

GENERAL CHEMICAL CORPORATION

FACILITY CLOSURE PLAN

HAZARDOUS WASTE MANAGEMENT FACILITY

MA LICENSE NO. 27B/2006

Submitted on behalf of General Chemical

by:

Stephen E. Pozner

Pozitive Environmental Solutions, Inc.

Revised Draft June 14, 2012

I. INTRODUCTION

General Chemical Corporation (GCC) formally notified the Massachusetts Department of Environmental protection (MassDEP) on March 1, 2012 that the company will "close" its licensed hazardous waste management facility located at 133 Leland St. in Framingham, MA. GCC terminated incoming shipments of off-site generated waste on March 30, 2012.

Closure will be performed in accordance with this modified Facility Closure Plan, in addition to applicable portions of the facility license, Attachment VI, "Closure Plan", MA regulations at 310 CMR 30.000, and specific clean closure criteria provided by MassDEP and USEPA.

Closure operations are being overseen by MassDEP and the Framingham Fire Department. Throughout the process, GCC will keep both informed of closure progress, via regularly scheduled status update conference calls, site visits, etc.

II. SCOPE AND TIMING OF CLOSURE OPERATIONS

Closure of the hazardous waste facility involves the removal of all waste in inventory as of March 30, 2012 (the 90-day regulatory removal deadline is June 29, 2012), and the decontamination of waste management units, equipment and structures that were used for such materials. Items and equipment that are suitable for continued use by GCC affiliates (or by others), will also be decontaminated prior to being transferred off-site. The regulatory deadline for closure is September 30, 2012. Attachment 11 shows a preliminary best-case time line for completion of invasive decontamination operations.

The waste inventory removal process is complete, and hand-cleaning decontamination activities have begun. However, potentially "invasive" decontamination activities are being delayed pending MassDEP approval of this Plan, including the scope of such work which may be accomplished before the nearby Woodrow Wilson School (the school) is closed, both for normal school-year usage and special summer programs in July. Section V contains more detailed information on decontamination procedures, and Section VII describes the proposed scheduling of invasive decontamination operations.

Except in the event of circumstances beyond General Chemical's control, the company expects to complete facility decontamination work before school re-opens.

III. DIVISION OF RESPONSIBILITY

GCC and its affiliates have considerable in-house experience and expertise in facility decontamination work, and will utilize this resource for decontamination and related work. Specialized third-party consultants will be employed for oversight, air monitoring, and certification of closure. Closure-related responsibilities have been assigned as follows:

1. Final review and submittal of this plan (for MassDEP approval), and performance of related compliance consultation services, are being provided by Mr. Stephen E. Pozner, Pozitive Environmental Solution, Inc. See Attachment 9 for Mr. Pozner's resume.
2. Site inspection (during and after closure) for Plan compliance, air monitoring, rinsate and other confirmatory testing, final inspection and other tasks associated with certification of closure are being provided by Prime Engineering. This includes certification of closure and filing of required closure information with the registry of deeds. The MA-registered Professional Engineer overseeing this project and certifying closure will be Robert S. Rego. See Attachment 9 for Mr. Rego's resume.
3. Company oversight will be provided by Stephen M. Ganley, GCC General Manager.
4. Decontamination and related closure activities will be performed by GCC and Clean Venture personnel, all of whom have been extensively trained in accordance with MassDEP, USEPA, USDOT, OSHA and other pertinent regulations. See Attachment 9 for information on Clean Venture's qualifications and experience.

IV. MANAGEMENT UNITS, EQUIPMENT AND STRUCTURES

- A. Management units, equipment and structures to be included in this Plan include the following (Refer to Attachments 1 and 2 - All references to tanks include associated piping and appurtenances. Except for the three small vessels numbered C1 through C3, it is assumed that all tanks will be left in place):

1. Hazardous waste container storage buildings no. 1 and 2
2. Non-hazardous waste storage areas
3. Hazardous waste storage tanks no. 1, 2 and 5
4. Waste oil storage tanks no. 3 and 4; vessels no. C1 through C3
5. Non-hazardous waste storage tanks no. 6 through 10
6. Former solvent storage tanks no. 11, 12 and 14.
7. Tank farm concrete containment structure
8. Bulk tank truck loading/unloading area
9. Container loading/unloading areas (at Building no. 2 and warehouse)
10. Drum crusher, dust collection system, laboratory equipment, etc.
11. Fork trucks, pallet jacks, drum carts, etc.

- B. The following are excluded from the provisions of this Plan:

1. Solvent recycling room (formerly called the "LUWA" room). The solvent recycling room was "closed" in August, 2004. Closure operations included draining and decontamination of the LUWA thin film evaporator, the pot still, and all waste-side piping and associated valves, pumps, etc. The floor was also decontaminated in accordance with the Closure Plan, and the entire

"Partial Facility Closure" was certified by a MA-registered Professional Engineer (see Attachment 10 for closure documentation). GCC intends to leave remaining structures and equipment in place.

2. Tanks no. 13 and 15. Tank #13 will be maintained for its current purpose, storage of #2 fuel oil for consumptive use on the premises (furnaces). Tank #15 will be maintained for its current purpose, storage of diesel fuel for Clean Venture vehicles (GCC affiliate specializing in waste transportation and generator site services).
3. Warehouse basement. The entire warehouse basement was cleaned out and subsequently decontaminated by pressure washing to meet the "clean debris surface" standard in 2010. This work was performed in accordance with MassDEP Consent Order ACOP-BO-10-2009, and a completion report was submitted to MassDEP on September 17, 2010.
4. Soil and groundwater are not covered by this Plan. Facility corrective action work is considered to be separately and adequately regulated under the Massachusetts Contingency Plan, as well as the GCC license (Corrective Action section and Closure Plan). As such, facility closure will not include any provisions related to soil or groundwater, or require any action for the purpose of accessing soil or groundwater. A separate post-closure order from MassDEP will regulate the continuation of site remediation activities after facility closure.

V. DECONTAMINATION METHODS

A. High Pressure Steam and Water Sprays

In accordance with MassDEP's closure decontamination matrix and USEPA method (A)(1)(e), as specified in Table 1, 40 CFR 268.45 (refer to Attachment 3), GCC will employ "High Pressure Steam and Water Sprays" (pressure washing) as the primary decontamination method for major waste management units and structures. Application of water sprays will be of sufficient temperature and pressure to remove hazardous contaminants from debris surfaces and surface pores, without removal of underlying surface layers, to meet the "clean debris surface" standard. "Clean debris surface" means that the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area. This determination will be verified by an independent MA licensed Professional Engineer.

This potentially "invasive" technique will not be employed when school is in session, except as approved by MassDEP for the pilot study described in Section VII (B), etc. Air monitoring will be performed as described in Section VIII to assure there is no adverse impact to the school property or nearby residents.

GCC will notify the Framingham Board of Health (BOH) at least one week prior to the intended use of this method. The purpose of such notification is to provide the town with a reasonable period of time for notifying nearby residents, making arrangements for school access restriction, and/or implementing other measures the BOH may deem appropriate. GCC will maintain open lines of communication with appropriate town officials to assure proper safety and security are maintained.

B. Hand Cleaning

Moveable equipment, contaminated surfaces and other items which are not amenable to high pressure cleaning (including items and equipment to be transferred to other company affiliates for further use) will be decontaminated using "Simple Green" industrial cleaner. This product is commonly used in the hazardous waste industry, is safe to use and is recommended for a wide range of industrial applications. Manufacturer's literature, including safety comparisons with other cleaners and an MSDS, is included as Attachment 4.

Simple Green will be applied using spray bottles. Rags and hand-scrubbing brushes will be used to minimize airborne mists. Because of the cleaner's benign chemical characteristics and the low-impact method of application, this will not be considered a potentially "invasive" decontamination method. As such, no air monitoring will be required for this hand-cleaning technique. Pending approval of this Plan, this method is currently authorized by MassDEP only for indoor use.

C. Flushing

Pipelines and associated pumps and valves will be cleaned by pumping a solution of water and Simple Green.

D. General Requirements for Indoor Decontamination Operations

Decontamination of indoor areas and equipment will only be done with all doors, windows and other potential openings closed. Hazardous waste Buildings No. 1 and 2 will additionally have all openings sealed by use of poly sheeting and/or an appropriate sealing compound prior to pressure washing. The workers will use appropriate respirators and Personal Protective Equipment (PPE). Worker safety requirements are fully detailed in the Health and Safety Plan, which is included as Attachment 5.

E. Specific items/areas will be decontaminated as specified below.

1. Hazardous waste container storage buildings No. 1 and 2 –

Equipment to be transferred to affiliated companies for further use will be decontaminated by hand cleaning with Simple Green prior to removal. This includes the dust collector and compressor in Building No. 1, and the drum crusher in Building No. 2. All tables, cabinets, etc. will be hand-cleaned and scrapped or left in place. Waste transfer pumps and related equipment will also be hand-cleaned, and may be transferred to an affiliate or stored for future use.

Building walls and floors will be decontaminated by pressure washing. Floors and berms will be scrubbed with Simple Green as needed to assure complete cleaning after pressure washing. Decontamination of walls will extend as high as required to remove visible contamination (staining). The corrugated metal wall in Building No. 2 has pinholes and weak spots that may not hold up to pressure washing. For such areas, stained portions will be hand-cleaned with Simple Green. Pressure washing liquids will be collected using a shop vacuum or vacuum tank truck and stored in appropriate DOT containers. In order to characterize this waste for proper disposal, representative samples from each building will be analyzed for the hazardous waste characteristics (D001 through D043), F001 and F002. Each representative sample will be a composite of no more than five container samples from the same building. The Building No. 1 PCB staging area and storage area (center/rear storage bay) will additionally be subject to PCB sampling in accordance with the PCB sampling Plan included as Attachment 6.

2. Non-hazardous waste storage areas will be inspected for the presence of any contamination (staining). Where found, the contamination will be removed by pressure washing and/or hand-cleaning (as appropriate).
3. Piping, pumps and valves [associated with tanks specified in Section IV (A)] to be left in place will be decontaminated by flushing with a solution of water and Simple Green. Flushing will continue until there is no visible evidence of waste (e.g., discoloration, particles, etc.) in the flushate. Flushing will generally be directed toward the associated tank, so flushing liquids will be contained within the tank. Otherwise, the flushing liquid will be stored in appropriate DOT containers. The flushing liquid will be disposed of in the same manner as the waste previously held in the associated tank. After the visual inspection, the line will be given a final rinse with clean water. This rinsate will be temporarily stored in appropriate DOT containers, and tested for constituents of concern (same as associated tank) to confirm clean closure and properly characterize the rinsate for disposal. Piping, pumps and valves to be dismantled and scrapped will be decontaminated by hand cleaning with Simple Green

4. Tanks specified in Section IV (A) to be left in place will be decontaminated by pressure washing. The pressure washing liquids will be collected using a vacuum tank truck and disposed of in the same manner as the waste previously held in the tank. After a visual inspection to assure all residues have been removed, the tank will be given a final rinse. This rinsate will be temporarily stored in appropriate DOT containers, and tested for constituents of concern (COC) to confirm clean closure and properly characterize the rinsate for disposal. Tanks for which there are no COC's (non-hazardous wastewater tanks) will not require rinsate testing. Based upon previous long-term tank contents, the analysis method for each tank will be as follows:

Hazardous Waste Tanks 1, 2, 5 – EPA Method 8260 (VOC's) and RCRA 8 Metals
Waste Oil Tanks 3, 4 – Petroleum Hydrocarbons (EPH/VPH), EPA Method 8260 (VOC's) and RCRA 8 Metals

Rinsate sampling and analysis will be performed by Prime Engineering. No tank will be considered "closed" until the final rinsate testing for required COC's indicates compliance with Massachusetts MCP, GW-1 standards.

5. Tank outside surfaces will be inspected after interior decontamination, and areas that appear contaminated (stained) will be hand-cleaned with Simple Green.
6. Vessels C1 through C3 will be removed. Decontamination will be performed either by pressure washing or, if that method is unsafe or impractical due to vessel configuration, by hand cleaning with Simple Green.
7. Portions of the warehouse building are considered "waste handling areas" subject to closure. This includes the laboratory, former waste accumulation area, former bioremediation room and the Universal Waste storage area. Such areas, including the floor, counters, hoods and other contaminated laboratory surfaces, will be hand-cleaned with Simple Green. Other portions of the warehouse (excluding the basement) will be inspected, and any areas evidencing signs of contamination (staining) will be decontaminated.
8. Outdoor hazardous waste handling areas to be included in the closure operation (e.g., tank farm structure, loading docks, ramps) will be decontaminated by pressure washing. Pressure washing liquids will be collected using a shop vacuum or vacuum tank truck and stored in appropriate DOT containers. Representative samples will be analyzed for the hazardous waste characteristics (D001 through D043), F001 and F002, and the liquids will be disposed of as appropriate. Each representative sample will be a composite of no more than five container samples from the same area. The floor, sumps and berms of the tank farm and bulk waste transfer enclosure will also

be scrubbed with Simple Green as needed to assure complete cleaning after pressure washing.

9. Waste moving equipment, such as fork trucks, drum dollies, and pallet jacks, will be hand-cleaned with Simple Green.
10. When a vacuum truck is utilized for removal of waste material or rinsate from a waste storage tank, or to collect rinsate from pressure washing operations, the vacuum pump exhaust system of the vehicle will be vented through a drum of vapor-phase carbon.
11. Waste generated from hand-cleaning operations will be placed in appropriate DOT containers. A representative sample will be analyzed for the hazardous waste characteristics (D001 through D043), and the material will be disposed of as appropriate.

VI. PCB SAMPLING

The PCB staging area and designated storage bay within Building No. 1, and equipment used for PCB handling, will be sampled and analyzed in accordance with the PCB Sampling Plan in Attachment 6. This activity may be performed prior to decontamination and, if the results are acceptable, no additional PCB sampling will be required after decontamination.

VII. SEQUENCING OF CLOSURE TASKS

The purpose of this section is to identify activities which are contingent upon other activities being completed first, and to describe the overall optimal sequencing of closure operations

- A. GCC has determined that it is appropriate for all waste inventory (as of the final day of waste acceptance - March 30, 2012) to be removed as soon as practical, and this phase is complete.
- B. Based upon air emissions concerns expressed by MassDEP and the town of Framingham, all have agreed that potentially invasive decontamination work is best delayed until after the Woodrow Wilson School has closed. However, GCC has been informed that this summer will present a very limited school closure time-frame. Sanctioned summer programs will be held at the school most of July (refer to Attachment 7), and the building will be reopening for preparatory purposes as early as August 20. Even with no other unforeseen uses of the school in August, this leaves a very short period of time for performance of this work. In order to achieve the consensus goal of completing facility decontamination before school re-opens, it will be essential to perform some of the potentially invasive work prior to July 26th.

Upon MassDEP approval of this Plan, GCC proposes to conduct a "worst case" Pilot Closure Operation (The Pilot Study). The Pilot Study would be conducted on a later date to be agreed upon by all parties. The purpose of the Pilot Study would be to evaluate "worst case" conditions and establish monitoring criteria. The Pilot Study would involve invasive cleaning operations within Building No. 1 and Tank No. 5.

The first phase of the Pilot Study will be conducted at Building No. 1. Since Hazardous Waste Container Storage Building No. 1 was licensed to store all of the hazardous waste (in both liquid and solid forms) authorized for storage at the facility, it was deemed the "worst case" building location. A list of the compounds licensed for storage at the facility is presented in Attachment 8. The initial phase of the Pilot Study will consist of conducting pressure washing operations within Building No. 1 for a period of up to two-hours. The cleaning operations will be conducted in accordance with the decontamination method outlined in Section V (A). As discussed in Section V, the building will be sealed off during the cleaning operations. Air/particulate sampling will be conducted at multiple locations immediately outside of Building No. 1 while the cleaning operations are being conducted. See Section VIII (A) for the air sampling details.

The second phase of the Pilot Study will be conducted at hazardous waste storage Tank No. 5. Tank No. 5 was selected since it was permitted to store oil containing chlorinated solvents. Other tanks contained greater concentrations of pure solvent, however, these tanks contain very little if any residue and will be easily cleaned. Tank No. 5 contained oils that are much more difficult to clean and represents more of a worst-case decontamination operation. As with Phase I, the cleaning operations will be conducted in accordance with the decontamination method outlined in Section V (A). The pressure washing will be conducted for a period of up to two-hours. Air/particulate sampling will be conducted at multiple locations around the tank while the cleaning operations are being conducted.. See Section VIII (A) for the air sampling details.

The Pilot Study air monitoring will be conducted by Prime Engineering per Section VIII. The results of the air monitoring will be utilized to establish the final Compounds of Concern (COCs) for Closure Operations and insure that the screening/sampling methods prescribed in Section VIII are suitable to quantify the COCs at levels that are protective of human health.

The air monitoring data for this work will be reported to MassDEP as soon as it becomes available. If emissions are shown to be at safe levels and the screening/sampling techniques are proven to be adequate, GCC will request MassDEP's approval to undertake additional closure activities prior to cessation of activities at the school.

- C. After the school is closed, GCC expects to perform remaining decontamination work using the pressure washing method, working concurrently within the tanks and the waste storage buildings if necessary. Dedicated, highly trained Clean Venture crews

would be employed, working in accordance with the Health and Safety Plan and Clean Venture's standard safety procedures. After completion of the tanks (including receipt of acceptable rinsate testing data), decontamination of outside areas would begin.

- D. Decontamination operations will conclude with the outdoor structures, working from the rear of the facility (closest to the school) toward the front (Leland Street). This would start with the tank farm (which is separated from the school property by a distance of approximately 100-feet, a 5-foot earthen berm and an 8-foot high wall); followed by the bulk liquid unloading area, Building no. 2 loading dock, and finally the warehouse loading dock/ramp area, all of which are separated from the school by intervening buildings. The 5-foot high earthen berm (along the school fence-line) and approximately 100-feet of clear space (from tank farm to berm) provide additional protective features between any invasive work and the schoolyard. These features will inherently minimize the possibility of any airborne emissions reaching the school.

VIII. AIR MONITORING

Air monitoring will be performed during potentially invasive decontamination operations, in order to detect any potentially adverse impact on the abutting school or residences. Initially, a worst case Pilot Study would be conducted per Section VII (B) to assess the adequacy of the proposed screening/sampling and to establish a list of COCs for screening as closure operations proceed. If the Pilot Study confirms the adequacy of the proposed screening/sampling, both continuous monitoring and subsequent air collection and analysis will be conducted as described below. Monitoring will be performed by Prime Engineering personnel with experience and expertise in the monitoring methods employed. In addition, MassDEP may deploy its mobile air monitoring laboratory for additional verification.

A. Monitoring During Pilot Study

The purpose of the Pilot Study is to establish the COCs and associated action levels for closure operations, and confirm that the prescribed monitoring activities are capable of detecting the COCs at levels that are protective of human health. Sampling and analysis for all of the compounds licensed for storage at the Facility will be conducted during the Pilot Study. During the initial phase of the Pilot Study, air and dust samples will be collected at the approximate mid-point outside of all four walls of Building No. 1, such that sampling data will be available for any wind direction. (sampling apparatus will be placed on tripod stands at the breathing zone height).

- Immediately outside of Building No. 1, A weather station will be used to continuously monitor meteorological parameters including: wind speed, wind direction, temperature, humidity and atmospheric pressure.

- Continuous monitoring for total organic vapors (TOVs) will be conducted using a PID capable of detecting TOVs at parts per billion levels (ppb RAE 3000).
- Continuous monitoring for particulates will be conducted from outside the building, near all four walls, using a portable Dustrak™II monitor.
- Ambient air samples will be collected from outside the building, near all four walls, for VOC analysis in laboratory supplied summa canisters. The summa canisters will be set up to collect two-hour samples during the initial two-hour Pilot Study period. Once collected, the samples will be shipped under a chain of custody to a MassDEP certified laboratory for analysis of select VOCs by EPA Method TO-15.
- Ambient dust samples will be collected at the passage door location using a high-volume particulate sampler designed for collection of ambient air dust samples. The dust samples will be analyzed for select pesticides by EPA Method 8081, select semi-volatile organic compounds (SVOCs) by EPA Method 8270 C, and RCRA 8 Metals by EPA Method 6200.

During the second phase of the Pilot Study, air and dust samples will be collected at locations to the north, south, east and west of Tank No. 5, along the inside edge of the tank farm wall, such that sampling data will be available for any wind direction.

- A weather station will be used to continuously monitor meteorological parameters including: wind speed, wind direction, temperature, humidity and atmospheric pressure;
- Continuous monitoring for TOVs will be conducted using a ppb RAE 3000;
- Continuous monitoring for particulates at the four locations will be conducted using a portable Dustrak™II monitor; and
- Ambient air samples will be collected from the four locations for VOC analysis in laboratory supplied summa canisters. The summa canisters will be set up to collect two-hour samples during the time period in which the second phase of the Pilot Study is being conducted. Once collected, the samples will be shipped under a chain of custody to a MassDEP certified laboratory for analysis of select VOCs by EPA method TO-15.

After COCs and action levels have been established through Pilot Study sampling and analysis, full-scale closure operations will be subject to air monitoring as described below. The locations and frequency of air monitoring discussed below are preliminary, and are subject to change based on the results of the Pilot Study.

B. Continuous Fence Line Monitoring using PID and Aerosol Monitor

Prime Engineering will conduct real time monitoring with a Photoionization Detector (PID) and an aerosol monitor at the fence-line between the facility and the school. A weather station will be used to monitor meteorological parameters including: wind

speed, wind direction, temperature, humidity and atmospheric pressure. A PID (Model ppbRAE 3000) will be employed to continuously monitor for the presence of volatile organic compounds. Continuous real time particulate monitoring will be conducted using portable Dustrak™II aerosol monitors placed at key locations (i.e. upwind and downwind of the work zone). The PID, aerosol monitor and weather station will be connected to a telemetry system that will upload data to a redundant Cloud Server, such that data will be immediately available over an internet website. The monitors will also be equipped with a visual and audible alarm that will indicate if project specific action levels have been exceeded.

PID, particulate and meteorological monitoring will be conducted until all potentially invasive decontamination work has been completed.

C. Snapshot PID Monitoring

Real time air monitoring for VOCs will be conducted intermittently using a PID (Model ppb RAE 3000) along the fence line between the facility and abutting properties at the down-wind location. Sampling locations will be selected based on anticipated activities and wind directions.

D. Confirmatory Fence Line Air Sampling

Prime Engineering will collect ambient air samples from the fence line between the facility and the school while pressure washing operations are underway. Each ambient air sample will be collected over a typical work-shift, in laboratory supplied summa canisters. The samples will be shipped under chain of custody to a MassDEP certified laboratory for TO-15 analysis of selected volatile organic compounds (VOC's).

Fence line ambient air samples will be collected on the first full day of pressure washing operations and twice subsequently during such operations. The samples will be analyzed with a 48-hour turn-around-time. Prime Engineering will review daily PID readings and will tabulate TO-15 analytical data for review and comparison against risk-based action levels.

E. Project Action Levels

Preliminary action levels have been set for all of the compounds licensed for storage at the facility. The action levels established for the closure project were developed to be protective of human health and represent extremely conservative levels that may pose a concern to human health over much longer periods of exposure. Exceedance of an established action level does not represent an unacceptable risk to human health, but rather an early warning that operations must be adjusted to reduce emissions off-Site. A summary of the action levels for each of the compounds is presented in Attachment 8, Table 8.1. Sampling and analysis conducted during the Pilot Study will be used to establish the list of compounds of concern (COCs) for the closure project. As part of the Pilot Study, samples will be collected and analyzed for all compounds licensed for

storage at the Facility. Compounds detected above the laboratory method detection limits will be retained as COCs. Once the Pilot Study is complete and the COCs have been determined, action levels will be set for full-scale closure operations.

The following is a summary of the preliminary action levels and the basis for each:

1. Fence line PID Monitoring – A sustained (approximately 15 seconds) reading of equal to or greater than 32 ppb total organic vapors (TOVs). This level was established as the lowest allowable risk based threshold of any of the volatile compounds commonly stored at the Facility (i.e., Trichloroethylene). A summary of the screening levels for each compound licensed for storage at the Facility is presented in Attachment 8, Table 8.2. Upon completion of the Pilot Study, this level will be adjusted to the lowest risk based threshold of any of the final COCs. If TOVs are detected above the action level on the fence-line PID, the second PID will be used to check the accuracy of the reading. If confirmed, the work will be halted. The source will be corrected or operations modified as necessary (by use of engineering controls, etc.), to reduce concentrations to acceptable levels upon resuming operations.
2. Fence-line aerosol monitoring – A 15 minute time weighted average (TWA) of 60 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for PM_{10} (particles that are 10 microns or less) was established as a preliminary screening level. Once the Pilot Study is complete and the COCs have been established, the dust screening level will be adjusted to the corresponding total dust concentration for the lowest risk based standard for any of the COCs identified. If particulates are detected above action levels, work will be halted. The source will be corrected or operations modified as necessary (by use of engineering controls, etc.), to reduce concentrations to acceptable levels upon resuming operations.
3. Confirmatory Sampling – An initial air sample will be collected over an 8-hour period during the initial shift of pressure washing operations. The initial pressure washing operations will be conducted closest to the school and are, therefore, considered worst case. The results from the initial sample will be compared to the action levels summarized in Attachment 8, Table 8.1. If any of the TO-15 analytes are detected above the respective action levels, closure operations will be halted. MassDEP and the Framingham Fire Department will be notified, and appropriate corrective action will be taken. Work will not resume without MassDEP approval. If VOCs are not detected above action levels, additional confirmatory air samples (TO-15) will be collected while two subsequent pressure washing operations are being conducted. If these tests show acceptable VOC concentrations, no further TO-15 sampling will be necessary, as the final areas to be decontaminated are furthest from the school.

IX. CONTACT INFORMATION

A. Emergencies:

Framingham Fire Department – 911
MassDEP – (888) 304-1133

B. Exceedence of Air Sampling Action Level:

MassDEP
Al Nardone (617) 292-5980
William Sirull (617) 292-5838
Framingham Fire Department (508) 532-5930
Assistant Chief Magri, or
Fire Marshall Joseph Hicks

C. Additional Project Contacts:

General Chemical Corp. - (508) 872-5000
Stephen Ganley, General Manager
Roy Swartz, Compliance Manager
Stephen Pozner, Pozitive Environmental Solutions – (617)592-6200
Robert Rego, PE, Prime Engineering – (508) 947-0050

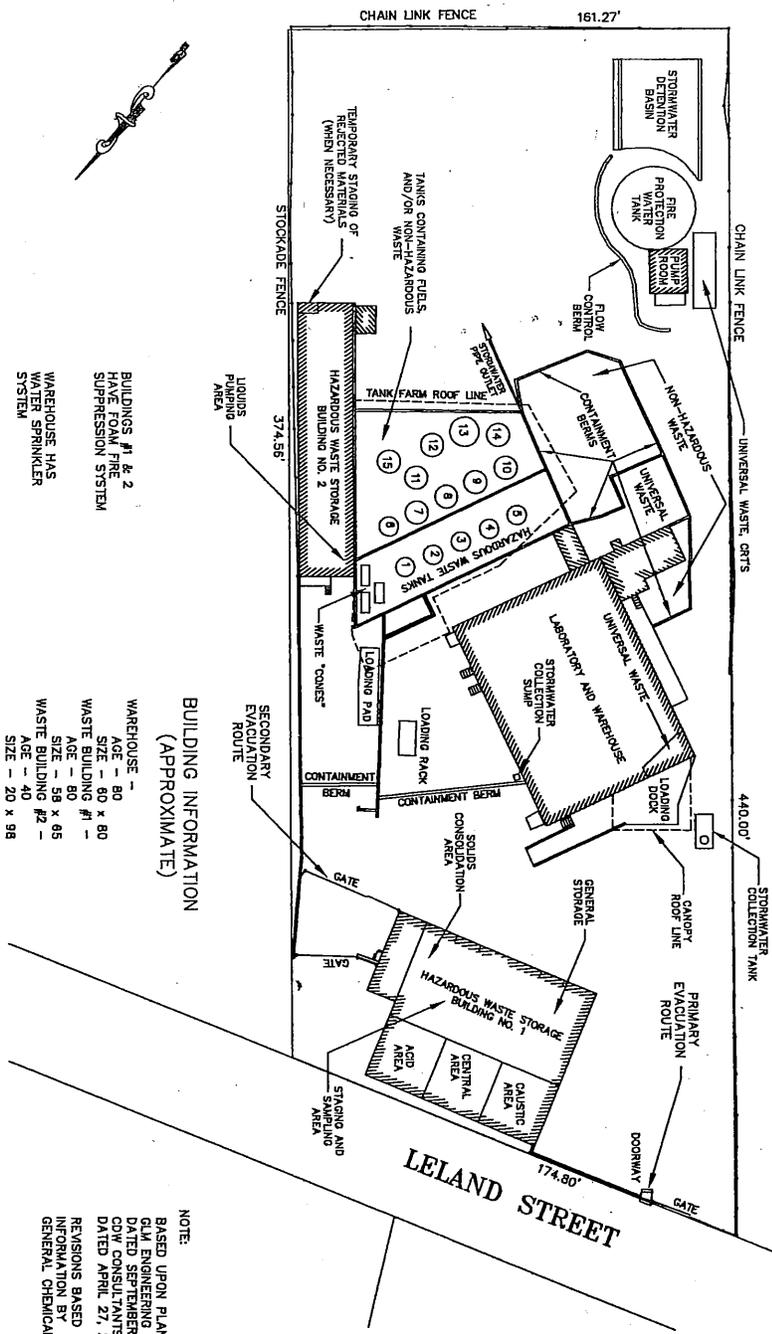
APPROVALS

This Closure Plan has been reviewed and approved by the key individuals who will be overseeing, monitoring, inspecting and/or certifying the work described. Their approval is indicated by signature and date below. If the Plan requires significant revision after work begins, a new signature sheet will be completed and appended to the Plan.

Stephen M. Ganley, GCC General Manager	_____
Roy H. Swartz, GCC Compliance Manager	_____
Stephen Pozner, Regulatory Consultant	_____
Robert S. Rego, Professional Engineer	_____

X. LIST OF ATTACHMENTS

1. General Chemical Corporation – Plant Layout
2. General Chemical Corporation – Tank Information
3. Regulatory Closure Requirements (MassDEP/USEPA)
4. Simple Green Manufacturer's Information
5. Health and Safety Plan
6. PCB Sampling Plan
7. Wilson School Summer Programs
8. Action and Screening Levels
9. Resumes and Qualifications
10. Closure of Solvent Recycling Area (2004)
11. Preliminary Decontamination Timeline (Best Case)



BUILDINGS #1 & 2
HAVE FOAM FIRE
SUPPRESSION SYSTEM

WAREHOUSE #1 -
AGE - 80
SIZE - 80 x 80

WAREHOUSE #2 -
AGE - 80
SIZE - 80 x 80

WASTE BUILDING #1 -
AGE - 80
SIZE - 80 x 85

WASTE BUILDING #2 -
AGE - 40
SIZE - 20 x 98

BUILDING INFORMATION
(APPROXIMATE)

NOTE:
BASED UPON PLANS BY
GLM ENGINEERING CONSULTANTS
DATED SEPTEMBER 3, 1998 AND
CDW CONSULTANTS, INC.
DATED APRIL 27, 2000.
REVISIONS BASED UPON
INFORMATION BY
GENERAL CHEMICAL CORPORATION

GCC CLOSURE PLAN ATTACHMENT 1

GENERAL CHEMICAL CORPORATION
PLANT LAYOUT
133 LELAND STREET
FRAMINGHAM, MASSACHUSETTS

SITE PLAN
L-01



NO.	DATE	REVISION
1	11/22/2001	UPDATE
2	11/29/2001	UPDATE
3	01/26/2002	UPDATE
4	02/04/2002	UPDATE AND
5	07/19/2011	USE REVISIONAL
6		
7		
8		
9		

GENERAL CHEMICAL CORPORATION

TANK INFORMATION

STORAGE TANKS				
Tank ID #	Approximate Age	Dimensions	Design Capacity (Gallons)	Current Designated Contents
01	40	8X17'11"	6500	RCRA Wastewater (F and D waste codes)
02	40	8X17'11"	6500	RCRA Wastewater (F and D waste codes)
03	40	8X17'11"	6500	MA Regulated Oil/Water (MA01,MA98)
04	40	8X17'11"	6500	MA Regulated Oil/Water (MA01,MA98)
05	40	8X17'11"	6500	RCRA Waste Oil (F and D waste codes)
06	40	9 x 23	7000	Non Hazardous Wastewater (MA99)
07	25	8 x 16-10	6200	Non Hazardous Wastewater (MA99)
08	25	8 x 16-10	6200	Non Hazardous Wastewater (MA99)
09	25	8 x 16-10	6200	Empty, Out of Service
10	25	8 x 16-10	6200	Non Hazardous Wastewater (MA99)
11	25	8 x 16-10	6200	Empty, Out of Service
12	30	7 x 18	5000	Empty, Out of Service
13	35	11 x 11	8800	No. 2 Fuel Oil for GCC Consumptive Use
14	25	8 x 16-10	6200	Empty, Out of Service
15	20	10-6 x 17	9500	Diesel Fuel
RECTANGULAR VESSELS ("CONES")				
C-1/3	30	9-6 x 4-2	900	Empty, Currently Out of Service

All tanks are of steel construction

Tanks licensed for hazardous waste storage shown in bold print

SUPPLEMENTAL CLOSURE INFORMATION

Facility Closure....General Chemical Corp.

A. Closure Schedule

GCC must provide a notice to MassDEP of the date of receipt of the last waste (either hazardous or solid) shipment. This date starts the closure clock.

- All wastes (HW and SW) removed from the facility within 90 days (30.584(1))
- Closure completed within 180 days (30.584(2))

B. Decontamination

Tanks

Use "Matrix" for decontamination of all surfaces which include:

- Tank interior
- Ancillary equipment
- Secondary containment walls
- Floors

Container Storage Areas

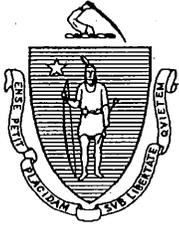
Use "Matrix" for decontamination of all surfaces which include:

- Floors
- Walls
- Structures

Waste Handling Areas

Use "Matrix" for decontamination of all surfaces which include:

- Docks
- Ramps
- Floors
- Satellite accumulation areas



COMMONWEALTH OF MASSACHUSETTS
 EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
 Governor

TIMOTHY P. MURRAY
 Lieutenant Governor

IAN A. BOWLES
 Secretary

LAURIE BURT
 Commissioner

Matrix for the Closure of RCRA Regulated Tanks at TSDFs	
Tank Disposition	Contained Characteristic and/or Listed Hazardous Waste
Reuse: Onsite or at an offsite TSDF for storage of a different Haz. Waste Onsite or at an offsite for storage of Haz. Material or Non-Haz. Waste	<ul style="list-style-type: none"> • Decontaminate using 40 CFR 268.45, Table 1 technology [usually physical extraction technology A.1.e., <i>High Pressure Steam and Water Wash</i>, or chemical extraction technology A.2.a., <i>Water Washing and Spraying</i>. • Treat to a clean debris surface* <ul style="list-style-type: none"> • Decontaminate using Table 1 technology [usu. A.1.e. or A.2.a.] • Test rinsate for Chemicals of Concern(COCs) • Clean until COC concentrations in rinsate are at or below GW-1 standards, at which point the tank is considered to meet the "clean closure" standard.
Scrap	<ul style="list-style-type: none"> • Decontaminate using Table 1 Technology [usu. A.1.e. or A.2.a.] • Treat to a clean debris surface
Dispose as Hazardous Waste	<ul style="list-style-type: none"> • Remove residue to extent practicable to meet the definition of an empty tank, 310 CMR 30.106

Version 040810

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD# 1-866-539-7622 or 1-617-574-6868.

MassDEP on the World Wide Web: <http://www.mass.gov/dep>

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*For the purposes of this guidance, in Table 1, footnote 3, "clean debris surface" means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5 percent of each square inch of surface area.

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LAND DISPOSAL RESTRICTIONS

(m) [Reserved]

(n) [Reserved]

(o) The following facilities are excluded from the treatment standard under § 268.43(a), Table CCW, and are subject to the following constituent concentrations:

TABLE—WASTES EXCLUDED FROM THE TREATMENT STANDARDS UNDER § 268.43(a)

Facility name ¹ and address	Waste code	See also	Regulated hazardous constituent	Wastewaters		Nonwastewaters	
				Concentration (mg/l)	Notes	Concentration (mg/kg)	Notes
Craftsman Plating and Tinning, Corp., Chicago, IL	F006	Table CCWE in 268.41	Cyanides (Total)	1.2	⁽²⁾ ^(2 and 3)	1800	⁽⁴⁾
			Cyanides (Amenable)	.86		30	⁽⁴⁾
			Cadmium	1.6		NA	
			Chromium	.32		NA	
			Lead	.040		NA	
			Nickel	.44		NA	
Northwestern Plating Works, Inc., Chicago, IL	F006	Table CCWE in 268.41	Cyanides (Total)	1.2	⁽²⁾ ^(2 and 3)	970	⁽⁴⁾
			Cyanides (Amenable)	.86		30	⁽⁴⁾
			Cadmium	1.6		NA	
			Chromium	.32		NA	
			Lead	.040		NA	
			Nickel	.44		NA	

(1)—A facility may certify compliance with these treatment standards according to provisions in 40 CFR 268.7.

(2)—Cyanide Wastewater Standards for F006 are based on analysis of composite samples.

(3)—These facilities must comply with 0.86 mg/l for amenable cyanides in the wastewater exiting the alkaline chlorination system. These facilities must also comply with 40 CFR § 268.7 a.4 for appropriate monitoring frequency consistent with the facilities' waste analysis plan.

(4)—Cyanide nonwastewaters are analyzed using SW-846 Method 9010 or 9012, sample size 10 grams, distillation time, 1 hour and 15 minutes.

NOTE: NA means Not Applicable.

[51 FR 40642, Nov. 7, 1986; 52 FR 21017, June 4, 1987 as amended at 53 FR 31221, Aug. 17, 1988; 54 FR 36972, Sept. 6, 1989; 56 FR 12355, Mar. 25, 1991]

§ 268.45 Treatment standards for hazardous debris.

(a) *Treatment standards.* Hazardous debris must be treated prior to land disposal as follows unless EPA determines under § 261.3(e)(2) of this chapter that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste-specific treatment standard provided in this subpart for the waste contaminating the debris:(1) *General.* Hazardous debris must be treated for each "contaminant subject to treatment" defined by paragraph (b) of this section using the technology or technologies identified in Table 1 of this section.(2) *Characteristic debris.* Hazardous debris that exhibits the characteristic of ignitability, corrosivity, or reactivity identified under §§ 261.21, 261.22, and 261.23 of this chapter, respectively, must be deactivated by treatment using one of the technologies identified in Table 1 of this section.(3) *Mixtures of debris types.* The treatment standards of Table 1 in this section must be achieved for each type of debris contained in a mixture of debris types. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.(4) *Mixtures of contaminant types.* Debris that is contaminated with two or more contaminants subject to treatment identified under paragraph (b) of this section must be treated for each contaminant using one or more treatment technologies identified in Table 1 of this section. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.(5) *Waste PCBs.* Hazardous debris that is also a waste PCB under 40 CFR part 761 is subject to the requirements of either 40 CFR part 761 or the requirements of this section, whichever are more stringent.(b) *Contaminants subject to treatment.* Hazardous debris must be treated for each "contaminant subject to treatment." The contaminants subject to treatment must be determined as follows:

LAND DISPOSAL RESTRICTIONS

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(1) *Toxicity characteristic debris.* The contaminants subject to treatment for debris that exhibits the Toxicity Characteristic (TC) by § 261.24 of this chapter are those EP constituents for which the debris exhibits the TC toxicity characteristic.

(2) *Debris contaminated with listed waste.* The contaminants subject to treatment for debris that is contaminated with a prohibited listed hazardous waste are those constituents or wastes for which treatment standards are established for the waste under § 268.40.

(3) *Cyanide reactive debris.* Hazardous debris that is reactive because of cyanide must be treated for cyanide.

(c) *Conditioned exclusion of treated debris.* Hazardous debris that has been treated using one of the specified extraction or destruction technologies in Table 1 of this section and that does not exhibit a characteristic of hazardous waste identified under subpart C, part 261, of this chapter after treatment is not a hazardous waste and need not be managed in a subtitle C facility. Hazardous debris contaminated with a listed waste that is treated by an immobilization technology specified in Table 1 is a hazardous waste and must be managed in a subtitle C facility.

(d) *Treatment residuals—(1) General requirements.* Except as provided by paragraphs (d)(2) and (d)(4) of this section:

(i) Residue from the treatment of hazardous debris must be separated from the treated debris using simple physical or mechanical means; and

(ii) Residue from the treatment of hazardous debris is subject to the waste-specific treatment standards provided by subpart D of this part for the waste contaminating the debris.

(2) *Nontoxic debris.* Residue from the deactivation of ignitable, corrosive, or reactive characteristic hazardous debris (other than cyanide-reactive) that is not contaminated with a contaminant subject to treatment defined by paragraph (b) of this section, must be deactivated prior to land disposal and is not subject to the waste-specific treatment standards of subpart D of this part.

(3) *Cyanide-reactive debris.* Residue from the treatment of debris that is reactive because of cyanide must meet the standards for D003 under § 268.43.

(4) *Ignitable nonwastewater residue.* Ignitable nonwastewater residue containing equal to or greater than 10% total organic carbon is subject to the technology-based standards for D001: "Ignitable Liquids based on § 261.21(a)(1)" under § 268.42.

(5) *Residue from spalling.* Layers of debris removed by spalling are hazardous debris that remain subject to the treatment standards of this section.

TABLE 1.—ALTERNATIVE TREATMENT STANDARDS FOR HAZARDOUS DEBRIS¹

Technology description	Performance and/or design and operating standard	Contaminant restrictions ²
A. Extraction Technologies:		
1. Physical Extraction		
a. <i>Abrasive Blasting:</i> Removal of contaminated debris surface layers using water and/or air pressure to propel a solid media (e.g., steel shot, aluminum oxide grit, plastic beads).	<i>Glass, Metal, Plastic, Rubber:</i> Treatment to a clean debris surface. ³ <i>Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:</i> Removal of at least 0.8 cm of the surface layer; and treatment to a clean debris surface. ³	All Debris: None.
b. <i>Scarification, Grinding, and Planing:</i> Process utilizing striking piston heads, saws, or rotating grinding wheels such that contaminated debris surface layers are removed.	Same as above.	Same as above.
c. <i>Spalling:</i> Drilling or chipping holes at appropriate locations and depth in the contaminated debris surface and applying a tool which exerts a force on the sides of those holes such that the surface layer is removed. The surface layer removed remains hazardous debris subject to the debris treatment standards.	Same as above.	Same as above.
d. <i>Vibratory Finishing:</i> Process utilizing scrubbing media, flushing fluid, and oscillating energy such that hazardous contaminants or contaminated debris surface layers are removed. ⁴	Same as above.	Same as above.

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TABLE 1.—ALTERNATIVE TREATMENT STANDARDS FOR HAZARDOUS DEBRIS¹—Continued

Technology description	Performance and/or design and operating standard	Contaminant restrictions ²
A. Extraction Technologies—Continued		
<p>e. <i>High Pressure Steam and Water Sprays:</i> Application of water or steam sprays of sufficient temperature, pressure, residence time, agitation, surfactants, and detergents to remove hazardous contaminants from debris surfaces or to remove contaminated debris surface layers.</p>	Same as above.	Same as above.
2. Chemical Extraction		
<p>a. <i>Water Washing and Spraying:</i> Application of water sprays or water baths of sufficient temperature, pressure, residence time, agitation, surfactants, acids, bases, and detergents to remove hazardous contaminants from debris surfaces and surface pores or to remove contaminated debris surface layers.</p>	<p><i>All Debris:</i> Treatment to a clean debris surface;³ <i>Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:</i> Debris must be no more than 1.2 cm (½ inch) in one dimension (i.e., thickness limit,⁵ except that this thickness limit may be waived under an "Equivalent Technology" approval under § 268.42(b);⁶ debris surfaces must be in contact with water solution for at least 15 minutes</p>	<p><i>Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:</i> Contaminant must be soluble to at least 5% by weight in water solution or 5% by weight in emulsion; if debris is contaminated with a dioxin-listed waste,⁵ an "Equivalent Technology" approval under § 268.42(b) must be obtained.⁸</p>
<p>b. <i>Liquid Phase Solvent Extraction:</i> Removal of hazardous contaminants from debris surfaces and surface pores by applying a nonaqueous liquid or liquid solution which causes the hazardous contaminants to enter the liquid phase and be flushed away from the debris along with the liquid or liquid solution while using appropriate agitation, temperature, and residence time.⁴</p>	Same as above.	<p><i>Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:</i> Same as above, except that contaminant must be soluble to at least 5% by weight in the solvent.</p>
<p>c. <i>Vapor Phase Solvent Extraction:</i> Application of an organic vapor using sufficient agitation, residence time, and temperature to cause hazardous contaminants on contaminated debris surfaces and surface pores to enter the vapor phase and be flushed away with the organic vapor.⁴</p>	<p>Same as above, except that brick, cloth, concrete, paper, pavement, rock and wood surfaces must be in contact with the organic vapor for at least 60 minutes.</p>	Same as above.
3. Thermal Extraction		
<p>a. <i>High Temperature Metals Recovery:</i> Application of sufficient heat, residence time, mixing, fluxing agents, and/or carbon in a smelting, melting, or refining furnace to separate metals from debris.</p>	<p>For refining furnaces, treated debris must be separated from treatment residuals using simple physical or mechanical means,⁹ and, prior to further treatment, such residuals must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.</p>	<p><i>Debris contaminated with a dioxin-listed waste.⁵</i> Obtain an "Equivalent Technology" approval under § 268.42(b).⁸</p>
<p>b. <i>Thermal Desorption:</i> Heating in an enclosed chamber under either oxidizing or nonoxidizing atmospheres at sufficient temperature and residence time to vaporize hazardous contaminants from contaminated surfaces and surface pores and to remove the contaminants from the heating chamber in a gaseous exhaust gas.⁷</p>	<p><i>All Debris:</i> Obtain an "Equivalent Technology" approval under § 268.42(b);⁹ treated debris must be separated from treatment residuals using simple physical or mechanical means,⁹ and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.</p> <p><i>Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:</i> Debris must be no more than 10 cm (4 inches) in one dimension (i.e., thickness limit),⁶ except that this thickness limit may be waived under the "Equivalent Technology" approval.</p>	<p><i>All Debris:</i> Metals other than mercury.</p>

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TABLE 1.—ALTERNATIVE TREATMENT STANDARDS FOR HAZARDOUS DEBRIS¹—Cont.

Technology description	Performance and/or design and operating standard	Contaminant restrictions ²
B. Destruction Technologies:		
1. <i>Biological Destruction (Biodegradation)</i> : Removal of hazardous contaminants from debris surfaces and surface pores in an aqueous solution and biodegradation of organic or nonmetallic inorganic compounds (i.e., inorganics that contain phosphorus, nitrogen, or sulfur) in units operated under either aerobic or anaerobic conditions.	<i>All Debris</i> : Obtain an "Equivalent Technology" approval under § 268.42(b); ³ treated debris must be separated from treatment residuals using simple physical or mechanical means, ⁹ and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. <i>Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood</i> : Debris must be no more than 1.2 cm (1/2 inch) in one dimension (i.e., thickness limit), ⁵ except that this thickness limit may be waived under the "Equivalent Technology" approval	<i>All Debris</i> : Metal contaminants.
2. <i>Chemical Destruction</i>		
a. <i>Chemical Oxidation</i> : Chemical or electrolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combination of reagents—(1) hypochlorite (e.g., bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxidas; (6) persulfates; (7) perchlorates; (8) permanganates; and/or (9) other oxidizing reagents of equivalent destruction efficiency. ⁴ Chemical oxidation specifically includes what is referred to as alkaline chlorination.	<i>All Debris</i> : Obtain an "Equivalent Technology" approval under § 268.42(b); ³ treated debris must be separated from treatment residuals using simple physical or mechanical means, ⁹ and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. <i>Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood</i> : Debris must be no more than 1.2 cm (1/2 inch) in one dimension (i.e., thickness limit), ⁵ except that this thickness limit may be waived under the "Equivalent Technology" approval	<i>All Debris</i> : Metal contaminants.
b. <i>Chemical Reduction</i> : Chemical reaction utilizing the following reducing reagents (or waste reagents) or combination of reagents: (1) sulfur dioxide; (2) sodium, potassium, or alkali salts of sulfites, bisulfites, and metabisulfites, and polyethylene glycols (e.g., NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; and/or (5) other reducing reagents of equivalent efficiency. ⁴	<i>Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood</i> : Debris must be no more than 1.2 cm (1/2 inch) in one dimension (i.e., thickness limit), ⁵ except that this thickness limit may be waived under the "Equivalent Technology" approval Same as above.	Same as above.
3. <i>Thermal Destruction</i> : Treatment in an incinerator operating in accordance with Subpart O of Parts 264 or 265 of this chapter; a boiler or industrial furnace operating in accordance with Subpart H of Part 266 of this chapter, or other thermal treatment unit operated in accordance with Subpart X, Part 264 of this chapter, or Subpart P, Part 265 of this chapter but excluding for purposes of these debris treatment standards Thermal Desorption Units.	Treated debris must be separated from treatment residuals using simple physical or mechanical means, ⁹ and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.	<i>Brick, Concrete, Glass, Metal, Pavement, Rock, Metal</i> : Metals other than mercury, except that there are no metal restrictions for vitrification. <i>Debris contaminated with a dioxin-listed waste</i> : ⁶ Obtain an "Equivalent Technology" approval under § 268.42(b), ⁸ except that this requirement does not apply to vitrification.
C. Immobilization Technologies:		
1. <i>Macroencapsulation</i> : Application of surface coating materials such as polymeric organics (e.g., resins and plastics) or use of a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media.	Encapsulating material must completely encapsulate debris and be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).	None.



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Simple Green Concentrated Cleaner

Simple Green® is one of the most versatile all-purpose cleaners you can buy! It's non-toxic and biodegradable, without harmful bleach or ammonia. Because it is a concentrate, you can custom dilute Simple Green to clean just about anything. It replaces most cleaners, detergents, degreasers and solvents you're using now!

Discover the value and power of Simple Green and your green will go a lot further, too.

- Non-Toxic, Biodegradable
- Non-Ionic, Non-Flammable, Non-Abrasive
- Exempt from OSHA & EPA special handling & personal protection requirements for hazardous materials
- Economical Concentrate
- Safer alternative to hazardous chemicals and solvents
- Authorized by the USDA for use in Federally inspected meat & poultry plants

Available in These Sizes:

24 oz #13012	1 gallon #13005	2.5 gallon #13223
5 gallon #13006	15 gallon #13016	35 gallon #13008
	7.5 gallon #13275	

The simple fact is, Simple Green is as strong as it is safe. Which makes it one of the most cost effective ways to remove oil, lubricants, grease and grime from practically any washable surface. Concentrated, water-based cleaner/degreaser contains a blend of synthetic, high-grade penetrants activated by cold/hot water. Custom dilute for specialized cleaning. For use in a broad range of applications including dip tanks. "Clear green" liquid has a mild pH of 9.3 to 9.5 and a pleasant sassafras scent. Contains no petroleum.

Where to Use

- Engines and machinery
- Dip tanks, aqueous-based parts washers, steam cleaners and pressure sprayers
- Manufacturing equipment
- Food processing plants and food preparation areas (grills, vents, traps & more)
- Prepping prior to painting, plating or welding
- Floor scrubbing and general plant maintenance
- Fleet and mass transit vehicles
- HVACR coils and cooling towers
- Removing machining oils and cutting fluids from manufactured parts and extruded tubing

Industrial Equipment

Simple Green offers a multitude of ways to ensure proper use, dilution, mixing, and application of our outstanding cleaning products, including 30-, 60-, and 80-gallon capacity parts washers, a multi-dilution foamer, and a 4-way proportioner.

Uses/Dilution Sheet

Need to know how to clean something? Download our [Industrial/Institutional Applications/Dilution Ratio Chart](#) (requires [Adobe Acrobat Reader](#)).

Safety Comparison Chart

[Safety Comparison Chart](#) (requires [Adobe Acrobat Reader](#))

- REPLACES OZONE DEPLETING SUBSTANCES (ODS) and hazardous chemicals. Meets federal Clean Air Act requirements - no need for ODS warning labels.
- LISTED ON THE EPA NATIONAL CONTINGENCY PLAN (NCP) Product Schedule as a surface washing agent.*
- EXEMPT FROM OSHA AND EPA REQUIREMENTS for special handling and personal protection for hazardous materials.
- USDA AUTHORIZED for use in Federally inspected meat and poultry plants.
- HELPS REDUCE WORKERS COMPENSATION CLAIMS in 4 major areas: Slip and fall, inhalation problems, eye damage, contact dermatitis/chemical burns. Mild 9.5 pH provides user-friendly cleaning

* Simple Green is on the U.S. Environmental Agency's National Contingency Plan schedule as a surface-washing agent for use in oil spills occurring in open waterways. This listing does not mean the EPA approves, recommends, licenses, certifies or authorizes the use of Simple Green. The listing means only that data has been properly submitted to the EPA as required by Subpart J of the National Contingency Plan. Coast Guard approval is required for specific NCP uses.

- SAVES TIME by thoroughly, quickly breaking up grease and sludge to easily rinse off all water-safe surfaces.
- SAVES MONEY by eliminating inventory of single purpose cleaners. Concentrate allows custom blending for heavy to light cleaning needs.
- CUTS COSTS related to disposal of hazardous wastes, and costs of the protective gear required for handling high pH and caustic cleaners.
- SAVES LABOR by reducing scrubbing and brushing. IT WORKS.

Available in 24 oz. trigger, 1 gallon, 2.5 gallon, 5 gallon, 15 gallon and 55 gallon drums and 275 gallon totes.

Material Safety Data Sheet

[Material Safety Data Sheet](#) (requires [Adobe Acrobat Reader](#))

Chemical Safety Survey

Simple Green®'s Chemical Safety Survey service is a personalized evaluation of end-user facilities to pinpoint and eliminate hazardous, costly and inefficient cleaning materials from the workplace. In addition, this service helps consolidate facilities' product inventory, save money and incorporate a safer systems approach to the workplace. Go to our [Chemical Safety Survey](#) section for more information.

Question?

Have a question? Need more information? Check out our [Frequently Asked Questions](#) section for detailed information about Simple Green products, applications, cleaning

simple green®

SAFETY COMPARISON CHART

	simple green	Castrol Super Clean	Chem-Pro Mean Green	CRC Complex Blue	Zep Z-Green	LPS Precision Clean	Loctite Natural Blue	RustOleum Industrial Pure Strength	Spray On Tough Green
BASE	Aqueous	Aqueous/Alkaline	Aqueous/Alkaline	Aqueous/Alkaline	Aqueous/Alkaline	Aqueous/Alkaline	Aqueous/Alkaline	Natural Terpene ("citrus")	Aqueous
pH	9.3 - 9.5	13	12.5 - 12.9	12	9.0 - 9.5	13.3	10.6	7.5 - 8.5	7.0 - 7.1
NFPA HAZARD	1 - Health	3 - Health 1 - Reactivity	2 - Health 1 - Reactivity	1 - Health	1 - Health	1 - Health	1 - Health	Class II Combustible Liquid	1 - Health
VOC	5.9% per EPA24	N/G	N/G	N/G	N/G	N/G	7.8 g/L	N/G	N/G
HANDLING INFO:									
Fire	None	Wear full protective gear - SCBA	Firefighters to wear full protective clothing & breathing equipment	NIOSH respirator	Wear self-contained positive pressure breathing apparatus.	None	Hazardous product formed by fire: irritating organic vapors	Use water, dry chemical or carbon dioxide	Spray containers with water. Wear self-contained breathing apparatus.
Reactivity	None	Avoid strong oxidizers, strong acids & contact w/ glass	No strong oxidizing agents	Avoid strong acids & oxidizers	No strong oxidizing agents	Avoid strong oxidizing agents	N/G	Avoid contact w/ strong oxidizers	No strong oxidizing agents.
Storage	Keep from freezing	Corrosive Material	N/G	Store in cool, dry area	Store in dry area. Keep out of reach of children	N/G	N/G	N/G	Keep from freezing. Keep out of reach of children
Spills	Simple Green will not harm sewage treatment micro-organisms. Prevent entry to open waterways.	Neutralize - contain spill, prevent entry to waterway, and absorb	Contain & dilute w/ plenty of water	Soak up material & dispose of in containers with regulations	Liquid waste not permitted in landfill. Absorb spill on inert absorbent material.	Soak up material w/ absorbent material. Do not flush to sewer	Dike large spills. Pump to containers or soak up w/ absorbent	Keep sources of ignition away from spill. Do not flush down sewer. Ventilate & remove w/ absorbent	Remove all sources of ignition from spill. Do not rinse down sewer. Ventilate & remove w/ absorbent

Information was obtained from the Material Safety Data Sheets of each manufacturer. *N/G = Not Given on MSDS. *None = No special requirements

	SIMPLE GREEN	Castrol Super Clean	Chem-Pro Mean Green	CRC Complex Blue	Zep Z-Green	LPS Precision Clean	Loctite Natural Blue	RustOleum Industrial Pure Strength	Spray On Tough Green
VENTILATION	Ample natural ventilation (Local exhaust)	Air supplied respirator	General/local exhaust	Adequate to maintain vapor concentration below TLV	No special measures required.	Local exhaust	Local exhaust	Provide ventilation in enclosed areas	Local exhaust ventilation.
PERSONAL PROTECTION	None normally required. Avoid eye contact.	Safety goggles/Safety shield	Safety goggles or chemist's goggles	Safety glasses	Use of tight fitting safety glasses or goggles is strongly recommended.	Safety goggles or glasses	Chemical splash goggles, face shield	Safety glasses	Safety glasses.
Eyes									
Skin	None required: Individuals w/ hyper-sensitive skin may want to wear gloves.	Impervious gloves & protective clothing	Chemical resistant apron & impervious clothing	Rubber gloves, boots & apron	Wearing neoprene or nitrile gloves is recommended when prolonged contact occurs.	Use rubber gloves	Rubber gloves with cuff	Protective gloves	Solvent-resistant gloves.
Respiratory	None	NIOSH air supplied respirator	NIOSH respirator	NIOSH respirator above TLV	No special measures	Good ventilation	N/G	NIOSH organic vapor respirator	None required.
SYMPTOMS OF OVEREXPOSURE									
Eyes	Mild eye irritant.	Can cause severe irritation or burns. Avoid contact	Can cause severe irritation / burns and possible blindness	May be damaging to eyes & skin. May cause painful irritation	Immediately flush eyes w/water for at least 15 min. Consult physician if irritation develops.	Liquid will cause irritation of eyes & skin	Irritation of eyes	Eye irritant	Irrigate well for at least 15 minutes. If irritation persists, call physician.
Skin	Non-toxic. Extensive use could cause drying.	Can cause severe irritation or burns. Avoid contact	Prolonged contact can irritate or burn	(see above)	Flush contaminated skin w/plenty of water. Consult physician if irritation develops.	(see above)	Irritation of skin	Skin irritant	May cause skin irritation. Flush with water for at least 15 minutes.
Inhalation	Non-toxic. Mild, temporary irritation to nasal passages.	Remove from area of exposure. Call physician	If breathing stops, get artificial respiration	May be irritant to nose & throat. May cause headaches	Move exposed person to fresh air. If irritation persists, get medical attention promptly.	Headache & dizziness	Nausea	Can cause drowsiness & headache	Avoid prolonged inhalation of vapor or mist.
Ingestion	Non-toxic. May cause some gastrointestinal upset (mild diarrhea) if enough is consumed.	Do not induce vomiting. Call physician	Obtain attention immediately. Do not induce	Possible liver/kidney injury, vomiting &	If this product is swallowed, do not induce vomiting. If victim is conscious, give plenty of water. Get medical	Drink large amount of milk. Contact physician immediately	Stomach distress, nausea or vomiting. Do not induce vomiting. Call physician	If ingested, dilute w/ large amounts of water. Call physician. Apply artificial respiration if breathing has stopped	If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Contact physician immediately.
FLAMMABILITY	Non-flammable	Non-flammable	Non-flammable	Non-flammable	Non-flammable	Non-flammable	Non-flammable	Class II Combustible Liquid	Non-flammable

Material Safety Data Sheet: **Simple Green® All-Purpose Cleaner and Simple Green® Scrubbing Pad**

Version No. 13005-12B Date of Issue: February 2012

ANSI-Z400.1-2003 Format

Section 1: PRODUCT & COMPANY IDENTIFICATION

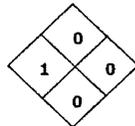
Product Name: Simple Green® All-Purpose Cleaner
Additional Names: Simple Green® Concentrated Cleaner Degreaser Deodorizer
Simple Green® Scrubbing Pad (Fluid in pad only)

Manufacturer's Part Number: **Please refer to page 4*

Company: Sunshine Makers, Inc.
15922 Pacific Coast Highway
Huntington Beach, CA 92649 USA
Telephone: 800-228-0709 • 562-795-6000 Fax: 562-592-3830
Emergency Phone: Chem-Tel 24-Hour Emergency Service: 800-255-3924

Section 2: HAZARDS IDENTIFICATION

Emergency Overview: CAUTION. Irritant. This is a Green colored liquid with a sassafras added odor. Scrubbing pad is a green fibrous rectangle infused with Simple Green Cleaner.



NFPA/HMIS Rating:
Health = 1 = slight
Fire, Reactivity, and Special = 0 = minimal

Potential Health Effects

Eye Contact: Mildly irritating.
Skin Contact: No adverse effects expected under typical use conditions. Prolonged exposure may cause dryness. Chemically sensitive individuals may experience mild irritation.
Ingestion: May cause stomach or intestinal irritation if swallowed.
Inhalation: No adverse effects expected under typical use conditions. Adequate ventilation should be present for prolonged usage in small enclosed areas.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS Number</u>	<u>Percent Range</u>
Water	7732-18-5	≥ 78%
2-butoxyethanol	111-76-2	≤ 5%
Ethoxylated Alcohol	68439-46-3	≤ 5%
Tetrapotassium Pyrophosphate	7320-34-5	≤ 5%
Sodium Citrate	68-04-2	≤ 5%
Fragrance	Proprietary Mixture	≤ 1%
Colorant	Proprietary Mixture	≤ 1%

Section 4: FIRST AID MEASURES

If Inhaled: If adverse effect occurs, move to fresh air.
If on skin: If adverse effect occurs, rinse skin with water.
If in eyes: Flush with plenty of water. After 5 minutes of flushing, remove contact lenses, if present. Continue flushing for at least 10 more minutes. If irritation persists seek medical attention.
If ingested: Drink plenty of water to dilute.

Section 5: FIRE FIGHTING MEASURES

This formula is stable, non-flammable, and will not burn. No special procedures necessary

Flammability: Non-flammable

Flash Point: Non-flammable

Suitable Extinguishing Media: Use Dry chemical, CO2, water spray or "alcohol" foam.

Extinguishing Media to Avoid: High volume jet water.

Special Exposure Hazards: In event of fire created carbon oxides, oxides of phosphorus may be formed.

Special Protective Equipment: Wear positive pressure self-contained breathing apparatus; Wear full protective clothing.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: See section 8 – personal protection.

Environmental Precautions: Do not allow into open waterways and ground water systems.

Method for Clean Up: Dilute with water and rinse into sanitary sewer system or soak up with inert absorbent material.

Section 7: HANDLING AND STORAGE

Handling: Keep container tightly closed. Ensure adequate ventilation. Keep out of reach of children.

Storage: Keep in cool dry area.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limit Values:

	OSHA PEL	ACGIH TLV
2-butoxyethanol	TWA 50 ppm (240 mg/m ³)	20 ppm (97 mg/m ³)
Tetrapotassium Pyrophosphate		5 mg/m ³

Exposure Controls:

Eye Contact: Use protective glasses if splashing or spray-back is likely.

Respiratory: Use in well ventilated areas.

Skin Contact: Prolonged exposure or dermal sensitive individuals should use protective gloves.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Green Liquid	Vapor Pressure:	18 mmHg @20°C; 23.5 mmHg @26°C	
Odor:	Added Sassafras odor	Density:	8.5 lb/gal;	
Specific Gravity:	1.010 ± 0.010	Water Solubility:	100%	
pH:	9.5 ± 0.5	VOC composite Partial Pressure:	TBD	
Boiling Point:	~210°F (98 °C)	VOC:	CARB Method 310	3.8%
Freezing Point:	~ 32°F (0 °C)		SCAQMD Method 313	2.8%
Nutrient Content:	Phosphorous: 0.28% Chloride: ~110 ppm	Sulfur: ~180 ppm Fluorine: ~90 ppm		

Section 10: STABILITY AND REACTIVITY

Stability: Stable
Materials to Avoid: None known
Hazardous Decomposition Products: Normal products of combustion - CO, CO₂; Oxides of Phosphorous may occur.

Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Oral LD₅₀ (rat) > 5 g/kg body weight
Dermal LD₅₀ (rabbit) > 5 g/kg body weight
Toxicity calculated from ingredients using OECD SERIES ON TESTING AND ASSESSMENT Number 33

Carcinogens: No ingredients are listed by OSHA, IARC, or NTP as known or suspected carcinogens.

Section 12: ECOLOGICAL INFORMATION

Hazard to wild mammals: Low, based on toxicology profile
Hazard to avian species: Low, based on toxicology profile
Hazard to aquatic organisms: Low, based on toxicology profile
Chemical Fate Information: Readily Biodegradable per OECD 301D, Closed Bottle Test

Section 13: DISPOSAL CONSIDERATIONS

Appropriate Method for Disposal:

- Unused Product: *Dilute with water to use concentration and dispose by sanitary sewer.
- Used Product: *This product can enter into clarifiers and oil/water separators. Used product may be hazardous depending on the cleaning application and resulting contaminants.
- Empty Containers: *Triple-rinse with water and offer for recycling if available in your area. Otherwise, dispose as non-hazardous waste.

*Dispose of used or unused product, and empty containers in accordance with the local, State, Provincial, and Federal regulations for your location. Never dispose of used degreasing rinsates into lakes, streams, and open bodies of water or storm drains.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT) / Canadian TDG: Not Regulated
IMO / IDMG: Not classified as Dangerous
ICAO/ IATA: Not classified as Dangerous
ADR/RID: Not classified as Dangerous

U.N. Number: Not Required Proper Shipping Name: Detergent Solution
Hazard Class: Non-Hazardous Marine Pollutant: No

Section 15: REGULATORY INFORMATION

All components are listed on: EINECS, TSCA, DSL and AICS Inventory.

No components listed under: Clean Air Act Section 112; Clean Water Act 307 & 311

SARA Title III 2-butoxyethanol is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 as Category N230 – Certain Glycol Ethers.

RCRA Status: Not a hazardous waste CERCLA Status: No components listed

State Right To Know Lists

2-butoxyethanol Illinois, Massachusetts, New Jersey, Pennsylvania, Rhode Island

WHMIS Classification – Category D, subcategory 2B, eye irritant

Name	Toxic Substances List – Schedule 1 – CEPA (Canadian Environmental Protection Act)	NPRI Inventory
2-butoxyethanol	Yes	No

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by Canada’s Controlled Products Regulation.

Section 16: OTHER INFORMATION

Questions about the information found on this MSDS should be directed to:

SUNSHINE MAKERS, INC. – TECHNICAL DEPARTMENT

15922 Pacific Coast Hwy. Huntington Beach, CA 92649

Phone: 800/228-0709 [8am-5pm Pacific time, Mon-Fri] Fax: 562/592-3830 Email: infoweb@simplegreen.com

CAGE CODE 1Z575

GSA/FSS - CONTRACT NO. GS-07F-0065J

Scrubbing Pad GSA/BPA - CONTRACT NO. GS-07F-BSIMP

National Stock Numbers & Industrial Part Numbers:

Simple Green	Part Number	NSN	Size
	13012	7930-01-342-5315	24 oz spray (12/case)
	13005	7930-01-306-8369	1 Gallon (6/case)
	13006	7930-01-342-5316	5 Gallon
	13016	7930-01-342-5317	15 Gallon
	13008	7930-01-342-4145	55 Gallon
	13103	N/A	2oz samples
	13225	N/A	2.5 Gallon
	13275	N/A	275 Gallon tote
	48049	N/A	1 Gallon Conc. w/ 32oz dilution
Scrubbing Pad	10224	7930-01-346-9148	Each (24/case)

Retail Numbers:

Part Number	Size
13002	16 oz Trigger (12/case)
13005	1 Gallon (6/case)
13013	24 oz Trigger (12/case)
13014	67 oz / 2 L (6/case)
13033	32 oz Trigger (12/case)
80007	Tier display holding 13005 (36/Tier)

part number is for both industrial and retail

****International Part Numbers May Differ.**

DISCLAIMER: The information provided with this MSDS is furnished in good faith and without warranty of any kind. Personnel handling this material must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of this material and the safety and health of employees and customers. Sunshine Makers, Inc. assumes no additional liability or responsibility resulting from the use of, or reliance on this information.

HEALTH & SAFETY PLAN

GENERAL CHEMICAL CORPORATION

FACILITY CLOSURE

Reviewed and Approved by:

Doug Gominger, Corporate Safety Director

Date

Stephen Ganley, General Manager

Date

Roy Swartz, Compliance Manager

Date

GCC CLOSURE PLAN
ATTACHMENT 5

1.0 INTRODUCTION

This Health & Safety Plan (HASP) has been prepared specifically for the General Chemical Corporation (GCC) facility closure. It is intended to provide a framework for completion of all required closure tasks in a manner that is protective of workers, the nearby Woodrow Wilson School and the neighborhood. Specific provisions have been developed to comply with GCC's license, MassDEP regulations and closure directives, applicable OSHA standards, and the company's standard Health & Safety protocols.

2.0 REVIEW OF PLAN

Prior to use, this HASP will be reviewed and approved by GCC local management, and the company's Corporate Safety Department. This HASP will also be part of GCC's Facility Closure Plan (Attachment 5) and, as such, will be subject to review by GCC's consultants, MassDEP and the Framingham Fire Department.

3.0 PLAN AVAILABILITY

This Site Health & Safety Plan and related information shall be available to all workers at the facility at all times, and shall address the following items, as a minimum:

- a. Names of key personnel responsible for site health and safety
- b. Current Job Safety Analysis (JSA) information for site tasks and operations to be implemented
- c. Employee training requirements as outlined in the applicable OSHA standards and company requirements
- d. PPE and respiratory protection to be used for each of the site tasks and operations being conducted

4.0 HEALTH & SAFETY MEETINGS

All workers involved in closure operations will be briefed on the Site Health & Safety Plan at one or more safety meetings prior to initiating any decontamination work associated with facility closure. Additional meetings will be held at any such time as necessary to ensure that new workers are properly briefed and/or whenever changes in site conditions may warrant. In addition, daily tool box safety meetings will be held prior to starting work. All safety meetings will be documented.

5.0 PURPOSE

The purpose of this Health and Safety Plan is to provide specific guidelines and establish procedures for the protection of all personnel during GCC facility closure operations. This HASP is based upon information available to date. The procedures outlined here will be continuously reviewed and updated, if necessary, as field conditions and/or tasks change.

All workers must have received 40 hour OSHA training in accordance with 29 CFR 1910.120 and be currently enrolled in the company’s medical surveillance program (or equivalent). Training records for company employees are available through the health and safety department.

6.0 PROJECT DESCRIPTION

The primary tasks involved in closing the GCC facility are related to decontamination of waste management units, containment buildings and structures, and related equipment. Two decontamination techniques are to be employed, hand-cleaning with “Simple Green” industrial cleaner, and high-pressure steam and water spray (without additives). Refer to the Facility Closure Plan for more information on these areas and items, and the decontamination methods to be employed. Work will be overseen by GCC management, the MassDEP, and the Framingham Fire Department. In addition, independent consultants have been engaged to inspect the work and conduct air monitoring to assess whether any contaminants are becoming airborne and/or leaving the site.

Project Characteristics

<u>Material Type</u>	<u>Location</u>	<u>Site Regulatory Agencies</u>
<input type="checkbox"/> Petroleum	<input checked="" type="checkbox"/> Industrial/ Commercial	<input type="checkbox"/> US EPA
<input checked="" type="checkbox"/> Hazardous Material	<input type="checkbox"/> Residential	<input type="checkbox"/> NJ DEP
	<input type="checkbox"/> Spill Cleanup	<input type="checkbox"/> NY DEC
		<input checked="" type="checkbox"/> Other: MassDEP, Framingham Fire Department

Anticipated Project Start Date: June 1, 2012 Anticipated Completion Date: August 31, 2012

7.0 ORGANIZATIONAL STRUCTURE

The following is a list of key personnel involved with this project. (Note: one individual may carry out more than one job function).

Project Manager	Stephen Ganley, General Manager GCC
Project Health & Safety:	Doug Gominger, Corporate Health & Safety Director
Site Safety Officer:	Roy Swartz, Compliance Manager
Supervisor:	Todd Johnson, Formerly GCC Facility Supervisor
Regulatory Consultant:	Stephen Pozner
Professional Engineer:	Robert Rego

8.0 PERSONNEL TRAINING REQUIREMENTS

All personnel entering active work areas (Exclusion Zone), whether to perform work or observe, must have current training and certification to the following:

- a. OSHA "Hazardous Waste Operations and Emergency Response" (HAZWOPER), per 29 CFR 1910.120
- b. OSHA "Permit-Required Confined Spaces" per 29 CFR 1910.146
- c. OSHA "Personal Protective Equipment" and "Respiratory Protection", per 29 CFR 1910.132-138
- d. OSHA "Control of Hazardous Energy" (Lockout/Tag-Out) per 29 CFR 1910.147

9.0 HAZARD ANALYSIS / RISK ASSESSMENT

a. Chemical Hazards:

All hazards need to be identified prior to the start of the project. Residues of the following wastes / substances are either known or suspected to be on-site.

Material Description	Hazards (Toxic, corrosive, volatile, flammable, reactive, etc.)	Primary Routes of Entry & Protective Measures
Oils, Oily Water, Oily Solids	Mildly toxic	Inhalation, skin contact, dust mask or cartridge respirator, Tyvek suits, gloves
D-Listed RCRA Metal Wastes (e.g. Lead, Cadmium, Chromium)	Chronic toxicity	Inhalation, skin contact, HEPA cartridge respirator, Tyvek suits, gloves
F-Listed RCRA Solvents (e.g. Trichloroethylene, Methylene Chloride)	Chronic toxicity	Inhalation, skin contact, organic vapor cartridge respirator, QC Tyvek suits, gloves

Cleaning products to be used:

1. Hand cleaning: "Simple Green" Industrial Cleaner (Manufacturer's literature and MSDS included as Attachment 4 of the Facility Closure Plan)
2. High pressure steam/water (without chemical additives)

A Lan model MHP4-3500 unit (or equivalent) will be employed for this work. This is a gasoline (pump) and diesel (water heater) powered unit which generates 3500 psi @ 16 hp and provides a water temperature of 200°F. Back-up gasoline and diesel supplies will be stored in appropriate containers (5-gallon maximum size), within a grounded flammable storage container.

b. Physical Hazards:

Physical Hazards	Task/ Area	Protection Protocol/ Procedures
Noise	Heavy Equipment Operation (Vacuum trucks, etc.)	Utilize hearing protection – ear muffs or ear plugs
High Pressure steam / water spray	Tank/Building Cleaning, etc.	Level C protective clothing, full face respirator

Heat	Wearing Protective Clothing, Steam Cleaning	Replenish fluids as necessary and monitor for heat stress.
Electric Storms / Rain	Outside work	Stop Work
Heavy Equipment	Clean-up or transfer of material	Hearing Protection, Spill Prevention
Confined Space Entry	Cleaning tanks	Follow Confined Space Entry Program and complete CSE Permit for each shift.**
Slip, Trip & Fall	All work, particularly where steam / water spray is being used	Awareness of surroundings, adequate lighting, and full body harness with tripod when vertically entering and exiting confined spaces. Fall protection when working over 6 feet above ground surface
Falling Objects / Overhead Structures	Tank farm, and where pressure washing may cause objects to become dislodged and fall	Hard hat

** Confined Space Entry Gear (CSE) includes rescue tripod, full body harness and lifeline, wherever possible.

10.0 LEVELS OF PROTECTION

Engineering controls will always be used to the greatest extent, in order to help reduce the types and levels of exposure. When engineering controls do not eliminate a hazard, protective equipment including respiratory protection may be necessary. The following is a basic summary of PPE that is required for each level of protection. Additional items may be required in specific circumstances, and as described in this HASP.

Level D Protection

- a. Basic Uniform
- b. Boots/shoes steel toes
- c. Safety glasses
- d. Work Gloves (with surgical gloves for non-hazardous liquid exposure)
- e. Ear protection (if necessary)

Level D should be used when:

- The atmosphere contains no known hazard
- Work tasks will not cause splashes, immersion, inhalation of or contact with hazardous levels of any chemicals

Level D may not be used when:

- The atmosphere contains less than 19.5% oxygen

Level C Protection

- a. Full face air-purifying, respirator (NIOSH/MSHA approved) with appropriate cartridges
- b. Chemical resistant clothing (QC Poly Tyvek)
- c. Gloves (outer/ inner), chemical-resistant

- d. Boots (outer), chemical-resistant (disposable)
- e. Steel toe boots/shoes
- f. Hard hat

Level C should be used when:

- The atmospheric contaminants, liquid splashes, or other direct contact will not be harmful to exposed skin or be absorbed through the skin
- The types of air contaminants have been identified, concentrations known, and a cartridge is available that will effectively remove the contaminant(s)
- All criteria for the use of air purifying respirators are met

Level C may not be used when:

- Atmospheric concentration of chemicals exceed IDLH levels
- The atmosphere contains less than 19.5% oxygen

Level B Protection

- a. Air-line breathing apparatus or Pressure/Demand SCBA with 5-minute escape bottle
- b. Chemical-resistant clothing (disposable chemical-resistant Saranex coated)
- c. Gloves (outer), chemical-resistant
- d. Gloves (inner), chemical-resistant
- e. Boots (outer), chemical-resistant (disposable)
- f. Steel toe boots/shoes
- g. Hard hat

Level B should be used when:

- The type and atmospheric concentration of substances have been identified and require a high level of respiratory and skin protection. This involves atmospheres:
 - with IDLH concentrations of specific substances that do not represent a severe skin hazard and which cannot be absorbed through the skin
 - that do not meet the criteria for use of air-purifying respirators
 - containing less than 19.5% oxygen
 - Incompletely identified vapors or gases as indicated by direct reading organic vapor detection instrument, but vapors and gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the intact skin

Level B may not be used when:

- The vapor or gases present are suspected of containing high concentrations of chemicals that are harmful to skin or capable of being absorbed through intact skin
- It is possible that the work being done will generate either high concentrations of vapors, gases, particulate or splashes of material that will affect exposed skin

Level A Protection

- a. Pressure Demand SCBA
- b. Fully encapsulating chemical-resistant suit
- c. Gloves (outer) chemical-resistant

- d. Gloves (inner) chemical-resistant
- e. Boots, chemical-resistant, steel toe (depending on suit construction, worn over or under suit boot)
- f. Hard Hat (under suit)

Level A should be used when:

- The chemical substance(s) has been identified and requires the highest level of protection for skin, eyes, and the respiratory system based on the following considerations:
 - Measured (potential for) high concentration(s) of atmospheric vapors, gases, or particulate.
 - Site operations and work functions involving high potential for splash, immersion, or exposure to unexpected vapors, gases, or particulate.
 - Extremely hazardous substances (for example: dioxin, cyanide compounds, concentrated pesticides Department of Transportation Poison "A: materials, suspected carcinogens, and infectious substances) are known or suspected to be present, and skin contact is possible.
- The potential exists for contact with substances that destroy skin.

LEVEL OF PROTECTION PER TASK

Task	Anticipated Level Of Protection	Special Procedures/ Comments
Hand cleaning of items, equipment, and surfaces with "Simple Green"	Level D	Use of surgical gloves, with or without heavy work gloves, and tyvek suit are recommended
PCB Sampling	Level D	Dust respirator and nitrile gloves recommended
Indoor pressure steam and water spray	Level C	Tape hood to full-face respirator, and gloves/boots to suit, to avoid skin contact with steam or water spray
Confined space entry	Level C	CSE permit to be completed and posted at the access point. Turn in to Safety Officer upon completion
Outdoor high pressure steam and water spray	Level D, plus QC Tyvek suit and full face shield	Additional skin/eye protection required for spray

11. GENERAL ZONE DELINEATION

- a. Work zones will be established in order to reduce the spread of contamination and to protect employees and other personnel involved. Three zones are generally utilized as follows:
 - Exclusion Zone – areas where contamination is present and decontamination is underway.
 - Contamination Reduction Zone – buffer zone that separates the Exclusion Zone from the Support Zone. This will normally be the area where disposable PPE and cleaning supplies are containerized for disposal.

- Support Zone – a clean area where the administrative office and clean equipment/supplies are located.
- b. For the purpose of GCC facility closure operations, each area where decontamination is being actively performed will be considered an Exclusion Zone and a Contamination Reduction Zone until the work has been completed.
- c. The Site Support Zone will be the office in the warehouse, with GCC’s office building at 138 Leland Street acting as the overall project Support Zone.

12.0 DECONTAMINATION OF EQUIPMENT & SUPPLIES

The following decontamination procedures will be used for this project.

a. Personal Decontamination

Disposable PPE will be utilized to the greatest possible extent. Workers will place used gloves, suits, booties, etc. into designated accumulation containers. These will be managed as hazardous waste and disposed of accordingly. Respirators, face shields, and similar reusable protective gear will be decontaminated using Simple Green or bleach/water solution.

b. Equipment Decontamination

Reusable equipment, including pressure washers, pumps, etc., will be decontaminated using Simple Green.

c. Other

Used cleaning supplies, including brushes and rags, will be placed in designation Accumulation containers along with disposable PPE for disposal as hazardous waste

13.0 AIR MONITORING FOR PERSONNEL SAFETY

Note: Perimeter/fence-line air monitoring is outside the scope of this HASP (see Facility Closure Plan Section VII).

Air Monitoring within the work area is used to initially and periodically identify airborne contaminants in order to determine the level of protection needed. Direct reading instruments will be used to monitor for changing conditions during confined operations. Oxygen levels will be monitored continuously within confined spaces to ensure that any oxygen deficiency is immediately detected and appropriate protective measures are taken.

Frequency & Type of Monitoring

Monitoring will be conducted

- Continuous (confined spaces)
- Routine
- Periodic (other work areas)

The following contaminants will be monitored:

- LEL
- Oxygen (O₂)
- Hydrogen Sulfide (H₂S)
- Carbon Monoxide (CO)
- Other Contaminants: Organic vapors will be checked by PID in the work area periodically to assure compliance with OSHA Permissible Exposure Levels.

14.0 CONTINGENCY PLANNING

The General Chemical Contingency Plan (Attachment V of GCC's License) will be in effect throughout closure operations. In the event of a hazardous waste/material release, fire or explosion (or if the potential for such an incident develops during closure), the provisions of the Contingency Plan will be implemented. In addition, the Framingham Fire Department will be contacted immediately if there is any threat of fire or explosion.

General Chemical will keep adequate quantities of spill cleanup supplies and equipment readily available throughout closure.

15.0 CONTACT INFORMATION

Site Location: General Chemical Facility
133 Leland Street, Framingham, MA

Site Contact: Stephen Ganley

Phone: **(508) 872-5000, Cell (617) 962-4777**

Area Police Department:

Location: 1 William Welch Way, Framingham, MA

Phone: **911 (508) 620-4926**

Area Fire Department:

Location: 10 Loring Drive, Framingham, MA

Phone: **911 (508) 532-5930**

Area Medical Emergency Services: MetroWest Medical Center

Location: 115 Lincoln Street, Framingham, MA

Phone: **911 (508) 383-1000**

POISON CONTROL CENTER:	1-800-962-1222
CHEMTREC:	1-800-424-9300
NATIONAL RESPONSE CENTER:	(800) 424-8802
REGULATORY AGENCY: MA DEP Emergency Response:	(617) 556-1133 or (888) 304-1133
Boston Office (Al Nardone):	(617) 292-5580
OTHER:	
Framingham Board of Health (Ethan Mascoop):	(508) 532-5470
Woodrow Wilson School (Robin Welch, Principal):	(508) 626-9164
GCC Corporate Safety Director (Doug Gominger):	(856) 863-8778

16.0 REVIEW AND SIGNATURE

All employees, subcontractors, and visitors conducting closure activities, and/or entering the exclusion or decontamination zones must sign this HASP.

Signing below indicates that the individual has read and understood this Health & Safety Plan and will conduct themselves in a manner that is in accordance with Plan requirements.

Print Name	Signature	Company	Date
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

Questions about this Plan should be directed to the Corporate safety Director or Site Safety Officer/GCC Compliance Manager at (508) 872-5000.

General Chemical Corporation

PCB SAMPLING PLAN

Concrete Floor Sampling

General Chemical Corporation (GCC) will conduct "bulk" PCB sampling at the staging area, and within the designated PCB storage area in Building No. 1 (center rear storage bay), per USEPA's Standard Operating Procedure for Sampling Porous Surfaces For PCBs (dated 5/5/11). This USEPA document is appended to this plan for reference purposes. Sampling per this plan may be performed prior to decontamination of Building No. 1. If the results of the sampling are acceptable, no additional PCB sampling will be required after the building has been decontaminated.

A square-based grid, with a grid interval of 5 feet (1.5 meters), will be superimposed over the areas that need to be sampled. The sampling points within each grid will be marked with unique identifying numbers, showing the grid location as well as a unique composite sample number.

Sample Collection Procedure

After constructing the grid system, samples will be collected using a rotary impact hammer drill with a carbide drill bit that is 1 inch in diameter, to generate a fine concrete powder suitable for analysis. The bit will be drilled into the concrete to a depth of 0.5 inches. The concrete material will be removed with small stainless steel scoopulas or a vacuum system at each sample location. Once the samples have been collected in the center of each grid location, they will be composited following procedures specified in 40 CFR 761.289 (compositing samples). Up to a maximum of 9 sub-samples will be collected for each composite sample in accordance 40 CFR 761.283. An equal volume from each sub-sample will be collected and thoroughly mixed with the other 8 sub-samples for a total of 9 sub-samples. Alternatively, the laboratory selected for analysis may prepare the composite samples for analysis. Once samples are collected, caps will be screwed tightly onto containers. A sample label will be completed using a water-resistant marker. Samples will be transported to the laboratory and stored prior to analysis, if necessary, under refrigeration. Chain-of-custody documentation will be maintained for the samples. Once a composite sample is prepared, the sample will be extracted and analyzed for PCB's.

Quality Assurance/Quality Control Samples

Quality Assurance/Quality Control ("QA/QC") samples will be collected in the same manner as other samples. The QA/QC samples will be managed, handled, and documented as they would for "actual" samples. For matrix spike/matrix spike duplicates ("MS/MSD"), matrix duplicates, and blanks, samples will be placed in the same type of containers. Efforts will be made to ensure that MS/MSD, duplicates, and blanks are handled in the same manner as the actual samples.

Blanks

Field Blank - Clean, unused tap water will be collected in new sample containers with appropriate preservatives, labeled, and submitted as a comparison sample. Tap water will be used as a comparison sample because tap water will be used to clean and rinse the areas undergoing closure. Trace constituents that are present in the comparison sample may also be present in the final rinse sample obtained to verify proper decontamination. The presence of constituents in the tap water as generated by the rinsing equipment, not generated by GCC's waste management activities, could falsely indicate that residues remain in the final rinse. Thus, the presence of hazardous constituents in the tap water sample, as determined analytically when compared with the final rinse samples, would indicate that such constituents were not caused by waste management activities, and unneeded repetitions of the cleaning procedures would be avoided. The tap water sample will be analyzed for the same constituents (organic and inorganic), using the same analytical methods specified for rinse water samples in Table 1.

Trip Blank - In addition, deionized water will be placed in appropriate sample containers and transported with other water samples as a trip blank. The deionized water sample will be submitted as a blank for analysis with other water samples. The trip blank will be analyzed for the volatile organic constituents, using the same analytical methods specified for rinse water samples.

Matrix Duplicates – Matrix duplicates will be collected at the rate of 1 in 10 and will be analyzed to check for sampling and analytical reproducibility.

MS/MSD – MS/MSD data provides information regarding the effect of the sample matrix on the digestion and measurement methodology. GCC will collect 1 MS/MSD for every 20 or fewer investigative samples of a given matrix.

Trip Blank – In addition, deionized water will be placed in appropriate sample containers and transported with other water samples as a trip blank. The deionized water sample will be submitted as a blank for analysis with other water samples.

Matrix Duplicates – Matrix duplicates will be collected at the rate of 1 in 10 and will be analyzed to check for sampling and analytical reproducibility.

Moveable Equipment

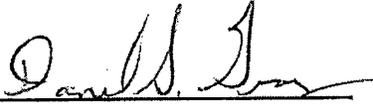
Moveable equipment utilized for managing PCB's will be decontaminated in accordance with 40 CFR Part 761.79(c) or may be swipe-sampled and analyzed in accordance with 40 CFR Part 761 Subpart P, in lieu of decontamination. For the purposes of this plan, moveable equipment is defined as fork trucks and equipment that had the possibility of contacting PCB's during facility operations and can be physically removed from the facility.

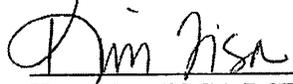
CLEAN CLOSURE CRITERIA

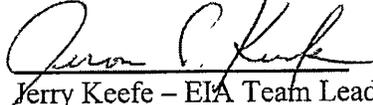
Type of Sample	Analytes	Type of Surface	Regulatory Program	Closure Criteria
Bulk	Polychlorinated Biphenyls	Concrete	TSCA	1 Milligram/Kilogram for reuse without restriction from a composite sample representing 100 square feet.
Swipe	Polychlorinated Biphenyls	Moveable Equipment	TSCA	10 µg/100cm ² or decontamination in accordance with 40 CFR Part 761.79(c) for reuse without restriction

**STANDARD OPERATING PROCEDURE
FOR SAMPLING POROUS SURFACES
FOR POLYCHLORINATED BIPHENYLS (PCBs)**

**The Office of Environmental Measurement and Evaluation
EPA New England – Region 1
11 Technology Dr.
North Chelmsford, MA 01863**

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Reviewed by:  05/23/11
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Approved by:  5/23/11
Dan Boudreau, EIA Chemistry Team Leader Date

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Attachments:

- Example of Custody Seal and Sample Label
- Example of Chain of Custody Form

1.0 Scope and Application

- 1.1 This Standard Operating Procedure (SOP) is suitable for collection of a porous matrix sample for analysis of Polychlorinated Biphenyls (PCBs).
- 1.2 This SOP describes sampling techniques for both hard and soft porous surfaces.
 - 1.2.1 Hard surfaces, and most soft surfaces, can be sampled using an impact hammer drill to generate a uniform, finely ground, powder to be extracted and analyzed for PCBs. This procedure is primarily geared at providing enough sample quantity for two analyses. Hard porous surfaces include concrete, brick, asphalt, cement, sandstone, limestone, unglazed ceramics, and other possible PCB suspected material. This procedure may also be used on other softer porous surfaces, such as wood.
 - 1.2.2 Soft surfaces can be sampled using a chisel or sharp knife to generate a representative sample to be extracted and analyzed for PCBs. Soft porous surfaces include wood, wall plasterboard, low density plastics, rubber, caulking, and other PCB suspected material.
- 1.3 This SOP provides for collection of surface samples (0 – 0.5 inches) and delineation of PCB contamination throughout the core of the porous surface. The procedure can be used to sample the porous surface at distinctly different depth zones.

2.0 Method Summary

A one-inch or other sized diameter carbide drill bit is used in a rotary impact hammer drill to generate a fine powder, or other representative sample, suitable for extraction and analysis of PCBs from porous surfaces. This method also allows the use of chisels or knives for the collection of samples from soft porous surfaces for PCB analysis.

3.0 Definitions

- 3.1 Field/Bottle Blank: A sample container of the same lot as the containers used for the environmental samples. This evaluates PCB contamination introduced from the sample container(s) from a common lot.
- 3.2 Equipment/Rinse/Rinsate Blanks: A sample that is collected by pouring hexane over the sample collection equipment after decontamination and before sample collection. The sample is collected in the appropriate sample container identical to the sample containers. This represents background contamination resulting from the field equipment, sampling procedure, sample container, and shipment.

- 3.3 Field Replicates/Duplicates: Two or more samples collected at the same sampling location. Field replicates should be samples collected side by side. Field replicates represent the precision of the whole method, site heterogeneity, field sampling, and the laboratory analysis.
- 3.4 Field Split Samples: Two or more representative subsamples taken from one environmental sample in the field. Prior to splitting, the environmental sample is homogenized to correct for sample heterogeneity that would adversely impact data comparability. Field split samples are usually analyzed by different laboratories (interlaboratory comparison) or by the same laboratory (intralaboratory comparison). Field splits are used to assess sample handling procedures from field to laboratory and laboratory comparability.
- 3.5 Laboratory Quality Samples: Additional samples that will be collected for the laboratory's quality control program: matrix spike, matrix spike duplicate, laboratory duplicates, etc.
- 3.6 Proficiency Testing (PT)/Performance Evaluation (PE) Sample: A sample, the composition of which is unknown to the laboratory or analyst, provided to the analyst or laboratory to assess the capability to produce results within acceptable criteria. This is optional depending on the data quality objectives. If possible, it is recommended that the PE sample be of similar matrix as the porous surface(s) being sampled.
- 3.7 Porous Surface: Any surface that allows PCBs to penetrate or pass into itself including, but not limited to, paint or coating on metal; corroded metal; fibrous glass or glass wool; unglazed ceramics; ceramics with porous glaze; porous building stone such as sandstone, travertine, limestone, or coral rock; low density plastics such as Styrofoam and low density polyethylene; coated (varnished or painted) or uncoated wood; painted or unpainted concrete or cement; plaster; plasterboard; wallboard; rubber; caulking; fiberboard; chipboard; asphalt; or tar paper.
- 3.8 Shipping Container Temperature Blank: A water sample that is transported to the laboratory to measure the temperature of the samples in the cooler.
- 4.0 Health and Safety**
- 4.1 Eye, respiratory, and hearing protection are required at all times during sample drilling. A properly fitted respirator is required for hard porous surface sampling. A respirator is recommended whenever there is a risk of inhalation of either particulate or volatilized PCBs during sampling.
- 4.2 All proper personal protection clothing and equipment must be worn.

4.3 When working with potentially hazardous materials or situations, follow EPA, OSHA, and specific health or safety procedures.

4.4 Care must be exercised when using an electrical drill and sharp cutting objects.

5.0 Interferences and Potential Problems

5.1 This sampling technique produces a finely ground uniform powder, which minimizes the physical matrix effects from variations in the sample consistency (i.e., particle size, uniformity, homogeneity, and surface condition). Matrix spike analysis of a sample is highly recommended to monitor for any matrix related interferences.

5.2 Nitrile gloves are recommended. Latex gloves must not be used due to possible phthalate contamination.

5.3 Interferences may result from using contaminated equipment, solvents, reagents, sample containers, or sampling in a disturbed area. The drill bit must be decontaminated between samples. (see Section 11.0.)

5.4 Cross contamination problems can be eliminated or minimized through the use of dedicated sampling equipment.

6.0 Personnel Qualifications

6.1 All field samplers working at hazardous materials/waste sites are required to take a 40 hour health and safety training course prior to engaging in any field activities. Subsequently, an 8 hour refresher health and safety course is required annually.

6.2 The field sampler should be trained by an experienced sampler before initiating this procedure.

6.3 All personnel shall be responsible for complying with all quality assurance/quality control requirements that pertain to their organizational/technical function.

7.0 Equipment and Supplies

7.1 This list varies with the matrix and if depth profiling is required

- Rotary impact hammer variable speed drill
- 1-inch or other suitable (1/2, 3/4, etc.) diameter carbide tip drill bits
- Steel chisel or sharp cutting knife, and hammer
- Brush and cloths to clean area
- Stainless steel scoopulas

Aluminum foil to collect the powder sample
1 quart Cubitainer with the top cut out to collect the powder sample
Aluminum weighing pans to collect the powder sample
Cleaned glass container (2 oz or 40 mL) with Teflon lined cap
Decontamination supplies: hexane, two small buckets, a scrub brush, detergent, deionized water, hexane squirt bottle, and paper towels
Dedicated vacuum cleaner with a disposable filter or a vacuum pump with a dust filter
Polyethylene tubing and Pasteur pipettes
Sample tags/labels, custody seals, and Chain-of-Custody form

8.0 Sampling Design

8.1 A sufficient number of samples must be collected to meet the data quality objectives of the project. If the source of the PCB contamination is regulated under the federal TSCA PCB Regulations at 40 CFR Part 761, the sampler should insure that the sampling design is sufficient to meet any investigation or verification sampling requirements. At a minimum, the following is recommended:

8.1.1 Suspected stained area (s) should be sampled.

8.1.2 At each separate location, collect at least 3 samples of each type of porous surface, regardless of the amount of each type of porous surface present.

8.1.3 In areas where PCB equipment was used or where PCBs were stored, samples should be collected at a frequency of 1 sample/100 square feet (ft²).

9.0 Sample Collection

9.1 Hard Porous Surfaces

9.1.1 Lock a 1-inch or another size diameter carbide drill bit into the impact hammer drill and plug the drill into an appropriate power source. For easy identification, sample locations may be pre-marked using a marker or paint. (Note: the actual drilling point must not be marked.) Remove any debris with a clean brush or cloth prior to drilling. All sampling decisions of this nature should be noted in the sampling logbook.

9.1.2 Use a Cubitainer with the top cut off or aluminum foil to contain the powdered sample. Begin drilling in the designated location. Apply steady even pressure and let the drill do the work. Applying too much pressure will generate excessive heat and dull the drill bit prematurely. The drill will provide a finely ground powder that can be easily collected.

- 9.1.3 Samples should be collected at ½-inch depth intervals. Thus, the initial surface sample should be collected from 0 – 0.5 inches. A ½-inch deep hole generates about 10 grams (20 mL) of powder. Multiple holes located closely adjacent to each other, may be needed to generate sufficient sample volumes for a PCB determination. It is strongly recommended that the analytical laboratory be consulted on the minimum sample size needed for PCB extraction and analysis.
- 9.1.4 Wall and Ceiling Sampling: A team of two samplers will be required for wall and ceiling sampling. The second person will hold a clean catch surface (e.g. an aluminum pan) below the drill to collect the falling powder. Alternatively, use the chuck-end of the drill bit and punch a hole through the center of the collection pan. The drill bit is then mounted through the pan and into the drill. For ceilings, the drill may be held at an angle to collect the powder. Thus the driller can be drilling at an angle while the assistant steadies the pan to catch the falling powder. As a precaution, it may be advantageous to tape a piece of plastic around the drill, just below the chuck, to avoid dust contaminating the body of the drill and entering the drill's cooling vents. Caution must be taken to prevent obstruction of the drill's cooling vents.

9.2 Soft Porous Surfaces

- 9.2.1 The procedure for the hard porous surface may be used for certain soft porous surfaces, such as wood.
- 9.2.2 Samples should be collected at no more than ½-inch depth intervals using a metal chisel or sharp cutting knife. Thus, the initial surface sample should be collected from 0 – 0.5 inches. It is important to collect at least 10 grams for analysis.
- 9.2.3 For soft porous surfaces, such as caulking and rubber, a representative sample can be collected using a metal chisel or sharp cutting knife.

9.3 Multiple Depth Sampling

- 9.3.1 Multiple Depth Sampling may not be applicable to certain porous surfaces, such as caulking.
- 9.3.2 Collect the surface sample as outlined in Section 9.1 or 9.2.
- 9.3.3 Use the vacuum pump or cleaner to clean out the hole.
- 9.3.4 To collect multiple depths there are two options.

9.3.4.1 Option one: drill sequentially ½-inch increments with the 1 inch drill.

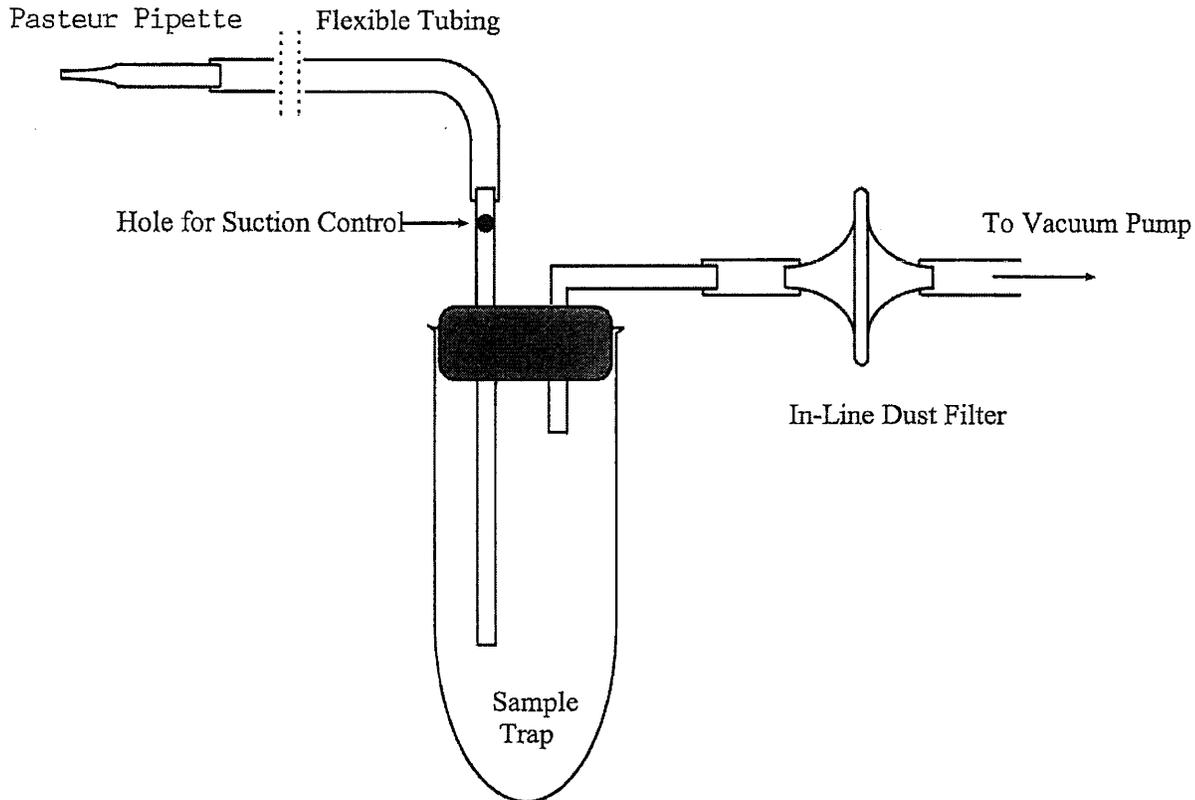
9.3.4.2 Option two: drill with the 1 inch bit and either make the hole larger or use a smaller bit to take the next ½- inch sample.

9.3.5 A stainless steel scoopula will make it easier to collect the sample from the bottom of the hole.

9.4 Vacuum Trap Design and Clean-out

The trap presented in Figure 1 is a convenient and thorough way for collecting and removing concrete powder from drilled holes. The trap system is designed to allow for control of the suction from the vacuum pump and easy trap clean-out between samples. Note, by placing a hole in the inlet tube (see Figure 1), a finger on the hand holding the trap can be used to control the suction at the sampling tip. Thus, when this hole is left completely open, there will be no suction, and the sampler can have complete control over where and what to sample. To change-out between samples the following steps should be taken: 1) the Pasteur pipette and piece of polyethylene tubing at the sample inlet should be replaced with new materials, 2) the portion of the rubber stopper and glass tubing that was in the trap should be wiped down with a clean damp paper towel (wetted with deionized water) and then dried with a fresh paper towel, 3) a clean pipe cleaner should be drawn through the glass inlet tube to remove any concrete dust present, and 4) the glass tube or flask used to collect the sample should swapped out with a clean decontaminated sample trap. Having several clean tubes or flasks on hand will facilitate change-out between samples.

Figure 1



Note: the holes should be vacuumed thoroughly to minimize any cross-contamination between sample depths and the bits should be decontaminated between samples. (See Section 11.0)

10.0 Sample Handling, Preservation, and Storage

- 10.1 Samples must be collected in glass containers for PCB analyses. In general, a 2-ounce sample container with a Teflon-lined cap (wide-mouth jars are preferred) will hold sufficient mass for most analyses. A 2-ounce jar can hold roughly 90 grams of sample.
- 10.2 Samples are to be shipped refrigerated and maintained at $\leq 6^{\circ}\text{C}$ until the time of extraction and analysis.
- 10.3 The suggested holding time for PCB samples is 14 days to extraction.

11.0 Decontamination

- 11.1 Assemble two decontamination buckets. The first bucket contains a detergent and potable water solution, and the second bucket is for rinsate. Place all used drill bits, hose for the vacuum cleaner, and utensils in the detergent and water bucket. Scrub each piece thoroughly using the scrub brush. Note, the powder does cling to the metal surfaces, so care should be taken during this step, especially with the twists and curves of the drill bits. Next, rinse each piece with water and hexane. Place the rinsed pieces on clean paper towels and individually dry and inspect each piece. Note: all pieces should be dry prior to reuse.
- 11.2 Lightly contaminated drill bits and utensils may be wiped with a hexane soaked cloth and hexane rinsed for decontamination.

12.0 Data and Record Management

- 12.1 All data and information collection should follow a Field Data Management SOP or Quality Assurance Project Plan (QAPP).
- 12.2 Follow the chain of custody procedures to release the samples to the laboratory. A copy is kept with the sampling records.
- 12.3 The field data is stored for at least 3 years.

13.0 Quality Control and Quality Assurance

- 13.1 Representative samples are required. The sampler will evaluate the site specific conditions to assure the sample will be representative.
- 13.2 All sampling equipment must be decontaminated prior to use and between each discrete sample.
- 13.3 All field Quality Control (QC) sample requirements in a Sample and Analysis Plan (SAP) or QAPP must be followed. The SAP or QAPP may involve field blanks, equipment blanks, field duplicates and/or the collection of extra samples for the laboratory's quality control program.
- 13.4 Field duplicates should be collected at a minimum frequency of 1 per 20 samples or 1 per non-related porous matrix, whichever is greater.

14.0 Waste Management and Pollution Prevention

- 14.1 During field sampling events there may be PCB and/or hazardous waste produced from the sample collection. The waste must be handled and disposed of in accordance with federal, state, and local regulations. The dust filter, and tubing if a vacuum pump is used, is disposed after each site investigation. This waste will be treated as PCB waste if the samples are positive for PCBs. It may be possible to manage or dispose of the waste produced at the site where the work was performed. If the site does not meet regulatory requirements for these types of activities, the waste must be transported to a facility permitted to manage and/or dispose of the waste.

15.0 References

1. Guidance for the Preparation of Standard Operating Procedures for Quality-Related Operations, QA/G-6, EPA/600/R-96/027, November 1995.
2. 40 CFR Part 761 – Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution In Commerce, and Use Prohibitions
3. Sample Container and Holding Time: RCRA SW 846, Chapter 4, Table 4.1, Revision 4, February, 2007.

Example of Sample Label and Custody Seal

U.S. ENVIRONMENTAL PROTECTION AGENCY -- REGION I BOSTON, MASS.	
LABEL	NAME OF UNIT AND ADDRESS ENVIRONMENTAL SERVICES DIVISION 60 WESTVIEW STREET LEXINGTON, MASSACHUSETTS 02173
	DATE: YR/MO/DAY TIME STATION NO.
SAMPLE	SOURCE OF SAMPLE SAMPLING CREW (FIRST, INITIAL, LAST NAME)
	SAMPLE NO. SUB NO. PRESERVATIVE
	AMOUNT ANALYSIS
	SEAL BROKEN BY DATE

 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY OFFICIAL SAMPLE SEAL	SAMPLE NO.	DATE
	SIGNATURE	
	PRINT NAME AND TITLE <i>(Inspector, Analyst or Technician)</i>	

EPA FORM 7500-2 (R7-75)

Example of Chain of Custody Form



ENVIRONMENTAL PROTECTION AGENCY
REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME				NO. OF CON. TAINERS	REMARKS
SAMPLERS: (Signature)		DATE	TIME	COMP	GRAB		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	REMARKS
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Relinquished by: (Signature)	Date / Time	Received by: (Signature)	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

1-16940

Framingham 21st Century Community Learning Centers
Elementary School Programs



Community Resource
Development
29 Upper Joclyn Ave.
508-626-9115



Build Enhance Strengthen

Woodrow Wilson Elementary School
169 Leland Street
508-626-9164

April 2012

Dear Parent/Guardian,

We are excited to announce that the 21st Century After School program here at Woodrow Wilson will be offering a Summer Program this year. We hope your son or daughter will participate in this special opportunity. This program is designed to enhance language skills, build vocabulary, strengthen relationships, and increase students' ability to engage in learning. We are also excited to be using curriculum designed by educators at the Museum of Science.

~~The summer program will run in two sessions. The first session will run Monday, July 2nd through Thursday, July 12th from 8:30am to 2:30pm. THE PROGRAM DOES NOT RUN ON WEDNESDAY, JULY 4th. The second session will run from Monday, July 16th through Thursday July 26th. (THE PROGRAM DOES NOT RUN ON FRIDAY, JULY 20th.)~~ You can enroll your child in one session or both sessions. The choice is yours. Lunch and a snack will be served to all students.

The program will include enrichment in reading, writing, and math. It will also incorporate engineering and design projects designed by educators affiliated with the Museum of Science. Students will have a daily outside activity time, a snack, and lunch during the day.

If you are interested in enrolling your child in this program, please complete the enclosed application and return it to your child's teacher by May 4th. After that date, your child's slot will be offered to another child.

Transportation is not provided. Students will need to be dropped off for 8:30am and picked up at 2:30pm in the cafeteria.

To register your child, please follow these steps:

- Choose which session(s) your child would like to attend.
- Sign the permission slips for the field trips.
- Fill out the registration form and have your child return it to their teacher with the appropriate field trip forms and payments, by May 4th. Please include cash or check made out to Framingham Public Schools.
- Applications will be accepted on a first come first serve basis, as we can only support a total of 60 students per week. Once we receive and process your application, we will contact you with further details.

**GCC CLOSURE PLAN
ATTACHMENT 7**

TABLE 8.1

COMPOUNDS LICENSED FOR STORAGE AT THE GENERAL CHEMICAL FACILITY

EPA Waste Category	Preliminary Compound of Concern	CAS Number	Analytical Method	Sampling Medium	Action Level (µg/m3)	Action level Basis
D017	2, 4, 5-TP (Silvex)	93-72-1	515.4	Dust	8	EPA RfD
D020	Chlordane	57-74-9	8081	Dust	0.5	EPA RfD
D012	Endrin	72-20-8	8081	Dust	2	ASTDR MRL
D031	Heptachlor	76-44-8	8081	Dust	0.1	ASTDR MRL
D032	Hexachlorobenzene	118-74-1	8081	Dust	0.1	ASTDR MRL
D013	Lindane	58-89-9	8081	Dust	0.3	EPA RfD
D014	Methoxychlor	72-43-5	8081	Dust	5	ASTDR MRL
D015	Toxaphene	8001-35-2	8081	Dust	2	ASTDR MRL
D036	Nitrobenzene	98-95-3	8270	Dust	2	EPA RfD
D037	Pentachlorophenol	87-86-5	8270	Dust	5	EPA RfD
D041	2, 4, 5-Trichlorophenol	95-95-4	8270C	Dust	100	EPA RfC
D042	2, 4, 6-Trichlorophenol	88-06-2	8270C	Dust	3	EPA RfD
D030	2,4 Dinitrotoluene....	121-14-2	8270C	Dust	50	ASTDR MRL
D034	Hexachloroethane	67-72-1	8270C	Dust	6000	ASTDR MRL
D024	m-Cresol	108-39-4	8270C	Dust	100	ASTDR MRL
D023	o-Cresol	95-48-7	8270C	Dust	100	ASTDR MRL
D025	p-Cresol	106-44-5	8270C	Dust	100	ASTDR MRL
D038	Pyridine	110-86-1	8270C	Dust	1	EPA RfD
TSCA	PCB	1336-36-3	8270C	Dust	0.02	IH Risk Calc.
F003	cyclohexanone	108-94-1	EPA-18	Air	5000	EPA RfD
D004	Arsenic	7440-38-2	RCRA 8	Dust	0.0025	IH Risk Calc.
D005	Barium	7440-39-3	RCRA 8	Dust	5	IH Risk Calc.
D006	Cadmium	7440-43-9	RCRA 8	Dust	0.0199	IH Risk Calc.
D007	Chromium	7440-47-3	RCRA 8	Dust	0.3	IH Risk Calc.
D008	Lead	7439-92-1	RCRA 8	Dust	1	IH Risk Calc.
D009	Mercury	7439-97-6	RCRA 8	Dust	0.3	IH Risk Calc.
D010	Selenium	7782-49-2	RCRA 8	Dust	3	IH Risk Calc.
D011	Silver	7440-22-4	RCRA 8	Dust	0.1399	IH Risk Calc.
D029	1, 1 Dichloroethylene.	75-35-4	TO-15	Air	198	IH Risk Calc.
D028	1, 2 Dichloroethane	107-06-2	TO-15	Air	5	IH Risk Calc.
D027	1, 4 Dichlorobenzene	106-46-7	TO-15	Air	18	IH Risk Calc.
F001	1,1,1,-trichloroethane	71-55-6	TO-15	Air	5148	IH Risk Calc.
F002	1,1,2-trichloro-1,2, 2,-trif.	76-14-2	TO-15	Air	9900	EPA RSL
F002	1,1,2-trichloroethane	79-00-5	TO-15	Air	8	IH Risk Calc.
F002	1,2-Dichlorobenzene	95-50-1	TO-15	Dust	600	ASTDR MRL
F005	2-nitropropane	79-46-9	TO-15	Air	20	EPA RfC
F003	acetone	67-64-1	TO-15	Air	792	IH Risk Calc.
D018	Benzene	71-43-2	TO-15	Air	16	IH Risk Calc.
F005	carbon disulfide	75-15-0	TO-15	Air	200	EPA RfC
F001	carbon tetrachloride	56-23-5	TO-15	Air	8	IH Risk Calc.
D021	Chlorobenzene	108-90-7	TO-15	Air	20	IH Risk Calc.
D022	Chloroform	67-66-3	TO-15	Air	5	IH Risk Calc.

TABLE 8.1

COMPOUNDS LICENSED FOR STORAGE AT THE GENERAL CHEMICAL FACILITY

EPA Waste Category	Preliminary Compound of Concern	CAS Number	Analytical Method	Sampling Medium	Action Level ($\mu\text{g}/\text{m}^3$)	Action level Basis
F003	ethyl acetate	141-78-6	TO-15	Air	900	EPA RfD
F003	ethyl benzene	100-41-4	TO-15	Air	700	IH Risk Calc.
D033	Hexachlorobutadiene	87-68-3	TO-15	Air	1	IH Risk Calc.
F003	methanol	67-56-1	TO-15	Air	500	EPA RfD
D035	Methyl ethyl ketone	78-93-3	TO-15	Air	10	IH Risk Calc.
F003	methyl isobutyl ketone	108-10-1	TO-15	Air	2970	IH Risk Calc.
F001	methylene chloride	75-09-2	TO-15	Air	300	ASTDR MRL
F001	tetrachloroethylene	127-18-4	TO-15	Air	13	IH Risk Calc.
F005	toluene	108-88-3	TO-15	Air	4950	IH Risk Calc.
D040	Trichloroethylene	79-01-6	TO-15	Air	74	IH Risk Calc.
F002	trichlorofluoromethane	75-69-4	TO-15	Air	130	EPA RSL
D043	Vinyl chloride	75-01-4	TO-15	Air	14	IH Risk Calc.
F003	xylene	1330-20-7	TO-15	Air	297	IH Risk Calc.
F005	2-ethoxyethanol	110-80-5	TO-17	Air	200	EPA RfC
F005	isobutanol	78-83-1	TO-17	Air	300	EPA RfD
F003	n-butanol	71-36-3	TO-17	Air	100	EPA RfD
F003	Diethyl Ether	60-29-7	TO-4A	Air	200	EPA RfD

MADEP, IH Risk Calc. - Massachusetts Department of Environmental Protection (MADEP) imminent hazard calculation using MADEP shortforms is the preferred screening level. The IH level is protective of daily human inhalation exposure for up to 5 years, including sensitive individuals such as children, the elderly, and those with pre-existing illnesses.

ATSDR Int. MRL - If no Intermediate MADEP, IH Risk Calc. is available, the screening level is the Agency for Toxic Substances and Disease Registry Intermediate Minimal Risk Level (MRL). The MRL is protective of daily human inhalation exposure for up to a year, including sensitive individuals such as children, the elderly, and those with pre-existing illnesses.

ATSDR Chronic MRL or EPA RfC - If no Intermediate MRL is available, the screening level is the ATSDR Chronic MRL or the EPA Reference Concentration (RfC). The chronic MRL and the RfC are protective of daily human inhalation exposure over a lifetime, including sensitive individuals.

IRIS RfD - If none of the above are available, the EPA Integrated Risk Information System (IRIS) Reference Dose is the screening level. The RfD are protective of daily exposure human exposure over a lifetime, including sensitive individuals.

TABLE 8.2

SCREENING LEVELS FOR ALL COMPOUNDS LICENSED FOR STORAGE AT THE GENERAL CHEMICAL FACILITY

Preliminary Compound of Concern	Sampling Medium	Action Level ($\mu\text{g}/\text{m}^3$)	Action Level (ppm)	Screening Instrument	Response Factor ¹	SCREENING LEVELS		
						PID Screening Value ² (ppbv)	Assumed Conc. in Dust ³ (mg/m^3)	Corresponding Total Dust Conc. ⁴ ($\mu\text{g}/\text{m}^3$)
2, 4, 5-TP (Silvex)	Dust	8	8	Dustrak			20	400000
Chlordane	Dust	0.5	0.5	Dustrak			20	25000
Endrin	Dust	2	2	Dustrak			20	100000
Heptachlor	Dust	0.1	0.1	Dustrak			20	5000
Hexachlorobenzene	Dust	0.1	0.1	Dustrak			20	5000
Lindane	Dust	0.3	0.3	Dustrak			20	15000
Methoxychlor	Dust	5	5	Dustrak			20	250000
Toxaphene	Dust	2	2	Dustrak			20	100000
Nitrobenzene	Dust	2	2	Dustrak			20	100000
Pentachlorophenol	Dust	5	5	Dustrak			20	250000
2, 4, 5-Trichlorophenol	Dust	100	100	Dustrak			20	5000000
2, 4, 6-Trichlorophenol	Dust	3	3	Dustrak			20	150000
2,4 Dinitrotoluene....	Dust	50	50	Dustrak			20	2500000
Hexachloroethane	Dust	6000	6000	Dustrak			20	300000000
m-Cresol	Dust	100	100	Dustrak			20	5000000
o-Cresol	Dust	100	100	Dustrak			20	5000000
p-Cresol	Dust	100	100	Dustrak			20	5000000
Pyridine	Dust	1	1	Dustrak			20	50000
PCBs	Dust	0.02	0.02	Dustrak			20	1000
cyclohexanone	Air	5000	5000	Dustrak			20	250000000
Arsenic	Dust	0.0025	0.0025	Dustrak			20	125
Barium	Dust	5.0	5.0	Dustrak			20	249995
Cadmium	Dust	0.020	0.020	Dustrak			20	995
Chromium	Dust	0.3	0.3	Dustrak			20	15000
Lead	Dust	1	1	Dustrak			20	50000
Mercury	Dust	0.3	0.3	Dustrak			20	15000
Selenium	Dust	3	3	Dustrak			20	150000
Silver	Dust	0.14	0.14	Dustrak			20	6995
1, 1 Dichloroethylene.	Air	198	50	PID	0.8	62		
1, 2 Dichloroethane	Air	5	1	PID	0.6	2		
1, 4 Dichlorobenzene	Air	18	3	PID	0.5	6		
1,1,1,-trichloroethane	Air	5148	944	PID	NR			
1,1,2-trichloro-1,2, 2,-trif.	Air	9900	1647	PID	NR			
1,1,2-trichloroethane	Air	8	1	PID	0.9	2		
1,2-Dichlorobenzene	Dust	600	100	PID	0.38	263		
2-nitropropane	Air	20	5	PID	2.6	2		
acetone	Air	792	334	PID	1.4	238		
Benzene	Air	16	5	PID	0.6	8		
carbon disulfide	Air	200	64	PID	0.44	146		
carbon tetrachloride	Air	8	1	PID	1.7	1		
Chlorobenzene	Air	20	4	PID	0.39	11		
Chloroform	Air	5	1	PID	3.5	0.3		
ethyl acetate	Air	900	250	PID	3.5	71		
ethyl benzene	Air	700	161	PID	0.51	316		
Hexachlorobutadiene	Air	1	0.1	PID	1	0.1		
methanol	Air	500	382	PID	2.5	153		

TABLE 8.2

SCREENING LEVELS FOR ALL COMPOUNDS LICENSED FOR STORAGE AT THE GENERAL CHEMICAL FACILITY

Preliminary Compound of Concern	Sampling Medium	Action Level ($\mu\text{g}/\text{m}^3$)	Action Level (ppm)	Screening Instrument	Response Factor ¹	SCREENING LEVELS		
						PID Screening Value ² (ppbv)	Assumed Conc. in Dust ³ (mg/m^3)	Corresponding Total Dust Conc. ⁴ ($\mu\text{g}/\text{m}^3$)
Methyl ethyl ketone	Air	10	3	PID	1.1	3		
methyl isobutyl ketone	Air	2970	725	PID	0.6	1209		
methylene chloride	Air	300	86	PID	0.89	97		
tetrachloroethylene	Air	13	2	PID	0.31	6		
toluene	Air	4950	1314	PID	0.51	2577		
Trichloroethylene	Air	74	14	PID	0.43	32		
trichlorofluoromethane	Air	130	23	PID	NR			
Vinyl chloride	Air	14	5	PID	0.6	9		
xylene	Air	297	68	PID	0.4	171		
2-ethoxyethanol	Air	200	54	PID	1.3	42		
isobutanol	Air	300	99	PID	1.5	66		
n-butanol	Air	100	33	PID	1.4	24		
Diethyl Ether	Air	200	66	PID	1.7	39		

Notes:

1. Response factors from RAE Systems Technical Note TN-106, based on an 11.7 eV lamp calibrated with isobutylene
2. PID Screening Value = Action Level ($\mu\text{g}/\text{m}^3$) / Response Factor
3. For purposes of the initial Pilot Study it was assumed that each compound would be present at a concentration of 20 mg/kg in the dust generated during Closure Activities.
4. Corr. Total Dust Conc. ($\mu\text{g}/\text{m}^3$) = [Action Level ($\mu\text{g}/\text{m}^3$) x 1,000,000 mg/kg] / Assumed Conc. In Dust

Stephen E. Pozner
63 Mayflower Lane
Stoughton, Massachusetts 02072
(617) 592-6200 (cell)

EDUCATION: University of Rhode Island
B.S. Chemical Engineering (1979)

EXPERIENCES:

7/1/03- Present **Pozitive Environmental Solutions, Inc.**
63 Mayflower Lane
Stoughton, MA. 02072
Title: President
Duties: Sole proprietor of an EH&S consulting company

7/1/03-Present **Global Remediation Services, Inc.**
700 Richmond Street
Taunton, MA. 03718
Title: V.P. of Business Development and Waste Disposal
Manager
Duties: Responsible for increasing revenues and profitability,
business development, compliance & health and safety,
marketing/sales. In addition, manage all waste transportation and
disposal projects

12/3/02-7/1/03 **National Environmental Services, Inc.**
343 Washington Street, Newton, MA
Title: President
Duties: Responsible for managing operations, finance and
administration, compliance and health & safety, sales, marketing,
and customer service.

1/1/01-12/3/02 **Moran Environmental Services L.L.C.**
75D York Ave, Randolph, MA.

1/1/02 – 12/3/02
Title: Director of Sales and Marketing
Duties: Manage 9 Account Managers, 2 Product Line Managers,
a Marketing Manager and manage the Transportation and Waste
Disposal (“T&D”) business line

Responsibilities include:

- Achieve the annual sales revenue budget @ 45% CM
- Implement a marketing program within budget
- Achieve projected “Product Line” revenues @ 45%
CM

- Continue to manage the "T&D" product line

1/1/01- 12/31/01

Title: Manager of Waste Disposal Business Line

Duties: Created and implemented a waste transportation and disposal ("T&D") business plan, which resulted in a 100% increase in "T&D" revenues

Responsibilities included:

- Increased transportation and disposal revenues from \$3.5 million to \$7.0 million
- Reduced disposal costs by 50%
- Increased contribution margin to >30%
- Created "T&D" marketing literature
- Implemented a Universal Waste program
- Purchased software and implemented a preprinted manifest and label system for waste pick ups

1/1/96- 12/31/00

Global Recycling Technologies, Inc.

218 Canton Street, Stoughton, MA 02072

Title: Senior Vice President (and minority owner)

Duties: Directed and managed the day-to-day operation of a hazardous waste recycling facility.

Responsibilities included:

- Managed operations, sales, customer service
- Ensured company profitability
- Developed and expanded business lines
- Increased revenues
- Ensured company met compliance and health and safety regulations
- Community Relations Program oversight

1987 - 1995

Clean Harbors, Inc.

325 Wood Road, Braintree, MA 02184

1992 - 1995

Title: Senior Vice President

Duties: Directed and managed facilities compliance, transportation compliance, Health and Safety training and field service compliance; reported directly to the President/CEO

Responsibilities included:

- Member of Executive Staff
- Directed and managed a compliance staff of 50 employees
- Ensured regulatory compliance at 13 Clean Harbors hazardous waste management facilities
- Maintained DOT regulatory compliance for a fleet of over 200 hazardous waste transportation vehicles

- Ensured that over 1200 Clean Harbors employees were properly trained OSHA, RCRA, TSCA and DOT
- Ensured regulatory compliance with OSHA and developed/implemented internal safety policies and procedures
- Ensured regulatory compliance at 23 branch offices involved in emergency response, underground tank removal and remedial site activities.

1987 - 1992

Title: Director of Compliance and Health and Safety

Duties: Directed regulatory compliance for 10 Clean Harbors hazardous waste storage and treatment facilities and 9 hazardous waste generator facilities

Responsibilities included:

- Directed a staff of 18 compliance employees
- Ensured regulatory compliance with hazardous waste, waste water, air quality, PCB, waste oil regulations and OSHA
- Prepared and submitted environmental permit/license applications and modification requests (e.g. Part B, TSCA PCB applications, etc.)
- Performed external and internal environmental regulatory compliance audits

1980-1987

Olin Corporation

One Wellington Road, Lincoln, RI 02865

Title: Environmental Affairs and Safety Specialist

Duties: Directed environmental/safety regulatory affairs for four Olin Hunt Manufacturing Plants and one Research and Development Laboratory

Responsibilities included:

- Hazardous Waste Regulatory compliance
- Underground Storage Tank Regulatory compliance
- Clean Air Act compliance
- Waste Minimization programs
- Waste Water Pretreatment compliance
- Environmental Permit applications/approvals

ROBERT S. REGO, P.E.

EDUCATION:

University of Massachusetts B.S. Civil Engineering, 1992

REGISTRATION:

Registered Professional Engineer, Massachusetts (No. 47413)
Approved Soil Evaluator (1996)
Approved Septic System Inspector (1995)
Certified Level 2 Waste Water Treatment Operator

TRAINING:

40 Hour Health and Safety Training, 1994
8 Hour Health and Safety Updates, 1995-2012
20 Hour Environmental Site Assessment Seminar, 1995

SUMMARY OF EXPERIENCE:

Mr. Rego is a Senior Project Engineer for Prime Engineering, Inc. He has a broad range of technical and project management experience in environmental and civil engineering areas. His experience includes environmental regulatory compliance; oil and hazardous material investigations; geologic and hydrogeologic field studies; local, state and federal permitting; remedial system design and maintenance; underground storage tank assessment and removal oversight; residential site design and development oversight; commercial and residential building inspections; and construction (environmental and civil) cost estimating.

Currently, Mr. Rego serves as Project Engineer at Prime Engineering, Inc. (Prime). He is a civil/environmental engineer with particular expertise in environmental assessment and remediation. He has previously held the position of Project Engineer and Environmental Engineer with nationally recognized engineering corporations.

EMPLOYMENT HISTORY:

Current - Prime Engineering, Inc.

As Project Engineer, Mr. Rego is responsible for a variety of environmental and civil projects. In this capacity, he is involved in all aspects of the project including initial set-up, performance of field activities, final design, plan and report preparation, permitting, and construction oversight. As Project engineer, Mr. Rego has performed assessment, permitting, remedial design, construction oversight, and regulatory report preparation for numerous projects which involved oil and/or hazardous waste contamination.

Mr. Rego's technical responsibilities have included the completion of a vast number of preliminary (RAM, URAM, IRA and LRA) and comprehensive (Phase I, II, III, IV and V) response actions. These assessments have addressed soil, groundwater, indoor air, sediment and surface water impacts and have included sampling and analytical programs, indoor air and soil gas surveys, pumping tests and aquifer hydraulic conductivity evaluations, and human health (Method 1, 2 and 3) and ecological (Stage 2) risk assessments to determine the risk posed by residual contaminants. Mr. Rego has routinely negotiated directly with DEP and other agencies on behalf of clients related to compliance and permitting documents (Notices of Non-Compliance, Tier I Permits, Tier I and II permit extensions and transfers, Administrative Consent Orders, Audit Follow-Up Reports) and has prepared and filed many Class A, B and C Response Action Outcomes.

1994 to 1996 - VERTEX Engineering Services, Inc.

As Project Engineer, Mr. Rego was directly responsible for project coordination and management for a variety of civil and environmental projects. Mr. Rego maintained a direct project management role for environmental projects which included: completion of environmental assessments throughout the country; the assessment, investigation, remediation, site work, and permitting associated with projects involving hazardous waste contamination; remedial system design and maintenance; and environmental soil and water sampling. Mr. Rego also maintained direct project management responsibilities for civil/site design projects which included: land survey field work; survey note reduction; percolation testing; lot layout and grading; drainage calculations, subsurface sewage disposal design; soil dewatering design and monitoring; water supply and distribution design; permit applications; and public presentations.

1992 to 1994 - SAIC Engineering, Inc.

As Environmental Engineer, Mr. Rego was involved in numerous projects involving solid and hazardous waste. Work performed included: evaluation of remedial alternatives for various hazardous waste projects including four separate federal Superfund National Priority List sites; preparation of solid waste management feasibility study for region in Slovakia; development and implementation of costing procedures to meet military and regulatory standards; preparation of numerous regulatory documents and reports for both commercial and municipal solid waste management facilities including Initial Site Investigations, Comprehensive Site Investigations, quarterly groundwater monitoring reports, and environmental monitoring plans; initial and secondary screening of alternatives for various remedial investigations/feasibility studies; and preparation of a comprehensive Stormwater Management Plan for a 20 square-mile environmentally sensitive watershed in Rhode Island.



Clean Venture, Inc.

Your Environmental Services Source

2011

Statement of Qualifications

Framingham, MA	508-872-5000
Stamford, CT	203-969-2800
Elizabeth, NJ	908-354-0210
Clayton, NJ	856-863-8778
Lewisberry, PA	717-938-4700
Baltimore, MD	410-368-9170
Quantico, MD	410- 677-6720



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Mission Statement

Clean Venture:

we strive to provide:

High levels of quality

A high degree of flexibility

High levels of service

Low costs

Short response times

Little or no variability



History

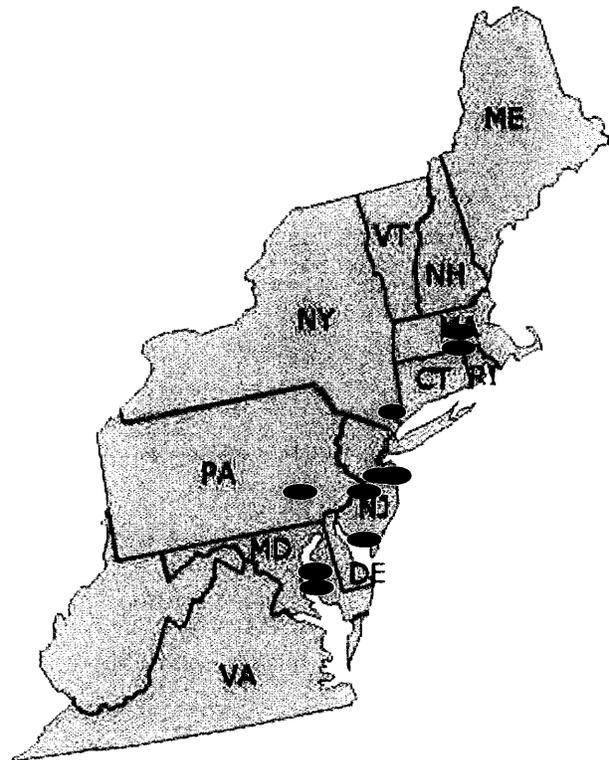
Clean Venture, Inc. (CVI) is an environmental contractor dedicated to the proper handling, transporting and disposal of oil/hazardous materials for both emergency and planned events. Responses are made to both waterside and landside incidents, predominantly in the Mid-Atlantic and New England States. CVI operates out of Framingham, MA, Stamford, CT, Elizabeth and Clayton, NJ, Baltimore, MD and our newly acquired Quantico, MD location.

Since forming in 1977, CVI has established itself as a leading environmental contractor with personnel and equipment resources available to handle virtually all environmental cleanup needs. Employing over 250 people on a full time basis and ten million dollars worth of equipment and cleanup materials available at all times, the company has responded to over 8,500 oil and hazardous material spills and performed over 12,000 planned projects ranging in size from \$1,000 to over \$7,000,000. It does so on a routine basis, 24 hours a day, 365 days per year.

CVI has sister company relationships with **Cycle Chem, Inc.** and **General Chemical Corporation**, our group of RCRA Part "B" TSD Facilities, **Envirotech Consultants LLC** our environmental consulting firm and **DEEP GREEN** of NEW YORK, Inc. our soil processor in New Windsor, NY. **DEEP GREEN** thermally destroys

petroleum contaminants in soils. Thermal treatment is the only process that converts hydro-carbons to harmless steam and carbon dioxide within seconds. Unlike most soil processors, Deep Green guarantees processed soils have been cleaned as per NYSDEC standards.

Our group of companies can meet your every need, from marine services, remedial work and emergency services, to transportation, treatment, storage and disposal.



- Clean Venture
- Cycle Chem/General Chemical
- Envirotech
- DEEP GREEN



Services



24 Hour Emergency Spill Response
Hazardous & Solid Waste Management
Transportation
Chemical Lab Packing Services
Excavation Projects
Pneumatic Excavation
Subsurface Structure Cleaning and Jet Rodding
PCB Transformer Pumping and Disposal
Confined Space Entry
Vacuum Tanker/Vactor Services
High Pressure Water Blasting
Industrial Tank Cleaning/Plant Maintenance
Oil/Water Separator Maintenance
In-Situ Remediation
UST/AST Removal & Disposal
Tank, Barge, Pipeline Cleaning & Marine Transfers
Marine Transport and Salvage
USCG Oil Spill Response Organization (OSRO)
Storage Tank Rental
Manufactured Gas Plant (MGP) Cleanups
WWTP and Lagoon Cleaning
Power Plant Services
Carbon/Sand Filter Change Outs/Media Replacement
OSHA & DOT Training
Thermal Treatment of Petroleum Contaminants in Soil



Health & Safety Summary

Clean Venture, Inc. is committed to providing a safe workplace for their employees, serving their clients with utmost safety, and striving for a cleaner and safer environment. Consequently, all field and supervisory employees, including sales and administrative personnel, undergo comprehensive and continual health and safety training. For example, in accordance with 29 CFR 1910.120(e) - the training requirements of the OSHA "HAZWOPER" standard, various employees of CVI receive the following training:

- 40 Hour Initial HAZWOPER for general site workers
- 24 Hour Initial HAZWOPER for occasional site workers
- 8 Hour HAZWOPER Supervisor for site supervisors
- 8 Hour Annual HAZWOPER Refresher for all trained workers

Beyond 29 CFR 1910.120 (e), these employees also undergo other OSHA, U.S.DOT and NJ DEP required safety training relevant to our operations, including:

- Confined Space Entry
- Fire Safety
- Respiratory Protection
- Hazard Communication
- Lock-out/Tag-out
- Occupational exposure to blood-borne pathogens
- Occupational exposure to hazardous laboratory chemicals
- Competent persons in excavation
- Hazardous materials transportation HM-126F, HM-181, HM-215

Additionally, CVI and affiliated companies have developed and implement a written Safety and Health Program, which includes among other requirements, safety and health Standard Operating Procedures {mandated by 29 CFR 1910.120(b)(ii)} enunciating corporate policies in the following areas of OSHA, EPA, U.S. DOT, and NJDEP occupational and environmental safety and health requirements pertinent to our operations:

OSHA General Industry Standards – 29 CFR 1910

- Walking-Working Surfaces: Fixed industrial stairs, Portable and Fixed ladders, Scaffolding – Subparts .24 to .30 CVI SOP # 980225
- Emergency Response Plans: Fire Prevention – Subpart .30 CVI SOP #980225
- Vehicle-mounted Work Platforms, Man-Lifts: - Subparts .67 to .68 CVI SOP# 980225
- Occupational Health & Environmental Controls: Occupational noise exposure and Ionizing radiation – Subparts .96 to .97 CVI SOP # 980225
- Hazardous Materials: Flammable and combustible liquids – Subpart .107 CVI SOP #851010
- Personal Protective Equipment: Eye and face protection, Respiratory protection, Head protection, Foot protection, Hand protection – Subparts .132 to .138 CVI SOP # 950429
- General Environmental Controls: Sanitation - Subpart .141, Permit required confined spaces – Subpart .146 and Control of hazardous energy Subpart .147 CVI SOP #'s 950201, 941213
- Fire Protection – Subparts .155 to .165 CVI SOP #950604
- Portable Tools and Equipment – Subpart .244 CVI SOP # 980226
- Electrical Work: Training - Subpart .322, Use of Equipment – Subpart .333 Safeguards for Personal Protection - Subpart .334
- Toxic and Hazardous Substances: – Air contaminants – Subpart .1000, Asbestos – Subpart .1001, Blood-borne pathogens – Subpart .1030, Hazard communication - Subpart .1200, Retention of DOT markings, placards and labels – Subpart .1201, Occupational exposure of hazardous chemicals in laboratories – Subpart .1450 CVI SOP #s950216, 950415, 950513, 950505PP, 950614 & 950615

OSHA Construction Standards – 29 CFR 1926

- Cranes, Derricks & Hoists: – Subpart N CVI SOP # 950101-C
- Fall Protection: Subparts .502, .503 CVI SOP #941214
- Excavation: Subpart P CVI SOP # 960501
- Motor Vehicles, Mechanized Equipment: Subparts .600 to .602 CVI SOP #950120
- Marine operations and equipment: Subpart .605 CVI SOP #95058
- Surface transportation of explosives: Subpart .902 CVI SOP #980225
- RCRA: 40 CFR 264, 265 (EPA)
- Transportation of hazardous materials: 40 CFR HM 171, 172.704 (US DOT)
- Drug and alcohol testing – 49 CFR 199 (US DOT)
- Closure of Underground storage tanks: NJ DEP

Finally, to assure company implementation of our strict employee compliance with these SOP's, the Corporate Safety and Health Officer conducts daily, random and unannounced job site audits. In addition, all CVI and CCI employees participate in our Comprehensive Medical Surveillance Program



Equipment Summary

15	Box Trucks	
14	Straight Vacuum Trucks	
13	Vactors	
20	Vacuum Trailers	
15	Jet Rodders	
20	Spill Response Vehicles	
90	Roll Off Containers – Various Sizes	
9	Roll Off Movers	
20	Vactainers/Sludge Boxes	
6	Heavy Equipment Units (Excavators/Loaders)	
11	38-Yard Dump Trailers	
26	Box Trailers (48' – 102')	
5	6,000 Gallon Holding Tanks	
29	Tractors	
3	Mobile Water Treatment Units	
23	Work/Deployment Boats Ranging in Size from 12' to 32'	
10,000'	18" Harbor Boom	

Numerous assorted pumps, generators, air compressors, welding gear. Lightering equipment and diving equipment

All equipment and supplies are subject to strict decontamination practices and maintenance schedules.





Personnel Resources

Combining CVI, CCI, GCC's and Envirotech's ten offices and three facilities we have available 345 personnel with widely varying backgrounds and experience providing CV/CC/GC's manpower. General personnel categories and the number of personnel in each include:

Executive	2
Health & Safety Officers	3
Regulatory	3
Chemists	17
Managers	33
Sales/Estimators	23
Supervisors	35
Foreman	20
Equipment Operators	46
Chemical Technicians	60
QA/QC Specialists	2
Mechanics/Maintenance Technicians	6
Dispatchers	5
Administrative/Office Personnel	70
Drivers	20

All CVI, CCI and GCC field personnel that work on hazardous waste sites have received all appropriate training.



Permit List

EPA ID Number: NJ0000027193
 Corp Code: Corp code 0100037271
 Federal ID Number: 22-2149233
 MD Contractors License Number: F2874477
 CVI SIC CODE: 8744
 NJDEP UST License: US00323
 US Coast Guard Rating: River/Canal Class E
 Inland/Nearshore Class B
 Industrial Discharge Permit: Issued By Camden County Municipal Utilities
 Authority
 DOT# 200827
 ICC# MC234335

Hazardous Materials Certificate
 Of Registration Number: 070899-003-040H

<u>STATE</u>	<u>PERMIT #</u>
ALABAMA	NJ0000027193
ARIZONA	15009
ARKANSAS	H-1294
CONNECTICUT	CT-HW-33
DELAWARE	DE-HW-290 (HAZARDOUS)
DELAWARE	DE-SW-290 (SOLID)
ILLINOIS	S.W.H. #2818
MARYLAND	HWH 269
MASSACHUSETTS	381
MICHIGAN	NJ0000027193 (HAZARDOUS)
MAINE	MEHWT H425
NEW JERSEY	16755
NEW JERSEY	S5811 (HAZARDOUS)
NEW HAMPSHIRE	TNH-0168
NEW MEXICO	00000027732
NEW YORK	NJ-396
OHIO	CONSENT TO SERVICE
PENNSYLVANIA	PA-AH 0299
RHODE ISLAND	740
SOUTH CAROLINA	NJ0000027193
TEXAS	86941
VERMONT	NJ0000027193
VIRGINIA	NJ0000027193
	DOT# 200827
	ICC# MC234335
WEST VIRGINIA	NJ0000027193
ICC Authority	

HAZMAT Certificate of Registration
 APPORTIONED PLATES

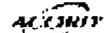


Bonding & Insurance

CVI's strong financial resources and stability, coupled with its excellent project completion history and qualified personnel allows us to secure bonds and insurance coverage which provides our clients with a sense of security in our services.

In addition, CVI has an established a bond program with parameters of \$10,000,000 single and \$20,000,000 aggregate.

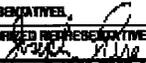
We have attached a sample certificate of insurance for your review.

 CERTIFICATE OF LIABILITY INSURANCE		DATE (MM/DD/YY) 09/15/10
PRODUCER FRENKEL & CO., INC. 260 Hudson Street - 4th Floor New York, NY 10014		THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.
Phone No. (212)-488-0200 Fax No. (212)-488-0220		
INSURED Clean Venture, Inc. 201 South First Street Elizabeth, NJ 07206		INSURERS AFFORDING COVERAGE
		INSURER A: Steadfast Insurance Company 26387 INSURER B: American Guarantee & Liability Insurance Company 26247 INSURER C: Zurich American Insurance Company 14536 INSURER D: Farmers Fend Insurance Company 21873 INSURER E:

COVERAGES
 THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY CLAIMS MADE <input checked="" type="checkbox"/> OCCUR DEMT. AGGREGATE LIMIT APPLIES PER <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC	GPL 4912322-08	09/30/10	09/30/11	EACH OCCURRENCE \$ 1,000,000 DAMAGES TO RENTED PREMISES (EA OCCURRENCE) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADJ INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMPROP AGG \$ 2,000,000
B AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	BAP 4912317-08	09/30/10	09/30/11	COMBINED SINGLE LIMIT (EA ACCIDENT) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
CARAGE LIABILITY <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EACH ACC \$ AGG
A UMBRELLA LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE DEDUCTIBLE RETENTION	SEO 4912320-08	09/30/10	09/30/11	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
C WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETARY PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> If yes, describe under SPECIAL PROVISIONS below	WYC 3863433-00 WYC 4015409-00	09/30/10	09/30/11	<input checked="" type="checkbox"/> WC-STAT-TORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
C ENVIRONMENTAL IMPAIRMENT LIABILITY	EPC 5257 647-08	09/30/10	09/30/11	\$ 5,000,000 EACH OCCURRENCE \$ 10,000,000 AGGREGATE
D MOTOR TRUCK CARGO	NMK 9712 0610	09/30/10	09/30/11	\$ 100,000 EACH VEHICLE \$ 200,000 EACH OCCURRENCE
D PROPERTY (ALL RISK)	NMK 9712 3155	09/30/10	09/30/11	REPLACEMENT COST BASIS

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS
 *****MCS 90 Endorsement applies to the Business Auto Policy.*****
 General Liability and Excess Umbrella Liability Policies include coverage for Contractors Pollution and Professional Liability.

CERTIFICATE HOLDER Evidence of Insurance	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL _____ DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE 
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Project References

Waste Management and Disposal Support to the National Institutes for Health

Client: National Institutes of Health
DEP, Building 13, Room 2W64
Bethesda, MD 20892

POC: Ms. Cathy Hiltner (Contracting Officer) – (301) 402-3063
Mr. Don Wilson (Site Contact) – (301) 496-7990

Contract #: HHSN263200500009I

Type: IDIQ/Firm Fixed Price (August 2005 to March 2010)

Value: Over \$22,700,000

Objective: To provide comprehensive and diverse chemical, radioactive and mixed waste management and disposal services to NIH offices in Maryland and Washington DC.

Project Description:

The National Institutes of Health (NIH) conducts the world's largest biomedical research program. Direct research and support activities are performed by approximately 18,000 employees in numerous laboratories, a 500 bed research hospital and support facilities on NIH's main 340 acre campus at Bethesda, Maryland, the 513 acre NIH animal Center (NIHAC) in Poolesville, MD and at 30 other off-campus installations located in the greater Baltimore-Washington DC metropolitan area. The NIH off-campus installations include buildings with research laboratories and animal facilities; a dental clinic; and a property warehouse.

Under this contract, Clean Venture operates the NIH Hazardous Waste Management Facility (WMF) under the terms of a Controlled Hazardous Substance (PartB) Permit issued by the Maryland Department of Environment (MDE). Clean Venture also manages all radioactive materials including radioactive wastes under the terms of the NIH NRC License. Discharge of waste waters to the sanitary sewer are regulated by the Washington Suburban Sanitary Commission (WSSC) and the Nuclear Regulatory Commission (NRC). A full-time crew of 22 employees is dedicated to this project including a project manager, 12 chemists, 6 radioactive waste specialists and 3 data entry clerks

Contaminated Soil Remediation

Client: Whiting-Turner Contracting Company
Address: 300 East Joppa Road Hampton Plaza
Towson, Maryland 21286-3048
POC: Kelly Carpenter or Al Tyler
POC Telephone: 410-821-1100
Contract Type: Lead Soil
Awarded Price: 2.6 Million
Performance Dates: 9-06 – 10-07

Description:

Clean Venture, Inc. submitted a Health & Safety Plan to the City of Baltimore. CVI supplied various large heavy equipment and 40 hr. trained operators to move large stockpiles of lead contaminated soils and maintained areas for sediment control and run off contamination. CVI set up a 22,000 gallon frac tank for dewatering of the site. Water was transported via tanker trucks. CVI excavated a culvert and provided personnel and materials to block out 48" pipe lines. We built over 1200 feet of construction roadways for truck traffic according to State specifications. In addition CVI provided treatability studies, disposal waste stream, manifesting, loaded 30 tractor trailers per day, transported, and disposed of approximately 1,000 tons of leaded soils and provided all documentation to Baltimore City.

BP Oil Spill Response & Cleanup

Handling, Removal & Disposal of Hazardous Materials

Entity:	New York City Department of Protection
Contract Length:	April 2006 through September 30, 2009
Contract Number:	HMHD-2007
CVI/CCI Rep:	Jarrod Hamilton
Description:	Handling, Removal & Disposal of Hazardous Materials
Contact:	NYC Dept. of Protection 59-17 Junction Blvd. Flushing, NY Shay McAttamey (718) 595-5266
Waste:	All Hazardous Waste Materials
Estimated Value:	\$1,500,000.00

Soil Remediation

Owner: State of New Jersey Division of Parks and Forestry
9 Freedom Way (Liberty State Park)
Jersey City, New Jersey

Contact: Dave Henderson (NJDEP Construction Manager)

Contact Phone: (609) 633-8463

Contract # X-32646

Performance Dates: 2005 - 2009

Project Size: \$ 4,524,000.00 (Current to January 09)

CVI Representative: Jose Class - (908) 354-0210

Scope of Work

In August, 2005 Clean Venture Inc. (CVI) was engaged to perform Non-Emergency remedial action services at the Liberty State Park (Site 15) located in Jersey City, New Jersey. Site 15 is approximately 14 acres enclosed by a fence and is bounded on the east by Liberty Walk and Upper New York Bay/Hudson River; on the south by a constructed earthen berm, a cove of Upper New York Bay/Hudson River and densely vegetated land that is part of Liberty State Park; on the west by Freedom Way; and on the north by moderately flat to rolling ground with a portion of the site identified as "wetlands". A road used by the Jersey City Parks Department to service the CSO lines, crosses the site along the eastern boundary. The site was identified as a chromate waste site based upon the presence of visually distinctive nodular waste observed from the soil surface and analytical results.

Phase one consisted of the site preparation for the removal and transportation of approximately 24,000 tons of Hexavalent Chrome contaminated soil and debris from the site while adhering to the soil erosion and sediment control plan submitted. CVI employed 3 x 325 Caterpillar Excavators, 3 – 4 x D-5 Caterpillar Dozers, 1 x 30 yard Caterpillar Articulating dump truck and a 3,000 gallon water truck to complete this phase. CVI loaded an estimated 1,200 tractor trailer dump trucks of waste for disposal. The site required a 1,200' access road to be built in order to access the Areas of Concern (AOC) along with the installation of approximately 800' linear feet of a privacy fence. CVI excavated the area of concerns in modified Level C while working around underground electrical utilities and a 6' diameter historical sewage discharge line.

Soil Remediation (continued)

Phase 2 required CVI to restore and construct the proposed wetland site to specifications identified by the New Jersey Department of Environmental Protection. CVI had to maintain the water levels onsite with a 6" automatic self priming diesel pump set 24 hours a day. This drained the onsite pond and controlled the water level by discharging the water directly into the Upper New York Bay / Hudson River. As part of the site re-grading activity, soil was moved from the existing pond and surrounding areas and used to build up the areas of excavation. In addition to this, CVI imported approximately 30,000 tons of various K0, K1, K2 and certified clean material in an estimated 1,350 tri-axle trucks. This material was utilized for the capping, contouring and construction of the park and the new pond. CVI installed new concrete access covers, outlet control structure, weir trash rack, 18" Tideflex valve and 40' of 18" RCP outlet pipe.

Phase 3 requires CVI to assist a subcontractor in the planting of approximately \$ 500,000.00 dollars worth of trees, shrubs, wild flower seed mixes and the spreading of approximately 2,000 tons of compost to the newly created park and the installation of monitoring wells.

Remediation & Demolition

Owner Name: City of Newark, New Jersey
Engineering Department
920 Broad Street
Newark, New Jersey 07107
Mr. Paul Butler - (973) 733-7994
Engineers-In-Charge
Ms. Sue Dugas - Malcolm Pirnie, Inc.
(201) 529-4700

Project Size: \$1,300,000.00
Project Date: October 1998 – March 1999
CVI Representative: Pam Kopp - (908) 354-0210



A former lamp manufacturing facility in downtown Newark (NJ) required hazardous waste removal and ultimate demolition of the five-story, 650,000 square foot facility. Concerned citizens brought this abandoned manufacturing plant to the attention of local government officials. After extensive site investigations the facility was put out to public bid by Newark's Engineering Department. Being the lowest responsible bidder out of ten potential contractors, Clean Venture was awarded the project. As the General Contractor for the project, Clean Venture crews performed hazardous waste remediation and ultimate disposal of heavy metals, PCB contaminated soils, light ballasts, and fixtures. Over 1,300 square feet of mercury contaminated flooring was remediated. All lead containing dust and debris were containerized and disposed. Over 25 loads of asbestos containing debris were removed from the site. The demolition of the massive structure is being mechanically performed with all inert material being processed and back-filled on site.





General Chemical Corporation

Responsive Environmental Management Services

August 24, 2004

Anna Stern
MA DEP
One Winter Street
Boston, MA 02108

Re: Closure of the Solvent Recycling Area

Dear Anna,

General Chemical is enclosing certification of closure of the solvent recycling area, as required by 310 CMR 30.587.

Please let me know if you have any questions or if you would like to schedule a site visit to inspect the portion of the facility affected by this certification.

Sincerely,

Roy H. Swartz
Manager of Regulatory Compliance

Cc: Al Nardone - DEP
Stephen Ganley
Michael Persico

GCC CLOSURE PLAN ATTACHMENT 10

133-138 Leland Street • Framingham, MA 01702
508-872-5000 • FAX: 508-875-5271
www.cyclechem.com

Corporate Office:
201 South First Street
Elizabeth, NJ 07206
908-355-5800
FAX: 908-355-3495

North Jersey Office:
201 South First Street
Elizabeth, NJ 07206
908-354-0210
FAX: 908-354-9731

New Jersey TSDF:
217 South First Street
Elizabeth, NJ 07206
908-355-5800
FAX: 908-355-0562

South Jersey Office:
1800 Carman Street
Camden, NJ 08105
856-365-5544
FAX: 856-365-0801

Maryland Office:
2031 Inverness Avenue
Baltimore, MD 21230
410-368-9170
FAX: 410-368-9171

Connecticut Office:
One Dock Street
Stamford, CT 06902
203-969-2800
FAX: 203-969-2264

Pennsylvania TSDF:
550 Industrial Drive
Lewisberry, PA 17339
717-938-4700
FAX: 717-938-3301

Certification of Partial Closure
(310 CMR 30.587)

FS Engineers, Inc. has reviewed the General Chemical Corporation closure plan for the processing area and sample analyses documentation provided by Mr. Roy Swartz, Manager of Regulatory Compliance. According to Mr. Swartz, the required closure wastes were appropriately sampled and analyzed in accordance with the waste analysis plan. FS Engineers has conducted a site walkover to review the area subsequent to the removal and partial closure of LUWA thin-film evaporator and the pot still, together with associated piping and appurtenances on the waste side of the process. Based upon the site walkover and information reviewed, the evaporator, pot still and associated piping were dismantled, decontaminated in accordance with the Closure Plan, and shipped off-site for scrap recycling.

Therefore, based upon available information, it is our professional opinion that a partial closure of the waste side of the solvent recycling operation has been completed at the General Chemical Corporation facility, 133 Leland Street, Framingham, MA. The closed waste management unit consisted of a LUWA thin-film evaporator, a batch pot still, associated waste solvent pumps, piping, valves, etc., and the floor of the recycling room. The closure was completed in compliance with General Chemical's approved Closure Plan, Section VI of the company's Hazardous Waste License No. 27B/95 and 310 CMR 30.000.

By: 
Owner/Operator - General Chemical Corporation
Michael S. Persico, President

Date: 8/16/04

By: _____
Independent Massachusetts Registered
Professional Engineer
Farooq Siddique, PE, LSP

Date: _____



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece or on the front if space permits.

1. Article Addressed to:

Massachusetts DEP
 One Winter Street
 Boston, MA 02108
 Attn: *Anna Stern*

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
 Addressee
 B. Received by (Printed Name) C. Date of Delivery

RECEIVED
 DEP
 ONE WINTER ST
 BOSTON MA 02108

D. Is delivery address different from item 1? Yes
 No
 YES, enter delivery address below:

DEP ST 4th FL
 ONE WINTER ST
 BOSTON MA 02108

3. Service Type Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.
 4. Restricted Delivery? (Extra Fee) Yes

2. Article Number

(Transfer from service label)

PS Form 3811 August 2001

Domestic Return Receipt

102595-02-M-1540

7003 3110 0005 2027 6537



General Chemical Corporation

Responsive Environmental Management Services

June 16, 2004

Mr. Al Nardone
MA DEP
One Winter Street
Boston, MA 02108

Re: Closure of the Solvent Recycling Area

Dear Al,

General Chemical has completed closure of the solvent recycling area. The LUWA thin-film evaporator and the pot still, together with all associated piping and appurtenances on the waste side of the process, have been dismantled, decontaminated in accordance with our Closure Plan, and shipped off-site for scrap recycling. A copy of the Bill of Lading documenting shipment is attached. The floor of the processing area has also been cleaned in accordance with our Closure Plan. All cleaning solutions, residues and other cleaning materials have been collected, analyzed and managed in accordance with our license.

We are contracting a registered professional engineer to review this closure and provide the certification required by 310 CMR 30.587(1)(a).

Please let me know if you have any questions.

Sincerely,

Roy H. Swartz
Manager of Regulatory Compliance

Cc: Anna Stern - DEP
Chief Smith - Framingham Fire Department
Robert Cooper - Framingham Board of Health
Stephen Ganley
Michael Persico
Stephen Chase

133-138 Leland Street • Framingham, MA 01702
508-872-5000 • FAX: 508-875-5271
www.cyclechem.com

Corporate Office:
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FAX: 908-355-3495

North Jersey Office:
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Elizabeth, NJ 07206
908-354-0210
FAX: 908-354-9731

New Jersey TSDF:
217 South First Street
Elizabeth, NJ 07206
908-355-5800
FAX: 908-355-0562

South Jersey Office:
1800 Carman Street
Camden, NJ 08105
856-365-5544
FAX: 856-365-0801

Maryland Office:
2031 Inverness Avenue
Baltimore, MD 21230
410-368-9170
FAX: 410-368-9171

Connecticut Office:
One Dock Street
Stamford, CT 06902
203-969-2800
FAX: 203-969-2264

Pennsylvania TSDF:
550 Industrial Drive
Lewisberry, PA 17339
717-938-4700
FAX: 717-938-3301

STRAIGHT BILL OF LADING - SHORT FORM

Shipper's No. MAD019371079

Carrier CLEAN VENTURE, INC. SCAC. _____ Carrier's No. NJ0000027193
provided, subject to the classifications and tariffs in effect on the date of this Bill of Lading:

at FRAMINGHAM, MA, date 6-10-04 from GENERAL CHEMICAL CORP.

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout, this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained (as specified in Appendix B to Part 1035) which are hereby agreed to by the shipper and accepted for himself and his assigns.

TO: (Mail or street address of consignee for purposes of notification only.)	FROM:
Consignee <u>FRAMINGHAM SALVAGE</u>	Shipper <u>GENERAL CHEMICAL CORPORATION</u>
Street <u>120 WAVERLY STREET</u>	Street <u>133-138 LELAND STREET</u>
Destination <u>FRAMINGHAM, MA</u> Zip <u>01702</u>	Origin <u>FRAMINGHAM, MA</u> Zip <u>01702</u>
Route:	

Delivering Carrier <u>CLEAN VENTURE, INC.</u>	Trailer Initial/Number	U.S. DOT Hazmat Reg. Number
--	------------------------	-----------------------------

No. of packages	HM	Description of articles, special marks, and exceptions	Hazard Class	I.D. Number	Packing Group	*Weight (subject to correction)	Class or rate	Labels required (or exemption)	Check column
		<u>NON RCRA, NON DOT REGULATED SCRAP METAL, CONSISTING OF TWO RECYCLING UNITS, PIPING, VALVES, AND ASSOCIATED APPURTENANCES.</u>							
		<u>TOTAL WEIGHT: 12,860</u>							
		<u>RECEIVED BY: [Signature]</u>							
		<u>FRAMINGHAM SALVAGE</u>							

Remit C.O.D. to: Address: City: State: Zip:	COD AMT: \$ Charges Advanced \$	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges. <small>(Signature of consignor)</small>	C. O. D. FEE: Prepaid <input type="checkbox"/> Collect <input type="checkbox"/> \$
<small>*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight". Note - where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____</small>			FREIGHT CHARGES <input type="checkbox"/> Prepaid <input type="checkbox"/> Collect

<small>This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.</small>	PLACARDS REQUIRED	PLACARDS SUPPLIED	<input type="checkbox"/> YES <input type="checkbox"/> NO - FURNISHED BY CARRIER
--	--------------------------	--------------------------	---

SPECIAL INSTRUCTIONS:

SHIPPER: GENERAL CHEMICAL CORPORATION CARRIER: CLEAN VENTURE, INC.

PER: [Signature] DATE: 6-10-04 PER: [Signature] DATE: 6-10-04

EMERGENCY RESPONSE TELEPHONE NUMBER: (508) 872-5000

Monitored at all times the Hazardous Material is in transportation including storage incidental to transportation (\$172.604).

Permanent post office address of shipper

DECON TIMELINE

