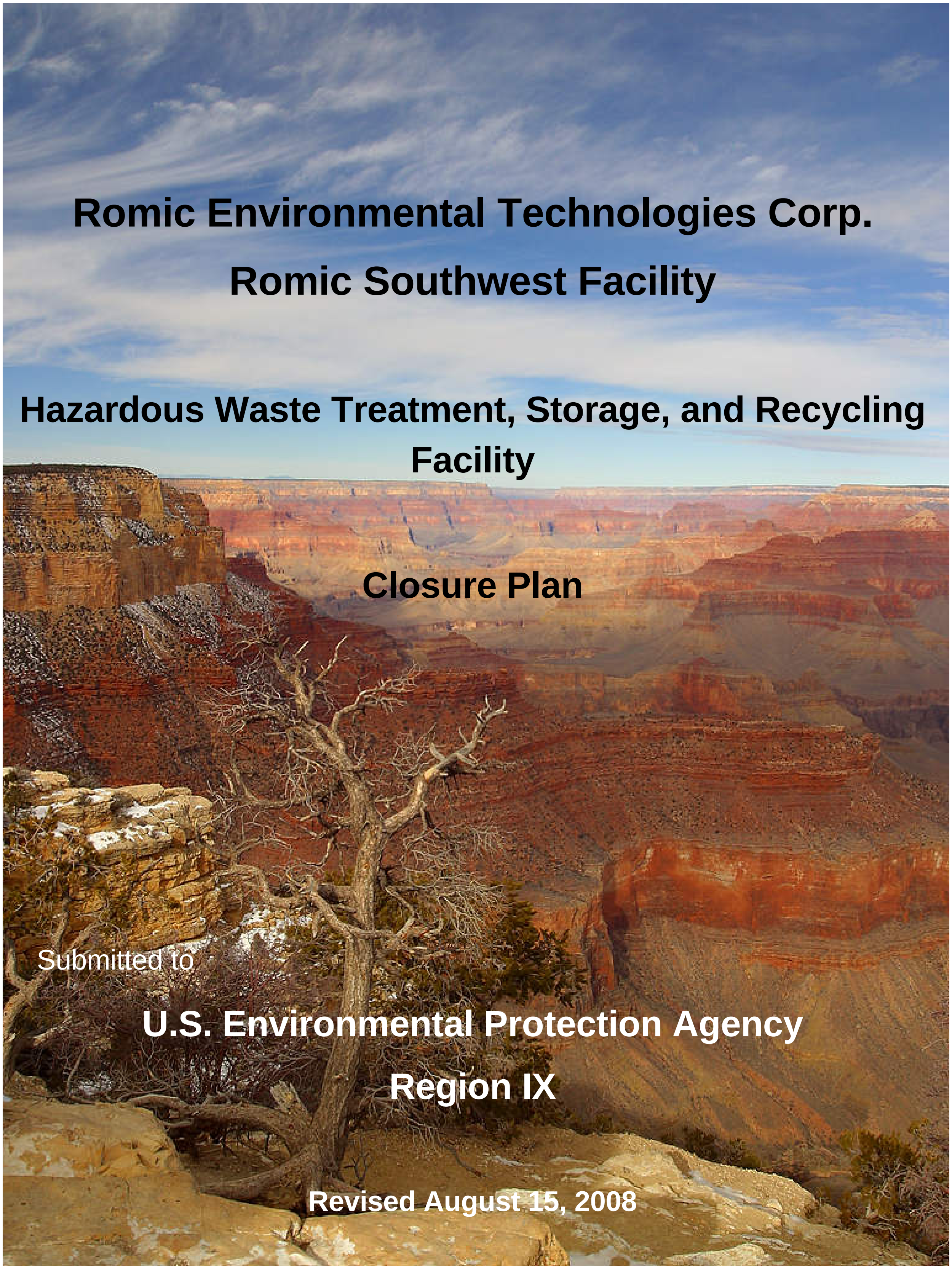

Romic Environmental Technologies Corp.

Romic Southwest Facility

Hazardous Waste Treatment, Storage, and Recycling Facility

Closure Plan

Submitted to

U.S. Environmental Protection Agency

Region IX

Revised August 15, 2008

CLOSURE PLAN TABLE OF CONTENTS

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Tables, Figures, and Attachments are presented as separate sections following the main body of the text.

TABLES

FIGURES

ATTACHMENTS

1.0 INTRODUCTION AND BACKGROUND

1.1 Introduction

This Closure Plan describes the procedures Romic will follow to close the existing hazardous waste management units (HWMUs) and one solid waste management unit (SWMU) at the former Romic Southwest facility in the Lone Butte Industrial Park near Chandler, Arizona. Closure activities will be performed in accordance with 40 CFR 265 Subpart G and 40 CFR 265.197. The goal of this plan is to achieve clean closure. In short, this means that all hazardous wastes will be removed from the RCRA regulated units, and that any releases at or from the units will be remediated so that further regulatory control under RCRA Subtitle C is not necessary to protect human health and the environment. In the event clean closure cannot be achieved, further investigation and remediation work will be performed in accordance with the RCRA 3008(h) Administrative Consent Order, Docket No. RCRA(AO)-09-2008-03 ("Corrective Action Order"), entered into by Romic and the U.S. EPA.

Safety and environmental stewardship are the two primary principles guiding Romic during closure activities. A comprehensive site-specific project health & safety plan (HASP) will be submitted prior to the start of work. Romic will evaluate and select its closure contractors on the basis of their health and safety record, compliance history, personnel training program, as well as their relevant environmental project management experience.

The closure of the former Romic Southwest facility is, by its very nature, an environmental project. The ultimate goal of the project is to restore the site to productive reuse. Romic will maximize the use of environmentally friendly ("green") technologies and approaches by requiring its contractors to submit a "Green Measures Plan" (see Section 3.2). Additionally, to conserve resources and minimize waste, Romic will sell the decontaminated equipment and materials at the site, as feasible, for industrial reuse.

To ensure the success of this closure project, Romic will work closely with local business and tribal leaders to avoid or mitigate community impacts resulting from closure activities. Open communication with the community will assist in the timely completion of the closure process.

The Closure Plan includes background information on the facility, a discussion of closure performance standards and activities, the facility closure cost estimate, description of the financial assurance mechanisms that are in place, and reporting requirements. A Sampling and Analysis Plan detailing the collection of samples, laboratory analysis, and interpretation of analytical results is included as an attachment.

1.2 Background

1.2.1 Facility Identification

Name of Facility:	former Romic Southwest Facility
EPA Identification Number:	AZD 009015389

Physical Address:	6760 West Allison Road Chandler, Arizona 85226
Mailing address:	820 Gessner, Suite 800 Houston, TX 77024
Telephone:	520-796-1040
Contact Person:	Wayne Kiso
Contact Telephone:	(650) 462-2310
Contact E-mail:	waynek@ehs-mgr.com
Location Information:	Township 2S, Range 4E Longitude: -111 degrees, 57 min. 26 sec. Latitude: 33 degrees, 17 min. 20 sec.

1.2.2 General Facility Description

Romic Southwest was an off-site hazardous waste management facility. A facility location map is provided as Figure B-1, and a site plan is provided as Figure B-2. The facility was primarily engaged in resource recovery. Industrial wastes were shipped to the facility for recycling and treatment from various industries, including:

- Dry Cleaning
- Printing
- Electronics
- Aerospace
- Paint
- Automotive

In addition, the facility received household hazardous waste (e.g., motor oil, paints, cleaners, etc.) from household waste collection events.

Specific types of waste streams managed at the facility included industrial and household wastes, halogenated and non-halogenated solvents, Freon and Freon substitutes, waste oils, sludges, oxidizers, corrosives, resins/adhesives, debris/solids, wastewater, resin bed media, paints, aerosols, batteries, fluorescent tubes, and lab packs.

The facility did not accept the following types of hazardous waste for treatment or processing:

- Radioactive Waste
- Explosives
- Waste containing polychlorinated biphenyls (PCBs) at levels of 50 part per million and above.
- Etiological Waste

- Pathogenic Waste

The facility received, stored, and processed wastes in either bulk loads (e.g., tanker trucks, roll off bins, etc.) or containers (e.g., 55-gallon drums, totes, etc.). The waste was transported to the facility by properly licensed transporters. All containers manifested to the facility were inspected and assigned a unique tracking number, which was marked on the container using a bar code label. The containers were then stored in designated storage areas prior to transfer to the assigned processing area. The storage areas were equipped with concrete secondary containment and a roof, and were operated so that incompatible wastes (e.g., strong acids and strong bases) were segregated.

The facility reclaimed, recycled, treated, and stored hazardous waste using the following management options:

- **Solids Consolidation:** Sorting and homogenizing containers of solid hazardous waste to remove liquids and non-uniform solid debris (e.g., sharps) prior to consolidating materials with similar hazard characteristics into a uniform, bulk waste stream for off-site transfer and disposal.
- **Solvent Recycling**: The distillation of used thinners and solvents (e.g., lacquer thinner, methanol, acetone, mineral spirits) to achieve a reclaimed solvent product of specified purity for resale or reuse.
- **Ethylene Glycol Recycling:** The distillation of used ethylene glycol (e.g., antifreeze) to achieve a useable product for resale or reuse.
- **Fuel Blending**: The mixing of impure waste materials of a sufficiently high heat content to produce a consistent alternative fuel for use in off-site cement kilns.
- **"Off-Site" Transfer:** Waste shipped off-site for treatment or disposal without on-site treatment by the facility.

The facility also provided the following waste management practices:

- **Consolidation of Small Containers**: Field service technicians received small quantity chemicals (e.g., outdated chemicals, lab packs) packaged in DOT-approved containers by hazard class for sorting and transfer to larger containers for subsequent appropriate management.
- **Can Crushing**: Small containers (e.g., liter, 1- and 5-gallon) that contain chemical residuals (e.g., latex paint, motor oil, roofing materials) were received and crushed in compatible batches. The residuals were collected and managed through the appropriate treatment process.
- **Aerosol Depressurization**: Commercial aerosol containers were punctured to remove flammable propellant and contents. An air emission control unit captured the propellants. The hazardous material was collected and managed through the fuel blending operation.

- **Drum Crush:** Empty and nearly empty drums were crushed. Residue removed from nearly empty drums was collected and treated on-site, as appropriate.

There were no wastes disposed of on-site by any means; no deep well injection, incineration, or landfill activities took place at Romic. All wastes were transferred off-site for ultimate disposal or reuse.

Romic was permitted under the federal National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit for storm water discharges under the terms and conditions imposed by this general permit.

1.2.3 Facility Location

The facility is located in Maricopa County on the Gila River Indian Reservation in the Lone Butte Industrial Park. A facility boundary map is provided as Figure B-3.

The adjacent landowner is: Gila River Indian Community
P.O. Box 398
Sacaton, AZ, 85247

The Industrial Park is zoned heavy industrial. The facility was surrounded by manufacturing and distribution plants to the west, south and east, and a highway (the San Tan Freeway, Loop 202) to the north.

1.2.4 Flood Plain

The facility is located in an area designated as “ZONE D” which is defined as an undetermined flood hazard.

1.2.5 Drainage

Storm water that falls on active areas of the facility drains toward blind sumps located at various points within the containment areas. The storm water was collected from these sumps, pumped into rain water storage tanks, and tested prior to discharge. If rainwater analysis indicated contamination, the rainwater was transported off-site for disposal. The locations of the storm water catch basins are at rail spur secondary containment areas shown in Figure B-4. Drainage from the roofs was routed to the driveway for drainage out of the facility onto Allison Road.

Cooling tower and boiler blow down water was discharged under permit No. 24 to the City of Chandler Treatment Facility via Lone Butte sewers. Romic Southwest did not discharge process waste water.

1.2.6 Rain Data

Average rainfall data was obtained from the Weather Bureau. The 25 year, 24-hour storm event was determined to be approximately 3.12 inches.

1.2.7 Wind Rose

The prevailing wind direction in the vicinity of the facility is primarily in the east, northeast, and southeast directions. The data was obtained from the meteorological station at Sky Harbor Airport (See Figure B-5).

1.2.8 Geology

The former Romic Southwest facility is located in the East Salt River Valley (SRV), which is part of the geologic Basin and range physiographic province. (The cadastral location of the facility is in Section 4, Township 2 South, Range 4 East). The East SRV is a basin filled with alluvial sediments several thousand feet thick. The facility is located within the part of the East SRV that is bounded on the north by the Salt River, to the west by South Mountain, to the south by the Santan Mountains, and to the east by the Superstition Mountains.

The facility is located approximately 75-100 feet above a minor aquifer, and 900-1000 feet above a usable aquifer that is the source of water for the Lone Butte Industrial Park. The site is capped by up to 100 feet of recent alluvial fill material. A clayey sand layer up to 1,000 feet thick underlies the surficial fill. Intermixed with this clayey sand are other constituents such as gravel, shale, and sandstone.

1.2.9 Hydrogeology

As discussed above, there are generally two regional aquifers in the immediate area. Information contained in well logs 1 and 2 as recorded by Bert E. Perry, Well Drilling Contractors, indicates there is an aquifer located at a minimum of 900 feet below ground level. This aquifer is the source of water to the Lone Butte Industrial Park. In May 2004, Lone Butte monitoring well LB-4 was installed on Nelson Road, approximately 500 feet southwest of the facility. The Gila River Indian Community Department of Environmental Quality (GRIC DEQ) indicated that depth to groundwater in this well is approximately 74 feet.

1.2.10 Prior Site Activities

The facility land is owned by the Gila River Indian Community and has been leased by several operators. The facility was originally operated as Southwest Solvents, and subsequently as Southwest Solvent Industrial Recycling (Southwest Industrial) by Mr. Ben Fisler. Mr. Fisler began operations on the site in 1975. Romic purchased the facility from Mr. Fisler in August, 1988. Romic was purchased by U.S. Liquids on January 15, 1999, and subsequently by ERP Environmental, Inc., on August 1, 2003.

The following chronology recaps remediation activities performed on the facility site upon purchase of the facility by Romic.

February 1989 Harding Lawson Associates conducted sampling of Phase I, II, and III areas (see Figure B-6a). Sampling consisted of collecting 38 surface soil samples and subsurface soil samples from 20 borings. The sample intervals included 1-1.5’, 5-5.5’, and 10-10.5’. The samples were analyzed for PCBs, Cyanide, Phenols, Pesticides, Total Petroleum Hydrocarbons

(TPH), Sulfides, EP Tox Metals, and Volatile Organic Hydrocarbons (VOCs) (subsurface samples only).

Analytical results showed that the only contaminant exceeding the EPA recommended action level was TPH. The TPH contaminated soil was limited in depth from the surface to approximately one foot. Isolated areas of soil contamination were detected to depths of three feet.

September 1989 Received EPA approval that Phase I area was adequately remediated.

September 1989 Emcon Associates conducted sampling of Phase II area. Sampling consisted of collecting 29 surface samples, subsurface soil samples, and subsurface soils samples from 28 borings. The sample intervals included 1-1.5', 5-5.5', and 10-10.5'. The samples were analyzed for PCBs, Pesticides, TPH, Total Metals, Cyanide, Phenols, Sulfides, and VOCs (subsurface samples only)

Analytical results showed that the only contaminant that exceeded the EPA recommended action level was TPH. The TPH contaminated soil was limited in depth from the surface to approximately one foot. Isolated areas of soil contamination were detected to depths of three feet.

October 1989 Remediation of Phase II was completed.

November 1989 Construction of Drum Storage building was completed. The foot print of the building was lined with a high-density polyethylene liner and the concrete was coated with a chemical resistant sealant.

July 1990 Emcon Associates conducted sampling of the Phase III area, Sampling consisted of collecting soil samples from 23 soil borings at sample intervals of 0-3", 1-1.5', 4-5.5', and 9.5-10'. The samples were analyzed for PCBs, Pesticides, TPH, Phenols, Sulfides, Total Metals, and VOCs (subsurface samples only).

Analytical results showed that the only contaminant that exceeded the EPA recommended action level was TPH. The TPH contaminated soil was limited in depth from the surface to approximately one foot. Isolated areas of soil contamination were detected to depths of three feet.

January – March 1991 Remediation of abandoned drum pads, truck loading dock and one tank farm. New tank farm built, foot print lined with a high-density polyethylene liner.

May – June 1991 Additional Phase II sampling requested by EPA. Sampling included addition of nine new sampling locations with as many as three depth intervals (.5-1', 4.5'-5', and 9.5'-10'). Samples were analyzed for a variety of constituents, to include: PCBs, Pesticides, TPH, Total Phenols, Total Sulfides, TCLP Metals, Total Metals, Polynuclear Aromatics, and Volatile Organics.

Analytical results showed that the only contaminant that exceeded the EPA recommended action level was TPH. The TPH contaminated soil was limited in depth from surface to approximately one foot. Isolated areas of soil contamination were detected to depths of three feet. Pesticides were detected in one surface sample above EPA action limits.

June 1991 Site was subdivided into smaller areas to expedite remediation efforts. Phase II and III were subdivided into seven remediation areas (see Figure B-6b).

August – September 1991 Remediation of Subarea 1 completed. Railroad tracks were extended around north of drum storage building. Concrete rail loading containment area constructed.

September – October 1991 Remediation of Subarea 2 completed. Concrete drive was installed on the east side of the facility equipped with an automatic gate. Concrete access to the rail loading facility and drum storage area was completed.

November – December 1991 Remediation of Subareas 3 and 4 was completed. Concrete drive was installed along the west side of the facility equipped with an automatic gate. Installation of a new tank farm located in the central portion of the facility, foot print lined with a high-density polyethylene liner.

January 1992 Remediation of Subarea 6 was 75% completed. Installation of a new tank farm located in the northwest portion of the facility, foot print lined with a high-density polyethylene liner.

March 1992 Remediation of Subarea 5 was completed. New waste handling area was installed in the central portion of the site. This area and the tank farm completed in December 1991 had a roof structure built over it.

April – June 1992 Completed remediation of Subareas 6 and 7. Installation of a new tank farm located in the western portion of the facility, foot print lined with a high-density polyethylene liner. This area contains the thin film processing equipment.

August 1992 Remediation completed. Construction of the new building in the southeast portion of the facility started. Building contains a tank farm on the north side and both building and tank farm footprints are lined with a high-density polyethylene liner. It will become the acid/base storage building and process area.

December 1992 Construction of planned acid/base storage building (Storage Building #2) complete.

GRIC DEQ has identified ground water contamination in the Lone Butte Industrial Park in recent years. Figure B-6c shows the locations of some area ground water monitoring wells. Romic is working with U.S. EPA and GRIC DEQ to further investigate and implement corrective actions to address regional ground water contamination.

1.2.11 Facility Design

The HWMUs at the facility consisted of a container storage building on the north portion, tank storage units in the center and on the east side, distillation processing units in the center east portion. A rail spur entered the facility on the west side; rail cars were loaded in a secondary containment structure in the western portion of the facility. The facility laboratory was housed in a building in the southeastern corner of the site. Trailers that housed facility administrative, supervisory, and management personnel, as well as field services personnel, are located in the south portion of the facility. These trailers also included the plant lunchroom and locker/shower facilities. Most of the remainder of the site is paved, with approximately 5% gravel.

Table 1 lists the units and related equipment that will be closed in accordance with the parameters of this Closure Plan.

2.0 CLOSURE PERFORMANCE STANDARDS

40 CFR 265.111

The goal of this closure project is to achieve “clean closure.” The closure activities conducted under the Plan at the facility will:

- Minimize the need for further maintenance;
- Control, minimize, or eliminate to the extent necessary the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground, surface water, groundwater, or atmosphere; and
- Confirm that any structures left in place on site meet the performance standards established for site closure.

In general, the closure of each hazardous waste management unit at the facility will be accomplished by:

- Decontaminating all contaminated equipment, containment system components and associated structures to specified closure performance standards;
- Verifying whether equipment has been decontaminated successfully based on the intended disposition;
- Dismantling and removing equipment that has been decontaminated successfully or will be disposed;
- Decontaminating containment structures and verifying that they have been successfully decontaminated and removing any contaminated concrete;
- Determining whether releases have occurred from units; and
- If releases have occurred, remediating those releases so that further regulatory control under RCRA Subtitle C is not necessary to protect human health and the environment.

Hazardous waste management units will be considered clean closed if detectable RCRA metal constituents are at or below the mean of background sample results plus two standard deviations, and detectable organic constituents are below EPA Region 9's Preliminary Remediation Goals (PRGs). If levels exceeding these standards at statistically significant levels are detected in soil, appropriate corrective action will be negotiated and implemented through the Corrective Action Order.

An independent registered professional engineer will monitor all closure activities to confirm that they are conducted in accordance with the Plan and that the performance standards are met.

Specific closure performance standards for each type of hazardous waste management unit at the facility are summarized in Table 2 and described in detail in Section 3.2 of the Sampling and Analysis Plan, Attachment B.

3.0 MITIGATION OF IMPACTS

3.1 Community Impacts

Closure activities will have certain impacts or potential impacts on the community and on the environment. Romic will work closely with local business and tribal leaders to avoid or mitigate community impacts resulting from closure activities, including, but not limited to:

- Lone Butte Industrial Development Corporation
- Gila River Indian Community (GRIC) Fire Department
- GRIC Department of Environmental Quality (DEQ)
- Chemical Tribal Emergency Response Commission (CTERC)

Romic will communicate directly with other local groups, such as fellow Lone Butte Industrial Park tenants, Community members, and off-Community neighbors, as the need arises. However, Romic will rely primarily on the above-listed entities (and U.S. EPA) to provide communication to other interested parties.

Romic will work with authorities in the following areas:

- Developing traffic routing specifications, taking into account the type of closure traffic, other activities in the local area, and non-commercial traffic needs.
- Informing interested parties of activities and milestones, and getting input and feedback when and where appropriate.
- Scheduling activities that present the potential for higher impacts, such as noisy operations, and developing mitigating measures.

3.2 Environmental Impacts

Romic's selected closure contractors will be required to submit a waste reduction and energy savings implementation plan (Green Measures Plan) within thirty days of Closure Plan approval. The Green Measures Plan will be subject to U.S. EPA input and approval, and will include the following provisions at a minimum:

<u>Energy Conservation Measures</u>

- Shut down electrical equipment such as generators, air compressors, power washers, and pumps when not in use.
- Restrict work area and administration lighting for use only while in attendance or as a safety enhancement measure.
- Use energy efficient light bulbs and EPA "Energy Star" devices.

<u>Fuel Conservation Measures</u>

- Use highest grade biofuel available (at least B5) for diesel construction equipment, trucks, and pickups.

Air Emissions

Use clean diesel technologies, clean fuels, and/or clean construction practices on diesel powered engines greater than 25 horsepower, including the following:

- Tune engines to manufacturers' specifications.
- Develop a plan to limit transportation through the community.
- Install the highest level of EPA-verified diesel technologies on off-road and on on-road diesel powered equipment, such as diesel particulate filters, and diesel oxidation catalysts.
- Require trucks to meet current emission standards.
- Limit idling of construction equipment, trucks, and vehicles to five minutes or less.
- Use ultra-low sulfur diesel in off-road and on-road diesel equipment.
- Collect rinsate water and contain in enclosed holding vessels immediately after application.

Water Conservation

- Use low water usage decontamination equipment (e.g., pressure washers, hydroblasters).
- Reuse decontamination water to the maximum extent possible.
- Secure and maintain water sources such as hydrants, water trucks, and water holding tanks to minimize leaks and seepage.

Material Consumption and Waste Generation

- Use biodegradable detergents and surfactants for decontamination.
- Purchase PPE, investigation materials, cleaning materials, remediation supplies, and office supplies in bulk or with emphasis on minimum packaging.

Reuse and Recycling

- Sort all recyclable materials (e.g., paper, glass, aluminum) for recycling.
- Handle decommissioned lighting, ballasts, batteries, thermostats, and other non-impacted materials as universal waste and ship off site to an approved universal waste handler.
- Recycle decontaminated scrap metal not otherwise reused.

The above-listed measures will be incorporated as bidder requirements in Romic's Requests for Proposals. Romic will provide strong incentives to its closure contractors to implement environmentally friendly measures, in addition to safety incentives. These incentives will be offered in the bidding phase and in the final contract. The following waste reduction and energy saving measures will be encouraged during facility closure activities. Further, Romic will solicit, evaluate, and provide incentives for the implementation of any bidder- or contractor-suggested "green" measures. Implemented waste reduction and energy-saving measures will be documented in the Closure Certification Report.

4.0 AMENDMENT OF CLOSURE PLAN

40 CFR 265.112(c)

The Closure Plan may require amendment and approved modification in accordance with the procedures specified in 40 CFR 265.112(c). The Closure Plan may be amended upon any of the following situations:

- Unexpected events arising during partial or final closure that affect the Closure Plan;
- Changes in regulations that affect facility closure; or
- Request of the Regional Administrator.

If necessary, Romic will submit to the Regional Administrator a request to modify the Closure Plan at least 60 days prior to any anticipated change. Romic will also request a Closure Plan modification within 60 days after any unanticipated event, such as following the effective date of a regulatory change or per the Regional Administrator's request, unless the Regional Administrator request occurs during partial or final closure. If a Regional Administrator's request occurs during partial or final closure, Romic will submit a request to modify the Plan within 30 days of the Administrator's request.

Post-Closure Applicability

The former Romic Southwest facility is not considered to be subject to post-closure requirements; however post-closure requirements may become applicable if soil contamination is found and we are unable to arrive at an agreement under the Corrective Action Order to address the contamination.

5.0 CLOSURE ACTIVITIES

40 CFR 265.112(b)(1) through (b)(4)

This section describes the closure activities for the hazardous waste management units at the facility. The primary goal of this project will be to provide a clean closure of this facility by investigating, mitigating, and removing all hazardous and non-hazardous waste constituents from the facility in a safe and regulatory compliant manner. The bulk inventory of received waste streams has already been processed and removed from the site. This Closure Plan is designed to locate and remove all waste residues in, and/or on, existing waste management units, equipment, and related containment structures. It will also provide a mechanism to address potential releases that may have occurred during normal operation. This goal will be achieved by performing the following items:

- All required and applicable standard operating procedures for proper waste management and worker health and safety will be followed at all times.
- Investigate and document the current condition of all processing equipment, containment units, and associated soils through visual and quantitative analysis.
- If required, clean and decontaminate processing equipment and containment units.
- Process and dispose of all hazardous and non-hazardous constituents realized or generated as a result of our investigations and related decontamination efforts.
- Disassemble, dismantle, package, and transport off-site units and equipment other than decontaminated concrete secondary containment structures.
- Romic will implement environmentally friendly technologies to the maximum extent feasible in the closure of this facility (see Section 3.2 above).

Romic will retain the services of contractors to perform this closure project. Romic will select its contractors based on factors including professional licenses, relevant environmental project management experience, health & safety record, compliance history, personnel training programs, insurance coverage, and financial stability. Romic will also consider contractor availability and ability to complete the project on schedule.

An independent registered professional engineer will monitor all closure activities to confirm that they are conducted in accordance with the Closure Plan. The certifying engineer, or their agent, will visit the facility at least weekly during site closure. The inspections during closure will become part of the facility's operating record.

Romic will implement measures to ensure that, during site closure, the facility is secure against unknowing and unauthorized entry. Romic will ensure that routine inspections are performed to ensure that deterioration or damage does not result in security breaches, releases to the environment, or threats to human health.

5.1 Closure Implementation Schedule

40 CFR 112(b)(6)

1. This section discusses the anticipated operational schedule for the final closure of the facility. Table 3, Closure Schedule lays out the anticipated time required to complete each closure step.
2. Romic will submit a comprehensive project HASP within thirty days of Closure Plan approval. Closure activities will commence within 30 days of final Closure Plan approval, but only subsequent to HASP submittal.
3. As discussed above, the container storage areas, tank systems, and processing equipment will be subject to closure. Since on-site generated wastes may be stored within the facility, portions of the storage and treatment units may remain active longer than others to accommodate the storage of closure-generated wastes.
4. As discrete areas or equipment items are decontaminated per this Closure Plan, they will be marked so that they will not be further used. For example, if Tank Farm A has had waste removed and been decontaminated, this area will be marked off and so identified. Any closure-generated wastes will be placed in authorized storage areas that have not yet been closed.
5. The order and duration of activities listed in Table 3 is our initial estimate. Romic's selected contractor will be required to prepare and submit a detailed critical path closure schedule, which will be submitted to U.S. EPA within thirty days of final approval of the Closure Plan.

5.2 Waste Inventory and Closure Generated Waste

40 CFR 265.112(b)(3)

The maximum inventory of wastes on-site at any time over the active life of the facility is estimated at 150,000 gallons. This is the maximum quantity of hazardous waste that the facility was authorized to store.

As of October, 2007 all wastes in inventory have been processed, treated, and/or shipped off-site.

Romic conducted a partial closure of its vacuum pot system. The system was decontaminated, dismantled, and sold to an off-site hazardous waste management facility, which will install and use the system for solvent recycling. Details and related certification of these activities will be provided in the Closure Certification Report, which will be developed at the conclusion of all closure activities.

Romic expects to generate the following closure activity generated waste streams:

- VOC, SVOC, and heavy metal contaminated waste water from rinsing and decontaminating equipment and materials.

- VOC, SVOC, and heavy metal contaminated PPE and other debris
- RCRA solid debris
- Non-RCRA solid debris
- Material removed from contaminated concrete surfaces, along with contaminated abrasive media

5.3 Disposition of Wastes

40 CFR 265.112(b)(3)

The closure cost estimate was developed assuming that an independent third party will conduct all closure activities and that generated waste will be removed for off-site treatment and disposal. However, the provisions below describe how Romic will manage closure-generated wastes during self-implementation of closure.

Waste generated during closure activities may include water from decontamination as well as contaminated consumables such as PPE. All generated waste will be sent offsite to an appropriate facility.

Prior to sending any wastes related to closure activities offsite for treatment and/or disposal, Romic will asses and insure that each Treatment, Storage, and Disposal Facility (TSDF) used is authorized to receive the specific waste. In addition, an effort will also be made to determine if the TSDFs are in good standing with the authorizing agency. This can be assessed by determining whether the TSDF is approved for use by EPA pursuant to the CERCLA Offsite Rule under 40 CFR 300.440.

Standard TSDF waste acceptance procedures will be followed, including establishing waste profiles. Wastes resulting from final cleaning will require consolidation, characterization, and offsite disposal.

Any closure wastes sent offsite for disposal will be placed in containers that meet the United Nations performance-oriented packaging standards or bulk containers that meet the U.S. Department of Transportation (DOT) requirements under 49 CFR 172 et seq.

All containers used will be properly labeled at time of waste packaging and manifested in accordance with generator standards under 40 CFR 262 Subpart C. A uniform hazardous waste manifest will accompany all shipments of hazardous waste. All transportation vehicles will be properly placarded and marked in accordance with U.S. DOT rules.

Land Disposal Restriction (LDR) Forms will be filled out for any hazardous wastes subject to LDR standards. This form will be filled out to identify all the applicable waste codes and treatment standards. These LDR forms will be either maintained with the profile or they will accompany each hazardous waste manifest, depending on the standard procedures.

Some tanks and other equipment may be transferred to an authorized (permitted) hazardous waste management facility without verification of complete removal of hazardous waste constituents. Such tanks and equipment will require notification on the part of Romic to the receiving facility of:

- The former status of the equipment, including a list of hazardous waste codes managed in the equipment,
- The current condition of the equipment, and
- An advisory that the receiving facility will be responsible for procuring necessary permits and authorization for use of the equipment.

5.4 Decontamination Procedures

40 CFR 265.112(b)(4)

The decontamination requirements and procedures are based on federal regulations, U.S. EPA closure guidance manuals, and company policies and standard operating procedures. The decontamination requirements and procedures are designed to ensure that all federal requirements for decontamination during site closure will be met. Decontamination activities during closure will include the following:

- Tanks, piping, pumps, valves, and other small equipment will be decontaminated and either sold for reuse, recycled, or disposed as nonhazardous waste, or transported offsite to an appropriate TSDF for disposal.

- Contaminated secondary containment structures will be decontaminated, if possible, to achieve the closure performance standards if they are to be left on-site. As an option, contaminated structures, storage tanks, and associated equipment that may not be decontaminated will be demolished and/or cut up, and transported offsite as a hazardous waste to an appropriate TSDF.

- Contaminated environmental media (soil and/or groundwater) identified during site closure will be removed and transported offsite to an appropriate TSDF for disposal or otherwise remediated.

- All equipment, including mobile equipment and earth moving equipment that comes in contact with hazardous waste constituents during closure, will be decontaminated before leaving the contaminated area or removal from the facility.

- Some decontamination and verification activities will require confined space entry permits in accordance with 29 CFR 1910.146. The closure contractor’s written confined space entry program will be included in the HASP.

- Any residues generated during decontamination activities will be handled in accordance with all applicable hazardous waste requirements of 40 CFR 261, 262, 263, and 268.34. Rinse water and wastewater generated during decontamination activities will be transported offsite to an appropriate facility.

Decontamination Technologies

Depending on the type and condition of each surface, tanks, piping, containment structures, and process equipment at the facility will be decontaminated using one or more of the following technologies:

- Physically scraping the surfaces with appropriate hand tools to remove attached materials;
- Rinsing with low-pressure water or a detergent/surfactant cleaning solution to remove scaling and surface debris;
- Hydroblasting and/or pressure washing with high-pressure water to scour the surface to remove contaminants and carry them away from the surface; or
- Steam cleaning to remove significant deposits of oils or other petroleum contaminants that cannot be adequately removed by other means.

Upon selection of a closure contractor or contractors and prior to commencement of decontamination activities, Romic will, within thirty days of approval of the Closure Plan, require the contractor(s) to submit detailed descriptions of the planned implementation of decontamination technologies to be used, including equipment specifications and standard operating procedures. These specifications will be incorporated into this Closure Plan in Attachment D, “Standard Operating Procedures.”

Decontamination of Hazardous Waste Tank Systems

All regulated hazardous waste storage tanks and associated pumps and piping will be decontaminated at the facility. If it is determined that a storage tank or piece of equipment cannot be successfully decontaminated, then the structure or equipment may be cut up, removed, and disposed of off-site at a permitted TSDF.

Decontamination of bulk hazardous waste storage tanks will be accomplished using pressure washing or other cleaning methods to achieve the closure performance standards. Field tasks will consist of draining the storage tank of its contents, decontamination of the tank exterior surface, purging the internal space, removing and cleaning all associated piping, and if required, confined space entry to clean the tank interior. Additional decontamination and closure details are provided in the SAP.

Following decontamination, all rinsate, wash water, and debris will be removed from the tank using pumps or vacuum devices, and loaded into 55-gallon drums or totes for additional characterization. Incompatible rinsate and cleaning residues will not be commingled. The collected rinsate will be characterized and transported off site to an approved TSDF.

Verification sampling of the bulk storage tanks will be conducted per the SAP. Decontaminated tanks that meet the closure performance standard may be re-used at a TSDF, sold for re-use at a TSDF or other industrial application, or sent to a scrap metal reclaimer.

As an alternative to tank decontamination, tanks may be drained, purged, sealed, and sent as a hazardous waste to an appropriately permitted off-site TSDF for reuse or disposal. Verification sampling under this scenario will not be required.

Decontamination of Hazardous Waste Management Equipment

All facility hazardous waste management equipment (i.e., piping, pumps, valves, and other small equipment) subject to closure will be decontaminated prior to removal from the site, unless it is shipped off as hazardous waste.

Equipment decontamination will be performed in concrete secondary containment areas. All rinsate from decontamination will be collected and sent off site to an approved facility. If equipment cannot be adequately decontaminated, then it will be disposed of offsite as a hazardous waste at an appropriately permitted TSDF. Verification sampling will be conducted per the SAP.

During the final decontamination stage, a small temporary decontamination area (approximately 10 feet by 20 feet) may be established on-site once all concrete containment areas have been fully decontaminated. This area will be constructed of plastic sheeting, a geo-tech synthetic liner or an equivalent protective material with full containment, and will be used for decontamination of small sampling equipment, PPE, and other miscellaneous tools used during site closure.

Decontamination of Concrete Secondary Containment Pads

All concrete containment surfaces including, but not limited to, the container storage areas, container processing areas, and tank system containment structures will be decontaminated to the maximum extent possible. The decontamination procedures will also apply to the sump collection systems within these containment structures throughout the facility. If it is determined that a containment area cannot be successfully decontaminated, then the structures may be demolished, removed, and disposed of off-site at a permitted TSDF.

The containment surfaces will initially be inspected for any cracks, gaps or other major structural defects prior to decontamination to determine potential subsurface soil sampling locations. Any cracks that are observed to extend through the entire thickness of the concrete slab will be sealed prior to decontamination of the unit. The containment pads then will be decontaminated by an appropriate decontamination technology. Areas with extensive staining or impacted contamination will be noted and addressed. All scarified materials removed from the concrete surfaces and wash water generated during decontamination will be isolated and contained within the containment pad using appropriate engineering controls, such as sand bags, visqueen plastic sheeting, and temporary absorbent barriers.

Following decontamination, all rinsate wash water and debris will be removed using pumps or vacuum devices, and loaded into 55-gallon drums for additional characterization. Incompatible rinsate and cleaning residues will not be commingled. The collected rinsate will be characterized and transported off site to an approved TSDF. The plastic sheeting, PPE, and similar materials will also be removed and drummed for off-site disposal at an approved TSDF.

After the containment areas have been decontaminated, verification sampling will be conducted according to the SAP. Upon verification that the containment area has met the closure performance standards, the area will be marked and isolated, or demolished and removed for disposal off site as a non-hazardous waste.

5.5 Decontamination Sequencing

This section describes the general order equipment is to be decontaminated once closure begins and is intended to maximize safety, coordinate manpower and material resources, save time, and reduce overall generation of waste.

1. Tanks

Decontamination sequencing will begin with the decontamination, decommissioning, and removal of all tanks and related tank farm equipment and fixtures not designated for use as temporary holding tanks for liquid rinsate generated from cleaning.

2. Production Area Distillation Systems

The distillation column system and thin film evaporator unit, along with their associated support systems, will be decontaminated in place, sampled in accordance with the SAP, and then disassembled.

3. Piping, Pumps, Valves, and Other Small Equipment

All other equipment, piping sections, process equipment, and portable containment systems will be disassembled and transferred to one or more centralized decontamination stations, sampled, and staged for metal salvage or demolition material for non-hazardous waste or hazardous waste landfill.

4. Concrete Secondary Containment Structures

Concrete containment systems, sumps, berms, and process pads will be decontaminated after all other aboveground items have been decontaminated and removed.

Sections of concrete containment found to exhibit contamination above cleanup levels and that cannot be further decontaminated will be broken up in place, removed for proper offsite disposal and replaced with new concrete.

5.6 Soil Investigation

Following decontamination and partial dismantlement of the containment structures, storage tanks, and equipment at the site, soils beneath the HWMUs and the railroad spur SWMU will be investigated. By drilling borings through the secondary containment pads, the soils will be sampled and analyzed to confirm that no residual contamination is present. The purpose of soil sampling and analysis is to identify areas where remediation may be necessary as a result of past practices and to meet the soil closure performance standards. The closure sampling will be performed in parallel with site-wide sampling of soil, soil vapor, and groundwater on and around the site in accordance with the RCRA 3008(h) Administrative Consent Order signed between Romic and the USEPA ("Corrective Action Order").

All collection and analysis of soil samples will be in accordance with the SAP, which includes provisions for using standard test methods, a state-certified laboratory for analyses, proper chain-of-custody procedures, and quality control/quality assurance samples such as field blanks, trip blanks, and duplicate samples.

Soils beneath each of the HWMUs and the railroad spur SWMU will be sampled at a minimum of two to five points. Additional sample locations within each structure will be based on locations of cracks or stains in the secondary containment systems. One boring per unit will be drilled into groundwater for the collection of deeper soil samples and a grab groundwater sample. Each of these borings will encounter the sub-slab liner installed beneath each of the HWMUs. Specific procedures are detailed in the SAP for sampling above and below the sub-slab liner that will facilitate inspection of the liner condition. The sub-slab liner also exists under a few other structures at the site; however, exploration of lined, non-HWMU areas will be considered separately during the investigation activities conducted under the Corrective Action Order.

Background samples will also be collected from three separate locations according to the SAP. The locations will be selected outside of the facility's operational boundaries and will represent constituent concentrations that have not been impacted by site operations. The results of these soil samples will be used in the development of closure performance standards for the site.

Soil samples will be collected at depths just below the concrete slab above the sub-slab liner, and then in a series beneath the sub-slab liner. Shallow samples will be collected using a Geoprobe direct push method, while deep borings will be drilled with a larger sonic or hollow stem auger rig.

After the samples are collected, each boring will be backfilled with grout. The collected soil samples will be transferred under formal chain-of-custody documentation to a state-certified laboratory for analysis by the methods specified in the SAP. Other sample collection, documentation, and handling procedures will be in accordance with standard procedures described in the SAP.

5.7 Groundwater Investigation

One-time grab sampling of the site groundwater directly beneath the HWMU and SWMU (rail spur only) areas will be performed during closure sampling to supplement data collected from the seven existing groundwater monitoring wells currently maintained on the site. Data from the grab-water sampling will be used to assess whether groundwater contaminant source area(s) exist at the site. Further groundwater investigation or possible mitigation work will be performed in accordance with the Corrective Action Order.

All collection of grab groundwater samples will be in accordance with the SAP, which includes procedures for borehole drilling and groundwater sampling. The SAP describes the sampling procedures using standard test methods, a state-certified laboratory for analyses, proper chain-of-custody procedures, and quality control/quality assurance samples such as field blanks, trip blanks, and duplicate samples.

6.0 CLOSURE COST ESTIMATE

40 CFR 265.142

The Closure Cost Estimate (CCE) is provided as Attachment A to the Closure Plan and was prepared in accordance with 40 CFR 265.142(a). The CCE will be:

- Adjusted annually for inflation, and/or other factors, in accordance with 40 CFR 265.142(b) within 60 days prior to the anniversary date of its closure financial assurance mechanism.
- Revised as necessary in accordance with 40 CFR 265.142(c), within 30 days of any modification of the Plan that results in a change in the cost required to close that facility.

Romic will maintain at the facility a copy of the most current CCE in accordance with 40 CFR 265.142(d). The unit costs associated with preparing the CCE are based on the following assumptions and procedures:

- The unit costs for all closure activities are based on the cost of hiring a third party to close the facility. A third party is someone other than the parent or subsidiary of the owner or operator.
- Unit costs were obtained, where possible, from actual operating costs and experience, and contractor estimates.
- Unit transportation costs used for estimating inventory elimination costs are based on contractor estimates for transporting bulk and containerized liquids and solids to on off-site permitted TSDF. Unit disposal costs for off-site landfill, incinerator, hazardous waste fuel, and other treatment options are based on Romic operating experience.
- Supplies and equipment will be salvaged to the extent possible. However, salvage value has not been incorporated into the closure cost estimate.
- The cost for decontaminating sampling equipment between samples is assumed to be negligible.
- Because the waste inventory has already been eliminated, no costs associated with inventory elimination are included in the CCE. The CCE does include provisions for disposal of bulk hazardous waste debris, which is expected to be generated during closure activities.
- The CCE worksheets include closure costs for decontamination of facility equipment, waste management units, and rinsate management. Tanks and equipment will be salvaged to the maximum extent possible. However, salvage value has not been incorporated into the CCE. Detailed estimates for sampling and analytical costs are included in the CCE, which allows for blanks, duplicates and other quality control/quality assurance samples.

7.0 FINANCIAL ASSURANCE

7.1 Facility Closure

Romic has established a surety bond guaranteeing payment into a closure trust fund to provide financial assurance for closure. Copies of the bond and standby trust agreement have been submitted to the Region 9 RCRA Facilities Management Office**.** The penal sum of the bond is at least equal to the current closure cost estimate. The wording of the bond and that of the trust agreement are in compliance with 40 CFR 264.151.

This financial assurance mechanism will be maintained until Romic receives written notification from U.S. EPA in accordance with 40 CFR 265.143(h). The financial assurance mechanism will be increased, if necessary, within thirty days of any event requiring an increase in the closure cost estimate, including approval of this revised Closure Plan.

7.2 Liability

Romic has established insurance coverage for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from facility operations. The amount of coverage is at least $1 million per occurrence with an annual aggregate of at least $2 million. Documentation of this coverage has previously been submitted to the Region 9 RCRA Facilities Management Office.

8.0 REPORTING AND RECORDKEEPING

8.1 Schedule of Deliverables

Romic will submit the deliverables listed in Table 4 to the U.S. EPA, Region 9 RCRA Facilities Management Office.

8.2 Closure Plan Amendment

Changes in facility plans, operations, or scheduling may require that the Plan be amended. Additionally, the Regional Administrator may request amendments. An amended Plan will be submitted to the Regional Administrator with a written request for a change to the approved Plan.

8.3 Certification Report Requirements

Romic will submit to the Regional Administrator certification that the final closure of the facility has been conducted in accordance with the specifications of the approved Plan. This certification will be signed by Romic and by an independent Professional Engineer, who will monitor the on-site closure process. The certification will be submitted to the Regional Administrator within 60 days of completion of final closure. The certification report shall include the following:

1. Certification by an independent registered Professional Engineer;
2. Supervisory personnel description;
3. Project Background Information
4. Summary of Closure Activities;
5. Field Engineer Observation Reports;
6. Sampling Data and Analyses (i.e., sampling locations, soil boring logs, chain of custody, analytical results, etc.);
7. Discussion of Analytical Results;
8. Manifests showing disposition of wastes;
9. Modifications and Amendments to Plan (if applicable);
10. Photographs.

Raw analytical results will be submitted only electronically (i.e., on compact disc) to conserve paper.

NOTE: The Closure Certification Report will also reference implementation of the RCRA 3008(h) Ground Water Corrective Action Enforcement Order and will refer groundwater clean up activities to that order.

8.4 Recordkeeping

A copy of the approved Plan, and subsequent authorized amendments, will be maintained at the facility. In addition, all sampling information, analytical results, permitting, manifesting, disposal certifications, and related record keeping will be maintained at the facility until closure is complete and certified.

TABLES

Table 1.
Inventory of Units and Equipment

Equipment ID	Location	Maximum Capacity	Permit Capacity/Dimensions	Material of Construction
101	Tank Farm A & B See Figure B-7	5,850 gal.	5,800 gal.	Carbon steel
102		5,850 gal.	5,800 gal.	Carbon steel
103		6,500 gal.	5,800 gal.	Carbon steel
104		5,850 gal.	5,800 gal.	Carbon steel
105		5,850 gal.	5,900 gal.	Carbon steel
112		15,300 gal.	15,000 gal.	Stainless steel
Secondary Containment			47.92' x 38.67' x 1.9'	Coated concrete
Sump			17" x 17" x 10.5"	Coated concrete
Sump			21" x 21" x 12"	Coated concrete
Pump			1	Steel/Aluminum/Plastic
121	Tank Farm C See Figure B-8	6,700 gal.	6,500 gal.	Carbon steel
122		6,700 gal.	6,500 gal.	Carbon steel
123		6,700 gal.	6,500 gal.	Carbon steel
124		9,400 gal.	9,000 gal.	Carbon steel
113		15,150 gal.	15,000 gal.	Stainless steel
Secondary Containment			45.25' x 25.83' x 2.5'	Coated concrete
Sump			21" x 21" x 12"	Coated concrete
Pump			1	Steel/Aluminum/Plastic
132	Tank Farm D See Figure B-8	3,500 gal.	3,256 gal.	HDPE
135[1]		5,000 gal.	4,106 gal.	
136		5,000 gal.	4,106 gal.	HDPE
Secondary Containment			39.67' x 25.83' x 2.5'	Coated concrete
Sump			21" x 21" x 12"	Coated concrete
Pump			1	Steel/Aluminum/Plastic
Vacuum Pot	Vac Pot/Thin Film Area See Figure B-7		1,700 gal.	Stainless steel
S-1			600 gal.	Stainless steel
S-2			600 gal.	Stainless steel
Thin Film Evaporator			24' diam. x 6'	Stainless steel
Receiver			225 gal.	Stainless steel
Flush Tank			225 gal.	Stainless steel
Secondary Containment			39.67' x 29' x 1'	Coated concrete
Sump			1. X 1.33' x 0.67'	Coated concrete
Distillation column	Distillation Column Area See Figure B-9		30" diam. x	Stainless steel
Reboiler			2,900 gal.	Carbon steel
Separator			85 gal.	Carbon steel
Secondary Containment			38.67' x 22' x 0.9'	Coated concrete
Sump			5.33' x 4' x 0.75'	Coated concrete

---

[1] Closed; closure certification previously submitted to U.S. EPA.

Table 1. Inventory of Units and Equipment (cont.)

Equipment ID	Location	Maximum Capacity	Permit Capacity/Dimensions	Material of Construction
Pumps			6	Steel/Aluminum/Plastic
Pumps			1	Steel/Aluminum/Plastic
S-1	VOC System See Figure B-4		318 gal.	Carbon steel
S-2			80 gal.	Carbon steel
S-3			8 gal.	Carbon steel
Secondary Containment			22' x 10' x 0.42'	Coated concrete
Sump			1' x 1' x 1'	Coated concrete
Pumps			4	Steel/Aluminum/Plastic
Secondary Containment	Drum Storage Building #1 See Figure B-10		11901 sq. ft.	Coated concrete
Sump			39.5' x 1.33' x 0.5'	Coated concrete
Canopy Area			5,440 sq. ft.	Coated concrete
Sump			21" x 21" x 12"	Coated concrete
Secondary Containment	Rail Loading Area[2] See Figure B-11		7900 sq. ft.	Carbon steel
Sump			18" x 18" x 12"	Coated concrete
Aerosol Can Depressurization/ Crusher Unit	West Bay Processing Area See Figure B-8		n/a	Carbon steel
Secondary Containment			45.25' x 29' x 2.5'	Coated concrete
Sump			18" x 18" x 12"	Coated concrete
Secondary Containment	East Bay Processing Area[2] See Figure B-8		39.67' x 29' x 2.5'	Coated concrete
Sump			18" x 18" x 12"	Coated concrete

HDPE = High density polyethylene

[2] 90-day generator area

Table 2
Closure Performance Standards

Item	Closure Performance Standard	End Point
HDPE Tanks	Drain and remove all liquids and residues; conduct visual inspection	TSDF
HDPE Tanks	Clean using extraction technology and apply clean debris surface standard (ref. 40 CFR 268.45 Table 1)	Exit RCRA (i.e., reuse in industrial application, recycle, or dispose as nonhazardous)
Steel Tanks	Drain and remove all liquids and residues; conduct visual inspection	TSDF
Steel Tanks	Clean using extraction technology and apply clean debris surface standard (ref. 40 CFR 268.45 Table 1)	Exit RCRA (i.e., reuse in industrial application/ TSDF, recycle, or dispose as nonhazardous)
Equipment	Drain and remove all liquids and residues; conduct visual inspection	TSDF
Equipment	Clean using chemical extraction technology (ref. 40 CFR 268.45 Table 1) and apply clean rinsate standard	Exit RCRA (i.e., reuse in industrial application/ TSDF, recycle, or dispose as nonhazardous)
Concrete	Physical or chemical extraction and clean debris surface not possible/feasible due to extensive staining	Disposal as hazardous waste
Concrete	Clean using physical or chemical extraction technology and apply clean debris surface standard (ref. 40 CFR 268.45 Table 1)	Remain in place or send to recycler
Soil	COCs present at statistically significant levels and excavation possible/feasible due to near surface location	Disposal as hazardous waste
Soil	COCs present at statistically significant levels at depth not amenable to excavation	Remediate under Corrective Action Order
Soil	COCs not present at statistically significant levels (i.e., organics below PRGs, metals below the mean of background sample results plus two standard deviations)	Clean closure

Table 3
Closure Schedule

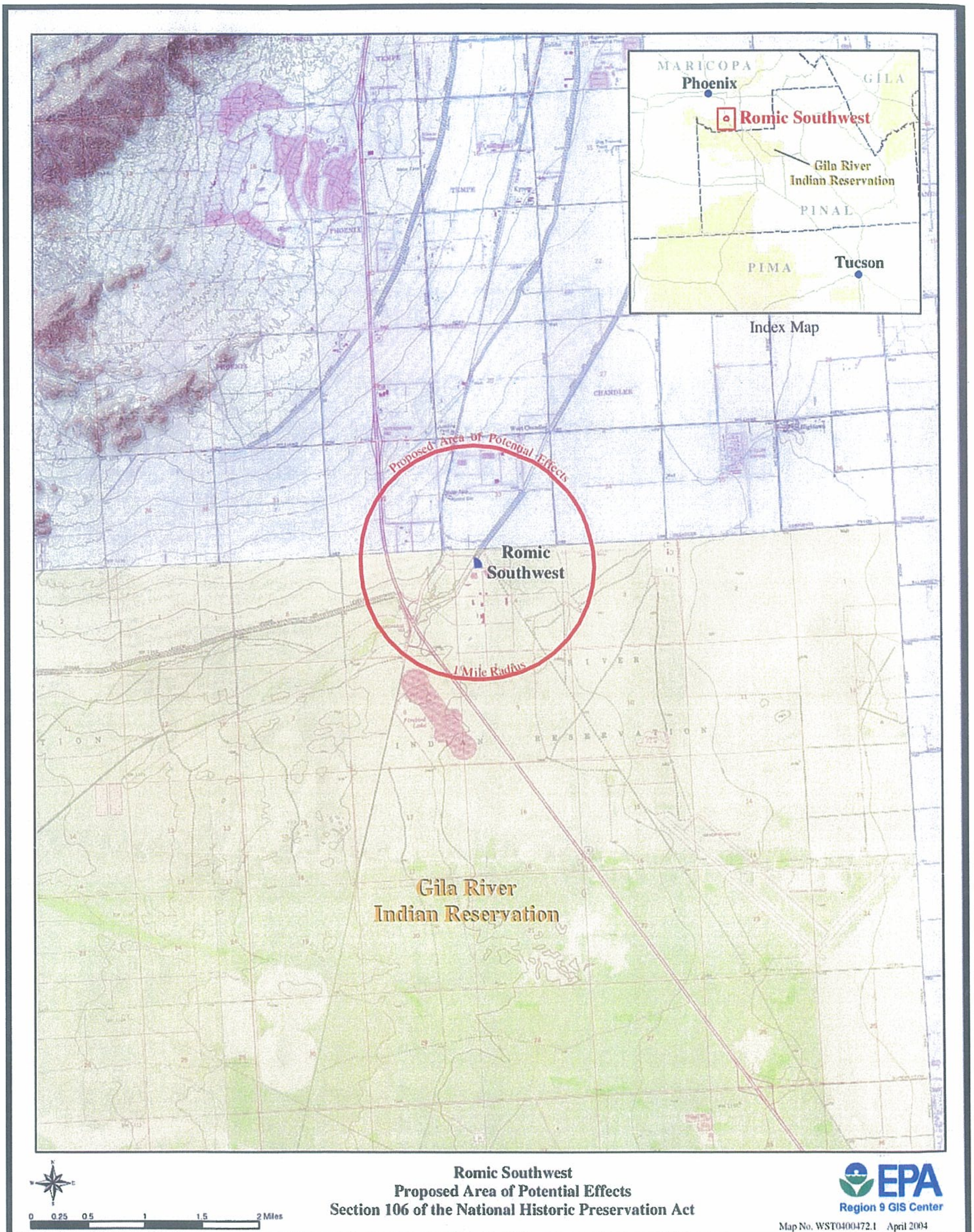
Closure Activity	Est. Time Required	Est. Completion Date[1]
Final approval of revised closure plan	1 day	Week 0
Submittal of Health & Safety Plan	30 days	Week 4
Commencement of Closure activities	0 days	Week 4
Container storage area decontamination	1 week	Week 5
Tank systems decontamination	2 weeks	Week 6
Process unit decontamination	1 week	Week 7
Ancillary equipment decontamination	1 week	Week 8
Equipment dismantling and removal and containment structure decontamination	3 weeks	Week 10
Containment structure sampling and analysis	4 weeks	Week 12
Soil sampling and analysis	5 weeks	Week 15
Complete profiling of all waste	4 weeks	Week 15
Offsite shipment of all waste	3 weeks	Week 17
Submittal of Closure Report and certification	6 weeks	Week 23
Compliance with RCRA 3008(h) Corrective Action Order	On-Going	

[1] Activities will not necessarily be conducted sequentially; overlap will occur.

Table 4
Schedule of Deliverables

Deliverable	Due
Notification of closure	Thirty days prior to start of final closure activities
Notification of closure performance sampling	Seven days prior to closure performance sampling
Health and Safety Plan	Thirty days after final Closure Plan approval
Closure Plan schedule	Thirty days after final Closure Plan approval
Waste reduction and energy savings implementation plan ("Green Measures Plan")	Thirty days after final Closure Plan approval
Decontamination standard operating procedures (SOPs) for tanks	Thirty days after final Closure Plan approval
Decontamination SOPs for piping, pumps, valves, and small equipment	Thirty days after final Closure Plan approval
Decontamination SOPs for concrete	Thirty days after final Closure Plan approval
Verification SOP for Clean Debris Surface Standard, tanks	Thirty days after final Closure Plan approval
Verification SOP for Clean Debris Surface Standard, concrete	Thirty days after final Closure Plan approval
Verification SOP for Clean Rinsate Standard for piping, pumps, valves, and small equipment	Thirty days after final Closure Plan approval
SOP for Sample Coding System	Thirty days after final Closure Plan approval
Closure Certification Report	Sixty days after completion of final closure

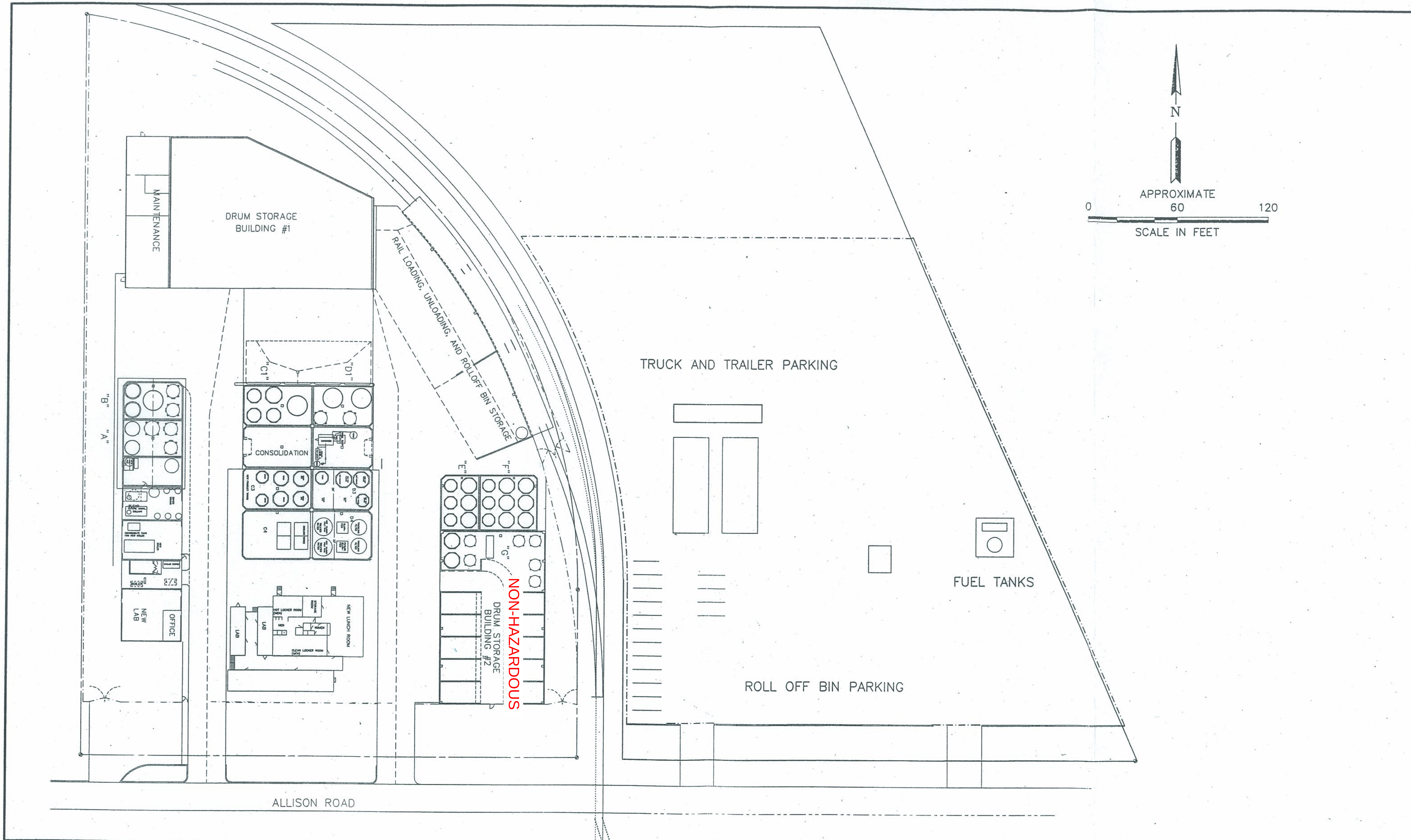
Figure B-1
Facility Location and Topographic Map



Romic Southwest
Proposed Area of Potential Effects
Section 106 of the National Historic Preservation Act

EPA Region 9 GIS Center

Map No. WST0400472.1 April 2004



REFERENCE: BASEMAP PROVIDED BY:
ROMIC
ENVIRONMENTAL TECHNOLOGIES CORP.
ROMIC SOUTHWEST, CHANDLER, ARIZONA

URS

Facility Layout/Site Plan

Romic - Southwest
Chandler, Arizona
Figure B-2

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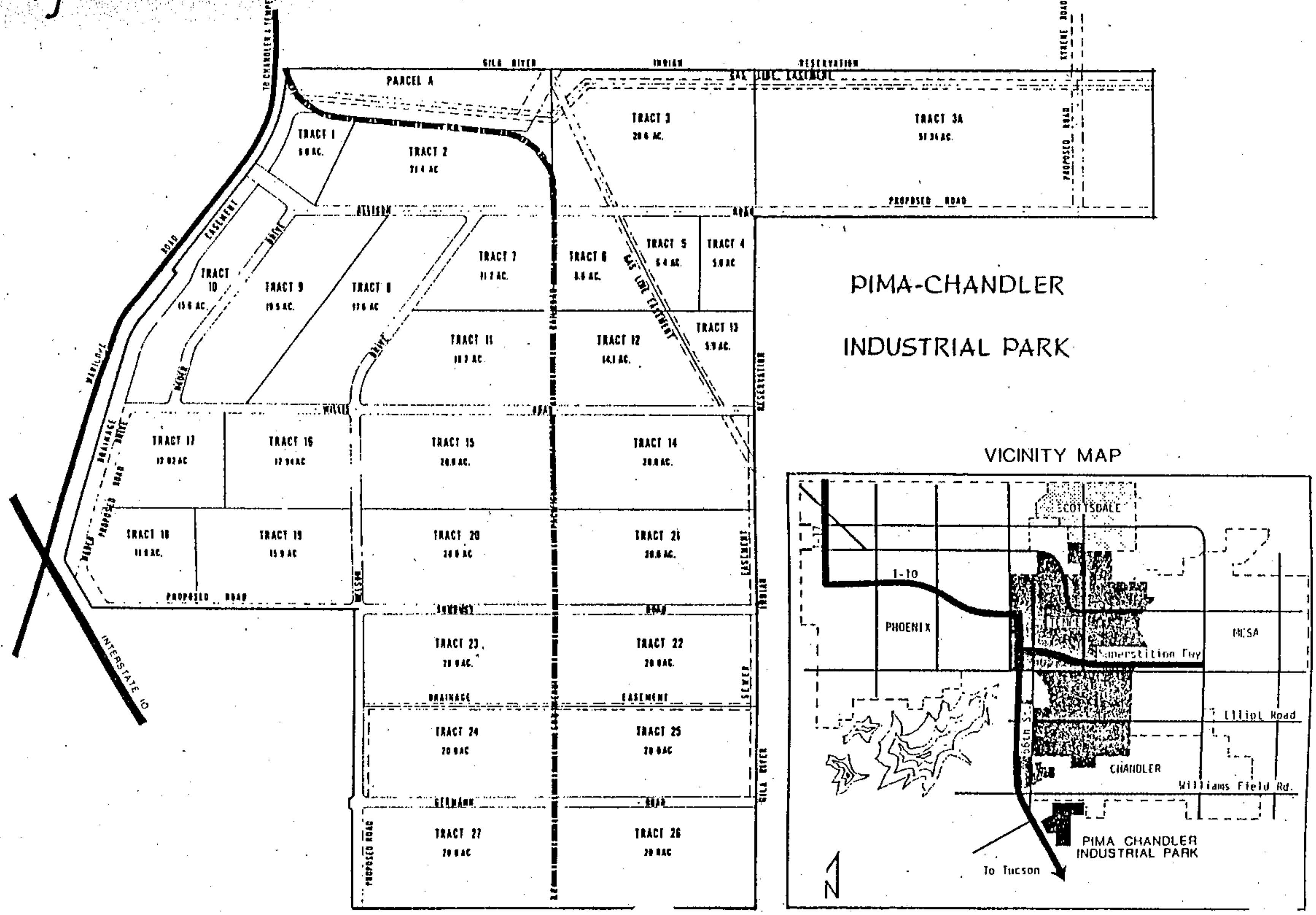
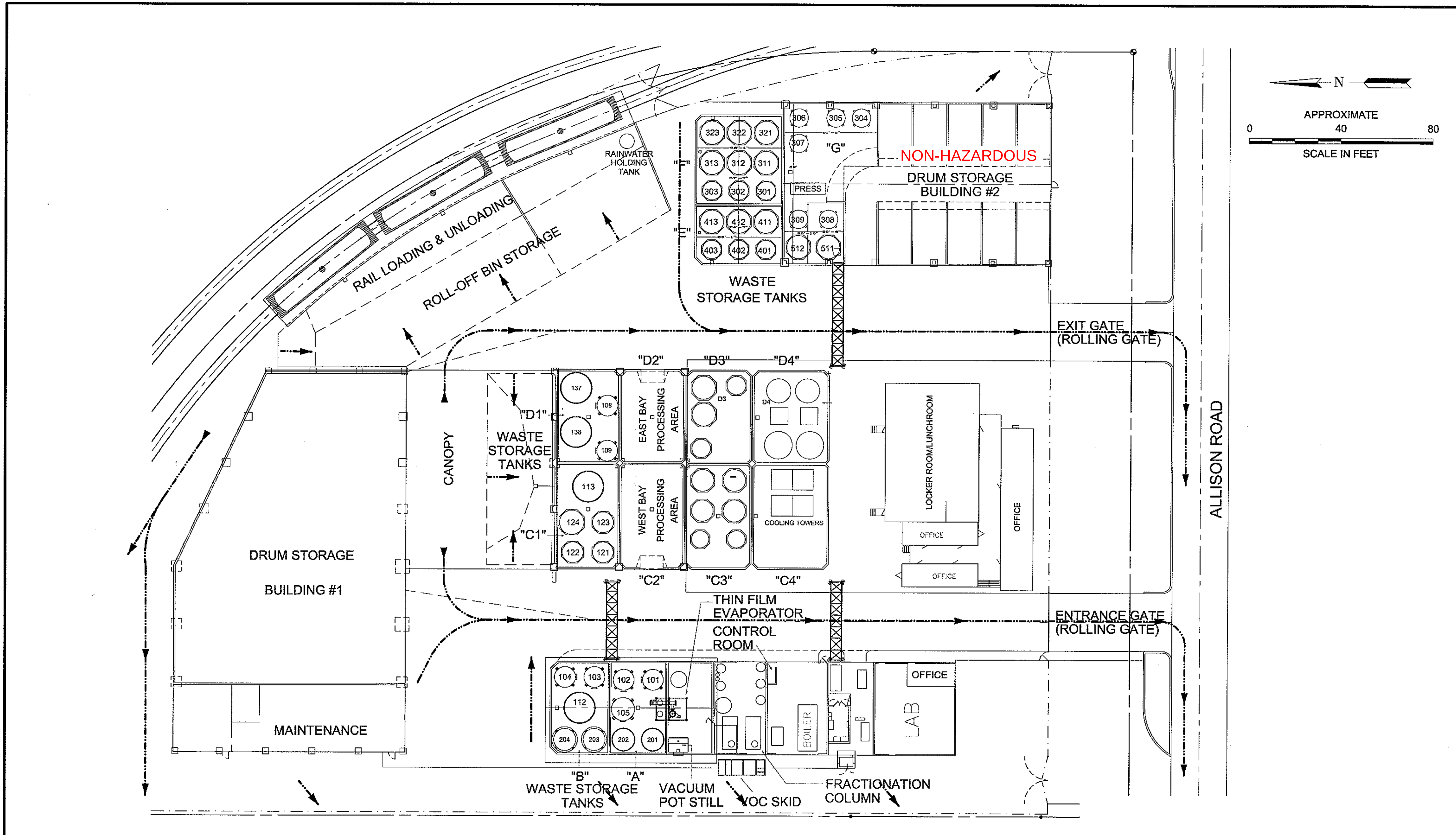
Figure B-3


PIMA-CHANDLER
INDUSTRIAL PARK
PARCEL A
TRACT 1
TRACT 2
TRACT 3
TRACT 3A
TRACT 4
TRACT 5
TRACT 6
TRACT 7
TRACT 8
TRACT 9
TRACT 10
TRACT 11
TRACT 12
TRACT 13
TRACT 14
TRACT 15
TRACT 16
TRACT 17
TRACT 18
TRACT 19
TRACT 20
TRACT 21
TRACT 22
TRACT 23
TRACT 24
TRACT 25
TRACT 26
TRACT 27
GILA RIVER
INDIAN
RESERVATION
GAS LINE EASEMENT
PROPOSED ROAD
INTERSTATE 10
VICINITY MAP
SCOTTSDALE
I-10
PHOENIX
MESA
CHANDLER
Elliot Road
Williams Field Rd.
PIMA CHANDLER
INDUSTRIAL PARK
To Tucson
N



REFERENCE: BASEMAP PROVIDED BY:

ROMIC ENVIRONMENTAL TECHNOLOGIES CORP.
ROMIC SOUTHWEST, CHANDLER, ARIZONA

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Site Drainage Map

Romic - Southwest
Chandler, Arizona

Figure B-4

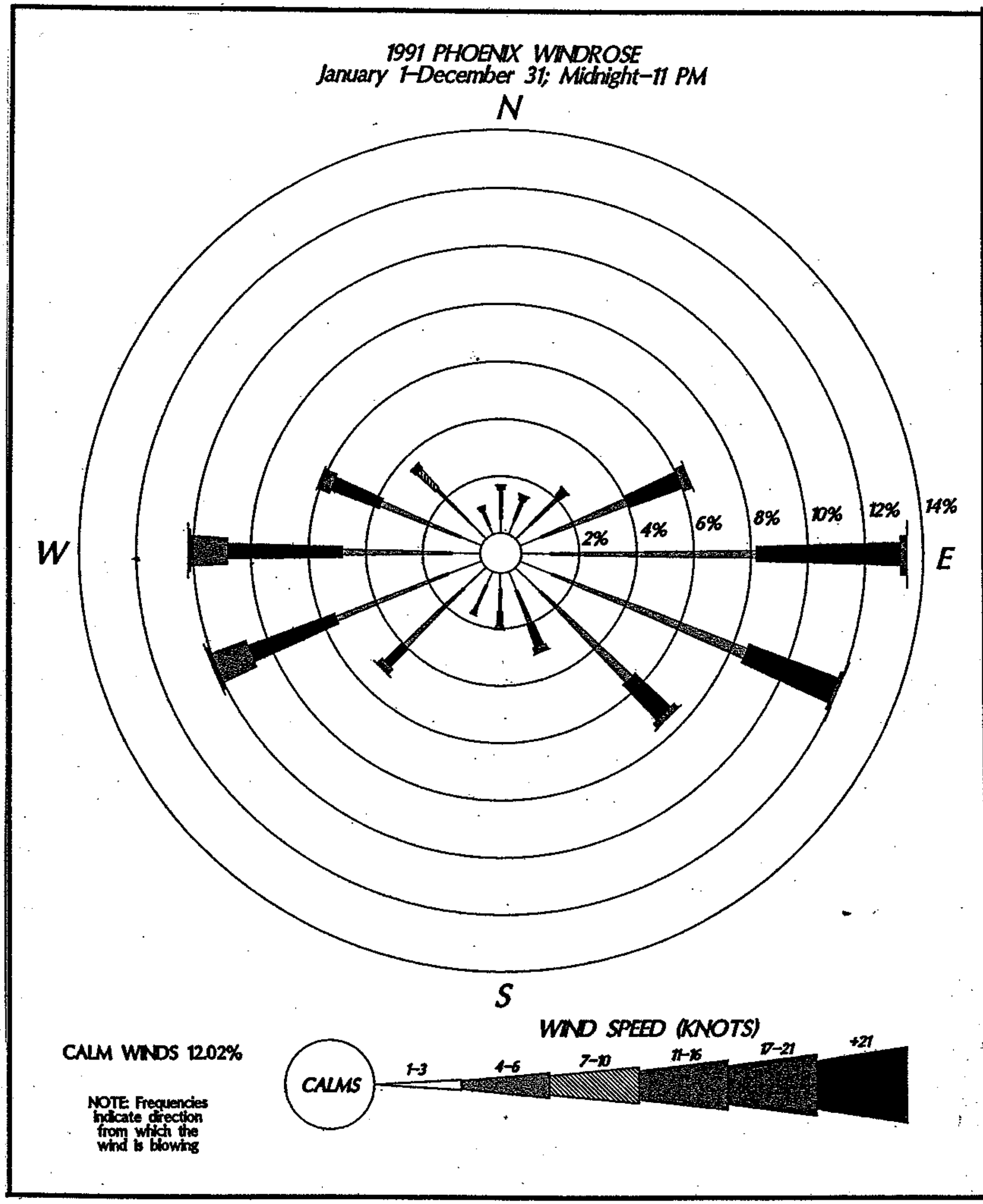
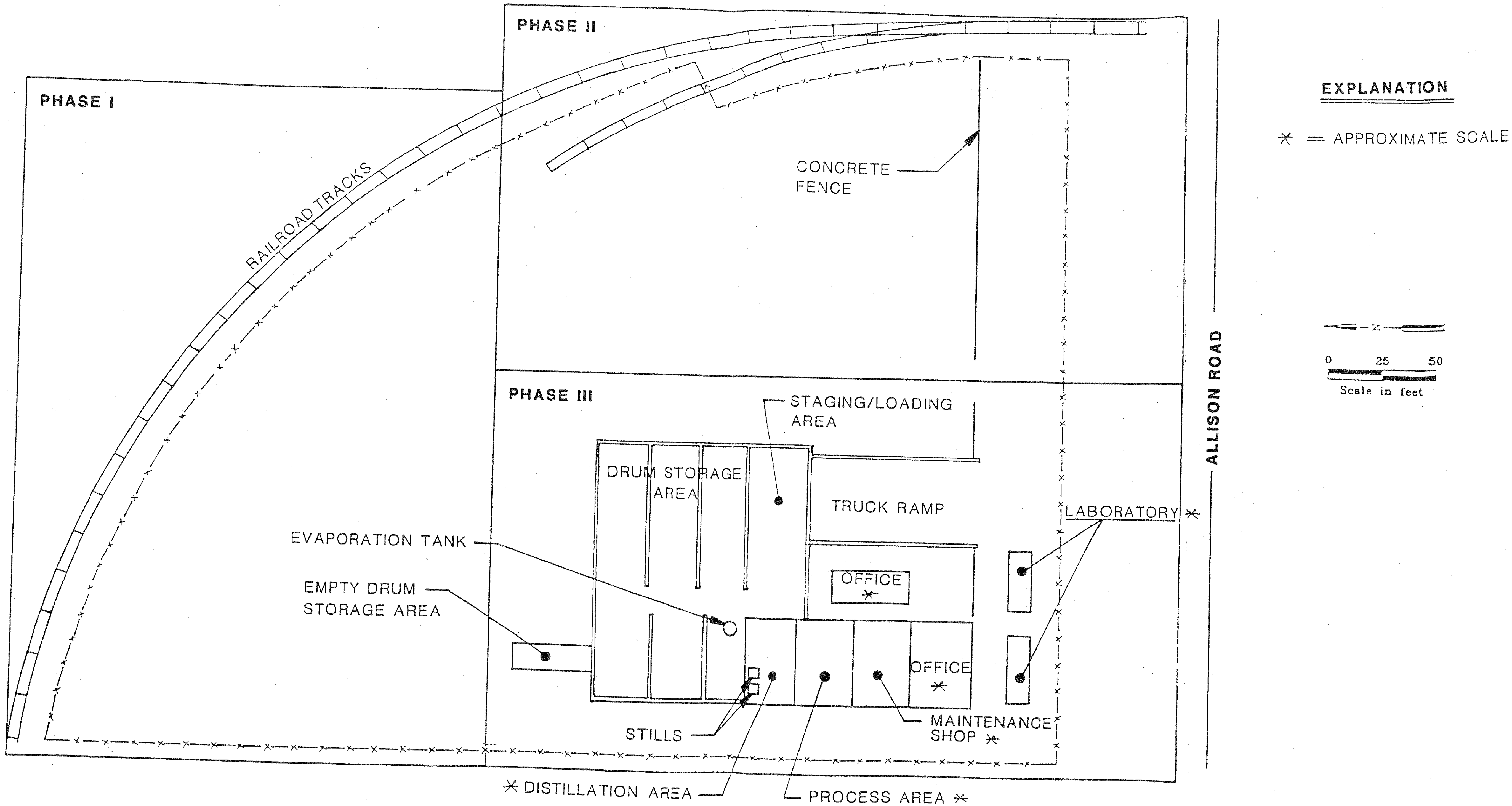


Figure B-5

Area Wind Rose Diagram

Phoenix, Arizona



ROMIC CHEMICAL CORPORATION SOUTHWEST

Figure B-6a. Remediation Phases

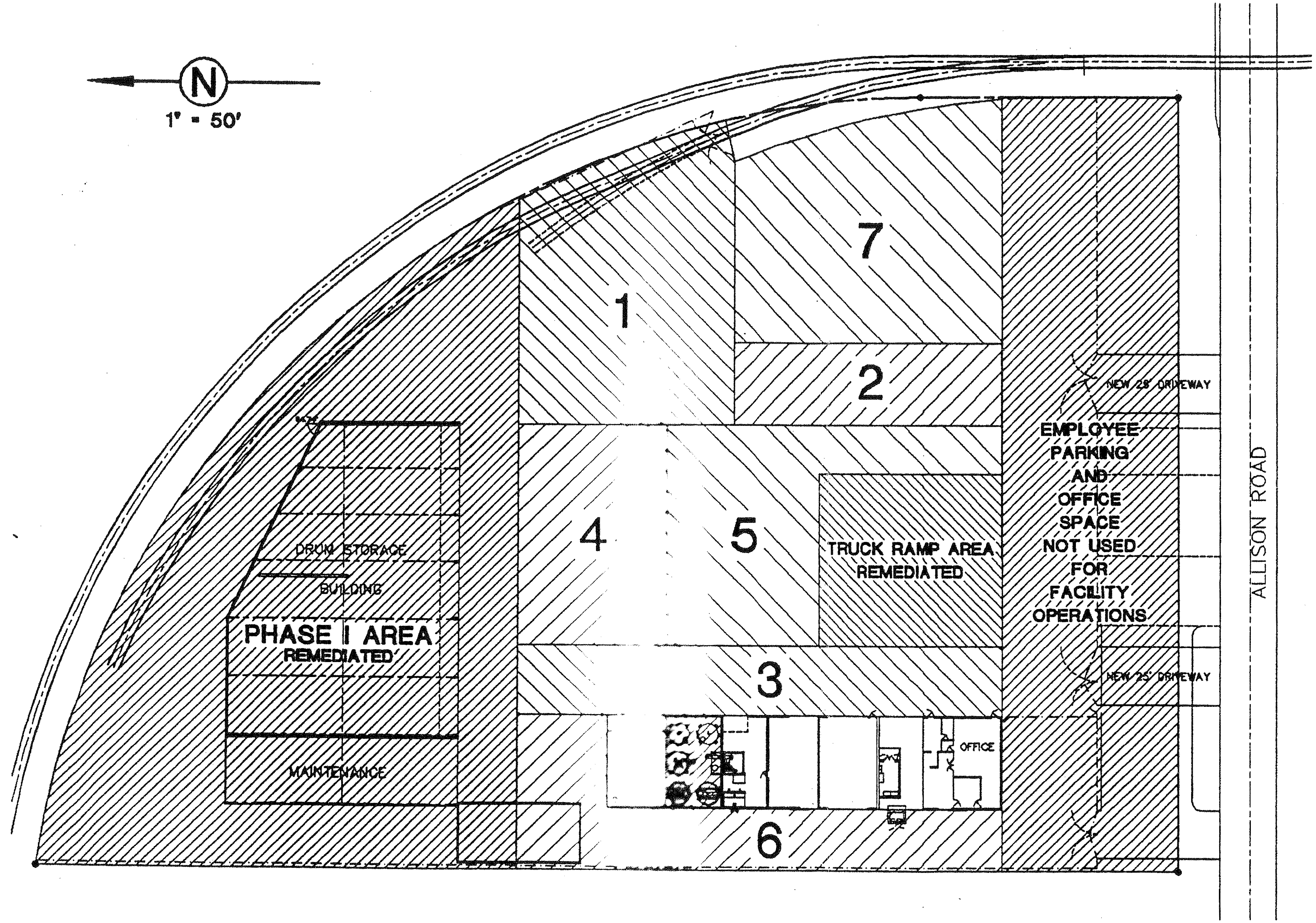


Figure B-6b. Remediation Subareas

REV	DATE	REVISION	APP

ROMIC CHEMICAL CORPORATION ENGINEERING DEPARTMENT

ROMIC CHEMICAL - SOUTHWEST
CHANDLER, ARIZONA

PLOT PLAN
REMEDIATION AREAS

DATE: 15 MAY 91
SCALE: 1" - 50'
DRAWING NO.
P-REM
SHEET OF

PLOT-REM.DWG 05-16-91

LEGEND

⊕ LB1 GROUNDWATER MONITOR WELL

0 1/2 1 MILE

0 1000 2000 3000 FEET

TCE INVESTIGATION SITE MAP - MONITORING WELL LOCATIONS

PHASE I REMEDIAL INVESTIGATION

TCE INVESTIGATION AREA

GILA RIVER INDIAN COMMUNITY, ARIZONA

PROJECT NUMBER: 34.78005.0001

DRAWING FILE: S:\Projects\34.78005 Gila River\34.78005.0001 Lone Butte GW Inv\Report\Fig 2 - Site Map.cdr

FIGURE B-6 c

Source: ATC Assoc. Tempe, Az

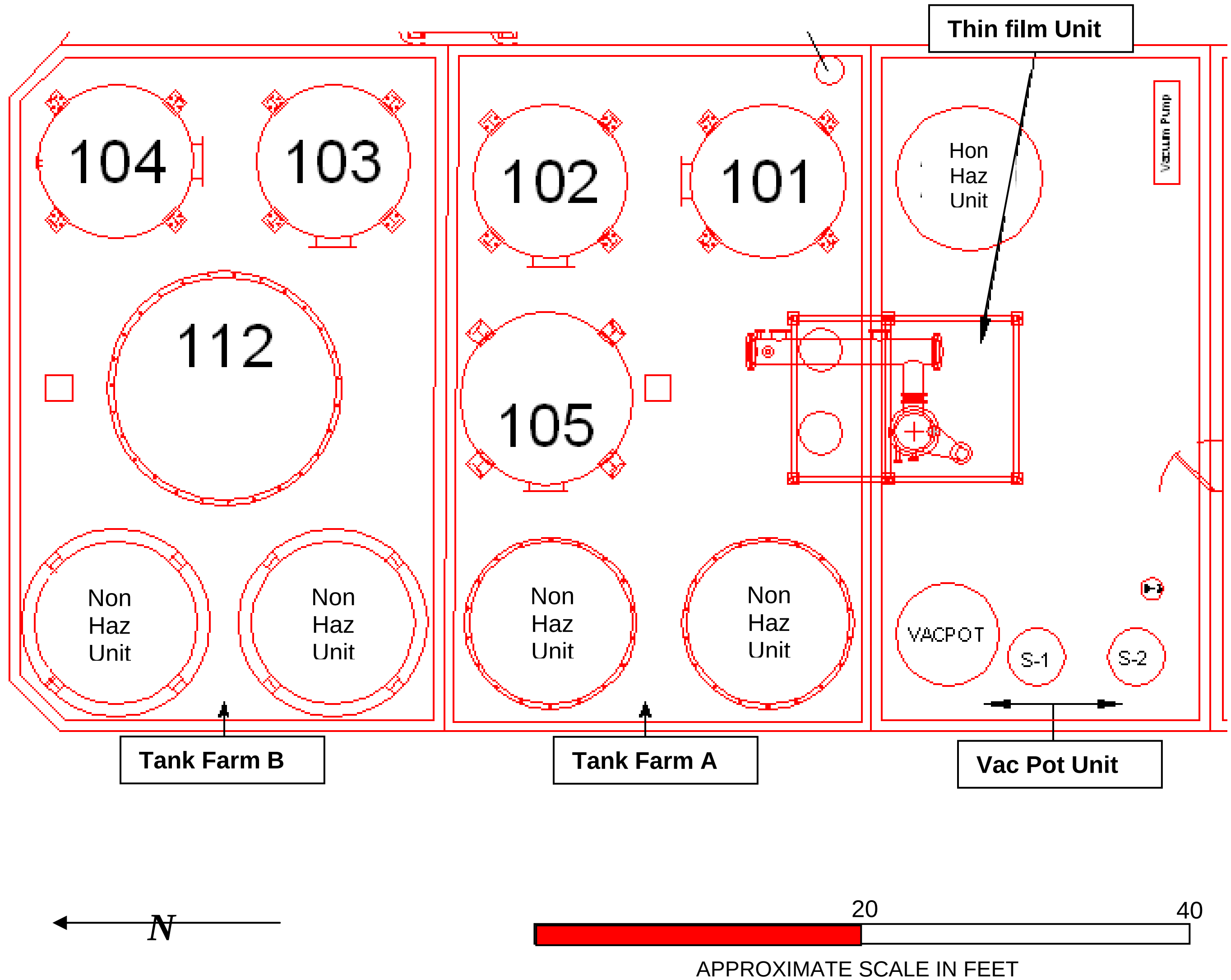


Figure B-7
Tank Farms A, B and Thin film/Vac Pot Unit Containment

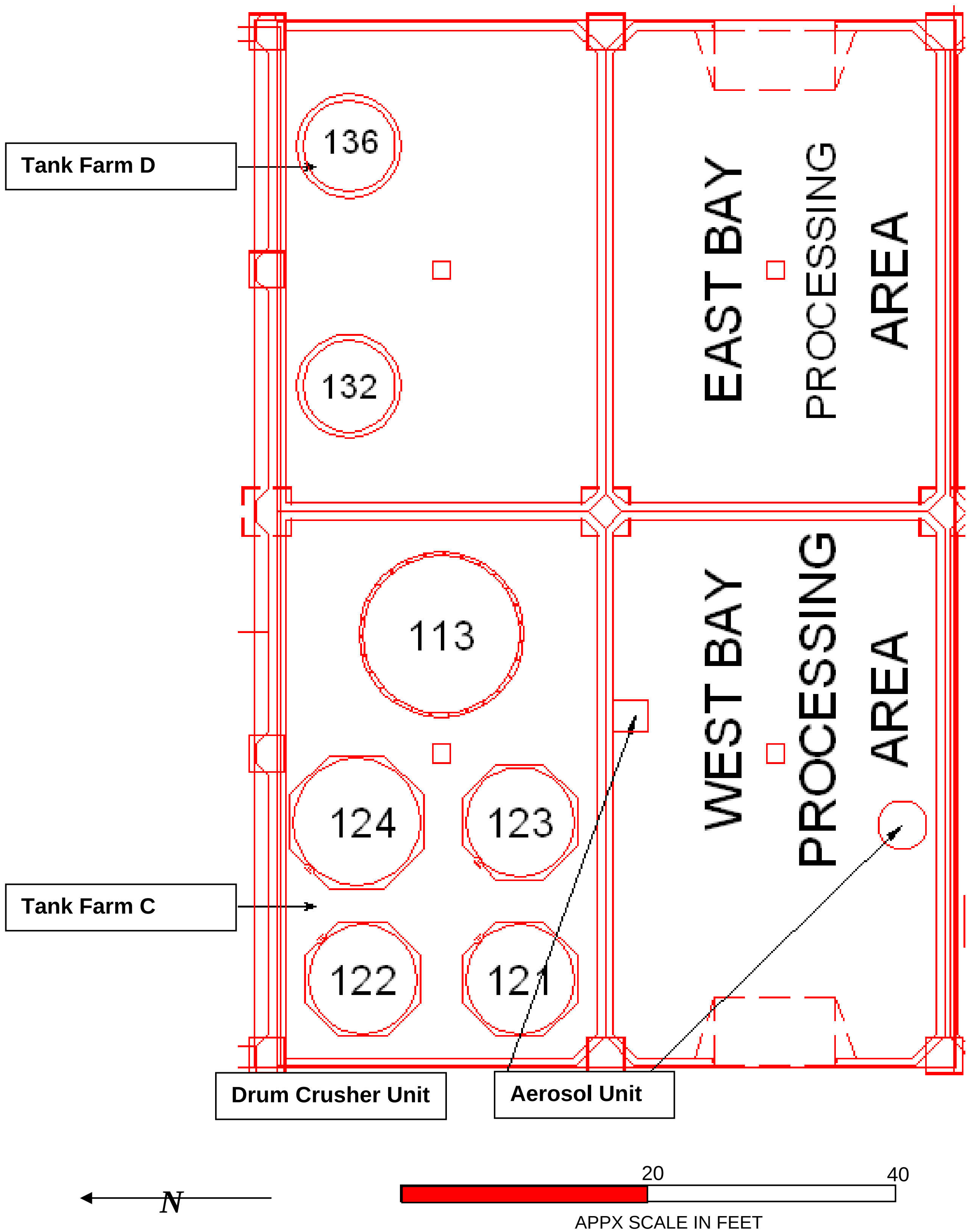


Figure B-8
Tank Farms C, D and West and East Processing Areas

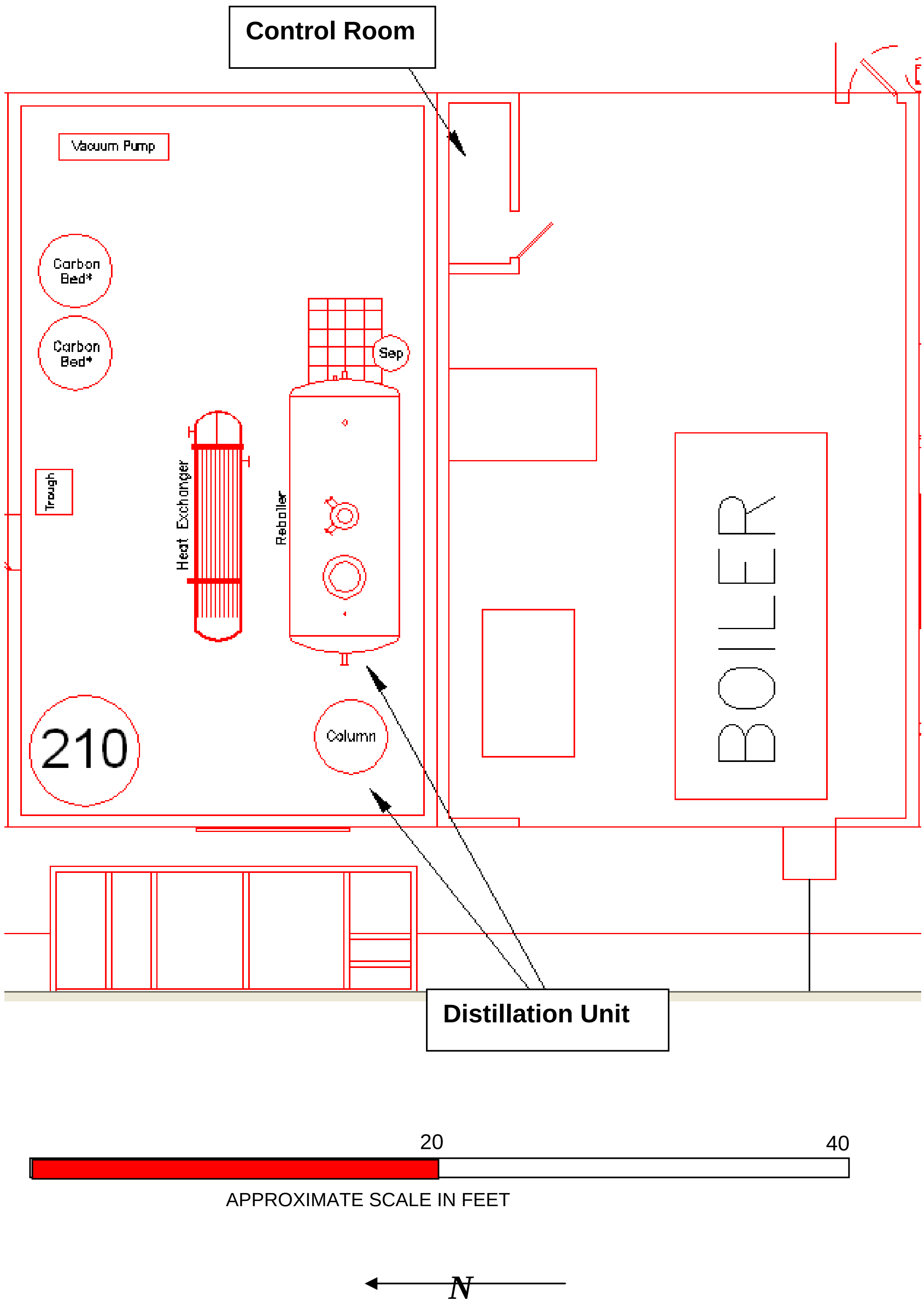


Figure B-9
Distillation Unit

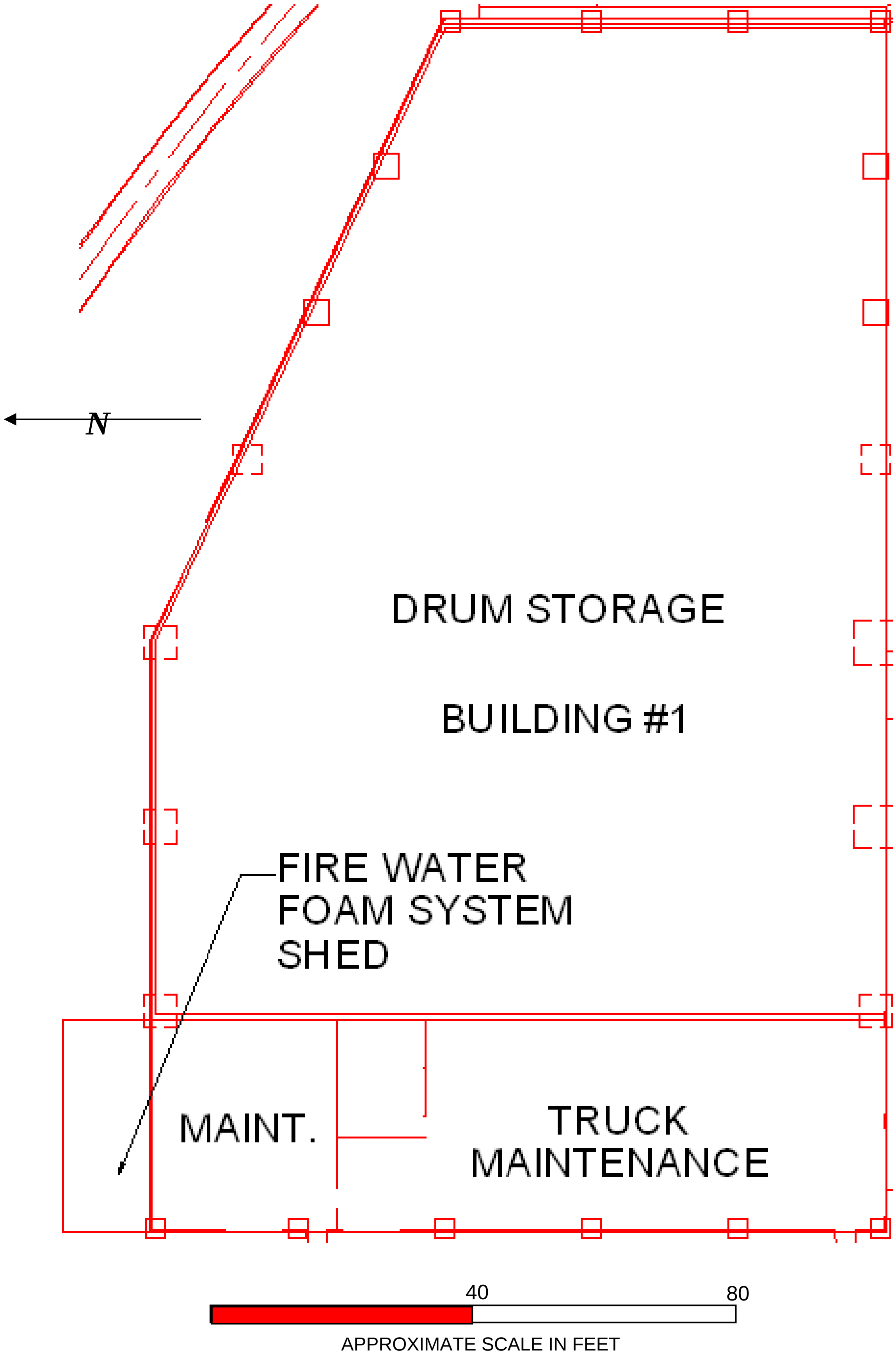


Figure B-10
Drum Storage Building #1

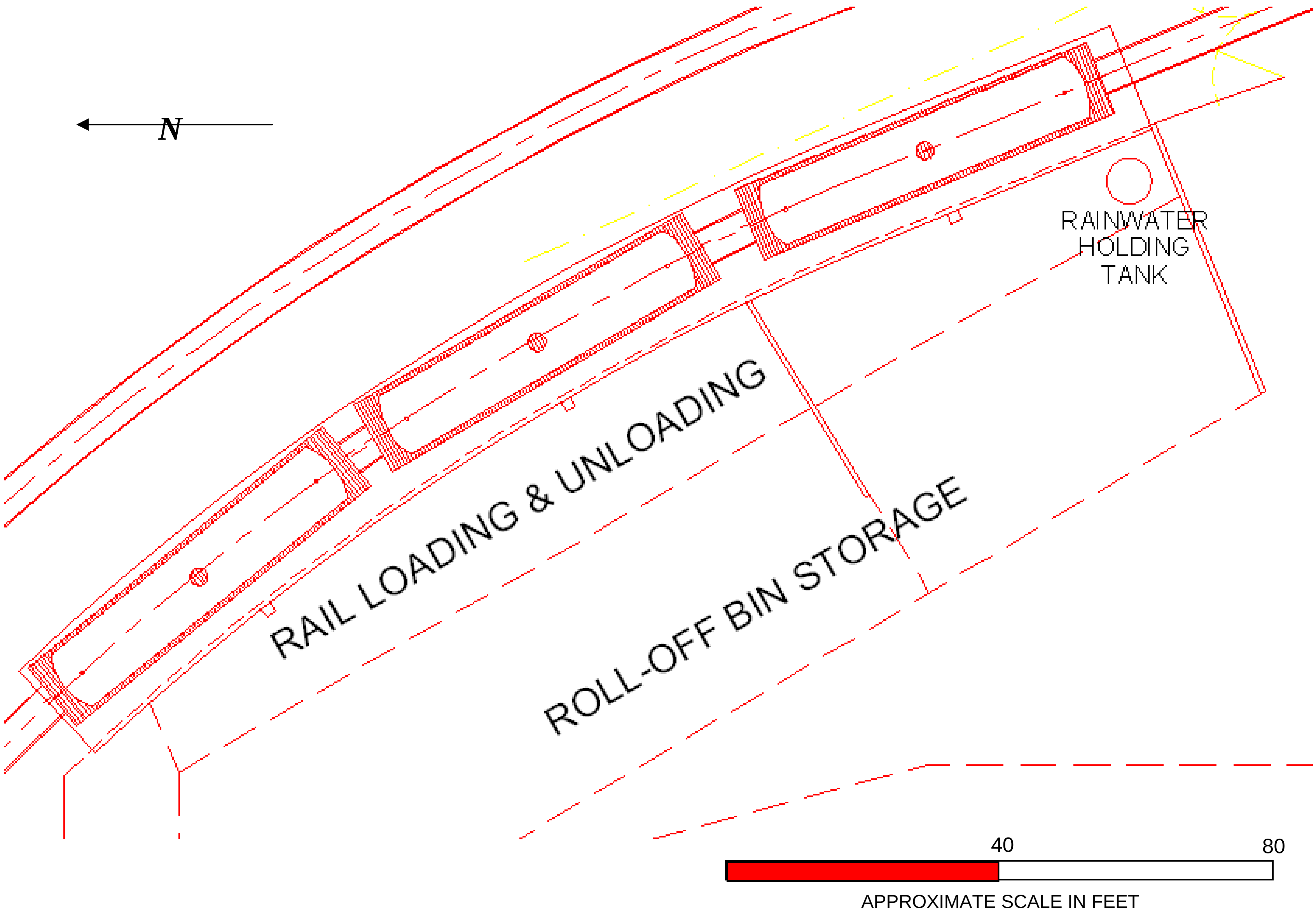


Figure B-1 1
SWMU Loading and Unloading Area

ATTACHMENT A – COST ESTIMATE FOR CLOSURE

ITEM DESCRIPTION (detailed costs provided in Attached Sheets)	**COST**
A.1 Waste Inventory Elimination	$0
A.2 Closure Generated Waste Management	$13,832
A.3. Investigation Derived Waste Disposal	$1,350
B1. Concrete Secondary Containment Decontamination	$28,761
B2. Tank and Process Equipment Decontamination	$21,973
B3. Pumps and Piping Decontamination	$17,266
B4. Heavy Equipment Decontamination	$1,295
B5. Yard Truck Decontamination	$1,000
B6. Decontamination Rinsate Disposal	$77,946
C. Soil, Groundwater, Concrete, and Rinsate Sampling and Analysis	$375,185
D1. Personal Protective Equipment	$6,600
D2. Engineering Certification	$42,680
D3. Other Contractor Costs	$125,000
D4. Other Consultant Costs (Toxicologist)	$0
SUBTOTAL	$712,888
Project Management, Engineering, Planning (10%)	$71,289
SUBTOTAL	$784,177
Contingency (15%)	$117,627
TOTAL CLOSURE COST ESTIMATE (2008 $)	**$901,804**

	Tank, Equipment, or Structure ID	Capacity/Dimensions (in gallons unless otherwise noted)	Surface Area (square feet)	Piping (feet)	Waste Handled	Decontamination Methods	Equipment Used
Tank Farms A & B	101	5,800	594	46	ORG, AQ	Hydroblasting	Hydroblaster
	102	5,800	594	18	"	"	"
	103	5,800	594	68	"	"	"
	104	5,800	594	121	"	"	"
	105	5,900	572	37	"	"	"
	112	15,000	960	148	"	"	"
	Secondary Containment	47.92' x 38.67' x 1.9'	2182.11	N/A	"	"	"
	Sump	17" x17" x10.5"	6.96				
	Sump	21" x 21" x 12"	10.06				
	pumps	1	N/A	N/A	"	Rinsing	Pressure washer
Tank Farm C	121	6,500	503	34	ORG, AQ	Hydroblasting	Hydroblaster
	122	6,500	503	30	"	"	"
	123	6,500	503	16	"	"	"
	124	9,000	644	12	"	"	"
	113	15,000	960	12	"	"	"
	Secondary Containment	45.25' x 25.83' x 2.5'	1524.21	N/A	"	"	"
	Sump	21" x 21" x 12"	10.06				
	Pumps	1	N/A	N/A	"	Rinsing	Pressure washer
Tank Farm D	132	4,100	580	5	ACID, ALK	Hydroblasting	Hydroblaster
	136	4,100	580	5	"	"	"
	Secondary Containment	39.67' x 25.83' x 2.5'	1,352	N/A	"	"	"
	Sump	21" x 21" x 12"	10				
	Pumps	1	N/A	N/A	"	Rinsing	Pressure washer
Processing Area	TF	N/A	86	82	ORG, AQ	Hydroblasting	Hydroblaster
	receivers	450	200	42	"	"	"
	Column/reboiler	2,900	603	158	"	"	"
	receiver	85	27	50	"	"	"
	Secondary Containment		1569		"	"	"
	Sump	5.33' x 4' x 0.75'	35.32		"	"	"
	Sump	1.5' x 1.33' x 0.67'	5.79		"	"	"
	Pumps	6	N/A		"	Rinsing	Pressure washer

	Tank, Equipment, or Structure ID	Capacity/Dimensions (in gallons unless otherwise noted)	Surface Area (square feet)	Piping (feet)	Waste Handled	Decontamination Methods	Equipment Used
VOC System	S-1	318	42.5	491	ORG, AQ	Hydroblasting	Hydroblaster
	S-2	80	10.6	10	"	"	"
	S-3	8	1.36	30	"	"	"
	Secondary Containment	22' x 10' x 0.42'	246.88		"	"	"
	Sump	1' x 1' x 1'	5.00		"	"	"
	Pumps	4			"	Rinsing	Pressure washer
Building #1	Secondary Containment		11,143	35	ORG, AQ	Hydroblasting	Hydroblaster
	Sump	39.5' x 1.33 x 0.5	93				
	Canopy		3,041.58	105	ORG, AQ, ACID, ALK	Hydroblasting	Hydroblaster
	Sump	21" x 21" x 12"	10.06				
Rail Spur Area	Secondary Containment		8,704	154	ORG, AQ, ACID, ALK	Hydroblasting	Hydroblaster
	Sumps	18" x 18" x 12"	8.25				
West Bay Processing Area	Secondary Containment		1,152	38	ORG, AQ, ACID, ALK	Hydroblasting	Hydroblaster
	Sump	18" x 18" x 12"	8.25				
East Bay Processing Area	Secondary Containment		1,039	0	ORG, AQ, ACID, ALK	Hydroblasting	Hydroblaster
	Sump	18" x 18" x 12"	8.25				
TOTALS	Tanks	95,800	8,181	552			
	Process Units including VOC System	3,841	970	863			
	Containment Areas		31,954	332			
	Sumps	7	211				
	Pumps	9					

CCE- Waste Management

A.1 Maximum Waste Inventory Elimination

No cost element for inventory elimination is included, as there is no waste in inventory.

A.2 Closure Generated Waste Management

RCRA Debris	Estimated			
Contaminated personal protective equipment	1	cu. yd.		
HDPE tanks, cut up	5	cu. yd.		
Steel tanks, cut up	10	cu. yd.		
Small equipment/piping	2	cu. yd.		
Demolished concrete	2	cu. yd.		
Total RCRA Debris:	20	cu. yd.		
Disposal cost per cubic yard	$125			
Transportation cost	$1,610			
		Total:	$	4,110.00
RCRA solids				
Concrete from surface removal	40	cu. yd.		
Excavated soil	10	cu. yd.		
Total RCRA solids:	50	cu. yd.		
Disposal cost per cubic yard	$125			
Transportation cost	$3,220			
		Total:	$	9,470.00
Non-RCRA solids				
Fence privacy slats, west side fence	2	cu. yd.		
Total non-RCRA solids:	2	cu. yd.		
Disposal cost per cubic yard	$26			
Transportation cost	200			
		Total:	$	252.00
		Total cost for management of closure wastes:	**$**	**13,832.00**

rinsate disposal accounted for in decon breakdown

A.3 Investigation Derived Waste Management

	#	unit		
Concrete borings	0.5	drums		
Soil borings	7.5	drums		
Total IDW solids:	8	drums		
T&D cost per drum:	$150			
Total cost:			$	1,200

	#	unit		
Well development water	1	drums		
T&D cost per drum:	$150			
		Total cost:	$	150
		Total cost for management of IDW wastes:	**$**	**1,350.00**

B. Facility Decontamination Costs (existing)

B1. Concrete Secondary Containment Decontamination (hydroblast)

Unit Costs
Assume all hydroblasting to be in Level C
100 square feet per hour-Level C hydroblasting

$72.65/hour operation of hydroblaster, including water, electricity and labor-Level C

4 gal/sq.ft. of rinsate generated during hydroblasting

$16.67 per hour hydroblaster rental ($4000 hydroblaster rental per month / 30 days per month / 8 hours per day)

Total
$89.32 per hour for hydroblasting-Level C

Surface Area

From Existing Units Summary - Total Secondary Containment Sq footage equals Include Sump Surface Area	32,165
Total Hours in Level C (at 100 sq. ft per hour)	322
Rinsate Quantity Total gallons at 4 gallons per Sq. foot (See B.6 for disposal)	128,660

Cost for Hydroblasting

Level C	322 hours x	$89.32	/ hour =	$28,761
				$28,761

B2. Tanks and Process Equipment Decontamination

Unit Costs

$72.65/hour operation of hydroblaster, including water, electricity and labor-Level C
4 gallon/sq.ft. of rinsate generated during hydroblasting
$16.67 per hour hydroblaster rental ($4000 rental per month / 30 days per month / 8 hours per day)

Total
$89.32 per hour for hydroblasting and decon-Level C

From Existing Units Summary - Total Tanks and Process Units Square footage equals	9,151
Total Hours in Level C (at 100 sq. ft per hour)	92
Rinsate Quantity Total gallons at 4 gallons per Sq. foot (See B.6 for disposal)	36,604

Cost

Level C	246 hours x	$89.32 / hour =	$21,973
			$21,973

B3. Pumps and Piping Decontamination

Unit Costs (pressure washing)
$702 per month pressure washer rental
$69.01/hour operation of pressure washer, including water, electricity and labor-Level C
4 gal/sq.ft. of rinsate generated during pressure washing (based on Means)

$2.925 per hour pressure washer rental ($702 rental per month / 30 days per month / 8 hours per day)
100 gallons rinsate per hour

Total
$71.94 per hour pressure washing-Level C

Unit Cost (pumps)
.5 hours per pump-Level C

Unit Costs (pipes)
300 lineal foot per hour-Level C

Quantity (pumps)	9	
Allowance (Estimated)		45
at .5 hours per pump =		23
Quantity (pipes)		
Approximate Feet=		1,747
Total labor hours for pipe at 300 feet per hour		6
Total Labor Hours (pumps and pipe)		240
Total Labor Cost		$17,265.60
Total Rinsate (gallons) -	24,000	
		$17,266

B4. Heavy Equipment Decontamination

Unit Costs
$63 /unit - equipment cost for high pressure washing
$29.50 /hr - labor for high pressure wash (1 unit/hr)
400 gallons rinsate per hour

Total cost per Unit $92.50

Quantity
5 forklifts, etc.

3 Manlifts
2 Sampling Systems
4 Misc. Equipment Items
14 Total Units

Cost for Decon $1,295.00

Rinseate Quantity
(14 hours)(400 gallons per hour) = 5600 gallons
(see Section B6., Decontamination Rinseate and Disposal, for rinseate disposal cost)

$1,295

B5. Yard Truck Decontamination

Unit Costs
Cost for rinsing each Yard truck (including rinsate disposal) is $500 per vehicle including disposal

Quantity
2 Yard Tankers

$1,000.00

$1,000

B6. Decontamination Rinseate Treatment and Disposal

Unit Costs
$0.08 /gal-liquid loading into bulk
$0.32 /gal - off-site wastewater transportation and disposal
$0.40 Total Cost

Quantity (gallons)	
B1. Concrete Secondary Containment Decontamination rinsate volume	128,660
B2. Tanks and Process Equipment Decontamination rinsate volume	36,604
B3. Pumps and Piping Decontamination rinsate volume	24,000
B4. Heavy Equipment Decontamination rinsate volume	5600
B5. Yard Tanker Decontamination (disposal included in cost above)	0
Total Rinsate (gallons)	194,864

Cost
194,864 gal x $0.40 / gal = $77,946

$77,946

TOTAL FACILITY DECONTAMINATION COSTS (existing facility) **$147,241**

C. Sampling and Analytical Costs (existing)

C1. Soil and Groundwater Sampling and Analysis

Analytical costs from Lab Price Sheet

Unit Costs(analysis)	Shallow Soil	Deep Soil	Groundwater	Rinsate
VOC analysis	$150	$150	$150	$150
3 MFSD samplers	$30	$30		
SVOC analysis	$225	$225	$225	$225
Herbicide Analysis[1]	$259			
Metals analysis	$145	$145	$145	$145
Mercury	$35	$35	$35	$35
Hexavalent Chromium, Low Level			$100	
pH	$10	$10	$10	$10
Subtotal (analysis) per sample	$854	$595	$665	$565
Add 15% to Analytical Costs for Lab duplicates, field blanks, etc.	$982	$684	$765	$650
w/10% Markup	$1,080	$752	$842	$715
Sampling Unit Cost (Includes mobilization, permits, utility locating, soil borings, Geoprobe, auger, geologist, labor)	$150	$330	$350	$18

Total (sampling + analysis)		
	$1,230	per shallow soil sample for soil and concrete
	$1,082	per deep soil sample
	$1,192	per groundwater sample
	$733	per rinsate sample

C2. Number of Samples

Unit	Square Footage	Subsurface Soil Samples per Unit	Rinsate Samples	Groundwater Samples
Building #1	11,143	37	0	1
Canopy	3,042	32	0	1
Railspur Area	8,704	32	4	1
West Bay Processing Area	1,152	27	2	1
East Bay Processing Area	1,039	22	1	1
Tank Farm A & B	2,182	32	12	1
Tank Farm C	1,524	22	4	1
Tank Farm D	1,352	22	2	1
Production Area	1,816	0	15	0
Vacuum Pot Unit Area		22	6	1
Distillation Unit Area		17	9	1
Background Borings	N/A	12	0	0
		277	55	10

Total Sampling Costs

	#Samples	$/Sample	Total $
shallow soil samples	157	$1,230	$193,110
deep soil samples	120	$1,082	$129,840
groundwater samples	10	$1,192	$11,920
rinsate samples	55	$733	$40,315

Total Costs for Sampling **$375,185**

D. Miscellaneous Costs (existing)

D1. Personal Protective Equipment (PPE)

Assume workers will need one set of PPE including body overalls, gloves, goggles, respirator cartridges, and hard hat at a cost of $140 per worker for each area decontaminated. plus replacement coveralls gloves, Tyvek, etc, at $60 per worker ($200 Total cost)

3 workers (Building #1)
3 workers (Canopy)
3 workers (Railspur Area)
3 workers (West Bay Processing Area)
3 workers (East Bay Processing Area)
3 workers (West Driveway)
3 workers (East Driveway)
3 workers (Tankfarm A & B)
3 workers (Tankfarm C)
3 workers (Tankfarm D)
3 workers (Processing and Voc System)

33 workers for total

33 workers x $200 / worker =	$6,600

D2. Closure (Engineering) Certification

Unit Costs
$165 /hr - labor for professional engineer
$100 /hr - for Junior Engineer
Quantity
4 hr/site visit - one site visit each week of closure
34 weeks to complete closure = 136 hours; 16 hours to review final documentation
total of 116 hours for Professional Engineer
Junior Engineer (Same field time 136 hrs plus 40 hours for report preparation
for total of 180 hours
Cost

152 hours x $165 / hour =	$25,080
176 hours x $100 / hour =	$17,600
Total Closure Certification Costs	**$42,680**

D3. Other Contractor Costs

Mobilization/Demobilization	$5,000
Pipe Fitting/Electrical Disconnect (for safety)	$25,000
Contractor Supervisory Costs (10 weeks x 40 hrs/week x $50/hr)	$20,000

Additional Heavy Equipment -Primary use will be Romic Equipment -Includes compressor, manlifts, cranes	$75,000
Subtotal Other Contractor Costs	$125,000

D4. Other Consultant Costs

	$0
Total Miscellaneous Costs	**$174,280**

Romic Environmental Technologies Corp.

AZD 009015389
Romic Southwest Facility

Attachment B

Sampling and Analysis Plan

Revised August 2008

SAMPLING AND ANALYSIS PLAN TABLE OF CONTENTS

SAMPLING AND ANALYSIS PLAN TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

This Sampling and Analysis Plan (SAP) presents the procedures that Romic Environmental Technologies Corp. ("Romic") will use for the collection, analysis, and evaluation of environmental media samples for the planned closure of the hazardous waste management units (HWMU) at the former Romic Southwest facility (Facility). The SAP has been prepared as part of the Romic Closure Plan (Plan). This sampling plan explains sample collection, analysis, and evaluation for:

- Verification sampling to confirm adequate decontamination of equipment.
- Verification of successful decontamination of tanks and concrete structures.
- Soil sampling, including background samples, for evaluation of closure performance standards; and,
- Groundwater sampling in support of the investigation required under the RCRA 3008(h) corrective action order.

1.1 Project Background

Closure activities at the facility will be performed in accordance with 40 CFR 265 Subpart G. An overview of the closure process is shown in Figure S-1. Additional description of the closure activities is provided in the Plan. Major site closure activities include:

- Initial set up
- Decontamination
- Verification sampling
- Dismantle or demolish structures
- Soil sampling and analysis
- Groundwater sampling and analysis
- Waste disposal (off-site), and
- Closure Certification

1.2 Program Organization

The responsibilities of key program personnel are as follows:

Closure Project Manager

Responsible for overall project execution and quality. The Closure Project Manager is responsible for management of all site personnel and subcontractors assigned with the task of closing the Facility, including training of staff, oversight, and supervision.

Quality Assurance (QA) Manager

The Quality Assurance (QA) Manager will direct all sampling activities and be responsible for assuring that representative samples are properly collected at the appropriate locations. In addition, the QA Manager will oversee that all samples are properly labeled, packaged and delivered to the analytical laboratory using appropriate chain-of-custody procedures.

The QA Manager is also responsible for reviewing, monitoring, auditing, and evaluating all sampling activities conducted during site closure. The QA Manager is responsible for the quality of data gathered, confirmation that the sampling was conducted in accordance with the SAP, and maintenance of the program database. In addition, the QA Manager will review and audit the contract analytical laboratory performance and be responsible for data verification.

Analytical Department Manager

Responsible for managing all day-to-day analytical activities. The Analytical Department Manager will direct the Closure project contract laboratories and will be responsible for the timely reporting of data to ensure uninterrupted operation of the closure activities.

All site personnel will be responsible for identifying potential problems that may arise in the collection of environmental samples and the reporting of program data. Personnel will inform their supervisors of any such problems.

2.0 CONTAMINANTS OF CONCERN

The Facility received a broad range of hazardous wastes for storage and treatment. The various treatment and disposal processes utilized at the Facility include:

- Solids Consolidation
- Solvent Recycling
- Ethylene Glycol Recycling
- Fuel Blending
- Non-Wastewater Treatment
- “Off-Site” Transfer

The Facility also conducted the following waste management practices:

- Consolidation of Small Containers
- Can Crushing
- Aerosol Depressurization
- Drum Crush
- Truck Wash

In general, the hazardous wastes accepted at the Facility include spent petroleum solvents, various liquid wastes, and sludges. The Facility did not accept TSCA-regulated PCBs.

The process by which the contaminants of concern for this closure were selected is detailed in the Appendix to the SAP. Table 5 in the Appendix lists the selected contaminants of concern (COC).

3.0 DATA QUALITY OBJECTIVES

This section describes the technical approach for the closure sampling and analysis including the specific data quality objectives, closure performance standards, and the respective sampling requirements for each data quality objective.

3.1 General Data Quality Objectives

The objectives of sampling and analysis is to confirm that the site meets all closure performance standards at time of closure. This confirmation process will be accomplished by the following:

- Determination that all structures, tank systems, and associated equipment used in the Facility have been adequately decontaminated during closure, unless they are to be disposed as hazardous waste; and
- Verification that there have been no releases of hazardous materials from the Facility to the environment during its years in operation and during closure.

Romic has prepared this sampling and analysis scheme through the systematic planning process called the "Data Quality Objectives" (DQO) process. The results of this planning process are documented in Tables S-1a and S-1b.

3.2 Closure Performance Standards

The objective of this closure project is clean closure. Clean closure means that all hazardous wastes will be removed from any RCRA regulated units and that any releases at or from the units will have been remediated so that further regulatory control under RCRA Subtitle C is not necessary to protect human health and the environment. Hazardous waste management units (HWMUs) located within the concrete secondary containment structures will be clean closed by decontamination and removal. Concrete secondary containment structures (i.e., slabs, berms, and walls) will be decontaminated and, if decontamination is verified to be successful, will be left in place, unless their removal is indicated for other reasons, such as project efficiency. Soils below the HWMUs will be evaluated against background levels for metals and U.S. EPA Region 9's Preliminary Remediation Goals (PRGs) for organics in industrial soils (see Appendix S-1). Groundwater will be addressed under the RCRA 3008(h) Administrative Consent Order, Docket No. RCRA(AO)-09-2008-03 ("Corrective Action Order"), entered into by Romic and the U.S. EPA.

A. General Above Ground HWMU Performance Standards

Waste handling equipment, such as tanks, processing equipment, and related piping and ancillary equipment, will be clean closed through decontamination and removal from the facility.

Decontamination verification testing will be performed to support decisionmaking concerning the disposition of decontaminated equipment. The disposition options to be considered will vary according to the type of equipment concerned.

1. High Density Polyethylene Tanks

The high density polyethylene (HDPE) tanks undergoing RCRA closure are Tanks 132 and 136, which were used for the storage of corrosive wastes with trace organic content. HDPE tanks, after successful decontamination, may be dispositioned in several different ways:

a. No Closure Performance Standard (see Figure S-2)

- Manifest to an authorized hazardous waste management facility (TSDF) for reuse
- Manifest to an authorized hazardous waste management facility for disposal

b. Meets Clean Debris Surface Standard (40 CFR 268.45, Table 1 A.1.e.) (see Figure S-3)

- Reuse in an industrial application or
- Recycle material (HDPE) or
- Dispose at a non-hazardous waste facility (e.g., solid waste landfill).

Romic will submit written standard operating procedures for:

- High pressure steam and water spray (decontamination technology)
- Clean debris surface standard verification

These standard operating procedures will be submitted within thirty days of final Closure Plan approval for U.S. EPA review and approval.

2. Steel Tanks and Process Equipment

Steel tanks and process equipment (e.g., thin film evaporator, vacuum pot, distillation column), after successful decontamination, may be dispositioned in several different ways:

a. No Closure Performance Standard (see Figure S-4)

- Manifest to an authorized hazardous waste management facility (TSDF) for reuse
- Manifest to an authorized hazardous waste management facility for disposal

b. Meets Clean Debris Surface Standard (40 CFR 268.45, Table 1 A.1.e.) (see Figure S-5)

- Reuse in an industrial application or
- Recycle material (steel) or
- Dispose at a non-hazardous waste facility (e.g., solid waste landfill).

Romic will submit written standard operating procedures for:

- High pressure steam and water spray (decontamination technology)
- Clean debris surface standard verification

These standard operating procedures will be submitted within thirty days of final Closure Plan approval for U.S. EPA review and approval.

3. Piping, Pumps, Valves, and Other Small Equipment

Piping, pumps, valves, and other small equipment, after successful decontamination, may be dispositioned in one of several different ways:

a. No Closure Performance Standard (see Figure S-6)

- Manifest to an authorized hazardous waste management facility (TSDF) for reuse
- Manifest to an authorized hazardous waste management facility for disposal

b. Meets Clean Rinsate Standard (see Figure S-7)

- Reuse in an industrial application or
- Recycle material or
- Dispose at a non-hazardous waste facility (e.g., solid waste landfill).

Romic will submit written standard operating procedures for:

- Water wash and spray (decontamination technology) (ref. 40 CFR 268.45 Table 1, A.2.a)
- Clean rinseate standard verification

These standard operating procedures will be submitted within thirty days of final Closure Plan approval for U.S. EPA review and approval.

4. Concrete Secondary Containment Structures

Concrete secondary containment structures will be left in place only if successfully decontaminated and verified clean against the standards specified below. Concrete that is not able to be decontaminated will be removed and disposed as hazardous waste.

a. No Closure Performance Standard (see Figure S-8)

- Manifest to an authorized hazardous waste management facility for disposal

b. Meets Clean Debris Surface Standard (40 CFR 268.45, Table 1 A.1.) (see Figure S-8)

- Decontamination will be deemed successful and concrete will remain in place or
- Recycle

Romic will submit written standard operating procedures for:

- High pressure steam and water spray (decontamination technology)
- Abrasive blasting; scarification, grinding, and planing; spalling; and/or vibratory finishing (physical removal/decontamination technology)
- Clean debris surface standard verification

These standard operating procedures will be submitted within thirty days of final Closure Plan approval for U.S. EPA review and approval.

B. Subsurface HWMU General Closure Performance Standards

The decision tree for subsurface soil is shown in Figure S-9.The soil beneath the concrete containment structures will be sampled from each HWMU. Several HWMUs are underlain by a 30 mil plastic liner, with a two- to six-inch layer of sand between the liner and the concrete.

The sand between the containment concrete and the plastic liner will be visually examined, evaluated for volatile organic compounds using a direct-reading instrument, and sampled for laboratory analysis. The sand will be evaluated against the following standards for closure:

1. Free of free liquids containing volatile organic compounds as verified by laboratory analytical data for organic compounds below U.S. EPA Region 9's Preliminary Remediation Goals (PRGs).
2. No apparent staining.
3. RCRA metals results below two standard deviations above the mean background level concentration distribution.
4. Organic results below U.S. EPA Region 9's PRGs for industrial soil.

Results not meeting these standards will indicate removal of the sand layer along with the portions of the liner in the area of contamination.

Clean closure for the soil beneath the liner (or beneath the concrete for HWMUs without a plastic liner) will be confirmed based on the following standards:

1. RCRA metals results below two standard deviations above the mean background level concentration distribution.
2. Organic results below U.S. EPA Region 9's PRGs for industrial soil.

Sample results exceeding either of these standards will result in excavation and removal, if feasible. If removal is not feasible, corrective action addressing contamination will be developed under the Corrective Action Order.

C. Groundwater General Performance Standards

Groundwater performance standards for clean closure of the HWMU will be developed in accordance with the Corrective Action Order. If closure sampling identifies specific source areas beneath a HWMU that have impacted groundwater, a corrective action will be developed as part of the ongoing groundwater corrective action under the Corrective Action Order.

3.3 Description of Sample Locations and Quantities

This section describes the location of the closure samples and the minimum quantities to be collected for each of the hazardous waste management units. A summary of the estimated number, location, type, and matrix of the samples is shown in Table S-2, Summary of Closure Sampling.

3.3.1 Piping, Pumps, Valves, and Other Small Equipment

The Facility has several pieces of piping, pumps, valves, and other small equipment that handled hazardous wastes. Such equipment is located in the following areas:

- Production Areas
- Tank Farm A
- Tank Farm B
- Tank Farm C
- Tank Farm D

Rinsate sampling will be used to confirm that the surfaces of specific equipment (i.e., piping, pumps, valves, and other small equipment) have been properly decontaminated. All decontaminated equipment will be visually inspected for the presence of process residues. Collected rinsate samples will be representative of the interior and exterior surfaces.

Analytical results from rinsate sampling will be compared to the closure performance standards found in section 3.2 If the results are at or below the standards for each COC, then the equipment may be demolished and removed from the site, or marked, and shipped off site for re-sale or as scrap metal. If the analytical results from the rinsate sampling are above the closure performance standards, then the equipment may be decontaminated again and resampled, or the equipment may be demolished and disposed of as a hazardous waste at an appropriately permitted off-site TSDF.

3.3.2 Site Soil

Subsurface Investigation

Site soils will be investigated following decontamination of the containment structures, storage tanks, and equipment as well as removal of the tanks and equipment. For closure, soils beneath each of the HWMU and SWMU (rail spur only) areas will be sampled. Site-wide sampling of soil, soil vapor, and groundwater on and around the Romic Site will also be performed in accordance with the RCRA 3008(h) Administrative Consent Order entered into by Romic and the USEPA ("Corrective Action Order"). While the sub-slab liner exists under other structures at the Romic Site, sampling for closure will only encounter the liner in borings within the HWMUs. Exploration of lined, non-HWMU areas will be considered during the RCRA 3008(h) investigation activities. In addition, background soil samples will be collected and analyzed during closure sampling. The analytical results of the background soil samples will be used in determining the closure performance standards for the site soils.

The analytical results of soil sampling will identify potential areas where remediation may be necessary as a result of past practices at the Facility. If confirmation soil samples have concentrations of hazardous constituents above the closure performance standards, then Romic will conclude that a release has occurred at the site. The impacted soil will be excavated and removed until additional confirmation samples indicate that the hazardous constituent concentrations are below the closure performance standards. In the event that significant soil contamination is present and attributed to the site, a Corrective Action may be developed and reviewed with the Regional Administrator. The Corrective Action may include alternative technology approaches such as soil vapor extraction for VOC removal.

In addition to soil sampling, one-time grab sampling of the site groundwater directly beneath the HWMU and SWMU (rail spur only) areas will be performed during closure sampling to supplement data collected from the seven existing groundwater monitoring wells currently maintained on the site. Data from the grab-water sampling will be used to assess whether groundwater contaminant source area(s) exist at the site. Further groundwater investigation or possible mitigation work will be performed in accordance with the Corrective Action Order.

All collection and analysis of closure soil and groundwater samples will be performed in accordance with the SAP, which includes provisions for using standard test methods, a state-certified laboratory for analyses, proper chain-of-custody procedures, and quality control/quality assurance samples such as field blanks, trip blanks, and duplicate samples.

Site closure soil sampling will be performed at each of the Units and at site background locations. Sample boring locations in the HWMU and SWMU (rail spur only) areas are shown on Figure S-10. A minimum of two to five locations per HWMU have been designated for planning purposes. This minimum number is based on the assumption that interior containment walls will be removed prior to sampling and select borings can thus be co-located. Additional borings may be drilled at questionable cracks or stains if encountered within the containment areas.

One of the designated borings at HWMU and SWMU (rail spur only) areas will be continued to a depth adequate to sample deeper soils and groundwater. The background soil samples will be collected to develop the baseline concentrations of metals as part of the closure performance standards for site soils.

A flexible liner was installed beneath many of the concrete structures during reconstruction of the facility, including each of the containment areas. The liner has been documented to be approximately two to four inches beneath the concrete slab. There is a thin soil fill above the sub-slab liner, and native soil beneath the sub-slab liner. Drilling the test borings in the HWMUs will also drill through the sub-slab liner, however the liner material will not be drilled through before it is confirmed that liquids are not pooled on top of the liner in the containment areas. Further discussion of the drilling methodology in the sub-slab liner areas are presented below.

Soil samples will be collected from beneath each HWMU and SWMU (rail spur only) area in borings drilled through temporary access holes cored through the concrete slabs. Small hydraulic probes will likely be used to collect shallow soil samples through the cores, while truck-mounted equipment will be used to drill the deeper borings that extend down to groundwater.

Vertical borings will be extended to depths of either 10 feet below the bottom of the secondary containment area concrete or into groundwater (estimated to be approximately 70 feet below ground), in accordance with the schedule shown in Tables S-4 and S-5 and on Figure S-10.

The sampling program is intended to test materials located both above and below the sub-slab liner.

Due to the presence of the sub-slab liner, special procedures have been established to minimize the potential for contaminant migration below the liner during sampling. Refer to Figure S-11 for a depiction of the observational sequence. The first sample will be collected from the thin sand layer installed between the concrete and the sub-slab liner. This sample will be collected from all cored locations as soon as possible after the concrete core is drilled in order to minimize volatilization of VOCs. After sampling, the top surface of the sub-slab liner will then be exposed and inspected for signs of liquid wastes. After the liner condition is inspected, the drill will continue down through the sub-slab liner and the remainder of samples collected from beneath the sub-slab liner. The second sample will be collected from approximately 6 inches below the liner. The subsequent target sample depths are shown in Table S-5 and are based on a vertical spacing of 3 feet.

Prior to penetrating the liner with the sampling equipment, the following general guidelines will be complied with depending on the field geologist's observations:

Scenario 1: Free liquids are present on top of the sub-slab liner.

If the sand layer is saturated above the liner when exposed during drilling, the liner will not be penetrated by any boring within the continuous HWMU being tested. Following further exploration of the extent of free liquid, a representative sample will be collected for laboratory testing. If the laboratory testing indicates the free liquids contain chemicals at concentrations in excess of the Cleanup Standards, a mitigation response will be developed in consultation with USEPA prior to deeper sampling beneath the sub-slab liner. If the free liquid does not pose a concern, drilling will be continued after concurrence by USEPA.

Scenario 2: Excessive chemical staining is noted in sand layer above sub-slab liner.

Assuming no free liquid is observed in association with the staining above the sub-slab liner, sampling will proceed in accordance with SAP and Health & Safety Plan (HASP) procedures. However, prior to drilling through the liner, sand will be cleared from around the borehole and a temporary plastic sheet will be used to form a collar to block excessive movement of the sand inwards toward the borehole. The borehole will be grouted and sealed in accordance with the SAP.

Scenario 3: Elevated VOC vapors are measured in sand layer above sub-slab liner.

Assuming no free liquid is observed in association with the elevated VOC vapors measured by direct-reading instrument on the sand layer above the sub-slab liner, sampling will proceed in accordance with SAP and HASP procedures. However, prior to drilling through the liner, sand will be cleared from around the borehole and a temporary plastic sheet will be used to form a collar to block excessive movement of the sand inward toward the borehole. The borehole will be grouted and sealed in accordance with the SAP.

Each of these possible response scenarios will be followed only after consultation with USEPA. The subsurface plastic liner underlying any affected units will be allowed to remain in place only if the following two conditions are met:

(i) It is conclusively established that the soil on top of the liner meets the specified closure performance standards; or

(ii) Such soil can be and is remediated to the specified closure performance standards.

If neither of these two conditions can be met, the relevant portions of the liner will be removed. In addition, if contaminated soil needs to be excavated from below the liner, then portions of the liner above the contamination will be removed.

For planning purposes, the final depth in each shallow boring is targeted at approximately 10 feet below the concrete. However, if odors or visible staining are encountered during drilling, the borings will be continued deeper and more samples collected up to the capacity of the drilling equipment. In addition, the borings that will be used to collect groundwater samples at about 70 feet below ground under each unit, will also be used to collect deep soil samples approximately once every ten feet all the way down to the bottom.

A geologist, under the oversight of a Registered Geologist, will be present during drilling to obtain samples of subsurface materials, maintain a log of the borings, make observations of the work area conditions, conduct health and safety monitoring of possible organic vapors encountered during drilling, screen and log soil samples, and provide technical assistance as required. Each boring will be continuously cored and logged. Boring logs will be prepared and included in the closure completion report.

Relatively undisturbed soil samples will be collected continuously during drilling for stratigraphic logging purposes. Soil samples will be collected from above the sub-slab liner using hand-driven samplers and from below the liner using either a split-spoon sampler (2-inch inside diameter, 18-inches long) or from a Geoprobe ™-type sample barrel. Sample collection requirements are detailed in Section 3.6.1.

Prior to sample collection from each boring location, the sampler will be washed using a dilute solution of Alconox, or equivalent, and rinsed with potable water. The California split-spoon sampler or the outer casing of the Geoprobe ™ system (if retracted from the borehole between soil sampling intervals) will be similarly rinsed between sampling intervals at each location. All rinsate and residual solids from decontamination of equipment will be contained for proper disposal.

After the boring is completed to the target depth, the borehole will be backfilled with grout and the concrete surface reconstructed with high strength Portland cement concrete.

After the samples are collected, each boring will be backfilled with Portland cement grout. The collected soil (and groundwater) samples will be transferred under formal chain-of-custody documentation to a state-certified laboratory for analysis by the methods specified in the SAP. Other sample collection, documentation, and handling procedures will be in accordance with standard procedures described in the SAP.

Background Sampling

Background level soil samples will also be collected from three separate locations at the Facility. The locations will be selected outside the Facilities' operational boundaries and will represent potential areas that have not been impacted by previous site operations. Samples will be tested for RCRA Metals. The background level soil samples will be collected from the locations shown in Figure S-12.

The background level of RCRA metals will be determined by calculating the mean of the three background level samples collected plus two standard deviations. If confirmatory soil samples have concentrations of RCRA metals that exceed the mean plus two standard deviations of the background level concentration distribution, then Romic will conclude a release has occurred. The impacted soil will be excavated, if required, to meet the specified closure performance standard.

Soil Excavation

If feasible, excavation of impacted site soil will extend horizontally to approximately 5 feet and vertically to an elevation of approximately 5 feet below the elevation of the samples exceeding cleanup levels. Additional confirmation soil samples will then be collected from each of the excavation sidewalls and from the bottom of the over-excavation. This process will be repeated, as practical, until all soil areas meet the closure performance standards. Alternative remedial measures may also be used in lieu of excavation with approval. If soil contamination is determined to be relatively extensive at the time of site closure, then a Corrective Action may be developed and reviewed with the Regional Administrator.

3.3.3 Groundwater Sampling

A minimum of one boring per HWMU and SWMU (rail spur only) area will be extended into the first groundwater aquifer estimated at approximately 70 feet below ground surface, and one grab groundwater sample will be collected for laboratory analysis from each boring. This sampling will be in addition to, and will supplement, the investigation being performed in accordance with the RCRA 3008(h) Corrective Action Enforcement Order. All collection and analysis of grab groundwater samples will be performed in accordance with the SAP.

Grab groundwater samples will be collected using a MaxiProbe® device. Target depth for the sample is 10 feet below the groundwater interface, based on the distribution of VOCs in groundwater observed in existing Site wells RE-103 and RE-107.

Upon completion of sampling, each grab groundwater boring will be backfilled with Portland cement grout back to the ground surface.

3.4 Data Quality Indicators

Data quality indicators for the program include "PARC" (precision, accuracy, representativeness, and completeness) goals, and level of confidence requirements, as described in the following subsections.

3.4.1 Precision

Precision measures the reproducibility of repetitive measurements and is usually expressed in terms of imprecision. For this project, precision will be evaluated by determining the relative percent difference (RPD) in results for the MS/MSD and field duplicate samples, using the following formula:

$$\text{RPD} = \frac{|D_2 - D_1|}{\left[\frac{(D_1 + D_2)}{2}\right]} \text{ x } 100\%$$

Where: RPD is the relative percent difference

D1 is the larger of the two observed values

D2 is the smaller of the two observed values

Imprecision in MS/MSD results is usually an indication of sample matrix effects, whereas imprecision of field duplicate (split or co-located) sample results may be an indication of sample heterogeneity or multiplicative interferences that diminish or enhance analytical signals. Sample results that do not meet precision objectives may still be considered usable for data quality objectives based upon professional judgment as to the cause and magnitude of the imprecision. All such decisions will be clearly justified in the data usability section of the review report.

Precision criteria are based on an evaluation of potential field and laboratory performance on samples of similar matrices.

3.4.2 Accuracy

Accuracy refers to the agreement between the amount of the analyte measured by the test method and the amount actually present expressed as percent recovery (%R) of surrogates and matrix spikes. Percent recoveries are calculated using the following equations:

$$\text{Surrogate } \%\text{R} = \frac{Q_d}{Q_a} \text{ x } 100\%$$

Where: Qa is the quantity added to the sample

Qd is the quantity recovered during analysis

and

$$\text{Matrix Spike } \%\text{R} = \frac{SS - SR}{SA} \text{ x } 100\%$$

Where: SA is the amount of spike added

SR is the sample result

SSR is the spiked sample result

Like precision, accuracy criteria are based on an evaluation of potential laboratory performance on samples of similar matrices.

3.4.3 Representativeness

Representativeness is the degree to which the sample data represent a characteristic of the measured population. It is a qualitative parameter most influenced by the design and effectiveness of the sampling program and the proficiency of the sampling personnel. The procedures specified in this plan are designed to assure representative samples are collected and handled in a manner that assures the results from analysis of the samples correctly characterize the media sampled.

3.4.4 Completeness

Completeness is expressed as the percentage determined from the number of acceptable results compared to number of expected results. Where necessary, samples will be reanalyzed, or if insufficient sample material remains, additional samples will be collected and analyzed to meet this requirement.

The precision, accuracy, representativeness, and completeness objectives for this sampling program are shown in Table S-3. For sampling, laboratory precision will be ensured through the analysis of laboratory duplicate samples and the total precision of the sampling and analysis process will be assessed by the collection and analysis of field duplicate samples. Analytical accuracy will be ensured through the use of matrix spike samples. Representativeness of the soil samples will be ensured through the use of a sample grid or pattern, a statistical assessment of the adequacy of the number of samples, and the use of consistent sampling procedures. Collecting a statistically significant number of samples will also ensure completeness.

3.5 Analytical Methods and Detection Limits

Based on a review of the hazardous wastes accepted at the Facility, Romic has selected the following analytical methods to indicate the presence of COCs that may remain on equipment that is not sufficiently decontaminated, or that may have been released during site operations or closure:

- EPA Method 8260B for volatile organic constituents (VOCs);
- EPA Method 8270D for semi-volatile organic constituents (SVOCs);
- EPA Method 8151A for chlorinated herbicides;
- EPA Method 6010C/7471B for metals including mercury; and
- EPA Method 9045D for pH.

The analytical methods will be based on the *Test Methods for Evaluating Solid Waste*, SW-846, U.S. Environmental Protection Agency, Third Edition, November 1986 (“SW-846”) or equivalent to evaluate the samples collected during closure. The detection limits for these methods will be set to at least the PQLs specified in SW-846. Romic will communicate the sensitivity requirements (i.e., the decision points) to any contract laboratories used.

These analytical methods have been selected based on the contaminants of concern as specified in the Appendix to the SAP.

3.6 Measurement/Data Acquisition

This section provides the sampling and analysis procedures, including sample collection, documentation and custody, and analytical method requirements. These requirements ensure that appropriate methods are employed and documented.

3.6.1 Sample Collection Requirements

This section describes the methodology for sampling each medium, the sampling equipment, decontamination procedures, sample container and preservation requirements, and sample handling and packaging procedures.

Rinsate Samples

Samples of liquids will consist of the sampling tank system and equipment final rinsate fluids. The rinsate samples will be collected by pouring clean rinse water over, on, or through, the tank or equipment or item to be sampled. Where possible, the samples will be collected by pouring the rinsate directly into the final sample container. The final sample container (provided by a certified laboratory) will be filled completely, excluding any headspace, and with a minimum of aeration. If transfers between containers, such as beakers or flasks, are required, these will be minimized to the extent possible.

Soil Samples

Soil samples will be collected using either hand augers, shallow test pits, drilling, or direct push samplers (for example, Geoprobe). The borings will be continuously cored and boring logs generated. A field geologist will screen extracted soil cores for physical evidence of contamination (e.g., odors, chemical sheen, or discoloration). If a sample of soil cannot be obtained at the exact location required because of boulders, loose sands, or other unfavorable conditions, a sample will be collected at a location adjacent to the prescribed location. Duplicate soil samples may be collected by dividing the sample. All sampling equipment will be decontaminated before and after each use. After the samples are collected, each boring will be backfilled with grout.

For non-VOC analysis, the soil samples will be collected in brass tubes using a coring device. Each designated core will be removed from the sampling device, sealed with Teflon tape, capped, labeled, and placed in a pre-chilled ice chest for transportation to the laboratory under proper chain-of-custody procedures..

All samples designated for VOC analysis will be handled in accordance with USEPA Method 5035 as described in Table S-4. Soil samples will be taken from the same cores retrieved from the subsurface in a core barrel. When analyzing soil samples pursuant to Method 5035, the soil from the core barrels will be subcored and simultaneously placed into an airtight container using a multifunctional sampling device (MFSD) such as an EnCore© which acts as both a subcoring tool and airtight storage container. The MFSD is designed to collect, transport, and deliver intact soil sample subcores to the stationary laboratory. The coring body of the MFSD is pushed into a freshly exposed soil surface, obtaining a headspace-free subcore. The sample chamber is then sealed with the cap, becoming airtight. Once back at the laboratory, the sample subcore is extruded into a tared empty or preserved VOA vial, as appropriate.

Groundwater Samples

Grab groundwater samples will be collected with the MaxiProbe® configured in groundwater mode at the bottom of the deep boreholes. To sample, the probe is operated using nitrogen back pressurization and a groundwater canister, with or without vacuum assistance. The probe is to be pressurized and depressurized inside the casing for safety. The probe is then lowered to the bottom of the borehole and hammer-driven 21 inches to collect a soil sample and to seal the sampler into the formation soils. The probe is then pulled back 2 to 3 inches to expose a screen allowing groundwater to flow into the sample canister. The entire sampler is then returned to the ground surface and the groundwater sample transferred to the appropriate sample containers for laboratory analysis in accordance with the SAP.

Groundwater samples will be transferred into clean, pre-preserved sampling containers provided by the laboratory. Three 40-ml glass vials with Teflon lined septa (or VOC vials) will be used for VOC analysis. After filling, the vials will be inspected for air bubbles and will be rejected if air bubbles exceed one millimeter in diameter. At borings where duplicate samples will be collected, sampling and duplicate sampling will be conducted for each analysis prior to collecting samples for subsequent analysis.

3.6.2 Decontamination Procedures

Proper decontamination of sampling equipment is essential to prevent accidental cross-contamination of samples. Sample collection equipment items that will require decontamination include reusable collection containers and trowels. A decontamination area will be designated and equipped with the necessary equipment (pressure-washer, wash buckets, brushes, spray bottles, potable water, distilled water, towels, etc.).

The following procedures will be used for the decontamination of nondisposable soil and liquid sampling equipment.

For small equipment items such as trowels or spoons:

- Scrub with a brush and potable water to remove visible contamination.
- Rinse with clean potable water.

- Dry with disposable towels.

Specific HWMU decontamination procedures are described in Section 5.4 of the Closure Plan.

3.6.3 Sample Preservation and Storage

Following collection, the samples will be properly stored to prevent degradation of their integrity. Table S-4, Summary of Sample Container, Preservation, and Holding Time Requirements, summarizes the preservation and holding time requirements for analyses of the soil and liquid samples.

3.6.4 Sample Packaging and Shipping Procedures

This section describes the procedures for packaging and transporting the samples from the point of collection to delivery to the laboratory. Samples will be sealed in the appropriate sampling container using plastic tape or an equivalent. A chain-of-custody seal will be placed over the tape. The samples will be packed securely in an ice chest containing ice sealed in double plastic bags. All samples will be cooled to 4°C during storage and prior to transfer to the laboratory.

3.7 Sample Documentation and Custody Requirements

Each sample will be properly documented to facilitate timely, correct, and complete analysis of data. The documentation system is used to identify, track, and monitor each sample from the point of collection through final data reporting. Chain-of-custody is necessary if there is any possibility that the analytical data or conclusions based upon analytical data will be used in litigation. A sample is considered to be in a person's custody if it is: 1) in a person's physical possession, 2) in view of the person after taking possession, or 3) secured by that person so that no one can tamper with it.

3.7.1 Field Sample Custody and Documentation

Sample custody and documentation are necessary to demonstrate the integrity of the sample from time of collection until delivery to the process or offsite analytical laboratory. The documentation required includes logbooks, sample labels, custody seals (for offsite samples), and chain-of-custody forms.

<u>Logbooks</u>

Logbooks will document where, when, how, and from whom any vital program information was obtained. Logbook entries will be complete and accurate enough to permit reconstruction of field activities. At a minimum, the following sampling information will be recorded:

- Sample location, station location, and description;
- Sample number;
- Sampler's name(s);

- Date and time of sample collection;
- Designation of sample as composite or grab;
- Type of sample (i.e., matrix);
- Type of sampling equipment used;
- Type of preservation used (if any);
- Shipping arrangements and airbill number (as applicable); and
- Recipient laboratory(ies).

Logbooks will be bound, ruled, and each page prenumbered. All entries in logbooks will be in indelible ink, and corrections will be made by striking out erroneous information and initializing the change. “White out” will not be used.

Labeling

All samples collected will be labeled in a clear, precise way for proper identification in the field and for tracking in the laboratory. The samples will have preassigned, identifiable, and unique numbers. At a minimum, the sample labels will contain the following information:

- Facility name;
- Sample number;
- Date of collection;
- Time of collection;
- Analytical parameter; and
- Method of preservation.

Custody Seals

Custody seals will be used to preserve the integrity of each sample container and cooler from the time it is collected until it is opened by the off-site laboratory. A custody seal will be placed on each sample cooler after collection such that it must be broken to open the cooler.

Chain-of-Custody Records

Chain-of-custody forms will be used for all samples delivered to the off-site laboratory and offsite laboratories to ensure that the integrity of the samples is maintained. Each form will include the following information:

- Sample number;
- Date of collection;
- Time of collection;

- Analytical parameter;
- Method of preservative;
- Number of sample containers;
- Shipping arrangements and airbill number, if applicable;
- Recipient laboratory; and
- Signatures of parties relinquishing and receiving the sample at each transfer point.

A coding system will be used to identify each sample. The system will allow for quick data retrieval and tracking to account for all samples. The sample designation will be assigned at the time of sample collection and recorded on the sample label, and logbook. A typical sampling numbering system might consist of three parts:

- Part 1 of the sample designation consists of a field indicating the sampling event (e.g., "BL" may be used for the background level soil sampling event);
- Part 2 is a multi-digit field corresponding to the sample location (e.g., "TANKA" for Tank Farm A); and
- Part 3 is a three-digit field that corresponds to the sequential number of sample collection.

Duplicate samples might be given the next number in the sampling sequence, or be designated with a "D".

A standard operating procedure describing the specific sample coding system to be used will be submitted within thirty days of final approval of the Closure Plan.

3.7.2 Laboratory Custody

The laboratory is to document all transfers of each sample within the laboratory system (e.g., the transfer of the sample from the sample custodian to the analyst for obtaining a sample aliquot and then the transfer of the sample back to the sample custodian). Additionally, all transfers of all sample extracts and digests will be recorded. This may be accomplished through the use of a sample preparation sheet with a signature block for documenting the transfer of the samples or by using a separate digest/extract custody transfer form.

3.8 Analytical Methods Requirements

The contract analytical laboratory selected must be a State-certified laboratory for the specific test methods used during closure sampling.

3.9 Laboratory Quality Assurance/Quality Control Samples

Laboratory quality assurance requirements are specified in the off-site laboratory Quality Assurance Program Plan.

3.10 Field Quality Control Samples

QC samples will consist of field duplicate samples and equipment rinsates.

3.10.1 Field Duplicate Samples

Duplicate samples will be collected for use as a measure of the precision of the sample collection and analysis process. The duplicate will be submitted with minimal indication of the site it was taken from. Duplicates will be prepared following standard sampling and preparation techniques as described in this section. Duplicates will be collected and submitted to the laboratory at a frequency of one per day or 10 percent (i.e., 1 per 10) of routine samples, whichever is more frequent. The relative percent difference (RPD) between field duplicate pairs will be evaluated against the precision criteria to determine data acceptability.

3.11 Special Training Requirements/Certification

All personnel directly involved in sample collection, handling, analysis, and data evaluation will be provided with a copy of this SAP. The management of the participating field or laboratory organization will establish personnel qualifications and training requirements for the project. The Closure Project Manager will ensure each person participating in the project has the education, training, technical knowledge, and experience, or a combination thereof, to enable that individual to perform assigned functions.

Training will be provided for each staff member as necessary to perform his or her functions properly. Personnel qualifications will be documented in terms of education, experience, and training, and periodically reviewed to ensure adequacy to current responsibilities. Examples of topics for which training is required, as applicable to the position, include:

- Safety;
- Quality Assurance measures outlined here;
- Standard Operating Procedures (SOPs);
- General field sampling techniques;
- Specific sampling protocols;
- Equipment calibration and maintenance;
- Corrective actions;
- Data reduction and validation;
- Reporting;
- Records management;
- Demonstration of proficiency; and
- Project-specific requirements.

3.12 Documentation and Records

The following sections describe required documentation and records for training, field, and laboratory activities.

3.12.1 Training Activities

Training will be documented and records kept on file and readily available for review. Documentation of training may be accomplished by including a summary of the training and the topics or items covered at the top of the attendance sheet, and/or including a copy of the slides, handouts, etc. used in the training session.

3.12.2 Facility and Laboratory Activities

Records provide the direct evidence and support for the necessary technical interpretations, judgments, and discussions concerning program activities. These records, particularly those that are anticipated to be used in permitting documents, will directly support current or ongoing technical studies and activities and provide the historical basis for later reviews and analyses. Records will be legible, identifiable, and retrievable and protected against damage, deterioration, or loss. The discussion in this section outlines procedures for record keeping. Organizations that conduct sampling and analyses will develop appropriate record-keeping procedures that satisfy relevant technical and legal requirements.

Records will consist of bound notebooks with prenumbered pages, sample collection forms, personnel qualification and training forms, sample location figures/drawings, equipment maintenance and calibration forms, chain-of-custody forms, sample analysis request forms, and change request forms. All records will be written in indelible ink.

Procedures for reviewing, approving, and revising records will be clearly defined, with the lines of authority included. All documentation errors will be corrected by drawing a single line through the error so it remains legible and will be initialed by the responsible individual, along with the date of change. If appropriate, the reason for the change will also be indicated. The correction will be written adjacent to the error.

Records will include but will not be limited to the following:

Sample Collection

To ensure maximum utility of the sampling effort and resulting data, documentation of the sampling protocol, as performed, is essential. Sample collection records will contain, at a minimum, the names of persons conducting the activity, sample number, sample location, equipment used, ambient conditions, documentation of adherence to protocol, and unusual observations. The actual sample collection record will be one of the following: a bound field notebook with prenumbered pages, a preprinted form, or digitized information on a computer tape or disc.

Chain-of-Custody Records

The chain-of-custody, which involves the possession of samples from the time they are obtained until they are disposed of or shipped off site, will be documented.

QC Samples

Documentation for identification of QC samples, such as equipment rinsate blanks and duplicate samples, will be maintained.

Deviations

All deviations from procedural documents and the SAP will be documented in the operating record. A nonconformance record will be generated for each and every deviation.

Reports

A copy of all reports issued and any supporting documentation will be retained.

4.0 ASSESSMENT AND OVERSIGHT

This section describes how activities will be checked to ensure that they are completed correctly and according to procedures outlined in this Plan.

4.1 Assessment/Oversight and Response Actions

The Quality Assurance manager will assess the project's activities to ensure that sampling activities are being implemented. Assessments will include:

Field Oversight

- Readiness review of the field team prior to starting field efforts,
- Field activity audits, and
- Review of field sampling and measurement activities methodologies and documentation at the end of each event, and

Laboratory Oversight

- Evaluation of laboratory data generated after each sampling event.

4.2 Field Activity Audits

During at least two sampling events, the QA Manager will assess the sample collection methodologies, field measurement procedures, and record keeping of the field team to ensure activities are being conducted as planned. Any deviations that are noted will be corrected immediately to ensure all subsequent samples and field measurements collected are valid. The QA Manager may stop any sampling activity that could potentially compromise data quality.

4.3 Reports to Management

Reports to the Closure Project Manager will include the program progress, a summary of key performance indicators, a summary of the nonconformance and corrective actions, surveillance and audit findings, and data validation reports. Each report, as appropriate, will include a section that provides an overall assessment of the sampling and laboratory programs.

5.0 DATA VALIDATION AND USABILITY

This section describes the data assessment and oversight program, including procedures for data review, validation, and verification and reconciliation with data quality objectives.

5.1 Data Review, Validation, and Verification Requirements

The raw data for this project shall be maintained by the laboratory. Data verification will be performed by the designated off-site laboratory for all the analyses prior to the release of data. The laboratory will archive the analytical data into their laboratory data management system.

5.2 Reconciliation with Data Quality Objectives

As soon as possible after each sampling event, calculations and determinations for precision, completeness, and accuracy will be made and corrective action implemented if needed.

If data quality indicators do not meet the project's specifications, data should be flagged and assigned an appropriate data quality level. Re-sampling may occur.

The cause of the failure will be evaluated. If the cause is found to be equipment failure, calibration and/or maintenance techniques will be reassessed and improved. If the problem is found to be sampling team error, team members will be re-trained. Any limitations on data use will be detailed in reports, when submitting data to EPA and other documentation as needed. If failure to meet project specifications is found to be unrelated to equipment, methods, or sample error, then the SAP will be revised.

TABLES

Table S-1a. Equipment Decontamination Data Quality Objectives

STEP 1 State the Problem	STEP 2 Identify the Goal	STEP 3 Identify Inputs to the Decisions	STEP 4 Define Study Boundaries	STEP 5 Develop Decision Rules	STEP 6 Specify Tolerable Limits on Errors	STEP 7 Optimize Sampling Design
Equipment that was used for the management of hazardous waste is to be decontaminated to a point where it can be released for use in an industrial application, reclamation as scrap metal, and/or disposal as nonhazardous waste.	The goals of the study are to confirm whether decontamination efforts have been successful for each piece of equipment so that items are properly managed, in order to protect human health and the environment.	• Decontamination technology used per 40 CFR 268.45 Table 1 and performance against standard. • Detailed visual inspection to determine whether the "clean debris surface" standard of 40 CFR 268.45 has been met. • Rinsate (water) samples from the final rinse for a piece or batch of equipment for which detailed visual inspection is not feasible will be analyzed for COCs. • Samples of water before it is used for rinsing of equipment will be analyzed to provide starting levels against which final rinsate sample analysis will be compared. • Rinsate analytical results will be compared to determine whether there is any net increase of COCs . • Rinsate samples will be analyzed for VOCs by EPA Method 8260B. • Rinsate samples will be analyzed for SVOCs by EPA Method 8270D. • Rinsate samples will be analyzed for metals including mercury by EPA Method 6010C/7471B (Goals 2-4). • Low laboratory reporting limits (RLs) sufficient to identify whether contaminants remain in/on equipment .	This study covers HDPE tanks, steel tanks, piping, pumps, valves, and other small equipment, and concrete containment structures that are decontaminated.	• If the 40 CFR 268.45 clean debris surface standard is met, equipment will have been confirmed decontaminated. • If the clean debris surface standard is not met, equipment will be considered contaminated. • If the COC content in the final rinsate is equal to or less than the COC content of water before it is used for rinsing (with 95% confidence), then equipment will have been confirmed decontaminated • If an increase in COCs is detected in the final rinsate (above the starting water), equipment will be considered contaminated.	Sampling error and measurement error are associated with environmental data collection and may lead to decision errors. Sampling error occurs when the sample is not representative of the true condition of the environment at the site. Measurement error occurs because of random and systematic errors associated with sample collection, handling, preparation, analysis, data reduction, and data handling. Decision errors are controlled by adopting a scientific approach that uses hypothesis testing to minimize the potential for error. There are two types of decision error: false rejection error and false acceptance error. A false rejection decision error occurs when the null hypothesis is rejected, although it is true. The consequences of a false rejection error would be that contaminated equipment that poses an unacceptable risk to human health or the environment would be released from RCRA controls. A false acceptance decision error occurs when the null hypothesis is not rejected, although it is false. The consequences of a false acceptance error are that unnecessary resources are expended on further action to decontaminate equipment that has already been successfully decontaminated, or decontaminated equipment is disposed as hazardous waste, instead of being reused or recycled. Tolerable limits on sampling decision errors cannot be precisely defined; however, the decision errors will be minimized by evaluating the potential source areas. Data quality will be evaluated using measurement quality objectives as specified in the SAP.	Detailed visual inspections will be conducted on equipment with surfaces accessible and amenable to such examination. Rinsate sampling will be conducted on equipment not amenable to detailed visual inspection.

Notes:

USEPA	U.S. Environmental Protection Agency
VOC	Volatile organic compounds
bgs	Below ground surface
QAPP	Quality Assurance Project Plan
RL	Reporting Limit

Table S-1b. Subsurface Data Quality Objectives

STEP 1 State the Problem	STEP 2 Identify the Goal	STEP 3 Identify Inputs to the Decisions	STEP 4 Define Study Boundaries	STEP 5 Develop Decision Rules	STEP 6 Specify Tolerable Limits on Errors	STEP 7 Optimize Sampling Design
RCRA closure requires subsurface sampling beneath hazardous waste management units and one solid waste management unit (rail spur) to determine whether there have been releases.	1. Determine whether Contaminants of Concern (COCs) been released to the soil above and below the liner installed beneath concrete structures of permitted units. 2. Identify potential distribution of COCs in subsurface soils beneath permitted units. 3. Determine whether COCs, if present in soil beneath permitted units, have migrated to groundwater. 4. Establish local background concentrations for metals in soil.	• Soil sampling at each of the Units and at three site background locations. Minimum of two to five borings per HWMU (Goals 1 and 4). • Soil borings will be extended to depths of either 10 feet below the bottom of the area concrete or into groundwater (estimated to be approximately 70 feet below ground). Samples will be collected at depths just below the concrete slab above the sub-slab liner, and then in a series beneath the sub-slab liner (Goals 1-4). • Background samples collected from three separate locations outside of the facility's operational boundaries (Goal 4). • A minimum of one boring per HWMU and SWMU (rail spur only) area will be extended into the first groundwater aquifer estimated at approximately 70 feet below ground surface, and one grab groundwater sample will be collected for laboratory analysis from each boring • Groundwater borings will also be used to collect soil samples approximately once every ten feet to groundwater (Goal 3). • Soil and groundwater samples will be tested for VOCs by EPA Method 8260B (Goals 2-4). • Soil and groundwater samples will be tested for SVOCs by EPA Method 8270D (Goals 2-4). • Soil and groundwater samples will be tested for metals including mercury by EPA Method 6010C/7471B (Goals 2-4). • Shallow soil samples collected in the SWMU area will be tested for 2,4-D by EPA Method 8151 (Goals 2-4). • Low laboratory reporting limits (RLs) sufficient to compare concentrations to screening criteria (Goals 1 through 4).	The study includes only on-site areas, specifically, the HWMU and SWMU (rail spur only) areas. Background samples may be collected off-site.	• If concentrations of COCs are not detected in soils above laboratory RLs or above closure performance standards, then additional investigation of COCs in the soil may not be warranted. • If COCs are detected in soils above laboratory RLs and two standard deviations above the mean background level concentration distribution for metal COCs, and/or organic detections are statistically significant and above the PRGs for industrial soil, then COCs have been released to the soil beneath the HWMUs or SWMU and additional investigation may be recommended. • A COC detection is statistically significant if it is present in greater frequency than the 95th percentile of that COC.	Sampling error and measurement error are associated with environmental data collection and may lead to decision errors. Sampling error occurs when the sample is not representative of the true condition of the environment at the site. Measurement error occurs because of random and systematic errors associated with sample collection, handling, preparation, analysis, data reduction, and data handling. Decision errors are controlled by adopting a scientific approach that uses hypothesis testing to minimize the potential for error. There are two types of decision error: false negative error and false positive error. A false negative decision error occurs when the null hypothesis is rejected, although it is true. The consequences of a false negative error would be that contaminated media that pose an unacceptable risk to potential human or ecological receptors at the site are not addressed. A false positive decision error occurs when the null hypothesis is not rejected, although it is false. The consequences of a false positive error are that unnecessary resources are expended on further action to address contaminated media that did not exist at levels that would exceed action levels or acceptable risk levels. Tolerable limits on sampling decision errors cannot be precisely defined; however, the decision errors will be minimized by evaluating the potential source areas. For this investigation, sampling locations are representative of areas most likely to be source areas at the site. Real-time analytical results will be used to modify sample locations and locate potential source areas. Decision errors based on analytical data will be minimized by the use of USEPA-approved analytical methods. Data quality will be evaluated using measurement quality objectives as specified in the SAP.	A minimum target of 189 shallow and 66 deep soil samples will be collected from 39 locations at the HWMUs and railroad spur SWMU. A minimum of 11 grab groundwater samples will be collected from 11 locations at the HWMUs and railroad spur SWMU. Therefore, all samples are or will be located in areas that will yield representative data that are necessary to make sound decisions and recommendations regarding the closure of the HWMUs and SWMU. Soil and groundwater samples will be collected using standard methodology and equipment. The analytical methods selected for soil and groundwater samples can detect potential contaminants of concern at concentrations at or below all screening level guidance for each contaminant of concern. Analytical methods chosen are all USEPA approved and are commonly implemented. Sample collection methods and analytical methods are discussed in the SAP.

Notes:

USEPA U.S. Environmental Protection Agency
VOC Volatile organic compounds
bgs Below ground surface

Table S-2
Summary of Closure Sampling

Location	Media	Estimated Number of Samples	VOC EPA 8260B	SVOC EPA 8270D	Herbicides EPA 8151A	Metals EPA 6010C	Mercury EPA 7471B	pH EPA 9045D
Tank Farm A	Equipment Rinsate	6	✓	✓		✓	✓	
	Soil	16	✓	✓		✓	✓	
	Groundwater	1*	✓	✓		✓	✓	
Tank Farm B	Equipment Rinsate	6	✓	✓		✓	✓	
	Soil	16	✓	✓		✓	✓	
	Groundwater	1*	✓	✓		✓	✓	
Tank Farm C	Equipment Rinsate	4	✓	✓		✓	✓	
	Soil	22	✓	✓		✓	✓	
	Groundwater	1	✓	✓		✓	✓	
Tank Farm D	Equipment Rinsate	2	✓	✓		✓	✓	✓
	Soil	22	✓	✓		✓	✓	✓
	Groundwater	1	✓	✓		✓	✓	✓
Vacuum Pot/Thin Film Area	Equipment Rinsate	6	✓	✓		✓	✓	
	Soil	22	✓	✓		✓	✓	
	Groundwater	1	✓	✓		✓	✓	
Distillation Column Area	Equipment Rinsate	9	✓	✓		✓	✓	
	Soil	16	✓	✓		✓	✓	
	Groundwater	1	✓	✓		✓	✓	
VOC System	Equipment Rinsate	18	✓	✓		✓	✓	
	Soil	1	✓	✓		✓	✓	
	Groundwater	1	✓	✓		✓	✓	
Drum Storage Building #1	Soil	69	✓	✓		✓	✓	
	Groundwater	2	✓	✓		✓	✓	
Rail Loading Area	Equipment Rinsate	4	✓	✓		✓	✓	
	Soil	32	✓	✓	✓	✓	✓	
	Groundwater	1	✓	✓		✓	✓	
West Bay Processing Area	Equipment Rinsate	5	✓	✓		✓	✓	
	Soil	27	✓	✓		✓	✓	
	Groundwater	1	✓	✓		✓	✓	
East Bay Processing Area	Soil	22	✓	✓		✓	✓	
	Groundwater	1	✓	✓		✓	✓	
Non-Impacted Areas	Soil	12	✓	✓		✓	✓	
(background)	Groundwater	0						

* Shared sample

Table S-3
Data Quality Indicators for Site Closure

Data Quality Indicator	Goal
Precision	±30% RPD for Field and Laboratory Duplicates, soil matrix ±20% RPD for Field and Laboratory Duplicates, water matrix
Accuracy	70 – 130% Recovery
Representativeness	NA*
Completeness	95%

* Qualitative measures to ensure representativeness are discussed in Section 3.4.3.

Table S-4
Summary of Sample Container, Preservation, and Holding Time Requirements

Analyte and Method	Sample Matrix	Sample Container	Preservation	Maximum Holding Time
Volatile Organic Constituents (EPA Method 8260)	Solid	Method 5035, MFSD (multi-functional sampling device), e.g. EnCore or Core N'One	Cool to 4°C	48 hrs to extrusion to VOA vial; 7 or 14 days to analysis[1]
Volatile Organic Constituents (EPA Method 8260)	Liquid	3x 40 mL glass vials	HCl to pH < 2, Cool to 4°C	14 days
Semi-Volatile Organic Constituents (EPA Method 8270)	Solid	250 mL wide-mouth glass bottle	Cool to 4°C	14 days to extraction; 40 days for analysis
Semi-Volatile Organic Constituents (EPA Method 8270)	Liquid	2 x 1-liter amber glass bottle	Cool to 4°C	7 days to extraction; 40 days for analysis
Chlorinated Herbicides (EPA Method 8151A)	Solid	1-liter wide-mouth glass bottle	Cool to 4°C	7 days to extraction; 40 days for analysis
Soil pH (EPA Method 9045D)	Solid	Acrylic or brass tube	N/A	Analyze ASAP (consider field analysis)
Groundwater pH (EPA Method 9040C)	Liquid	250 mL high density polyethylene bottle	N/A	Analyze ASAP (consider field analysis)
Metals (EPA Method 6010 and 7471 for mercury)	Solid	250 mL wide-mouth glass bottle[2]	N/A	6 months[3]
Metals (EPA Method 6010 and 7471 for mercury)	Liquid	1-liter high density polyethylene bottle[2]	HNO_3 to pH < 2	6 months[4]

Notes:

1. Samples with low concentrations of VOCs (<200 µg/kg) can be extruded into an unpreserved VOA vial and frozen at <-7˚ C (but >-20˚ C) for 7 days or extruded into sodium bisulfate solution and kept at 4˚ C for 14 days. Samples with high concentrations of VOCs (>200 µg/kg) can be extruded into an unpreserved VOA vial and frozen at <-7˚ C (but >-20˚ C) for 7 days or extruded into methanol and kept at 4˚ C for 14 days. If the concentration of VOCs is unknown, three samples should be collected: one for high level analysis, one for low level analysis, and one back-up. *(State of California Method 5035 Guidance Document, DTSC/Cal-EPA, November 2004)*

2. Plastic, glass, or PFTE are acceptable sampling containers for metals.

3. If mercury is included in the analysis, the holding time is 28 days and the sample should be kept at 6˚ C. If hexavalent chromium is included in the analysis, the sample should be kept at 6˚ C; the holding time is 30 days to extraction and 7 days from extraction to analysis. Additional sample volume must be collected for additional analyses (200 g is needed for total metals, 200 g for mercury, and 100 g for hexavalent chromium).

4. If dissolved and/or suspended metals are included in the analysis, the sample should be filtered on site or upon receipt by the laboratory. If mercury is included in the analysis, the holding time is 28 days. If hexavalent chromium is included in the analysis, the holding time is 24 hours and the sample should be kept at 6˚ C with no HNO_3. Additional sample volume must be collected for additional analyses (600 mL for total metals, 600 mL for dissolved metals, 600 mL for suspended metals, 400 mL for total mercury, 400 mL for dissolved mercury, and 400 mL for hexavalent chromium).

Table S-5 Subsurface Sample Schedule

HMWU & SWMU Borings	Target Sample Depths	
	Shallow Boring[1]	Boring to Groundwater[1]
First Sample- above liner	0-0.5	0-0.5
Second Sample- 6" below liner	0.5-1.0	0.5-1.0
Third Sample	4.0-4.5	4.0-4.5
Fourth Sample	7.0-7.5	7.0-7.5
Fifth Sample	10.0-10.5	10.0-10.5
Remainder of Samples	--	Every 10 ft
Background Borings		
First Sample	0.5-1.0 ft bgs[2]	
Second Sample	4.0-4.5	
Third Sample	7.0-7.5	
Fourth Sample	10.0-10.5	
Groundwater		
Grab Groundwater Sample		10 ft below first encountered GW[3]

Notes:

-- = Sample not collected

1. Measured in feet below the concrete slab
2. ft bgs = feet below ground surface
3. GW = groundwater

FIGURES

Figure S-1
Overview of Closure Process for Romic Facility

Initial Setup
- Notification of Site Closure
- Submittal of Health & Safety Plan and Standard Operating Procedures
- Site preparation
- Training of personnel

Site Decontamination
- Decontamination of tank systems, equipment, and concrete secondary containment
- Progressive decontamination and closure of hazardous waste management units

Verification Sampling & Analysis
- Collection and analysis of rinsate samples
- Comparison of analytical results against Closure Performance Standards
- Detailed visual confirmation of meeting “Clean Debris Surface” standard

Dismantling and Demolition of Tanks, Equipment, and Concrete Secondary Containment
- Demolition and removal of decontaminated tanks and equipment
- Salvage and recycling of decontaminated tanks, equipment, and concrete
- Demolition, removal, and disposal of contaminated tanks, equipment, and concrete
- Identification of decontaminated concrete secondary containment to remain in place

Soil and Groundwater Sampling & Analysis
- Sampling of soil and groundwater under hazardous waste management units and operational areas. Includes background samples
- Comparison of soil analytical results Closure Performance Standards
- Excavation and removal of contaminated soil, if feasible
- Defer groundwater contamination to Corrective Action Order

Closure Certification Report
- Documentation of closure activities and analytical results
- Certification by independent registered Professional Engineer

Figure S-2
Decision Tree, HDPE Tanks to TSDF

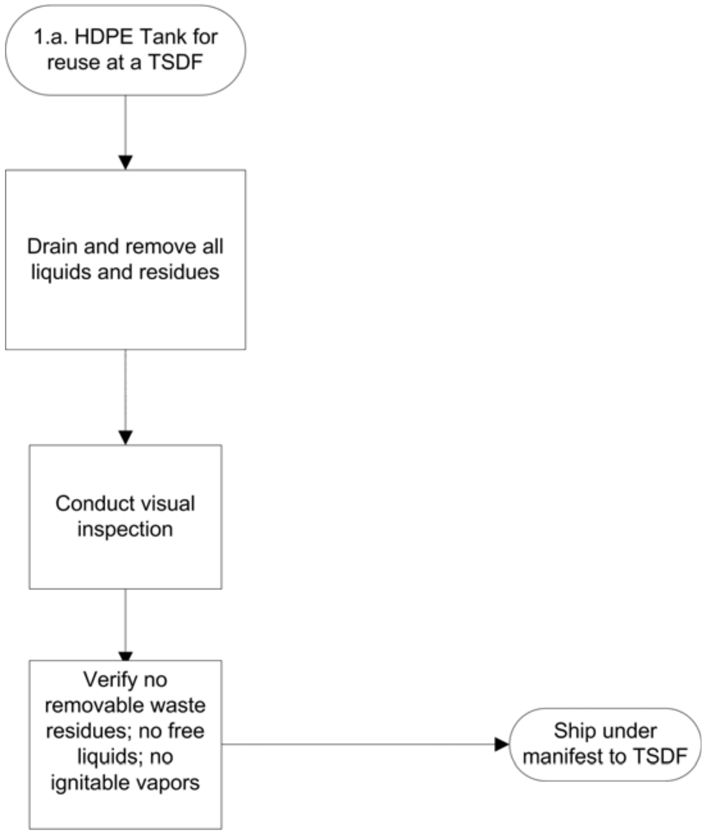


Figure S-3
Decision Tree, HDPE Tanks to Exit RCRA

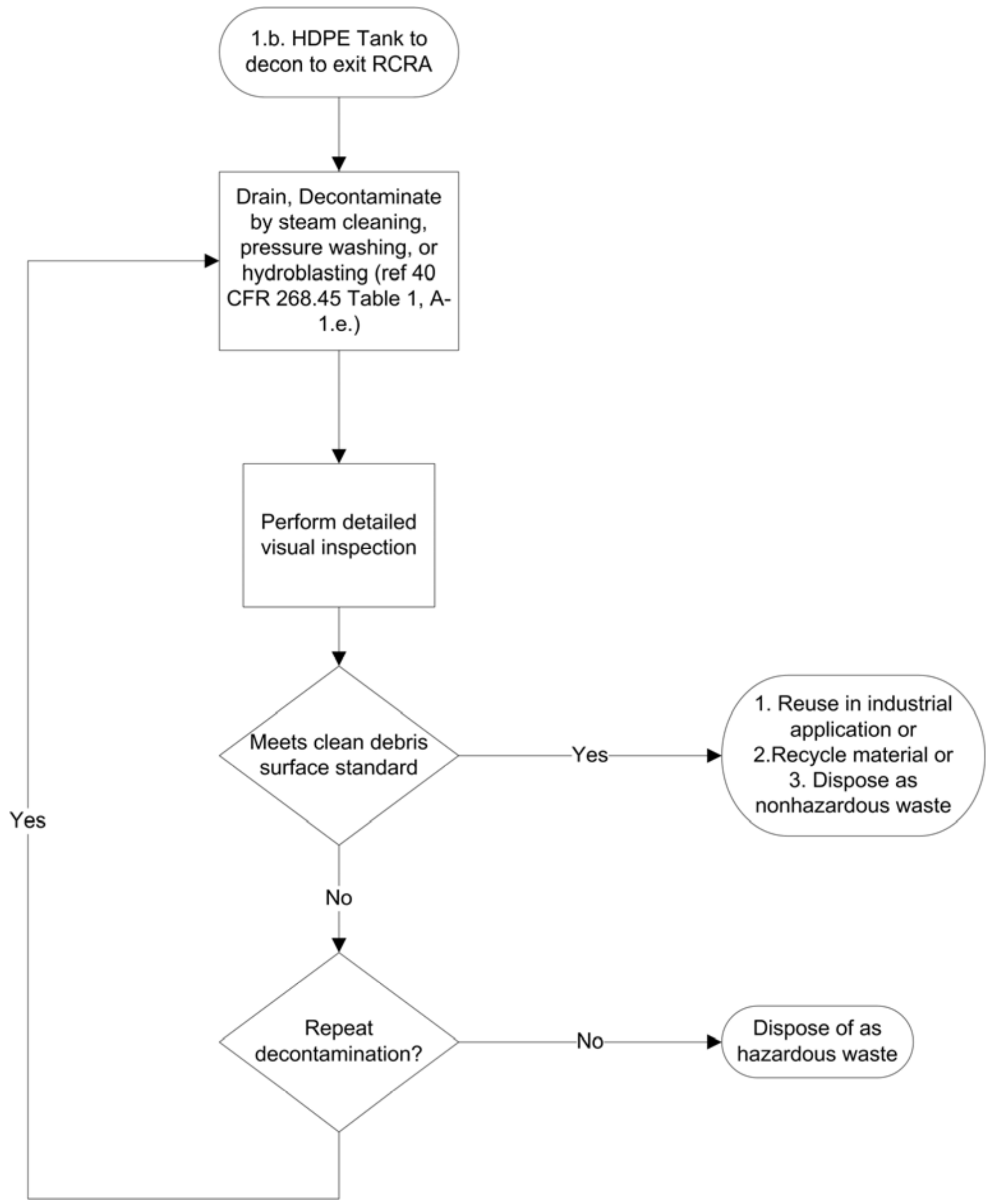


Figure S-4
Decision Tree, Steel Tanks to TSDF

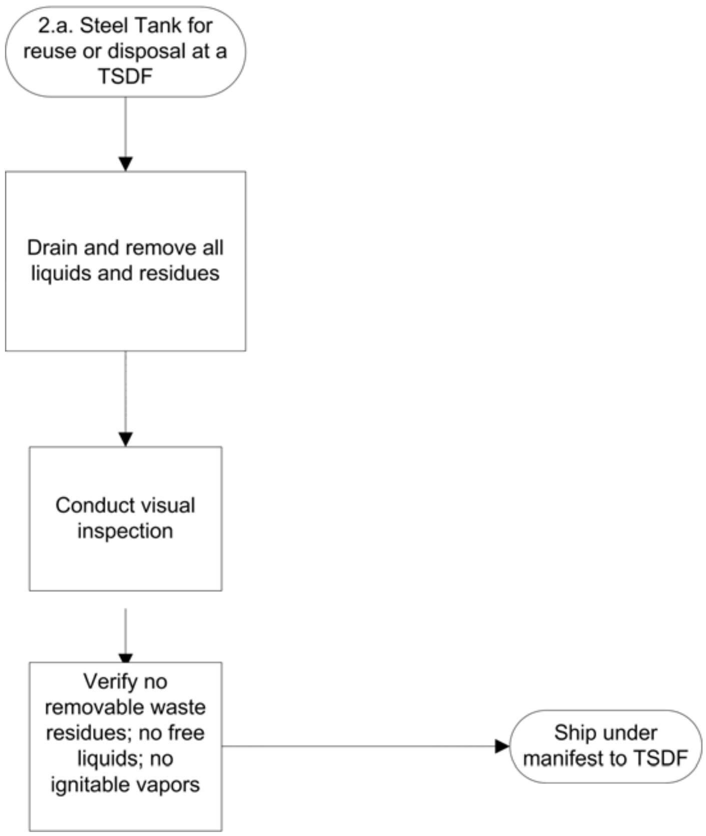


Figure S-5
Decision Tree, Steel Tanks to Exit RCRA

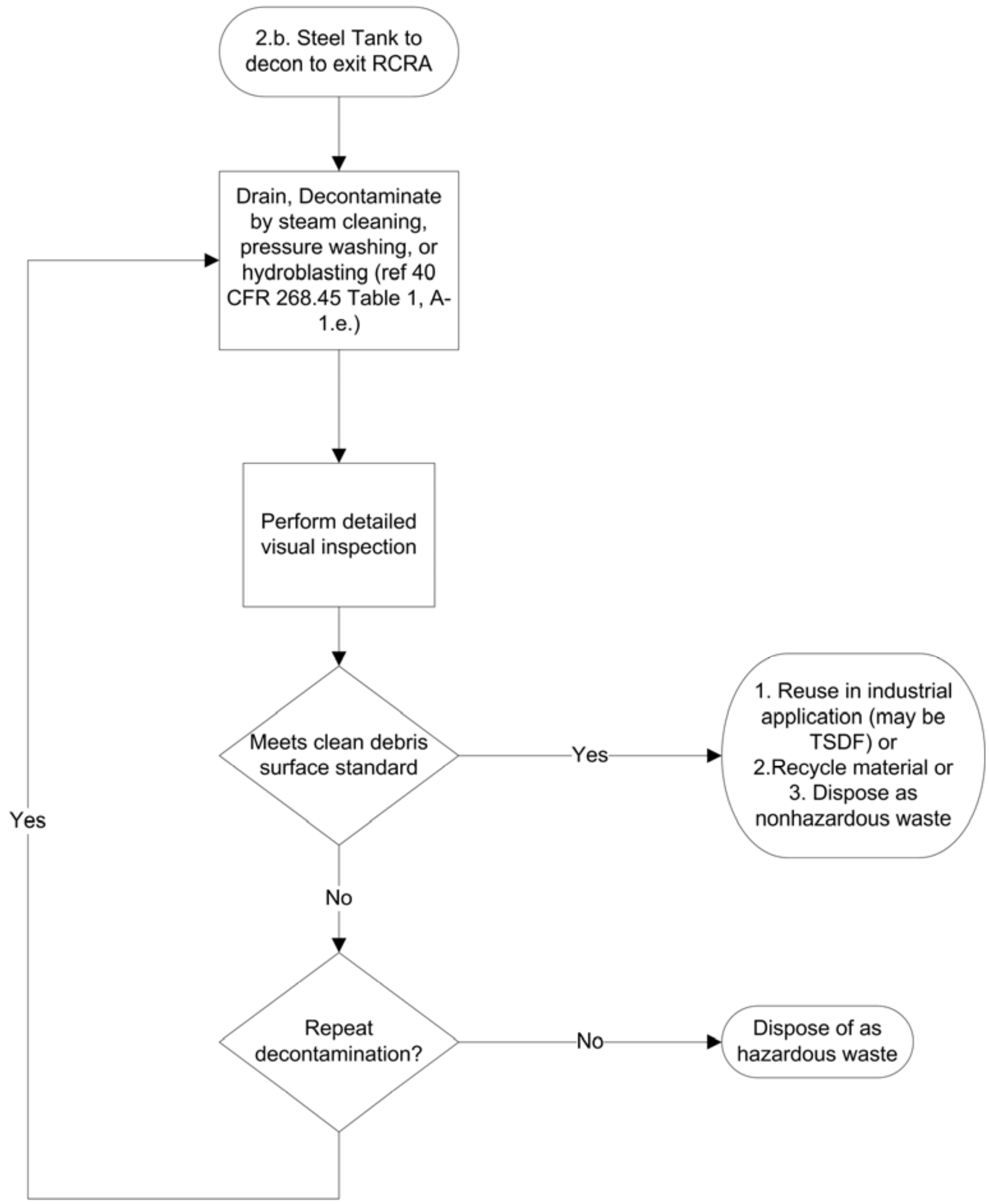


Figure S-6
Decision Tree, Equipment to TSDF

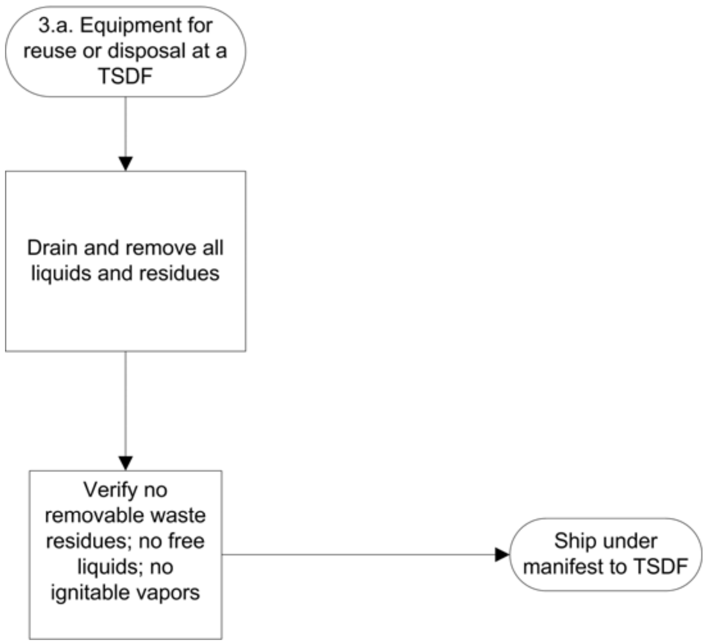


Figure S-7
Decision Tree, Equipment to Exit RCRA

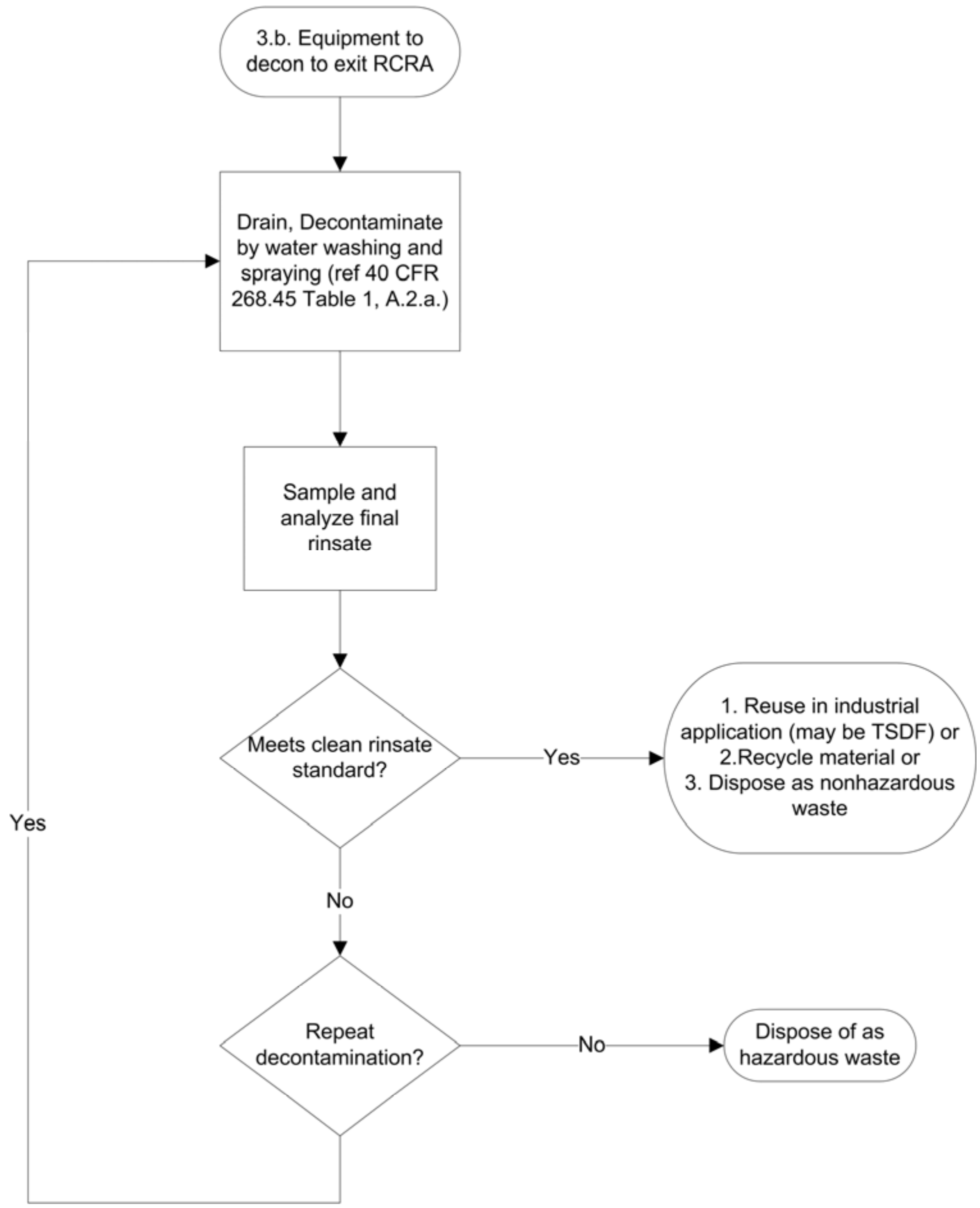


Figure S-8
Decision Tree, Concrete

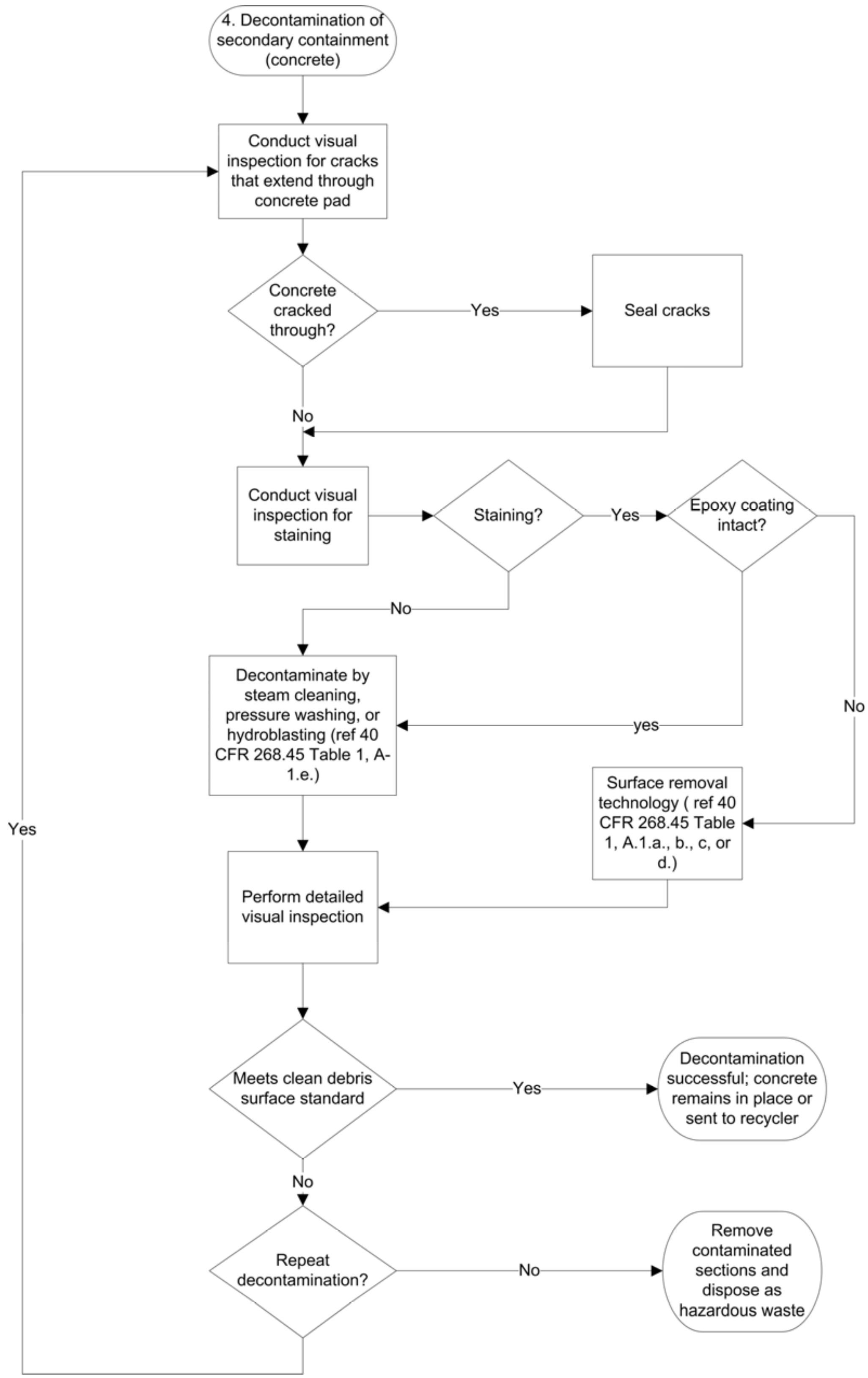
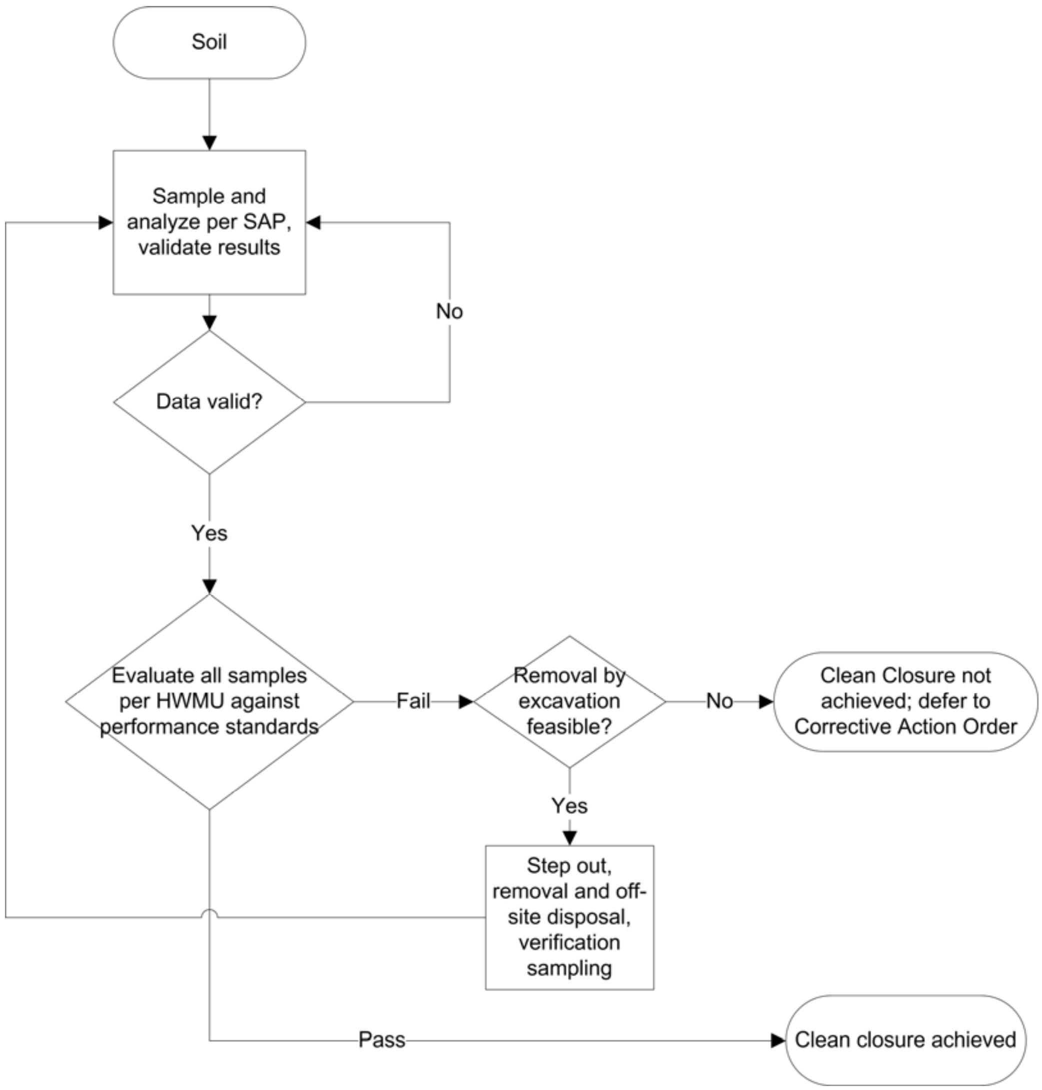
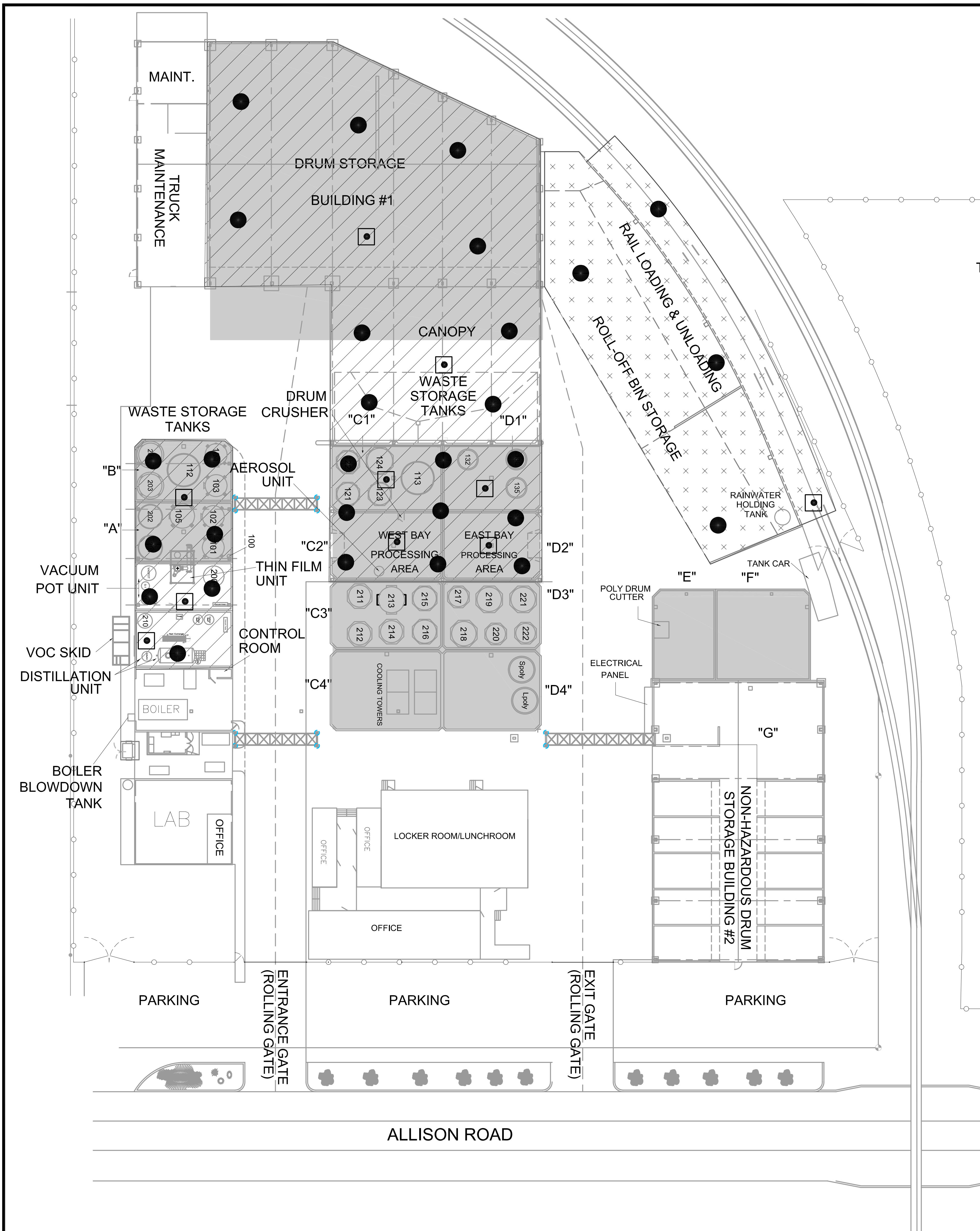


Figure S-9
Decision Tree, Soil





EXPLANATION:

- Soil boring
- Soil boring and groundwater sample location
- HWMU closure areas
- SWMU closure area
- Estimated subslab liner location

N

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SCALE IN FEET

IRIS ENVIRONMENTAL
1438 Webster Street, Suite 302
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HWMU and SWMU Closure Subsurface Sample Locations
Romic Southwest
Chandler, Arizona

Figure
S-10

Drafter: EC | Date: 8/12/08 | Contract Number: 07-555-B

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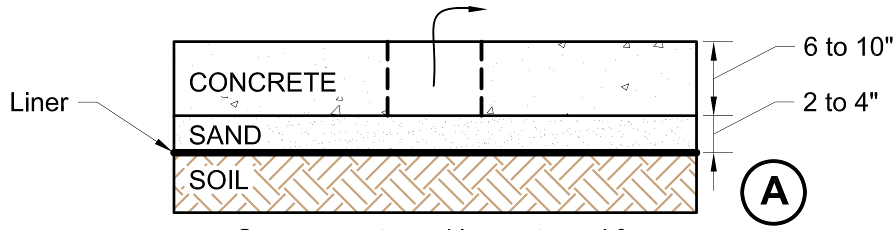
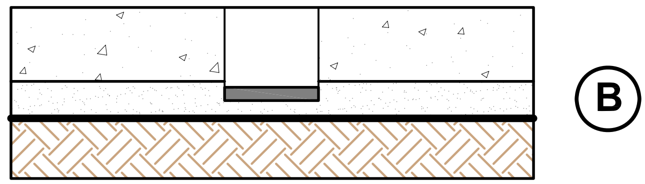
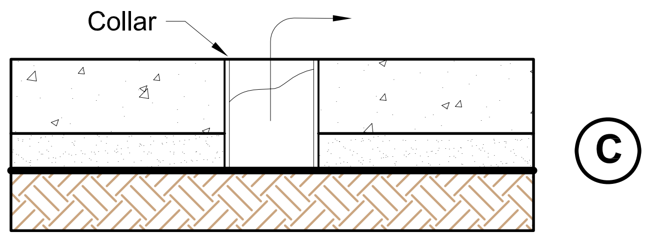


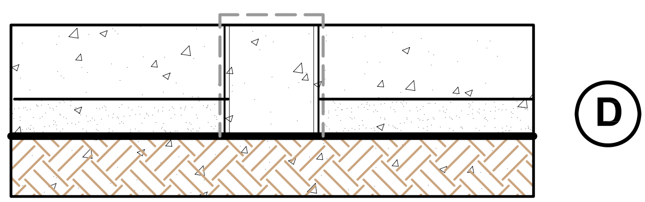
Core concrete and inspect sand for:
-VOC odors
-free liquids
-chemical staining



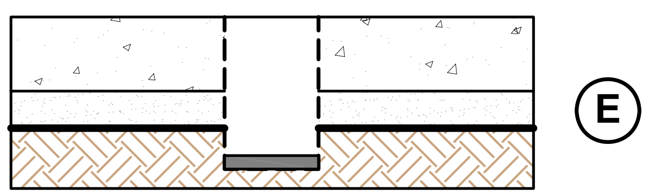
Sample above liner



Remove sand above liner
Use temporary collar to maintain hole



Inspect liner



If sand and liner conditions meet criteria,
advance boring through liner

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Procedure for Subsurface Sampling Through Sub-Slab Liner
Romic Southwest
Chandler, Arizona

Figure
S-11

Drafter: EBH | Date: 5/13/08 | Contract Number: 07-555-B

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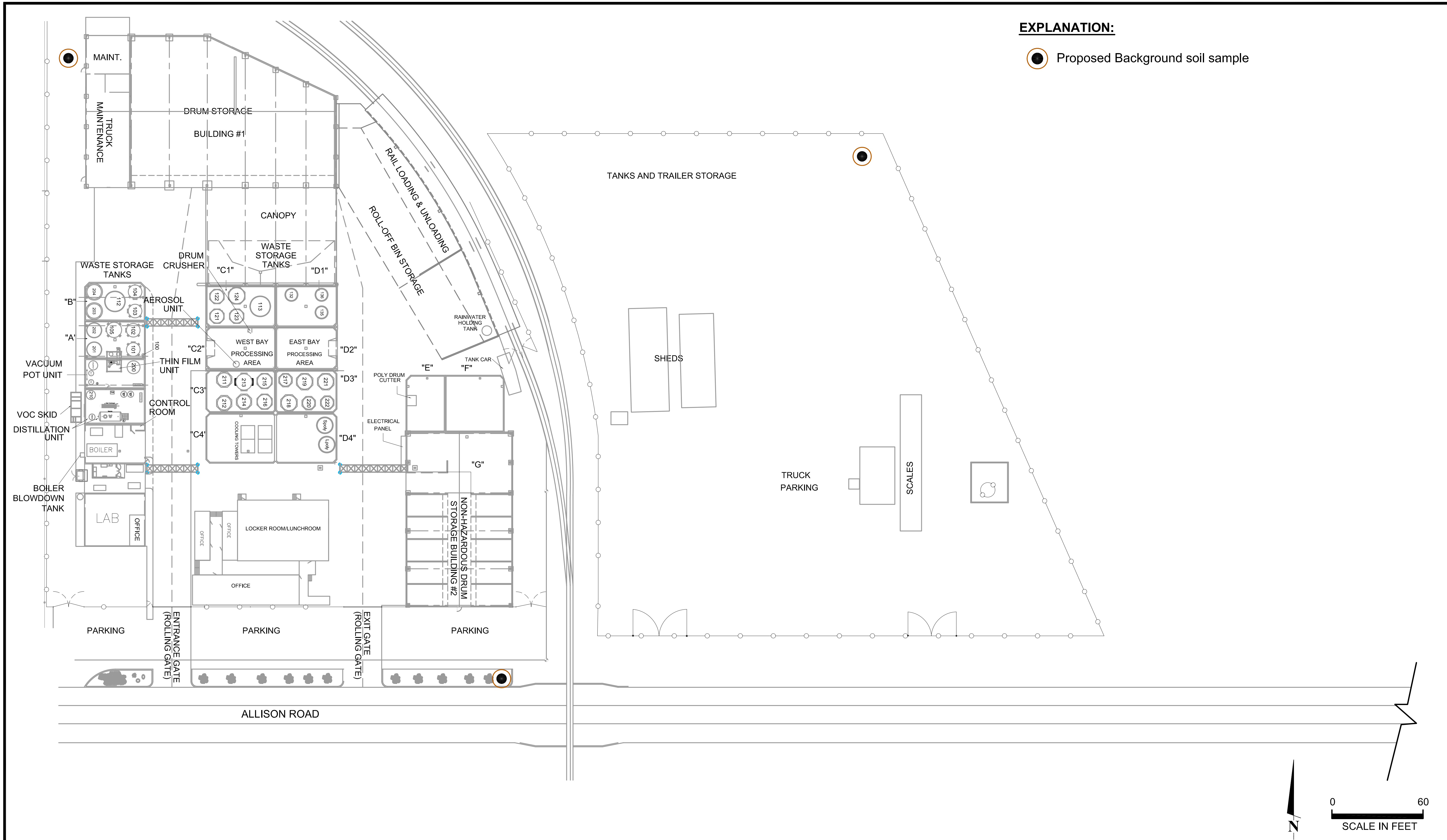

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Soil Background Closure Sampling Locations
Romic Southwest
Chandler, Arizona

Figure
S-12

Drafter: EC | Date: 8/12/08 | Contract Number: 07-555-B

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Appendix Selection of Contaminants of Concern

Introduction

Romic Environmental Technologies Corp. has prepared a written Closure Plan for its Romic Southwest facility in accordance with 40 CFR Part 265 Subpart G. The Closure Plan includes standards for verifying that clean closure has been achieved. This determination is made, in part, on analytical results for certain contaminants of concern (see the Sampling and Analysis Plan, Attachment B to the Closure Plan).

This appendix describes the process by which the contaminants of concern were selected.

Selection of Contaminants of Concern

The selection of contaminants of concern (COC) was conducted in two stages. In the first stage, a master chemical list was compiled based on the waste codes Romic Southwest was authorized to manage. In the second stage, the master list was screened to identify the COC to quantitatively evaluate in the Closure Plan. These stages are detailed below.

Master Chemical List

An initial review of the list of waste codes on Romic Southwest's Part A application indicated that the list included the waste code F039. F039 is listed in 40 CFR 261.31 as "Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of [Part 261]." Waste code F039 adequately covers all other waste codes, as it was developed to apply to leachate from the disposal of all the other waste codes. F039 waste is also referred to as "multisource leachate." The 215 constituents that form the basis for listing F039, per Appendix VII to Part 261, are enumerated in Table 1. These constituents comprise the starting master chemical list.

Screening Based on Handling at the Facility

The master chemical list was first screened against the list of chemical constituents handled at the Romic Southwest facility. Three lists of chemical constituents were compiled during the development of the health risk evaluation in 2005 based on information in Romic's database, for the three onsite waste management process streams. Other constituents may have been accepted at the facility in waste shipments, but those wastes would have remained in containers at the facility, with minimal handling.

The three lists were for waste that was fuel blended, waste that was organic and underwent distillation, and waste that was primarily aqueous and underwent distillation. The blended fuel stream was comprised of 612 constituents; the organic distillation waste stream was comprised of 135 constituents; the aqueous distillation waste stream was comprised of 535 constituents. All three lists are included here as Tables 2 through 4 in their entirety. These tables include an annual quantity in pounds, as well as the percentage of the total quantity for each process stream represented by a constituent.

The chemicals on the master list were compared with the lists of constituents actually handled at the facility. Chemicals on the master list that were not present on any of the three process stream lists (Tables 2 – 4) were removed from the list. Those constituents with a combined quantity of less than one annual pound totaled across all three process stream lists were also removed from the master list.

Contaminants of Concern List

The selection process described above resulted in a list of 47 contaminants of concern. These are presented in Table 5. The table includes each contaminant's CAS number, if designated, the applicable Region 9 PRG for Industrial Soil, for organics, if designated, and approved EPA test methods for analyzing for the contaminant.

Additional Concerns

In addition to the chemical constituents, Romic handled corrosive wastes. Measurement of pH should be used in order to verify the absence of residues of corrosive wastes.

Table 1 Master Chemical List

Chemical	CAS Number[1]
Acenaphthylene	208-96-8
Acenaphthene	83-32-9
Acetone	67-64-1
Acetonitrile	75-05-8
Acetophenone	96-86-2
2-Acetylaminofluorene	53-96-3
Acrolein	107-02-8
Acrylonitrile	107-13-1
Aldrin	309-00-2
4-Aminobiphenyl	92-67-1
Aniline	62-53-3
o-Anisidine (2-methoxyaniline)	90-04-0
Anthracene	120-12-7
Aramite	140-57-8
alpha-BHC	319-84-6
beta-BHC	319-85-7
delta-BHC	319-86-8
gamma-BHC	58-89-9
Benzene	71-43-2
Benz(a)anthracene	56-55-3
Benzo(b)fluoranthene (difficult to distinguish from benzo(k) fluoranthene)	205-99-2
Benzo(k)fluoranthene (difficult to distinguish from benzo(b) fluoranthene)	207-08-9
Benzo(g,h,i)perylene	191-24-2
Benzo(a)pyrene	50-32-8
Bromodichloromethane	75-27-4
Bromomethane/Methyl bromide	74-83-9
4-Bromophenyl phenyl ether	101-55-3
n-Butyl alcohol	71-36-3
Butyl benzyl phthalate	85-68-7
2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7
Carbon disulfide	75-15-0
Carbon tetrachloride	56-23-5
Chlordane (alpha and gamma isomers)	57-74-9
p-Chloroaniline	106-47-8
Chlorobenzene	108-90-7
Chlorobenzilate	510-15-6
2-Chloro-1,3-butadiene	126-99-8
Chlorodibromomethane	124-48-1
Chloroethane	75-00-3

[1] Chemical Abstracts Service registry number

Table 1. Master Chemical List (cont.)

Chemical	CAS Number[1]
bis(2-Chloroethoxy)methane	111-91-1
bis(2-Chloroethyl)ether	111-44-4
Chloroform	67-66-3
bis(2-Chloroisopropyl)ether	39638-32-9
p-Chloro-m-cresol	59-50-7
Chloromethane (Methyl chloride)	74-87-3
2-Chloronaphthalene	91-58-7
2-Chlorophenol	95-57-8
3-Chloropropylene	107-05-1
Chrysene	218-01-9
o-Cresol	95-48-7
p-Cresidine	120-71-8
m-Cresol (difficult to distinguish from p-cresol)	108-39-4
p-Cresol (difficult to distinguish from m-cresol)	106-44-5
Cyclohexanone	108-94-1
o,p'-DDD	53-19-0
p,p'-DDD	72-54-8
o.p'-DDE	3424-82-6
p,p'-DDE	72-55-9
o,p'-DDT	789-02-6
p,p'-DDT	50-29-3
Dibenz(a,h)anthracene	53-70-3
Dibenz(a,e)pyrene	192-65-4
1,2-Dibromo-3-chloropropane	96-12-8
1,2-Dibromoethane (Ethylene dibromide)	106-93-4
Dibromomethane	74-95-3
m-Dichlorobenzene	541-73-1
o-Dichlorobenzene	95-50-1
p-Dichlorobenzene	106-46-7
Dichlorodifluoromethane	75-71-8
1,1-Dichloroethane	75-34-3
1,2-Dichloroethane	107-06-2
1,1-Dichloroethylene	75-35-4
trans-1,2-Dichloroethylene	156-60-5
2,4-Dichlorophenol	120-83-2
2,6-Dichlorophenol	87-65-0
2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7
1,2-Dichloropropane	78-87-5
cis-1,3-Dichloropropylene	10061-01-5
trans-1,3-Dichloropropylene	10061-02-6
Dieldrin	60-57-1
Diethyl phthalate	84-66-2
2,4-Dimethylaniline (2,4-Xylidine)	95-68-1
2-4-Dimethyl phenol	105-67-9
Dimethyl phthalate	131-11-3
Di-n-butyl phthalate	84-74-2

Table 1. Master Chemical List (cont.)

Chemical	CAS Number[1]
1,4-Dinitrobenzene	100-25-4
4,6-Dinitro-o-cresol	534-52-1
2,4-Dinitrophenol	51-28-5
2,4-Dinitrotoluene	121-14-2
2,6-Dinitrotoluene	606-20-2
Di-n-octyl phthalate	117-84-0
Di-n-propylnitrosamine	621-64-7
1,4-Dioxane	123-91-1
Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4
Diphenylnitrosamine (difficult to disguish from diphenylamine)	86-30-6
1,2-Diphenylhydrazine	122-66-7
Disulfoton	198-04-4
Endosulfan I	939-98-8
Endosulfan II	33213-6-5
Endosulfan sulfate	1031-07-8
Endrin	72-20-8
Endrin aldehyde	7421-93-4
Ethyl acetate	141-78-6
Ethyl benzene	100-41-4
Ethyl cyanide (Propanenitrile)	107-12-0
Ethyl ether	60-29-7
bis(2-Ethylhexyl) phthalate	117-81-7
Ethyl methacrylate	97-63-2
Ethylene oxide	75-21-8
Famphur	52-85-7
Fluoranthene	206-44-0
Fluorene	86-73-7
Heptachlor	76-44-8
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD)	35822-46-9
1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF)	67562-39-4
1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-HpCDF)	55673-89-7
Heptachlor epoxide	1024-57-3
Hexachlorobenzene	118-74-1
Hexachlorobutadiene	87-68-3
Hexachlorocyclopentadiene	77-47-4
HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA
HxCDFs (All Hexachlorodibenzofurans)	NA
Hexachloroethane	67-72-1
Hexachloropropylene	1888-71-7
Indeno (1,2,3-c,d) pyrene	193-39-5
Iodomethane	74-88-4
Isobutyl alcohol	78-83-1
Isodrin	465-73-6
Isosafrole	120-58-1
Kepone	143-50-8
Methacrylonitrile	126-98-7

Table 1. Master Chemical List (cont.)

Chemical	CAS Number[1]
Methanol	67-56-1
Methapyrilene	91-80-5
Methoxychlor	72-43-5
3-Methylcholanthrene	56-49-5
4,4-Methylene bis(2-chloroaniline)	101-14-4
Methylene chloride	75-09-2
Methyl ethyl ketone	78-93-3
Methyl isobutyl ketone	108-10-1
Methyl methacrylate	80-62-6
Methyl methanesulfonate	66-27-3
Methyl parathion	298-00-0
Naphthalene	91-20-3
2-Naphthylamine	91-59-8
p-Nitroaniline	100-01-6
Nitrobenzene	98-95-3
5-Nitro-o-toluidine	99-55-8
p-Nitrophenol	100-02-7
N-Nitrosodiethylamine	55-18-5
N-Nitrosodimethylamine	62-75-9
N-Nitroso-di-n-butylamine	924-16-3
N-Nitrosomethylethylamine	10595-95-6
N-Nitrosomorpholine	59-89-2
N-Nitrosopiperidine	100-75-4
N-Nitrosopyrrolidine	930-55-2
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0
Parathion	56-38-2
Total PCBs (sum of all PCB isomers, or Aroclors)	1336-36-3
Pentachlorobenzene	608-93-5
PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA
PeCDFs (All Pentachlorodibenzofurans)	NA
Pentachloronitrobenzene	82-68-8
Pentachlorophenol	87-86-5
Phenacetin	62-44-2
Phenanthrene	85-01-8
Phenol	108-95-2
m-Phenylenediamine (1,3-Diaminobenzene)	108-45-2
Phorate	298-02-2
Phthalic anhydride	85-44-9
Pronamide	23950-58-5
Pyrene	129-00-0
Pyridine	110-86-1
Safrole	94-59-7
Silvex (2,4,5-TP)	93-72-1
1,2,4,5-Tetrachlorobenzene	95-94-3
TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA

Table 1. Master Chemical List (cont.)

Chemical	CAS Number[1]
TCDFs (All Tetrachlorodibenzofurans)	NA
1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachloroethane	79-34-6
Tetrachloroethylene	127-18-4
2,3,4,6-Tetrachlorophenol	58-90-2
Toluene	108-88-3
Toxaphene	8001-35-2
Tribromomethane (Bromoform)	75-25-2
1,2,4-Trichlorobenzene	120-82-1
1,1,1-Trichloroethane	71-55-6
1,1,2-Trichloroethane	79-00-5
Trichloroethylene	79-01-6
Trichloromonofluoromethane	75-69-4
2,4,5-Trichlorophenol	95-95-4
2,4,6-Trichlorophenol	88-06-2
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	93-76-5
1,2,3-Trichloropropane	96-18-4
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1
tris(2,3-Dibromopropyl) phosphate	126-72-7
Vinyl chloride	75-01-4
Xylenes-mixed isomers (sum of o-,m-, and p-xylene concentrations)	1330-20-7
Antimony	7440-36-0
Arsenic	7440-38-2
Barium	7440-39-3
Beryllium	7440-41-7
Cadmium	7440-43-9
Chromium (Total)	7440-47-3
Cyanides (Total)	57-12-5
Cyanides (Amenable)	57-12-5
Fluoride	16984-48-6
Lead	7439-92-1
Mercury	7439-97-6
Nickel	7440-02-0
Selenium	7782-49-2
Silver	7440-22-4
Sulfide	8496-25-8
Thallium	7440-28-0
Vanadium	7440-62-2

Table 2 Composition of Fuels Waste Stream

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
1,1,1 TRICHLOROETHANE	539.275	0.0055%
1,1,1,2-TETRAFLUOROETHANE	2.75	0.0000%
1,1,1-TRICHLOROETHANE	12100.7039	0.1231%
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4.1283	0.0000%
1,1,2-TRICHLOROETHANE	4.1283	0.0000%
1,1-DICHLORO-1-FLUOROETHANE	4.5	0.0000%
1,2,4-TRIMETHYLBENZENE	4.67	0.0000%
1,2,5-DIAZONAPHTHAQUINENESULFONIC	333.52525	0.0034%
1,2-DICHLOROBENZENE	10	0.0001%
1,2-DICHLOROETHENE	0.29	0.0000%
1,2-EPOXYBUTANE	2.637525	0.0000%
1,3,5-TRIMETHYLBENZENE	1173.699825	0.0119%
1,3-BENZENEDIMETHANEAMINE	10.5084	0.0001%
1,3-DIOXOLANE	18.57735	0.0002%
1,4-DIOXANE	1108.525	0.0113%
1,6-HEXANEDIOL DIACRYLATE	24.75	0.0003%
1-BROMOPROPANE	4175.478	0.0425%
1-BUTOXY-2-PROPANOL	647.3925	0.0066%
1-METHOXY-2-PROPANOL	163443.655	1.6631%
1-METHOXY-2-PROPANOL ACETATE	93884.903	0.9553%
1-METHOXY-2-PROPYLENEACETATE	26.489925	0.0003%
1-METHYL-2-PYRROLIDINONE	173815.1394	1.7680%
2-(2-AMINOETHOXY)ETHANOL	8197.208775	0.0834%
2,2,2-TRIFLUOROETHANOL	0.96	0.0000%
2,4-D	8.967585	0.0001%
2-BUTANOL	1344.875	0.0137%
2-BUTANONE	84.8595	0.0009%
2-BUTOXYETHANOL	2264.60775	0.0230%
2-BUTOXYETHANOL ACETATE	45.901275	0.0005%
2-DIMETHYLAMINOETHANOL	80.004	0.0008%
2-ETHOXYETHANOL	600	0.0061%
2-ETHOXYETHYL ACETATE	12399.912	0.1262%
2-ETHYL-1-HEXYL METHACRYLATE	275.22	0.0028%
2-HEPTANONE	2039.082	0.0207%
2-METHOXY-1-PROPANOL ACETATE	5.625	0.0001%
2-METHOXYETHANOL	7652.025	0.0779%
2-METHYL BUTANE	13.8	0.0001%
2-METHYL-1-PROPANOL	3.94065	0.0000%
2-METHYL-2-PROPANOL	5.27505	0.0001%
2-PENTANONE	6003.4545	0.0611%
2-PROPANOL	217.530375	0.0022%
3-NONEN-2-ONE	250.2	0.0025%
4,4-DIPHENYLMETHANE DIISOCYANATE	686.531	0.0070%
4-HYDROXY-4-METHYL-2-PENTANONE	26.489925	0.0003%
4-METHYL-2-PENTANONE	3.67	0.0000%
5-BROMO-3-SEC-BUTYL-6-METHYLURACIL	8.967585	0.0001%
ABSORBENT	6	0.0001%
ACETATES	2353.131	0.0239%
ACETIC ACID	2816.596683	0.0287%
ACETONE	507025.6198	5.1591%

Table 2. Composition of Fuels Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
ACETONITRILE	121230.4671	1.2336%
ACETYL ACETONE	1334.4	0.0136%
ACRYLATE OLIGOMER	135	0.0014%
ACRYLATE RESIN	135	0.0014%
ACRYLATES	356.535	0.0036%
ACRYLIC COPOLYMER	422.004	0.0043%
ACRYLIC PAINT	543	0.0055%
ACRYLIC POLYMER	3.6	0.0000%
ACRYLIC RESIN	3568.2	0.0363%
ACTIVATED CARBON	76315.24748	0.7765%
ADHESIVE	10776.5475	0.1097%
ADHESIVE RESIN	46	0.0005%
AEROSOL CANS	11125.495	0.1132%
AEROSOLS	93999.505	0.9565%
AEROSOLS CONTAINING:	10	0.0001%
ALCOHOLS	57501.7635	0.5851%
ALIPHATIC HYDROCARBONS	2781.593125	0.0283%
ALIPHATIC NAPHTHA	2018.0325	0.0205%
ALIPHATIC PETROLEUM DISTILLATES	692.83	0.0070%
ALKYD POLYMER	22.935	0.0002%
ALKYD RESIN	143.865	0.0015%
ALKYL AMINES	45	0.0005%
ALKYL METHACRYLATE	501.6	0.0051%
ALKYL PHENOL	45	0.0005%
ALUMINA	434.25	0.0044%
ALUMINUM	60	0.0006%
ALUMINUM SILICATE	36.745	0.0004%
AMINES	137.57	0.0014%
AMMONIA	69.335	0.0007%
AMMONIUM ACETATE	68	0.0007%
AMMONIUM CHLORIDE	22	0.0002%
AMMONIUM HYDROXIDE	2185.894525	0.0222%
AMMONIUM PERCHLORATE	22.5	0.0002%
AMMONIUM PERFLUOROOCTANOTATE	18.925	0.0002%
AMMONIUM THIOSULFATE	10.5	0.0001%
AMYL ACETATE	21811.871	0.2219%
AMYL ALCOHOL	5233.545675	0.0533%
ANISOLE	1113.188268	0.0113%
ANTIMONY	4084.836	0.0416%
AROCLOR 1016	208.5	0.0021%
AROMATIC ALCOHOL	82.5	0.0008%
AROMATIC HYDROCARBONS	434.1655	0.0044%
AROMATIC PETROLEUM DISTILLATES	100.914	0.0010%
AROMATIC SOLVENT NAPTHA	145.95	0.0015%
ARSENIC	524.5443766	0.0053%
ARSENIC PENTOXIDE	17.5	0.0002%
ARSENIC TRIOXIDE	17.5	0.0002%
ASH	46.55	0.0005%
ASPHALT	460.6508	0.0047%
ASPHALT EMULSION	4866.6625	0.0495%
AVIATION FUEL	396.15	0.0040%
AXAREL	1704.6225	0.0173%

Table 2. Composition of Fuels Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
BAKING SODA	2.637525	0.0000%
BARIUM	1147.510372	0.0117%
BARIUM COMPOUNDS	4.725	0.0000%
BARIUM SULFATE	108	0.0011%
BENZENE	25163.17129	0.2560%
BENZENE, C10-16 ALKYL DERIVATIVES	417	0.0042%
BERYLLIUM	9.61	0.0001%
BERYLLIUM OXIDE	76.015	0.0008%
BIS(T-BUTYLPHENYL) PHENYL PHOSPHATE	3056.411925	0.0311%
BLUING AGENT	45.87	0.0005%
BORON TRIFLUORIDE	30.96225	0.0003%
BOTTLES	1337.6	0.0136%
BRAKE CLEANER	263.7525	0.0027%
BRAKE FLUID	2919	0.0297%
BROMINATED BISPHENOL	41868.3654	0.4260%
BROMINE	0	0.0000%
BROMOEOSINE	8.2566	0.0001%
BUTANE	36.0276	0.0004%
BUTANOL	46.4121	0.0005%
BUTYL ACETATE	31637.66953	0.3219%
BUTYL ALCOHOL	43.5137	0.0004%
BUTYLATED TRIPHENYL PHOSPHATE	2028.455	0.0206%
BUTYLENE OXIDE	44.65375	0.0005%
BUTYROLACTONE	2376.37965	0.0242%
CADMIUM	215.8088511	0.0022%
CALCIUM CARBONATE	30.7238	0.0003%
CALCIUM STEARATE	12	0.0001%
CAMPHORSULFONIC ACID	72	0.0007%
CARBON	5327.26975	0.0542%
CARBON BLACK	61.4	0.0006%
CARBON DIOXIDE	0	0.0000%
CARBON PELLETS	74.625	0.0008%
CARBON TETRACHLORIDE	11.4675	0.0001%
CARDBOARD	5409.5	0.0550%
CASTOR OIL	4153	0.0423%
CETYL ALCOHOL	5.838	0.0001%
CHLORHEXIDENE DIACETATE	13.975	0.0001%
CHLORINATED HYDROCARBONS	20.64191283	0.0002%
CHLORINATED PARAFFINS	119.48	0.0012%
CHLORINE	1167.6	0.0119%
CHLOROALKANES	8100	0.0824%
CHLOROBENZENE	83.1283	0.0008%
CHLOROBENZOTRIFLUORIDE	825.66	0.0084%
CHLOROFLUOROMETHANE	9.392925	0.0001%
CHLOROFORM	4408.716625	0.0449%
CHROMIUM	133.4855342	0.0014%
CITRIC ACID	19.875	0.0002%
CITRUS TURPENES	32.4	0.0003%
CLAY	59.955	0.0006%
CLEANING COMPOUNDS	45.87	0.0005%
COBALT	0.0344025	0.0000%
COBALT COMPOUNDS	641.2515	0.0065%

Table 2. Composition of Fuels Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
COCONUT OIL	1200	0.0122%
COOLANT	213.2955	0.0022%
COOMASSIE STAIN	0	0.0000%
COPPER	24.03937794	0.0002%
COPPER SHAVINGS	550	0.0056%
CORN SYRUP	1000.8	0.0102%
COTTONSEED OIL	2485.737	0.0253%
CRESOL	128.343	0.0013%
CRESOL NOVOLAK RESIN	225.202518	0.0023%
CRESYLIC ACID	11.6325	0.0001%
CUMENE	11.775	0.0001%
CUTTING OIL	1238.145975	0.0126%
CYCLOHEXANE	5833.35925	0.0594%
CYCLOHEXANONE	17055.7733	0.1735%
CYCLOPENTANONE	112.612518	0.0011%
DEBRIS (METALLIC)	11.69718483	0.0001%
DEBRIS: PAPER, WOOD, GLASS, PLASTIC	402.2360446	0.0041%
DECAMETHYL CYCLOPENTASILOXANE	50.112975	0.0005%
DETERGENT	218.3	0.0022%
DEVELOPER	450	0.0046%
DIACETONE ALCOHOL	356.587125	0.0036%
DIACETOXYPROPANE	26.489925	0.0003%
DIAZO PHOTOACTIVE COMPOUNDS	18.3	0.0002%
DIBASIC ESTER	854.45325	0.0087%
DIBUTYL ETHER	33.36	0.0003%
DIBUTYL PHTHALATE	50	0.0005%
DIBUTYLTIN DIACEATATE	275.22	0.0028%
DICHLORODIFLUOROMETHANE	21.3921	0.0002%
DICHLOROFLUOROMETHANE	543.713	0.0055%
DICHLOROMETHANE	2202.367975	0.0224%
DIESEL	187411.0953	1.9070%
DIESEL FUEL	15796.37513	0.1607%
DIETHANOLAMINE	9.717	0.0001%
DIETHYL ETHER	21.8925	0.0002%
DIETHYL KETONE	501.6	0.0051%
DIETHYLENE GLYCOL	575.625	0.0059%
DIETHYLENE GLYCOL BUTYL ETHER	729.75	0.0074%
DIETHYLENE GLYCOL ETHYL ETHER	34.4025	0.0004%
DIETHYLENE GLYCOL MONOBUTYL ETHER	4.24	0.0000%
DIISOPROPYLETHYLAMINE	3.1275	0.0000%
DIMETHOXYMETHANE	80.96055	0.0008%
DIMETHYL ACETAMIDE	112.612518	0.0011%
DIMETHYL DIALKYL AMMONIUM CHLORIDE	577.962	0.0059%
DIMETHYL ISOSORBIDE	351.2825	0.0036%
DIMETHYL PHOSPHITE	0.012	0.0000%
DIMETHYL SILOXANE	71.9325	0.0007%
DIMETHYL SULFOXIDE	1260.118875	0.0128%
DIMETHYLAMINE	3.65	0.0000%
DIMETHYLAMINOPROPYL METHACRYLAMIDE	917.4	0.0093%
DIMETHYLDICHLOROSILANE	194.634875	0.0020%
DIMETHYLFORMAMIDE	37228.59675	0.3788%
DIMETHYLSULFOXIDE	7979.89	0.0812%

Table 2. Composition of Fuels Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
DIMETRICONE	12.5934	0.0001%
DIOCTYL ADIPATE	112.5	0.0011%
DIOXANE	1167.80925	0.0119%
DIPROPYLENE GLYCOL MONOMETHYL ETHER	51.911775	0.0005%
DIRT	25029.27632	0.2547%
D-LIMONENE	1246.83	0.0127%
DYE	85.60215	0.0009%
EMPTY CONTAINERS	206.425	0.0021%
ENAMEL PAINT	671.37	0.0068%
EOSIN	45.87	0.0005%
EPOXY ADHESIVE	387.5	0.0039%
EPOXY PASTE	2.637525	0.0000%
EPOXY RESIN	4345.772	0.0442%
ESTERS	530.9456628	0.0054%
ETHANOL	139246.4692	1.4169%
ETHANOLAMINE	8.757	0.0001%
ETHER	77.145	0.0008%
ETHYL ACETATE	50406.95007	0.5129%
ETHYL ALCOHOL	32855.9469	0.3343%
ETHYL BENZENE	8148.063025	0.0829%
ETHYL ETHER	2559.13435	0.0260%
ETHYL LACTATE	414431.3864	4.2170%
ETHYL-3-ETHOXYPROPIONATE	1399.869	0.0142%
ETHYLACID-3-METHOXY-N-BUTYLENEESTER	26.489925	0.0003%
ETHYLBENZENE	436.2487392	0.0044%
ETHYLENE GLYCOL	28090.80878	0.2858%
ETHYLENE GLYCOL BUTYL ETHER	450.3378	0.0046%
ETHYLENE GLYCOL BUTYL ETHER ACETATE	870.17475	0.0089%
ETHYLENE GLYCOL ETHYL ETHER ACETATE	671.43255	0.0068%
ETHYLENE GLYCOL MONOBUTYL ETHER	2107.5541	0.0214%
ETHYLENE GLYCOL MONOETHYL ETHER	25.2285	0.0003%
F001	100.13055	0.0010%
F002	60.3105	0.0006%
FERRIC CHLORIDE	99	0.0010%
FIBER WITH RESIDUE:	19037.7	0.1937%
FIBERGLASS	2880.980025	0.0293%
FILTERS	662.85	0.0067%
FIRE EXTINGUISHERS	200	0.0020%
FIXER	0	0.0000%
FLUOROALIPHATIC POLYMER ESTERS	1.83	0.0000%
FLUOROCARBONS	1081.9216	0.0110%
FLUX	4082.645595	0.0415%
FOAM INSULATION	597	0.0061%
FOOD FLAVORING	41.7	0.0004%
FORMALDEHYDE	328.59506	0.0033%
FORMIC ACID	2.1673575	0.0000%
FREON 11	2.06415	0.0000%
GASOLINE	243099.7586	2.4736%
GEAR OIL	2965.9125	0.0302%
GLYCERIN	849.012	0.0086%
GLYCERINE	3944.267475	0.0401%
GLYCEROL	158.555	0.0016%

Table 2. Composition of Fuels Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
GLYCERYL MONOSTEARATE	417	0.0042%
GLYCERYL STEARATE	12.7602	0.0001%
GLYCOL ETHERS	2429.039	0.0247%
GLYCOLIC ACID	35.12825	0.0004%
GLYCOLS	48.5	0.0005%
GREASE	248924.3633	2.5329%
GRIT BLAST	9.174	0.0001%
HALOGENS	222.678	0.0023%
HEAT TRANSFER OIL	2956.5	0.0301%
HEMATOXYLIN	45.87	0.0005%
HEPTANE	8669.955625	0.0882%
HEXAMETHYLDISILAZANE	418.0605	0.0043%
HEXAMETHYLENE DIISOCYANATE	32.25	0.0003%
HEXANE	15781.2458	0.1606%
HEXANES	342.5655	0.0035%
HYDRAULIC FLUID	2310.0676	0.0235%
HYDRAULIC OIL	7912.80875	0.0805%
HYDROBROMIC ACID	51.646271	0.0005%
HYDROCHLORIC ACID	1265.526625	0.0129%
HYDROFLUORIC ACID	189.9018	0.0019%
HYDROGEN SILSESQUIOXANE	1611.4164	0.0164%
HYDROQUINONE	33.125	0.0003%
HYDROTREATED PARAFINNIC DISTILLATE	106.335	0.0011%
HYDROXYLAMINE	233.46	0.0024%
IMIDAZOLE	0.96	0.0000%
INERTS	218.125	0.0022%
INK	45653.01998	0.4645%
INK CONTAINING:	0	0.0000%
INK PIGMENTS	123.5154	0.0013%
INSECTICIDE	1.0875	0.0000%
IODINE	2.06415	0.0000%
IRON GRINDINGS	32.109	0.0003%
IRON OXIDE	50	0.0005%
ISOBUTANE	642.8675	0.0065%
ISOBUTANOL	472.495925	0.0048%
ISOBUTYL ACETATE	1178.6283	0.0120%
ISOBUTYL ALCOHOL	1670.717075	0.0170%
ISOBUTYL ISOBUTYRATE	4.8	0.0000%
ISOBUTYL KETONE	39.21885	0.0004%
ISOCYANATE	28.25	0.0003%
ISOOCTANE	1600.52475	0.0163%
ISOPAR	19951.5	0.2030%
ISOPARAFFINIC HYDROCARBON	48600.18	0.4945%
ISOPARAFFINIC HYDROCARBONS	409508.1818	4.1669%
ISOPHTHALYL DICHLORIDE	4346.3847	0.0442%
ISOPROPANOL	487210.7825	4.9575%
ISOPROPYL ACETATE	117.75	0.0012%
ISOPROPYL ALCOHOL	43139.98687	0.4390%
ISOPROPYL ETHER	47.955	0.0005%
ISOPROPYL MYRISTATE	400	0.0041%
ISOPROPYLBENZENE	2.35	0.0000%
ISPROPYL ALCOHOL	708.9	0.0072%

Table 2. Composition of Fuels Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
JET FUEL	148781.7406	1.5139%
KEROSENE	15064.05575	0.1533%
KETONES	251.7164128	0.0026%
KEVLAR	2.637525	0.0000%
LABPACKS - SEE INVENTORY SHEETS	7.5	0.0001%
LACOLENE	1179.693	0.0120%
LACQUER	82.566	0.0008%
LACQUER THINNER	27907.5307	0.2840%
LACTIC ACID	1728	0.0176%
LANOLIN	351.2825	0.0036%
LATEX PAINT	36543.91	0.3718%
LEAD	30339.07237	0.3087%
LECITHIN	6569.9	0.0669%
LIMONENE	3244.499775	0.0330%
LINSEED OIL	189.735	0.0019%
L-MENTHOL	229.35	0.0023%
L-MENTHONE	229.35	0.0023%
MAGNESIUM RESINATE	185.7735	0.0019%
MAGNESIUM SILICATE	120	0.0012%
MANGANESE	645.4915	0.0066%
MERCURY	0.6358702	0.0000%
METAL CONTAINERS	200.16	0.0020%
METAL SCREEN	5	0.0001%
METAL SHAVINGS	18.348	0.0002%
METHANESULFONIC ACID	0.038	0.0000%
METHANOL	226733.1525	2.3071%
METHOXY PROPYL ACETATE	125.1	0.0013%
METHYL ACETATE	4068.15308	0.0414%
METHYL ALCOHOL	3384.952	0.0344%
METHYL AMYL KETONE	2481.849	0.0253%
METHYL CELLOSOLVE	159.5	0.0016%
METHYL CYCLOHEXANE	167.625	0.0017%
METHYL ETHYL KETONE	266337.1499	2.7101%
METHYL ISOBUTYL KETONE	72200.3045	0.7347%
METHYL PROPYL KETONE	68061.696	0.6925%
METHYL RED	6.8	0.0001%
METHYLBENZENE	41.283	0.0004%
METHYLDIETHOXYSILANE	35	0.0004%
METHYLENE CHLORIDE	114352.3038	1.1636%
METHYL-TERT-BUTYL ETHER	73.87107	0.0008%
MICA	12	0.0001%
MINERAL OIL	50312.708	0.5119%
MINERAL SPIRITS	88588.3225	0.9014%
MODIFIERS	5.3	0.0001%
MOLYBDENUM	4.24	0.0000%
MONOETHANOLAMINE	24.96	0.0003%
MONOETHYLAMINE	900	0.0092%
M-PHENYLENEDIAMINE	72	0.0007%
MUD	5.625	0.0001%
N,N-DIMETHYLFORMAMIDE	128311.2318	1.3056%
N-AMINO-ETHYLETHANOLAMINE	8.757	0.0001%
NAPHTHA	97316.85805	0.9902%

Table 2. Composition of Fuels Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
NAPHTHALENE	403.57	0.0041%
N-BUTANOL	48183.67118	0.4903%
N-BUTYL ACETATE	95636.32708	0.9731%
N-BUTYL ALCOHOL	4896.418425	0.0498%
N-DIMETHYL FORMAMIDE	143.125	0.0015%
N-HEXANE	185.7735	0.0019%
NICKEL	0.00077979	0.0000%
NITRIC ACID	1013.89635	0.0103%
NITROCELLULOSE	4.24	0.0000%
NITROMETHANE	9501.65775	0.0967%
N-METHYL-2-PYRROLIDONE	136059.9651	1.3845%
N-METHYLPYRROLIDINE	1627.8012	0.0166%
NON HALOGENATED SOLVENTS	0	0.0000%
NONIONIC SURFACTANT	1.83	0.0000%
N-PROPANOL	2155.6785	0.0219%
N-PROPYL ACETATE	2563.22575	0.0261%
N-PROPYL ALCOHOL	6.8805	0.0001%
N-PROPYL BROMIDE	448.37925	0.0046%
NYLON	34.4025	0.0004%
OCTAMETHYLCYCLOTETRASILOXANE	249.557775	0.0025%
O-DICHLOROBENZENE	4.1283	0.0000%
OIL	866010.0851	8.8119%
OIL (HYDRAULIC)	912.813	0.0093%
OIL (SKYDROL)	641.763	0.0065%
OIL BASED PAINT	53578.205	0.5452%
OIL SLUDGE	835.305	0.0085%
OLEAMINE	187.0245	0.0019%
OLIVE OIL	351.2825	0.0036%
ORGANIC BINDER	960	0.0098%
ORGANOSILOXANE	167.2	0.0017%
OXIRANE-METHOXIRANE POLYMER-BUTYL E	2168	0.0221%
PAINT	208556.6164	2.1221%
PAINT & THINNER RESIDUE CONTAINING:	161.25	0.0016%
PAINT IN CANS	168.75	0.0017%
PAINT LIQUIDS	21.684	0.0002%
PAINT PIGMENT	24633.9691	0.2507%
PAINT POWDER	909.0181126	0.0092%
PAINT RELATED MATERIAL	583.8	0.0059%
PAINT SLUDGE	144389.0096	1.4692%
PAINT SOLIDS	27676.81563	0.2816%
PAINT SOLIDS (PIGMENT, RESIN)	147.9311628	0.0015%
PAINT THINNERS	13777.4782	0.1402%
PAPER TOWELS	0	0.0000%
PARA-CHLORO BENZO TRIFLOURIDE	1179.693	0.0120%
PARAFFIN	5259.4721	0.0535%
PARAFFIN OIL	5903.82375	0.0601%
PARAFFINIC DISTILLATES	542.06	0.0055%
PARAFFINIC SOLVENT	174.825	0.0018%
PCBS	224.763	0.0023%
PEG 24 GLYCERINE	450	0.0046%
PERCHLOROETHYLENE	46617.26348	0.4743%
PERFUME	1501.2	0.0153%

Table 2. Composition of Fuels Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
PETROLATUM	10.2582	0.0001%
PETROLEUM ASPHALT	3561.25	0.0362%
PETROLEUM BASED OIL	990.792	0.0101%
PETROLEUM CRUDE	1949.255	0.0198%
PETROLEUM DISTILLATES	200212.8089	2.0372%
PETROLEUM ETHER	352.6287	0.0036%
PETROLEUM HYDROCARBON	1147.5	0.0117%
PETROLEUM HYDROCARBONS	55233.85768	0.5620%
PETROLEUM NAPHTHA	36224.02651	0.3686%
PETROLEUM OIL	41189.15013	0.4191%
PETROLEUM PRODUCTS	168.75	0.0017%
PETROLEUM SOLVENT	541.839375	0.0055%
PHENOL	439.620125	0.0045%
PHENOLIC RESINS	250.2	0.0025%
PHENOLPHTHALEIN	3.753	0.0000%
PHOSPHATE DETERGENT	1320	0.0134%
PHOSPHINE	521.75	0.0053%
PHOSPHONIC ACID	0.012	0.0000%
PHOSPHORUS	753.8522	0.0077%
PHOSPHORUS PENTOXIDE	2.5	0.0000%
PHOTO RESIST	22993.10075	0.2340%
PHOTORESIST	13304.87	0.1354%
PIGMENT	178.5275254	0.0018%
PIGMENTS	73999.03541	0.7530%
PIPERIDINE	1357.9605	0.0138%
PLASTIC BAGS	638.159325	0.0065%
PLASTIC MATERIAL	50	0.0005%
POLYALKYLENE GLYCOL	337.5	0.0034%
POLYALPHAOLEFIN	350.9055	0.0036%
POLYAMIC ACID	668.8	0.0068%
POLYCHLORINATED BIPHENYLS	0.1577665	0.0000%
POLYCHLOROPRENE	340.58475	0.0035%
POLYCHLOROTRIFLUOROETHYLENE	66.28148483	0.0007%
POLYDIMETHYL SILOXANE	20338.14	0.2069%
POLYESTER RESIN	1039.7895	0.0106%
POLYETHERSULFONE	3.75	0.0000%
POLYETHYLENE GLYCOL	660.7794	0.0067%
POLYGLYCOL MONOETHYL ETHER ACETATE	225.202518	0.0023%
POLYMER (UNPROCESSED)	11.355	0.0001%
POLYMERIC RESIN	229.57935	0.0023%
POLYMERS	2380.731	0.0242%
POLYSULFONE POLYMER	7255.23	0.0738%
POLYURETHANE (OIL BASED)	29.242125	0.0003%
POLYURETHANE RESIN	7463.75	0.0759%
POLYVINYL ACETATE	0	0.0000%
POLYVINYL ALCOHOL	664	0.0068%
POLYVINYL CHLORIDE	247.164	0.0025%
POTASSIUM CARBONATE	81.315	0.0008%
POTASSIUM HYDROXIDE	1548.42525	0.0158%
POTASSIUM PERCHLORATE	22.5	0.0002%
PROPANE	191.515	0.0019%
PROPANOL	75.06	0.0008%

Table 2. Composition of Fuels Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
PROPELLENT	0	0.0000%
PROPIONIC ACID	583.904625	0.0059%
PROPIONITRILE	80	0.0008%
PROPYLENE GLYCOL	4631.180063	0.0471%
PROPYLENE GLYCOL ESTER	75.06	0.0008%
PROPYLENE GLYCOL ETHER	75.06	0.0008%
PROPYLENE GLYCOL METHYL ETHER	3062.025225	0.0312%
PROPYLENE GLYCOL METHYL ETHER ACETA	108563.7391	1.1047%
PROPYLENE GLYCOL MONOETHYL ETHER	50.725	0.0005%
PROPYLENE GLYCOL MONOETHYL ETHER AC	197.55375	0.0020%
PROPYLENE GLYCOL MONOMETHYL ETHER	530.9219	0.0054%
PROPYLENE GLYCOL N-BUTYL ETHER	27	0.0003%
PROPYLENE OXIDE	573.375	0.0058%
PYRIDINE	1237.027331	0.0126%
PYROCATECHOL	83.46	0.0008%
RESIN	17411.50967	0.1772%
RESIN (EPOXY)	1147.5	0.0117%
RESIN (SYNTHETIC)	275.22	0.0028%
RESIN FLUX	2030	0.0207%
RESINS	40520.6145	0.4123%
RESIST	80.004	0.0008%
ROOFING TAR	25.02	0.0003%
ROSIN	14.8035	0.0002%
ROSIN FLUX	2782.5	0.0283%
RUBBER	900.86	0.0092%
RUST	1931.7505	0.0197%
SAND	12026.37525	0.1224%
SCALE	1264.9195	0.0129%
SEC-BUTANOL	0.65	0.0000%
SELENIUM	0.1358955	0.0000%
SENSITIZER	83.6	0.0009%
SHELLAC	127.2	0.0013%
SILANE	82.566	0.0008%
SILICA	351.073425	0.0036%
SILICON	1819	0.0185%
SILICON OIL	3300.525	0.0336%
SILICONE	3416.354	0.0348%
SILICONE RESIN	383.64	0.0039%
SILVER	8.77029525	0.0001%
SLUDGE	26196.51413	0.2666%
SOAP	210	0.0021%
SODIUM ACETATE	1100	0.0112%
SODIUM BICARBONATE	200	0.0020%
SODIUM BISULFATE	0.45	0.0000%
SODIUM CARBONATE	4.81635	0.0000%
SODIUM DODECYLBENZENE SULFONATE	16.0545	0.0002%
SODIUM HYDROXIDE	6.69285	0.0001%
SODIUM LAURYL SULFATE	72	0.0007%
SODIUM NITRATE	131.355	0.0013%
SOIL	9.85	0.0001%
SOLIDS	43.5765	0.0004%
SOLIDS (SUSPENDED)	5987.1219	0.0609%

Table 2. Composition of Fuels Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
SOYBEAN OIL	2805.68025	0.0285%
STAIN	3034.471	0.0309%
STEARIC ACID	43.88525	0.0004%
STODDARD SOLVENT	58865.75775	0.5990%
STRONTIUM NITRATE	6.8	0.0001%
STYRENE	9052.862625	0.0921%
STYRENE MONOMER	369.2535	0.0038%
STYRENE RESIN	6956.4	0.0708%
SUGAR	36.261	0.0004%
SULFOLANE	52861.3008	0.5379%
SULFONIC ACID ESTER	32.05641	0.0003%
SULFURIC ACID	776.806425	0.0079%
SURFACTANT	400.32	0.0041%
SURFACTANTS	104.25	0.0011%
SUSPENDED SOLIDS	36.696	0.0004%
SYNTHETIC ESTERS	41.283	0.0004%
TALC	79.12575	0.0008%
TAR	3916.44825	0.0399%
T-BUTYL ALCOHOL	5.59	0.0001%
T-BUTYLPHENYL DIPHENYL PHOSPHATE	3056.411925	0.0311%
TERPENE	509.000625	0.0052%
TERPENE HYDROCARBONS	2374.74127	0.0242%
TERPINEOL	12.72	0.0001%
TERTBUTYL ALCOHOL	6.949305	0.0001%
TERT-BUTYL METHYLETHER	287.73	0.0029%
TETRACHLOROETHANE	1251	0.0127%
TETRACHLOROETHENE	1.62	0.0000%
TETRACHLOROETHYLENE	55658.6081	0.5663%
TETRAETHYL ORTHOSILICATE	15411.79	0.1568%
TETRAETHYLENE GLYCOL	240	0.0024%
TETRAHYDROFURAN	15794.35533	0.1607%
TETRAHYDROFURFURYL ALCOHOL	16.0545	0.0002%
TETRAHYDROTHIOPHENE	2400	0.0244%
TETRAHYDROXYPROPYLETHYLENEDIAMINE	875.7	0.0089%
TETRAZOLE	58.48425	0.0006%
THALLIUM	0	0.0000%
THINNER (LACQUER)	4902.075	0.0499%
TIN	4.24	0.0000%
TITANIUM DIOXIDE	9976.7565	0.1015%
TOLUENE	328505.3953	3.3426%
TOLUENE DIISOCYANATE	22	0.0002%
TONER	153	0.0016%
TOWELS	347.255	0.0035%
TRANSMISSION FLUID	2390.2308	0.0243%
TRI(T-BUTYLPHENYL) PHOSPHATE	1175.616825	0.0120%
TRIBUTOXYETHYL PHOSPHATE	1.8	0.0000%
TRIBUTYL PHOSPHATE	8.757	0.0001%
TRICHLOROETHANE	45.5	0.0005%
TRICHLOROETHENE	0.325	0.0000%
TRICHLOROETHYLENE	155911.705	1.5865%
TRICHLOROFLUOROMETHANE	39.10115	0.0004%
TRICHLOROMONOFLUOROMETHANE	6.19245	0.0001%

Table 2. Composition of Fuels Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
TRICHLOROTRIFLUOROETHANE	617.48275	0.0063%
TRICRESYL PHOSPHATE	21	0.0002%
TRIETHANOLAMINE	13.761	0.0001%
TRIETHYL PHOSPHATE	450	0.0046%
TRIETHYLAMINE	462.6632808	0.0047%
TRIETHYLENE GLYCOL ETHYL ETHER	91.74	0.0009%
TRIETHYLENE GLYCOL MONOMETHYL ETHER	91.74	0.0009%
TRIETHYLENETETRAMINE	50	0.0005%
TRIFLUOROACETIC ACID	2386.491	0.0243%
TRIMESIC ACID	6416.0917	0.0653%
TRIMESOYL CHLORIDE	106.125	0.0011%
TRIMETHYL BENZENE	174.06025	0.0018%
TRIMETHYL PHOSPHITE	47.76	0.0005%
TRIMETHYLATED SILICA	383.64	0.0039%
TRIPHENYL PHOSPHATE	2580.249875	0.0263%
TRIPROPYLENE GLYCOL METHYL ETHER	375	0.0038%
TRIPROPYLENE GLYCOL MONOMETHYLETHER	24.875	0.0003%
TRITOTYL PHOSPHATE	49.54125132	0.0005%
TRIXYLENYL PHOSPHATE	1576.08	0.0160%
TURPENTINE	135.525	0.0014%
UREA	10.0914	0.0001%
URETHANE	92.75	0.0009%
URETHANE FOAM	217.5	0.0022%
URETHANE RESIN	4032.46735	0.0410%
VEGETABLE OIL	3294.24425	0.0335%
VERMICULITE	191	0.0019%
VINYL COPOLYMER	41.5	0.0004%
VINYLPOLYDIMETHYLSILOXANE	1790	0.0182%
VITAMIN D3 POWDER	0.5	0.0000%
VM & P NAPTHA	972.8288	0.0099%
WATER	768770.138	7.8225%
WELDING DUST	11.25	0.0001%
XYLENE	146315.6606	1.4888%
XYLENES	64666.44727	0.6580%
XYLENOLS	0.9	0.0000%
ZEOLITE	50	0.0005%
ZINC	7.289367243	0.0001%
ZINC ACETATE	9.174	0.0001%
ZINC ALKYL DITHIOPHOSPHATE	363.2904	0.0037%
ZINC PHOSPHATE	2353.131	0.0239%
ZINC SULFATE	11.70936	0.0001%
Grand Total	9827708.953	100.0000%

Table 3. Composition of Organic Distillation Waste Stream

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
1,1,1-TRICHLOROETHANE	4074.9576	0.059%
1,2,3,4-TETRAHYDRONAPHTHALENE	9.174	0.000%
1,2,5-DIAZONAPHTHAQUINENESULFONIC	514.5363	0.007%
1-METHYL-2-PROPANOL ACETATE	19457.56	0.279%
2-(2-BUTOXYETHOXY)ETHANOL	10663.65952	0.153%
2-ETHOXYETHYL ACETATE	16.0545	0.000%
2-ETHOXYPROPANOL	19457.56	0.279%
2-HEPTANONE	2841.76	0.041%
2-PENTANONE	9261.6534	0.133%
ACETATES	392.1885	0.006%
ACETONE	121997.458	1.752%
ACETONITRILE	676.791	0.010%
ALUMINUM	0.773191732	0.000%
AMMONIUM FLUORIDE	3015.25	0.043%
ANISOLE	1543.6089	0.022%
BARIUM	3.06316275	0.000%
BUTANOL	127.31895	0.002%
BUTYL ACETATE	778.3242	0.011%
BUTYL ALCOHOL	9.075	0.000%
CADMIUM	0.006126326	0.000%
CARBON BLACK	22.5	0.000%
CHLOROFORM	235.7929803	0.003%
CHROMIUM	187.0176326	0.003%
COPPER	2.390552	0.000%
CYCLOHEXANONE	10863.022	0.156%
DIBASIC ESTER	38.9895	0.001%
DIBUTYL PHTHALATE	22.5	0.000%
DICHLOROETHANE	6.60528	0.000%
DICHLOROFLUOROMETHANE	5217.813	0.075%
DICHLOROMETHANE	1524.135	0.022%
DIETHYL ETHER	31.79625	0.000%
DIETHYLENE GLYCOL	501122.1225	7.195%
DIMETHYL SULFOXIDE	202.76625	0.003%
DIMETHYLFORMAMIDE	1584.898625	0.023%
DIRT	249.745375	0.004%
EPOXY RESIN	22.5	0.000%
ETHANOL	2597.17662	0.037%
ETHOXYETHYL ACETATE	19457.56	0.279%
ETHYL ACETATE	3691.431	0.053%
ETHYL BENZENE	431.178	0.006%
ETHYL LACTATE	409729.9577	5.883%
ETHYL-3-ETHOXYPROPIONATE	10846.17	0.156%
ETHYLENE GLYCOL	167952.73	2.411%
ETHYLENE GLYCOL BUTYL ETHER	77.0616	0.001%
ETHYLENE GLYCOL BUTYL ETHER ACETATE	52.2918	0.001%
ETHYLENE GLYCOL ETHYL ETHER ACETATE	23291.06185	0.334%
ETHYLENE GLYCOL MONOBUTYL ETHER	78.91725	0.001%
FIBER WITH RESIDUE:	386.1	0.006%
FLUOROCARBONS	5176.5	0.074%
FORMALIN	33.02673026	0.000%

Table 3. Composition of Organic Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
GLUE	87.5	0.001%
GREASE	10898.05094	0.156%
HEPTANE	392.1885	0.006%
HEXAMETHYLDISILAZANE	11266.22452	0.162%
HEXANE	282.88029	0.004%
HEXANES	381.555	0.005%
HYDROFLUORIC ACID	603.05	0.009%
INK	110.505	0.002%
IODINE	3.753	0.000%
ION EXCHANGE RESIN (CATION)	6035	0.087%
IRON	0.773191732	0.000%
IRON OXIDE	22.5	0.000%
ISOBUTYL ALCOHOL	3.89895	0.000%
ISOCYANATE	9.174	0.000%
ISOPARAFFINIC HYDROCARBONS	180.5625	0.003%
ISOPROPANOL	157964.3791	2.268%
ISOPROPANOLAMINE	10150	0.146%
ISOPROPYL ACETATE	23.3937	0.000%
ISOPROPYL ALCOHOL	2884.01775	0.041%
LACTIC ACID	431.5	0.006%
LEAD	92.35263255	0.001%
METHANOL	4113.949655	0.059%
METHYL AMYL KETONE	392.1885	0.006%
METHYL ETHYL KETONE	38032.32825	0.546%
METHYL ISOBUTYL KETONE	1278.040925	0.018%
METHYL NONAFLUOROBUTYL ETHER	791.2575	0.011%
METHYL NONAFLUOROISOBUTYL ETHER	791.2575	0.011%
METHYLENE CHLORIDE	24289.43918	0.349%
METHYL-TERT-BUTYL ETHER	6.486435	0.000%
MINERAL SPIRITS	422372.4025	6.064%
NAPHTHA	13710.96	0.197%
N-BUTANOL	69.35544	0.001%
N-BUTYL ACETATE	1367.4557	0.020%
N-BUTYL ALCOHOL	3310.907	0.048%
NICKEL	4.639104	0.000%
N-METHYL-2-PYRROLIDONE	3375386.848	48.461%
N-METHYLPYRROLIDINE	1925.835	0.028%
N-PROPANOL	1807.695	0.026%
N-PROPYL ACETATE	3445.5042	0.049%
OIL	45665.0196	0.656%
PAINT	1146.176625	0.016%
PAINT PIGMENT	2815.09455	0.040%
PAINT SLUDGE	604.9	0.009%
PAINT SOLIDS	1949.171175	0.028%
PAINT SOLIDS (PIGMENT, RESIN)	10.894125	0.000%
PERCHLOROETHYLENE	45929.03608	0.659%
PERFLUORINATED POLYETHERS	5176.5	0.074%
PERFLUORO COMPOUNDS	2690.2755	0.039%
PETROLEUM DISTILLATES	188868.6957	2.712%
PETROLEUM HYDROCARBONS	419.7105	0.006%
PETROLEUM NAPHTHA	595.10904	0.009%
PETROLEUM OIL	22.5	0.000%

Table 3. Composition of Organic Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
PHENOL	36.32904	0.001%
PHOSPHORIC ACID	9.174	0.000%
PHOTORESIST	1949.475	0.028%
PIGMENTS	359.76	0.005%
PLASTIC MATERIAL	22.5	0.000%
POLYMERS	392.1885	0.006%
PROPYLENE GLYCOL	4019.463	0.058%
PROPYLENE GLYCOL METHYL ETHER	2755.17055	0.040%
PROPYLENE GLYCOL METHYL ETHER ACETA	22261.67177	0.320%
PROPYLENE GLYCOL MONOETHYL ETHER	18.275	0.000%
RESIN	2046.850715	0.029%
RESINS	17981.49175	0.258%
SLUDGE	1756.821	0.025%
SODIUM CHLORIDE	1206.1	0.017%
SODIUM SULFATE	25.02	0.000%
SOLIDS (SUSPENDED)	354981.7406	5.097%
SULFOLANE	1897.695	0.027%
SULFONIC ACID ESTER	254.625915	0.004%
TETRACHLOROETHYLENE	35482.16573	0.509%
TETRAETHYL ORTHOSILICATE	30	0.000%
TETRAHYDROFURAN	550.62045	0.008%
TETRAHYDROTHIOPHENE-1,1-DIOXIDE	50750	0.729%
TOLUENE	17279.28664	0.248%
TRICHLOROACETIC ACID	3.302970264	0.000%
TRICHLOROETHYLENE	23342.42115	0.335%
TRICHLOROTRIFLUOROETHANE	5217.813	0.075%
TRIETHYLENETETRAMINE	22.5	0.000%
WATER	566475.4168	8.133%
XYLENE	3576.31674	0.051%
XYLENES	99254.71982	1.425%
ZEOLITE	22.5	0.000%
ZINC	0.782358	0.000%
ZINC PHOSPHATE	392.1885	0.006%
Grand Total	6965163.808	100.000%

Table 4. Composition of Aqueous Distillation Waste Stream

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
1,1,1-TRICHLOROETHANE	147.4	0.0029%
1,2,3-TRIMETHYLBENZENE	1.7	0.0000%
1,2,4-TRIMETHYLBENZENE	440.4	0.0086%
1,2-DICHLOROBENZENE	4.0	0.0001%
1,2-ETHANEDIOL	6.4	0.0001%
1,2-HEXANEDIOL	1167.6	0.0229%
1,5-PENTANEDIOL	3888.9	0.0762%
1-HYDROXYETHYLIDENE-1,1 DIPHOSPHONI	60.7	0.0012%
1-METHOXY-2-PROPANOL	131.9	0.0026%
1-METHYL-2-PYRROLIDINONE	200.0	0.0039%
1-NAPHTHALENEACETIC ACID	114.7	0.0022%
1-NITROPROPANE	27.2	0.0005%
2-(2-BUTOXYETHOXY)ETHANOL	2.4	0.0000%
2,4-PENTANEDIONE	2.5	0.0000%
2-AMINO-2-METHYL-1-PROPANOL	440.4	0.0086%
2-BUTANOL	699.8	0.0137%
2-BUTENEDINIC ACID	131.4	0.0026%
2-BUTOXYETHANOL	348.9	0.0068%
2-DIMETHYLAMINOETHANOL	5.0	0.0001%
2-ETHOXYETHANOL	37.5	0.0007%
2-METHOXYETHANOL	17.4	0.0003%
2-METHYL-1,3-PROPANEDIOL	275.2	0.0054%
2-METHYLAMINOETHANOL	0.0	0.0000%
2-PROPANOL	1.4	0.0000%
2-PYRROLIDONE	9970.5	0.1954%
3,3-DIAMINOBENZIDINE	16.4	0.0003%
3,3-DIAMINOBENZIDINE TETRAHYDROCHLO	5.8	0.0001%
4-METHYLAMINOPHENOL SULFATE	7.6	0.0001%
ABSORBENT	162.0	0.0032%
ACETATES	12.5	0.0002%
ACETIC ACID	1523.3	0.0299%
ACETONE	12602.9	0.2470%
ACETONITRILE	1674.5	0.0328%
ACRYLIC COPOLYMER	60.7	0.0012%
ACRYLIC POLYMER	75.7	0.0015%
ADIPIC ACID	1.4	0.0000%
ALCOHOL ETHOXYLATES	27.9	0.0005%
ALCOHOL ETHOXYSULFATE	10.6	0.0002%
ALCOHOLS	136.5	0.0027%
ALIPHATIC HYDROCARBONS	125.1	0.0025%
ALKYLAMMONIUM HYDROXIDE	15.8	0.0003%
ALKYLATED PHENOL INHIBITOR	0.4	0.0000%
ALUMINA	142.4	0.0028%
ALUMINA POWDER	299.5	0.0059%
ALUMINUM	158.8	0.0031%
ALUMINUM FINES	412.8	0.0081%
ALUMINUM HYDROXIDE	1877.5	0.0368%
ALUMINUM HYDROXY CHLORIDE	2817.0	0.0552%
ALUMINUM OXIDE	1052.3	0.0206%
ALUMINUM SULFATE	0.0	0.0000%

Table 4. Composition of Aqueous Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
AMMONIA	1407.4	0.0276%
AMMONIUM ACETATE	63.7	0.0012%
AMMONIUM ALUM, DODECAHYDRATE	7.6	0.0001%
AMMONIUM BISULFITE	33.8	0.0007%
AMMONIUM FLUORIDE	630.2	0.0123%
AMMONIUM HYDROXIDE	1992.2	0.0390%
AMMONIUM NITRATE	36.3	0.0007%
AMMONIUM OXALATE	0.5	0.0000%
AMMONIUM PERFLUOROOCTANOTATE	23.6	0.0005%
AMMONIUM SULFITE	1.2	0.0000%
AMMONIUM THIOSULFATE	2273.9	0.0446%
ANIONIC COPOLYMER	476.0	0.0093%
AROCLOR 1260	602.0	0.0118%
AROMATIC HYDROCARBONS	300.2	0.0059%
AROMATIC SOLVENT NAPTHA	1834.8	0.0360%
ARSENIC	640.4	0.0125%
ASPHALT	2445.7	0.0479%
ASPHALT EMULSION	5119.1	0.1003%
BARIUM	239.3	0.0047%
BARIUM SULFATE	1105.7	0.0217%
BENZENE	839.6	0.0165%
BENZOIC ACID	32.5	0.0006%
BENZYL ALCOHOL	24.0	0.0005%
BIFENTHRIN	350.3	0.0069%
BIOCIDE	5.1	0.0001%
BORAX	20.0	0.0004%
BORIC ACID	403.4	0.0079%
BORON	72.7	0.0014%
BRAKE FLUID	1376.1	0.0270%
BUFFER	23.7	0.0005%
BUTANE	13.0	0.0003%
BUTANOL	43.6	0.0009%
BUTOXYETHANOL	7.5	0.0001%
BUTYL ACETATE	1660.8	0.0325%
BUTYL CHLORIDE	2.5	0.0000%
CADMIUM	1387.6	0.0272%
CADMIUM OXIDE	4057.6	0.0795%
CALCIUM CHLORIDE	26223.3	0.5139%
CALCIUM HYDROXIDE	496.6	0.0097%
CALCIUM LIGNOSULFONATE	326.1	0.0064%
CALCIUM OXIDE	27.3	0.0005%
CAMPHORSULFONIC ACID	1373.0	0.0269%
CARBON BLACK	3915.3	0.0767%
CARBOXYALKANE	15.8	0.0003%
CARBOXYLIC ACID	35.2	0.0007%
CERAMIC DUST	275.2	0.0054%
CETYL ALCOHOL	37.5	0.0007%
CHELATING AGENT	39.0	0.0008%
CHLORIDE SALTS	1.3	0.0000%
CHLORINATED PARAFFINS	500.0	0.0098%
CHLOROBENZENE	5.7	0.0001%
CHLOROFORM	123.4	0.0024%

Table 4. Composition of Aqueous Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
CHROMIC ACID	186.5	0.0037%
CHROMIUM	2117.7	0.0415%
CHROMIUM TRIOXIDE	378.0	0.0074%
CITRIC ACID	1083.5	0.0212%
CLEANING COMPOUNDS	1269.6	0.0249%
COBALT	137.4	0.0027%
COLLOIDAL SILICA	57.5	0.0011%
CONCRETE SEALER	131.9	0.0026%
CONDITIONER SOLUTION	275.2	0.0054%
CONTAINERS (METAL)	1335.3	0.0262%
COOLANT	1688.2	0.0331%
COPOLYMER ACRYLAMIDE	0.7	0.0000%
COPPER	74.0	0.0015%
COPPER SULFATE	20309.0	0.3980%
CRESOL	12.0	0.0002%
CUTTING OIL	13475.3	0.2641%
CYANIDES	3.6	0.0001%
CYCLOHEXANE	7859.7	0.1540%
CYCLOHEXANOL	6.3	0.0001%
CYCLOHEXANONE	1269.0	0.0249%
CYPERMETHRIN	350.3	0.0069%
DEBRIS: PAPER, WOOD, GLASS, PLASTIC	107.6	0.0021%
DEBRIS: PLASTIC, PAPER, CLOTH	186.3	0.0037%
DEBRIS: PLASTIC,PAPER,CLOTH,WOOD	239.8	0.0047%
DEGREASER	187.7	0.0037%
DETERGENT	1992.7	0.0391%
DEVELOPER	71.9	0.0014%
DIAMOND DUST	12.0	0.0002%
DICHLOROACETIC ACID	121.8	0.0024%
DICHLOROMETHANE	307.5	0.0060%
DICHLOROPHENE	0.5	0.0000%
DIESEL	70121.4	1.3742%
DIESEL FUEL	1409.5	0.0276%
DIETHANOLAMINE	772.8	0.0151%
DIETHYL ETHER	123.8	0.0024%
DIETHYLENE GLYCOL	2863.4	0.0561%
DIETHYLENE GLYCOL BUTYL ETHER	866.2	0.0170%
DIETHYLENE GLYCOL MONOBUTYL ETHER	552.2	0.0108%
DIETHYLENETRIAMINE	15.1	0.0003%
DIMETHYL SULFOXIDE	17.4	0.0003%
DIMETHYLAMINE BORANE	0.1	0.0000%
DIMETHYLDICHLOROSILANE	10.5	0.0002%
DIMETHYLFORMAMIDE	113.0	0.0022%
DIOXANE	62.7	0.0012%
DIPROPYLENE GLYCOL METHYL ETHER	45.8	0.0009%
DIPROPYLENE GLYCOL MONOMETHYL ETHER	18.8	0.0004%
DIRT	19339.6	0.3790%
DISTILLED WATER	491.8	0.0096%
DIURON	350.3	0.0069%
D-LIMONENE	128.0	0.0025%
DYE	1015.3	0.0199%
EDTA TETRASODIUM SALT	19.7	0.0004%

Table 4. Composition of Aqueous Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
EMULSIFIER	57.3	0.0011%
ENAMEL	874.0	0.0171%
ENZYMES	0.1	0.0000%
EPOXY RESIN	110.7	0.0022%
ESTERS	12.9	0.0003%
ETHANOL	5844.1	0.1145%
ETHANOLAMINE	502.2	0.0098%
ETHIDIUM BROMIDE	2.3	0.0000%
ETHOXYLATED ACETYLENIC DIOLS	16.7	0.0003%
ETHOXYLATED ALCOHOLS	40.0	0.0008%
ETHYL ACETATE	1292.7	0.0253%
ETHYL ALCOHOL	97.6	0.0019%
ETHYL BENZENE	116.0	0.0023%
ETHYL CELLULOSE	75.1	0.0015%
ETHYL ETHER	1.8	0.0000%
ETHYL LACTATE	1269.0	0.0249%
ETHYLBENZENE	402.2	0.0079%
ETHYLENE DIAMINE TETRAACETIC ACID	4.8	0.0001%
ETHYLENE GLYCOL	54399.6	1.0661%
ETHYLENE GLYCOL METHYL ETHER	211.0	0.0041%
F002	2.3	0.0000%
FAT	849.3	0.0166%
FATTY ACIDS	235.0	0.0046%
FERRIC AMMONIUM OXALATE	225.0	0.0044%
FERRIC CHLORIDE	41.7	0.0008%
FERRIC OXIDE	2008.7	0.0394%
FERROUS OXIDE	82.5	0.0016%
FIBERGLASS	1284.4	0.0252%
FILTER CAKE	3195.9	0.0626%
FIPRONIL	350.3	0.0069%
FIRE SUPPRESSANT FOAM	13.8	0.0003%
FIXER	57.3	0.0011%
FLOW MODIFIER	0.4	0.0000%
FLUORIDE	465.9	0.0091%
FLUX	1.9	0.0000%
FORMALDEHYDE	517.8	0.0101%
FORMALIN	500.4	0.0098%
FRAGRANCE OILS	184.6	0.0036%
FRAGRANCES	2792.2	0.0547%
FUEL OIL	5629.5	0.1103%
FURFURYL ALCOHOL	15.0	0.0003%
GALLIUM ARSENIDE	78.3	0.0015%
GASOLINE	119716.0	2.3461%
GEAR OIL	1376.1	0.0270%
GLASS	303.4	0.0059%
GLASS BEADS	1651.3	0.0324%
GLUE	42.2	0.0008%
GLUTARALDEHYDE	72.3	0.0014%
GLYCERIN	543.3	0.0106%
GLYCERINE	295.9	0.0058%
GLYCEROL	13.1	0.0003%
GLYCOL ETHERS	45.0	0.0009%

Table 4. Composition of Aqueous Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
GLYCOLIC ACID	228.5	0.0045%
GLYCOLS	48.2	0.0009%
GLYPHOSPHATE	4.6	0.0001%
GOLD	0.6	0.0000%
GRAPHITE	303.4	0.0059%
GRAVEL	71.8	0.0014%
GREASE	2934.6	0.0575%
GUM ARABIC	6.9	0.0001%
HAIR GEL	275.2	0.0054%
HALOGENS	17.5	0.0003%
HARDENER	21.5	0.0004%
HEPES	0.4	0.0000%
HEPTANE	247.5	0.0049%
HEXANE	81.0	0.0016%
HEXANES	53.9	0.0011%
HEXYLENE GLYCOL	188.7	0.0037%
HYDRAULIC FLUID	760.4	0.0149%
HYDRAULIC OIL	1550.6	0.0304%
HYDRAZINE	29.2	0.0006%
HYDROCHLORIC ACID	2122.4	0.0416%
HYDROFLUORIC ACID	364.6	0.0071%
HYDROGEN PEROXIDE	16.4	0.0003%
HYDROQUINONE	242.4	0.0048%
IMIDACLOPRID	350.3	0.0069%
INDIUM PHOSPHIDE	0.1	0.0000%
INERTS	8209.9	0.1609%
INK	72460.8	1.4200%
INK (WATER SOLUBLE)	4450.8	0.0872%
INK CONTAINING:	0.0	0.0000%
INK PIGMENTS	114.7	0.0022%
INORGANIC ACIDS	2.5	0.0000%
INORGANIC SALTS	32.8	0.0006%
IODINE	22.9	0.0004%
IODINE COMPLEX	8.1	0.0002%
IRON	1789.6	0.0351%
IRON HYDROXIDE	1126.5	0.0221%
IRON OXIDE	4.8	0.0001%
IRON PHOSPHATE	1107.8	0.0217%
ISOBUTANOL	435.3	0.0085%
ISOBUTYL ALCOHOL	23.6	0.0005%
ISOPARAFFINIC HYDROCARBON	412.8	0.0081%
ISOPARAFFINIC HYDROCARBONS	8775.0	0.1720%
ISOPHTHALYL DICHLORIDE	94.5	0.0019%
ISOPROPANOL	14848.0	0.2910%
ISOPROPYL ACETATE	218.6	0.0043%
ISOPROPYL ALCOHOL	3446.2	0.0675%
JET FUEL	68019.7	1.3330%
KEROSENE	9161.9	0.1795%
LACQUER THINNER	500.4	0.0098%
LACTOSE	1.3	0.0000%
LAMBDA-CYHALOTHRIN	350.3	0.0069%
LATEX PAINT	14483.6	0.2838%

Table 4. Composition of Aqueous Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
LAURAMINE OXIDE	40.0	0.0008%
LAURIC ALCOHOL	33.0	0.0006%
L-CYSTINE	26.4	0.0005%
LEAD	3895.8	0.0763%
LEAD NITRATE	10.0	0.0002%
LEAD OXIDE	13.5	0.0003%
LECITHIN	32.6	0.0006%
LITHIUM HYDROXIDE	7.2	0.0001%
LOTION	275.2	0.0054%
LUBRICANT	602.3	0.0118%
MAGNESIUM HYDROXIDE	138.7	0.0027%
MAGNESIUM NITRATE	1.4	0.0000%
MAGNESIUM OXIDE	124.8	0.0024%
MANGANESE OXIDE	7.5	0.0001%
MERCURIC CHLORIDE	20.9	0.0004%
MERCURIC IODIDE	20.9	0.0004%
MERCURY	6.6	0.0001%
METAL	4.0	0.0001%
METAL SHAVINGS	71.9	0.0014%
METHANOL	2815.4	0.0552%
METHOXY-METHYL ETHOXY PROPANOL	41.3	0.0008%
METHYL AMYL KETONE	100.0	0.0020%
METHYL ETHYL KETONE	1832.4	0.0359%
METHYL ISOBUTYL KETONE	264.1	0.0052%
METHYL RED	39.5	0.0008%
METHYLENE CHLORIDE	8559.4	0.1677%
METHYL-TERT-BUTYL ETHER	0.0	0.0000%
MILK	20.2	0.0004%
MINERAL OIL	2475.6	0.0485%
MINERAL SPIRITS	5270.2	0.1033%
MONOCHLOROTOLUENE	31.2	0.0006%
MONOETHANOLAMINE	540.5	0.0106%
M-PHENYLENEDIAMINE	1373.0	0.0269%
MUD	532.4	0.0104%
N,N-DIMETHYLFORMAMIDE	396.8	0.0078%
N-AMINOETHYLETHANOLAMINE	15.8	0.0003%
NAPHTHA	112.6	0.0022%
NAPHTHALENE	62.6	0.0012%
N-BUTANOL	5.9	0.0001%
N-BUTYL ACETATE	353.2	0.0069%
N-BUTYL ALCOHOL	151.0	0.0030%
NEUTRALIZED ACIDS	0.4	0.0000%
N-HEXANE	100.1	0.0020%
NICKEL	99.1	0.0019%
NICKEL BROMIDE	15.8	0.0003%
NICKEL CHLORIDE	62.5	0.0012%
NICKEL COMPOUNDS	184.6	0.0036%
NICKEL HYDROXIDE	188.1	0.0037%
NICKEL NITRATE	16.3	0.0003%
NICKEL SULFAMATE	21118.5	0.4139%
NICKEL SULFATE	90.4	0.0018%
NITRATES	13.2	0.0003%

Table 4. Composition of Aqueous Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
NITRIC ACID	423.3	0.0083%
N-METHYL-2-PYRROLIDONE	8995.1	0.1763%
NON-HALOGENATED ORGANIC SOLVENTS	21.9	0.0004%
NONYLPHENOXYPOLYETHANOL	0.7	0.0000%
NONYLPHENOXYPOLYETHOXYETHANOL	4.8	0.0001%
N-PROPANOL	106.0	0.0021%
N-PROPYL ACETATE	301.2	0.0059%
N-PROPYL ALCOHOL	13.4	0.0003%
OIL	230680.0	4.5206%
OIL (HYDRAULIC)	59.6	0.0012%
OIL (NAPTHENIC)	11.3	0.0002%
OIL BASED PAINT	1814.0	0.0355%
OIL PRODUCTS	252.3	0.0049%
OIL SLUDGE	375.3	0.0074%
ORGANIC ACID	34.0	0.0007%
ORGANIC ACID SALTS	2.5	0.0000%
OXALIC ACID	1789.6	0.0351%
PAINT	3583.0	0.0702%
PAINT PIGMENT	72.0	0.0014%
PAINT POWDER	15.4	0.0003%
PAINT SLUDGE	7792.6	0.1527%
PAINT SOLIDS	175.7	0.0034%
PAINT THINNERS	32.5	0.0006%
PAPER	6.9	0.0001%
PAPER TOWELS	5298.0	0.1038%
PARAFFIN	164.4	0.0032%
PARAFFIN OIL	990.0	0.0194%
PARAFFINIC DISTILLATES	35.9	0.0007%
PERCHLOROETHYLENE	5474.2	0.1073%
PERFUME	53.5	0.0010%
PERMETHRIN	350.3	0.0069%
PETROLEUM ASPHALT	67.1	0.0013%
PETROLEUM CRUDE	1146.8	0.0225%
PETROLEUM DISTILLATES	6315.7	0.1238%
PETROLEUM ETHER	91.7	0.0018%
PETROLEUM HYDROCARBONS	8961.3	0.1756%
PETROLEUM NAPHTHA	544.7	0.0107%
PETROLEUM OIL	2356.6	0.0462%
PETROLEUM SLACK WAX	2088.5	0.0409%
PHENOL	1119.7	0.0219%
PHENOLPHTHALEIN	36.3	0.0007%
PHENYLISOTHIOCYANATE	25.0	0.0005%
PHENYLMERCURIC ACETATE	0.1	0.0000%
PHENYLMERCURY ACETATE	0.1	0.0000%
PHOSPHATE	43.3	0.0008%
PHOSPHORIC ACID	977.9	0.0192%
PHOTO PROCESSING SOLUTIONS	114.7	0.0022%
PHOTORESIST	125.0	0.0024%
PICRIC ACID	17.4	0.0003%
PIGMENT	735.8	0.0144%
PIGMENTS	68621.7	1.3448%
PLASTIC CONTAINERS	79.5	0.0016%

Table 4. Composition of Aqueous Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
PLASTIC LINERS	756.9	0.0148%
PLASTIC MATERIAL	0.2	0.0000%
POLY(DIMETHYLSILOXANE)	38.9	0.0008%
POLY(ETHYLENE-PROPYLENE) GLYCOL	155.4	0.0030%
POLYACRYLAMIDE POLYMER	1009.1	0.0198%
POLYALKYLENE GLYCOL	337.5	0.0066%
POLYESTER RESIN	633.0	0.0124%
POLYETHYLENE GLYCOL	0.5	0.0000%
POLYETHYLENE GLYCOL TRIMETHYLNONYL	13.8	0.0003%
POLYMERS	873.3	0.0171%
POLYOXYALKYLENE GLYCOL	32.2	0.0006%
POLYOXYETHYLENE(DIMETHYLIMINIO)ETHY	4.2	0.0001%
POLYTETRAFLUOROETHYLENE	2593.9	0.0508%
POLYVINYL ALCOHOL	3242.7	0.0635%
POTASSIUM BIPHTHALATE	13.1	0.0003%
POTASSIUM BROMIDE	0.5	0.0000%
POTASSIUM CARBONATE	2009.2	0.0394%
POTASSIUM CHLORIDE	68.8	0.0013%
POTASSIUM CITRATE MONOHYDRATE	5.2	0.0001%
POTASSIUM DICHROMATE	2.4	0.0000%
POTASSIUM FERRICYANIDE	715.8	0.0140%
POTASSIUM FERROCYANIDE (II)	17.4	0.0003%
POTASSIUM HYDROXIDE	3408.6	0.0668%
POTASSIUM IODIDE	314.5	0.0062%
POTASSIUM NAPTHALENESULFONATE	782.7	0.0153%
POTASSIUM PERMANGANATE	22.2	0.0004%
POTASSIUM PHOSPHATE DIBASIC	1.3	0.0000%
POTASSIUM SULFATE	68.8	0.0013%
POTASSIUM SULFITE	114.9	0.0023%
POTASSIUM THIOCYANATE	159.7	0.0031%
PPE	337.5	0.0066%
PROPIONIC ACID	391.6	0.0077%
PROPRIETARY INGREDIENT(S)	7722.1	0.1513%
PROPYLENE GLYCOL	6546.9	0.1283%
PROPYLENE GLYCOL METHYL ETHER ACETA	1283.9	0.0252%
PROPYLENE GLYCOL MONOMETHYL ETHER	27.2	0.0005%
PYRIDINE	36.0	0.0007%
QUARTZ	1054.9	0.0207%
QUATERNARY AMMONIUM COMPOUNDS	12.0	0.0002%
RESIN	711.7	0.0139%
RESINS	1320.1	0.0259%
RESIST	5.0	0.0001%
ROSIN	58.7	0.0012%
RUST	164.2	0.0032%
SAFROLE	1.0	0.0000%
SALICYLIC ACID	228.5	0.0045%
SALINE	16.4	0.0003%
SAND	260.6	0.0051%
SEDIMENT	13.9	0.0003%
SELENIUM	7.2	0.0001%
SHAMPOO	275.2	0.0054%
SILICA	2062.1	0.0404%

Table 4. Composition of Aqueous Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
SILICATE MINERALS	43.3	0.0008%
SILICIC ACID	5.0	0.0001%
SILICON	77.7	0.0015%
SILICON DIOXIDE	562.5	0.0110%
SILICON OXIDE	4.8	0.0001%
SILVER	210.8	0.0041%
SILVER NITRATE	77.2	0.0015%
SLUDGE	48052.9	0.9417%
SOAP	18815.2	0.3687%
SODIUM	0.7	0.0000%
SODIUM ACETATE	19.4	0.0004%
SODIUM ALKYLBENZENESULFONATE	4.0	0.0001%
SODIUM BICARBONATE	12.5	0.0002%
SODIUM BICHROMATE	1.9	0.0000%
SODIUM BISULFATE	73.0	0.0014%
SODIUM BISULFITE	1338.9	0.0262%
SODIUM BORATE	252.9	0.0050%
SODIUM CARBONATE	7524.7	0.1475%
SODIUM CHLORIDE	346.3	0.0068%
SODIUM CHROMATE	79.8	0.0016%
SODIUM CITRATE	68.8	0.0013%
SODIUM CYANIDE	0.0	0.0000%
SODIUM CYANOBOROHYDRIDE	72.3	0.0014%
SODIUM DICHROMATE	92.9	0.0018%
SODIUM DODECYLBENZENE SULFONATE	0.7	0.0000%
SODIUM FLUORIDE	251.8	0.0049%
SODIUM HYDROXIDE	45727.3	0.8961%
SODIUM HYPOCHLORITE	29.6	0.0006%
SODIUM HYPOPHOSPHITE	68.1	0.0013%
SODIUM IODIDE	213.9	0.0042%
SODIUM LACTATE	320.0	0.0063%
SODIUM LAURYL SULFATE	1482.7	0.0291%
SODIUM METABISULFITE	220.5	0.0043%
SODIUM METABORATE TETRAHYDRATE	38.8	0.0008%
SODIUM METASILICATE	90.1	0.0018%
SODIUM MOLYBDATE	65.5	0.0013%
SODIUM NAPTHALENESULFONATE	782.7	0.0153%
SODIUM NITRATE	209.6	0.0041%
SODIUM NITRITE	130.1	0.0025%
SODIUM PENTAHYDRATE	7.6	0.0001%
SODIUM PERMANGANATE	4.3	0.0001%
SODIUM PHOSPHATE	20.4	0.0004%
SODIUM PHOSPHATE, DIBASIC	2.6	0.0001%
SODIUM SALT	120.4	0.0024%
SODIUM SALTS	256.3	0.0050%
SODIUM SELENITE	7.7	0.0002%
SODIUM SILICATE	441.3	0.0086%
SODIUM SULFATE	460.0	0.0090%
SODIUM SULFITE	313.3	0.0061%
SODIUM TETRABORATE	7.6	0.0001%
SODIUM THIOCYANATE	69.9	0.0014%
SODIUM THIOSULFATE	585.2	0.0115%

Table 4. Composition of Aqueous Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
SODIUM TOLYTRIAZOLE	4.8	0.0001%
SODIUM XYLENE SULFONATE	24.0	0.0005%
SOIL	12496.2	0.2449%
SOLIDS (SUSPENDED)	1619.3	0.0317%
SORBITOL	3428.8	0.0672%
SOY BEAN OIL	398.0	0.0078%
STAIN	172.0	0.0034%
STARCH	300.0	0.0059%
STEARIC ACID	27.2	0.0005%
STEEL DUST	21.7	0.0004%
STODDARD SOLVENT	150.1	0.0029%
STRONTIUM NITRATE	3.3	0.0001%
STYRENE	370.0	0.0073%
STYRENE MONOMER	553.9	0.0109%
STYROFOAM	6.9	0.0001%
SUCCINIC ACID	1625.3	0.0319%
SULFATES	1.3	0.0000%
SULFIDE	187.7	0.0037%
SULFOLANE	1903.5	0.0373%
SULFURIC ACID	318.6	0.0062%
SURFACTANT	1022.5	0.0200%
SURFACTANTS	1263.6	0.0248%
SUSPENDED SOLIDS	50866.9	0.9968%
TALC	118.7	0.0023%
TALL OIL	238.2	0.0047%
TAR	2401.9	0.0471%
TERPENE HYDROCARBONS	335.0	0.0066%
TERT-BUTYL METHYLETHER	108.4	0.0021%
TETRACHLOROETHENE	0.7	0.0000%
TETRACHLOROETHYLENE	343.0	0.0067%
TETRAETHYL ORTHOSILICATE	634.5	0.0124%
TETRAETHYLENE GLYCOL	745.9	0.0146%
TETRAHYDROFURAN	6.3	0.0001%
TETRAHYDROTHIOPHENE	150.0	0.0029%
TETRAMETHYL AMMONIUM HYDROXIDE	2257.5	0.0442%
TETRASODIUM EDTA	198.5	0.0039%
THALLIUM	11.9	0.0002%
TIN	804.0	0.0158%
TITANIUM DIOXIDE	1134.1	0.0222%
TOLUENE	1582.3	0.0310%
TRASH	48.0	0.0009%
TRICHLOROETHENE	10.5	0.0002%
TRICHLOROETHYLENE	387.6	0.0076%
TRICHLOROFLUOROMETHANE	4.4	0.0001%
TRIETHANOLAMINE	1390.3	0.0272%
TRIETHYL AMMONIUM ACETATE	22.9	0.0004%
TRIETHYL AMMONIUM BICARBONATE	11.5	0.0002%
TRIETHYLAMINE	1379.2	0.0270%
TRIETHYLENE GLYCOL	108.6	0.0021%
TRIFLUOROACETIC ACID	46.9	0.0009%
TRIISOPROPANOLAMINE	3.0	0.0001%
TRIMESIC ACID	139.5	0.0027%

Table 4. Composition of Aqueous Distillation Waste Stream (cont.)

CONSTITUENT	TOTAL POUNDS	% OF TOTAL
TRIMETHYL BENZENE	0.0	0.0000%
TRIPROPYLENE GLYCOL MONOMETHYLETHER	13.8	0.0003%
TRIS(HYDROXYMETHYL)NITROMETHANE	0.1	0.0000%
TRISODIUM PHOSPHATE	261.2	0.0051%
VEGETABLE OIL	4837.2	0.0948%
VINYLPOLYDIMETHYLSILOXANE	412.5	0.0081%
WATER	3730835.1	73.1129%
WATER BASED POLYMER	24.0	0.0005%
WATER BASED SOLVENT	1396.2	0.0274%
WATER TREATMENT CHEMICAL	106.0	0.0021%
WAXES	582.6	0.0114%
WITH	0.0	0.0000%
WOOD	21.1	0.0004%
XYLENE	1876.7	0.0368%
XYLENES	1036.6	0.0203%
ZINC	10.6	0.0002%
ZIRCONIUM OXIDE	4.8	0.0001%
Grand Total	5102838.4	100%

Table 5. Contaminants of Concern

Contaminant	CAS Number	Industrial Soil PRG (mg/kg)[2]	EPA Test Method
Acetone	67-64-1	54,320	8260B
Acetonitrile	75-05-8	1,817	8260B
Benzene	71-43-2	1.41	8260B
n-Butyl alcohol	71-36-3	61,350	8260B
Carbon tetrachloride	56-23-5	0.55	8260B
Chlorobenzene	108-90-7	530	8260B
Chloroform	67-66-3	0.47	8260B
o-Cresol	95-48-7	30,780	8270D
m-Cresol	108-39-4	30,780	8270D
p-Cresol	106-44-5	3,078	8270D
1,2-Dichlorobenzene	95-50-1	600	8260B
Dichlorodifluoromethane	75-71-8	308	8260B
Dichloroethane	75-34-3	1,739	8260B
2,4-Dichlorophenoxyacetic acid	94-75-7	7,683	8151A
Di-n-butyl phthalate	84-74-2	61,560	8270D
1,4-Dioxane	123-91-1	156	8260B
Ethyl acetate	141-78-6	37,000	8260B
Ethyl benzene	100-41-4	395	8260B
Ethyl cyanide (Propanenitrile)	107-12-0	-	8260B
Ethyl ether	60-29-7	1,800	8260B
Isobutyl alcohol	78-83-1	40,000	8260B
Methanol	67-56-1	100,000	8260B
Methylene chloride	75-09-2	20	8260B
Methyl ethyl ketone	78-93-3	113,264	8260B
Methyl isobutyl ketone	108-10-1	47,001	8260B
Naphthalene	91-20-3	187	8260B or 8270D
Total PCBs (sum of all Aroclors), unspeciated mixture, low risk Aroclors, e.g., Aroclor 1016	1336-36-3	21.25	8082A or 8270D
Total PCBs (sum of all Aroclors), unspeciated mixture, high risk Aroclors, e.g., Aroclor 1254	1336-36-3	0.74	8082A or 8270D
Phenol	108-95-2	100,000	8270D
Pyridine	110-86-1	615	8260B
1,1,1,2-Tetrachloroethane	630-20-6	7.28	8260B
1,1,2,2-Tetrachloroethane	79-34-5	0.93	8260B
Tetrachloroethylene	127-18-4	1.31	8260B
Toluene	108-88-3	520	8260B
1,1,1-Trichloroethane	71-55-6	1,200	8260B
Trichloroethylene	79-01-6	0.11	8260B
Trichloromonofluoromethane	75-69-4	2,000	8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5,600	8260B-TIC
1,1,2-Trichloroethane	79-00-5	1.6	8260B
Antimony	7440-36-0	NA	6010C
Arsenic	7440-38-2	NA	6010C
Barium	7440-39-3	NA	6010C
Cadmium	7440-43-9	NA	6010C
Chromium (Total)	7440-47-3	NA	6010C
Lead	7439-92-1	NA	6010C

[2] U.S. EPA Region 9 Preliminary Remediation Goals; NA indicates that the PRG will not be applied to inorganic results

Table 5. Contaminants of Concern (cont.)

Contaminant	CAS Number	Industrial Soil PRG (mg/kg)[2]	EPA Test Method
Mercury	7439-97-6	NA	7471B
Nickel	7440-02-0	NA	6010C
Silver	7440-22-4	NA	6010C