*Groundworks Environmental, Inc.* 93 SEP 30 PM 1:40

# TRANSMITTAL

September 30, 1993
Project CS1602

*To:*

Alameda County Dept. of Environmental Health,
Hazardous Materials Division
Attn. Larry Seto
80 Swan Way, Room 200
Oakland, CA 94621

*Please find enclosed:*

1 copy: Draft workplan - "Results of soil sampling and workplan for remedial activities, Alameda facility".

1 copy: Drilling permit from Zone 7 Water Agency (for hand-augered borings)

*Comments:*

Per our discussion of September 29, 1993, here is copy of the draft workplan. Phase I activities are scheduled for October 1, 1993.

*Sent by:* Courier

*From:*

Mark C Wheeler

Mark Wheeler

TRANACH1.DOC

Groundworks Environmental, Inc.
1022 North Second Street, San Jose CA 95112
(408) 292-5592

GROUNDWORKS
ENVIRONMENTAL, INC.

93 SEP 30 PM 1:40 DRAFT

September 30, 1993
Project CS1602

Ms. Barbara Ransom
Cargill Salt
7220 Central Avenue
Newark, California 94560-4206

Re: Results of soil sampling and workplan for remedial activities, Alameda facility

Dear Ms. Ransom;

This letter presents results of soil sampling and a workplan for remedial activities for the Cargill Salt Dispensing Systems Division facility located at 2016 Clement Avenue in Alameda, California (Alameda facility). Results of a soil sampling and analysis investigation conducted in July 1993 at the Alameda facility indicate impact to soils in one area of the site by volatile organic compounds, metals, and petroleum hydrocarbons (oil and grease). At the request of Cargill Salt, Groundworks Environmental, Inc. (Groundworks) has prepared the enclosed workplan for remedial activities at the Alameda facility, including assessment of potential impact to groundwater and excavation and disposal of impacted soils.

The proposed workplan involves two phases. During the first phase, the extent of impact to soils by organic compounds will be further defined, potential impact to groundwater will be assessed, and metals-impacted surficial soils will be excavated for disposal. During the second phase, soils impacted by organic compounds will be excavated for disposal. The results of the first phase will be used in defining the area and depth for soil excavation.

The site background and results of the July 1993 soil sampling investigation are summarized below, and are followed by the proposed scope of work.

## Site Background

The Alameda facility is located on a rectangular lot (approximately 150 feet by 92 feet), in an industrial and residential neighborhood. The facility building occupies approximately one-third the area of the site and is separated from the vacant side of the

lot by an asphalt driveway, as shown on Figure 1. The facility lot is bordered by a sheet-metal shop and residential lot to the northwest, an apartment complex to the southwest, and a residential lot to the southeast.

A small foundry was operated in the back room of the facility building from approximately 1951 to 1978. The foundry produced salt-dispensing units for use by clients of Leslie Salt. Casting of the salt-dispensing units is now done off site, and the facility is currently used for milling and repair of salt-dispensing units.

According to site personnel, the foundry was used mainly for casting of aluminum and brass pieces and was not equipped to cast iron. Site personnel have also indicated that solvents were used to clean casting and milling equipment.

Constituents of concern that might be associated with waste products from facility operations include casting sands with elevated concentrations of metals, and solvents, machine oils, and grease used in the casting and milling operations. Cargill Salt is investigating the possibility that waste products from facility operations might have been discarded on or in the ground on the vacant side of the facility lot.

## Results of Soil Sampling and Analysis

Soil samples were collected from shallow borings advanced with hand-augering equipment on July 13, 1993. The soil boring locations are shown on Figure 1, and sample collection data and field observations are shown on Table 1. A total of 10 shallow borings were hand augered and 21 soil samples were collected. Based on field observations and the results of field monitoring for volatile organic vapors using a photoionization detector (PID), five soil samples were selected for analysis of total metals and six samples were selected for analysis of volatile and semivolatile organic compounds and oil and grease. Metals selected for analysis included those commonly alloyed with brass and aluminum (i.e., copper, lead, nickel and zinc) and those commonly associated with petroleum hydrocarbon oils as residual metals in the refining process or as additives (i.e., barium, cadmium, chromium, lead, nickel, vanadium and zinc).

The results of the laboratory analyses are summarized on Tables 2 and 3. Two volatile organic compounds, 1,1-dichloroethene and tetrachloroethene, were detected in one soil boring (ASB-1) at concentrations of 25,000 and 740,000 micrograms per Kilogram ($\mu$g/Kg), respectively. Tetrachloroethene was detected at a lower concentration (25 $\mu$g/Kg) in boring ASB-10, located 5.5 feet from boring ASB-1. No volatile organic compounds were detected in the samples from the other borings, and no semivolatile organic compounds were detected in any of the samples analyzed. Petroleum hydrocarbons (oil and grease) were detected at 1,100 milligrams per

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kilogram (mg/Kg) in boring ASB-1 but were not detected in any of the other samples analyzed.

Shallow soil samples from three borings (ASB-1, ASB-2, and ASB-9) exhibited higher total metals concentrations than the samples from two other borings (ASB-6 and ASB-8). As described in the field observations for these five shallow soil samples (see Table 1), the shallow soil samples from ASB-1, ASB-2, and ASB-9 contained light-colored or reddish-colored sands that might be casting sands. Discoloration was not observed for the shallow soil samples at ASB-6 and ASB-8. Thus, the higher metals concentrations detected for ASB-1, ASB-2, and ASB-9 appear to be associated with these light-colored and reddish-colored sands.

Total cadmium was detected in the shallow soil sample from ASB-1 at a concentration that exceeds the total threshold limit concentration (TTLC). Total cadmium in boring ASB-2 and total lead in borings ASB-1, ASB-2, and ASB-9 were detected at concentrations that exceed 10 times the soluble threshold limit concentration (STLC), indicating that if an extraction for soluble metals was performed with the Waste Extraction Test (WET), the soluble metals might exceed the STLC (the WET includes a 10-fold sample dilution).

After receiving these results for the total metals analyses, the shallow soil samples from borings ASB-2 and ASB-9 were analyzed for soluble metals using the WET method; the ASB-2 sample was analyzed for cadmium and lead, and the ASB-9 sample was analyzed for lead. The ASB-1 sample was not analyzed for soluble metals because cadmium had been detected in this sample at a concentration over the TTLC. The results of the WET method analyses are shown on Table 3. Lead was detected at concentrations over the STLC in both the ASB-2 and ASB-9 samples. The concentration of cadmium from the ASB-2 sample was below the STLC.

During sample collection, groundwater was noted in several of the hand-augered borings at a depth of approximately 5 feet (see Table 1). Because of the proximity of shallow groundwater to impacted soils at the site, there is potential for impact to shallow groundwater by the constituents detected in the soil samples.

## Proposed Scope of Work

The purpose of the proposed scope of work is to excavate and dispose of soil impacted by volatile organic compounds, metals, and petroleum hydrocarbons, and to assess potential impact to groundwater by these compounds.

During the first phase of the proposed work, the extent of impact to soils by organic compounds will be further defined, potential impact to groundwater will be assessed, and metals-impacted surficial soils will be excavated for disposal. During the second

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phase, soils impacted by organic compounds will be excavated for disposal. The results of the first phase will be used in defining the area and depth for soil excavation.

**Phase I Activities**

Excavate Soils Impacted by Metals

Surficial soil at the locations of borings ASB-1, ASB-2, and ASB-9 will be excavated for disposal. At these locations, chemical impact by metals appears to be associated with light-colored and reddish-colored sands that might represent discarded casting sands. These light-colored and reddish-colored sands will be excavated using a hand shovel or a backhoe. It is estimated that removal of 1 to 2 cubic feet of soil at each of these locations will be sufficient to remove these sands. One soil sample will be collected at the base of each of these three shallow excavations and submitted for total metals analysis for confirmation that the metals-impacted soils have been removed. The excavated soil will be placed in drums for temporary on-site storage pending chemical profiling and disposal by Chem Waste. The excavations will be filled with a sand-cement slurry.

Define Lateral Extent of Organic Impact to Soils

The extent of impact to soils by organic compounds will be further defined by hand-augering four to six shallow (less than 5 feet deep) borings around boring ASB-1 and testing soils from the borings for volatile organic vapors with a PID. At least two borings will be made between ASB-1 and the rear property line to determine if the area of soil impact extends to the property line. Upon completion, the borings will be filled with a sand-cement slurry. Soil cuttings will be placed on plastic sheeting, covered with plastic, and stored temporarily on site pending analytical testing and disposal.

Assess Potential Impact to Groundwater

Potential impact to groundwater near boring ASB-1 will be assessed by hand augering a boring and collecting a groundwater sample for laboratory analysis. If impact to groundwater is detected, the need for additional groundwater characterization activities will be assessed.

A boring will be advanced to a depth of approximately 6 feet using hand-augering equipment. A 1-¼-inch-diameter polyvinyl chloride (PVC) well point will be driven 1 to 2 feet below the base of the boring and a groundwater sample will be collected from the well point using a small-diameter PVC bailer. The groundwater sample will be submitted for laboratory analysis of volatile organic compounds, metals, and oil and grease. The boring will be backfilled with cement slurry. Soils augered from the boring will either be placed in drums or on plastic sheeting and covered with plastic, and stored temporarily on site pending analytical testing and disposal.

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**Phase II Activities**

The general plan for Phase II is to excavate and dispose of soil impacted by volatile organic compounds and petroleum hydrocarbons. After defining the lateral extent of organic impact to soils and assessing the potential impact to groundwater in Phase I, the plans for Phase II activities will be re-evaluated and finalized. The area and depth of soils to be excavated and the method of soil containment (containerizing versus stockpiling) will be determined.

Excavate Impacted Soil at ASB-1

Soil impacted by volatile organic compounds and oil and grease at boring ASB-1 will be excavated using a backhoe. As indicated by field observations and the results of chemical analysis to date, the extent of impact to soil appears to be relatively limited near boring ASB-1. It is estimated that the excavation will be approximately 5 feet wide and 6 feet deep and that approximately 5.5 cubic yards of soil will be excavated from the location of boring ASB-1. This estimate will be re-evaluated based on the results of the Phase I activities.

It is possible that the area of chemical impact to soil at the ASB-1 location extends more than 3 feet towards the rear property line and beneath the *[parking?]* structure immediately adjacent to this property line. Because the area to be excavated is within 3 feet of the rear property line and the sandy soil material may tend to cave during excavation, precautions will be taken to avoid caving of the excavation sidewall nearest the property line. Temporary shoring will be placed next to this sidewall during excavation.

The intent of the planned excavation is to remove soils with the highest degree of chemical impact. It may not be possible to remove all impacted soils at this location during the proposed work because of the potential risk of damage to the structure at the rear of the property. If the area of chemical impact to soil at the ASB-1 location extends beyond the rear property line, these soils will not be removed during the proposed phase of field work. A soil sample will be collected from each sidewall of the excavation and from the base of the excavation for analysis of VOCs, metals, and oil and grease. The need for further soil excavation will be assessed after analyzing these soil samples.

The excavated soil will be placed in drums, bins, or stockpiles for temporary on-site storage pending chemical profiling and disposal by Chem Waste. If stockpiled, the soils will be placed on plastic sheeting and covered with plastic. After soil samples have been collected from the sidewalls and base of the excavation, the excavation will be filled with pumpable sand-cement slurry.

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**Sampling and Analysis**

The groundwater sample will be submitted for laboratory analysis of the following parameters:

- Volatile organic compounds by EPA Method 8010
- Metals (cadmium, copper, lead, nickel, zinc)
- Hydrocarbons (Oil and grease) by EPA Method 5520(F)
- Choride and total dissolved solids (TDS) (for general water quality assessment)

The soil samples for chemical analysis will be collected in 2-inch-diameter, 6-inch-long stainless-steel liners inserted in a hand-driven sampling tool. The tool will be driven into soil at the bottom or sides of the excavation. The soil samples will be preserved in the stainless steel liners by covering the ends of the liners with Teflon® film and capping them with plastic end caps. The groundwater sample will be poured from the sample collection bailer into appropriate EPA-approved sample containers. The soil and groundwater samples will be stored in a cooler packed with blue ice for transportation to a state-certified laboratory. Chain of custody documentation will accompany the samples to the laboratory.

The soil samples collected from the shallow excavations at borings ASB-1, ASB-2 and ASB-9 will be submitted for laboratory analysis of the following metals: cadmium, copper, lead, nickel, zinc.

The soils samples collected from the sidewalls and base of the backhoe excavation at boring ASB-1 will be submitted for laboratory analysis of the following parameters:

- Volatile organic compounds by EPA Method 8010
- Metals (cadmium, copper, lead, nickel, zinc)
- Hydrocarbons (Oil and grease) by EPA Method 5520(F)

**Project Team**

Groundworks will perform the Phase I field activities. For Phase II activities, soil excavation and disposal services will be provided by Chemical Waste Management, Inc. (Chem Waste). Groundworks will collect confirmation soil samples from the excavated areas. The chemical analyses will be performed by Columbia Analytical Services, a state-certified laboratory.

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**Permitting and Utility Clearance**

Before beginning the proposed field activities, this workplan will be submitted to the Alameda County Department of Environmental Health (ACDEH) and the field work schedule will be coordinated with the ACDEH. A drilling permit application for the groundwater sampling boring and the PID borings will be filed with the Zone 7 Water Agency of the Alameda County Flood Control and Water Conservation District. The proposed areas of excavation will be checked for underground utilities by a utility locating service.

**Health and Safety Plan**

A site-specific health and safety plan has been prepared for the proposed field . It is anticipated that "Level C" personal protective gear will be appropriate for the proposed field activities. Breathing-zone air will be monitored for volatile organics using a PID or a flame-ionization detector (FID). If conditions are encountered that may warrant an upgrade to a higher level of protection, work activities will cease until appropriate arrangements can be made. Cleaning fluids and personnel protective gear will be containerized for proper disposal.

**Report Preparation**

Groundworks will prepare of report of findings that will include a description of field procedures and observations, an assessment of potential impact to groundwater, and an assessment of the need for further soil or groundwater characterization or remediation.

Please call if you have any questions concerning this letter.

Sincerely yours,

Mark C. Wheeler
Project Manager
RG 4563

MCW:jlc

Attachments: Table 1. Soil Sample Collection Data
Table 2. Summary of Analytical Results for Soil Samples - Volatile Organics, Semivolatile Organics, and Oil and Grease
Table 3. Summary of Analytical Results for Soil Samples - Metals
Figure 1. Soil Boring Locations
Site Health and Safety Plan

Table 1
Soil Sample Collection Data
Cargill Salt - Alameda Facility

| Boring No. | Sample Depth (feet) | Sample Tube Collection Method (1) | Laboratory Analyses Completed (2) | PID readings from borehole (3) | Field Observations |
|---|---|---|---|---|---|
| ASB-1 | 0.25' | S | TM | Background (4) | Targeted light-colored sands (casting sands?) for sampling. |
| ASB-1 | 1.0 - 1.5' | HD | | 2 - 3 ppm | No odor, no discoloration. |
| ASB-1 | 5' | BA | | >100 ppm | Chemical odor, greenish staining (noticed odor and staining beginning at depth of 3 ft). |
| ASB-1 | 5 - 5.5' | HD* | V, SV, OG | >100 ppm | Chemical odor, greenish staining. |
| ASB-2 | 0.25' | S | TM, WET-M (Cd, Pb) | Background | Targeted reddish-colored sands (casting sands?) for sampling. |
| ASB-2 | 0.5 - 1.0' | HD | | Background to 2 ppm | No odor or discoloration. |
| ASB-2 | 4.5 - 5.0' | HD | V, SV, OG | Background | No odor or discoloration; Groundwater in borehole at 4.7 ft. |
| ASB-3 | 0.75 - 1.25' | HD | | Background | No odor or discoloration, possible glass fragments. |
| ASB-3 | 4.25 - 4.75' | BA | | Background | No odor or discoloration; Augered boring to 5.5 ft, groundwater in borehole at 5.0 ft. |
| ASB-4 | 0.75 - 1.25' | HD | | Background | No odor or discoloration. |
| ASB-4 | 4.25 - 4.75' | BA | | Background | No odor or discoloration; Augered boring to 6.0 ft, groundwater in borehole at 4.7 ft. |
| ASB-5 | 0.75 - 1.25' | HD | | Background | No odor or discoloration, hit storm drain (?) at 1.25', aborted boring. |
| ASB-6 | 0.75 - 1.25' | HD | TM | Background | No odor or discoloration. |
| ASB-6 | 3.5 - 4.0' | HD* | V, SV, OG | Background | No odor or discoloration; Augered boring to 5.4 ft, groundwater in borehole at 4.9 ft. |
| ASB-7 | 0.75 - 1.25' | HD | | Background | No odor or discoloration. |
| ASB-7 | 3.5 - 4.0' | BA | | Background | No odor or discoloration. |
| ASB-8 | 0.75 - 1.25' | HD | TM | Background | No odor or discoloration. |
| ASB-8 | 4.0 - 4.5' | BA | V, SV, OG | Background | No odor or discoloration. |
| ASB-9 | 0.3 - 0.8' | HD | TM, WET-M (Pb) | Background | No odor, reddish discoloration and glass fragments at top of sampled interval (casting sands?). |
| ASB-9 | 4.3 - 4.8' | BA | V, SV, OG | Background to 1.6 ppm | No odor or discoloration. |
| ASB-10 | 4.5 - 5.0' | BA | V, SV, OG | Background to 0.7 ppm | No odor or discoloration; Augered boring to 5.2 ft, groundwater in borehole at 5.15 ft. |

(1) S = Scrape; Soil sample collected by scraping soils into sample tube.
HD = Hammer driven; Soil sample collected with hammer-driven sampler fitted with sample tube.
BA = Bucket auger; Soil sample collected by emptying soils from hand-advanced bucket auger into a plastic bag and filling sample tube from plastic bag.
(2) TM = Total metals (Barium, Cadmium, Chromium, Copper, Lead, Nickel, Vanadium, Zinc)
V = Volatile organic compounds; SV = Semivolatile organic compounds; OG = Oil and grease
WET-M = Soluble metals using WET extraction
(3) PID = Photoionization detector (Thermo Environmental Instruments OVM Model 580 A; Minimum detectable concentration 0.1 parts per million [ppm]).
(4) Background = 0.0 to 0.4 ppm.
* Sample tube in hammer-driven sampler was partially full upon retrieval from borehole, additional soil was added to tube from bucket auger.
Note: All soil samples collected 7/13/93.

Table 2
Summary of Analytical Results for Soil Samples - Volatile Organics, Semivolatile Organics, and Oil and Grease
Cargill Salt - Alameda Facility

| Boring No. | ASB-1 | ASB-2 | ASB-6 | ASB-8 | ASB-9 | ASB-10 | Regulatory Criteria | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth (feet) | 5.0-5.5 | 4.5-5.0 | 3.5-4.0 | 4.0-4.5 | 4.3-4.8 | 4.5-5.0 | STLC (1) | TTLC (2) | MCCTC (3) | MCL (4) | AL (5) |
| **Volatile Organics** *EPA Method 8240 (µg/Kg) (6)* | | | | | | | | | | | |
| 1,1-Dichloroethene | **25,000** | nd (7) | nd | nd | nd | nd | ne (8) | ne | 700 | 6 | ne |
| Tetrachloroethene (PCE) | **740,000** | nd | nd | nd | nd | **25** | ne | ne | 700 | 5 | ne |
| All other Method 8240 analytes | nd † | nd | nd | nd | nd | nd | - | - | - | - | - |
| **Semivolatile Organics** *EPA Method 8270 (mg/Kg) (9)* | | | | | | | | | | | |
| All Method 8270 analytes | nd | nd | nd | nd | nd | nd | - | - | - | - | - |
| **Hydrocarbons (Oil and Grease)** *EPA Method 5520F (mg/Kg)* | **1,100** | nd | nd | nd | nd | nd | ‡ | ‡ | ‡ | ‡ | ‡ |

(1) STLC = Soluble threshold limit concentration (in micrograms per liter [µg/L])
(2) TTLC = Total threshold limit concentration (in micrograms per kilogram [µg/Kg])
(3) MCCTC = Maximum concentration (in µg/L) of contaminants for the toxicity characteristic for a liquid extract (when using the Toxicity Characteristic Leaching Procedure [TCLP])
(4) MCL = California Primary Drinking Water Standard - Maximum Contaminant Level (in parts per billion [ppb])
(5) AL = Action Level for drinking water, set by California Department of Toxic Substances Control (in ppb)
(6) µg/Kg = micrograms per kilogram (equivalent to ppb)
(7) nd = none detected at or above the method reporting limit
(8) ne = none established or none applicable
(9) mg/Kg = milligrams per kilogram (equivalent to parts per million [ppm])

† For sample ASB-1, method reporting limit (MRL) raised to 25,000 µg/Kg or higher for all analytes because high analyte concentrations required sample dilution.
‡ Regulatory criteria for petroleum hydrocarbons are established on a case by case basis.

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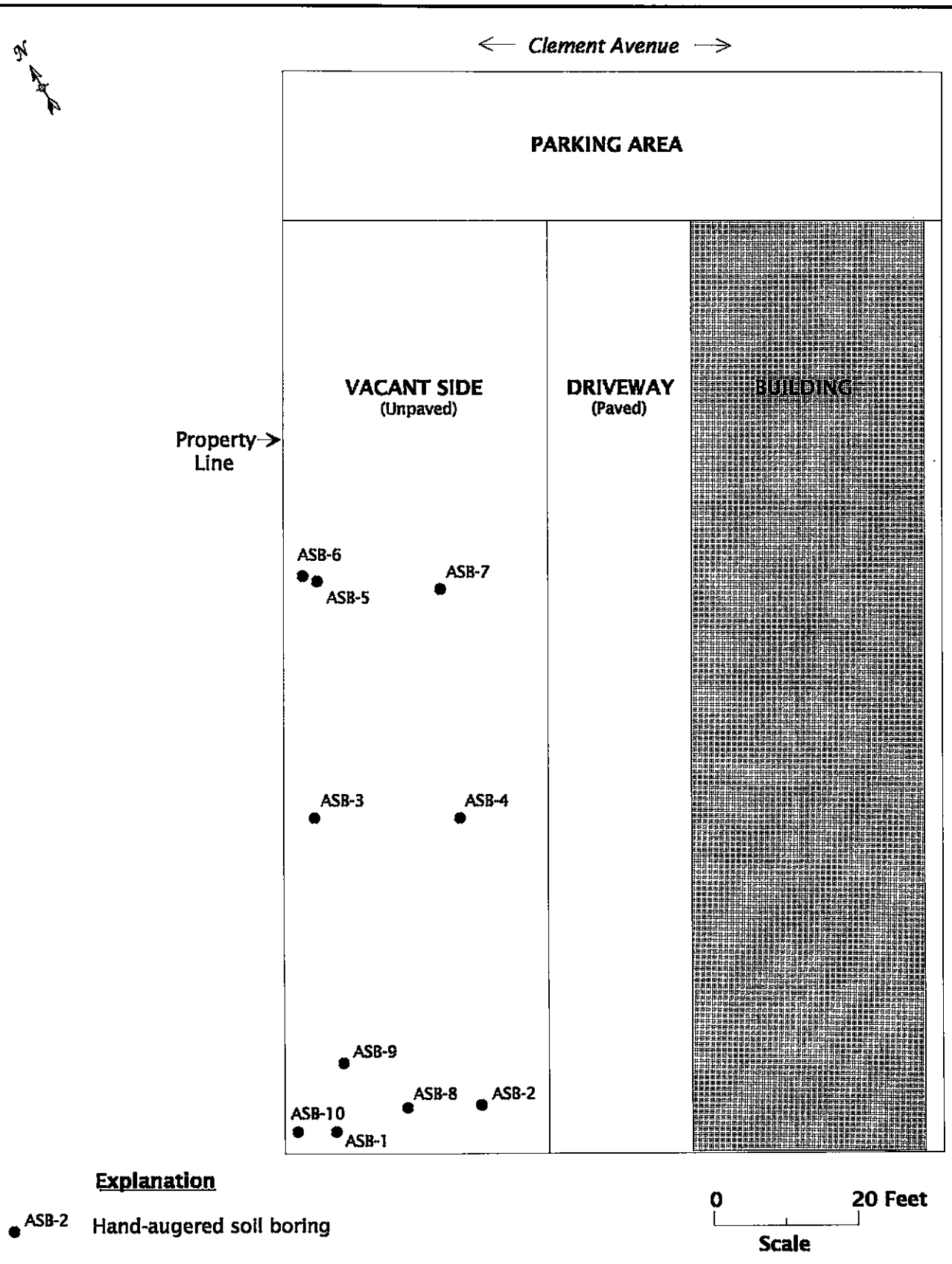
Table 3
Summary of Analytical Results for Soil Samples - Metals
Cargill Salt - Alameda Facility

| Boring No. | ASB-1 | ASB-2 | ASB-6 | ASB-8 | ASB-9 | Regulatory Criteria | |
|---|---|---|---|---|---|---|---|
| Sample Depth (feet) | 0.25 | 0.25 | 0.75-1.25 | 0.75-1.25 | 0.3-0.8 | STLC (1) | TTLC (2) |
| **Metals, Total** *(mg/Kg) (3)* | | | | | | | |
| Barium | 81 | 200 | 100 | 87 | 210 | 100 | 10,000 |
| Cadmium | **280** | ***18*** | nd (4) | nd | 4 | 1.0 | 100 |
| Chromium | 30 | 37 | 35 | 37 | 25 | 5 | 2,500 |
| Copper | 210 | 53 | 10 | 9 | 40 | 25 | 2,500 |
| Lead | ***210*** | ***390*** | 5 | 3 | ***280*** | 5.0 | 1,000 |
| Nickel | 130 | 30 | 19 | 21 | 44 | 20 | 2,000 |
| Vanadium | 11 | 22 | 18 | 20 | 21 | 24 | 2,400 |
| Zinc | 1,300 | 460 | 25 | 22 | 280 | 250 | 5,000 |
| **Metals, WET Extract** *(mg/L) (5)* | | | | | | | |
| Cadmium | na (6) | 0.7 | na | na | na | 1.0 | 100 |
| Lead | na | **8.5** | na | na | **6.0** | 5.0 | 1,000 |

(1) STLC = soluble threshold limit concentration (in milligrams per liter)
(2) TTLC = total threshold limit concentration (in milligrams per kilogram)
(3) mg/kg = milligrams per kilogram
(4) nd = none detected at or above the method reporting limit
(5) mg/L = milligrams per liter
(6) na = not analyzed

Total metals concentration in bold indicates concentration over TTLC.
Total metals concentration in bold italics indicates concentration 10 times greater than STLC.
WET extract metals concentration in bold indicates concentration over STLC.

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Cargill Salt Dispensing Systems Division
2016 Clement Avenue
Alameda, California

**Figure 1. Soil Boring Locations**

# SITE HEALTH AND SAFETY PLAN
## Groundworks Environmental, Inc.

## PROJECT INFORMATION

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**Project Name:** Remedial activities
**Project Number:** CS1602
**Project Manager:** Mark Wheeler
**Field Supervisor:** Mark Wheeler
**Office Phone No.:** 408-292-5592, pager 408-631-0504
**Other Groundworks contacts:** Rick Cramer @ pager 408-631-0505
Allen Waldman @ pager 408-631-1162

## SITE INFORMATION

**Site Owner:** Cargill Salt
**Site Address:** 2016 Clement Avenue
**County:** Alameda
**Directions to Site:** Near intersection of Chestnut and Clement, in Alameda
**Type of Facility:** Machine shop
**Site Owner Contact:** Barbara Ransom - 510-790-8182
**Site Contact:** Joe Esmond, and David - 510-523-6191

## EMERGENCY INFORMATION

**Emergency Phone No.:** **911**

**Location of Nearest Phone:** In facility building.
**Site Health and Safety Officer:** Mark Wheeler
**Hospital/Clinic:** Alameda Hospital

Address: 2070 Clinton Ave.
Alameda CA 94501

Phone: 510-522-3700

Directions: From site, right onto Clement, right on Willow (about 5 blocks from site), follow Willow about 11 blocks to intersection of Willow and Clinton Ave. Hospital on far right corner of intersection.

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**SITE SAFETY**

**Planned Activities:**
Phase I activities: Excavation of shallow metals-impacted soils with shovels, hand-driven soil sampling, hand augering a shallow boring for a grab groundwater sample, hand-augering soil borings to assess extent of volatile organic compounds (VOCs) with a photoionization detector (PID). Phase I activities to be implemented by Groundworks personnel.

Phase II activities: Excavation of VOC-impacted soil with a backhoe, hand-driven soil sampling. Phase II activities to be implemented by Chem Waste and Groundworks personnel.

Detailed description of activities in attached workplan.

**Chemical Hazards (Substances/Concentrations):**

VOCs detected in soils during previous soil sampling:
tetrachloroethene (perchloroethene, PCE, or "perk") @ 740 ppm, 1,1-dichloroethene @ 25 ppm.
Oil and grease detected in soils: 1,100 ppm.
Metals detected in colored sands mixed in surficial soils:
Total cadmium @ 280 ppm (above TTLC of 100 ppm), dissolved lead at 8.5 ppm (above STLC of 5.0)
See tables of analytical results in attached workplan.

**Chemical Exposure Information:**

*Tetrachloroethene*: Colorless liquid with a mild, chloroform-like odor. Considered by NIOSH as an occupational carcinogen. *Exposure routes:* inhalation, ingestion, skin or eye contact. *Exposure symptoms*: - irritated eyes, nose, throat; nausea; flush face, neck; dizziness, vertigo, incoordination, headache, somnolence. *If exposed:* eyes - immediately wash eyes, lifting lids, get medical attention immediately, do not wear contacts; skin - soap wash promptly; if breath large amounts - respiratory support as needed; swallow - immediate medical attention.
OSHA TWA = 25 ppm. IDLH = 500 ppm.
Respiratory protection: At all times in work zone: minimum half-face air-purifying respirator with organic vapor cartridges. If detected in breathing zone, must upgrade to supplied air full-face respirator (adequate to 10x TLV).
Goggles advised for reasonable probability of exposure. Non-impervious clothing recommended. Have eye wash available.
1,1-Dichloroethene: OSHA TLV = 1 ppm. No IDLH. Odor threshold 190 ppm.
Respiratory protection same as for tetrachloroethene, must upgrade to supplied air full-face respirator if detected in breathing zone.
Lead: *Exposure routes*: inhalation, ingestion, skin or eye contact. *Exposure symptoms*: weakness, lassitude, facial pallor, abdominal pain, irritated eyes. First aid same as for tetrachloroethene.
OSHA TWA = 0.050 $mg/m^3$. IDLH = 700 $mg/m^3$.

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**SITE SAFETY EVALUATION (Continued)**

Respiratory protection: At all times in work zone: minimum half-face air-purifying respirator with dust/mist filters (adequate to 10x TLV).
Goggles advised for reasonable probability of exposure. Non-impervious clothing recommended.
Cadmium: Considered by NIOSH as an occupational carcinogen. Reduce exposure to lowest feasible concentration. *Exposure routes*: inhalation, ingestion. *Exposure symptoms*: pulmonary edema, dyspnea, cough, tight chest, substernal pain, headache, chills, muscle aches, nausea, vomiting, diarrhea.
OSHA TWA = 0.2 mg/m$^3$; TLV = 0.05 mg/m$^3$; IDLH = 50 mg/m$^3$
Respiratory protection: At all times in work zone: minimum half-face air-purifying respirator with dust/mist filters (adequate to 10x TLV).
Goggles for any possible exposure. First aid same as for tetrachloroethene.

**Physical Hazards**

| | |
|---|---|
| Underground: | None known. Site to be checked by utility locator. |
| Overhead: | None known. |
| **Excavations:** | Hand augering during Phase I, Backhoe excavation during Phase II. |

**Potential Explosion and Fire Hazards:** None known.

**Level of Personal Protective Equipment:** Level C. ***Must stop work if organic vapors detected at any concentration in the breathing zone***. If detected, leave work zone. May return in Level C if no organic vapors detected in breathing zone. Must upgrade to supplied-air, full-face respirators if organic vapors continue to be detected in breathing zone.

**Personal Protective Equipment (required):**
Half-mask or full-face air-purifying respirator with organic vapor cartridges and dust/mist filters. Chemical-resistant, poly-coated Tyvek suit. Chemical resistant gloves (Ansell Edmont Sol-Vex Nitrile NBR or equivalent) for all field work involving soil disruption and groundwater sampling, for handling samples and cleaning equipment. Chemical resistant boots or disposable chemical booties. Chemical-resistant goggles.
Hard hat if working near machinery on site. Have eye wash available.

**Ambient Air Monitoring Requirements:**
FID or PID - measure breathing zone for organic vapors minimum of every 15 minutes.

**Field Personnel Training Requirements:**
Current OSHA 29 CFR 1910.120 training.

**Decontamination/Disposal:**
Setup decon station with Alconox wash and rinse for gloves, boots. Sampling tools to be cleaned in Alconox, rinsed in distilled water, fluids to be containerized. After use, containerize Tyvek suits and gloves and other disposable protective equipment.

**Site Control Measures:**
Establish exclusion zone. No non-OSHA trained personnel allowed to enter exclusion zone, handle samples, cleaning fluids.

DRAFT

## General Safety Guidelines for Field Operations

### Personal Protective Equipment

- Field personnel must use safety equipment specified in Site Safety Evaluation.

### Work Practices

- Groundworks Environmental, Inc. employees conducting or supervising field operations at sites potentially containing chemical or physical health hazards must participate in the company's medical surveillance program and hazardous waste operations training program.
- Employees shall not enter any excavation greater than 4 feet deep or confined space without written approval from the company health and safety officer.
- Employees must be trained in the proper use of field and safety equipment specified for the work site.
- Observe vehicular laws. Wear seat belts. Be familiar with and observe any work-site vehicle restrictions and speed limits.
- Field and safety equipment must be maintained in good operating condition and inspected as appropriate.
- Conduct field operations in upwind position of areas of known or suspected chemical contamination whenever possible.
- First aid supplies and fire extinguishers must be kept in all field vehicles and available at the work site

Site Health and Safety Plan prepared by Mark C. Wheeler.
Attachments: Remedial activities workplan.

# ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600 FAX (510) 462-3914

## DRILLING PERMIT APPLICATION

**FOR APPLICANT TO COMPLETE**

LOCATION OF PROJECT CARGILL SALT DISPENSING SYSTEMS FACILITY, 2016 CLEMENT AVE., ALAMEDA, CA

CLIENT
Name CARGILL SALT, Attn. Ms. BARBARA RANSOM
Address 7220 CENTRAL AVE Voice 510 790 8182
City NEWARK, CA Zip 94560

APPLICANT
Name GROUNDWORKS ENVIRONMENTAL, INC.
Attn. MARK WHEELER Fax (408) 292-5573
Address 1011 N. SECOND ST. Voice (408) 292-5592
City SAN JOSE CA Zip 95112

TYPE OF PROJECT

| Well Construction | | Geotechnical Investigation | |
|---|---|---|---|
| Cathodic Protection | ___ | General | |
| Water Supply | ___ | Contamination | ✓ |
| Monitoring | ___ | Well Destruction | ___ |

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger ___
Cable ___ Other Hand Auger

DRILLER'S LICENSE NO. ___

WELL PROJECTS
Drill Hole Diameter ___ in. Maximum
Casing Diameter ___ in. Depth ___ ft.
Surface Seal Depth ___ ft. Number ___

GEOTECHNICAL PROJECTS
Number of Borings 8 Maximum
Hole Diameter 3 in. Depth 8 ft.

ESTIMATED STARTING DATE October 1, 1993
ESTIMATED COMPLETION DATE October 1, 1993

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Mark C. Wheeler Date 9/28/93

**FOR OFFICE USE**

PERMIT NUMBER 93531
LOCATION NUMBER ___

**PERMIT CONDITIONS**

Circled Permit Requirements Apply

A. GENERAL
(1.) A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
(3.) Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 29 Sep 93
Wyman Hong

91992