decided to have laboratory tests done to document this for the files and provide proof for other facilities. The lab tests were done on three core samples taken from the Langley, B.C. branch, and the results are attached. The permeability of the samples ranged from 4.830×10^{-9} cm/s to 1.063×10^{-8} cm/s, falling within the range estimated by CPCA.

In an effort to reduce immediate capital costs and future maintenance cost, I am planning on using this documentation to aggressively fight any agency's requests for the epoxy coatings. I hope this information will also prove useful for the branches in the U.S.

CR/cd

The moisture content of thin concrete elements after drying in air with a relative humidity of 50% to 90% for several months is about 1% to 2% by weight of the concrete depending on the concrete's constituents, original water content, drying conditions, and the size of the concrete element (refer to Chapter 13 for more information).

Size and shape of a concrete member have an important bearing on the rate of drying. Concrete elements with large surface area in relation to volume (such as floor slabs) dry faster than large concrete volumes with relatively small surface areas (such as bridge piers).

Many other properties of hardened concrete also are affected by its moisture content; these include elasticity, creep, insulating value, fire resistance, abrasion resistance, electrical conductivity, and durability.

Strength

Compressive strength may be defined as the measured maximum resistance of a concrete or mortar specimen to axial loading. It is generally expressed in pounds per square inch (psi) at an age of 28 days and is designated by the symbol f'_c. To determine compressive strength, tests are made on specimens of mortar or concrete; in the United States, unless otherwise specified, compression tests of mortar are made on 2-in. cubes, while compression tests of concrete are made on cylinders 6 in. in diameter and 12 in. high (see Fig. 1-6).

Compressive strength of concrete is a primary physical property and one frequently used in design calculations for bridges, buildings, and other structures. Most general-use concrete has a compressive strength between 3000 psi and 5000 psi. High-strength concrete has a compressive strength of at least 6000 psi. Compressive strengths of 20,000 psi have been used in building applications.

In designing pavements and other slabs on ground, the flexural strength of concrete is generally used.

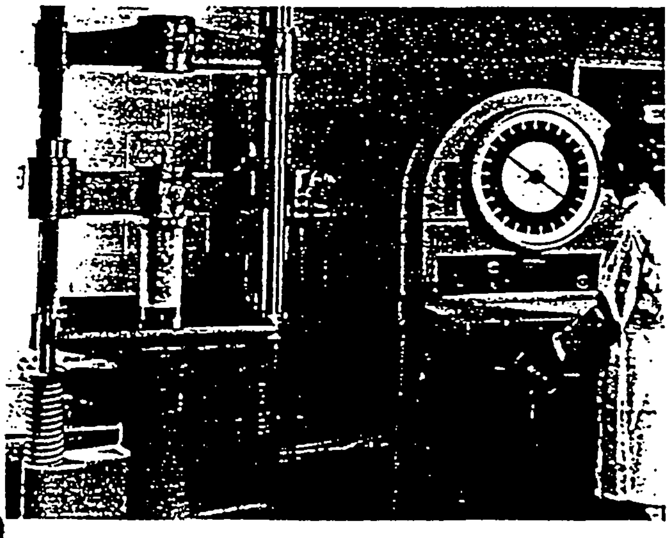


Fig. 1-6. Testing a 6x12-in. concrete cylinder in compression. The load on the test cylinder is registered on the scale.

Compressive strength can be used as an index of flexural strength, once the empirical relationship between them has been established for the materials and the size of the member involved. The flexural strength or modulus of rupture of normal-weight concrete is often approximated as 7.5 to 10 times the square root of the compressive strength.

The tensile strength of concrete is about 8% to 12% of the compressive strength and is often estimated as 5* to 7.5 times the square root of the compressive strength.**

The torsional strength for concrete is related to the modulus of rupture and the dimensions of the concrete element.†

The shear strength of concrete can vary from 35% to 80% of the compressive strength. The correlation between compressive strength and flexural, tensile, torsional, and shear strength varies with concrete ingredients and environment.

Modulus of elasticity, denoted by the symbol E, may be defined as the ratio of normal stress to corresponding strain for tensile or compressive stresses below the proportional limit of a material. For normal-weight concrete, E ranges from 2 to 6 million psi and can be approximated as 57,000 times the square root of the compressive strength.††

The principal factors affecting strength are water-cement ratio and age, or the extent to which hydration has progressed. Fig. 1-7 shows compressive strengths for a range of water-cement ratios at different ages. Tests were made on 6-in.-diameter cylinders that were 12 in. in height. Note that strengths increase with age and increase as the water-cement ratios decrease. These factors also affect flexural and tensile strengths and bond of concrete to steel.

The age-compressive strength relationships in Fig. 1-7 are for typical air-entrained and non-air-entrained concretes. When more precise values for concrete are required, curves should be developed for the specific materials and mix proportions to be used on the job.

For a given workability and a given amount of cement, air-entrained concrete requires less mixing water than non-air-entrained concrete. The lower water-cement ratio possible for air-entrained concrete tends to offset the somewhat lower strengths of air-entrained concrete, particularly in lean-to-medium cement content mixes.

Unit Weight

Conventional concrete, normally used in pavements, buildings, and other structures, has a unit weight in the range of 140 to 150 lb per cubic foot (pcf). The unit weight (density) of concrete varies, depending on the amount and relative density of the aggregate, the amount of air that is entrapped or purposely entrained, and the water and cement contents, which in turn are

*Reference 1-11.

**ACI 207.2R estimates tensile strength as $6.7\sqrt{f'_c}$.

†Torsional strength correlations are presented in Reference 1-11.

††See Section 8.5 of ACI 318.

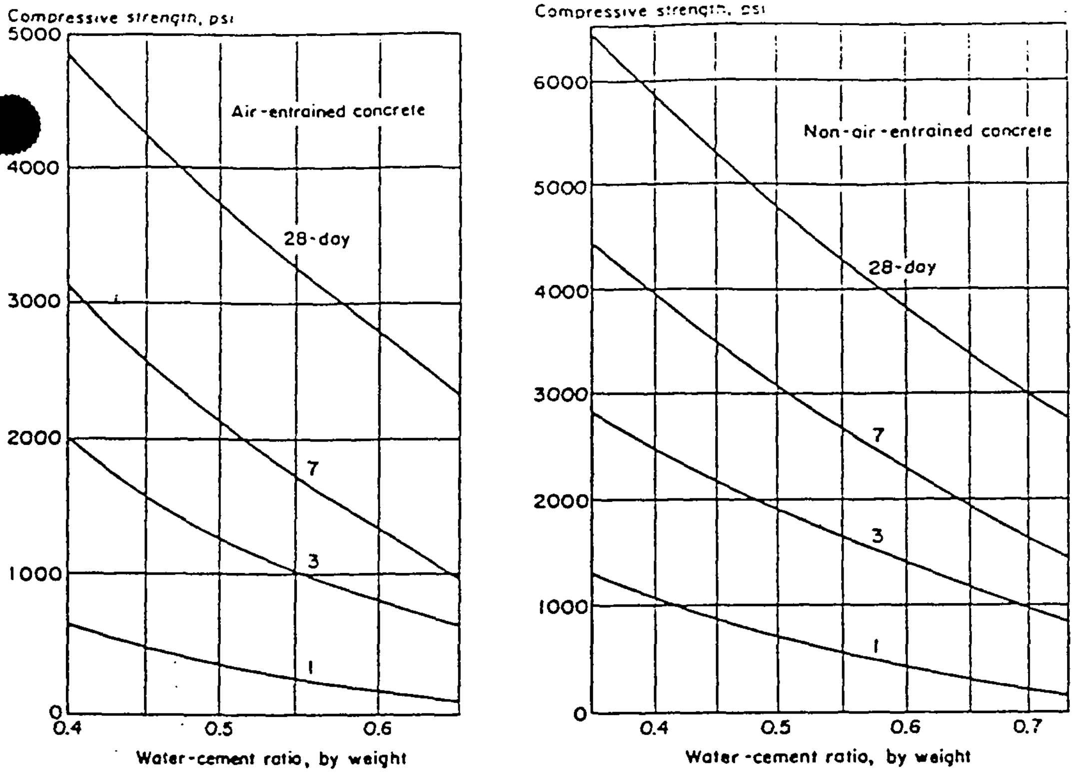


Fig. 1-7. Typical age-strength relationships of concrete based on compression tests of 6x12-in. cylinders, using Type I portland cement and moist-curing at 70°F.

influenced by the maximum-size aggregate. Values of the unit weight of fresh concrete are given in Table 1-1. In the design of reinforced concrete structures, the combination of conventional concrete and reinforcing bars is commonly assumed to weigh 150 pcf.

The weight of dry concrete equals the weight of freshly mixed concrete less the weight of evaporable water. Some of the mix water combines chemically with the cement during the hydration process, converting the cement into cement gel. Also, some of the water remains tightly held in pores and capillaries and does not evaporate under normal conditions. The amount of water that will evaporate in air at 50% relative humidity is about 2% to 3% of the concrete weight, depending on initial water content of the concrete, absorption characteristics of the aggregates, and size of the structure.

Aside from conventional concrete, there is a wide spectrum of other concretes to meet various needs, ranging from lightweight insulating concretes with a unit weight of 15 pcf to heavyweight concrete with a unit weight of up to about 400 pcf used for counterweights or radiation shielding (see Chapter 15, "Special Types of Concrete").

Resistance to Freezing and Thawing

Concrete used in structures and pavements is expected to have long life and low maintenance. It must have good durability to resist anticipated exposure conditions. The most destructive weathering factor is freezing and thawing while the concrete is wet, particularly in the presence of deicing chemicals. Deterioration is caused by the freezing of the water in the paste, the aggregate particles, or both.

With air entrainment, concrete is highly resistant to this deterioration as shown in Fig. 1-8. During freezing,

Table 1-1. Observed Average Weight of Fresh Concrete*

Maximum size of aggregate, inches	Air content, percent	Water, pounds per cubic yard	Cement, pounds per cubic yard	Unit weight, pounds per cubic foot**				
				Specific gravity of aggregate†				
				2.55	2.60	2.65	2.70	2.75
¾	6.0	283	566	137	139	141	143	145
1½	4.5	245	490	141	143	146	148	150
3	3.5	204	408	144	147	149	152	154
6	3.0	164	282	147	149	152	154	157

*Source: Reference 1-15, Table 4.
**Air-entrained concrete with indicated air content.
†On saturated surface-dry basis.

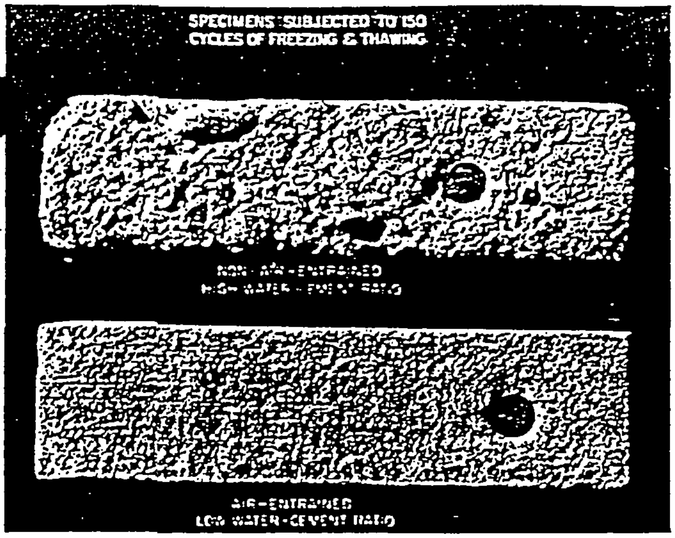


Fig. 1-8. Air-entrained concrete is highly resistant to repeated freeze-thaw cycles.

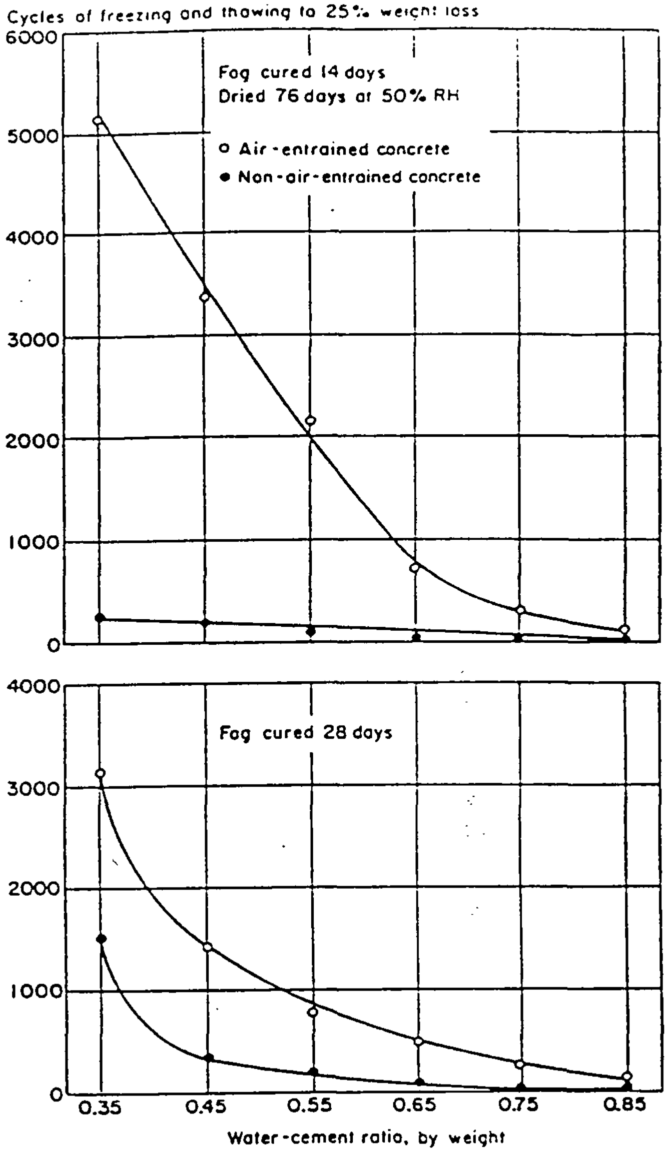


Fig. 1-9. Relationship between freeze-thaw resistance, water-cement ratio, and drying for air-entrained and non-air-entrained concretes made with Type I cement. High resistance to freezing and thawing is associated with entrained air, low water-cement ratio, and a drying period prior to freeze-thaw exposure. Reference 1-5.

the water displaced by ice formation in the paste is accommodated so that it is not disruptive; the air bubbles in the paste provide chambers for the water to enter and thus relieve the hydraulic pressure generated.

When freezing occurs in concrete containing saturated aggregate, disruptive hydraulic pressures can also be generated within the aggregate. Water displaced from the aggregate particles during the formation of ice cannot escape fast enough to the surrounding paste to relieve pressure. However, under nearly all exposure conditions, a paste of good quality (low water-cement ratio) will prevent most aggregate particles from becoming saturated. Also, if the paste is air-entrained, it will accommodate the small amounts of excess water that may be expelled from aggregates, thus protecting the concrete from freeze-thaw damage.

Fig. 1-9 illustrates, for a range of water-cement ratios, that (1) air-entrained concrete is much more resistant to freeze-thaw cycles than non-air-entrained concrete, (2) concrete with a low water-cement ratio is more durable than concrete with a high water-cement ratio, and (3) a drying period prior to freeze-thaw exposure substantially benefits the freeze-thaw resistance of air-entrained concrete but does not significantly benefit non-air-entrained concrete.* Air-entrained concrete with a low water-cement ratio and an air content of 4% to 8% will withstand a great number of cycles of freezing and thawing without distress.

Freeze-thaw durability can be determined by laboratory test procedure ASTM C666, Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing. From the test, a durability factor is calculated that reflects the number of cycles of freezing and thawing required to produce a certain amount of deterioration. Deicer-scaling resistance can be determined by ASTM C672, Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.

Permeability and Watertightness

Concrete used in water-retaining structures or exposed to weather or other severe exposure conditions must be virtually impermeable or watertight. Watertightness is often referred to as the ability of concrete to hold back or retain water without visible leakage. Permeability refers to the amount of water migration through concrete when the water is under pressure or to the ability of concrete to resist penetration of water or other substances (liquid, gas, ions, etc.). Generally,

*See References 1-5 and 1-6.

the same properties of concrete that make concrete less permeable also make it more watertight.

The overall permeability of concrete to water is a function of the permeability of the paste, the permeability and gradation of the aggregate, and the relative proportion of paste to aggregate. Decreased permeability improves concrete's resistance to resaturation, sulfate and other chemical attack, and chloride-ion penetration.

Permeability also affects the destructiveness of saturated freezing. Here the permeability of the paste is of particular importance because the paste envelops all constituents in the concrete. Paste permeability is related to water-cement ratio and the degree of cement hydration or length of moist curing. A low-permeability concrete requires a low water-cement ratio and an adequate moist-curing period. Air entrainment aids watertightness but has little effect on permeability. Permeability increases with drying.*

The permeability of mature hardened paste kept continuously moist ranges from 0.1×10^{-12} to 120×10^{-12} cm per sec. for water-cement ratios ranging from 0.3 to 0.7.* The permeability of rock commonly used as concrete aggregate varies from approximately 1.7×10^{-9} to 3.5×10^{-13} cm per sec. The permeability of mature, good-quality concrete is aproximately 1×10^{-10} cm per sec.

The relationship between permeability, water-cement ratio, and initial curing for 4x8-in. cylindrical concrete specimens tested after 90 days of air drying and subjected to 3000 psi of water pressure is illustrated in Fig. 1-10. The test apparatus is shown in Fig. 1-11. Although permeability values would be different for other liquids and gases, the relationship between water-cement ratio, curing period, and permeability would be similar.

Test results obtained by subjecting 1-in.-thick non-air-entrained mortar disks to 20-psi water pressure are given in Fig. 1-12. In these tests, there was no water leakage through mortar disks that had a water-cement ratio of 0.50 by weight or less and were moist-cured for seven days. Where leakage occurred, it was greater in mortar disks made with high water-cement ratios. Also, for each water-cement ratio, leakage was less as the length of the moist-curing period increased. In disks with a water-cement ratio of 0.80, the mortar still

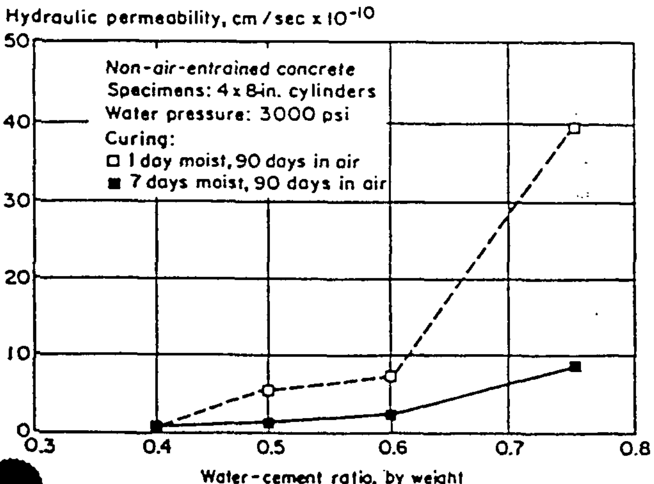


Fig. 1-10. Relationship between hydraulic (water) permeability, water-cement ratio, and initial curing on concrete specimens. Reference PCA HM1170.

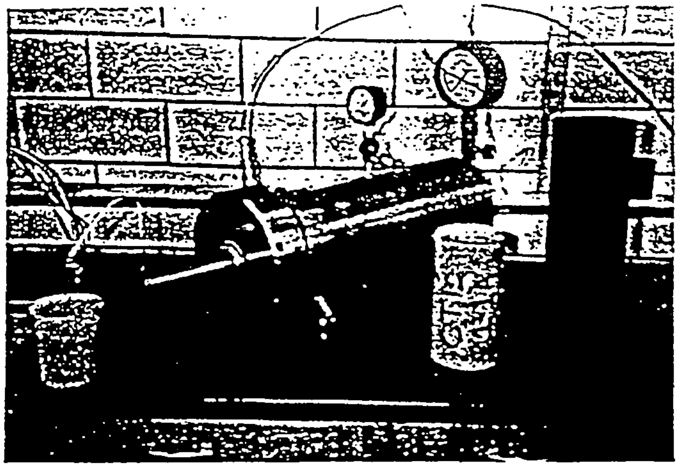


Fig. 1-11. Hydraulic permeability test apparatus used to obtain data illustrated in Fig. 1-10.

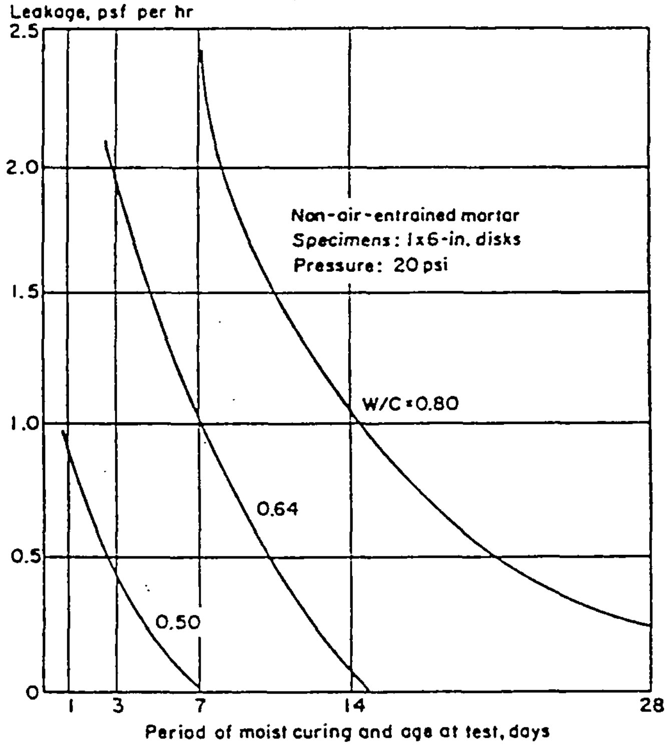


Fig. 1-12. Effect of water-cement ratio (w/c) and curing duration on permeability of mortar. Note that leakage is reduced as the water-cement ratio is decreased and the curing period increased. Reference 1-1 and PCA Major Series 227.

*Reference 1-4.

permitted leakage after being moist-cured for one month. These results clearly show that a low water-cement ratio and a period of moist curing significantly reduce permeability.

A low water-cement ratio also reduces segregation and bleeding, further contributing to watertightness. To be watertight, concrete must also be free from cracks and honeycomb.

Occasionally, porous concrete—no-fines concrete that readily allows water to flow through—is designed for special applications. In these concretes, the fine aggregate is greatly reduced or completely removed producing a high volume of air voids. Porous concrete has been used in tennis courts, pavements, parking lots, greenhouses, and drainage structures. No-fines concrete has also been used in buildings because of its thermal insulation properties. Additional information on porous concrete is given in Chapter 15, "Special Types of Concrete."

Abrasion Resistance

Floors, pavements, and hydraulic structures are subjected to abrasion; therefore, in these applications concrete must have a high abrasion resistance. Test results indicate that abrasion resistance is closely related to the compressive strength of concrete. Strong concrete has more resistance to abrasion than does weak concrete. Since compressive strength depends on water-cement ratio and curing, a low water-cement ratio and adequate curing are necessary for abrasion resistance. The type of aggregate and surface finish or treatment used also have a strong influence on abrasion resistance. Hard aggregate is more abrasion resistant than soft aggregate and a steel-troweled surface resists abrasion more than a surface that is not troweled.

Fig. 1-13 shows results of abrasion tests on concretes of different compressive strengths and aggregate types.

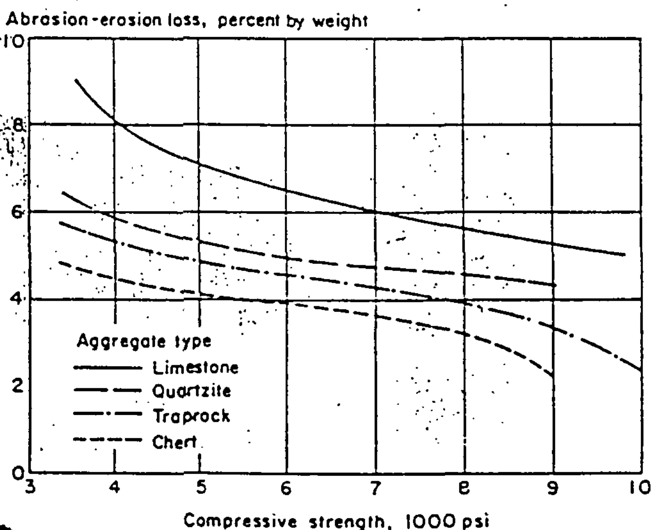


Fig. 1-13. Effect of compressive strength and aggregate type on the abrasion resistance of concrete. High-strength concrete made with a hard aggregate is highly resistant to abrasion. Reference 1-16.

Fig. 1-14 illustrates the effect hard steel troweling and surface treatments have on abrasion resistance. Abrasion tests can be conducted by rotating steel balls, dressing wheels, or disks under pressure over the surface (ASTM C 779). One type of test apparatus is pictured in Fig. 1-15. Other types of abrasion tests are also available (ASTM C 418 and C 944).

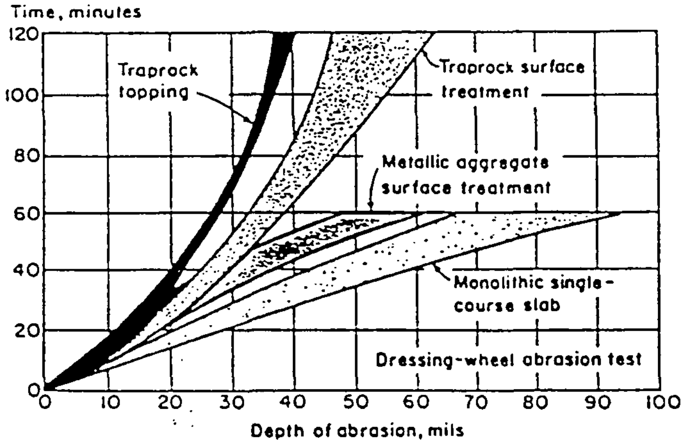


Fig. 1-14. Effect of hard steel troweling and surface treatments on the abrasion resistance of concrete. Base slab compressive strength was 6000 psi at 28 days. All slabs were steel troweled. Reference 1-12.

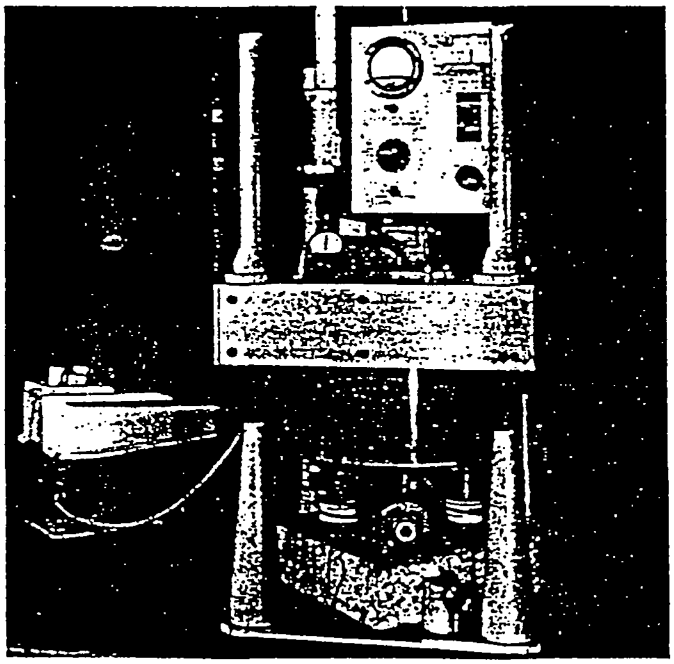


Fig. 1-15. Test apparatus for measuring abrasion resistance of concrete. The machine can be adjusted to use either revolving disks or dressing wheels. With a different machine, steel balls under pressure are rolled over the surface of the specimen. The tests are described in ASTM C 779, Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces.

Volume Stability

Hardened concrete changes volume slightly due to changes in temperature, moisture, and stress. These volume or length changes may range from about 0.01% to 0.08%. Thermal volume changes of hardened concrete are about the same as those for steel.

Concrete kept continually moist will expand slightly. When permitted to dry, concrete will shrink. The primary factor influencing the amount of drying shrinkage is the water content of the freshly mixed concrete. Drying shrinkage increases directly with increases in this water content. The amount of shrinkage also depends upon several other factors, such as amounts of aggregate used, properties of the aggregate, size and shape of the concrete mass, relative humidity and temperature of the environment, method of curing, degree of hydration, and time. Cement content has little to no effect on shrinkage of concrete with cement contents between 5 and 8 bags per cu yd.

Concrete under stress will deform elastically. Sustained stress will result in additional deformation called creep. The rate of creep (deformation per unit of time) decreases with time.

The magnitude of volume changes and factors influencing them are discussed in Chapter 13, "Volume Changes of Concrete."

Control of Cracking

Two basic causes of cracks in concrete are (1) stress due to applied loads and (2) stress due to drying shrinkage or temperature changes in restrained conditions.

Drying shrinkage is an inherent, unavoidable property of concrete; therefore, properly positioned reinforcing steel is used to reduce crack widths, or joints (Fig. 1-16) are used to predetermine and control the location of cracks. Thermal stress due to fluctuations in temperature can cause cracking, particularly at an early age.

Concrete shrinkage cracks occur because of restraint. When shrinkage occurs and there is no restraint, the concrete does not crack. Restraint comes from several sources. Drying shrinkage is always greater near the surface of concrete; the moist inner portions restrain the concrete near the surface, which can cause cracking. Other sources of restraint are reinforcing steel embedded in concrete, the interconnected parts of a concrete structure, and the friction of the subgrade on which concrete is placed.

Joints are the most effective method of controlling unsightly cracking. If a sizable expanse of concrete (a wall, slab, or pavement) is not provided with properly spaced joints to accommodate drying shrinkage and temperature contraction, the concrete will crack in a random manner.*

Control joints are grooved, formed, or sawed into sidewalks, driveways, pavements, floors, and walls so that cracking will occur in these joints rather than in a random manner. Control joints permit movement in the plane of a slab or wall. They extend to a depth of approximately one-quarter the concrete thickness.

Isolation joints separate a slab from other parts of a structure and permit horizontal and vertical movements of the slab. They are placed at the junction of floors with walls, columns, footings, and other points where restraint can occur. They extend the full depth of the slab and include a premolded joint filler.

Construction joints occur where concrete work is concluded for the day; they separate areas of concrete placed at different times. In slabs-on-ground, construction joints usually align with and function as control or isolation joints.

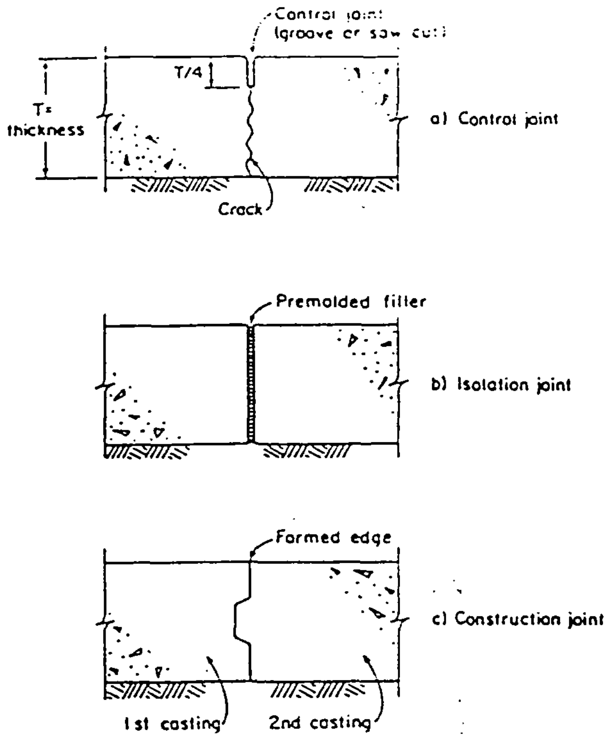


Fig. 1-16. The three basic types of joints used in concrete slab-on-ground construction.

*Refer to Chapter 9 for more information.

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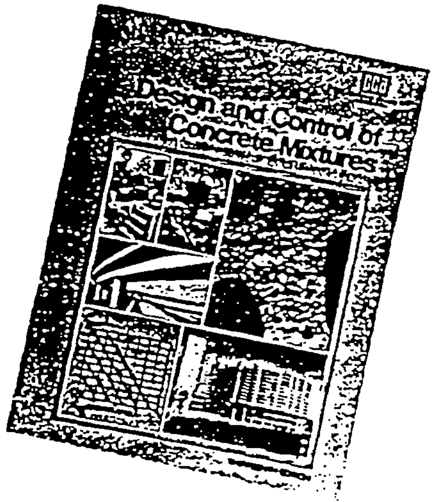
Design and Control of Concrete Mixtures

13th edition (EB001T), the industry's handbook—for 60 years the ultimate authority on cement and concrete. *Here, in one volume, is the complete and up-to-date guide on everything from* designing the mix to inspecting the finished product. Topics discussed are as follows:



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Caution: Avoid prolonged contact between unhardened (wet) cement or concrete mixtures and skin surfaces. To prevent such contact, it is advisable to wear protective clothing. Skin areas that have been exposed to wet cement or concrete, either directly or through saturated clothing, should be thoroughly washed with water.

PORTLAND CEMENT ASSOCIATION

An organization of cement manufacturers to improve and extend the uses of portland cement and concrete through market development, engineering, research, education, and public affairs work.

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IS054.03T

CONCRETE INFORMATION

PCA

Reprinted from *Design and Control of Concrete Mixtures* (EB001.13T), Chapter 1.

Fundamentals of Concrete

Concrete is basically a mixture of two components: aggregates and paste. The paste, comprised of portland cement and water, binds the aggregates (sand and gravel or crushed stone) into a rocklike mass as the paste hardens because of the chemical reaction of the cement and water.*

Aggregates are generally divided into two groups: fine and coarse. Fine aggregates consist of natural or manufactured sand with particle sizes ranging up to ⅜ in.; coarse aggregates are those with particles retained on the No. 16 sieve and ranging up to 6 in. The most commonly used maximum aggregate size is ¾ in. or 1 in.

The paste is composed of portland cement, water, and entrapped air or purposely entrained air. Cement paste ordinarily constitutes about 25% to 40% of the total volume of concrete. Fig. 1-1 shows that the absolute volume of cement is usually between 7% and 15% and the water between 14% and 21%. Air content in air-entrained concrete ranges up to about 8% of the volume of the concrete, depending on the top size of the coarse aggregate.

Since aggregates make up about 60% to 75% of the total volume of concrete, their selection is important. Aggregates should consist of particles with adequate strength and resistance to exposure conditions and should not contain materials that will cause deterioration of the concrete. A continuous gradation of particle sizes is desirable for efficient use of the cement and water paste. Throughout this text, it will be assumed that suitable aggregates are being used, except where otherwise noted.

The quality of the concrete depends to a great extent upon the quality of the paste. In properly made concrete, each particle of aggregate is completely coated with paste and all of the spaces between aggregate particles are completely filled with paste, as illustrated in Fig. 1-2.

For any particular set of materials and conditions of curing, the quality of hardened concrete is determined

*This text addresses the utilization of portland cement in the production of concrete. The term "portland cement" pertains to a calcareous hydraulic cement produced by heating the oxides of silicon, calcium, aluminum, and iron. The term "cement" used throughout the text pertains to portland cement unless otherwise stated.

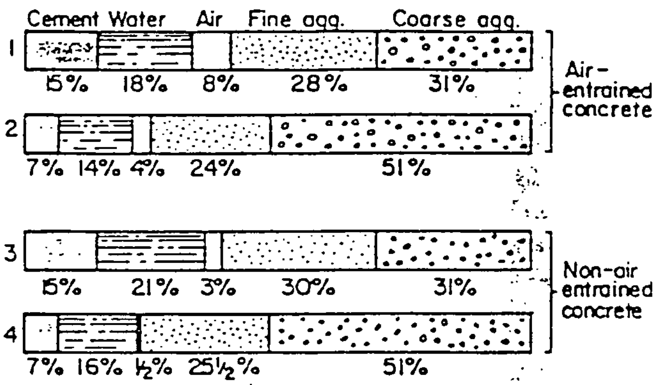

Fig. 1-1. Range in proportions of materials used in concrete, by absolute volume. Bars 1 and 3 represent rich mixes with small aggregates. Bars 2 and 4 represent lean mixes with large aggregates.

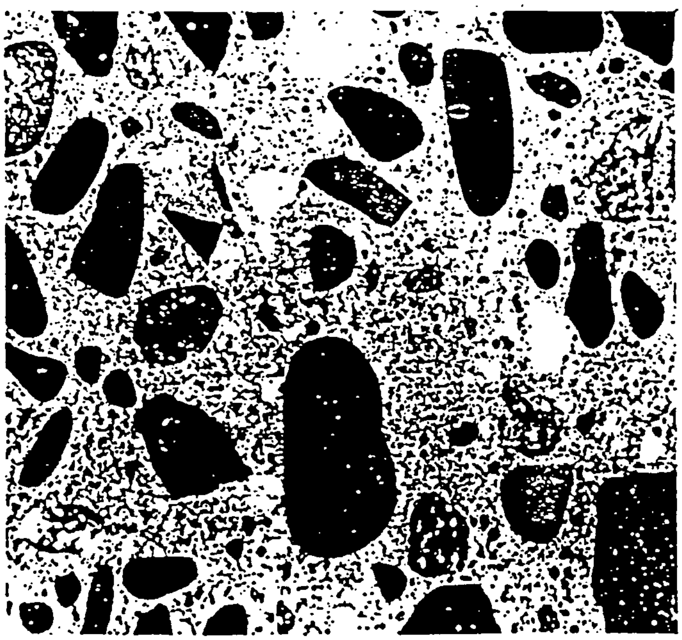

Fig. 1-2. Cross section of hardened concrete. Cement-and-water paste completely coats each aggregate particle and fills all spaces between particles.

by the amount of water used in relation to the amount of cement. Following are some advantages of reducing water content:

- Increased compressive and flexural strength
- Lower permeability, thus increased watertightness and lower absorption
- Increased resistance to weathering
- Better bond between successive layers and between concrete and reinforcement
- Less volume change from wetting and drying
- Reduced shrinkage cracking tendencies

The less water used, the better the quality of the concrete—provided it can be consolidated properly. Smaller amounts of mixing water result in stiffer mixtures; but with vibration, the stiffer mixtures can be used. For a given quality of concrete, stiffer mixtures are more economical. Thus consolidation by vibration permits improvement in the quality of concrete and in economy.

The freshly mixed (plastic) and hardened properties of concrete may be changed by adding admixtures to the concrete, usually in liquid form, during batching. Admixtures are commonly used to (1) adjust setting time or hardening, (2) reduce water demand, (3) increase workability, (4) intentionally entrain air, and (5) adjust other concrete properties. Admixtures are discussed in Chapter 6.

After completion of proper proportioning, batching, mixing, placing, consolidating, finishing, and curing, hardened concrete becomes a strong, noncombustible, durable, abrasion-resistant, and practically impermeable building material that requires little or no maintenance. Concrete is also an excellent building material because it can be formed into a wide variety of shapes, colors, and textures for use in almost unlimited number of applications.

FRESHLY MIXED CONCRETE

Freshly mixed concrete should be plastic or semifluid and generally capable of being molded by hand. A very wet concrete mixture can be molded in the sense that it can be cast in a mold, but this is not within the definition of "plastic"—that which is pliable and capable of being molded or shaped like a lump of modeling clay.

In a plastic concrete mixture all grains of sand and pieces of gravel or stone are encased and held in suspension. The ingredients are not apt to segregate during transport; and when the concrete hardens, it becomes a homogeneous mixture of all the components. Concrete of plastic consistency does not crumble but flows sluggishly without segregation.

Slump is used as a measure of the consistency of concrete. A low-slump concrete has a stiff consistency.

In construction practice, thin concrete members and heavily reinforced concrete members require workable, but never soupy, mixes for ease of placement. A plastic mixture is required for strength and for maintaining homogeneity during handling and placement. While a plastic mixture is suitable for most concrete work, superplasticizing admixtures may be used to make concrete more flowable in thin or heavily reinforced concrete members.

Mixing

In Fig. 1-1, the five basic components of concrete are shown separately. To ensure that they are combined into a homogeneous mix requires effort and care. The sequence of charging ingredients into the mixer plays an important part in the uniformity of the finished product. The sequence, however, can be varied and still produce a quality concrete. Different sequences require adjustments in the time of water addition, the total number of revolutions of the mixer drum, and the speed of revolution. Other important factors in mixing are the size of the batch in relation to the size of the mixer drum, the elapsed time between batching and mixing, and the design, configuration, and condition of the mixer drum and blades. Approved mixers, correctly operated and maintained, ensure an end-to-end exchange of materials by a rolling, folding, and kneading action of the batch over itself as the concrete is mixed.

Workability

The ease of placing, consolidating, and finishing freshly mixed concrete is called workability. Concrete should be workable but should not segregate or bleed excessively. Bleeding is the migration of water to the top surface of freshly placed concrete caused by the settlement of the solid materials—cement, sand, and stone—within the mass. Settlement is a consequence of the combined effect of vibration and gravity.

Excessive bleeding increases the water-cement ratio near the top surface and a weak top layer with poor durability may result, particularly if finishing operations take place while bleed water is present. Because of the tendency of freshly mixed concrete to segregate and bleed, it is important to transport and place each load as close as possible to its final position. Entrained air improves workability and reduces the tendency of freshly mixed concrete to segregate and bleed.

Consolidation

Vibration sets into motion the particles in freshly mixed concrete, reducing friction between them and giving the mixture the mobile qualities of a thick fluid. The vibratory action permits use of a stiffer mixture containing a larger proportion of coarse and a smaller proportion of fine aggregate. The larger the maximum-size aggregate in concrete with a well-graded aggregate, the less volume there is to fill with paste and the less aggregate surface area there is to coat with paste; thus less water and cement are needed. With adequate consolidation, harsher as well as stiffer mixtures can be used, resulting in improved quality and economy.

If a concrete mixture is workable enough to be readily consolidated by hand rodding, there may not be an

To: Chris Riehl
From: Peter Swan
Pages: 01
Date: 10/19/94

(c) flammable solids, substances liable to spontaneous combustion or substances that on contact with water emit flammable gases as defined and regulated in Divisions 1, 2 and 3 of Class 4

of the Federal Regulations;

"impervious" means having a permeability not greater than 1×10^{-7} cm per second when subjected to a head of 0.305 m of water;

"incinerator" means a thermal treatment facility using controlled flame combustion;

"incompatible special waste" means a special waste which, when in contact with another special waste or substance and under normal conditions of storage or transportation, may react to produce

(a) heat,

(b) a gas,

(c) a corrosive substance, or

(d) a toxic substance;

"indoor' means enclosed and protected from precipitation and wind as in a building but does not include a shipping container used for passive storage;

"in situ management facility" means a facility used to

(a) prevent or control the movement or release of special waste contaminants, or

(b) treat or destroy special waste contaminants in soil or groundwater

at an historical special waste contaminated site in such a way that the physical location of the special waste contaminants and the soil is not substantially altered.

"labpack" means an outer packaging as defined by the Federal Regulations which has a maximum capacity of 454 ℓ and which is used to transport multiple small inside containers of special waste;

"land treatment" means the treatment of special waste by applying it to land;

"leachate" means any liquid, including suspended materials which it contains, which has percolated through or drained from a special waste facility;

"leachable toxic waste" means waste which when subjected to the Leachate Extraction Procedure described in Part 1 of Schedule 4 produces an extract with a contaminant concentration greater than those prescribed in Table 1 of Schedule 4;

"liner" means a continuous layer of synthetic or natural clay or earth materials, placed beneath and at the sides of a secure landfill, a

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January 23, 1995

Safety-Kleen
300 Woolwich St. S
Breslau, Ontario
N0B 1M0

JAN 25 1995

Attention : Mr. Chris Riehl

Re : Hydraulic Conductivity Study
Our File: 94RE1256

Dear Chris,

Enclosed please find a copy of our report entitled *Hydraulic Conductivity Study* that you requested. Also enclosed is our Invoice #67763 for the amount of $1,363.59.

If you have any questions regarding this study, please do not hesitate to contact us at (403) 299-2000.

Sincerely yours,

AGAT Laboratories

M. Pankalla

Marianna Pankalla, M.Sc.
Reservoir Analyst
Reservoir Engineering Division

299-2105

Graham McLeod

Graham McLeod, P.Geol., B.Sc.
Manager, Special Core
Reservoir Engineering Division

AGAT Laboratories

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Contact:______________________________ Date:__________ Phone #:______________

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2. Quality of Work

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c)	Technical ability of AGAT personnel?	____	____	____
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John Desanti
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Calgary, AB T2E 6T5,
Fax Number: (403) 299-2005.

AG1003

HYDRAULIC CONDUCTIVITY STUDY

Prepared for:

SAFETY - KLEEN

Prepared by:

AGAT Laboratories
3801 - 21st Street N.E.
Calgary, Alberta
T2E 6T5

Telephone: (403) 299-2000

Work Order 94RE1245
January, 1995

SUMMARY

For the current study, three (2.5 cm in diameter) cement samples from the West Wall location were subjected to hydraulic conductivity testing.

Prior to testing, samples' petrophysical properties (gas permeability, Boyle's Law porosity and grain density) were determined. The samples were then pressure-saturated with Deionized Water. Each saturated sample was placed in a coreholder and a nominal pressure was applied to the samples to prevent fluid bypass during testing. A hydraulic head of approximately 2.989 kPa (equivalent of 0.305 m of water) was applied to the samples to determine their permeability. The water permeability was calculated from the measured flowrate and hydraulic head applied to the sample. The permeability was then converted to a hydraulic conductivity using a multiplication factor of $9.66*10^{-7}$ cm/s/md.

The hydraulic conductivities of the samples were found to range from $4.830*10^{-9}$ cm/s to $1.063*10^{-8}$ cm/s (refer to Table 1).

SAFETY - KLEEN **FILE 94RE1245**

3 Cement Samples - Hydraulic Conductivity Testing

TABLE 1
SAMPLE SUMMARY

Sample #	Length (cm)	Diameter (cm)	Porosity (%)	Grain Dens (kg/m3)	Gas Perm. (md)	Water Perm. (md)	Hydraulic Conductivity (cm/s)
1	4.673	2.515	22.06	2.584	0.838	0.011	1.06E-08
2	4.936	2.513	16.98	2.596	0.684	0.007	6.80E-09
3	4.711	2.518	13.88	2.712	0.610	0.005	4.83E-09

AGAT Laboratories would like to acknowledge the following employees for their contributions to this report:

Marianna Pankalla, M.Sc.
Reservoir Analyst, Reservoir Engineering Division

Graham McLeod, P.Geol., B.Sc.
Manager, Reservoir Engineering Division

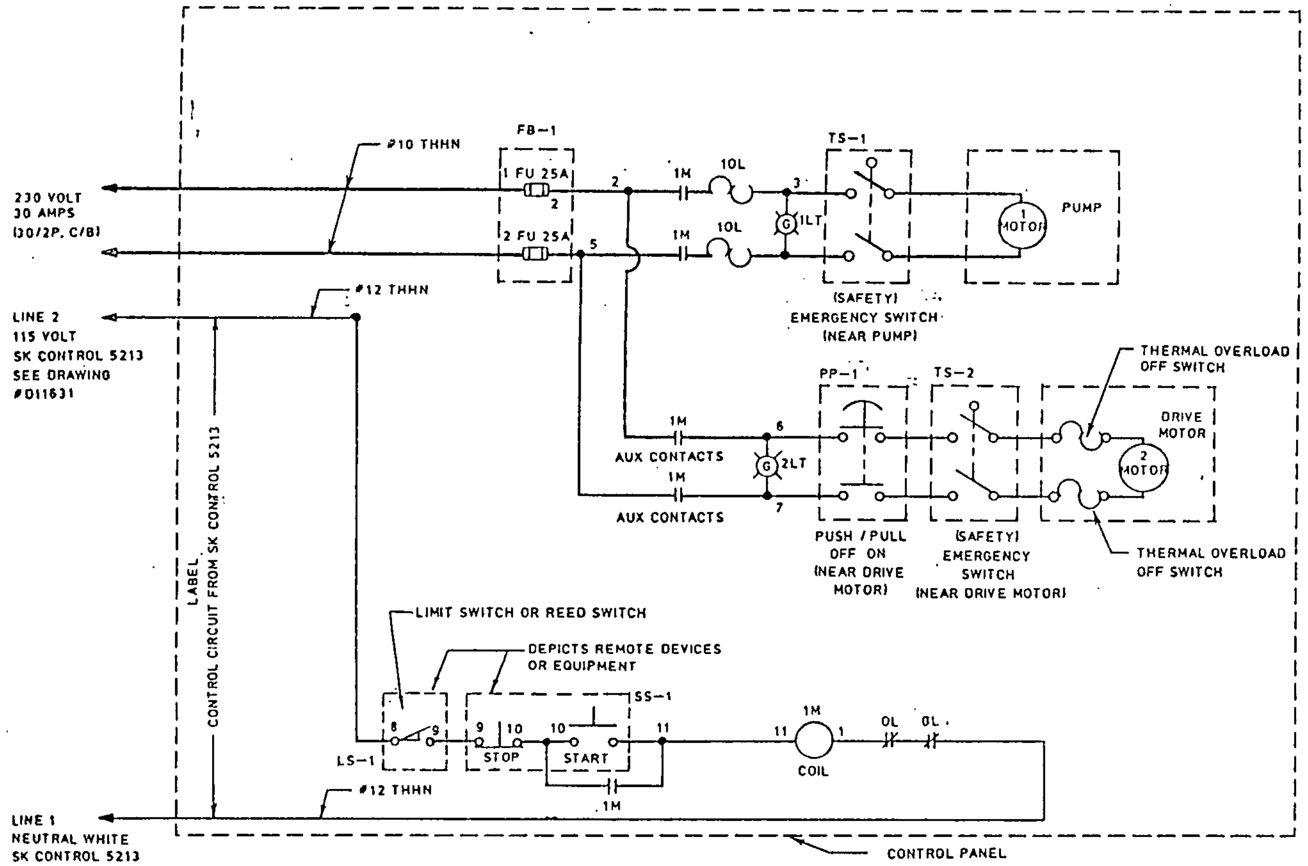
and all Laboratory Technologists

PERMIT TO PRACTICE
AGAT LABORATORIES LTD.
Signature Graham McLeod
Date January 10, 1995
PERMIT NUMBER: P 3989
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

Report Prepared by : M. Pankalla
Marianna Pankalla, M.Sc.

Appendix E

Engineering Drawings of Barrel Washers

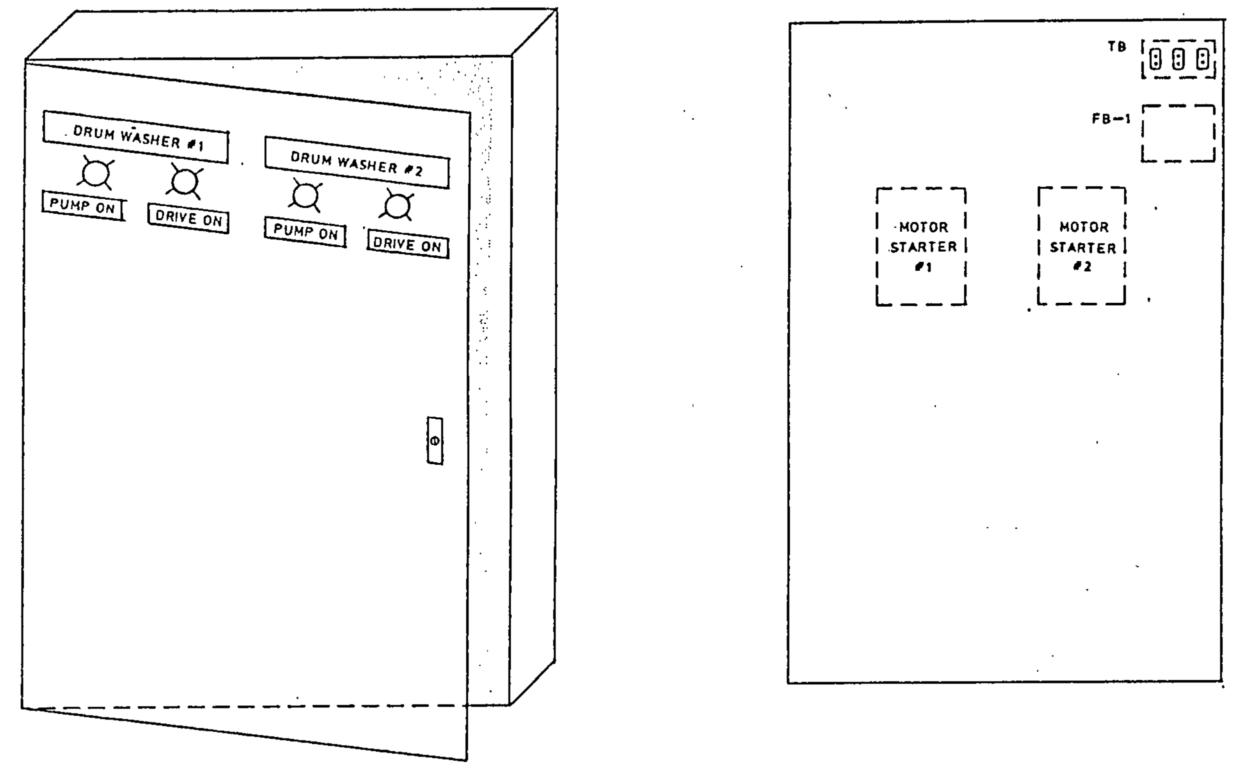


"PANEL WIRING" & ELEMENTARY DIAGRAM

N.T.S. (ONE BARREL WASHER)

POWER WIRING

CONTROL WIRING

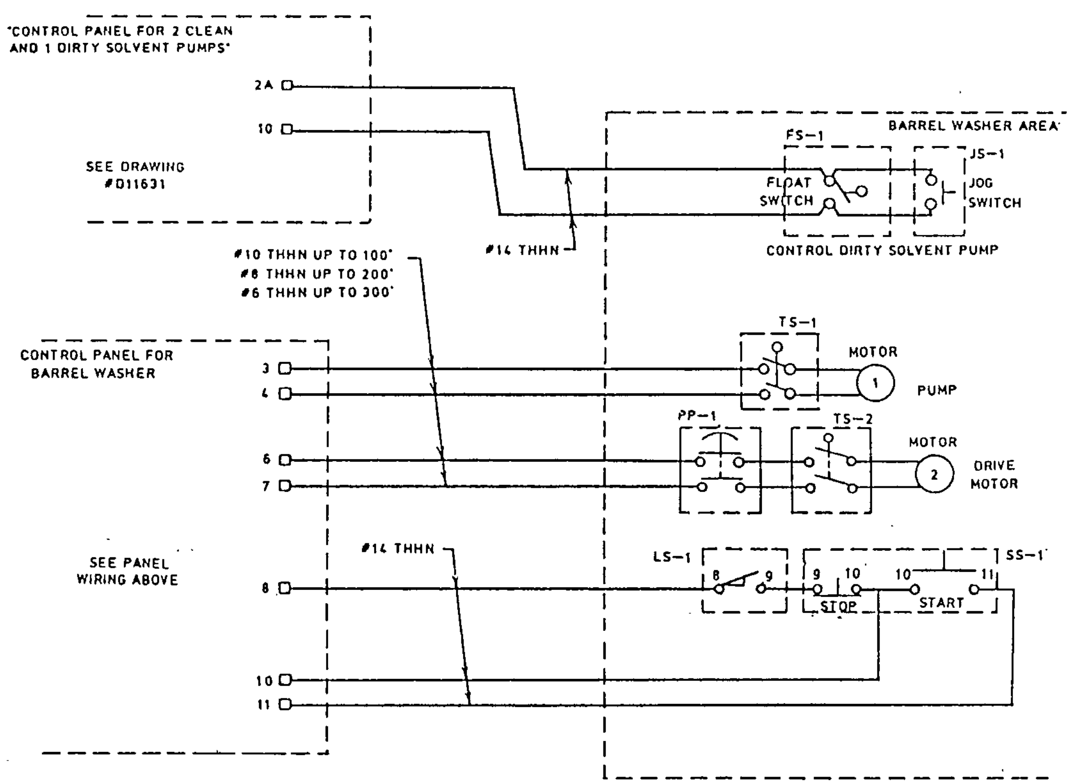


PANEL FRONT

PANEL INTERIOR

CONTROL PANEL MAKE-UP

N.T.S.



WIRING DIAGRAM

N.T.S.

BILL OF MATERIAL

TAG	QUANTITY	DESCRIPTION
FB-1	1	FUSE BLOCK WITH FRN FUSES LITTLE FUSE LH 250 30 2P FUSES FLNR 25
STARTER	2	NEMA SIZE #1 MAGNETIC STARTER SQ D 8536-SB0 1S
1LT	2	PUMP PILOT LIGHT - GREEN - 240 VOLT SQ D 9001 KP7R9 W/TRANSFORMER
2LT	2	DRIVE MOTOR PILOT LIGHT-GREEN - 240 VOLT SQ D 9001 KP7R9 WITH TRANSFORMER
PANEL	1	UNIVERSAL BOX WITH PIANO HINGE, SINGLE POINT L HANDLE LOCK, 8" DEEP, 36" HIGH, 24" WIDE
REMOTE ITEMS		
SS-1	1	START-STOP STATION 9001 BR205
TS-1,2	2	2-POLE TOGGLE SWITCH, 20A RATED SQ D 2510 KR1
JS-1	1	JOG SWITCH, 1-POLE, 20A RATED
FS-1	1	FLOAT SWITCH, 1-POLE, 10A RATED
LS-1	1	LIMIT SWITCH OR REED SWITCH MAKES WHEN BARREL IS IN PLACE 9007 CL61J
PP-1	1	2 POLE TOGGLE SWITCH, START STOP STATION 2HP CONTACT RATING

NO.	DESCRIPTION	BY	CHKD	APPR	DATE

REVISIONS

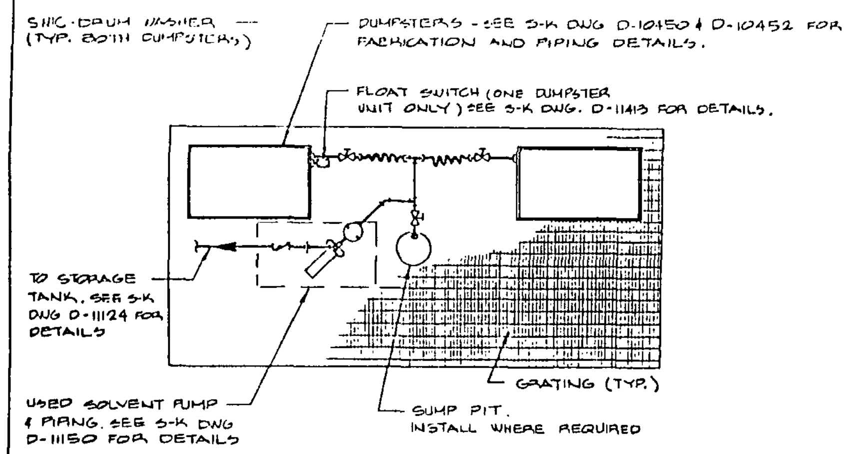
TITLE

ELECTRICAL CONTROL PANEL
FOR DRUM WASHER "90"

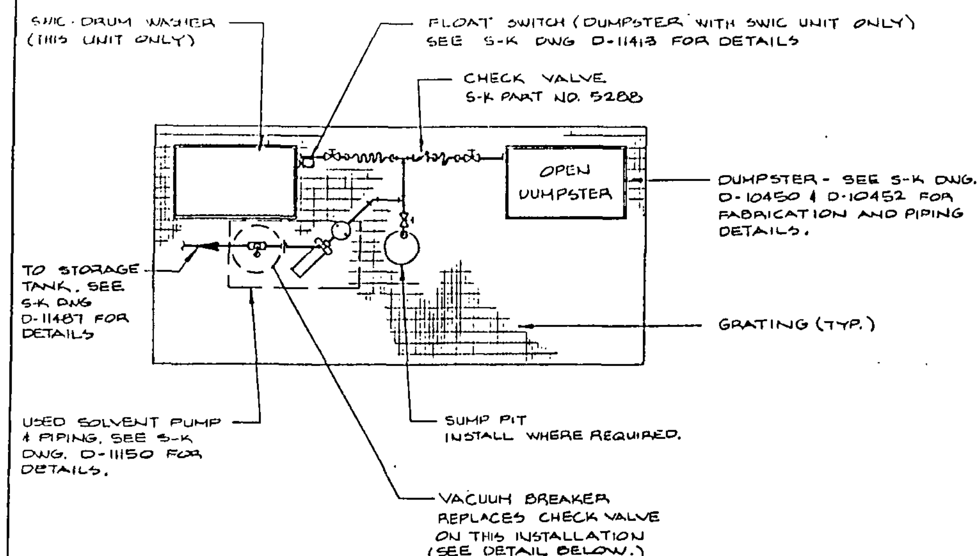
SAFETY-KLEEN CORP.
777 BIG TIMBER ROAD, ELGIN, ILLINOIS 60120 PHONE 312/697-8460

PROJ. ENG. APPR.	OPERATIONS APPR.	SCALE	DRAWN	DATE
		NONE	DK	

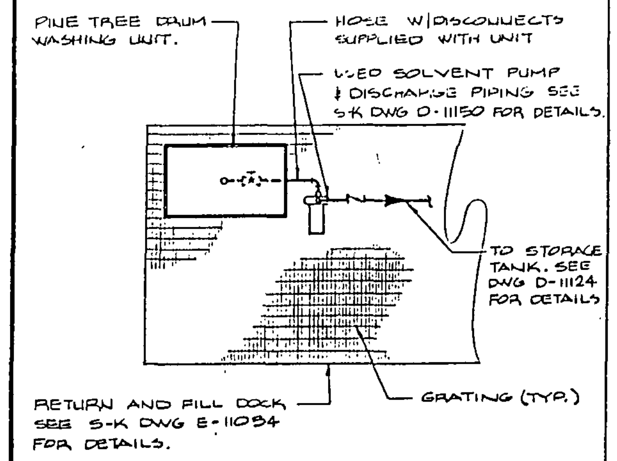
BRANCH	DRAWING NO.	REV.
	D- 14289	



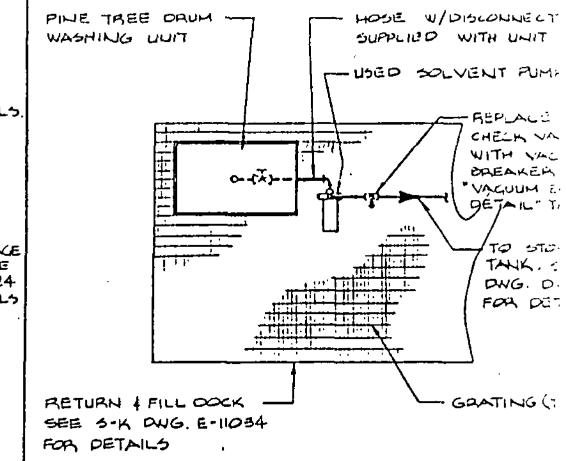
DOUBLE SWIC INSTALLATION
W/ ABOVE GROUND STORAGE



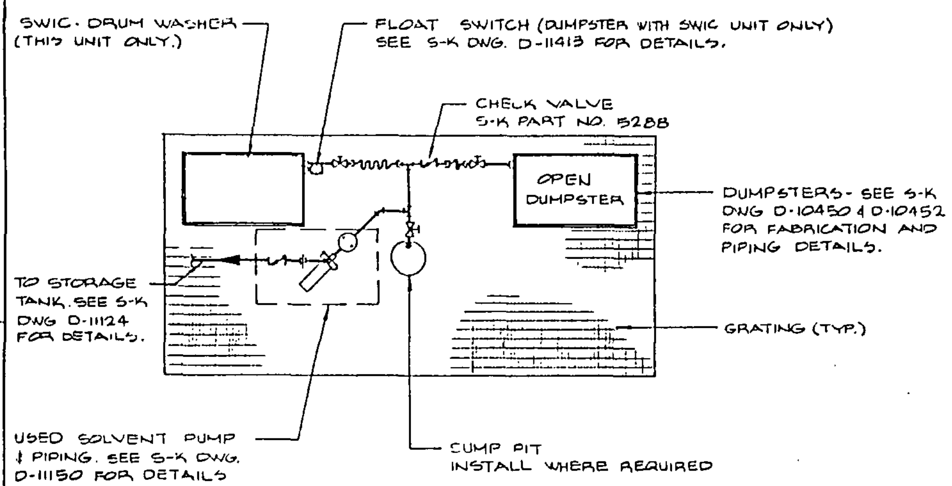
SINGLE SWIC INSTALLATION
W/UNDERGROUND STORAGE



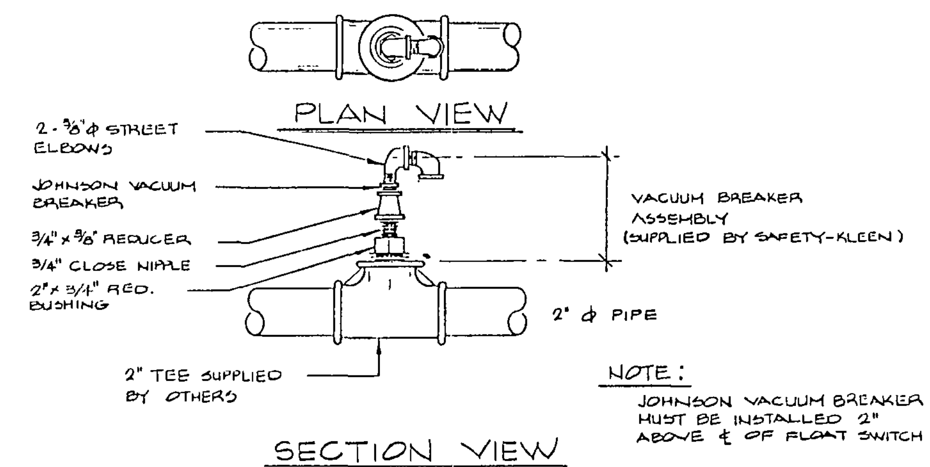
PINE TREE INSTALLATION
W/ ABOVE GROUND STORAGE



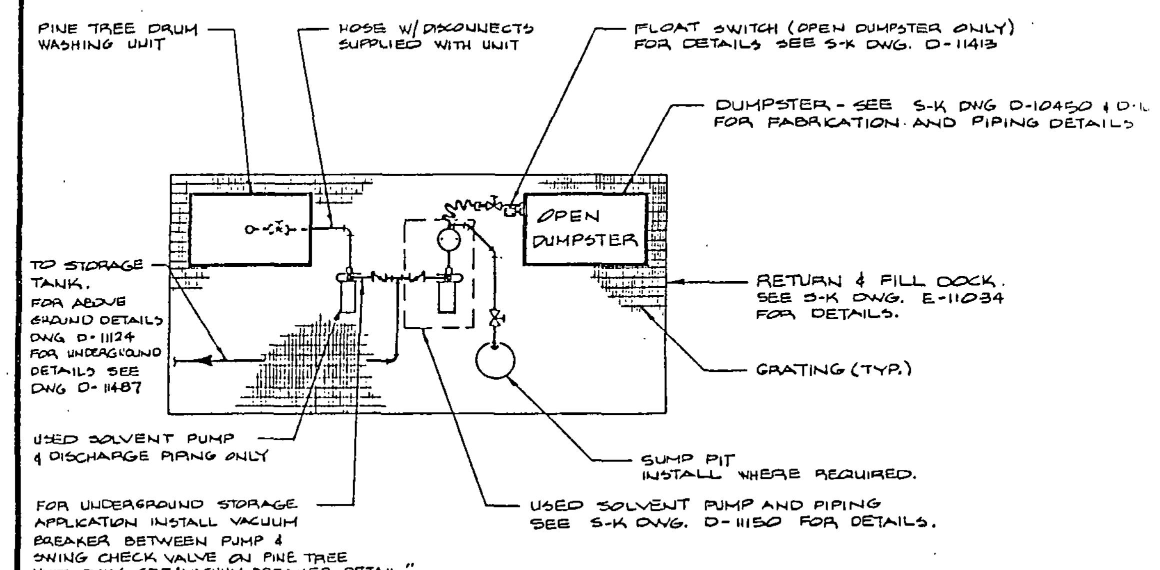
PINE TREE INSTALLATION
W/ UNDERGROUND STORAGE



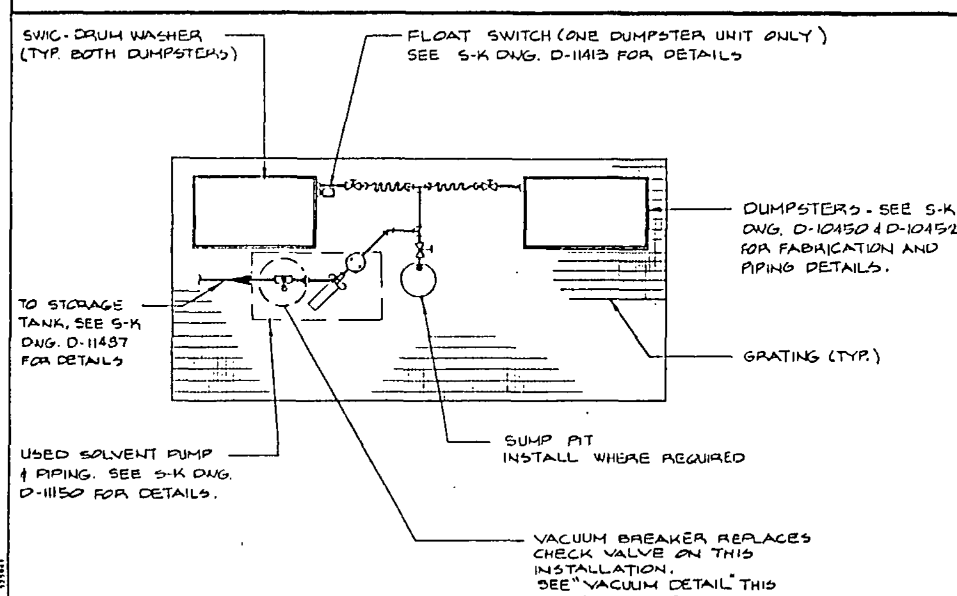
SINGLE SWIC INSTALLATION
W/ ABOVE GROUND STORAGE



VACUUM BREAKER DETAIL



PINE TREE AND OPEN DUMPSTER INSTALLATION
FOR ABOVE GROUND & UNDERGROUND STORAGE



DOUBLE SWIC INSTALLATION
W/UNDERGROUND STORAGE

NO	DESCRIPTION	BY	CHK	APPR	DATE

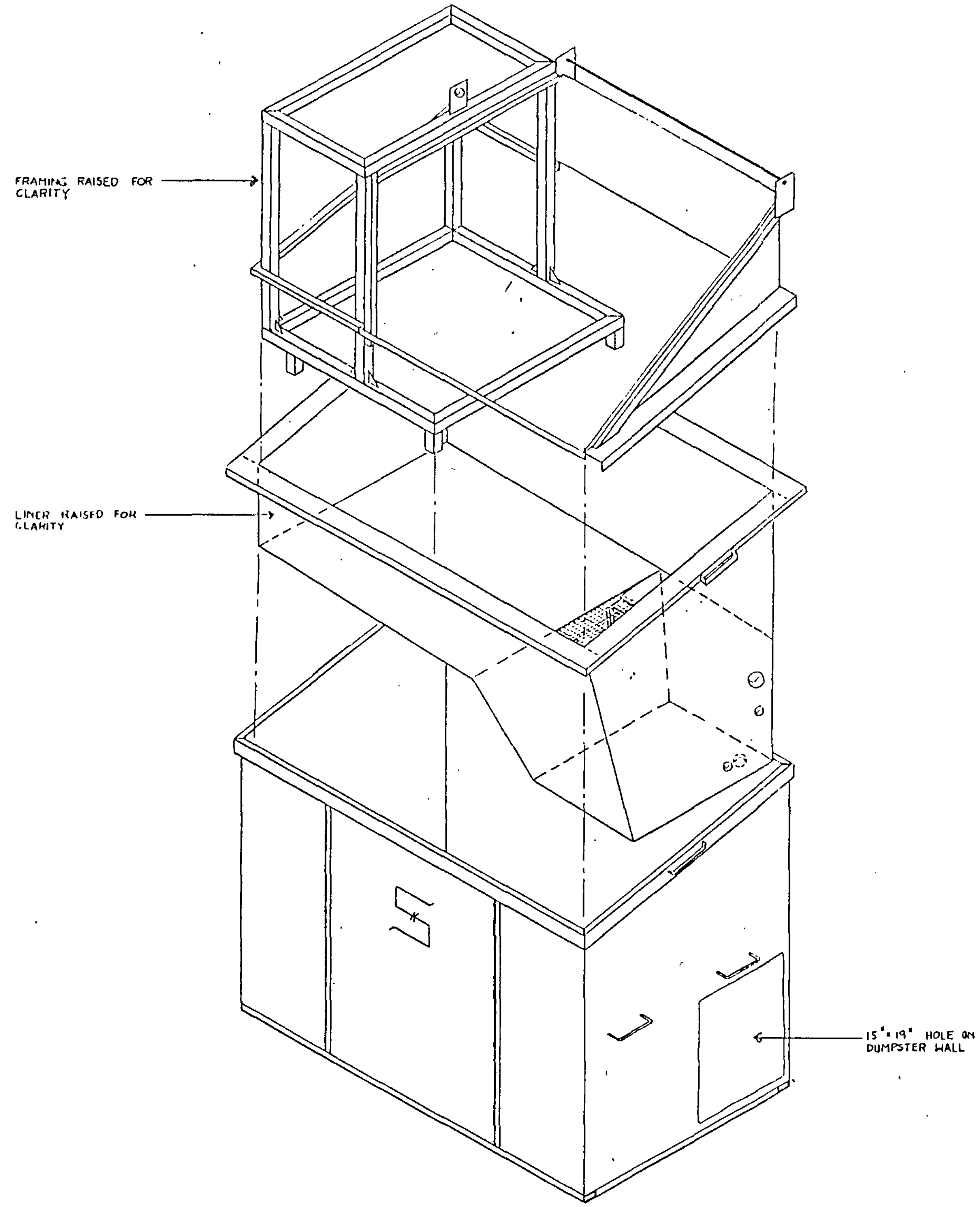
REVISIONS

TITLE: TYPICAL DRUM WASHER SCHEMATICS

SAFETY-KLEEN CORP.
777 BIG TIMBER ROAD • ELGIN, ILLINOIS 60123 PHONE 708/697-8460

SCALE	DRAWN	CHECKED	ENGINEERING APPR	OPERATION APPR
NONE	DLS			

FOR SERVICE CENTER BRANCH:
DRAWING NO D-14288

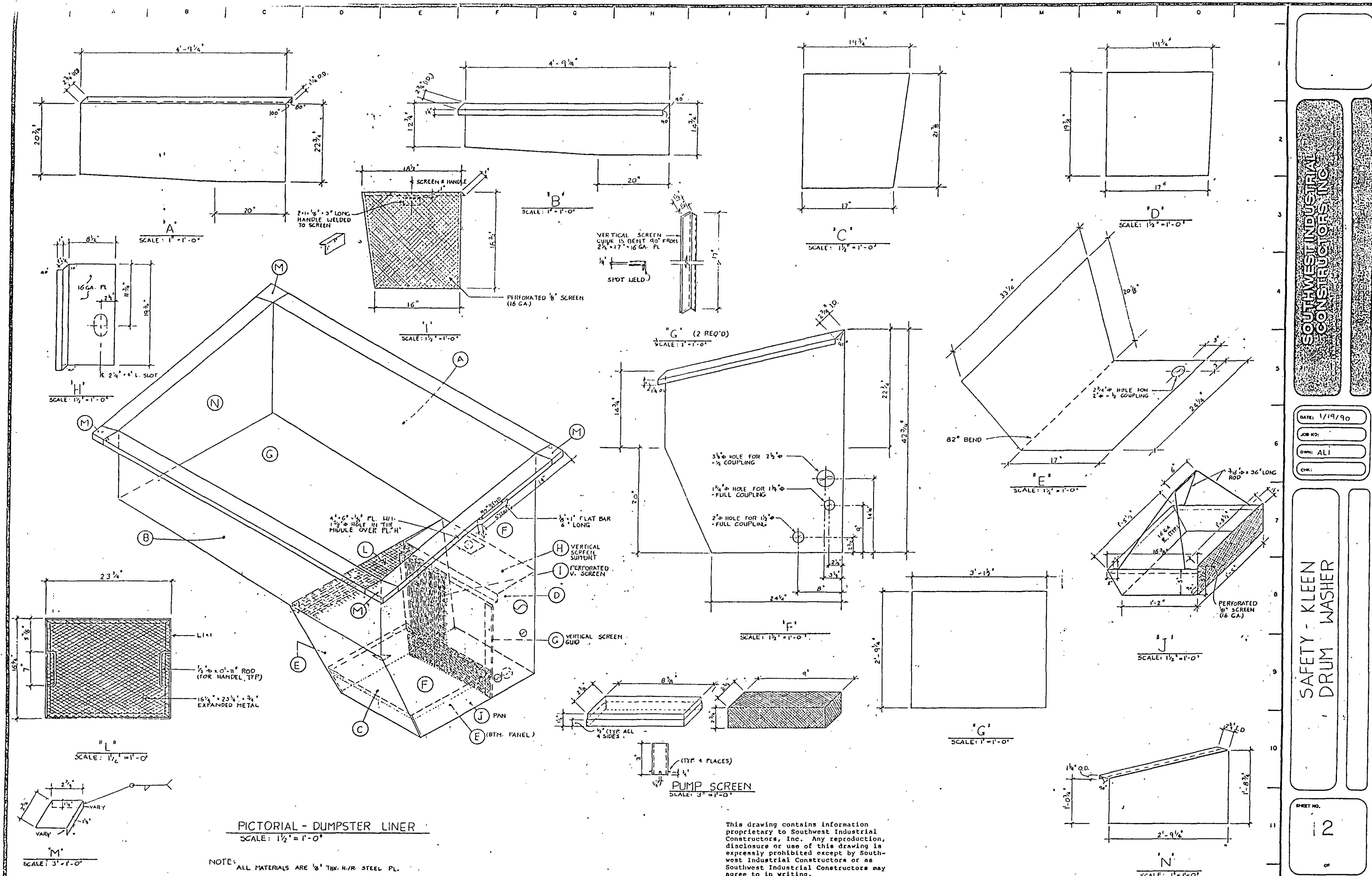


SOUTHWEST INDUSTRIAL CONSTRUCTORS INC.

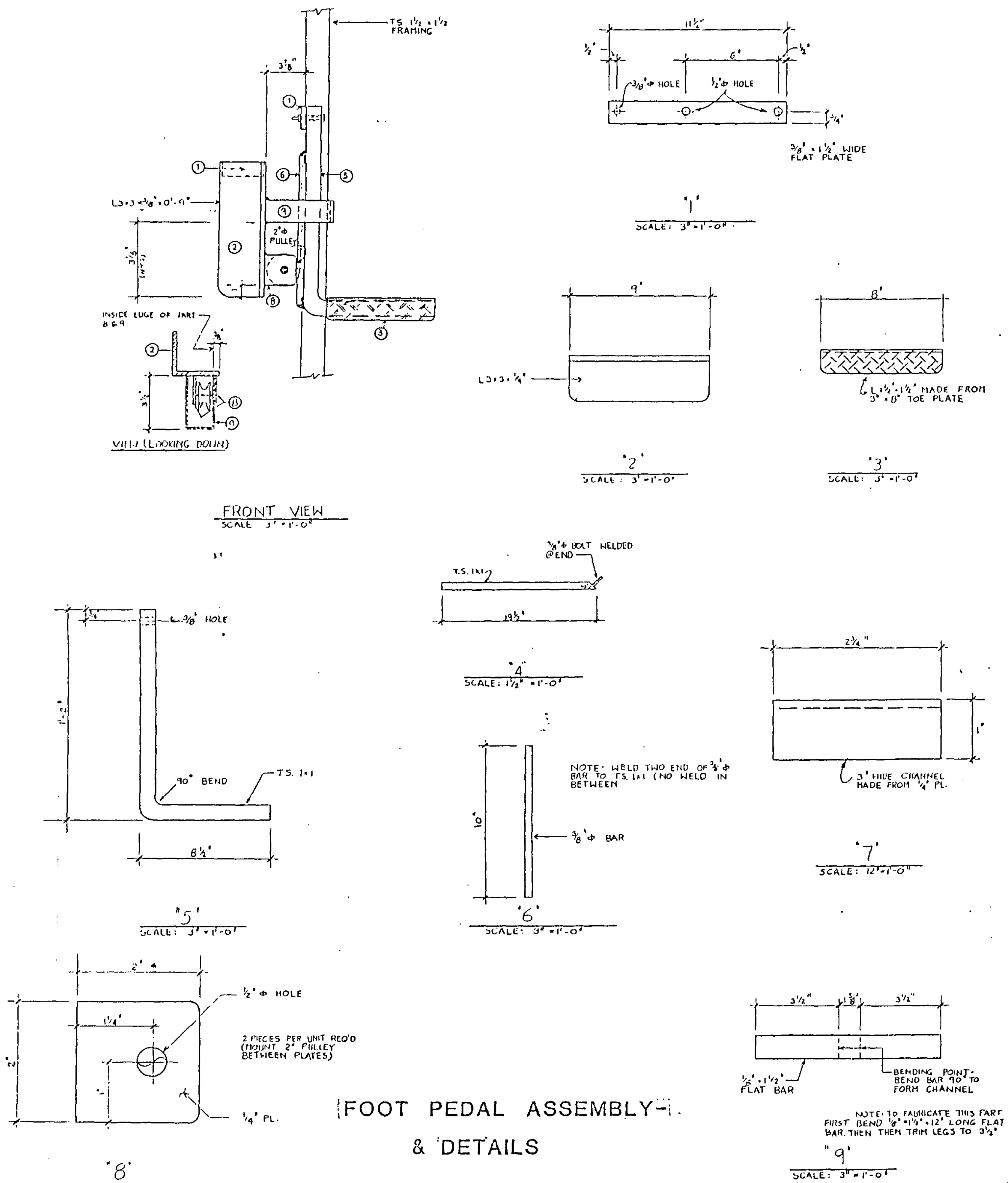
DATE: 1/19/90
JOB NO:
DWN: ALI
CHK:

SAFETY - KLEEN DRUM WASHER

SHEET NO. 1 OF



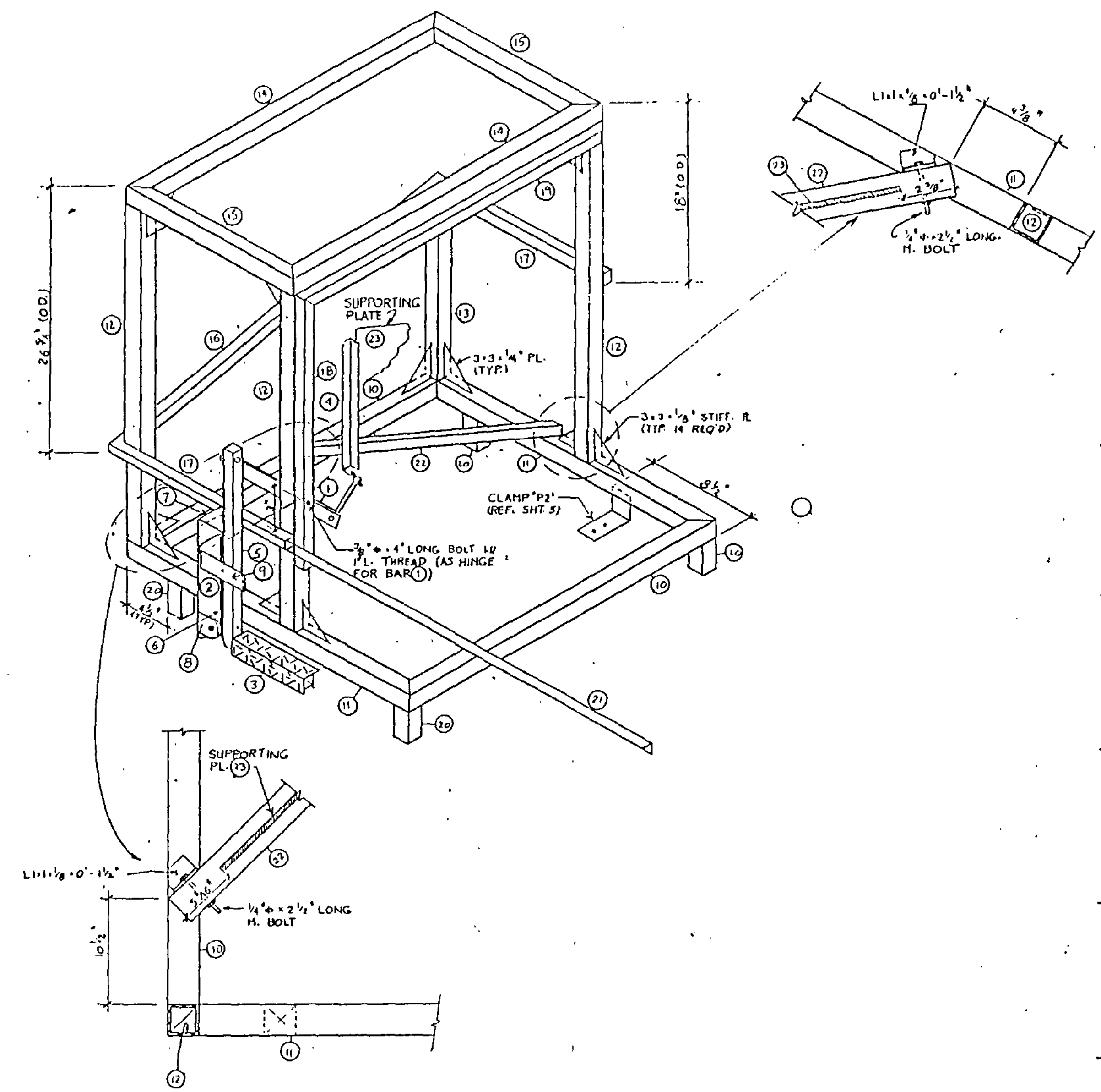
NOTE: ALL MATERIALS ARE ⅛" THK. H/R. STEEL PL.



FOOT PEDAL ASSEMBLY-1

& DETAILS

MEMBER	NO. REQ'D	TYPE	LENGTH	CUT 1	CUT 2
10	2	T.S. 1½ × 1½	32⅞"	45°	45°
11	2		29⅞"	45°	45°
12	3		32½"	90°	90°
13	1		16¾"	90°	90°
14	2		33"	45°	45°
15	2		18"	45°	45°
16	1	T.S. 1×1	35⅝"	45°	45°
17	2		19"	45°	90°
18	1		26¼"	45°	90°
19	1		31¼"	45°	90°
20	4	T.S. 1¼ × 1¼	3"	90°	90°
21	1	L 1×1	39¼"	90°	90°
22	1	T.S 1×1	24"	90°	90°

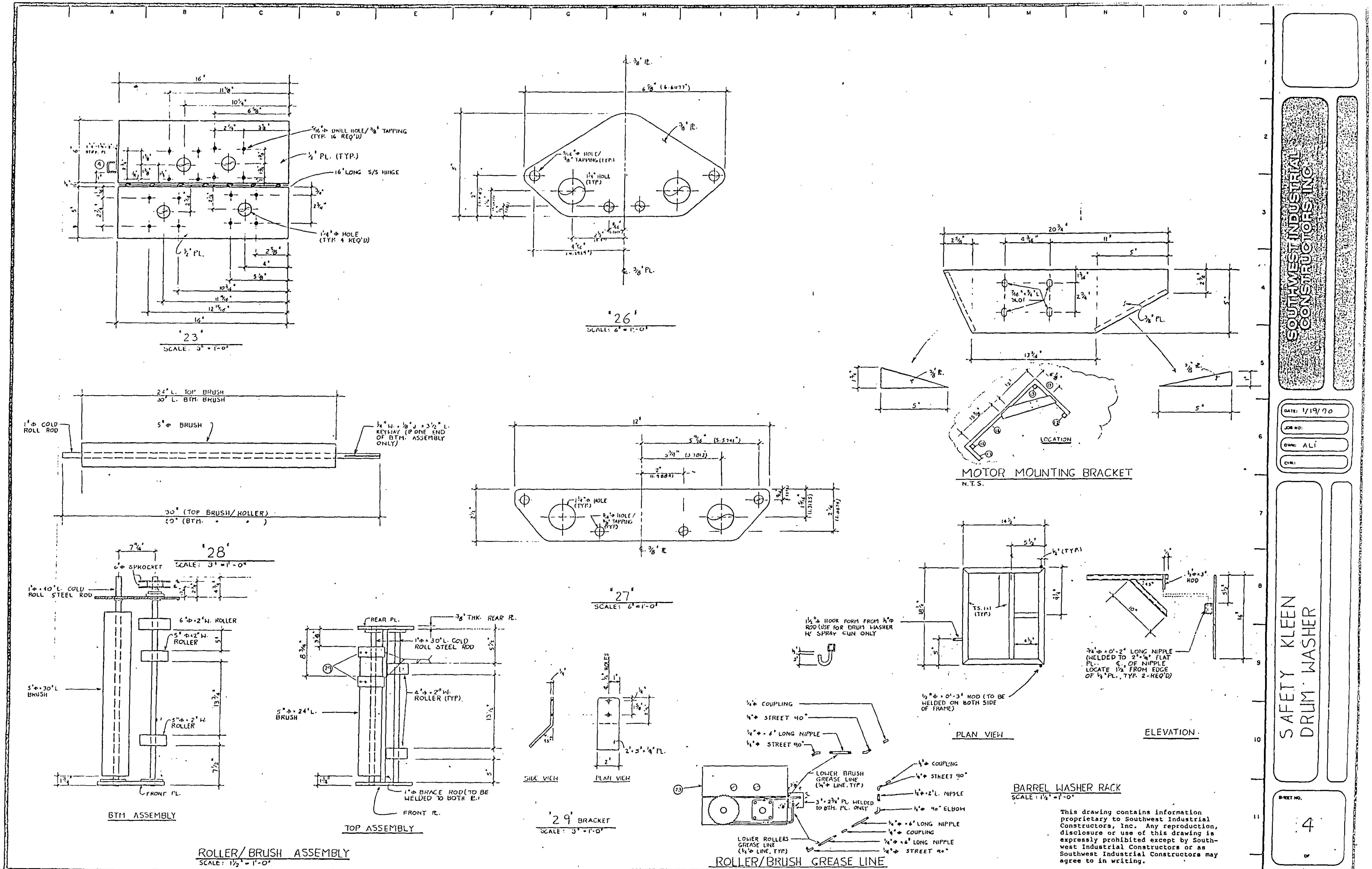


SOUTHWEST INDUSTRIAL CONSTRUCTORS INC.

DATE: 1/19/90
JOB NO:
DWN: ALI
CHK:

SAFETY - KLEEN DRUM WASHER

SHEET NO. 3 OF



'23'
SCALE: 3" = 1'-0"
5/16"Φ DRILL HOLE/3/8" TAPPING (TYP. 16 REQ'D)
1/2" PL. (TYP.)
16" LONG S/S HINGE
1 1/4"Φ HOLE (TYP. 4 REQ'D)
1/2" PL.
'26'
SCALE: 6" = 1'-0"
'27'
SCALE: 6" = 1'-0"
'28'
SCALE: 3" = 1'-0"
22" L. TOP BRUSH
30" L. BTM. BRUSH
5"Φ BRUSH
1"Φ COLD ROLL ROD
30" (TOP BRUSH/ROLLER)
MOTOR MOUNTING BRACKET
N.T.S.
LOCATION
6"Φ SPROCKET
1"Φ x 40" L. COLD ROLL STEEL ROD
6"Φ x 2" W. ROLLER
5"Φ x 2" W. ROLLER
5"Φ x 30" L BRUSH
FRONT PL.
BTM ASSEMBLY
REAR PL.
3/8" THK. REAR PL.
1"Φ x 30" L. COLD ROLL STEEL ROD
4"Φ x 2" W. ROLLER (TYP.)
5"Φ x 24" L. BRUSH
1"Φ BRACE ROD (TO BE WELDED TO BOTH PL.)
FRONT PL.
TOP ASSEMBLY
ROLLER/BRUSH ASSEMBLY
SCALE: 1 1/2" = 1'-0"
SIDE VIEW
PLAN VIEW
'29' BRACKET
SCALE: 3" = 1'-0"
1/4"Φ COUPLING
1/4"Φ STREET 90°
1/4"Φ x 6" LONG NIPPLE
1/4"Φ STREET 90°
LOWER BRUSH GREASE LINE (1/4"Φ LINE, TYP.)
LOWER ROLLERS GREASE LINE (1/4"Φ LINE, TYP.)
ROLLER/BRUSH GREASE LINE
PLAN VIEW
ELEVATION
BARREL WASHER RACK
SCALE: 1 1/2" = 1'-0"
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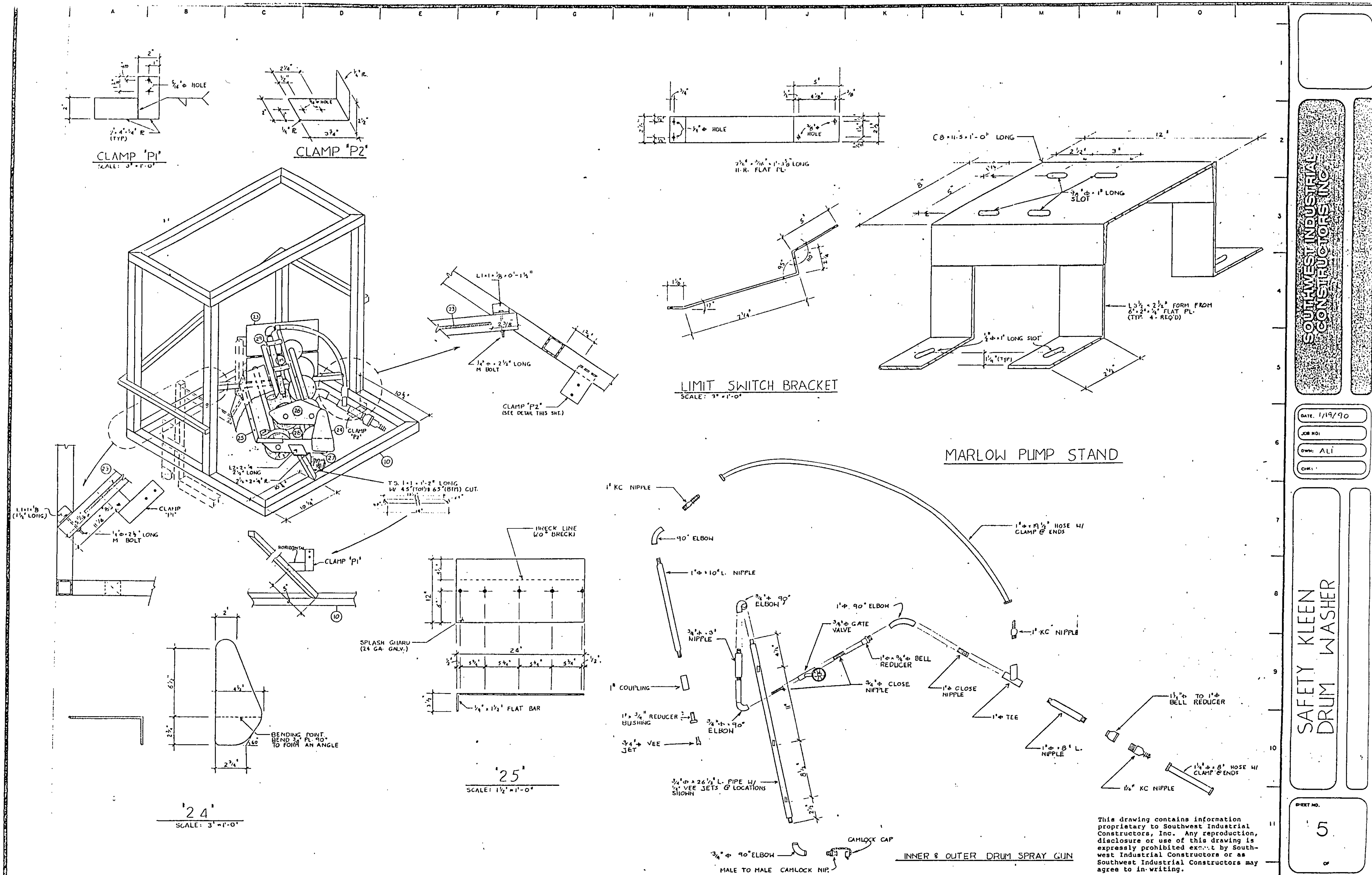
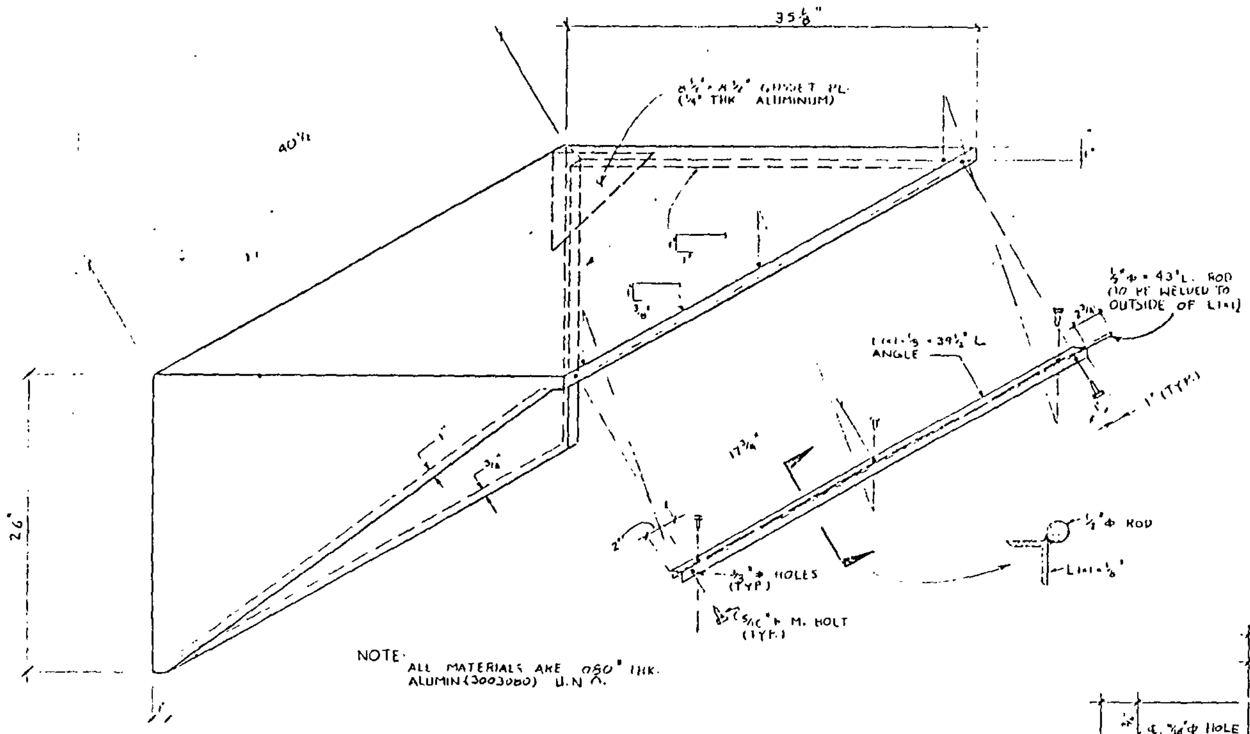
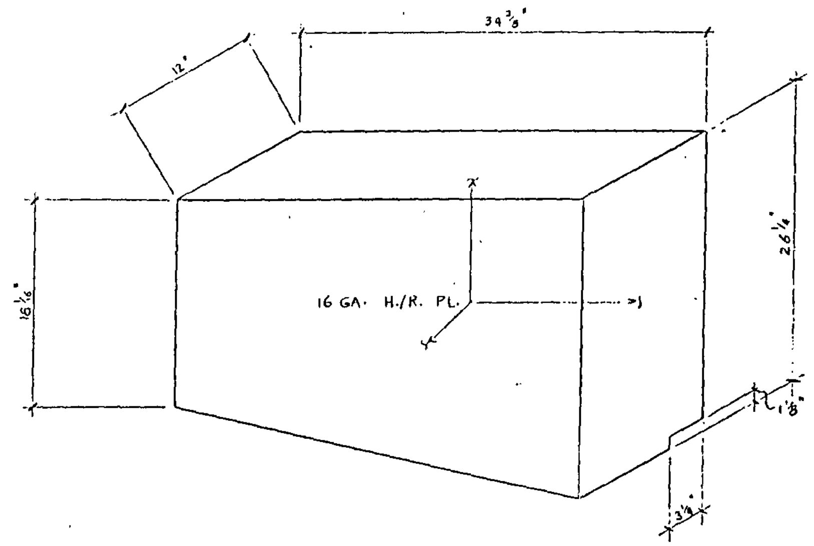
SOUTHWEST INDUSTRIAL CONSTRUCTORS, INC.
DATE: 1/19/90
DWN: ALI
SAFETY KLEEN DRUM WASHER
SHEET NO. 4


CLAMP 'P1'
SCALE: 3" = 1'-0"
5/16" ⌀ HOLE
CLAMP "P2"
LIMIT SWITCH BRACKET
SCALE: 3" = 1'-0"
C8 × 11.5 × 1'-0" LONG
9/16" ⌀ × 1" LONG SLOT
L 3 1/2 × 2 1/2" FORM FROM 6" × 2" × 1/4" FLAT PL. (TYP. 4 - REQ'D)
9/16" ⌀ × 1" LONG SLOT
MARLOW PUMP STAND
CLAMP "P2" (SEE DETAIL THIS SHT.)
M BOLT
CLAMP 'P1'
BRECK LINE (20° BRECK)
SPLASH GUARD (24 GA. GALV.)
1/4" × 1 1/2" FLAT BAR
BENDING POINT. BEND 3/8" PL. 90° TO FORM AN ANGLE
'24'
SCALE: 3" = 1'-0"
'25'
SCALE: 1 1/2" = 1'-0"
1" KC NIPPLE
90° ELBOW
1" ⌀ × 10" L. NIPPLE
1" COUPLING
1" × 3/4" REDUCER BUSHING
3/4" ⌀ VEE JET
3/4" ⌀ × 90° ELBOW
3/4" ⌀ × 3" NIPPLE
3/4" ⌀ 90° ELBOW
3/4" ⌀ × 26 1/2" L. PIPE W/ 1/4" VEE JETS @ LOCATIONS SHOWN
3/4" ⌀ 90° ELBOW
MALE TO MALE CAMLOCK NIP.
CAMLOCK CAP
3/4" ⌀ GATE VALVE
1" ⌀ 90° ELBOW
1" ⌀ × 3/4" ⌀ BELL REDUCER
3/4" ⌀ CLOSE NIPPLE
1" ⌀ CLOSE NIPPLE
1" ⌀ TEE
1" ⌀ × 8" L. NIPPLE
1" ⌀ × 19 1/2" HOSE W/ CLAMP @ ENDS
1" KC NIPPLE
1 1/2" ⌀ TO 1" ⌀ BELL REDUCER
1 1/2" KC NIPPLE
1 1/2" ⌀ × 8" HOSE W/ CLAMP @ ENDS
INNER & OUTER DRUM SPRAY GUN
SOUTHWEST INDUSTRIAL CONSTRUCTORS INC.
DATE: 1/19/90
JOB NO:
DWN: ALI
CHK:
SAFETY KLEEN DRUM WASHER
SHEET NO. 5

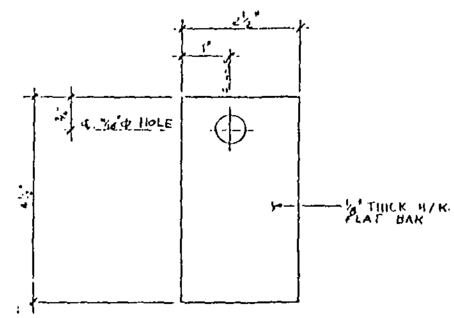


NOTE: ALL MATERIALS ARE .080" THK. ALUMIN (3003080) U.N.O.

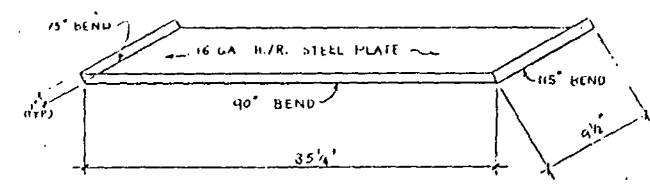
DRUM WASHER LID
SCALE: 1½" = 1'-0"



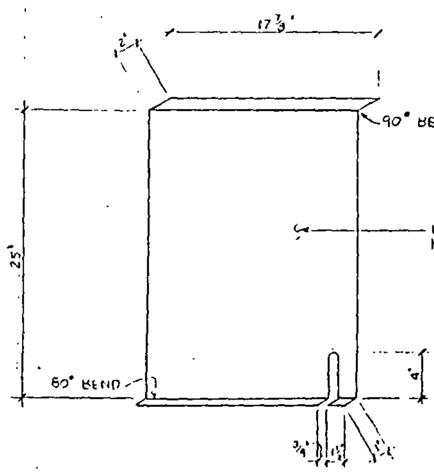
MOTOR COVER
SCALE: 1½" = 1'-0"



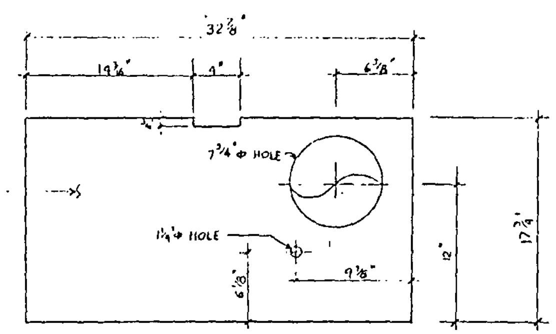
HINGE BRACKET
SCALE: 6" = 1'-0"



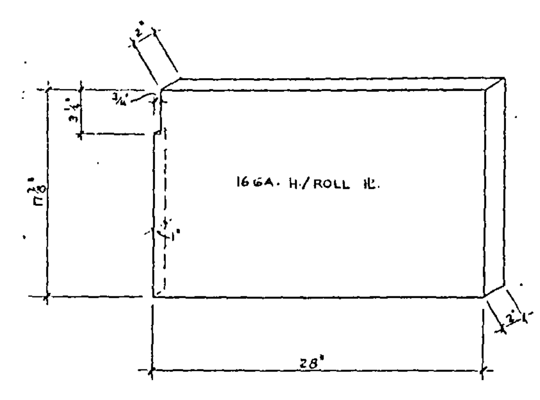
BOTTOM PAN FOR MOTOR COVER
SCALE: 1½" = 1'-0"



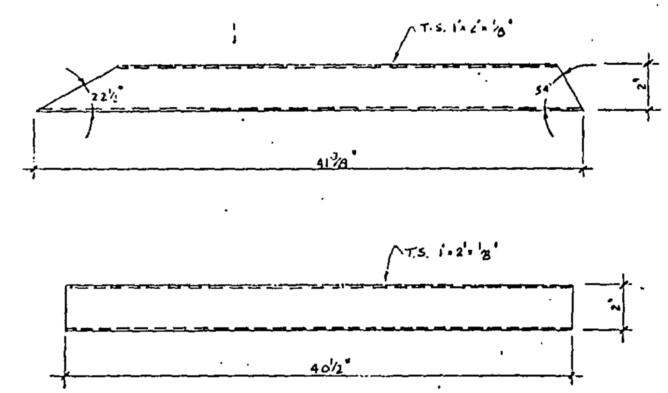
CABINET FRONT
SCALE: 1½" = 1'-0"



CABINET TOP
SCALE: 1½" = 1'-0"



CABINET BACK
SCALE: 1½" = 1'-0"



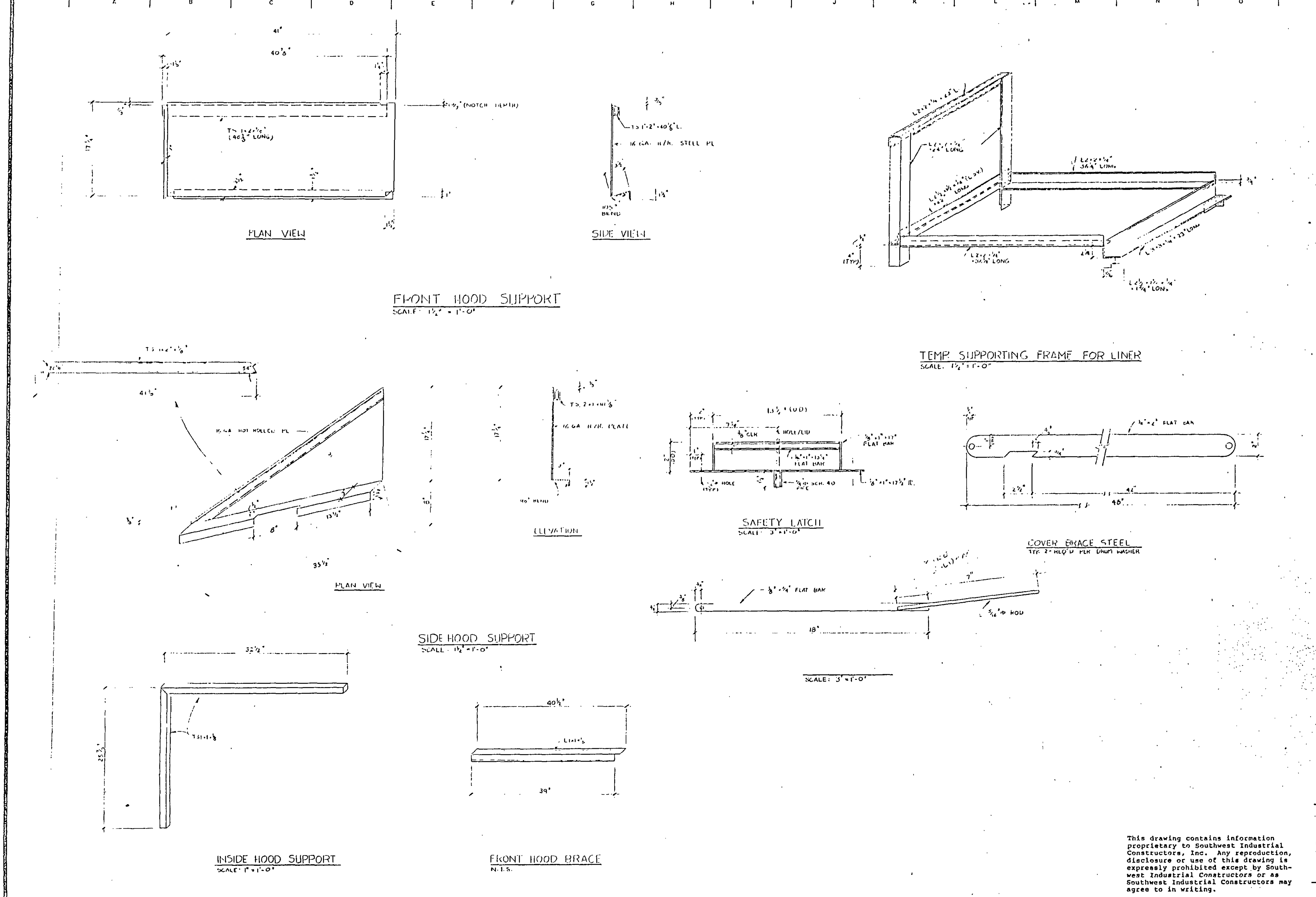
HOOD STIFFENER
N.T.S.

SOUTHWEST INDUSTRIAL CONSTRUCTORS, INC.

DATE: 1/ /90
JOB NO:
DWN: ALI
CHK:

SAFETY - KLEEN DRUM WASHER

SHEET NO. 7 OF



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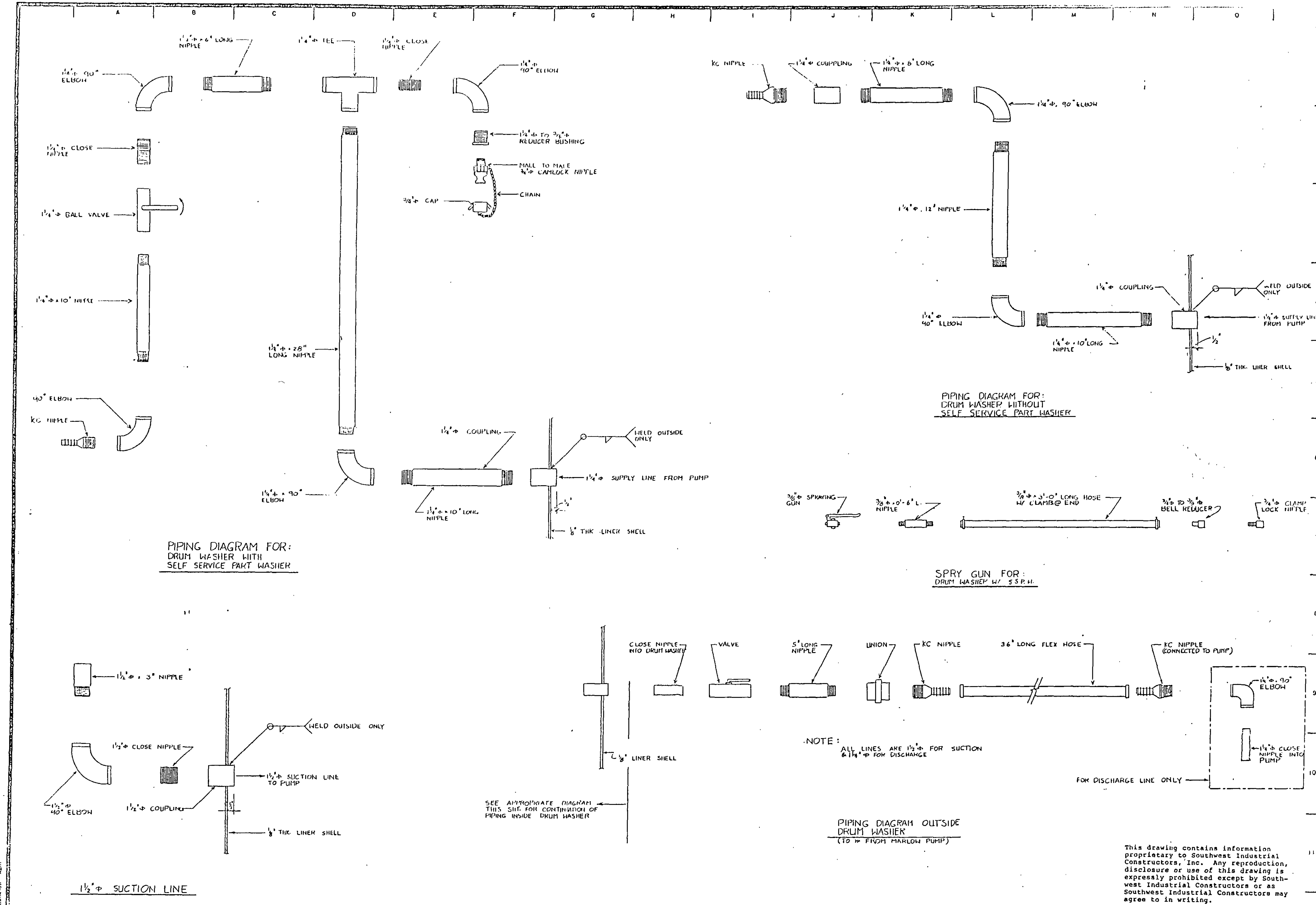
SOUTHWEST INDUSTRIAL CONSTRUCTORS, INC.

DATE: 1/13/90
JOB NO:
DWN: ALI
CHK:

SAFETY-KLEEN DRUM WASHER

SHEET NO. 8 OF


PIPING DIAGRAM FOR:
DRUM WASHER WITH
SELF SERVICE PART WASHER
1¼"Φ 90° ELBOW
1¼"Φ CLOSE NIPPLE
1¼"Φ BALL VALVE
1¼"Φ x 10" NIPPLE
90° ELBOW
KC NIPPLE
1¼"Φ TEE
1¼"Φ CLOSE NIPPLE
90° ELBOW
1¼"Φ TO ¾"Φ REDUCER BUSHING
MALE TO MALE ¾"Φ CAMLOCK NIPPLE
CHAIN
¾"Φ CAP
1¼"Φ x 28" LONG NIPPLE
1¼"Φ x 90° ELBOW
1¼"Φ COUPLING
1¼"Φ x 10" LONG NIPPLE
WELD OUTSIDE ONLY
1¼"Φ SUPPLY LINE FROM PUMP
⅛" THK LINER SHELL
PIPING DIAGRAM FOR:
DRUM WASHER WITHOUT
SELF SERVICE PART WASHER
KC NIPPLE
1¼"Φ COUPPLING
1¼"Φ x 8" LONG NIPPLE
1¼"Φ, 90° ELBOW
1¼"Φ, 12" NIPPLE
1¼"Φ 90° ELBOW
1¼"Φ x 10" LONG NIPPLE
1¼"Φ COUPLING
WELD OUTSIDE ONLY
1¼"Φ SUPPLY LINE FROM PUMP
⅛" THK LINER SHELL
SPRY GUN FOR:
DRUM WASHER W/ S.S.P.W.
⅜"Φ SPRAYING GUN
⅜"Φ x 0'-6" L. NIPPLE
⅜"Φ x 3'-0" LONG HOSE W/ CLAMB@ END
¾"Φ TO ⅜"Φ BELL REDUCER
¾"Φ CLAMP LOCK NIPPLE
1½"Φ SUCTION LINE
1½"Φ x 3" NIPPLE
1½"Φ CLOSE NIPPLE
1½"Φ 90° ELBOW
1½"Φ COUPLING
WELD OUTSIDE ONLY
1½"Φ SUCTION LINE TO PUMP
⅛" THK LINER SHELL
PIPING DIAGRAM OUTSIDE
DRUM WASHER
(TO & FROM MARLOW PUMP)
CLOSE NIPPLE INTO DRUM WASHER
VALVE
5" LONG NIPPLE
UNION
KC NIPPLE
36" LONG FLEX HOSE
KC NIPPLE (CONNECTED TO PUMP)
1¼"Φ, 90° ELBOW
1¼"Φ CLOSE NIPPLE INTO PUMP
FOR DISCHARGE LINE ONLY
⅛" LINER SHELL
SEE APPROPRIATE DIAGRAM THIS SHT. FOR CONTINUATION OF PIPING INSIDE DRUM WASHER
NOTE:
ALL LINES ARE 1½"Φ FOR SUCTION & 1¼"Φ FOR DISCHARGE
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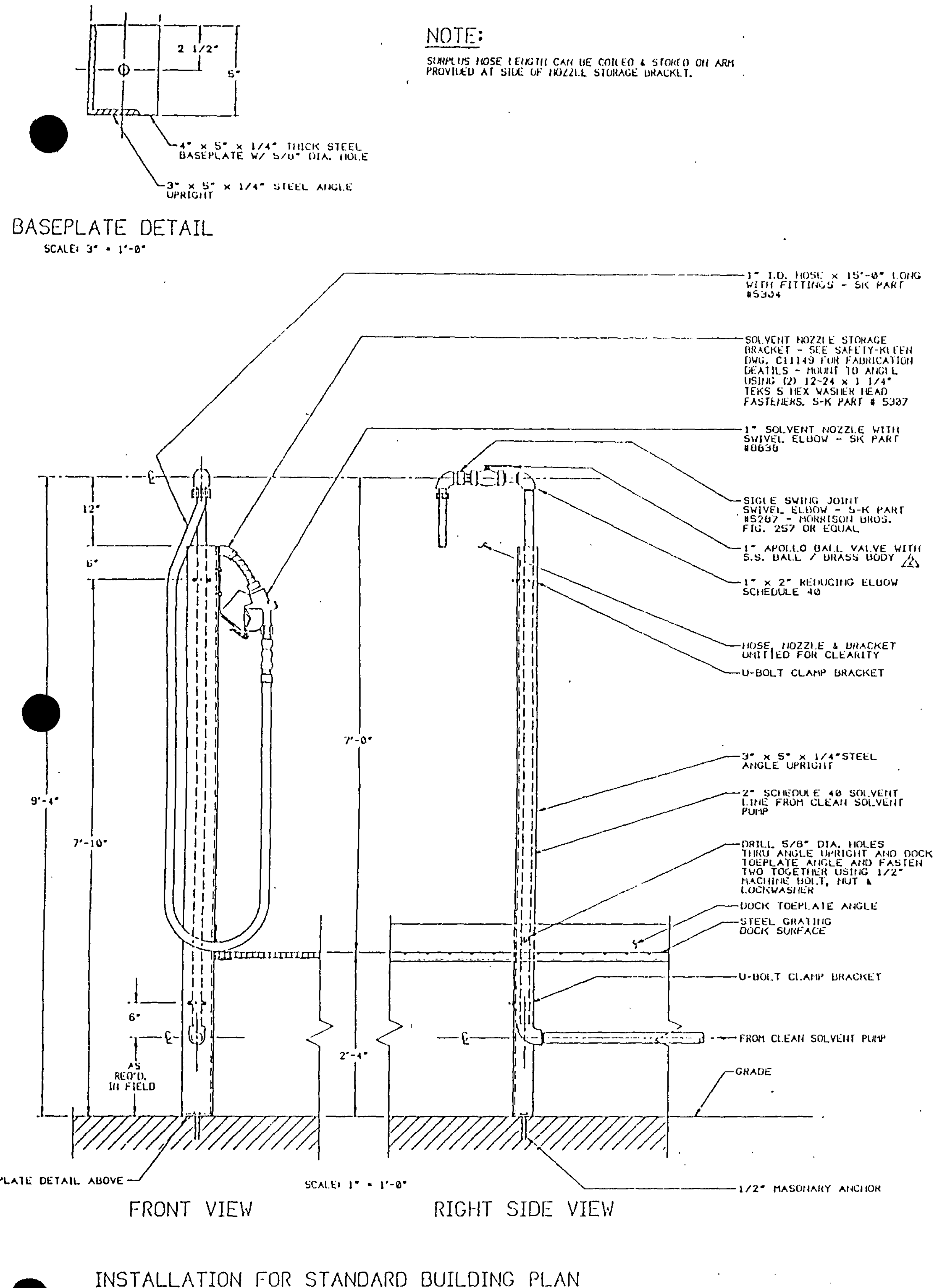
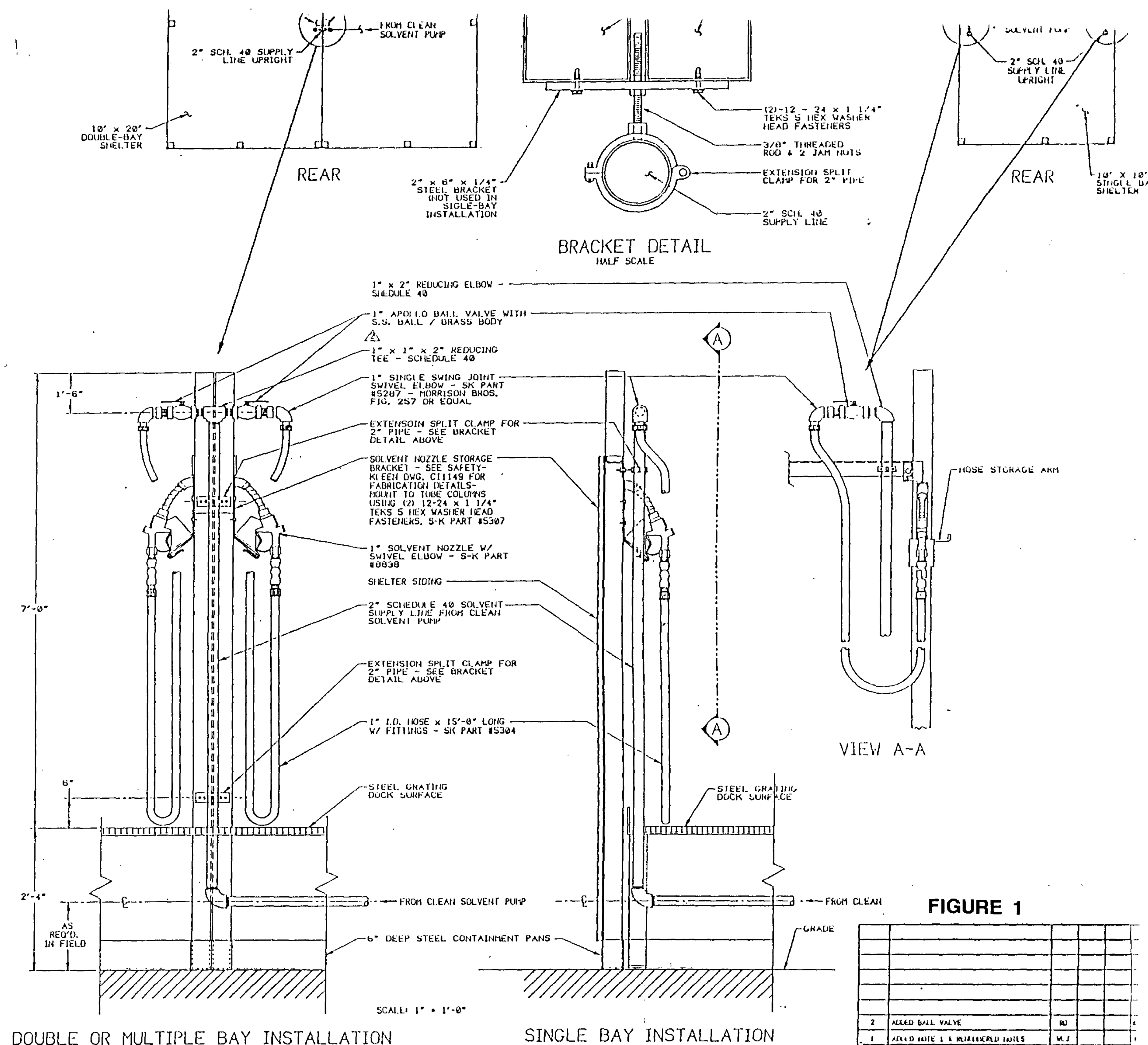
Appendix F

Engineering Specification Drawings for Tank System





NOTES:

1. ALL ITEMS WITH SAFETY-KLEEN PART NO. REFERENCES WILL BE SUPPLIED TO CONTRACTOR.
2. THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO SAFETY-KLEEN CORP. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAWING IS EXPRESSLY PROHIBITED EXCEPT BY SAFETY-KLEEN OR AS SAFETY-KLEEN MAY AGREE IN WRITING.
3. THIS DRAWING SUPERCEDES SAFETY-KLEEN DRAWINGS C10219 & C10961.
4. SEE INDIVIDUAL SERVICE CENTER PLANS FOR LOCATION OF THESE DETAILS.

BJ3
2/20/09 GD

FIGURE 1

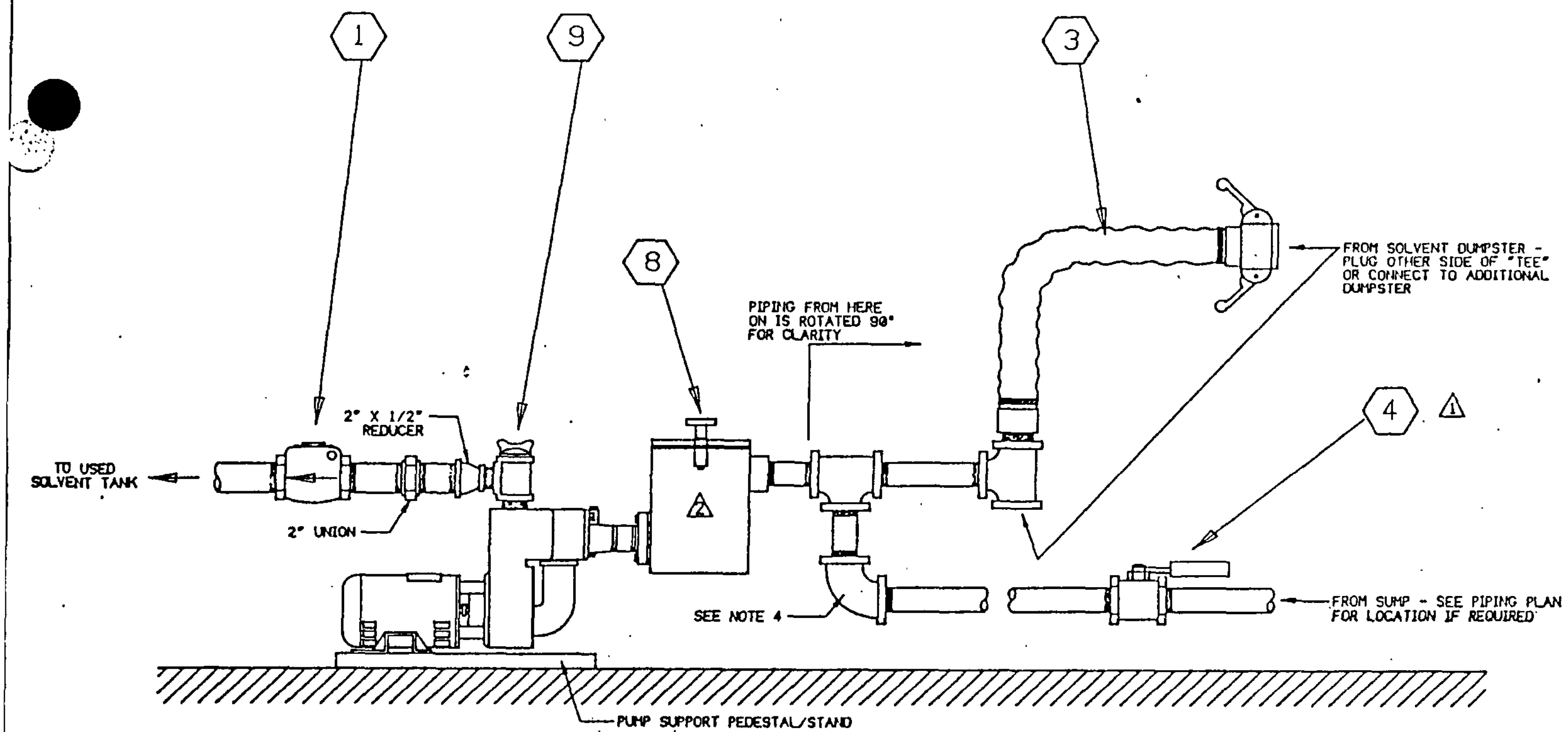
NO.	DESCRIPTION	BY	CHKD	APPR
2	ADDED BALL VALVE	RJ		
1	ADDED NOTE 1 & NUMBERED NOTES	WJ		

REVISIONS

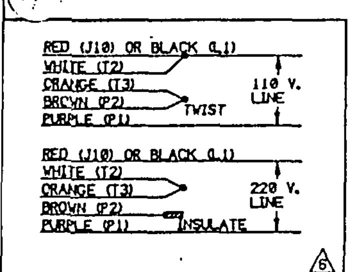
TITLE: SOLVENT DISPENSER TREE INSTALLATION DETAILS

SAFETY-KLEEN CORP.

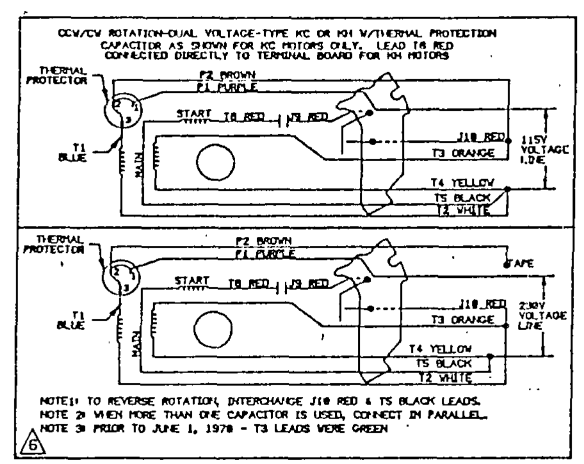
		SCALE: AS SHOWN	DRAWN: NVD-GD
BRANCH: FOR SERVICE CENTER BRANCH		DRAWING NO. D11223	



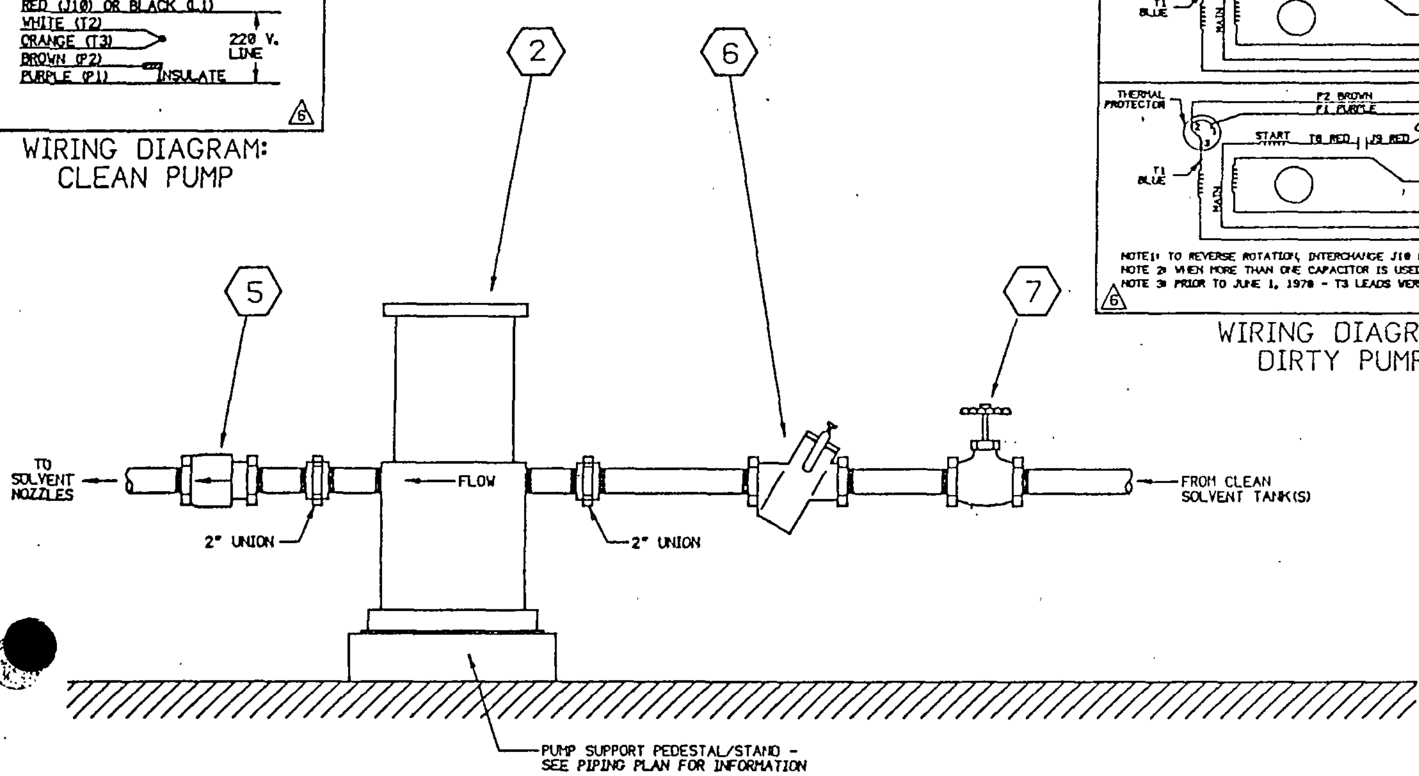
USED SOLVENT PUMP INSTALLATION



WIRING DIAGRAM:
CLEAN PUMP



WIRING DIAGRAM:
DIRTY PUMP



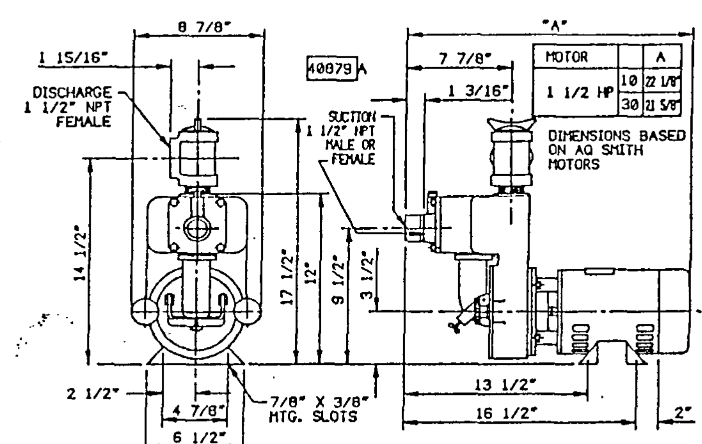
CLEAN SOLVENT PUMP INSTALLATION

EQUIPMENT / FIXTURE SCHEDULE

MARK	SIZE	DESCRIPTION	SK PART NO.	REMARKS
1	2"	2" BRONZE CHECK VALVE - MORRISON BROS. FIG. 246-A	5288	
2	2"	2" MARLOW PUMP - 20 EVP 10A 1 HP EXPLOSION PROOF MOTOR W/JUNCTION BOX - VITON FITTED	5240	SEE SPECIFICATION DETAILS ON SAFETY-KLEEN DWG. A11118 BELOW
3	2"	2" DUMPSTER HOSE ASSEMBLY	5234	SEE SAFETY-KLEEN DWG. D10452 FOR DETAILED INFORMATION
⚠1 4	2"	2" APOLLO BALL VALVE, BRONZE BODY W/STAINLESS STEEL BALL & TRIM. TEFLON SEALS & CONBRACO SPRING LOADED SELF CLOSING DEADMAN HANDLE	5272	
5	2"	2" BACK PRESSURE VALVE VERTICAL TYPE WITH 6 PSI SPRING SETTING - MORRISON BROS. FIG. 158-B/PR (15 P.S.I. OPEN)	5268	FOR ABOVEGROUND TANK INSTALLATION ONLY
6	2"	2" LINE STRAINER W/TOP CLEAN-OUT W/#20 MESH MORRISON BROS. FIG. 286	5269	
7	2"	2" BRONZE GATE VALVE MORRISON BROS. FIG. 235	5236	
⚠2 8	2"	2" MARLOW SUCTION STRAINER ASSEMBLY MODEL 2810X W/STAINLESS STEEL BASKET W/#10 PERFORATIONS	5313	FLANGED DISCHARGE PORT OF STRAINER SERVES AS UNION ON SUCTION SIDE OF PUMP
9	1 1/2"	1 1/2" MARLOW PUMP - 1 1/2HR49EC, SINGLE PHASE, EXPLOSION PROOF, BUNA FITTED, SELF PRIMING CENTRIFUGAL	5330	SEE DETAIL BELOW LEFT

PUMP UNITS WITH OPEN MOTORS
1 1/2HR49EC

DWGS BASED ON "AO SMITH" MOTORS

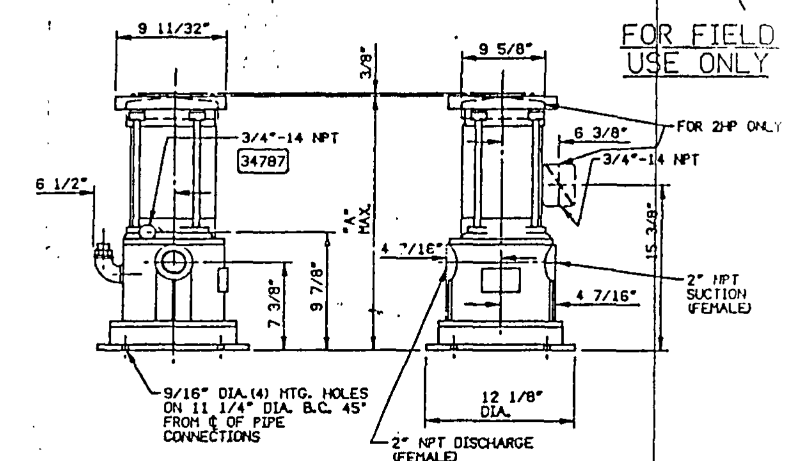


THESE DIMENSIONS NOT TO BE USED FOR CONSTRUCTION PURPOSES WITHOUT FORMAL FACTORY APPROVAL.

GENERAL NOTES

1. THIS DRAWING SUPERCEDES SAFTY-KLEEN CORP. DRAWING A1118
2. SEE INDIVIDUAL SERVICE CENTER SITE & PIPING PLANS FOR LOCATIONS & ARRANGEMENT OF THESE DETAILS.
3. FOR UNDERGROUND TANK INSTALLATIONS, A 90° CHECK VALVE MORRISON BROS. FIG. 137 OR APPROVED EQUAL SHOULD BE INSTALLED AT TOP OF TANK ON CLEAN PUMP SUCTION LINE (CLEAN TANKS ONLY).
4. ⚠2 ALL PIPING TO BE 2" SCHEDULE 40 GALVANIZED UNLESS OTHERWISE SPECIFIED. ALL CHANGES OF DIRECTION IN DIRTY SOLVENT PIPING TO BE ACCOMPLISHED USING EITHER (2)-45° ELBOWS OR (1)-LONG RADIUS 90° ELBOW.
5. THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO SAFETY-KLEEN CORP. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAWING IS EXPRESSLY PROHIBITED EXCEPT BY SAFETY-KLEEN OR AS SAFETY-KLEEN MAY AGREE IN WRITING.
6. ⚠4 ALL ITEMS WITH SAFETY-KLEEN PART NO. REFERENCES WILL BE SUPPLIED TO CONTRACTOR.

FOR FIELD USE ONLY



GENERAL NOTES

1 MODEL TO BE USED BY SAFETY-KLEEN CORP. - MODEL 20 EVP-10A, 1 HP - 2" WITH EXPLOSION PROOF MOTOR W/JUNCTION BOX & VITON FITTED, SINGLE PHASE 60 CYCLE 115/230V.

2 SEE INDIVIDUAL SERVICE CENTER SITE PLANS FOR LOCATION OF THE INSTALLATION.

S-K PART NO.	G.E. EXPL. PROOF MOTORS				
	HP	PHASE	CYCLE	A	
5240		1	60	20 13/32"	115/230

FIGURE 2

NO.	DESCRIPTION	BY	CHK
6	ADDED V.D.'S FOR CLEAN & USED PUMPS	RD	
5	ADDED NEW PUMP FOR DIRTY SOLVENT TO VIEW & TABLE, ADDED PUMP SPEC.'S	RD	
4	ADDED NOTE 6	WLJ	
3	ADDED PUMP SPECS - DWG A11118	WLJ	
2	ADDED ITEM (8) & ADDED TO NOTE (4)	WLJ	
1	CHANGED ITEM (4) TO NEW TYPE VALVE	WLJ	

REVISIONS

TITLE: SOLVENT PUMP PIPING INSTALLATION DETAIL

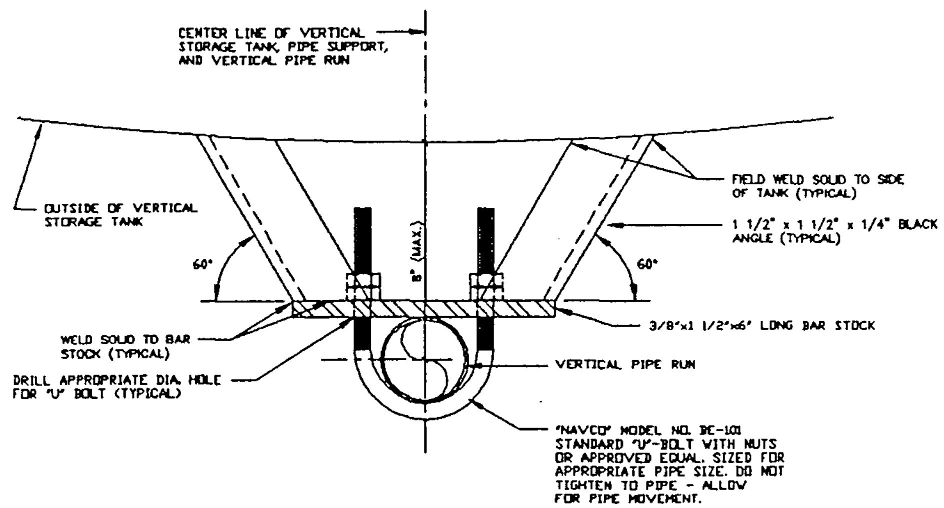
SAFETY-KLEEN CORP.
777 BIG TIMBER ROAD, ELGIN, ILLINOIS 60120 PHONE 312/

PROJ. ENG. APPR.	OPERATIONS APPR.	SCALE	DRAWN
		NTS	NWD-F

BJS 2/24/89 PBG

BRANCH: FOR SERVICE CENTER BRANCH

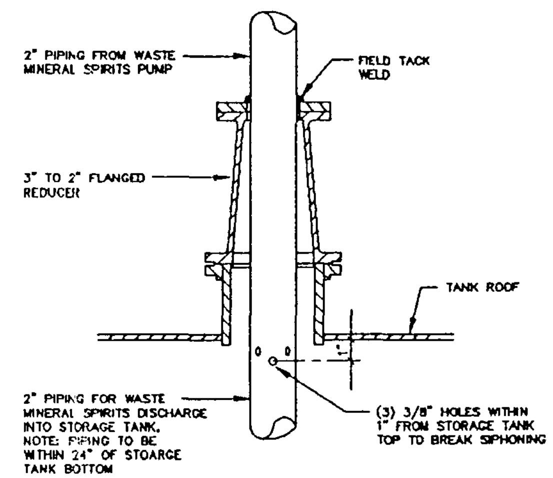
DRAWING NO. D11150



(1) VERTICAL PIPE SUPPORT DETAIL

*NOTE: SIMILAR DETAIL TO BE USED FOR SUPPORTING PIPE RUNS ACROSS TANK TOPS.
*NOTE: PAINT "U"-BOLT & NUTS, BARSTOCK, & ANGLES PER TANK PAINTING SPECS.

SCALE: NONE

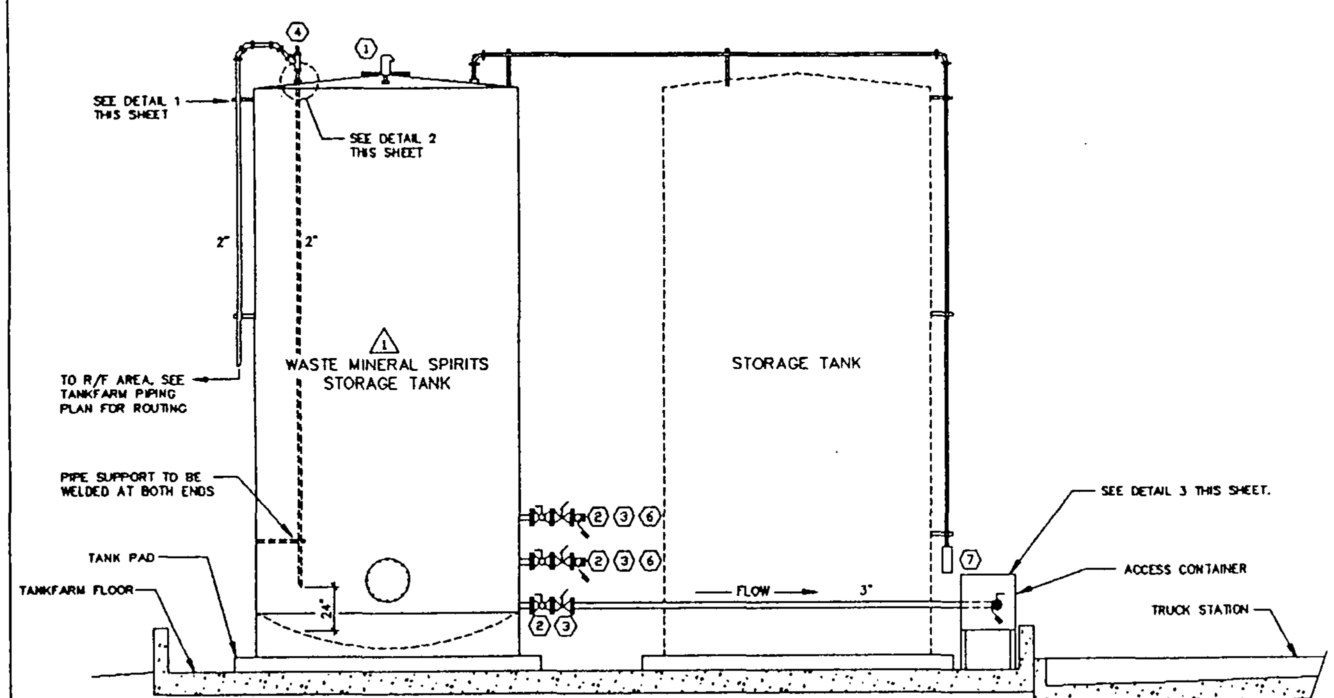


(2) TANK DOME PIPING PENETRATION DETAIL

SCALE: NONE

MARK	PART DESCRIPTION	SK PART	REMARKS
1	3" THREADED BRASS PRESSURE/VACUUM VENT. (2oz. pressure/1oz. vacuum)	5339	⚠1
2	3" FLANGED DUCTILE IRON BALL VALVE	-	LOCKING TYPE ⚠1
3	3" FLANGED DUCTILE IRON EXTERNAL EMERGENCY VALVE WITH FUSIBLE LINK (160° F)	-	⚠1
4	3/8" THREADED BRASS AUTOMATIC VACUUM BREAKER	5236	⚠1
5	3" FLANGED DUCTILE IRON SWING CHECK VALVE	-	⚠1
6	3" FLANGED ALUMINUM CAMLOC QUICK COUPLING WITH CAP AND CHAIN	-	⚠1
7	TANK GAUGE	-	SEE INSTALLATION DETAILS ON DRAWING #2025 ⚠1

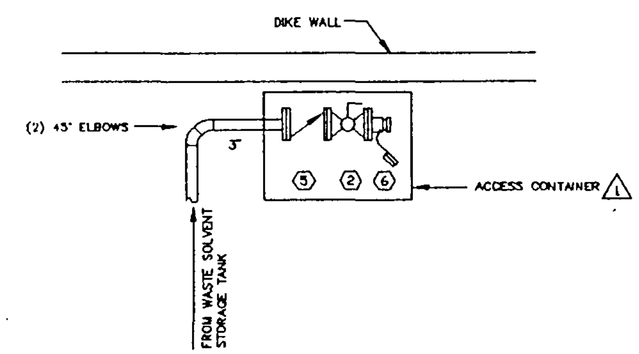
EQUIPMENT SCHEDULE



PARTIAL TANK FARM PIPING ELEVATION, TYPICAL

(SEE TANK FARM PIPING PLAN FOR ACTUAL PIPING ROUTINGS.)

SCALE: NONE



(3) ACCESS CONTAINER PIPING DETAIL

SCALE: NONE

FIGURE 3

GENERAL NOTES

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1. SUPPLIED BY SAFETY-KLEEN.
2. ALL DIRECTION CHANGES IN WASTE SOLVENT PIPING LINES TO BE MADE USING A COMBINATION OF 45° ELBOWS OR LONG SWEEP 90° ELBOWS.

QUESTEC CONSULTING ENGINEERS

NO.	DESCRIPTION	BY	CHK	APPR	DATE

REVISIONS

TITLE

TANK FARM / WASTE MINERAL SPIRITS PIPING PLAN

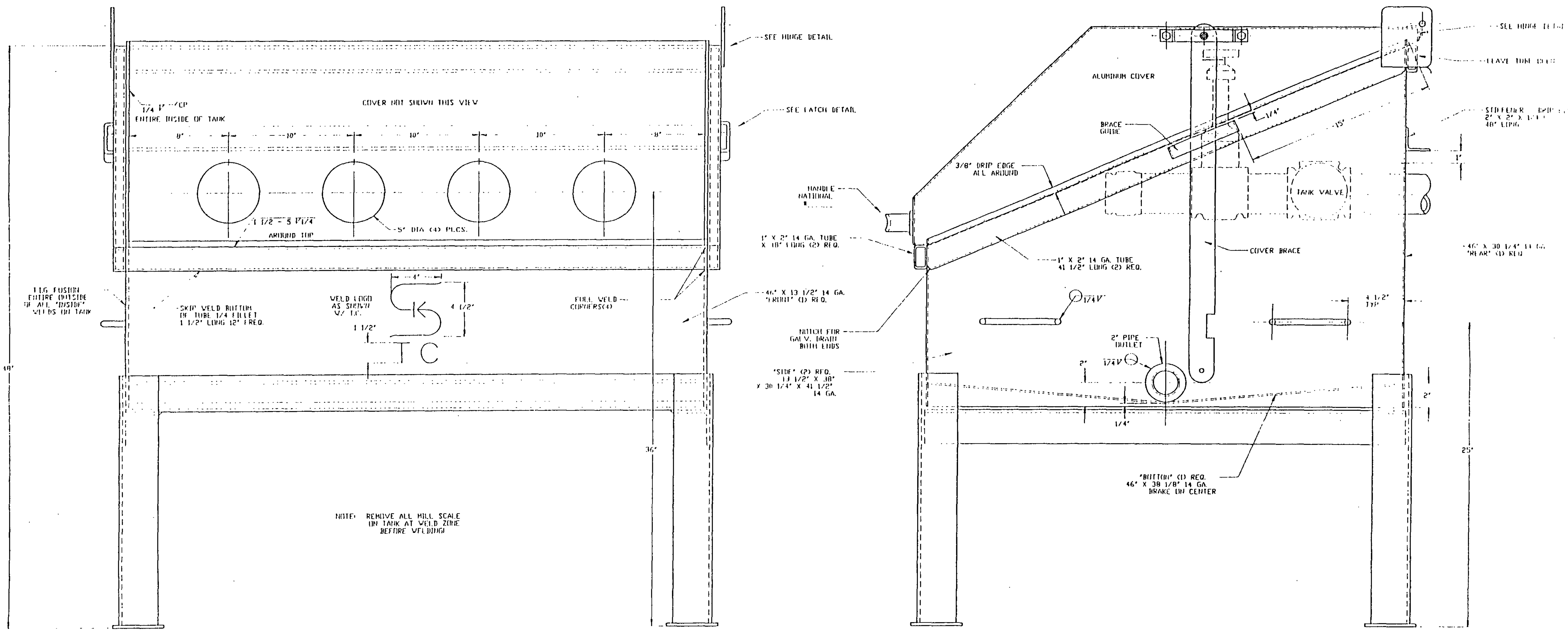
SAFETY-KLEEN CORP.

777 BIG TIMBER ROAD ELGIN, ILLINOIS 60123

SCALE	BY	CHKD	P.E. APPR	OP. APPR	DATE
NONE	QuesTec				9-27-91

SERVICE CENTER LOCATION	SC-DWG-REV NO.	SHEET NO.
MEDLEY, FL	316301-2011-00	49

10-7-91 9:30am 2011-0.DWG



NOTE: TANK MUST BE DESLAGGED AND MECHANICALLY DEBURRED. DEGREASE TANK BEFORE PICKELING AND HOT DIP GALVANIZING A 123 A.C.T.M.

FIGURE 4

GENERAL NOTES

NO	DESCRIPTION	BY	CHK	APPR	DATE

REVISIONS

TITLE: TANK ACCESS CONTAINER (GALV.)

SAFETY-KLEEN CORP.

SCALE	BY	CHKD
1/4"=1'-0"	N.D.	

SERVICE CENTER STANDARDS — FABRICATION

STD DWG NUMBER D13479

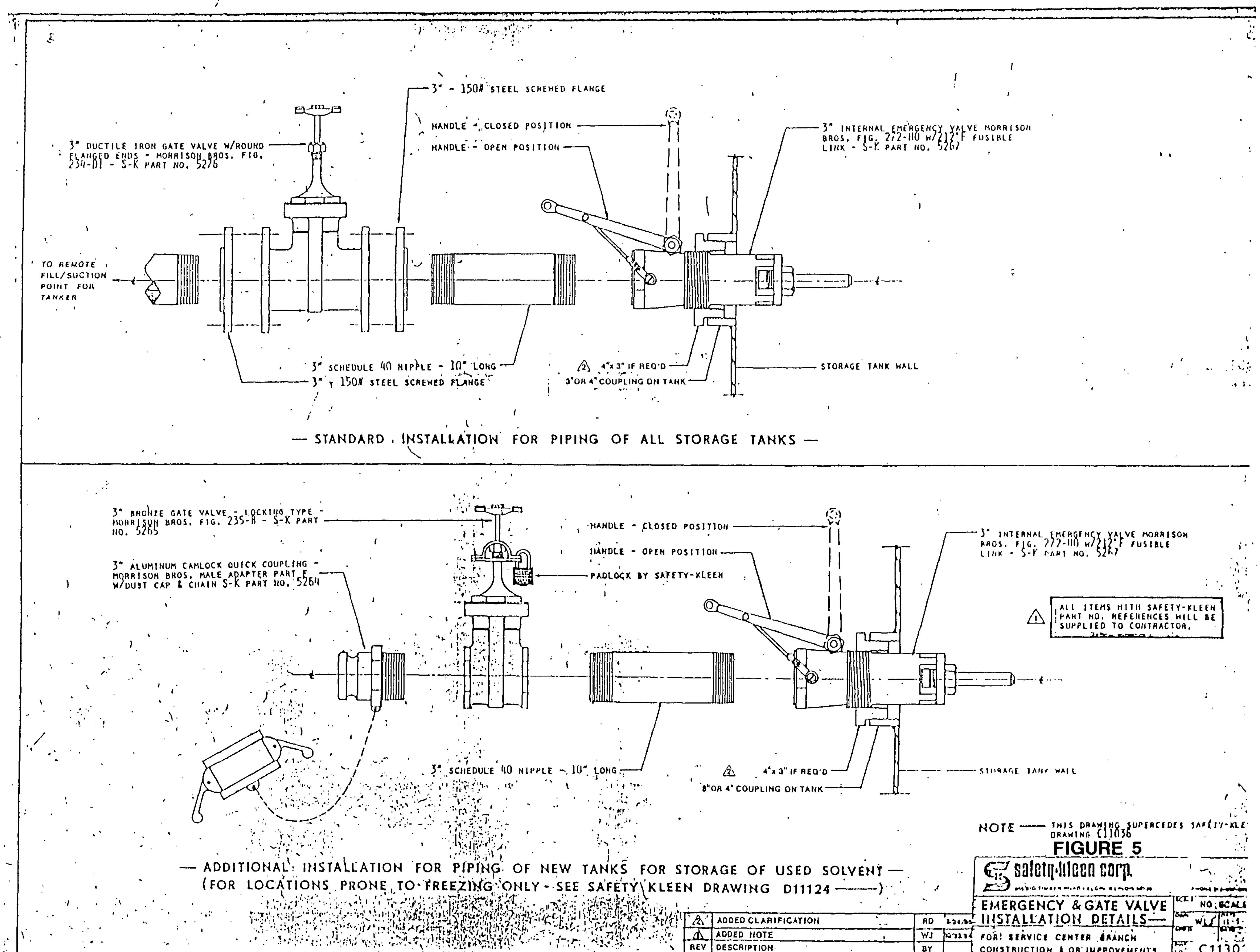
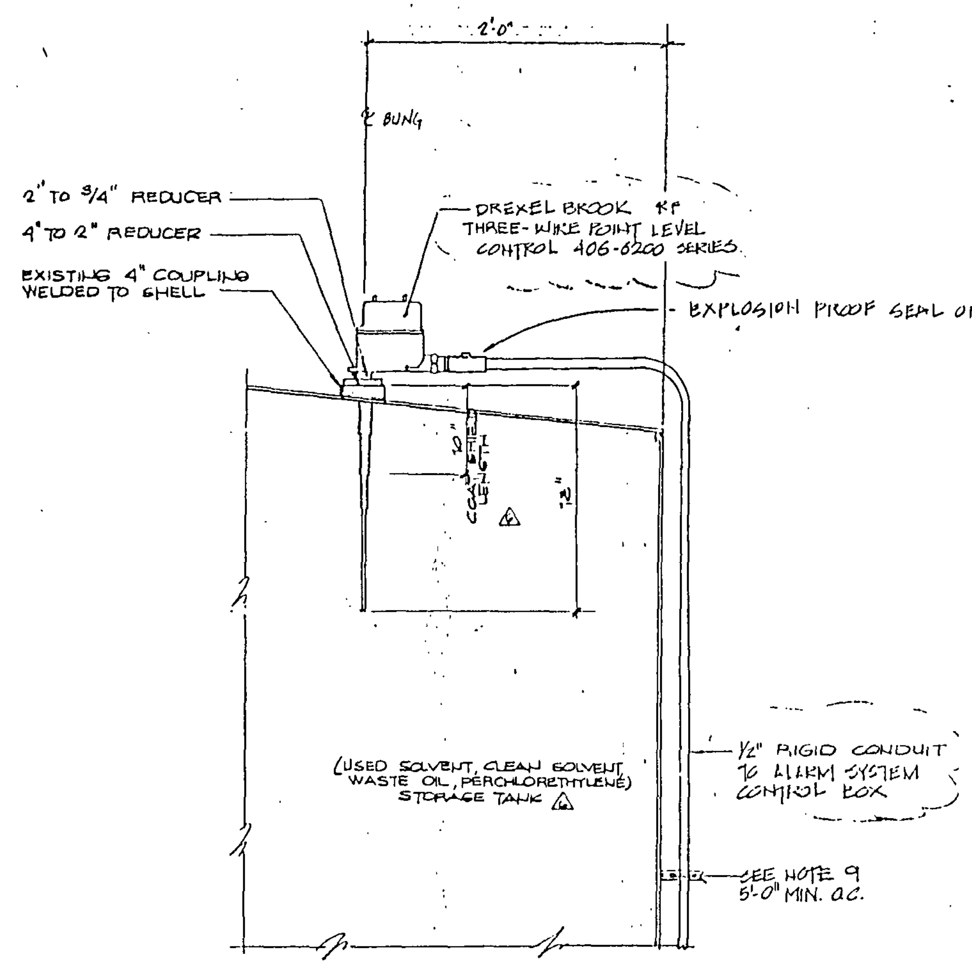
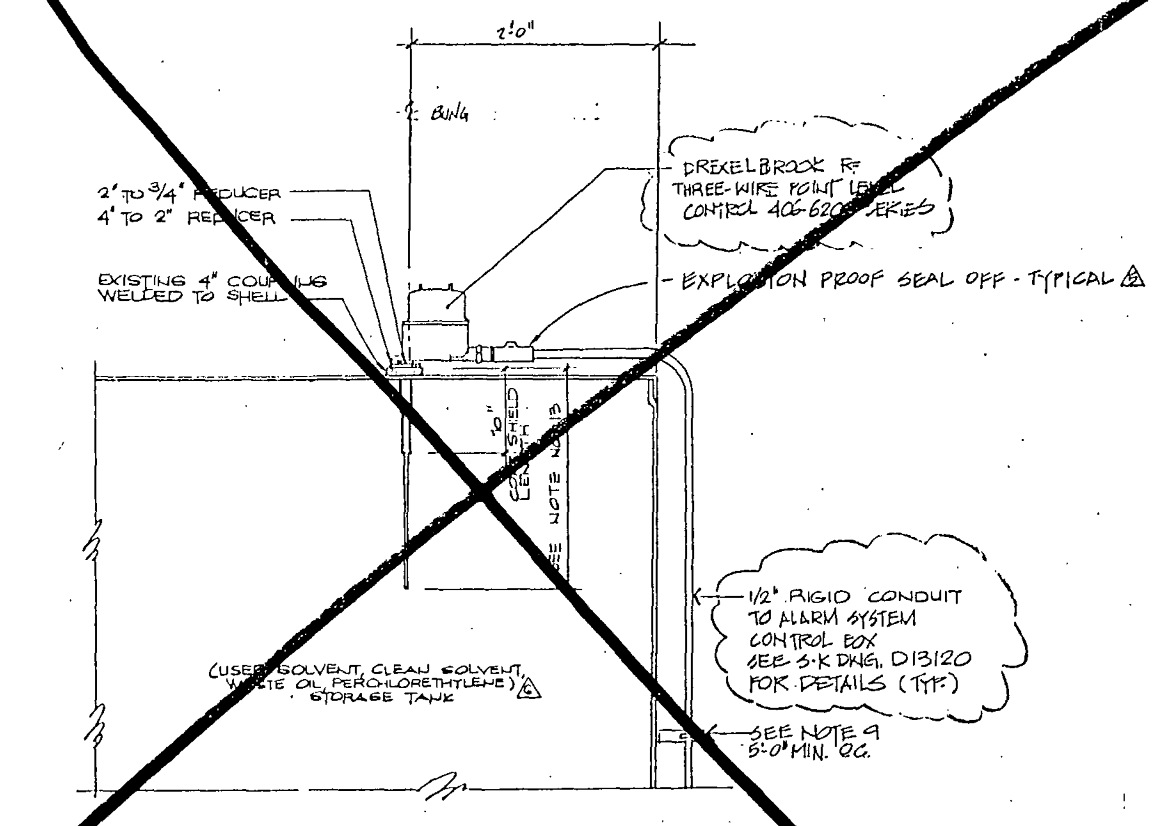

3" - 150# STEEL SCREWED FLANGE
3" DUCTILE IRON GATE VALVE W/ROUND FLANGED ENDS - MORRISON BROS. FIG. 234-DI - S-K PART NO. 5276
HANDLE - CLOSED POSITION
HANDLE - OPEN POSITION
3" INTERNAL EMERGENCY VALVE MORRISON BROS. FIG. 272-110 W/212°F FUSIBLE LINK - S-K PART NO. 5267
TO REMOTE FILL/SUCTION POINT FOR TANKER
3" SCHEDULE 40 NIPPLE - 10" LONG
3" - 150# STEEL SCREWED FLANGE
4"x3" IF REQ'D
3"OR 4" COUPLING ON TANK
STORAGE TANK WALL
— STANDARD INSTALLATION FOR PIPING OF ALL STORAGE TANKS —
3" BRONZE GATE VALVE - LOCKING TYPE - MORRISON BROS. FIG. 235-B - S-K PART NO. 5265
3" ALUMINUM CAMLOCK QUICK COUPLING - MORRISON BROS. MALE ADAPTER PART F W/DUST CAP & CHAIN S-K PART NO. 5264
HANDLE - CLOSED POSITION
HANDLE - OPEN POSITION
PADLOCK BY SAFETY-KLEEN
3" INTERNAL EMERGENCY VALVE MORRISON BROS. FIG. 272-110 W/212°F FUSIBLE LINK - S-K PART NO. 5267
ALL ITEMS WITH SAFETY-KLEEN PART NO. REFERENCES WILL BE SUPPLIED TO CONTRACTOR.
3" SCHEDULE 40 NIPPLE - 10" LONG
4"x3" IF REQ'D
3"OR 4" COUPLING ON TANK
STORAGE TANK WALL
NOTE — THIS DRAWING SUPERCEDES SAFETY-KLEEN DRAWING C11036
— ADDITIONAL INSTALLATION FOR PIPING OF NEW TANKS FOR STORAGE OF USED SOLVENT —
(FOR LOCATIONS PRONE TO FREEZING ONLY - SEE SAFETY KLEEN DRAWING D11124 —)
safety-kleen corp.
EMERGENCY & GATE VALVE INSTALLATION DETAILS
FOR: SERVICE CENTER BRANCH CONSTRUCTION & OR IMPROVEMENTS
ADDED CLARIFICATION RD
ADDED NOTE WJ
REV DESCRIPTION BY
C1130

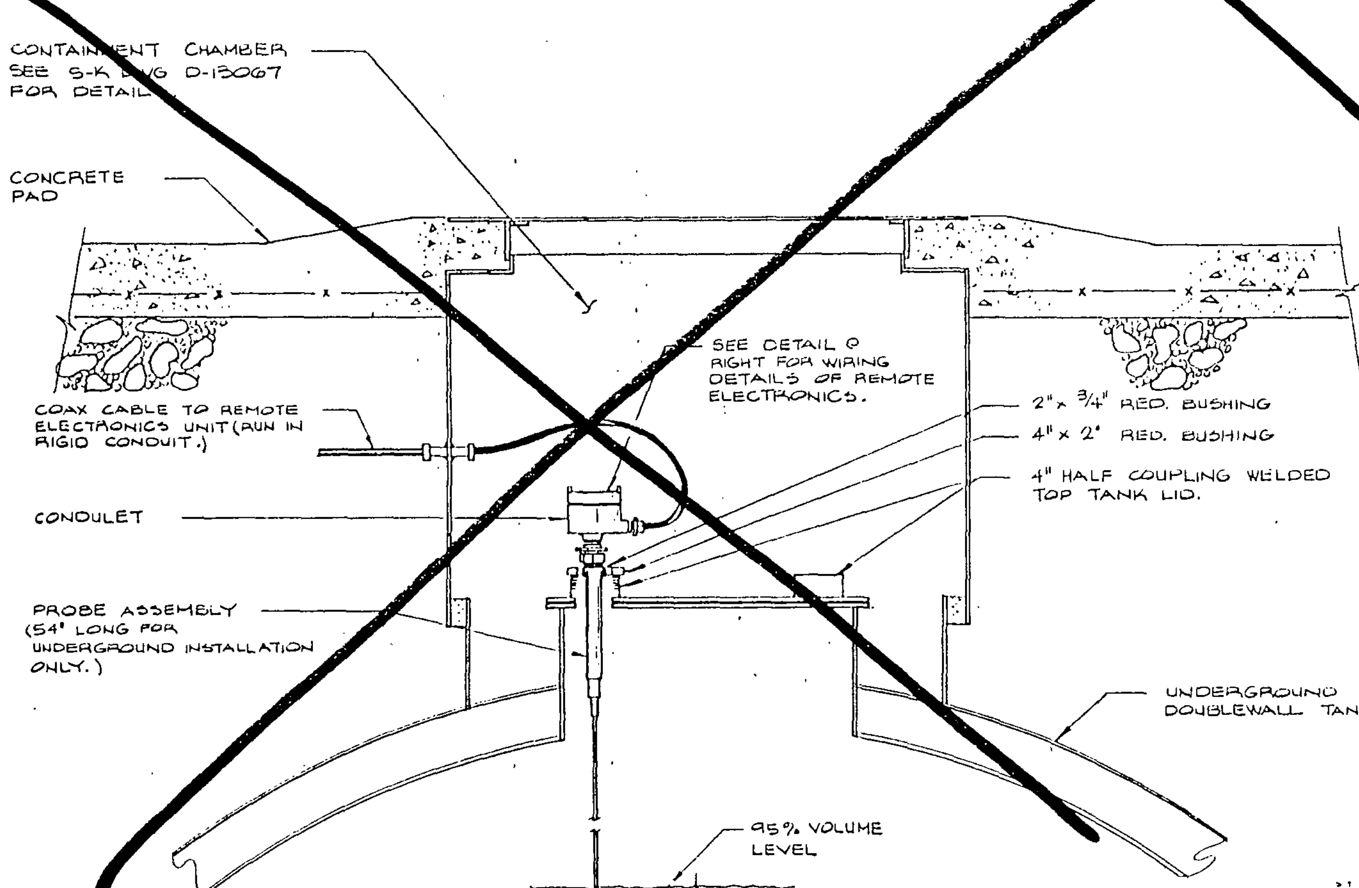
FIGURE 5

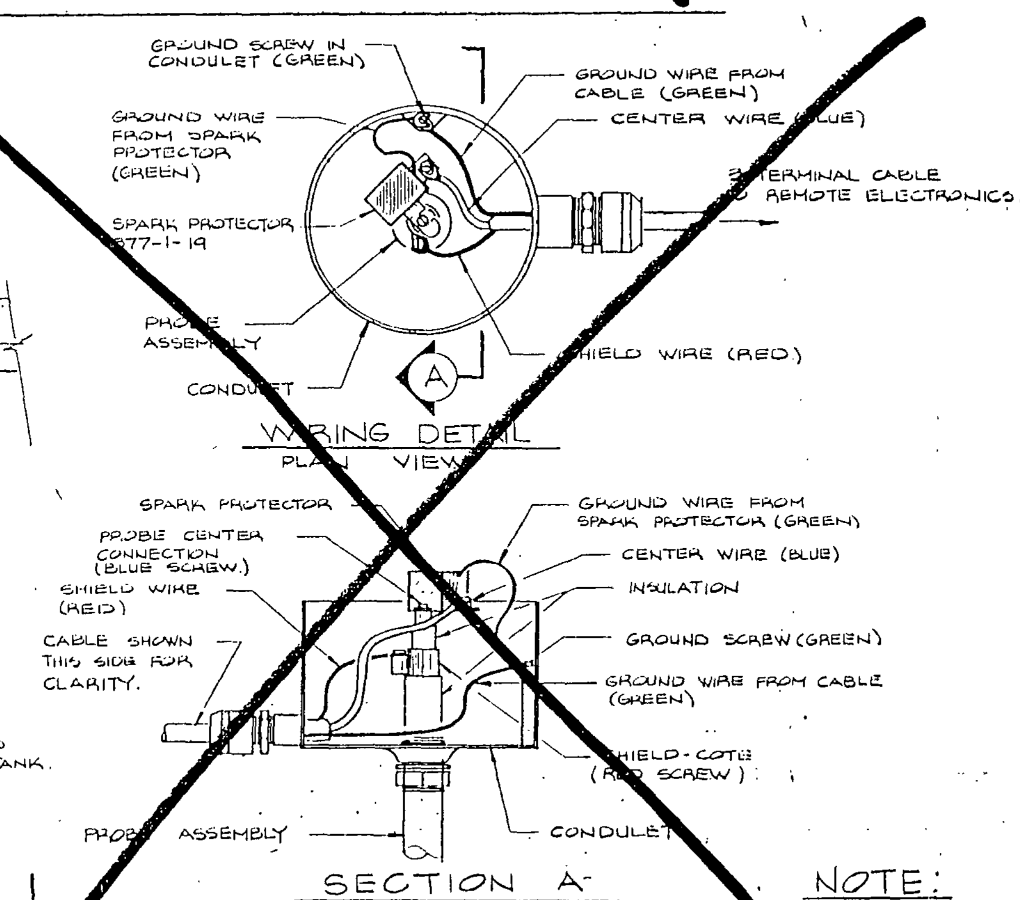


ABOVEGROUND VERTICAL TANK INSTALLATION



ABOVEGROUND HORIZONTAL TANK INSTALLATION





UNDERGROUND TANK INSTALLATION

NOTE:
WORK THIS DWG. WITH SK. DWGS D-13929 AND D-14218

GENERAL NOTES

1. POWER REQUIREMENT 13 TO 28 VDC
2. OUTPUT 4 - 10 ma (ALARM STATE)
   15 - 25 ma (NORMAL STATE)
3. OPERATING TEMP. -40°F TO +140°F
4. SHIELD-TO-GROUND LOADING: 25 ohm MIN. RESISTANCE
5. RFI EFFECT: LESS THAN 2 pF SHIFT IN OPERATING POINT FOR UNIT IN EXPLOSION-PROOF HOUSING FROM 5 W FIELD @ 27, 150, OR 450 mHz AT A DISTANCE OF 5 FT. FROM EXPOSED CABLE OR SIGNAL WIRE.
6. FAIL-SAFE: SWITCHABLE OR EITHER LOW-LEVEL FAIL-SAFE (LLFS) OR HIGH-LEVEL FAIL SAFE (HLFS).
7. HOUSING: NEMA 12-WATERPROOF EXPLOSION PROOF FOR CLASS I GROUPS A, B, C, D, AND CLASS II GROUPS E, F, G DW, 1 OR 2.
8. SEE INDIVIDUAL SERVICE CENTER SITE PLANS FOR RELATIVE LOCATIONS OF THESE DETAILS.
9. CONTRACTOR TO SUPPLY & INSTALL CONDUIT SUPPORTS & BRACKETS AS REQUIRED.
10. THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO SAFETY-KLEEN CORP. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAWING IS EXPRESSLY PROHIBITED BY SAFETY-KLEEN
11. ALL ITEMS SHOWN WITH A SAFETY-KLEEN PART NUMBER WILL BE SUPPLIED BY SAFETY-KLEEN CORP. (e.g. S-K- - - -)
12. IF INDIVIDUAL SERVICE CENTER CONDITIONS ARE NOT COVERED BY DETAILS SHOWN HERE, PLEASE CONTACT TECHNICAL SERVICES AT THE CORPORATE OFFICE FOR ASSISTANCE.
13. CALCULATIONS FOR LENGTH OF PROBE INSIDE OF TANK ARE SET TO ACTIVATE THE ALARM AT THE 95% VOLUME LEVEL.
14. ALL CALIBRATION OF UNIT SHALL BE DONE IN ACCORDANCE WITH DREXELBROOK'S RECOMMENDATIONS. CALIBRATION SHALL BE DONE AFTER ALL COMPONENTS OF SYSTEM ARE IN PLACE.
15. ALL TANKS SHALL BE GROUNDED PRIOR TO INSTALLATION OF ALARM SYSTEM.

FIGURE 6A

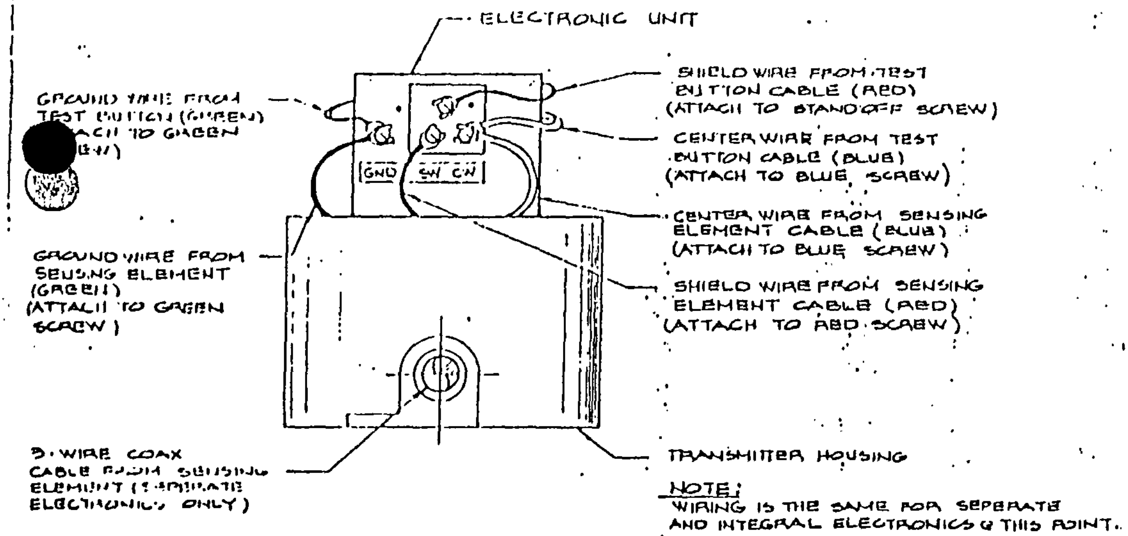
7 REDREW UNDERGROUND INSTALLATION ADDED DETAILS & CHANGED CONDUIT TO RIGID	QS	1-4
6 ADD NOTES AND MODIFY THE DWG. ON VERT. & HOR. TANK INSTALLATION.	MA	7-2
5 ADD "EXPLOSION PROOF SEAL OFF" NOTE	RLB	12-1
4 CHANGE: PROBE DEPTH, NOTE 13	RLB	11-1

safety-kleen corp.
777 BIG TIMBER ROAD • ELGIN, ILLINOIS 60123 PHONE 312/697-84

HIGH LEVEL ALARM SYSTEM TRANSMITTER TO TANK INSTALLATION DETAILS

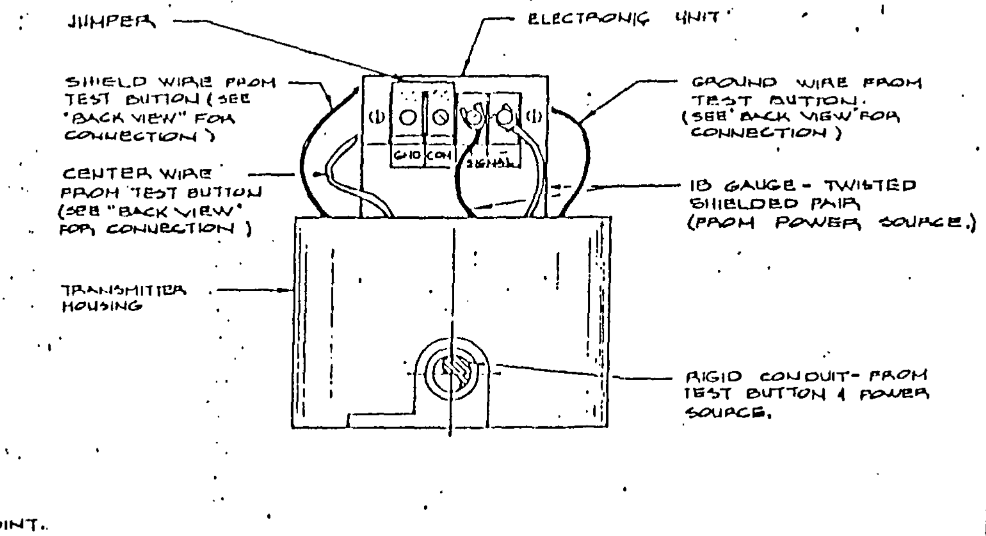
	REVISIONS	BY	
SCALE NONE			
DATE 6-22-88	1 ADDED CHART & MISC. INFO.	RD	7
DR. BY RD / CKD.	2 16" Ø WAS 18"; 24" WAS 18"	RD	
APPD.	3 ADDED SEAL-OFF	RD	

TITLE for: SERVICE CENTER BRANCH | NO. D1310



ELECTRONIC UNIT BACK VIEW

(SENSING ELEMENT CONNECTIONS)



ELECTRONIC UNIT FRONT VIEW

(SIGNAL WIRING)

TERMINATIONS OF COAXIAL CABLE

1. Cut cable to required length plus 3". Strip the ground tracer wire away from the coax to a length of about 1". Strip about 3/16" of insulation from the end of the wire. Crimp on 18-22 ga. spade terminal lug onto the ground wire. If possible, this wire should be color-coded green to match the color scheme for the ground connections.

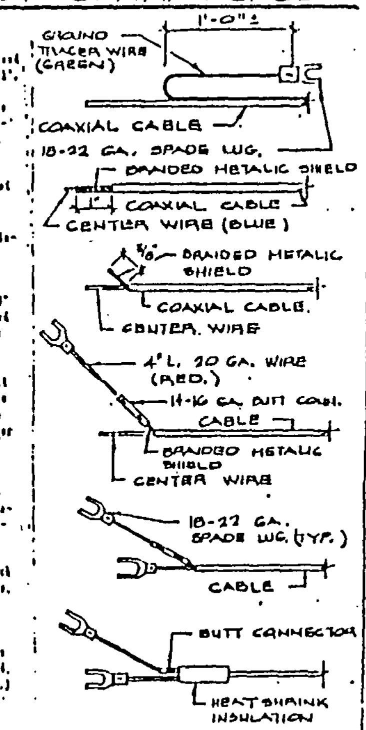
2. Trim outer insulation back 1", cutting down to but not including braided metallic shield.

3. Unravel the metallic braid from the center wire insulation. Twist the braid tightly together. Cut the twisted braid to a length of about 3/8".

4. Using a 14-16 ga. crimp-on butt connector, attach a 4" piece of 20 ga. stranded insulated wire to the twisted braid. In order to make a strong connection with the larger gauge of the butt connector, a 3/4" stripped length of the 20 ga. wire should be twisted and then folded back upon itself before insertion into the butt connector. Crimp on 18-22 ga. spade terminal lug onto the other end of the 4" wire. If possible, this wire should be color-coded red to match the color scheme for the coax-shield connections.

5. Trim about 1/4" of the inner plastic insulation to expose the center wire. Slip an 18-22 ga. spade terminal lug over the bare center wire so that the insulation of the spade lug bottoms out on the inner insulation and the tip of the wire shows at the lug end. Crimp the lug and trim any excess center wire. If possible, this wire should be color-coded blue to match the color scheme for the probe/center wire connections.

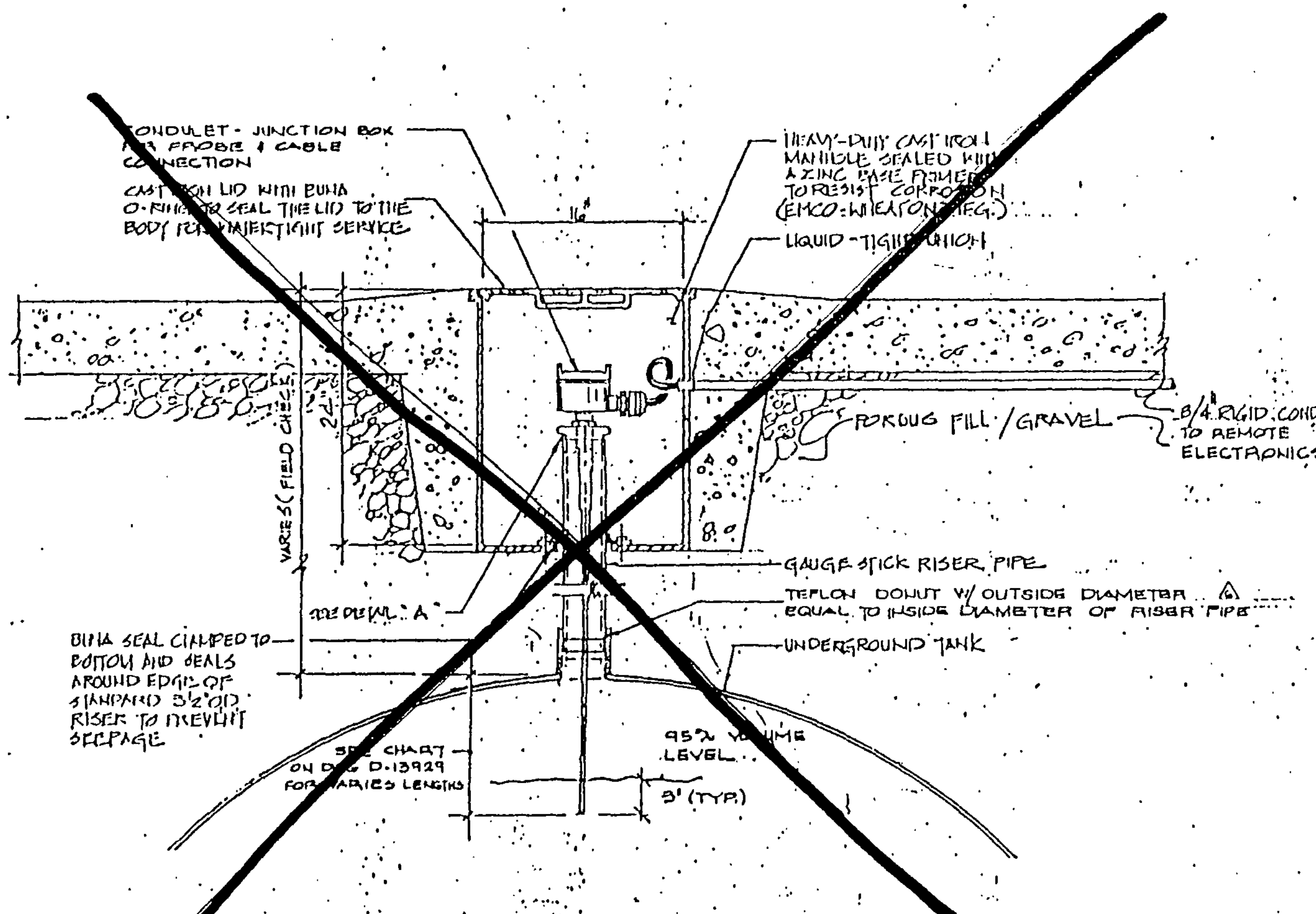
6. Slip 1" of 1/2" diameter heatshrink insulation over cable end so that all metallic braid is well covered. Heat the insulation until it shrinks and tightly grips the cable. (Any heat source of 200-250 degrees needed. A propane torch with a low level flame is recommended.)



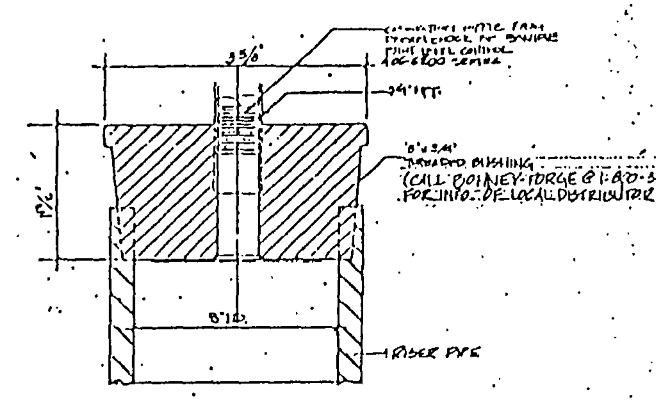
GENERAL NOTES

1. POWER REQUIREMENT 13 TO 24 VDC
2. OUTPUT 4 - 10 mA (ALARM STATE)
   15 - 25 mA (NORMAL STATE)
3. OPERATING TEMP. -40°F TO +140°F
4. SHIELD-TO-GROUND LOADING: 25 ohm MIN. RESISTANCE
5. RFI EFFECT: LESS THAN 2 pF SHIFT IN OPERATING POINT FOR UNIT IN EXPLOSION-PROOF HOUSING FROM 5 W FIELD @ 27, 150, OR 450 mH, AT A DISTANCE OF 3 FT. FROM EXPOSED CABLE OR SIGNAL WIRE.
6. FAIL-SAFE: SWITCHABLE OR EITHER LOW-LEVEL FAIL-SAFE (LLFS) OR HIGH-LEVEL FAIL SAFE (HLFS).
7. HOUSING: NEMA 12-WATERPROOF EXPLOSION PROOF FOR CLASS I GROUPS A, B, C, D, AND CLASS II GROUPS E, F, G DW, 1 OR 2.
8. SEE INDIVIDUAL SERVICE CENTER SITE PLANS FOR RELATIVE LOCATIONS OF THESE DETAILS.
9. CONTRACTOR TO SUPPLY & INSTALL CONDUIT SUPPORTS & .. BRACKETS AS REQUIRED.
10. THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO SAFETY-KLEEN CORP. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAWING IS EXPRESSLY PROHIBITED BY SAFETY-KLEEN
11. ALL ITEMS SHOWN WITH A SAFETY-KLEEN PART NUMBER WILL BE SUPPLIED BY SAFETY-KLEEN CORP. (e.g. SK-–––)
12. IF INDIVIDUAL SERVICE CENTER CONDITIONS ARE NOT COVERED BY DETAILS SHOWN HERE, PLEASE CONTACT TECHNICAL SERVICES AT THE CORPORATE OFFICE FOR ASSISTANCE.
13. ⚠4 CALCULATIONS FOR LENGTH OF PROBE INSIDE OF TANK ARE SET TO ACTIVATE THE ALARM AT THE 95% VOLUME LEVEL.
14. ⚠5 ALL CALIBRATION OF UNIT SHALL BE DONE IN ACCORDANCE WITH DREXELBROOK'S RECOMMENDATIONS. CALIBRATION SHALL BE DONE AFTER ALL COMPONENTS OF SYSTEM ARE IN PLACE.
15. ALL TANKS SHALL BE GROUNDED PRIOR TO INSTALLATION OF ALARM SYSTEM.

NOTE:
WORK THIS DWG. WITH SK DWGS D-13929 AND D-13102



UNDERGROUND TANK RISER PIPE INSTALLATION



DETAIL A

CALIBRATION OF ELECTRONICS

1. Verify that the liquid is not covering the probe. This can be done by checking the reading on the tank's tape gauge. If the tank is less than full, the probe will not be immersed in liquid.

2. The calibration should be performed with all electrical connections of the system already completed. Any change in these connections invalidates the calibration. Also, make sure that the wires are neatly dressed. This means that the slack in the wires should be pushed down in the condulet (without straining the wires). This protects the wires from damage when the cap of the condulet is screwed on. Also, if the wires are lying too high in the condulet, stray capacitance from the metal cap can alter the operating point of the electronics unit.

3. Using the plastic tuning wrench supplied with the electronics unit, turn the tuning capacitor to the fully counterclockwise position. Then slowly turn the tuning wrench clockwise until the green light illuminates. This is the operating point of the sensor.

4. Identify exactly the position of the operating point and then turn the tuning wrench clockwise exactly one-half additional turn (180 degrees). The green light should remain illuminated. Remove the tuning wrench. Carefully screw the cap on the condulet.

THIS DOCUMENT HAS BEEN PREPARED AND IS APPROVED BY MS.FOR INCLUSION IN BRANCH RENTAL PERMIT APPLICATION ONLY. IT IS NEITHER APPROVED NOR IS IT TO BE USED FOR EQUIPMENT OR MATERIAL PROCUREMENT, CONSTRUCTION, OR ANY OTHER PURPOSE.

FIGURE 6B

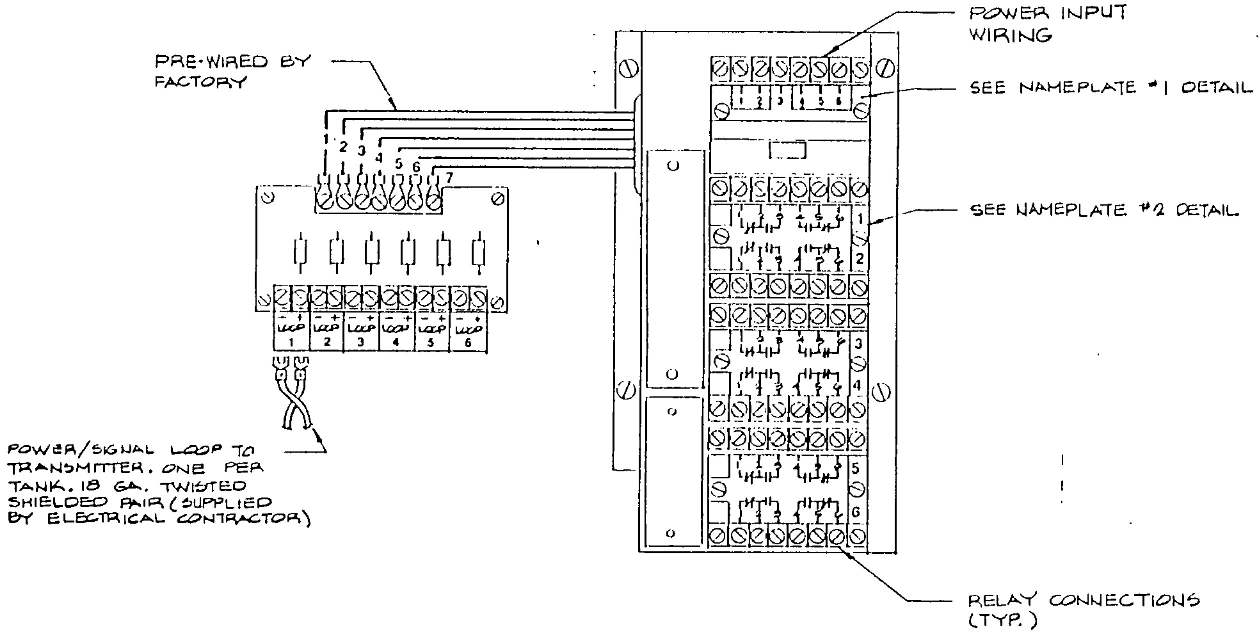
⚠7	ADDED WIRING DETAILS AND NOTES FOR CABLE TERMINATIONS.
⚠6	ADD NOTES AND MODIFY THE DWG. ON VERT. & HOR. TANK INSTALLATION.
⚠5	ADD "EXPLOSION PROOF SEAL OFF" NOTE.
⚠4	CHANGED PROBE DEPTH, NOTE 13

safety-kleen corp.

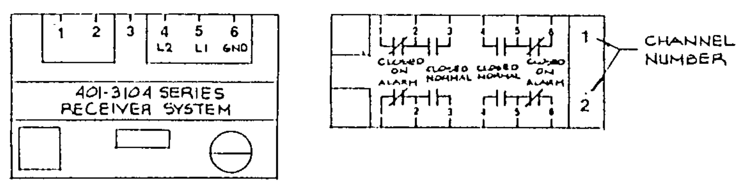
HIGH LEVEL ALARM, REMOTE TRANS TO TANK INSTALLATION DETAILS

NONE	
6-22-88	⚠1 ADDED CHART & MISC. INFO.
RD	⚠2 16" Ø WAS 18"; 24" WAS 18"
	⚠3 ADDED SEAL-OFF

for: SERVICE CENTER BRANCH — D-

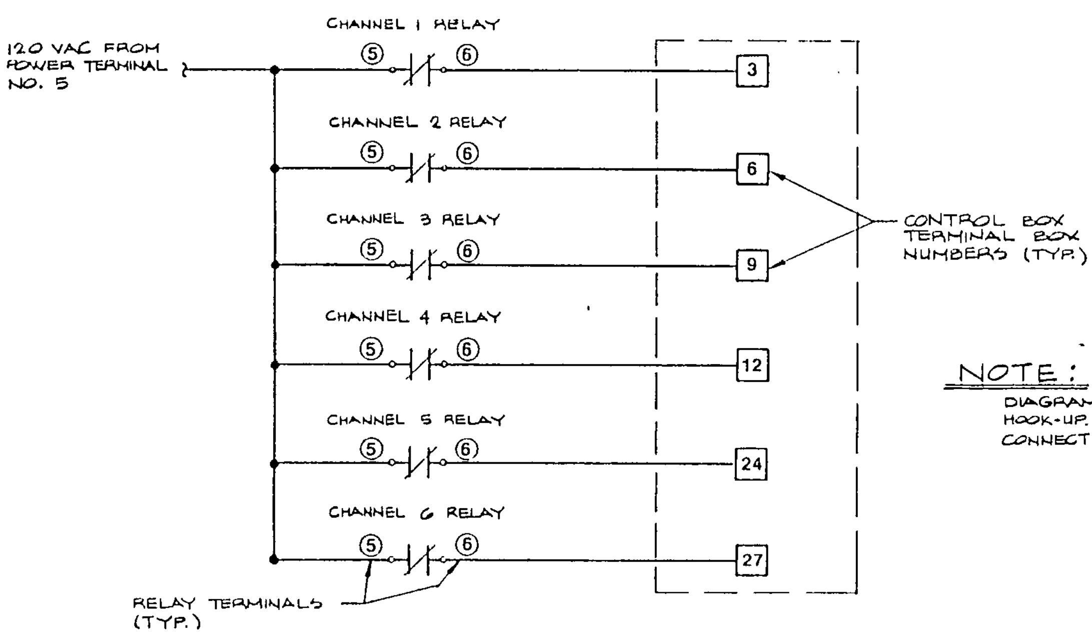


EXISTING TANK PROBE LENGTH		
TANK DIAMETER	DISTANCE FROM TOP OF TANK TO 95% VOL. LEVEL.	MINIMUM LENGTH OF PROBE INSIDE TANK
8' = 96"	9"	12"
10' - 120"	11"	14"
12' -, 144"	14"	17"



NAMEPLATE #1 DETAIL

NAMEPLATE #2 DETAIL (TYP.)



WIRING TO ALARM CONTROL BOX

NOTE:
DIAGRAM SHOWS 6 TANK HOOK-UP. ONLY MAKE CONNECTIONS FOR EXISTING TANKS.

FIGURE 6C

NO	DESCRIPTION	BY	CHK	APPR	DATE

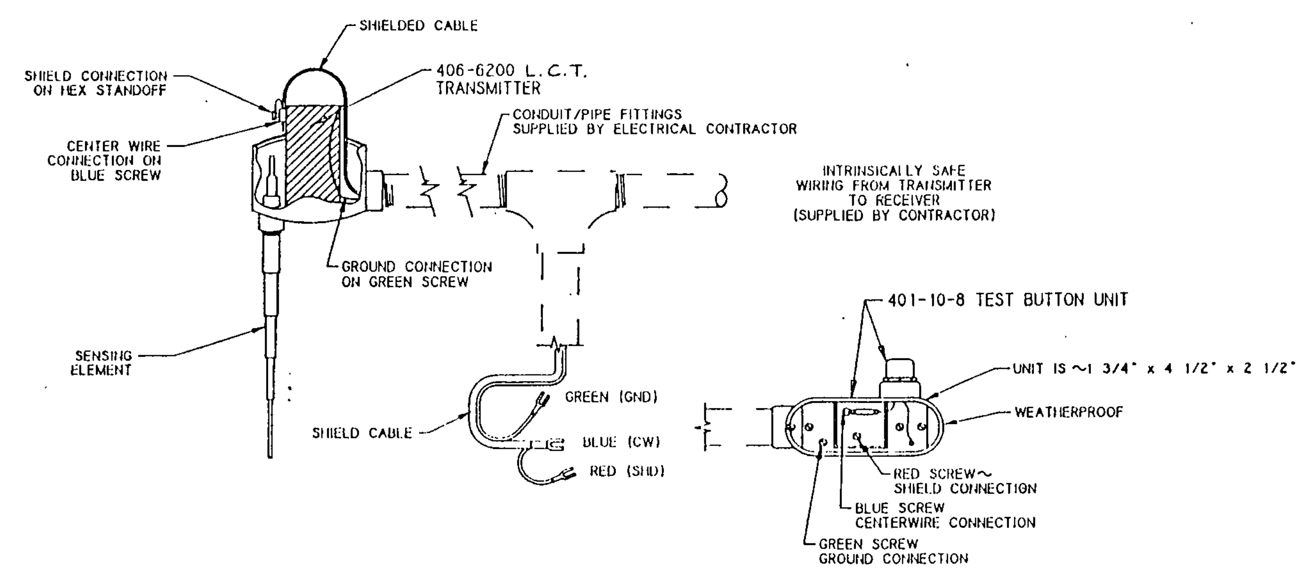
REVISIONS

TITLE: L.C.T. HIGH LEVEL ALARM RECIEVER SYSTEM DETAILS

SAFETY-KLEEN CORP.
777 BIG TIMBER ROAD • ELGIN, ILLINOIS 60123 • PHONE 708/697-8460

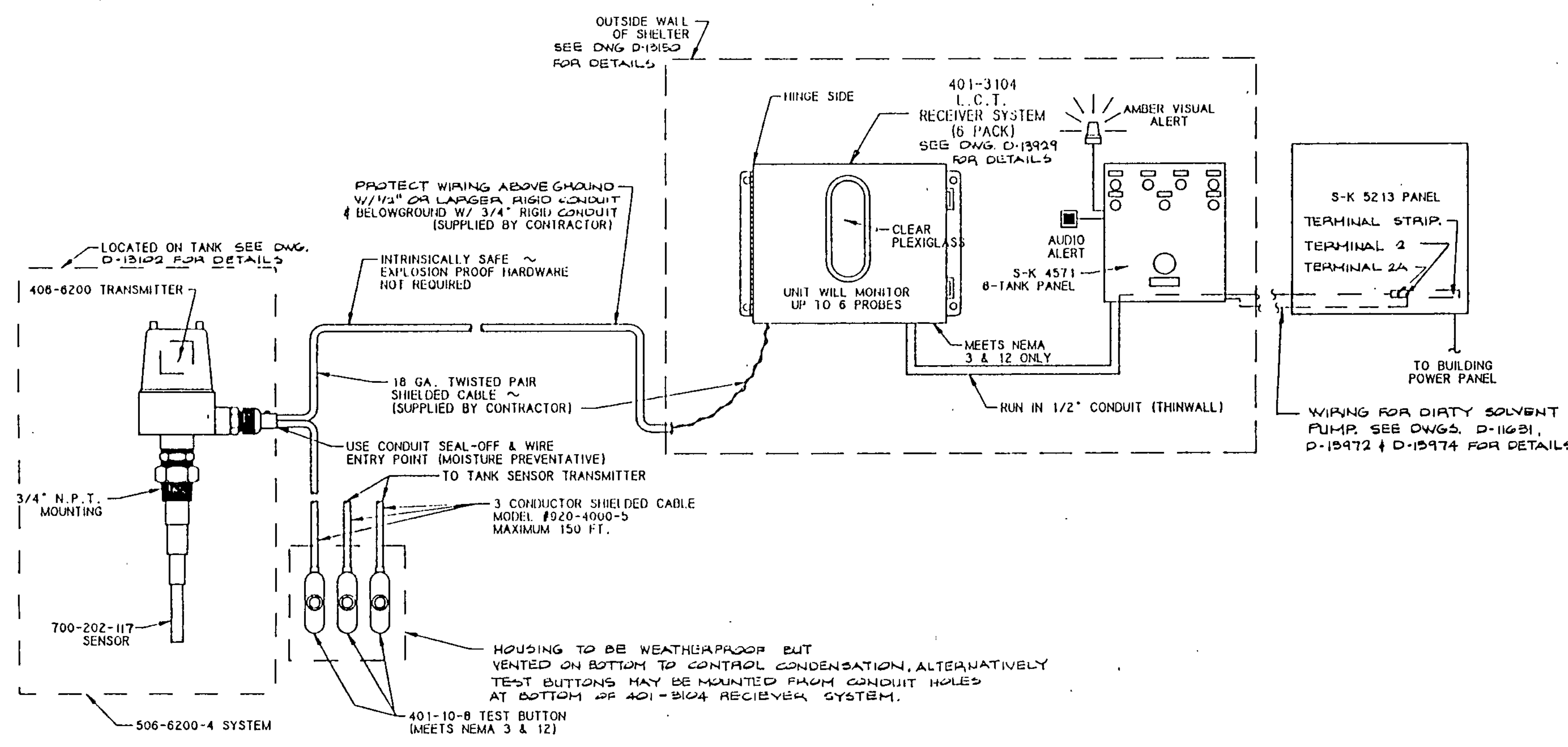
SCALE	DRAWN	CHECKED	ENGINEERING APPR	OPERATION APPR	DATE
NONE	DLS				1-10-8

DRAWING NO: D-13929



TEST BUTTON DIAGRAM

CUSTOMER CONNECTIONS



MEETS NEMA 1, 2, 3, 4, 5 & 12 AND CLASS I GROUPS A, B, C & D & CLASS II GROUPS E, F & G

WIRING DIAGRAM OVERVIEW

NO SCALE

GENERAL NOTES:

1. DRAWING IS INTENDED TO SHOW A TYPICAL INSTALLATION ONLY. SEE ACTUAL SITE PLA
2. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ACTUAL FIELD CONDITIONS.
3. ALL ITEMS SHOWN WITH A SAFETY-KLEEN PART NO. , THESE ITEMS WILL BE SUPPLIED BY S-K.
4. IF ANY FIELD MODIFICATIONS ARE REQUIRED, SAFETY-KLEEN BRANCH CONSTRUCTION GROUP IS TO BE NOTIFIED BEFORE PROCEEDING.
5. E.C. TO SUPPLY & INSTALL ALL RIGID CONDUIT, EMT & ANY NECESSARY LABOR & MATERIALS TO COMPLETE PROJECT.

FIGURE 6D

NO.	DESCRIPTION	BY	CHKD	APPR
E	ADDED VARIOUS NOTATIONS	DS		
D	REV'D. & REDRAWN ON COMP'TR.	NWD		
C	ADDED TEST BUTTON UNIT	MA		
B	ADDED SEALOFF FITTING	RD		
A	REVISED & REDRAWN	RD		

REVISIONS

TITLE

L.C.T. HIGH LEVEL ALARM ELECTRICAL DIAGRAM

SAFETY-KLEEN CORP.

777 BIG TIMBER ROAD, ELGIN, ILLINOIS 60120 PHONE 312/697-8460

PROJ. ENG. APPR.	OPERATIONS APPR.	SCALE	DRAWN	DATE
		NONE	RD	5/1

BRANCH

DRAWING NO. D13120

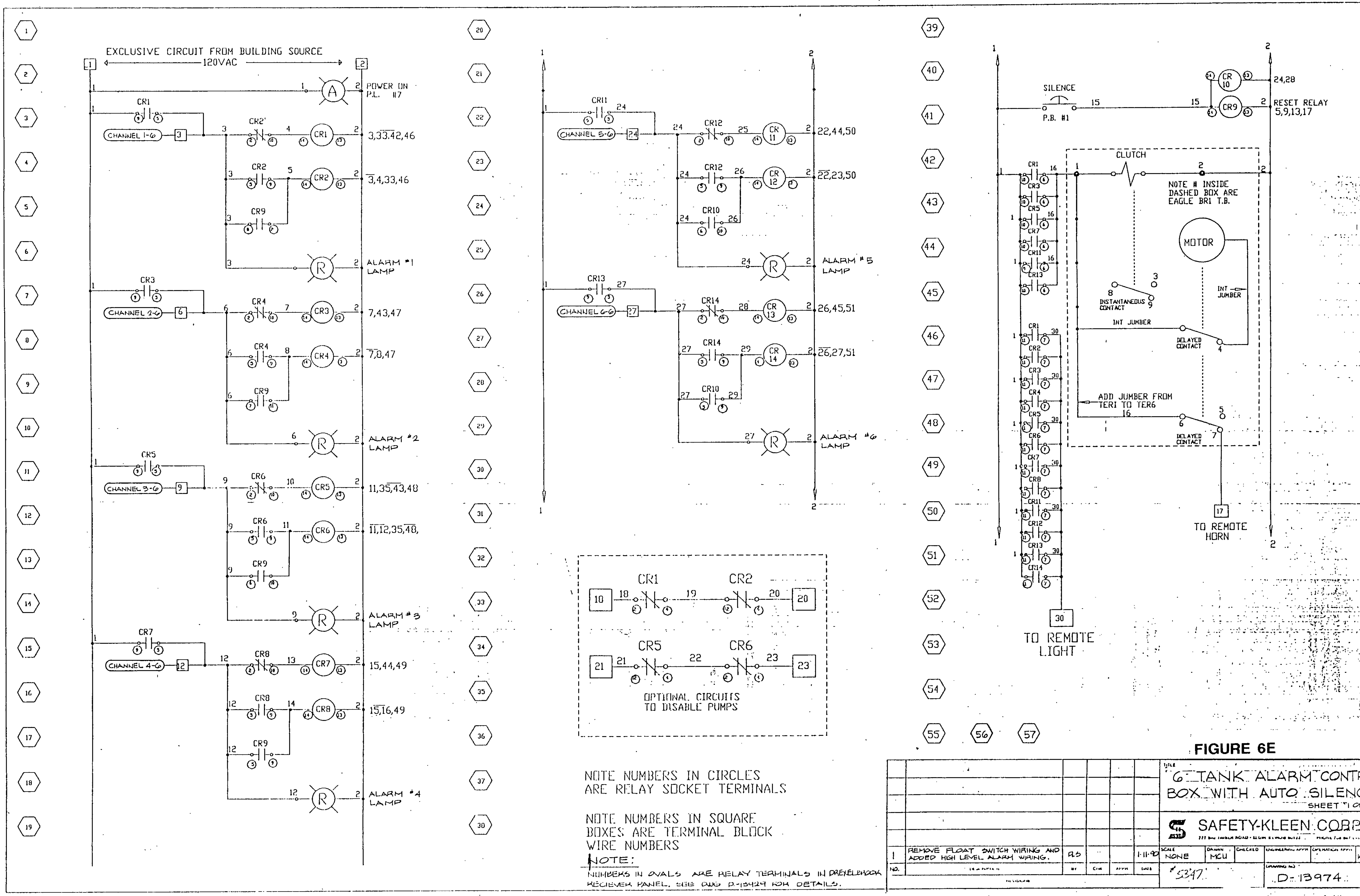
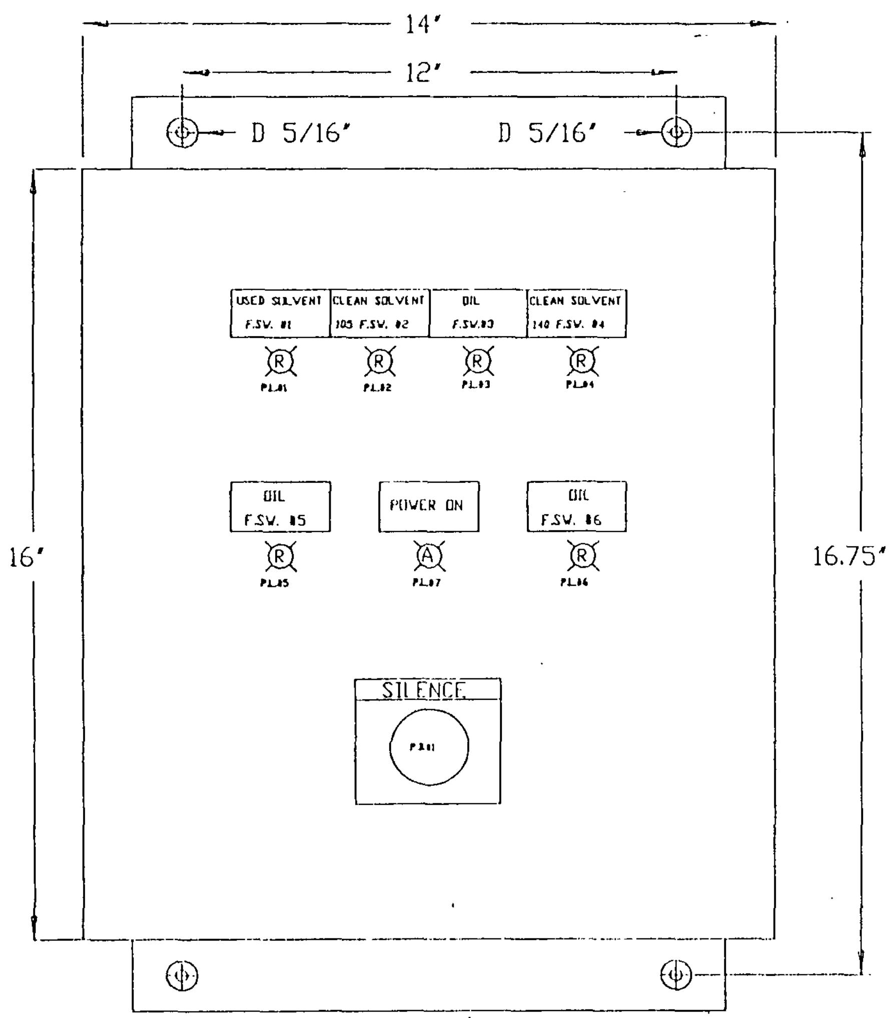
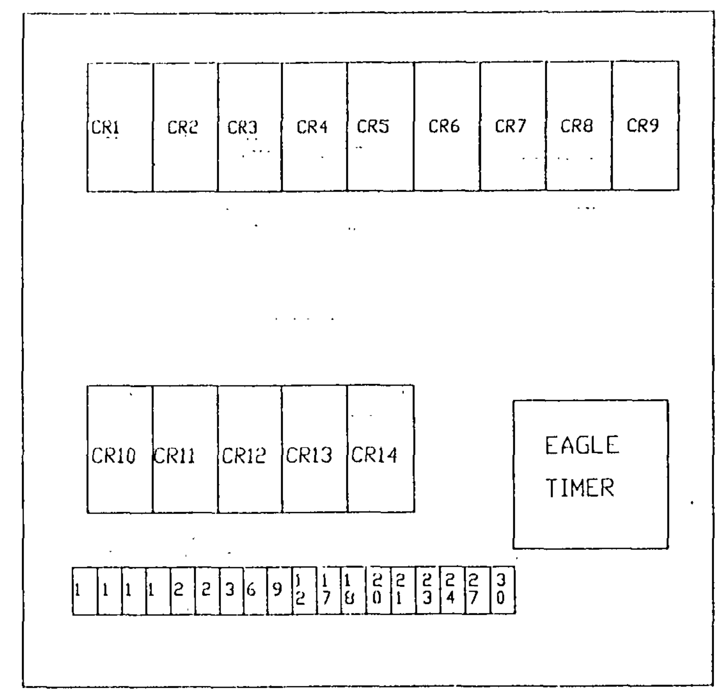

EXCLUSIVE CIRCUIT FROM BUILDING SOURCE
120VAC
POWER ON P.L. #7
CHANNEL 1-6
CHANNEL 2-6
CHANNEL 3-6
CHANNEL 4-6
CHANNEL 5-6
CHANNEL 6-6
ALARM #1 LAMP
ALARM #2 LAMP
ALARM #3 LAMP
ALARM #4 LAMP
ALARM #5 LAMP
ALARM #6 LAMP
3,33,42,46
3,4,33,46
7,43,47
7,8,47
11,35,43,48
11,12,35,48,
15,44,49
15,16,49
22,44,50
22,23,50
26,45,51
26,27,51
SILENCE
P.B. #1
24,28
RESET RELAY 5,9,13,17
CLUTCH
NOTE # INSIDE DASHED BOX ARE EAGLE BR1 T.B.
MOTOR
INSTANTANEOUS CONTACT
INT JUMBER
DELAYED CONTACT
ADD JUMBER FROM TER1 TO TER6
TO REMOTE HORN
TO REMOTE LIGHT
OPTIONAL CIRCUITS TO DISABLE PUMPS
NOTE NUMBERS IN CIRCLES ARE RELAY SOCKET TERMINALS
NOTE NUMBERS IN SQUARE BOXES ARE TERMINAL BLOCK WIRE NUMBERS
NOTE:
NUMBERS IN OVALS ARE RELAY TERMINALS IN DREXELBROOK RECIEVER PANEL. SEE DWG D-13424 FOR DETAILS.
6 TANK ALARM CONTRO
BOX WITH AUTO SILENCE
SAFETY-KLEEN CORP
REMOVE FLOAT SWITCH WIRING AND ADDED HIGH LEVEL ALARM WIRING.
NONE
MCU
5347
D-13974

FIGURE 6E

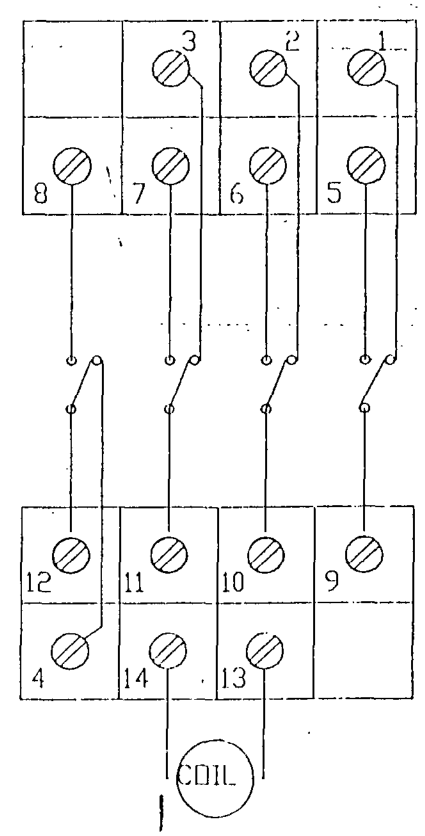


SUB PLATE
COMPONET LOCATION



PARTS LIST

QTY		
1	A1614CH	HOFFMAN ENCLOSER
1	A16P14	HOFFMAN SUB PLATE
1	800T-D6D1	A-B RED PUSHBUTTON
1	800T-X700	A-B NAME PLATE
1	BR1-7-A6-00	EAGLE TIMER 5MIN
14	MY4AC120	OMRON RELAY
14	PYF14A	OMRON RELAY BASE
1	PFP-50N	MOUNTING TRACK
7	30099	SYLVANIA LIGHT BASE
6	30120	SYLVANIA RED LENS
1	30126	SYLVANIA AMBER LENS
7	120 PSB	LIGHT BULBS
	1492-H1	TERMINAL BLOCKS A-B
	E-1x2WH6	PANDUIT WIRE WAY
	C-1WH6	PANDUIT COVER



OMRON RELAY
MY4AC120
TERMINAL
LAYOUT

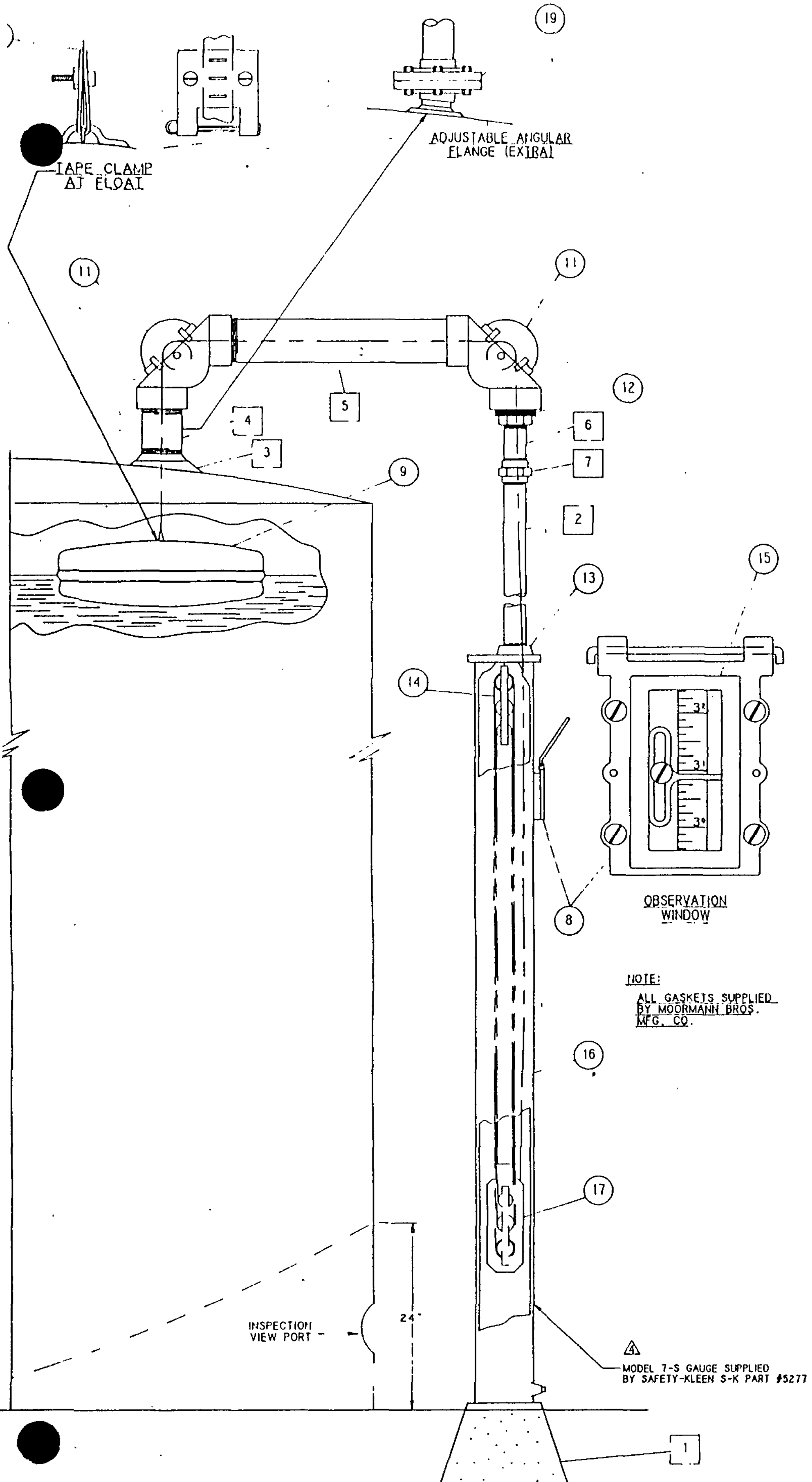
FIGURE 6F

NO.	REVISION	BY	CHK.	APPR.	DATE
1	CHANGED PART NO. FOR EAGLE 5 MIN. TIMER	DS			1-8-90

TITLE: 6 TANK ALARM CONTROL BOX WITH AUTO SILENCE
SHEET 2 OF 2

SAFETY-KLEEN CORP.

SCALE: NONE. DRAWN: MCU 10-10-89
5347
DRAWING NO. D-13975 REV. 1



MODEL 7-S VERTICAL BULK STORAGE TANK GAUGE

INSTALLATION INSTRUCTIONS - MODEL 7-S

1. LOCATE GAUGE POSITION ON GROUND - MARK TOP EDGE OF TANK DIRECTLY ABOVE GROUND LOCATION.
2. MEASURE, CUT AND THREAD 2" PIPE (AS MARKED ON PRINT).
3. USE PIPE DOPE ON ALL CONNECTIONS.
4. ASSEMBLE BOTH A-30 ELBOWS AND 2" PIPE AS SHOWN ON PRINT.
5. SCREW (1) ELBOW A-30 ONTO 2" PIPE WITH REDUCING BUSHING, CLOSE NIPPLE AND UNION AS SHOWN ON PRINT; OTHER A-30 ELBOW ONTO 2" NIPPLE IN TANK THEN SCREW OTHER END OF 2" PIPE INTO TANK ELBOW. MAKE STRAIGHT WITH TANK MARKING.
6. LEVEL 2" PIPE. USE TEMPORARY WOOD BRACE OR ALIGNMENT FLANGE, IF NECESSARY.
7. SET GAUGE HOUSING WITH ECCENTRIC CAP ASSEMBLED ON GROUND DIRECTLY BELOW OVERHANGING ELBOW.
8. MEASURE FOR 1" PIPE (REDUCING BUSHING IN ELBOW TO ECCENTRIC CAP V-71 ON GAUGE HOUSING) ALLOW FOR THREADS. CUT AND THREAD 1" PIPE.
9. SCREW 1" PIPE INTO ELBOW. THEN REMOVE V-71 ECCENTRIC CAP FROM HOUSING AND PUT ON 1" PIPE. CAUTION - BE SURE ECCENTRIC CAP IS STRAIGHT AND 1" OUTLET IS FARTHEST AWAY FROM TANK.
10. FASTEN PULLEY RACK WITH LARGE PULLEY UP TO ECCENTRIC CAP USING STAINLESS STEEL PINS.
11. ASSEMBLE OTHER PULLEY RACK IN COUNTERWEIGHTS WITH LARGE PULLEY DOWN.
12. PLACE COUNTERWEIGHT ON GROUND DIRECTLY BENEATH ECCENTRIC CAP PULLEY RACK.
13. REMOVE A-33 CAPS FROM BOTH ELBOWS.
14. THREAD TAPE FROM TANK ELBOW WITH NUMBERS UP AND CLIP ENDS FIRST THROUGH 2" PIPE AND OVER ELBOW PULLEYS DOWN THROUGH 1" PIPE AND OUT ECCENTRIC CAP. STRAIGHT DOWN AND AROUND BOTTOM PULLEY IN C/W AND UP AND OVER TOP PULLEY IN ECCENTRIC CAP. DOWN TO MEDIUM PULLEY UP AND OVER MEDIUM PULLEY. DOWN AND AROUND SMALL PULLEY ON C/W AND UP AND AROUND SMALL PULLEY ON ECCENTRIC CAP. DOWN AND FASTEN TO LUG ON COUNTERWEIGHT PULLEY RACK - USE STAINLESS STEEL PIN. CAUTION - DO NOT THREAD TAPE OVER OR UNDER CROSS BARS IN PULLEY RACK. USE CAUTION - DO NOT KINK OR BEND TAPE.
15. FASTEN TAPE TO FLOAT WITH TAPE CLAMP (AS PER PRINT) CAUTION - DO NOT FASTEN TAPE CLAMP TOO TIGHT AS THIS MAY DAMAGE TAPE.
16. PLACE ECCENTRIC CAP GASKET ON HOUSING TOP AND INSERT COUNTERWEIGHT ASSEMBLY INTO HOUSING. CAUTION - DO NOT ALLOW C/W TO DROP OR JERK AS THIS MAY CAUSE DAMAGE TO BEARINGS. ALSO BE SURE THE TAPE IS IN GROOVE OF PULLEYS AND NOT ON THE EDGE.
17. FASTEN HOUSING TO ECCENTRIC CAP WITH OBSERVATION WINDOW DIRECTLY BELOW 1" PIPE.
18. PLACE OUTSIDE STRAND OF TAPE OVER TAPE GUIDE IN OBSERVATION WINDOW. CAUTION - DO NOT BEND OR KINK TAPE. AND PUT ONLY ONE(1) STRAND OF TAPE OVER THE TAPE GUIDE.
19. FIX BASE FOR HOUSING EITHER, CONCRETE, WOOD POST, OR STEEL PLATE WELDED TO TANK. - CAUTION - DO NOT WELD GAUGE HOUSING TO TANK.
20. PERFORM CALIBRATION AS DESCRIBED IN "CALIBRATION DETAILS - EMPTY TANK" (THIS DRAWING). IN PERFORMING THIS CALIBRATION, 1/2", 1/4" OR EVEN 1/8" IS NOT CLOSE ENOUGH. BE PARTICULAR; SET THE GAUGE AS CLOSE AS POSSIBLE TO THE CORRECT READING (1 3/8" FOR EMPTY TANK, TRUE FLUID LEVEL FOR NON EMPTY TANK).
21. CAUTION - LET FLOAT DOWN IN TANK EASILY. DO NOT LET IT DROP.
22. ASSEMBLE OBSERVATION FRAME AND LID A-34 & 38 PLACE ON HOUSING. TIGHTEN FOR VAPOR-PROOFING.
23. IN MOST CLIMATES, CONDENSATION FORMS INSIDE TANK AND GAUGE. A DRAIN PLUG HAS BEEN PROVIDED FOR DRAINING AT THE BOTTOM OF HOUSING. IN MOST CLIMATES THIS IS NECESSARY 2 TIMES A YEAR (SPRING & FALL). HOWEVER, IN EXTREME CASES DRAINING IS REQUIRED MORE OFTEN.

CALIBRATION DETAILS - EMPTY TANK

1. BEFORE CALIBRATION, COMPLETE INSTALLATION THROUGH STEP 19 OF INSTALLATION INSTRUCTIONS (THIS DRAWING).
2. IN ALL SUCCEEDING STEPS, BE CAREFUL NOT TO TWIST OR KINK THE TAPE.
3. THROUGH OPEN MANWAY AT THE TOP OF THE TANK, LOWER FLOAT SLOWLY AND LET IT COME TO REST GENTLY AT THE BOTTOM OF THE TANK, DIRECTLY BENEATH THE TANK ROOF FLANGE. BECAUSE THE TANK BOTTOM IS CONCAVE, THE FLOAT MAY TEND TO SIDESLIP TO THE CENTER OF THE TANK BOTTOM, THUS INTRODUCING ERROR INTO THE CALCULATION. GENTLY LOWERING THE FLOAT MINIMIZES THIS SLIPPAGE AND THE RESULTING ERROR.
4. DETERMINE THE REQUIRED TAPE ADJUSTMENT AS FOLLOWS: WITH THE FLOAT AT THE TANK BOTTOM DIRECTLY BENEATH THE ROOF FLANGE, RECORD THE TAPE READING AT THE OBSERVATION WINDOW. AN EMPTY TANK SHOULD READ 1 3/8" (THE FLOAT DRAFT). THE REQUIRED TAPE ADJUSTMENT CAN BE COMPUTED AS THE ACTUAL READING MINUS 1 3/8".
5. MARK THE TAPE AT THE POSITION AT WHICH IT IS FASTENED TO THE FLOAT UNCLAMP THE TAPE FROM THE FLOAT. MEASURE OFF THE REQUIRED ADJUSTMENT USING A TAPE MEASURE AND MARK THE NEW POSITION. CUT THE TAPE TO SIZE, LEAVING ABOUT 2' EXCESS SLACK. THIS SLACK IS NECESSARY BECAUSE CUTTING OFF TOO MUCH TAPE WILL RENDER THE TAPE UNUSABLE. REFASTEN THE TAPE TO THE FLOAT AT THE NEWLY MARKED POSITION. DO NOT FASTEN THE TAPE CLAMP TOO TIGHTLY, AS THIS MAY DAMAGE THE TAPE.
6. REPEAT STEPS 3 & 4 TO CHECK THE CALIBRATION. IF THE ERROR IS LESS THAN 1", THE REMAINING ADJUSTMENT MAY BE MADE USING THE FINGER IN THE OBSERVATION WINDOW. FOR MAJOR ADJUSTMENTS (OVER 1"), REPEAT STEP 5.
7. WHEN CALIBRATION IS COMPLETE, CUT THE EXCESS TAPE AT FLOAT, LEAVING 6" FOR MINOR ADJUSTMENTS. LOWER THE FLOAT GENTLY TO THE TANK BOTTOM.

CALIBRATION DETAILS - NON-EMPTY TANK

1. DETERMINE THE REQUIRED TAPE ADJUSTMENT AS FOLLOWS:

   A) USE A MEASURING STICK OR WEIGHTED LINE TO MEASURE THE TRUE FLUID LEVEL IN THE TANK. BECAUSE THE CONCAVE BOTTOM OF THE TANK RESULTS IN VARYING DEPTHS, THIS MEASUREMENT SHOULD BE PERFORMED AS CLOSE AS POSSIBLE TO THE ACTUAL POSITION OF THE FLOAT IN THE TANK.

   B) RECORD THE TAPE READING AT THE OBSERVATION WINDOW.

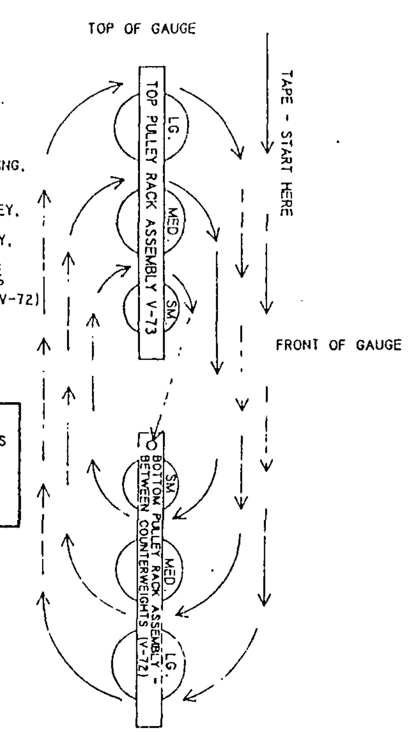
   C) THE REQUIRED TAPE ADJUSTMENT CAN BE COMPUTED AS THE TAPE READING MINUS THE TRUE FLUID LEVEL.

2. *TO GAIN ACCESS TO THE FLOAT AND TAPE IN THE TANK, OPEN THE MANWAY AT THE TOP* OF THE TANK. ALSO REMOVE THE A-33 CAP FROM A-30 ELBOW ASSEMBLY. IN ALL SUCCEEDING STEPS. BE CAREFUL NOT TO TWIST OR KINK THE TAPE.
3. GRASPING THE TAPE THROUGH THE OPEN MANWAY, CAREFULLY RAISE THE FLOAT OUT OF THE TANK. MARK THE TAPE AT THE POSITION AT WHICH IT IS FASTENED TO THE FLOAT. UNCLAMP THE TAPE FROM THE FLOAT. MEASURE OFF THE REQURIED ADJUSTMENT USING A TAPE MEASURE AND MARK THE NEW POSITION. CUT THE TAPE TO SIZE, LEAVING ABOUT 2' EXCESS SLACK. THIS SLACK IS NECESSARY BECAUSE CUTTING OFF TOO MUCH TAPE WILL RENDER THE TAPE UNUSABLE. REFASTEN THE TAPE TO THE FLOAT AT THE NEWLY MARKED POSITION. DO NOT FASTEN THE TAPE CLAMP TOO TIGHTLY, AS THIS MAY DAMAGE THE TAPE. CAREFULLY LOWER THE FLOAT INTO THE TANK.
4. *REPEAT STEP 1 TO CHECK THE CALIBRATION. IF THE ERROR IS LESS THAN 1" THE REMAINING* ADJUSTMENT MAY BE MADE USING THE FINGER IN THE OBSERVATION WINDOW. FOR MAJOR ADJUSTMENTS (OVER 1"). REPEAT STEP 3.
5. WHEN CALIBRATION IS COMPLETE, CUT THE EXCESS TAPE AT THE FLOAT, LEAVING 6" FOR MINOR ADJUSTMENTS LOWER THE FLOAT GENTLY INTO THE TANK. REPLACE THE A-33 CAP ON THE A-30 ELBOW ASSEMBLY. CLOSE THE MANWAY.

START TAPE, CLIP END FIRST, WITH NUMBERS ON TAPE FACING TOWARD FRONT OF GAUGE HOUSING, AROUND LARGE BOTTOM PULLEY, UP TO LARGE TOP PULLEY, DOWN TO MEDIUM BOTTOM PULLEY, UP TO MEDIUM TOP PULLEY, DOWN TO SMALL BOTTOM PULLEY, UP TO SMALL TOP PULLEY, AND THEN SECURE CLIP END OF TAPE WITH A COTTER PIN TO THE TOP OF THE BOTTOM PULLEY RACK (V-72) ASSEMBLY.

SEE NOTE 14 ABOVE.

NOTE:
FOR GENERAL INFORMATION, THERE IS
5'-8" OF STARTER TAPE
43'-0" NUMBERED TAPE
42'-2" LEADER TAPE
91'-0" APPROX. OVERALL



ENLARGED DETAIL SHOWING HOW TAPE IS WOUND ON PULLEY RACK ASSEMBLIES OF MOORMANN MODEL #7-S. CUT OFF EXCESS TAPE AT FLOAT.

BJ4
JS 2/15/89

MATERIAL LIST
MODEL 7-S

FOR ALL VERTICAL TANKS UP TO & INCLUDING 35'.

MATERIAL SUPPLIED BY CONTRACTOR

1. GAUGE HOUSING BASE SUPPORT.
2. 1" GALVANIZED PIPE (CUT TO LENGTH).
3. TANK ROOF FLANGE.
4. 2" TANK OPENING PIPE.
5. 2" GALVANIZED PIPE (CUT TO LENGTH).
6. 1" GALVANIZED NIPPLE (ANY LENGTH).
7. 1" GALVANIZED UNION.

MATERIAL SUPPLIED BY MOORMANN BROS. (SAFTY-KLEEN)

PART NAME	PART NO.	QUANTITY PER UNIT
8. OBSERVATION WINDOW ASSEMBLY	A-34-A-38	1
9. FLOAT	V-75	1
10. STAINLESS STEEL TAPE CLAMP & SCREWS	V-93	1
11. ELBOW ASSEMBLY COMPLETE	A-30, A-33	2
12. *2" TO 1" REDUCING BUSHING*		1
13. ECCENTRIC CAP COMPLETE WITH NUTS & BOLTS	V-71	1
14. PULLEY RACK ASSEMBLY	V-73	2
15. LUFKIN STAINLESS STEEL HIGH VISIBILITY TAPE	V-49	1
16. RUST-PROOFED STEEL GAUGE HOUSING	V-77	1
17. COUNTERWEIGHT	V-72	2
18. CONDENSATION DRAIN PLUG		1
FRAME & LID ASSEMBLY FOR OBSERVATION WINDOW	A-34, A-38	1
GASKETS - SET FOR OBSERVATION WINDOW	V-81, V-82	1
GASKET - ELBOW CAP	V-83	2
GASKET - V-71 ECCENTRIC CAP	V-84	1
GLASS - WINDOW	V-86	1
STAINLESS STEEL INDICATOR FINGER FOR OBSERVATION WINDOW	V-94	1
WIRE PIN - STAINLESS STEEL	V-96	5

GENERAL NOTES

1. TANK GAUGE ASSEMBLY SUPPLIED BY SAFETY-KLEEN CORP.
2. SEE INDIVIDUAL SERVICE CENTER SITE PLANS FOR LOCATION OF THE INSTALLATION.
3. GAUGE MUST BE ORDERED WITH THE PERFORATED TAPE FOR FUTURE REMOTE READ-OUT SYSTEM.
4. ALL EXPOSED NON-PROTECTED STEEL IS TO BE PAINTED PER SAFETY-KLEEN SPECIFICATIONS.
5. IF REQUIRED, ADDITIONAL VERBAL INSTALLATION INSTRUCTIONS CAN BE OBTAINED BY CALLING MOORMANN BROS. MFG. CO., RUSHVILLE, INDIANA - (317) 932-3590 - ASK FOR: BOB GAINES OR JIM RAVENCRAFT

FIGURE 7

	DESCRIPTION	BY	CHKD	APPR	DATE
8	ASSIGN NEW #, OLD # 9006	JHD			7-5-…
7	DRG. # WAS A10243	RD			2/8/…
6	REV'D NOTES 19-23 AND ADDITIONAL CALIBRATION INFORMATION	RD			1/12…
5	RMV'D. HI-LEV. ALARM INFO.	RD			7/5…
4	ADDED SAFETY-KLEEN PART #5	RD			2/15…
3	ADDED ADDITIONAL HIGH LEVEL ALARM INFO	RD			10/6…
2	ADDED TAPE WINDING INFO.	WLJ			6/21…
1	ADDED NOTE 5	WLJ			2/13…

REVISIONS

TITLE
MOORMANN BROS. TANK GAUGE INSTALLATION (DISHED BOTTOM TANKS ONLY)

SAFETY-KLEEN CORP.
777 BIG TIMBER ROAD; ELGIN, ILLINOIS 60120 PHONE 312/697-8460

PROJ. ENG. APPR.	OPERATIONS APPR.	SCALE	DRAWN	DATE
		NONE	WLJ	10/7/…

BRANCH	DRAWING NO.	REV.
FOR SERVICE CENTER BRANCH	STD-2015	0…

Appendix G

Containment Calculations for Tank Containment Area

ERM-South, Inc.
Environmental Resources Management

Project [illegible]	W.O. No. 13112.21	Sheet 1 of 2	
Subject Available Storage Capacity	By DS	Date 7-16-92	
	Chkd by VH	Date 7/16/92	

<u>TANK FARM (Figure II. 3.7-1)</u>:

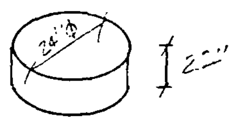
$$\text{Total Vol} = \text{Vol}_{\text{INIT.}} + \text{Vol}_{\text{SUMP}} - \text{Vol}_{\text{TANK}} - \text{Vol}_{\text{PAD}} - \text{Vol}_{\text{RAINFALL}}$$

1. [illegible]:

$$V_c = (58' - 16'')(40' - 16'')\left(\frac{36 + 38}{2}''\right)$$
$$= (56.67')(38.67')(3.08')$$
$$= 6749.60\ ft^3\,(7.48\ gal/ft^3)$$
$$= 50,487.0\ gal$$

2. <u>Sump</u> (qty = 1):

$$V_s = \left(\pi\ \frac{d^2}{4}\right)(h)$$
$$= \pi\ \frac{(2)^2}{4}\left(\frac{22''}{12}\right) = 5.76\ ft^3$$
$$= 5.76\ ft^3\,(7.48\ gal/ft^3)$$
$$= 43.1\ gal$$

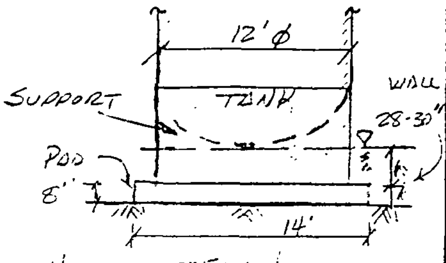


Circular Sump

ERM-South, Inc.
Environmental Resources Management

Project SK - Medley	W.O. No. 13112.21	Sheet 2	of 2
Subject Available Storage Capacity TANK FARM	By DS	Date 7-16-92	
	Chkd by VH	Date 7/16/92	

3. Tank (Qty = 6, w/ 1 ruptured & 5 intact)



Vertical Tank & Support

(a) $V_T = 5\left(\pi \frac{(12)^2}{4}\right)\left(\frac{28+30''}{2(12)}\right)$

$= 1366.59\ ft^3 (7.48\ gal/ft^3)$

$= 10,222.1$ gal

(b) $V_P = 6(14)(14)(8/12)$

$= 784\ ft^3 (7.48\ gal/ft^3) = 5864.3$ gal

4. Rainfall

Based on 25 yr - 24 hr rainfall = 10 inches

V_R = (Containment Area) (Rainfall)

$= (56.67' \times 38.67')(10/12)$

$= 1826.2\ ft^3 (7.48\ gal/ft^3) = 13,659.9$ gal

Total Available Storage Vol. $= V_C + V_S - V_T - V_P - V_R$

Vol = (50,487.0 + 43.1 − 10,222.1 − 5864.3 − 13,659.9) gal

Vol = 20,783.8 gal

∴ Total Available Storage volume (20,783.8 gal) exceeds single tank volume (20,000 gal).

Appendix H

Subpart BB Information

Safety-Kleen Corp.

MEMORANDUM

SUBJECT: RCRA Air Emission Standards
Immediate Action Required

DATE: December 17, 1990

TO: Branch Managers

FROM: Ellen Jurczak

cc: Reg. Engrs.
Rick Peoples
Anita Pendry
Jennifer Jendras
Melissa Hlebasko
Reg. Mgrs.
Div. V.P.'s
Bill Heyn
Dan Dowling

On December 21, 1990, new EPA rules take effect which regulate air emissions from equipment (such as pumps and valves) used to manage hazardous wastes. Included are requirements for equipment marking and identification, inspection, recordkeeping and specific repair procedures.

Enclosed are some new inspection forms which you must complete to comply with these rules. An explanation of the forms follows:

1. Equipment Inventory Form

This form must be completed and kept in file 1070 (with a copy sent to EHS, Elgin). SITE PLANS SHOWING THE I.D. NUMBER AND LOCATION OF ALL EQUIPMENT WILL BE SENT TO YOU BY TECH SERVICES. Each valve and pump which is associated with the hazardous waste tank(s) (i.e. from the dumpster/barrel washer to the tank and from the tank to the fill pipes) must be marked and listed on this form. The site plan shows the location and newly assigned (by Tech Services) I.D. numbers of all the equipment. You should verify this information to make sure it is correct and use the same I.D. numbers when completing the inventory forms. Tags are used to mark the equipment with its I.D. number. In the column headed Hazardous Waste Management Unit, enter "storage tank". If there are two tanks at the branch, (e.g. waste mineral spirits and waste antifreeze) differentiate between the two for equipment which is only associated with one tank. In the columns headed Pump Description or Valve Type, enter a descriptive term such as spent solvent pump, dumpster shutoff valve, gate valve or check valve.

2. Revised Facility Inspection Record

An additional page has been added to the facility inspection record (file 1210) for the daily inspection of equipment. You should begin using it on December 21, 1990. If a potential leak is discovered (by visual evidence or excessive odor) note it as "N" on the form and follow procedures in #3 below.

3. Leak Detection and Repair Record

After detection of a potential or actual leak, a pump or valve must be monitored with a photoionizer-type instrument within five days. If the instrument reading is 10,000 ppm or greater, a leak is confirmed and a repair must be made within 15 days. Contact your Regional Environmental Engineer immediately to arrange for the equipment to be monitored by a local environmental consultant.

The third form must only be completed for each potential or actual leak detected. The piece of equipment must be tagged with the I.D. number, date of potential or actual leak detection and date of leak confirmation. Tags may be obtained from Tech. Services. After a valve has been repaired, it must be monitored monthly by a consultant using a photoionization detector. After two successive months with no leak detection, the identification may be removed and monitoring discontinued. For other equipment, such as pumps, the tag may be removed after a successful repair. This form must be kept in a new file (1220.2 - Leak Detection and Repair Record).

EQUIPMENT INVENTORY

TO BE FILLED OUT AT THE BRANCH AND KEPT IN THE OPERATING RECORD (FILE 1070) WITH THE SITE PLAN AND PUMP AND VALVE LIST

Listed on the attached pump list and valve list is all equipment at the facility which is subject to the requirements of 40 CFR 264 and 265, Subpart BB. The equipment is also identified on the attached site plan.

The hazardous waste influent to and effluent from the hazardous waste management unit(s) is spent mineral spirits (D001, D004-D011, D018, D019, D021-D030 and D032-D043). Tanks are used for storage of spent mineral spirits which is usually 100% by weight organic. The vapor pressure of mineral spirits at 68^{o} F is 0.27 kPa (equivalent to 2 mm Hg - see MSDS and the attached EPA guidance document page). The waste stream has a vapor pressure equal or lower than that of the clean mineral spirits due to contamination during use with oil, grease and sediment and it is in a liquid state at the equipment, so all equipment is in contact with materials defined as heavy liquid under the cited regulations.

Equipment associated with the waste antifreeze tank(s) is also in heavy liquid service. Ethylene glycol has a vapor pressure at 68^{oF} of .08 mm Hg or 0.01 kPa and is usually 100% organic.

Compliance with the standard (264.1058) will be achieved through daily facility inspections, and if required, leak detection monitoring and repair. The facility inspection record has been updated to include a detailed daily equipment inspection. Records of equipment monitoring and repair are maintained on a separate form in the operating record.

LEAK DETECTION AND REPAIR RECORD

EQUIPMENT I.D.# ____________________ BRANCH #____________________
DESCRIPTION ____________________

	DATE	INSPECTOR'S SIGNATURE
HOW WAS POTENTIAL OR ACTUAL LEAK DETECTED? ____________	________	____________
DESCRIBE THE POTENTIAL OR ACTUAL LEAK: ____________ ____________		
INSTRUMENT MONITORING WITHIN FIVE DAYS	________	____________
(1.) RESULTS ____________		
REPAIR ATTEMPT METHOD ____________	________	____________
(2.) RESULTS ____________		
REPAIR ATTEMPT METHOD ____________	________	____________
(3.) RESULTS ____________		
DATE OF SUCCESSFUL REPAIR (must be completed w/in 15 days)	________	____________
METHOD ____________		
(4.) RESULTS ____________		

FOLLOWUP MONTHLY MONITORING FOR VALVES

	DATE	INSPECTOR'S SIGNATURE
(5.) RESULTS ____________	________	____________
(6.) RESULTS ____________	________	____________

MONITORING SUMMARY

(REFERENCE NUMBER - SEE ABOVE)

	(1)	(2)	(3)	(4)	(5)	(6)
INSTRUMENT #/OPERATOR	___	___	___	___	___	___
CALIBRATION	___	___	___	___	___	___
BACKGROUND READING	___	___	___	___	___	___
READING AT EQUIPMENT	___	___	___	___	___	___
LEAK DETECTED?	___	___	___	___	___	___

ATTACH ANY DOCUMENTATION PREPARED BY THE CONSULTANT

INSPECTION LOG SHEET FOR: Daily Inspection List of EQUIPMENT

INSPECTOR'S NAME/TITLE: ______________________

INSPECTOR'S SIGNATURE: ______________________

	MON	TUES	WED	THURS	FRI
DATE: (M/D/Y)	____	____	____	____	____
TIME:	____	____	____	____	____

Pump or Valve Number

	MON	TUES	WED	THURS	FRI
1	A* N	A N	A N	A N	A N
2	A N	A N	A N	A N	A N
3	A N	A N	A N	A N	A N
4	A N	A N	A N	A N	A N
5	A N	A N	A N	A N	A N
6	A N	A N	A N	A N	A N
7	A N	A N	A N	A N	A N
8	A N	A N	A N	A N	A N
9	A N	A N	A N	A N	A N
10	A N	A N	A N	A N	A N
11	A N	A N	A N	A N	A N
12	A N	A N	A N	A N	A N
13	A N	A N	A N	A N	A N
14	A N	A N	A N	A N	A N
15	A N	A N	A N	A N	A N
16	A N	A N	A N	A N	A N
17	A N	A N	A N	A N	A N
18	A N	A N	A N	A N	A N
19	A N	A N	A N	A N	A N
20	A N	A N	A N	A N	A N
21	A N	A N	A N	A N	A N
22	A N	A N	A N	A N	A N
23	A N	A N	A N	A N	A N
24	A N	A N	A N	A N	A N
25	A N	A N	A N	A N	A N
26	A N	A N	A N	A N	A N
27	A N	A N	A N	A N	A N
28	A N	A N	A N	A N	A N
29	A N	A N	A N	A N	A N
30	A N	A N	A N	A N	A N
31	A N	A N	A N	A N	A N
32	A N	A N	A N	A N	A N
33	A N	A N	A N	A N	A N
34	A N	A N	A N	A N	A N
35	A N	A N	A N	A N	A N
36	A N	A N	A N	A N	A N
37	A N	A N	A N	A N	A N
38	A N	A N	A N	A N	A N
39	A N	A N	A N	A N	A N

If "N", enter pump or valve # _____ and circle appropriate problem: potential leak, actual leak, sticking, wear, does not operate smoothly, other:

______________________________ .

For all leaks and potential leaks, the Leak Detection and Repair Record <u>must</u> be completed.

* A = ACCEPTABLE
N = NOT ACCEPTABLE

Draw a line through valve and pump I.D. numbers which do not apply.

PAGE

FLANGE LIST

DATE ____________
BRANCH # ____________
PREPARER'S SIGNATURE ____________

	SIZE	INDIVIDUAL NUMBER	TYPE	HAZARDOUS WASTE MANAGEMENT UNIT	LOCATION
					Refer to site plan